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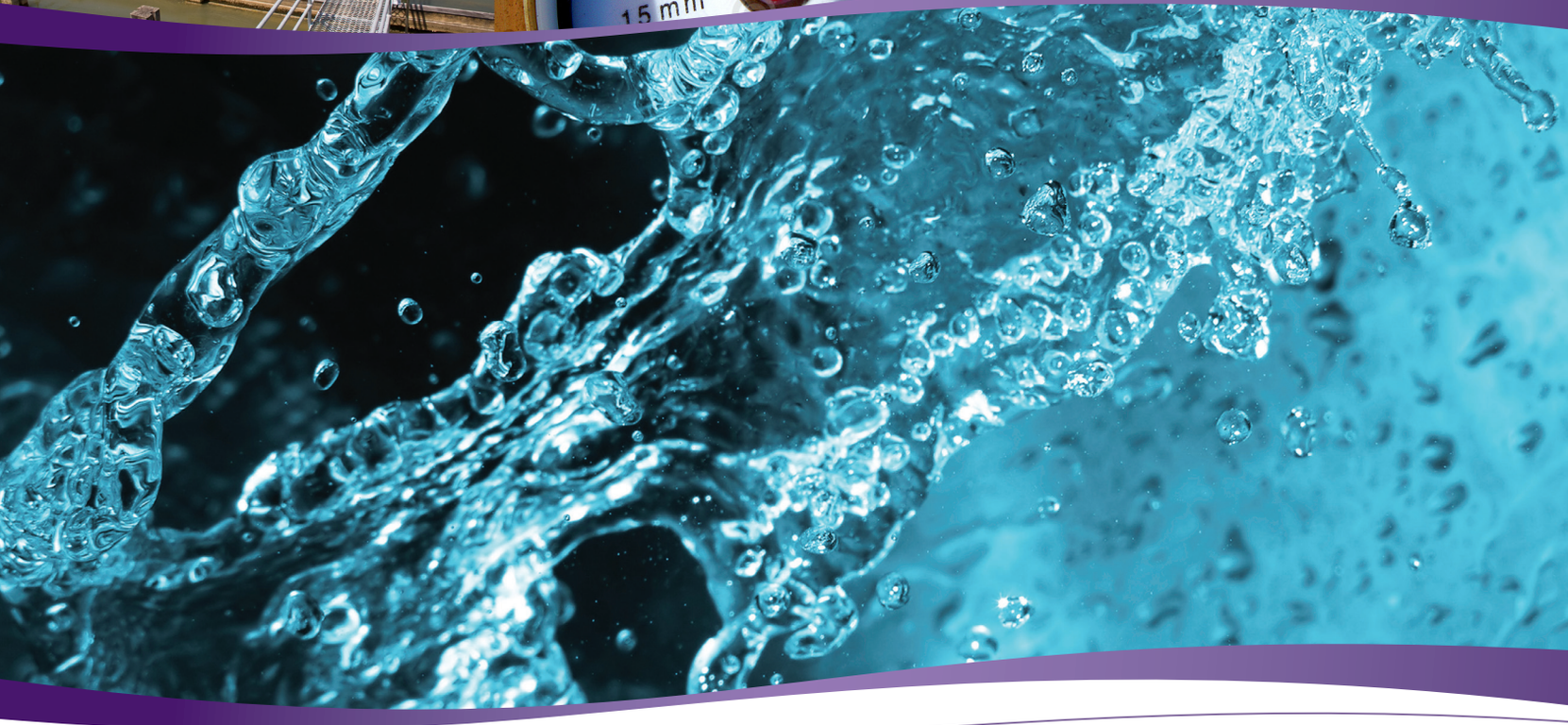
Grid Service Charges 2011-2012:

Assessment of Capital and Operating Expenditure

Grid Service Provider: WaterSecure

July 2011



Grid Service Charges 2011-2012

ASSESSMENT OF PRUDENCY AND EFFICIENCY OF OPERATING AND CAPITAL COSTS - WATERSECURE

- Final
- 27 July 2011

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Limitation Statement

The sole purpose of this report and the associated services performed by Sinclair Knight Merz Pty Ltd (SKM) is to assist the Queensland Competition Authority (the Authority) in its review of Grid Service Charges for the SEQ Water Grid 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 Grid Service Providers 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 Grid Service Providers 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. Executive Summary

The Queensland Competition Authority (the Authority) commissioned Sinclair Knight Merz Pty Ltd (SKM) to review the prudency and efficiency of capital expenditure and operating expenditure of the three Grid Service Providers (GSPs) – Seqwater, WaterSecure and LinkWater. This review is part of the Authority's process to recommend the Grid Service Charges to be applied in 2011/12. The Grid Service Charges represent the amount payable by the South East Queensland (SEQ) Water Grid Manager to the three GSPs for declared water services.

This report is one of three reports, one for each of the three GSPs. This report specifically reports on the prudency and efficiency of the operating costs and capital expenditure for WaterSecure.

1.1. Introduction and background

To inform the recommendations on the 2011-12 Grid Service Charges, the Authority requires the adequacy of available information and prudency and efficiency of capital and operating expenditure proposed by each of the GSPs for the 2011-12 year to be assessed against relevant service standards and industry best practice.

The Authority appointed SKM to review the capital and operating expenditure forecasts for declared services from July 2011 to June 2012. Declared water services include storage, production, treatment and transport of water to grid customers, including retailer-distributor entities.

Our assessment of prudency and efficiency of operating and capital expenditure applies to expenditure in the 2011/12 financial year only. The underlying information used to make this determination may only be relevant to the particular circumstances and activities that will be undertaken in 2011/12. 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.

1.2. Policy and procedure review

SKM has reviewed WaterSecure's procurement, asset performance, condition assessment and demand forecasting policies and procedures and assessed whether these policies and procedures represent good industry practice. A short summary of our findings is presented below:

- **Procurement policy** - WaterSecure has produced comprehensive procurement policy and procedure documents which cover all aspects of their purchasing process from initiation and decision, through to project delivery and close-out. Based on our review of WaterSecure's

Procurement Policy and Procedure, we conclude that WaterSecure operates in accordance with good industry practice. WaterSecure has identified a rigorous procurement method, including tender assessment and triple bottom line assessments to ensure sustainable outcomes, and although repetitive in a number of areas, covers all areas that require assessments.

WaterSecure could improve its procurement processes by initiating a post implementation review process to ensure that any issues are recorded and lessons learnt documented and incorporated into future procurement practices. This may include identifying what went well or what did not, how the vendor performed, how well the project addressed critical success criteria, and how the actual cost compared with the original estimate upon which approval was obtained.

- **Asset performance and condition assessment -** WaterSecure's procedures for monitoring its assets performance standards have been written into its contracts or asset management plans. They define the level of service expected and have associated performance indicators to enable their compliance to be assessed. This is consistent with good industry practice.

  The process for condition and risk assessments has been detailed in the Western Corridor Recycled Water plant's Asset Management Plan. It is comprehensive and provides a means to assess action to correct potential problems. It also requires economic assessments (based on whole life cycle cost analyses) to be used to determine the most economical solution and if further action is warranted. This is consistent with good industry practice.

  No condition assessment process was provided for the Gold Coast Desalination Plant. Given this facility is relatively new, the lack of a condition assessment procedure is not considered to be a major issue at this stage. However, we recommend that one should be developed as soon as possible and incorporated into the Asset Management Plan. WaterSecure may consider if it is appropriate to use the condition assessment procedure developed for the Western Corridor Recycled Water Plant for the Gold Coast Desalination Plant.

- **Demand forecasting** - WaterSecure does not have nor does it require a demand forecasting policy or process. Water demand forecast is the responsibility of the SEQ Water Grid Manager in the short term and the Queensland Water Commission in the long term. Instructions to expand the grid or supply capacity come from these parties rather than WaterSecure. Any capital expenditure undertaken by WaterSecure is related to the renewal of assets rather than the expansion of the network or capacity in response to increased water demand.

  In the next ten years lack of capacity is unlikely to be an issue. The Western Corridor Recycled Water Scheme will only produce 40 ML/day, out of a design capacity of 232 ML/day. Likewise, the Gold Coast Desalination plant will be run on a hot standby mode, with

potentially varying operating levels. In the current circumstances the development of demand forecasting should be a low priority for WaterSecure.

- **Standards of service** - WaterSecure currently has well defined levels of service for water quality, but not for other parameters. This is not considered to be an issue as volumes and availability of assets are dictated by the SEQ Water Grid Manager and are not controllable by WaterSecure.

  We recommend that future levels of service are considered following the merger between Seqwater and WaterSecure.

  In the longer term, we understand that service standards are to be set by the SEQ Water Grid Manager, which should ensure consistency of standards across all GSPs.

1.3. Information adequacy

WaterSecure has also supplied comprehensive supporting information to enable us to complete an assessment of the prudency and efficiency for a sample of operating costs. No deficiencies in the data supplied and the Authority's requirements are noted.

Due to existing contractual arrangements, final budgets are not available for this review. The operating expenditure provided to the Authority is draft only. WaterSecure is currently undertaking a 60 working day review of the draft budgets.

Eight capital expenditure projects were selected for analysis. Information provided was limited for four of the eight projects (the Bundamba Advanced Water Treatment Plant[1] Chemical Area Covers Project, the Network Storage Shed Project, the Karawatha Forest Access Track Project, and the Environmental Weed Hygiene Wash Down Bays) with only an initial business case or change proposal from Veolia Water[2] being available for review. Insufficient information has been received on four projects, resulting in SKM not being able to complete an assessment of prudency and/or efficiency for these projects.

Examples of the insufficiency of information provided for these four projects include:

- Limited agreement between the costs submitted to the Authority and the costs within the supporting documentation for the Network Storage Shed project

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1 In this report Advanced Water Treatment Plant is also referred to by the abbreviaton AWTP

2 Veolia Water is WaterSecure's operator of its Western Corridor Recycled Water Scheme, contracted under the Western Corridor Recycled Water Scheme Operation and Maintenance Agreement

- Undefined scope of works, eg for the Karawatha Forest Access Track Project, no details have been provided of type or dimensions of work to be undertaken to enable a reasonable cost estimation or comparison to be made.
- Limited cost driver information regarding the justification behind the need for the capital project and limited evidence of options assessment into the appropriate design or solution to the expenditure, in particular for the Environmental Weed Hygiene Wash Down Bays Project

We understand that this non-availability of information is due to the timing of the review. Currently, these projects have been proposed by Veolia Water, but have not been reviewed by WaterSecure. It is understood that review of these projects would be undertaken by WaterSecure prior to undertaking these works.

1.4. Operating expenditure

In undertaking our assessment we have identified three common issues across the operating expenditure items. All of these issues need to be considered to place our assessment in the correct context.

Existing contractual agreements

WaterSecure has an existing Operations and Maintenance Agreement in place for the Western Corridor Recycled Water Scheme with the operator (defined under the agreement as Veolia, General Water and Veolia Utilities (collectively called Veolia Water in this report). WaterSecure also has an Alliance Agreement in place for the Gold Coast Desalination Plant, comprising WaterSecure, Veolia Water and John Holland. These agreements were put in place during drought times where it was expected that assets would be 100 per cent utilised. Since then significant rainfall in the catchments have resulted in the filling of dams, and reduced reliability on desalination and purified recycled water to supply water to South East Queensland. By way of example, the Western Corridor Recycled Water Scheme is forecast to produce 40 ML/day in 2011/12, from a design capacity of 232 ML/day.

For the Western Corridor Recycled Water Scheme, we note that under the Operations and Maintenance Agreement for that Scheme, Veolia Water sets the draft budget for forward operational expenditure. WaterSecure then has 60 business days to review and agree these budgets with Veolia Water. We also note that the agreement with Veolia Water is effectively a ‘cost plus contract'. That is, the actual operating costs (being the sum of all direct project costs incurred by Veolia Water in operating and maintaining the assets) are met by WaterSecure with an overhead recovery and profit element payment paid by WaterSecure to Veolia Water as a percentage of actual operating costs. We further note from the agreement that, during the establishment phase of the contract (which is the phase of the agreement in which the parties are in at the time of writing), there is a ‘pain share/gain share’ arrangement based on a Key Performance Indicator related to

'Finance'. This provides an incentive for the operator to reduce costs against budget (Target Operating Costs) in that the service fee (uplift on actual operating costs) is adjusted by the gain-share/ pain-share adjustment. The maximum amount of the net negative sum of gain-share/pain-share adjustment is capped at the agreed allowable profit element of the actual operating costs payable to the operator in any given year. Whereas the maximum amount of the net positive sum of gain-share/ pain-share adjustments is not capped.

For the Gold Coast Desalination Alliance (the Alliance), the Project Alliance Agreement outlines the budget development process for establishing a Target Outturn Cost (TOC) during a TOC development phase. During this phase the Base Cost TOC is developed for years one to ten of the Operating Phase (the phase of the agreement in which the parties are in at the time of writing). Under the agreement the TOC is subject to 'rebasing' through agreement every three years during the ten year operating phase. However, we have been advised by WaterSecure that the Alliance participants have agreed to rebase the TOC for the first three years of operation to provide greater accuracy of expenditure assessment due to the recent changes in operating strategy. The Service Fee payable to the Alliance Contractor (being Veolia Water and John Holland) is subject to a gain-share/pain-share mechanism where the operator would be incentivised to reduce costs via a share of the savings. Conversely the Alliance Contractor will have its margin reduced to a cap for failure to achieve the agreed budget.

A fundamental principle of the Gold Coast Desalination Services Phase Target Operating Cost is that the operator works to a fixed fee for the year with the only adjustment being through the gain-share/pain-share mechanism. Hence the operator does not gain any additional fee if the direct fixed costs increase.

We would make the following observation and comments with respect to the agreements in place for operation of WaterSecure's assets:

- It is in the nature of cost plus contracts that there is an inherent incentive for the operator to increase operating expenditure (which in the case of the agreement for the Western Corridor Recycled Water Scheme is fully recoverable under the contract) in order to increase the overhead recovery and profit margin received. However we note that WaterSecure has mechanisms in place to moderate and adjust the operation and maintenance budgets proposed by the Veolia Water on an annual basis, and by way of evidence provided to us a review of the proposed budgets is currently being undertaken by WaterSecure. However, we consider that the ability to achieve a fair and equitable payment for the services performed is highly dependent on each party having the knowledge and experience to accurately forecast a reasonable and realistic budget for operating and maintenance expenditure. In our experience it is the nature of such contracts that, during the contract term, the operator tends to be the party that gains most knowledge on the costs for operating and maintaining the assets

concerned. This will be particularly the case where the environment in which the assets are maintained has gone through significant change.

- The Operation and Maintenance Agreement for the Western Corridor Recycled Water Project is for a 15 year term. We consider this to be a long duration for the type of agreement entered into, particularly considering the significant changes in the operating environment under which the agreement is now being performed.
- There has been a significant change in circumstances since the agreements were entered into. For example, as a result of South East Queensland moving out of drought conditions, the Western Corridor Recycled Water Assets and the Gold Coast Desalination plant are not expected to operate near their full capacities within the next 10 years. For example, the Water Grid Manager has forecast that there is only a very small chance (2.6 per cent) that purified recycled water will be required to supplement drinking water in the next 10 years. Whilst we accept that the agreements with Veolia Water contemplates changes in operating conditions, such as mothballing and decommissioning of plant, given the paradigm shift in the operating conditions and changes to corporate structure of the owner of the plant that have occurred since the agreements were entered into, we believe that it would be prudent to review these agreements. We consider a review of particular importance given that the agreements incorporate mechanisms to determine operating costs and hence have an impact on the efficiency, or otherwise, of those costs. The timeliness of the need to review these contracts is also underlined by the 15 year term of the Western Corridor Recycled Water Scheme operation and maintenance agreement.

We do, however, acknowledge the rights of the contracted parties under the existing agreement and that substantial changes are not possible without agreement from both parties.

De-commissioning of assets

As stated above, both the Gold Coast Desalination Plant and Western Corridor Recycled Water Scheme were built in a time of drought. Subsequent rainfall has meant ample availability of water from the dams and reduced reliability on desalination and purified recycled water to supply water to South East Queensland. Consequently WaterSecure is required to de-mobilise (i.e. mothball) part of the Western Corridor Recycled Water Scheme and to place the Gold Coast Desalination Plant into ‘hot standby’ mode.

Demobilising an advanced water treatment plant or placing a desalination plant into ‘hot standby’ is not a common occurrence in the water industry, worldwide. As such, there is no established best practice method that can be followed by WaterSecure.

All of the operating cost information that has been gathered to date has been for the plants operating at a normal capacity. These costs do not directly translate on a pro-rata production basis

to an operating condition where the output of a plant is significantly reduced below full capacity, or where part of the plant is mothballed.

There is an acknowledgement that much work is required to determine the most cost effective ways to operate plants at a significantly reduced output, and to de-mobilise others. WaterSecure has commenced this process and will evaluate several options looking at a range of timeframes in order to determine the optimum method of operation.

Timing

For the Western Corridor Recycled Water Scheme, many of the operating costs are provided through WaterSecure's operator, Veolia Water. Veolia Water is not contractually obliged to provide the draft information until 31 March each year. WaterSecure then has 60 working days to review the budgets and make adjustments as necessary through discussion with Veolia Water and to produce a final budget. For this regulatory assessment the Authority required a submission by 31 March. WaterSecure has advised that it is only through a good working relationship with Veolia Water that they were able to provide sufficient information for this year's regulatory review.

WaterSecure has a separate and different budget timeframe and process for the budget agreement for the Gold Coast Desalination Alliance, which is specified within the Project Alliance Agreement. Under the Gold Coast Desalination Plant Project Alliance Agreement, the Alliance (Veolia, John Holland and WaterSecure) is not required to prepare annual budgets. However, the Alliance Contractor is assisting WaterSecure in preparing a budget for 2012; the timeframe for completion is aligned with the Western Corridor Recycled Water Scheme 60 day review period.

The budget information is therefore in draft form, and should be considered as such. In parallel with this assessment WaterSecure is analysing the draft budgets which typically involves operational task analysis, benchmarking, peer reviews and overall budget moderation.

We have based our assessment of prudency and efficiency on the information that is presently available. It is acknowledged however, that it likely that these budgets will be refined and efficiency gains identified during WaterSecure's 60 working day review. We further understand that there are mechanisms in the Direction Notice to the Authority for overspend and under spend of expenditure to be reviewed at the conclusion of the regulatory period.

Table 1 presents a summary of the prudency and efficiency reviews of WaterSecure's operating expenditure.

- **Table 1 Summary of prudency and efficiency of operating costs**

Project	Cost 2011/12	Prudency	Efficiency
Operational project management Bundamba AWTP Luggage Point AWTP Gibson Island AWTP Network	 $2,480,484 $2,037,616 $369,720 $1,751,740	Prudent	Efficient
Employee Costs Bundamba AWTP Luggage Point AWTP Gibson Island AWTP	 $2,143,000 $1,856,000 $347,000	Prudent	Efficient
Plant Defects Luggage Point AWTP	 $3,200,000	Prudent	Efficient
Mothballing Costs Gibson Island AWTP	$1,626,906	Prudent	Efficient – based on WaterSecure's revised costs subsequent to its submission of up to 1,534,647
Repairs and Maintenance Network Tugun Desalination Plant	 $1,679,000 $4,660,000	Prudent	Efficient
Electricity Tugun Desalination Plant	 $4,882,708	Prudent	Efficient
Overheads Business Services Operational Services	 $8,134,883 $5,151,958	Prudent	Efficient

We have assessed all of the expenditure in our operating cost sample to be prudent. We also consider the expenditure to be efficient with the following qualification; efficient expenditure for Mothballing Gibson Island will not exceed $1,534,647.

1.5. Capital expenditure

Table 2 presents a summary of the prudency and efficiency reviews of WaterSecure's capital projects.

- **Table 2 Summary of prudency and efficiency of capital expenditure projects**

Project	Cost 2011/12	Prudent	Efficient
Bundamba SCADA Integration Program	$1,500,000	Prudent	Efficient
Swanbank cross connection pipeline	$1,500,000	Prudent	Efficient
Bundamba Advanced Water Treatment Plant – Chemical Area Storage Covers	$800,000	Not all elements are prudent	Efficient
Network Storage Shed	$575,000	Insufficient information to assess prudency and efficiency	
HV Switchroom Fire Alert System	$300,000	Prudent	Efficient
Environmental weed hygiene wash down bays	$220,000	Insufficient information to assess prudency and efficiency	
Karawatha Forrest Access Track	$200,000	Insufficient information to assess prudency and efficiency	
Bundamba Advanced Water Treatment Plant Renewals sump pumps	$106,528	Prudent	Efficient
Bundamba Advanced Water Treatment Plant Renewals - chemical mixers	$62,616	Insufficient information to assess prudency and efficiency	

The following projects have been assessed as prudent and efficient:

- **Bundamba SCADA Integration Program**
  - Prudency – The project is required to reduce the amount of operating support required and the associated costs, and to provide a more reliable plant with reduced potential safety, environmental and equipment damage incidences. Therefore we conclude that the project is prudent.
  - Efficiency – Based on the proposed resourcing schedule and the provided costs, we find the hourly rates to be reasonable and therefore conclude that the project is efficient.
- **Bundamba AWTP – HV Switchroom Fire Alert System**
  - Prudency –We believe it is typical industry practice to install this type of system for high voltage switchboards and as such we conclude that the capital expenditure for the high voltage switchroom fire alarm and suppression system is prudent.
  - Efficiency – Based on our knowledge of fire protection systems, we consider these costs to be efficient. The scope of works is deemed suitable for the existing plant, and the costs are based upon competitive tender rates.

- **Swanbank Cross-Connection Pipeline**
  - Prudency – WaterSecure has received a letter from SEQ Water Grid Manager to WaterSecure detailing the requirement for this Bundamba AWTP cross connection as part of the package of de-mobilising the Gibson Island AWTP and one stage of the Bundamba AWTP. We considered that this letter constitutes approval from the SEQ Water Grid Manager for this project, and for all intents and purposes may be read as an instruction for the project to be undertaken. Hence we conclude that the project is prudent under the grounds of compliance with that instruction. Notwithstanding the above, we recommend that WaterSecure proceeds with detailed design to verify whether the preferred option for the cross connection is technically feasible.
  - Efficiency – We conclude that the costs for the current scope of works are of the correct order of magnitude and are therefore efficient. Given that the current concept for design is based on a number of assumptions such as the ability for the required flow to be provided by gravity flow alone, we recommend that these assumptions be tested and verified and, in order to finalise the project costs, a detailed design based is required to be completed. If the detailed design results in a reduced scope of works, an adjustment will be required to the overall budget at the end of the financial year.

For the following projects, insufficient information has been provided to assess the prudency and efficiency of the works:

- **Bundamba AWTP – Chemical Area Storage Covers**
  - Prudency – Whilst we agree that project drivers are clearly identified for the need for a permanent cover over the chemical storage areas, the business case has not taken into consideration the decision to mothball Bundamba AWTP Stage 1B. Further information is required to support the need for the covering of the chemical area for Stage 1B given that this plant will not be used in the foreseeable future. Based on the Veolia business case provided, we understand that Stage 1A has a separate outdoor uncovered chemical storage areas to that of Stage 1B. On the basis that the covering of the chemical area for Stage 1A works will not be affected by the mothballing of Stage 1B, these works are considered to be prudent. However, it is recommended that the scope of works for Stage 1A is reviewed in view of the mothballing of Stage 1B to ascertain the exact requirements for chemical storage for Stage 1A. The scope of works for chemical storage area 1B is not considered prudent based on the recent decision to mothball Stage 1B of the plant.
  - Efficiency – Based on benchmarking of the proposed costs of the chemical storage covers for both Stages 1A and 1B, the proposed costs are considered efficient. This is based on evidence that the costs presented in the tender are of competitive nature and are of the right order of magnitude given the scope of works.

- **Network Storage Shed**
  - Prudency – The project is considered not to be prudent due to the lack of fiscal evidence demonstrating costs savings arising from protection of stock to support the project justification. We also find that one of the drivers, stated by WaterSecure as being the primary driver ie that of improved ability to control stock and avoid over ordering spares not to be a relevant driver for the project. In addition, inadequate information has been provided regarding the scope of works, eg additional office space for network personnel has not been adequately justified.
  - Efficiency – Whilst the costs submitted in the supporting documentation are reasonable and in line with industry norms, the costs in the supporting documentation are less than the cost submitted to the Authority for this project. Whilst a revised cost estimate has been provided we note that this amount ($370 k) is still lower than the value submitted to the Authority. We therefore find the project not to be efficient.
- **Tugun Desalination Plant – Environmental Hygiene Wash Down Bund**
  - Prudency – There is insufficient information to assess the need for the project, hence we are unable to determine whether the project is prudent.
  - Efficiency – There is insufficient information on the scope of works and the associated costs of the project to determine whether the costs are efficient.
- **Karawatha Forest Track Access**
  - Prudency – There is insufficient information to assess the need for the project, hence we are unable to determine whether the project is prudent.
  - Efficiency – There is insufficient information on the scope of works and the associated costs of the project to determine whether the costs are efficient.
- **Bundamba AWTP – Renewals Expenditure**
  - Prudency – The capital expenditure for the sump pumps for the Bundamba renewals project is considered to be prudent. The capital expenditure associated with the chemical mixers is not considered to be prudent; the replacement of the chemical mixers is based on an assumed asset condition, rather than a proven asset condition. We recommended that WaterSecure undertakes the condition assessment of these four mixers to determine the condition of the linings.
  - Efficiency – The costs associated with the sump pumps for the Bundamba renewals project are considered to be efficient. Insufficient information has been provided on the mixers to allow an assessment of efficiency. Information on the size (diameter) of mixers is required for this assessment to be completed.

For a number of the capital projects above, insufficient information was available to establish the prudency and efficiency within the timeframes of the reviews. To enable a complete assessment, further information is required, as described above. We understand that one element contributing to the insufficiency of information is the timing of our review. At the time of our review, the above projects had been proposed by Veolia Water, but have not yet been reviewed by WaterSecure. As such, we understand that the costs that we have reviewed are not necessarily the final costs that will be incorporated into the budget.

WaterSecure has stated that, as these projects were at the very early stage of "identification", a high level estimate was submitted by Veolia Water to determine whether to proceed with the detailed business case development, including cost benefit analyses etc. Business cases were not yet completed by WaterSecure given the early stages of this project. It is understood that the completion of business cases would be undertaken prior to WaterSecure finally approving the undertaking these works. Hence we conclude that we have insufficient information to determine whether the final budget costs will be efficient.

2. Introduction

The Authority is required to recommend the Grid Service Charges to be applied in 2011/12. These represent the amount payable by the SEQ Water Grid Manager to the three Grid Service Providers (GSPs) – Seqwater, WaterSecure and LinkWater – for declared water services. For the three years preceding 2011, the Queensland Water Commission has recommended the grid service charges.

To inform the recommendations on the 2011-12 Grid Service Charges, the Authority requires the adequacy of available information on the GSPs' expenditure and prudency and efficiency of capital and operating expenditure proposed by each of the GSPs for the 2011-12 year to be assessed against relevant service standards and industry best practice.

The Authority appointed SKM to review the capital and operating expenditure forecasts for declared services from July 2011 to June 2012. Declared water services include the storage, production, treatment and transport of water to grid customers, including retailer-distributor entities.

The consultancy consists of three components:

- Component 1 – Information adequacy
- Component 2 – Prudency and efficiency of operating expenditure
- Component 3 – Prudency and efficiency of capital expenditure

This report addresses all three components.

2.1. Terms of reference

SKM undertook the assessment of the prudency and efficiency of operating and capital expenditure based on the terms of reference issued by the Authority. The full terms of reference are included in **Appendix A**.

2.1.1. Scope exclusions

The following items are outside of the scope of SKM's review:

- Discussion of the allowable operation costs (including the Queensland Water Commission and the Authority's charges, finance charges, treatment of depreciation, working capital, asset valuation methodology)
- Discussion of the application of the standard building block method for calculating Maximum Allowable Revenue
- Review of drought related capital projects, over which the GSPs have minimal (if any) control

- Review of capital expenditure beyond 2011/12. Review of any capital expenditure within 2011/12 will be reviewed, but for projects spanning multiple years, this review will not include an assessment of prudency and efficiency for future years
- Discussion of irrigation schemes and associated costs
- Discussion of any potential efficiencies associated with the merger of Seqwater and WaterSecure

2.2. Report overview

SKM has prepared reports for each of the three GSPs (LinkWater, Seqwater and WaterSecure). This report specifically reports on the prudency and efficiency of the operating costs and capital expenditure for WaterSecure.

This report is structured as follows:

- Background
- Policy and procedure review
- Overview of information adequacy
- Prudency and efficiency of operating expenditure
- Prudency and efficiency of capital expenditure
- Conclusions and recommendations

3. Background

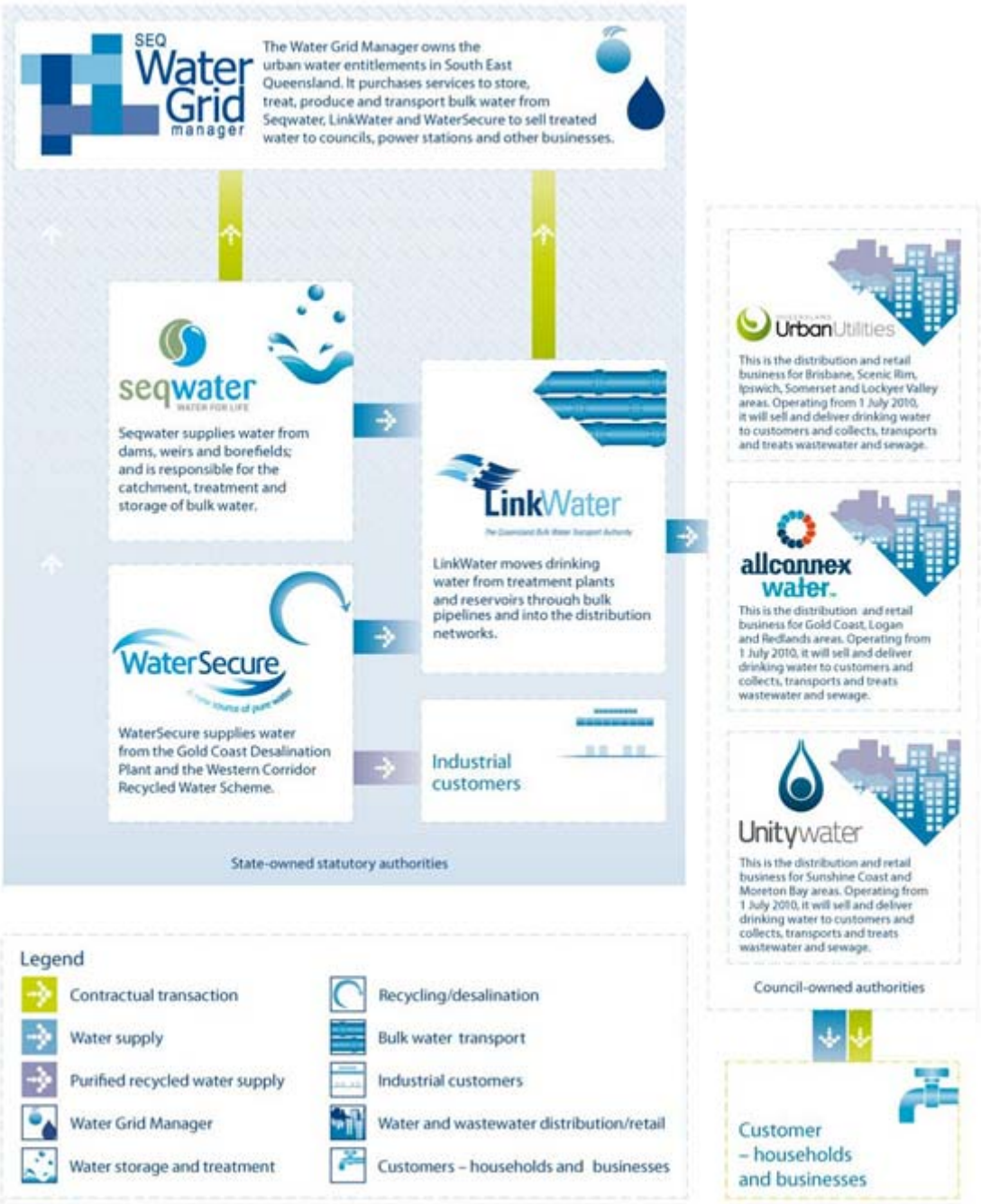
3.1. Water Reform and Grid Entities

On 1 July 2008, the Queensland Government implemented a series of reforms in the sSouth East Queensland (SEQ) water industry. The *South East Queensland Water (Restructuring) Act 2007* established four new bulk water entities that own and operate the SEQ Water Grid:

- The SEQ Water Grid Manager- responsible for the operation of the SEQ Water Grid
- Seqwater – responsible for the storage and supply of bulk water in Queensland and its major assets, including dams, weirs and water treatment plants (WTPs). Seqwater provides potable water by treating the water captured in its water storages.
- LinkWater – owns and operates the bulk transport assets that transport potable water around the SEQ Water Grid. LinkWater's assets include bulk pipelines, pumping stations and reservoirs.
- WaterSecure – responsible for two recently constructed drought assets that manufacture water in SEQ. The Gold Coast Desalination Plant produces potable water from seawater, while the Western Corridor Recycled Water Scheme is a network of advanced water treatment plants (AWTPs) that produce purified recycled water (PRW) from treated water.

Seqwater and WaterSecure merged on 1st July 2011. For the 2011/12 regulatory period, SKM has considered Seqwater and WaterSecure to be two separate entities as the information reviewed was prepared by and provided from the two separate entities prior to merger.

In addition to the bulk water entities, ten regional council water utilities were amalgamated into three larger retail distribution entities. These entities now own the water and sewerage distribution infrastructure and sell water and sewage disposal services to customers in their respective areas.



- **Figure 1 Contractual and Operational Characteristics of the Water Grid**

Source: Regulatory Submission to the QCA for 2011-12 Grid Services Charges, LinkWater, March 2011.

3.2. The role of the Authority

The Authority – an independent statutory authority established by the *Queensland Competition Authority Act 1997* – is responsible for regulating prices, access and other matters relating to regulated industries in Queensland. Under the *Queensland Competition Authority Act 1997*, 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

Under the South East Queensland Water Market Rules (the Market Rules), the Authority has to recommend the Grid Service Charges from 1 July 2011 to 30 June 2012. The Authority has to report its final recommendations on grid service charges and supporting information (as available) to the Price Regulator by 29 July 2011.

Grid Service Charges are paid by the SEQ Water Grid Manager to the three GSPs, for the provision of declared water services. Declared water services relate to the storage, production, treatment and transport of water to retailer-distributors and other grid customers, such as power stations and irrigators in South East Queensland. A single Grid Service Charge is applied for each GSP.

3.3. Role of the SEQ Water Grid Manager

The SEQ Water Grid Manager is responsible for directing the physical operation of the SEQ Water Grid to ensure regional water supply security and efficiency objectives are met. By acting as the single buyer of bulk water services and the single seller of bulk water for urban purposes, the SEQ Water Grid Manager provides a mechanism to share the costs of the SEQ Water Grid. It sells a wholesale "pool" product, which reflects the portfolio cost of supplying retailers with a defined security and quality of supply at a defined bulk supply node.

To ensure compliance to its 10 year customer contracts, the SEQ Water Grid Manager has back to back 10 year contracts with Grid Service providers. The contracts, along with other market instruments such as Water Grid Operating Strategy, Water Grid Quality Management Plan and Water Grid Emergency Response Plan, provide the means by which the SEQ Water Grid Manager optimises assets and water supply across the Water Grid (system). Mechanisms to achieve this includes specifying service performance requirements for the Grid Service Providers at Bulk Supply Points and other key nodes, based on the efficient operation of the system as a whole (system efficiency). Grid Service Providers are responsible for the efficient achievement of those

specifications (asset efficiency). Specifications are currently being developed for key nodal points (Grid Facilities) for a 20 year time period, with greater definition over the first 5 to 10 years. The specifications include security, capacity, quality and reliability.

The SEQ Water Grid Manager sells potable water to the three council-owned retail-distributor customers and various industrial and rural customers at a price determined under the SEQ Bulk Water Price Path. A 10-year price path has been projected for bulk water prices. The Bulk Water Price Path is intended to reach full cost recovery by 2017/18. The bulk water prices are different from the Grid Service Charges payable by the SEQ Water Grid Manager. The SEQ Water Grid Manager funds the difference between the revenue from sales and service charges from a debt that will be recovered over time. It is a not for profit organisation with a commercial interest in Grid efficiency, water security and customer service.

3.4. Prudency and efficiency

The Market Rules do not establish the definition or test to be applied when considering the reasonableness or prudent nature of the proposed expenditure. The *Draft Investigation Plan – SEQ Bulk Water Grid Service Charges for 2011-12* (Queensland Competition Authority, 2010) defines the Authority's approach to its assessment of reasonableness and prudency. The Authority proposes to adopt the definitions of prudency and efficiency that were approved by the Minister for Natural Resources Mines and Energy and the Minister for Trade for the interim price monitoring of the SEQ retail distributors.

For the purposes of this consultancy, SKM has adopted the following definitions:

- ***Operating expenditure*** is ***prudent*** if it is required to meet the GSP's requirements relating to:
  i. its Grid Contract
  ii. the South East Queensland System Operating Plan
  iii. the forecast required supply under the SEQ Water Grid Manager's Operating Strategy or
  iv. its required or nominated standard of service
- ***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, having regard to the conditions prevailing in relevant markets, historical trends in operating expenditure and the potential for efficiency gains or economies of scale
- ***Capital expenditure*** is ***prudent*** if it is required as a result of a legal obligation, growth in demand, renewal of existing infrastructure that is currently used and useful, or it achieves an increase in the reliability or the quality of supply that is explicitly endorsed or desired by the SEQ Water Grid Manager

- ***Capital expenditure*** is ***efficient*** if:
  i. 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 the substitution possibilities between capital expenditure and operating expenditure and non-network alternatives, such as demand management
  ii. 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.
  iii. The cost of the defined scope and standard of works is consistent with conditions prevailing in the markets for engineering, equipment supply and construction

- SKM must also assess:
  a) Whether the entities' policies and procedures for capital expenditure represent good industry practice. In particular, the policies and procedures must reflect strategic development plans, integrate risk and asset management planning, corporate directives, be consistent with external drivers, and incorporate robust procurement practices.
  b) The deliverability and timing of the capital expenditure program, with regard to the policies and procedures for capital expenditure approvals
  c) Whether the capital expenditure forecasts encompass any efficiency gains or economies of scale, and identify a prudent and efficient level of these gains with reference to appropriate benchmarks
  d) Whether corporate or overheads costs have been appropriately assigned to capital expenditure projects

3.5. Application of assessment

Our assessment of prudency and efficiency of operating and capital expenditure applies to WaterSecure's expenditure in the 2011/12 financial year only. The underlying information used to make this determination may only be relevant to the particular circumstances and activities that will be undertaken in 2011/12. Hence, the acceptance of expenditure as being prudent and efficient in this assessment should not be used a precedent for regulatory assessments to the future. This applies to both recurring operating expenditure and capital projects where capital expenditure will be spread over a number of years.

4. Policies and Procedures

The Authority has requested SKM to review WaterSecure's procurement, asset performance, condition assessment and demand forecasting policies and procedures and assess whether these policies and procedures represent good industry practice.

Good industry practice for a water utility's policy and procedure would require, where appropriate:

- Demonstration of clear linkages with the organisation's corporate strategic plan, policy and objectives (eg in relation to water supply provision, demand forecasting, asset management etc)
- The use of master planning of its water system, including trunk infrastructure planning, preliminary infrastructure sizing, modelling and forward costing
- The use of a defined asset management system based on condition assessments and/ or risk profiles
- The consideration of relevant legislation and state-wide planning directions
- Clear strategic framework spelt out (strategic/tactical/operational objectives) for a particular issue of activity. For example, management of "critical water mains" to prevent failure.
- Definition and specification of the necessary and sufficient information requirements to assess asset/system performance against those objectives
- Asset/system performance assessment process
- Gaps identification (ie shortfalls in performance)
- Risk assessment framework defined
- Decision-making framework and prioritisation process specified, including "appetite for risk" (this should cover the asset class and/or classes being considered, but also be in context of how decisions are made in a broader organisational context)
- Options identification and evaluation process, including how the preferred option is selected (economic, triple bottom line/multiple criteria assessment, stakeholder input, other). Options assessments should consider the "do nothing" base case. Within the context of a water utility, the "do nothing" base case should describe the impact and consequences of not taking action. A multiple criteria assessment to ensure a triple bottom line approach for determining the recommended solutions should also be used. Using a standardised process to conduct this assessment will facilitate justification and prioritisation of a project over another.
- How the works and related expenditure projects and programs are determined from the options identification and evaluation process
- The identification of cost drivers to determine whether a project is adequately justified and therefore prudent

- The documentation of the project/program selection and prioritisation, through close-out reports and approvals gateways
- Specification of performance evaluation measures for the project on implementation
- Feedback loops to capture and take account of learnings from previous acitivities
- The production of adequate documentation and reporting for each process, approvals within a project management and delivery framework

A good governance process should address and document:

- The identification of specific project drivers
- Options likely to address the drivers
- How the recommended option was selected
- The approved project cost and its basis
- The evaluation of economic, technical, environmental and regulatory tests
- Risks and how they are to be managed
- Critical success factors for the project
- The approval process
- The implementation process
- The project performance and evaluation – what went well, what can be learned from the performance, and whether the critical success factors were addressed
- The comparison of the actual, as-built cost with the original estimate upon which approval was sought and how that would have impacted the merit order of options considered

4.1. Procurement

Appendix 11 of WaterSecure's submission includes three documents that represent its procurement policy and procedures:

- Procurement Policy
- Procurement Procedure
- Capital Expenditure Guideline

4.1.1. Procurement policy

In its Procurement Policy, WaterSecure states that its procurement activities seek to ensure its business needs are met and comply with the State Procurement Policy and WaterSecure's strategic objectives. To do so, WaterSecure must:

- Explain and justify its procurement process and decisions to internal and external review

- Identify and measure the benefit of investment to WaterSecure

The Procurement Policy has six principles:

- Achieve value for money through
  - Risk mitigation
  - Stakeholder management
  - Whole-of-life assessment
- Compliance with State Procurement Policy
  - Advance Government priorities
  - Achieve value for money
  - Probity and accountability for outcomes
  - Sustainable procurement
- Governance
  - In accordance with the appropriate level of delegated authority
  - Compliance with its Procurement Policy and Procedure
  - Compliance with WaterSecure's Code of Conduct
  - Transparent and accountable procurement practices
- Transparent and accountability
  - A probity auditor will be engaged for the procurement of goods and services above $10 million and for construction projects above $100 million
  - A probity auditor may be engaged where the risk complexity of procurement is high and is justified
  - WaterSecure will publish on the Queensland Government's eTender website
    - Details of all contracts where the initial term is valued at $10,000 or more within 60 days of the start date from July 2011
    - Schedule of planned significant procurement activities for the following year
    - Any known open invitation opportunities before the closing date
- Proper planning
  - Adequate market research
  - Project planning based on the significance of the project
  - Strategic procurement planning through the development of an annual Corporate Procurement Plan which aligns with the Strategic Business Plan
- Sustainable procurement

- Whole-of-life analysis
- Ethical procurement
- Transparent procurement
- Green procurement
- Triple bottom line assessment
- Supplier and market development
- Supply chain management

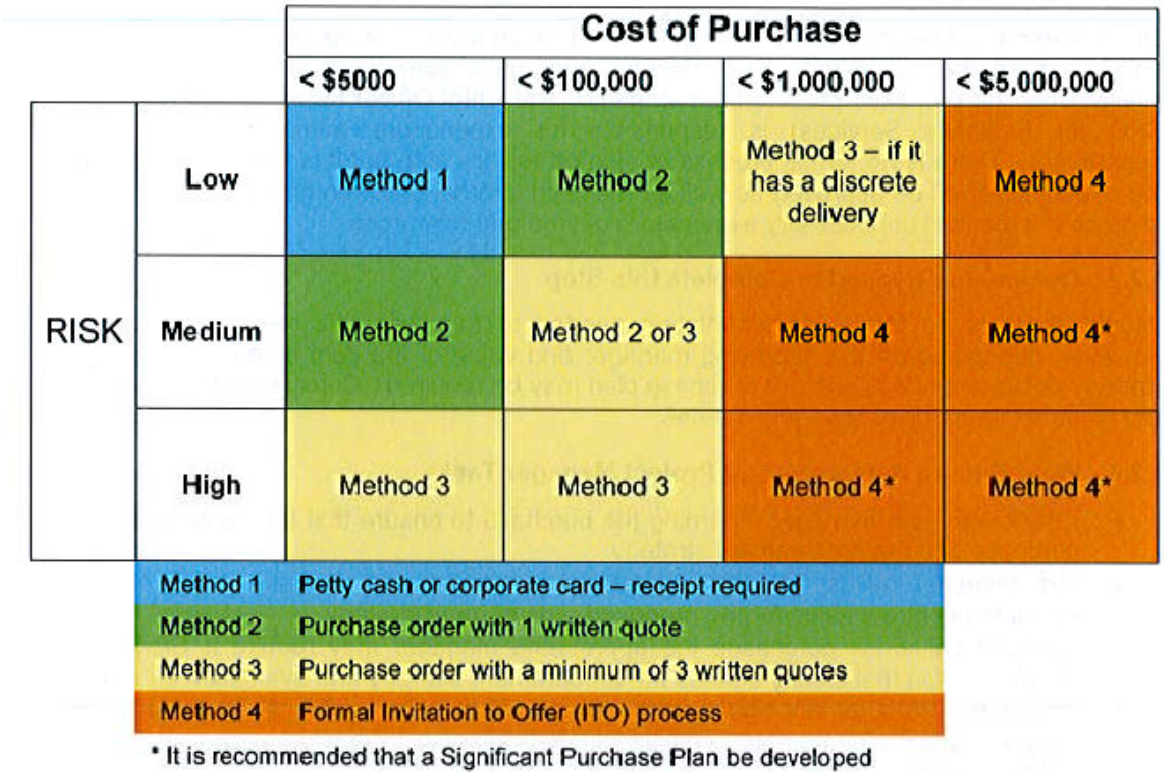
The policy also sets out the responsibilities of various WaterSecure staff and allows for a review (together with its procurement procedures) every two years.

4.1.2. Procurement procedure

WaterSecure's Procurement Procedure details the completed procurement process, from the identification of a need through to the close-out of the contract or purchase order. Six steps have been identified:

- Obtain internal approval and budget
- Obtain quote for goods/services
- Evaluate quotation
- Establish form of engagement
- Prepare recommendation and obtain approval
- Execute and process

The procedure provides the method by which procurement is to proceed depending on a cost of purchase/risk matrix. This matrix is reproduced below.



		Cost of Purchase			
		< $5000	< $100,000	< $1,000,000	< $5,000,000
RISK	Low	Method 1	Method 2	Method 3 – if it has a discrete delivery	Method 4
	Medium	Method 2	Method 2 or 3	Method 4	Method 4*
	High	Method 3	Method 3	Method 4*	Method 4*

Method 1	Petty cash or corporate card – receipt required
Method 2	Purchase order with 1 written quote
Method 3	Purchase order with a minimum of 3 written quotes
Method 4	Formal Invitation to Offer (ITO) process

* It is recommended that a Significant Purchase Plan be developed

The procedure also enables a panel agreement to be set up for a range of regularly purchased common services/goods, for which it may be inefficient to undertake the entire procurement process every time a new purchase is required. For such purchases, a panel agreement would be set up with a zero commitment value and no scope of work. Scope and contract value would only be provided to panel members as required.

The procedure details how procurement is to proceed once the contract has been awarded. A contract kick-off meeting is arranged to ensure the detailed scope of work is clear, all procedural issues are understood by all parties and to resolve any issues that may be of concern.

Given that WaterSecure prioritises safety and environmental issues, the procedure also allows for a review and input by a safety and environmental team in the management of contracts. For contracts with low safety and environmental risk, the project manager may assume this role. The delegated authority appoints a project manager, who is responsible for contract management, including:

- Budget and forecast
- Schedule
- Scope
- Risk

- Environment and safety

Where a contract variation or extension of time is sought, the procedure enables the project manager to document the request and to forward/return it to the original requester. The project manager reviews the request and determines if it is justified. If justified, a "Variation – Deed of Acceptance" is prepared for approval and forwarded to the supplier. The appropriate parties within WaterSecure are informed and a record of this variation is kept.

The procedure details the process for how contract/purchase orders are assessed and paid. It incorporates/enables checks/has a mechanism to check that the claim is in order and in accordance with the contract, milestones specified in the contract are reached and the total value under the contract/purchase order has not been breached.

When a contract's deliverables are completed, the project manager would conduct a contract close-out, by evaluating:

- If all the work under the contract has been completed
- The quality of the work
- The likelihood of additional work to be completed under a variation
- The provision for the retention of some of the contract value
- The handover of WaterSecure's information and documents

Once satisfied that all issues relating to the scope have been addressed, the project manager would notify the contracts team to start the commercial close-out. The procedure stipulates a series of close-out steps. When these are completed a formal close-out would be conducted, using the appropriate documents as provided in the procedure.

4.1.3. Capital expenditure guideline

WaterSecure has also issued a guideline to establish a framework for identifying and approving capital expenditure. It states that the criteria for approving capital expenditure include:

- The reason for expenditure
- Benefits to WaterSecure
- Cost/value
- Schedule
- Funding arrangements

A pro forma Capital Expenditure Request Form is provided in the guideline, stipulating the steps, economic analysis, justification, option evaluation (including a "Do Nothing Option") and required authorisations.

The following project templates have been developed for use for documenting the development of capital projects:

- Phase 0 – Concept Development (Project Proposal)
- Phase 1 – Project Definition (Initial Business Case)
- Phase 2 – Project Procurement (Final Business Case)
- Phase 3 – Manage the Project (Project Status Report)
- Phase 4 – Project close Out (Acceptance Certificate and Project Review and closure Report)

For new capital works, a Change Request Process Form is required. An example of a Change Request Process Form has been provided to us for the Swanbank Cross Connection Pipeline.

4.1.4. SKM's assessment

WaterSecure has produced comprehensive procurement policy and procedure documents which cover all aspects of their purchasing process from initiation and decision, through to project delivery and close-out. Based on our review of WaterSecure's Procurement Policy and Procedure, we conclude that WaterSecure operates in accordance with good industry practice. WaterSecure has identified a rigorous procurement method, including tender assessment and triple bottom line assessments to ensure sustainable outcomes, and although repetitive in a number of areas, covers all areas that require assessments.

WaterSecure could improve its procurement processes by initiating a review process to ensure that any issues are recorded and lessons learnt documented for future procurement activities. This may include identifying what went well or what did not, how the vendor performed, how well the project addressed critical success criteria, and how the actual cost compared with the original estimate upon which approval was obtained. In discussion with WaterSecure, WaterSecure advised that it has some of these procedures in place; however we have not sighted documentation to confirm this.

4.2. Asset performance and condition assessment

WaterSecure's major operational assets are the Western Corridor Recycled Water Pty Ltd and the South East Queensland (Gold Coast) Desalination Company. WaterSecure owns the assets that are dedicated to supplying WaterSecure with recycled and potable desalinated water, respectively. One of WaterSecure's most important relationships is that with its operator, Veolia Water. This

relationship is direct in the case of the Western Corridor Recycled Water scheme and indirect through the Gold Coast Desalination Alliance in the case of the Gold Coast Desalination Plant.

WaterSecure has submitted asset management plans from its contracts with Veolia Water. With the commissioning and operation of the Bundamba Advanced Water Treatment Plant and some of the network pipeline, WaterSecure has been operating under the asset management plan submitted by Veolia Water. These plans stipulate the performance standard required under the contracts. Following the changes announced by the Queensland Government in December 2010, WaterSecure is updating its Strategic Asset Management Plan and, at the time of discussion on this was expecting to complete this in June 2011.

These asset management plans determine the maintenance regimes, operating procedures and capital investment and replacement strategies to ensure ongoing service delivery. The Veolia Water contract for the Western Corridor Recycled Water Scheme covers:

- Performance targets and service levels
- Policies and procedures for the preparation of Veolia Water's asset management strategy
- Asset register and data standard
- Maintenance requirements
- Asset condition and risk assessment
- Analysis and review of asset assessment
- Review of maintenance requirements
- Asset replacement program
- Review of investment needs

For the Gold Coast Desalination plant, an interim Strategic Asset Management Plan (SAMP) was prepared by the operator on behalf of the owner. Whilst the interim SAMP does not define the levels of service required, it does contain some service level indicators. It also details the process under which the operations, maintenance and renewal strategy will be established with Alliance Contractor as the contracted operator of the desalination facility.

4.2.1. Asset performance standards

Asset performance standards are stipulated in WaterSecure's contract with the operator, Veolia Water, for the Western Corridor Recycled Water scheme and in the contract with Veolia Water and John Holland, and the owner, WaterSecure, for the Gold Coast Desalination Plant. The process for establishing defined performance levels and service levels are also found in Veolia Water's Asset Management Plan.

For the Western Corridor Recycled Water scheme, the Operations and Maintenance Agreement stipulates the mandatory performance criteria, which define the minimum level of service, in terms of water quality and production level, to be delivered by the scheme. It also specifies the key performance indicators that will be measured to ensure that a minimum level of service is achieved or exceeded. Where changes in demand or other requirements necessitate changes to the level of service, the agreement allows for the consideration and notification of how the new requirements will impact the performance and management of the assets.

Similarly, the interim Strategic Asset Management Plan for the Gold Coast Desalination Plant contains some service level indicators, including:

- Continuity of service
- Source of water
- Water quality
- Treatment process
- Waste stream management

4.2.2. Asset condition assessment

A major issue facing WaterSecure is that it is a newly established entity operating in the new water grid environment, with a number of major assets that do not have a comprehensive operating history and which are being required to operate in a very different environment than was envisaged when the assets were constructed (ie in non drought conditions).

In its Asset Management Plan, Veolia Water has provided a comprehensive process for assessing asset condition and risk. In the asset register, an asset condition rating is assigned to provide a quick guide to the condition of the asset. The condition ratings are as follows:

- Excellent (where the asset is new)
- Good (where the asset has minor integrity issues
- Not new (but in good condition)
- Average (where the asset does not operate efficiently, but does not significantly hamper normal operations),
- Fair (where the assets have significant structural or integrity issues that have the potential to develop into major operational problems)
- Poor (where the asset is deemed incapable of performing to a satisfactory standard under normal operating conditions).

The Asset Management Plan also includes a process to assess criticality of the asset to measure the impact of a failure of that asset on the operation of the plant. Non-critical assets have no impact on

the operation of the plant, are easy and economical to replace. Assets with low criticality have a moderate impact on operations and are moderately expensive to replace, while critical assets have a high impact on plant operation, are expensive and their replacement is infrequent and/or complex.

In the plan, the asset assessment considers the condition and criticality rating of an asset and produces a Risk Management Plan, which contains an assessment score. This is reproduced below. The resultant risk assessment is used to guide the plant's asset maintenance and replacement activities.

			Criticality Factor "consequence"		
			Non-Critical 1	Low Criticality 2	Critical 3
Condition Rating "likelihood"	1	Excellent	1	2	3
	2	Good	2	4	6
	3	Average	3	6	9
	4	Fair	4	8	12
	5	Poor	5	10	15

Score	Risk Level	Description
1 - 2	Low	Review of current maintenance practices to determine if asset are being over maintained
3 - 6	Moderate	Review of current maintenance practices to determine if assets are being under maintained and if replacement is warranted
7 - 15	High	Immediate action taken – asset replacement or refurbishment

Assets with a low score are deemed to be in excellent or good condition with minimum risk to operations in the event of a failure. The risk perceived is low and a strategy to do nothing or to run to failure may be employed where appropriate.

Assets with a moderate score will be reviewed to determine if they are adequately maintained and a whole life cycle costing analysis conducted to determine if the replacement of the asset is economically justified or increased preventative maintenance is the most cost-effective solution.

High scores will result in immediate action as these assets are highly critical and in average to poor condition. They will be placed into the asset replacement/refurbishment program, after which a

decision will be made to determine if the asset requires further more detailed condition monitoring. Measures to reduce the criticality of the asset will be adopted, including changes to operating procedures and issues around redundancy.

4.2.3. SKM's assessment

WaterSecure's procedures for monitoring its assets performance standards have been written into its contracts or asset management plans. They define the level of service expected and have associated performance indicators to enable their compliance to be assessed. This is consistent with good industry practice.

The process for condition and risk assessments has been detailed in the Western Corridor Recycled Water plant's Asset Management Plan. It is comprehensive and provides a means to assess action to correct potential problems. It also requires economic assessments (based on whole life cycle cost analyses) to be used to determine the most economical solution and if further action is warranted. This is consistent with good industry practice.

No condition assessment process was provided to us for the Gold Coast Desalination Plant. However WaterSecure has advised that they have undertaken assessments of durability and commissioned a review by a third party.

Given this facility is relatively new, the lack of a condition assessment procedure is not considered to be a major issue at this stage. However, one should be developed as soon as possible and incorporated into the Asset Management Plan. WaterSecure may consider if it is appropriate to use the condition assessment procedure developed for the Western Corridor Recycled Water Plant for the Gold Coast Desalination Plant.

4.3. Demand forecasting

In its submission, WaterSecure states that it has no ability to control the demand for its water. The SEQ Water Grid Manager issues grid instructions specifying the quantity of water WaterSecure is expected to produce over the coming months. Whilst these instructions are developed in consultation with stakeholders, including WaterSecure, it can do little to control the demand for its water, which is determined as the difference (shortfall) between the the likely demand for water across the water grid and the amount of water capable of being sourced from dams. Under the water grid's current mode of operation (cost efficiency) demand for water is first met by water from dams. Water from the desalination and recycling plants will then make up any shortfall as the cost producing water from these sources is invariably more expensive.

It is the SEQ Water Grid Manager's role to identify new customers. New customers will also be supplied through the water retailers rather than by WaterSecure. Therefore, WaterSecure has limited dealings with water customers and their demand.

4.3.1. SKM's assessment

WaterSecure does not have nor does it require a demand forecasting policy or process. Water demand forecast is the responsibility of the SEQ Water Grid Manager in the short term and the Queensland Water Commission in the long term. Instructions to expand the grid or supply capacity come from these parties rather than WaterSecure. Any capital expenditure undertaken by WaterSecure is primarily related to the renewal of assets rather than the expansion of the network or capacity in response to increased water demand.

In the next ten years lack of capacity is unlikely to be an issue. The Western Corridor Recycled Water Scheme will only produce 40 ML/day, out of a design capacity of 232 ML/day. Likewise, the Gold Coast Desalination Plant will only be run on a hot standby mode, with potentially varying operating levels. In the current circumstances the development of a demand forecast should be a low priority for WaterSecure.

4.4. Business models

SKM has completed a review of WaterSecure's business models. We note that the majority of information regarding the operating costs and capital expenditure is sourced from Veolia Water. Whilst we have not received a copy of Veolia Water's models, during our interview with WaterSecure, we were shown extracts from this model, which included a breakdown of costs on an asset by asset basis.

Budget formation

Based on discussions with WaterSecure, we understand that the formation of the operating budget for the Western Corridor Recycled Water Scheme is based on:

- Veolia Water's Asset Management System - which is a key component for determining the Repairs and Maintenance costs and the forecast capital expenditure plans
- Operating cost models built up from a zero base
- WaterSecure's internal accounting program – Finance 1 – which breaks down all of WaterSecure's internal cost into cost centres within the business. All costs are recorded for the current period and forecasted forward using internal calculations (as per program) for the future proposed budget.

The development of the annual budget for the Western Corridor Recycled Water Scheme occurs in a number of stages:

- 28th January – Veolia Water provides a 'first cut': WaterSecure make revisions based on a high level analysis

- 18th February - Veolia Water provides a 'second cut': WaterSecure once again provides comments and returns these to Veolia Water. It is the budget values developed at this stage of the process that have been submitted to the Authority for the purpose of this review.
- 31st March – Under the Operation and Maintenance Agreement Veolia Water is required to submit a final budget for the year (this year's date was extended to allow for plant operators to assess and provide with greater accuracy numbers required given the change in operation for the upcoming year (mothballing costs and the like).

Water Secure has 60 business days to assess the budget, which includes benchmarking and review of the submitted numbers. The final budget is then submitted to WaterSecure's Board for approval.

WaterSecure has a separate and different budget timeframe and process for establishing the operation and maintenance budget for the Gold Coast Desalination which is specified within the Project Alliance Agreement – Gold Coast Desalination Project (Project Alliance Agreement). Under the Project Alliance Agreement, the Alliance Contractor (Veolia Water and John Holland) is not required to prepare annual budgets for agreement with WaterSecure. Nevertheless, the Alliance Contractor is assisting WaterSecure in preparing a budget for 2011/2012. The timeframe for completion is aligned with the Western Corridor Recycled Water Scheme 60 day review period.

Under the Project Alliance Agreement, the Project Alliance is required to agree a Target Outturn Cost (TOC) prior to the commencement of the ten year Operating Phase of the Project Alliance Agreement (see section 6.3.1). This TOC is a forecast annual target operating cost for the Gold Coast Desalination plant for each year of the Operating Phase. The Project Alliance parties are required, by agreement, to rebase the TOC at the end of the first three years of operation, being September 2013. However, the Alliance participants have agreed to rebase the TOC for the first three years of operation to provide greater accuracy of expenditure assessment in recognition of the recent changes in Operating Strategy.

WaterSecure's 2011/12 budget has been based on forecast production volumes that have been developed and confirmed with the SEQ Water Grid Manager. The demand forecasts include a Direction Notice from the Minister to de-mobilise part of the Western Corridor Recycled Water Scheme's advanced water treatment assets and to place the Gold Coast Desalination Plant into 'hot standby' mode.

Regarding the development of the internal WaterSecure costs, we understand that each Cost Centre contained within 'Overheads' produces a budget which is required to be approved by the executive management team. Given approval, this is then submitted to a committee comprising of three directors of the board (one of which is the CFO). Once the committee approves the budget, it is submitted to the board for approval.

WaterSecure has a documented procedure for the formation of the capital budget. There are two main methods by which capital expenditure can be identified; either it is proposed by WaterSecure or Veolia Water. Once a capital expenditure project is agreed upon and a scope of work drawn up – the process of costing the works is undertaken. This process is required to be followed as per the original operation and maintenance contract for each asset. Under the operation and maintenance agreement for the Western Corridor Recycled Water Scheme, Veolia Water, as the operator under the contract, has a 'first right of refusal' for all new capital works proposed on the project. WaterSecure has advised us that the reason for this is it facilitates maintaining the intent of the operation and maintenance contract to transfer risk to the operator (Veolia Water) for those projects should the operators' price for undertaking such be deemed to be value for money.

4.4.1. SKM's assessment

WaterSecure's current systems present a clear and effective method of capturing costs. In addition, WaterSecure undertakes a methodical approach to forming and reviewing its budget for capital and operational expenditure.

We also note that timing is an important issue.

In respect of the Western Corridor Recycled Water Scheme Veolia Water is not obliged, under the Operation and Maintenance Agreement, to supply any budget estimates until 31st March each year. It is from this point in time that WaterSecure has 60 working days to moderate the proposed budget. Hence a final budget for the Western Corridor Recycled Water Scheme is not expected until the end of June each year. We understand that a similar budget review process is being undertaken for the Gold Coast Desalination Plant. These timeframes are obviously not consistent with the Authority's review timeframes. Both WaterSecure and SKM acknowledge that the budgets that have been presented are draft only, with further refinement to take place before these are finalised.

Further, WaterSecure has indicated that it is only through a good working relationship with its operator that it is possible for WaterSecure to provide a budget, even in a provisional form, for this regulatory review.

4.5. Standards of service review

WaterSecure's operating obligations are driven by, inter alia, the following legislative instruments:

- *Water Act 2000*
- *Water Supply (Safety and Reliability) Act 2008*
- *South-East Queensland Water (Restructuring) Act 2007*
- The Market Rules: SEQ Water Market

- SEQ Water Grid Quality Management Plan
- SEQ Water Grid Operating Strategy
- Grid Instructions
- Regulatory licences

In addition to the legislative drivers listed above, WaterSecure is required to produce a Recycled Water Management Plan and a Drinking Water Quality Management Plan, which are required to be approved by the Office of the Water Supply Regulator within the Department of Environment and Resource Management (DERM). We understand that these documents provide a structure and risk-based approach to water quality, including outlining the required water quality at defined monitoring points. Water Secure is currently waiting on final approvals to be issued by the Office of the Water Supply Regulator. Water quality is also outlined in WaterSecure's Grid Contract.

As previously noted, volumes are set by the SEQ Water Grid Manager. The annual operating strategy issued by the SEQ Water Grid Manager also dictates the required availability of assets, for example, the mothballing of advanced water treatment plants and the availability of the desalination plant.

As described in Section 4.2.1, asset performance standards are outlined in the Operations and Maintenance Agreement for the Western Corridor Recycled Water Scheme and within the Strategic Asset Management Plan for the Gold Coast Desalination Plant.

4.5.1. SKM's assessment

As outlined above WaterSecure currently has well defined levels of service for water quality and performance standards on an asset by asset basis. The fact that WaterSecure doesn't have defined standards for production volumes and plant availability is not considered to be an issue as volumes and availability of assets are dictated by the SEQ Water Grid Manager and are not controllable by WaterSecure.

We recommend that future levels of service are considered as part of the merger between Seqwater and WaterSecure. This could include standardisation of asset management practices.

In the longer term, service standards are likely to be set by the SEQ Water Grid Manager, which should ensure consistency of standards across all GSPs.

5. Overview of Information Adequacy

5.1. Summary of information received

WaterSecure included the following documents in its initial Submission to the Authority:

- Water Grid Service Charges for 2011-12 – Submission to the Queensland Competition Authority. WaterSecure, 31st March 2011.
- Attachment 1: 2011-12 Information Data Template
- Attachment 2: Queensland Government Legislation for the SEQ Water Industry
- Attachment 3: Queensland Government Policies and Guidelines
- Attachment 4: SEQ System Operating Plan
- Attachment 5: Water Flow linear Process Schematic
- Attachment 6: WGM Volume Instruction and QTC Interest Rate Forecast
- Attachment 7: Veolia Water Budget Volume Instruction
- Attachment 8: Veolia Water Australia WCRW Operation and Maintenance Agreement
- Attachment 9: Gold Coast Desalination Project Alliance Agreement
- Attachment 10: Queensland Transport Corporation(QTC) Loan Account Statements
- Attachment 11: WaterSecure Policies and Procedures
- Attachment 12: Draft 2011 – 12 Strategic and Operational Plan
- Attachment 13 : Strategic Asset Management Plan
- Attachment 14: Asset Register as at 28 February 2011
- Attachment 15:Capital Program
- Attachment 16: WaterSecure Board 2011-12 Budget Approval – Minutes Extract
- Attachment 17: Projected Financial Statements

5.2. Initial gap analysis and information requirements

SKM undertook a gap analysis to determine whether the information provided by WaterSecure meets the Authority's requirements. Where gaps in information were identified requests for information (RFI) were issued to WaterSecure.

Through additional detail provided by WaterSecure in response to the RFIs, WaterSecure was able to clarify the identified information issues. No outstanding issues or gaps in information of data are noted.

A full gap analysis is included in **Appendix B.**

5.3. Operational expenditure

For the assessment of prudency and efficiency of operating expenditure a sample of costs was selected (refer to **Section 6** of this report). Further RFIs were issued to WaterSecure to provide detailed information on the items within the sample. The information requested included:

- Explanation of why this expenditure is required with reference to the Grid Contract, SEQ Operating Plan, SEQ Water Grid Manager Operating Strategy or standards of service
- Details of how the costs have been built up including indices that have been applied, baseline data, unit rates, quantities and any other assumptions used in the cost calculations
- Details of any internal benchmarking that has been undertaken
- Disaggregation of costs for work completed in-house and work that is contracted to external parties, including a rationale for delivering the work in this manner.

WaterSecure supplied comprehensive documentation in response. The documentation, in addition to interviews we held with key personnel, was sufficient for SKM to undertake the assessment of operating expenditure prudency and efficiency. As stated previously, the budget information supplied is a draft at this stage. WaterSecure will undertake further refinement of the proposed operating expenditure, including internal benchmarking, option analysis and independent peer review before a final budget is approved.

5.4. Capital expenditure

For the assessment of prudency and efficiency of capital expenditure, a sample of capital expenditure projects was selected (refer to **Section 7.3** of this report). Further RFIs were issued to WaterSecure to provide detailed information on the capital expenditure projects selected for further review. The information requested included specific project details regarding the need for the project, the scope of works and details of how the project is to be developed.

Eight capital expenditure projects were selected for analysis. Information provided was limited for four of the eight projects (the Bundamba AWTP Chemical Area Covers Project, the Network Storage Shed Project, the Karawatha Forest Access Track Project, and the Environmental Weed Hygiene Wash Down Bays) with only an initial business case or change proposal from Veolia being available for review. The insufficiency of information received on these four projects resulted in SKM not being able to complete an assessment of prudency and/or efficiency.

Examples of the insufficient information provided for these projects include:

- Limited agreement between the costs submitted to the Authority and the costs within the supporting documentation for the Network Storage Shed Project
- Undefined scope of works, eg for the Karawatha Forest Access Track Project, no details have been provided of the type or dimensions of work to be undertaken to make a reasonable cost estimation or comparison.
- Limited cost driver information regarding the justification behind the need for the capital project and limited evidence of options assessment into the appropriate design or solution to the expenditure

We understand that this non-availability of information is due to the timing of this review. Currently, these projects have been proposed by Veolia Water, but have not been reviewed by WaterSecure. It is understood that a review of these projects would be undertaken by WaterSecure prior to undertaking these works.

5.5. Obstacles to reporting

WaterSecure's submission outlined the key issues affecting their operations, they include the following:

- No control over demand for WaterSecure's water
- Merger with Seqwater
- WaterSecure establishment and development costs

WaterSecure has outlined that it has no ability to control demand for its water. The current situation is that each month the SEQ Water Grid Manager issues Water Grid instructions for the upcoming month. These instructions outline the required demand for water by the Grid and the quantity to be supplied from which entity/source. Given the Queensland Government's announcement of changes to the operating strategy of WaterSecure's assets due to the strong water security position of the region, the need to accurately predict the future demand for each asset reduces significantly. This lack of control and predictability of demand may become an issue when WaterSecure is asked to provide evidence in regards to the next financial years' water demand and associated operating costs.

The Queensland Government has also announced the merger of WaterSecure and Seqwater to form a single bulk water supply authority of SEQ. The merger is intended to create a more efficient and streamlined bulk water entity, with hopes of reducing operating costs and providing better value for money in the long term. However due to the merger being scheduled for completion by the end of the current financial year, and with the expectation that time will be needed to show the full benefits of the merger – the expected operation and corporate cost reductions have not been factored into the 2011-12 budget.

As WaterSecure is a relatively new business. It is still in the process of developing its systems and processes and optimising the operations of its plants. The associated establishment and development costs have fed into the cost structure currently present. In addition to these costs are the final commercial arrangements with all WaterSecure's construction alliances prior to granting final completion. These costs currently feed into WaterSecure's cost structure and will continue to do so until final completion is granted.

5.6. Conclusions and recommendations

The information supplied in the original submission is compliant with the template requirementsof the Authority.

WaterSecure has also supplied comprehensive supporting information to enable us to complete an assessment of the prudency and efficiency for a sample of operating costs. We have been advised that the operating budgets are in draft form at this stage. Refinement of the operating budget, including internal benchmarking, option analysis and peer review (where appropriate) will not be complete in time to be captured in this review.

WaterSecure has provided supporting information to enable us to complete an assessment of the prudency and efficiency for four of the eight capital expenditure projects selected for review. We understand that this limited information on the remaining four projects is due to the timing of the review. At the time of the review, these projects have been proposed by Veolia Water, but have not yet been reviewed by WaterSecure and hence final documentation is not currently available.

6. Operating Expenditure

This section contains the review of prudency and efficiency of WaterSecure's proposed operating expenditure for the 2011/12 financial year. This section includes the following sections:

- Overview of WaterSecure's operating expenditure for 2011/12
- SKM's sample selection
- Overview of prudency and efficiency of WaterSecure's operating expenditure
- Summary and recommendations

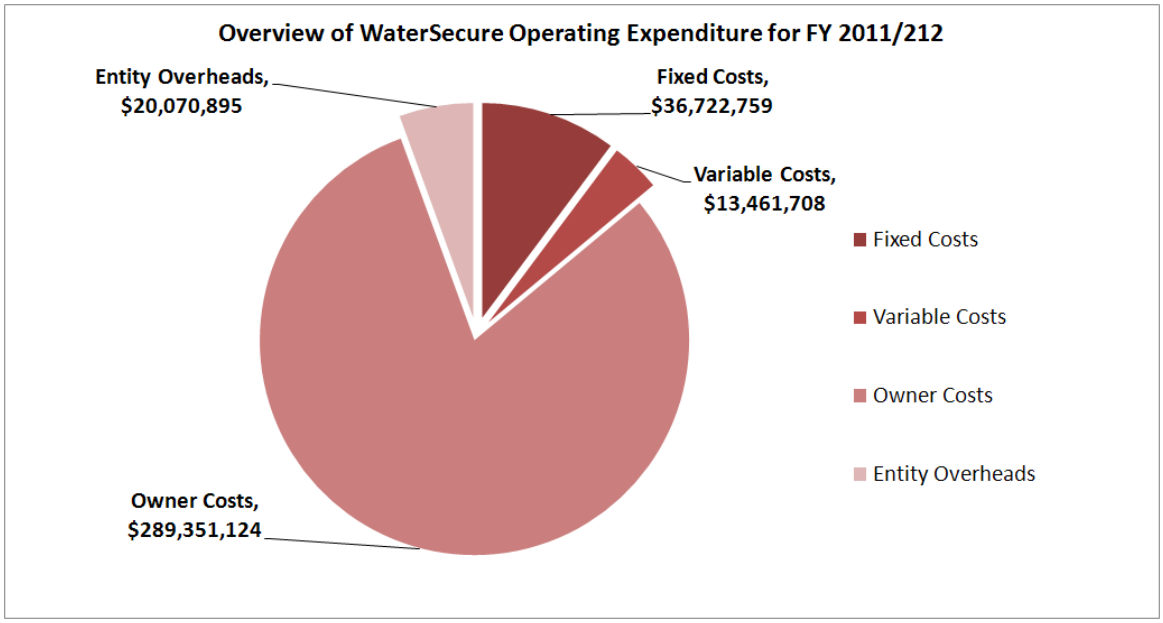
6.1. Overview of operating expenditure

A breakdown of costs associated with the various parts of WaterSecure's business is shown below in **Figure 2.** The costs are broken into four main areas:

- Fixed costs. These are costs applied through the Operation and Maintenance Agreement with Veolia Water and include operational employee costs, water analysis and testing, repairs and maintenance and site office costs.
- Variable costs. There are costs applied through the Operation and Maintenance Agreement with Veolia Water, and include chemical, power and waste disposal costs.
- Entity wide overheads. These are costs incurred directly by WaterSecure operations. They comprise mostly labour costs for Business Services, Corporate Services, as well as the operational and technical teams within WaterSecure.
- Owner costs. These costs refer to depreciation, finance and insurance costs for the Gold Coast Desalination Plant and the Western Corridor Recycled Water Scheme.

For details of the costs that are attributable to each area see **Section 6.2**.

As shown in **Figure 1**, the majority of operating expenditure (80 per cent) is Owner Costs. These costs are largely uncontrollable by WaterSecure, either being prescribed by accounting principles in the case of depreciation, or part of loan repayments for the construction of the assets in the case of finance costs.

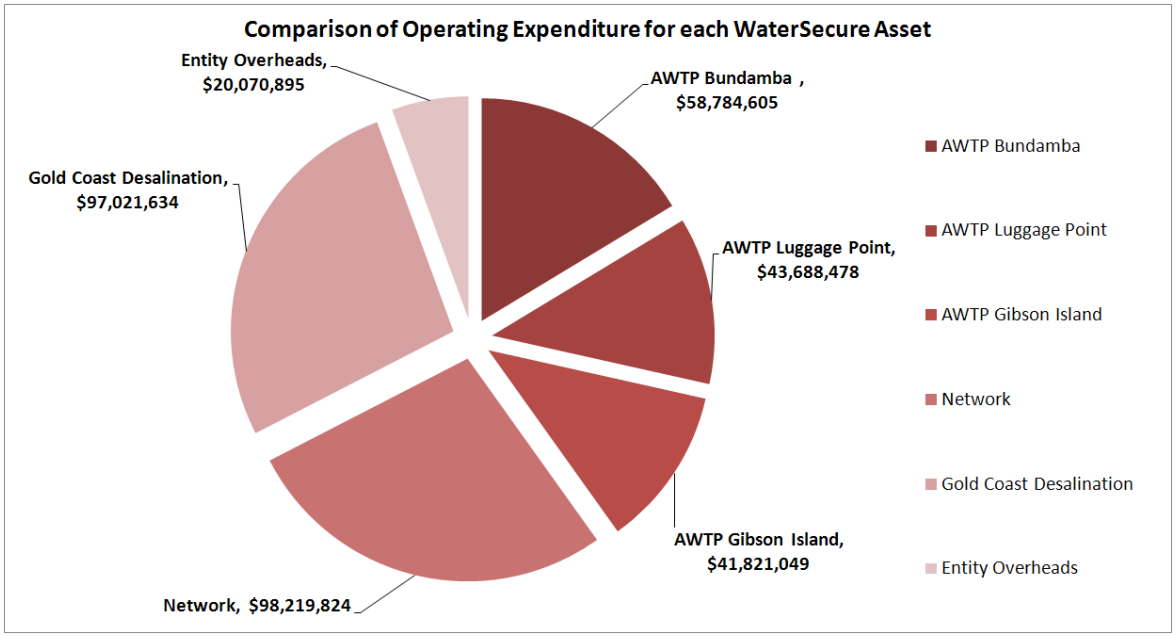


- **Figure 2 WaterSecure's operating expenditure for 2011/12 breakdown by cost area**

Water Secure currently has five major infrastructure assets which generate operating expenditure each year for the business. They include:

- Bundamba advanced water treatment plant
- Luggage Point advanced water treatment plant
- Gibson Island advanced water treatment pant
- Gold Coast desalination plant
- Purified recycled water network

Figure 3 shows the proportion of overall operating expenditure for the five assets and entity overheads. The Gold Coast Desalination Plant and Network attract the largest portion of overall operating costs. A considerable portion of this expenditure is for owner costs - $90.5M and $76.9M for the network and desalination plant respectively.



- **Figure 3 WaterSecure's operating expenditure for 2011/12 breakdown by major asset**

6.2. Costs in aggregate

WaterSecure's operating expenditure, shown in **Table 3**, covers all the costs of running the business and is broken down into three main areas:

- Fixed costs: costs that do not vary in the short term and are not dependant on the level of activity of the business. These include areas such as employee costs, repair and maintenance, plant consumables, fixed energy and owner costs.
- Variable operations cost: costs that change in proportion to the activity of the business such as energy use, chemical use and waste disposal.
- Entity-wide overheads being the overhead cost for WaterSecure.

Table 3 WaterSecure's major operating expenditure for 2011/12 – 2015/16

Category	2011-12 Budget	2012-13 Budget	2013-14 Budget	2014-15 Budget	2015-16 Budget
Fixed Operating Costs					
Labour	$8,117,000	$8,360,510	$8,611,325	$8,869,665	$9,135,755
External Consultants	$1,324,000	$1,363,720	$1,404,632	$1,446,771	$1,490,174
Water Analysis	$2,111,000	$2,174,330	$2,239,560	$2,306,747	$2,375,949
Repairs and maintenance	$9,993,000	$10,292,790	$10,601,574	$10,919,621	$11,247,210
Operational Project Management	$8,523,141	$8,778,835	$9,042,200	$9,313,466	$9,592,870
Owner Costs*	$289,351,124	$271,604,279	$269,303,032	$266,991,023	$264,382,239
Other Fixed Costs	$6,654,618	$6,854,257	$7,059,884	$7,271,681	$7,489,831
Variable operating Costs					
Energy	$8,585,708	$8,797,192	$9,015,020	$9,239,384	$9,470,478
Chemicals	$3,756,000	$3,868,680	$3,984,740	$4,104,283	$4,227,411
Sludge and Waste Disposal	$1,120,000	$1,153,600	$1,188,208	$1,223,854	$1,260,570
Entity Overheads					
Business Services	$8,134,883	$8,378,929	$8,630,297	$8,889,206	$9,155,882
Technical Services	$1,765,377	$1,818,338	$1,872,888	$1,929,075	$1,986,947
Executive Services	$447,383	$460,804	$474,629	$488,867	$503,534
Operational Services	$5,151,958	$5,306,517	$5,465,712	$5,629,684	$5,798,574
Corporate Services	$3,474,844	$3,579,089	$3,686,462	$3,797,056	$3,910,968
Office Management	$1,096,450	$1,129,344	$1,163,224	$1,198,121	$1,234,064
Total Operating Expenditure	**$359,606,486**	**$343,921,215**	**$343,743,388**	**$343,618,503**	**$343,262,456**

* Owner's cost are costs incurred by WaterSecure outside of the Operations and Maintenance Contract with Veolia Water such as costs associated with depreciation, finance, insurance, property rates, plant defect maintenance, communications and mothballing costs.

6.3. Key issues

In undertaking this assessment several key issues relating to the operating expenditure budgets have been made apparent. An understanding of these issues is important to bring into context our review. Each of these is discussed below.

6.3.1. Existing contractual agreements

WaterSecure has an existing Operations and Maintenance Agreement in place with Veolia Water for the Western Corridor Recycled Water Scheme (Operation and Maintenance Agreement). In addition, WaterSecure has a Project Alliance Agreement in place for the Gold Coast Desalination Plant, comprising WaterSecure, Veolia Water and John Holland (Project Alliance Agreement). These agreements were put in place during drought times where it was expected that assets would be 100 per cent utilised. Since then significant rainfall in the catchments has resulted in the filling of dams, and reduced reliability on desalination and purified recycled water to supply water to South East Queensland. By way of example, the Western Corridor Recycled Water Scheme will produce 40 ML/day, from a design capacity of 232 ML/day.

The payment mechanism under the Operations and Maintenance Agreement for the Western Corridor Recycled Water Scheme differs between the Establishment Phase of the project (which lasts for two years) and the Operation and Maintenance Phase which, under the agreement, has a term of 15 years. The project is understood to be currently in the Establishment Phase, although the two year period post hand over of assets has yet to commence as one remaining asset has yet to be handed over. WaterSecure has advised us that the hand over of the last remaining asset is imminent.

Under the Operation and Maintenance Agreement the payment (TP) to Veolia Water for its performance of the services during the Establishment Phase and following hand over of all of the assets by WaterSecure to Veolia Water following commissioning of the assets is calculated as:

TP = Actual Operating Costs + Service Fee

Where:

> Actual Operating Costs are the sum of all direct project costs, such as salary costs, project costs, incurred by Veolia Water in carrying out the services.
>
> Service Fee is calculated as a percentage of the Actual Operating Costs – Key Performance Indicator Adjustments plus a gain-share/pain share adjustment.
>
> The Key Performance Indicator Adjustment is determined according to performance by Veolia Water in delivery of the services against agreed Key Performance Indicators:

- Safety
- Environment Management
- Water Quality
- Quantity of Water
- Community and Stakeholder Engagement
- Maintenance
- Reporting;
- Legacy (maintenance of O&M manuals, knowledge transfer)
- Relationship
- Financial (which feeds into the gain-share/pain-share calculation).

The Key Performance Indicator Adjustment is capped at an agreed upper limit.

The gain-share/pain-share element (GPSn) is calculated as a percentage of the difference between Target Operating Costs and Actual Operating Costs in any one year. As with the Key Performance Indicator Adjustment, the negative amount of GPSn permissible is capped.

The difference in calculation of TP prior and post hand over of all the assets is simply that, prior to hand over of all the assets, there is no gain-share/pain-share element to the payment and there is a adjustment in the Actual Operating Cost calculation to take into account and deduct any excess mobilisation cost above that budgeted.

During the Operation and Maintenance Phase of the Agreement, WaterSecure pays a fee to Veolia Water on monthly basis for the services performed. This monthly fee (the Charges) incorporates a fixed and variable charge element.

Both the fixed and variable fee elements are agreed between the parties prior to commencement of Operation and Maintenance Phase and are escalated annually according to an agreed escalation formula. The Operation and Maintenance Agreement allows for the parties to revisit the fixed and variable charge fee and 'reset' the fees, by agreement and following an 'open book' review, every 5th anniversary year of the start of the Operation and Maintenance Phase of the contract.

As with the Establishment Phase the agreement specifies a maximum negative Key Performance Indicator Adjustment by which the Charges are reduced. A Key Performance Indicator Adjustment is applied to the Charges if the performance of delivery of the services results in an assessment figure below a set trigger point (eg less than 95% of target)

We note that in the Operation and Maintenance Phase of the Agreement, the Key Performance Indicator –Financial is not taken into account and hence there is no gain-share/pain-share adjustment to the Charges. As such, and as is the case for the Establishment Phase prior to hand

over of all the assets, there is not a Key Performance Indicator related incentive (gain-share/pain-share incentive) for the operator to drive down operating costs or to actively seek operating improvements that may generate cost savings during the 15 year operation and maintenance phase of the agreement.

For the Gold Coast Desalination Alliance (the Alliance), the Project Alliance Agreement outlines the budget development process for establishing a Target Outturn Cost (TOC) during a TOC Development Phase at commencement of the agreement in which Base Cost Target Outturn Costs are developed for years one to ten of the Operating Phase (the phase of the agreement in which the parties are in at the time of writing). Under the terms of the agreement, the TOC is subject to 'rebasing' through agreement every three years during the ten year operation and maintenance term. However, we have been advised by WaterSecure that the Alliance participants have agreed to rebase the TOC for the first three years of operation to provide greater accuracy of expenditure assessment due to the recent changes in operating strategy. The Service Fee payable to the Alliance Contractor (Veolia Water and John Holland) is subject to a gain-share/pain-share mechanism where the operator would be incentivised to reduce costs via a share of the savings. Conversely under the gain share/pain share the Alliance Contractor will have its profit margin reduced to a cap for failure to achieve the agreed budget.

In the Project Alliance Agreement the following is payable during the Operating Phase of the agreement:

- Direct Project Costs
- Services Fee

Direct Project Costs are those costs directly incurred by the Alliance Contractor in carrying out its obligations to operating and maintain the plant, such as salaries, (including salary on costs) of those staff providing the services and project costs (being the costs of materials and services engaged in the physical delivery of the operation and maintenance service). These costs are met in full by WaterSecure and paid monthly to the Alliance Contractor.

The Services Fee is an additional fee charged by Veolia Water as a lump sum fee which is calculated annually as a fixed percentage of the agreed Target Outturn Costs in any one year made up of two components, one taking into account water volumes and one taking into account water volume budget. The Service Fee is paid to cover off-site overheads, corporate overheads and profit.

TOC is made up of target base costs (labour, vehicles, consumables, office equipment, telecommunication equipment, licence fees and permits, waste disposal costs, project management

costs, insurance, spares, uniforms, tools and equipment and security costs), equipment replacement costs and variable costs.

Although the Services Fee is a lump sum fee it is adjusted by a gain share/pain share mechanism and incentive payments/reductions according to performance of the Alliance Contractor against agreed Key Performance Indicators.

The gain share/pain share adjustment is calculated as 50% of the difference between Target Outturn Costs and Actual Outturn Costs in any year. Any negative payment is capped at the Service Fee. This mechanism is intended to provide an incentive to the Alliance Contractor to reduce annual operating costs below agreed operating costs (Target Outturn Costs) in any particular year.

The Key Performance Indicator adjustment can be again positive or negative, but in this case both negative and positive payments under the Key Performance Indicator adjustment is capped. The Key Performance Indicator adjustment is intended to incentivise the Alliance Contractor to meet or exceed agreed standards of performance in respect of:

- Safety (public and workforce)
- Asset quality
- Environmental compliance
- Legacy issues
- Community and Stakeholders.

Also, a fundamental principle of the Gold Coast Desalination Services Phase Target Operating Cost mechanism is that the operator works to a fixed fee for direct fixed costs for the year with the only adjustment being through the pain gain mechanism. Hence the operator does not gain any additional fee if the direct fixed costs increase.

We note that under the current phase of operation, both the Western Corridor Operation and Maintenance Agreement and Gold Coast Desalination Project Alliance Agreement are effectively ‘cost plus’ contracts. That is, the actual operating costs (being the sum of all direct project costs incurred by Veolia Water in operating and maintaining the assets) are met by WaterSecure with an overhead recovery and profit element payment paid by WaterSecure to the operator as a percentage of actual operating costs. We also note for the respective agreements that, for the phase of operation during 2011/12, there is a ‘pain share/gain share’ arrangement where there is an incentive for the operator to reduce costs against budget in that the service fee (uplift on actual operating costs) is adjusted by the gain share/ pain-share adjustment. The maximum amount of the net negative sum of gain-share/pain-share adjustment is capped at the agreed allowable profit element of the actual operating costs payable to the operator in any given year. Whereas the maximum amount of the net positive sum of gain-share/ pain-share adjustments is not capped.

We also recognise that WaterSecure has mechanisms in place to moderate and adjust the budgets proposed by the operator, and by way of evidence provided to us WaterSecure is currently undertaking this. However, we consider that, under both contracts (the Project Alliance Agreement and the Operation and Maintenance Agreement), the ability to achieve a fair and equitable payment for the services performed is highly dependent on each party having the knowledge and experience to accurately forecast a reasonable and realistic budget for operating and maintenance expenditure. In our experience it is the nature of such contracts that, during the contract term, the operator tends to be the party that gains most knowledge of the costs for operating and maintaining the assets concerned. This will be particularly the case where the environment in which the assets are maintained has gone through significant change.

Further, there has been a significant change in circumstances since the contracts were entered into. For example, as a result of South East Queensland moving out of drought conditions, the Western Corridor Recycled Water Assets and the Gold Coast Desalination plant are not expected to operate near their full capacities in the next 10 years. Whilst we accept that the contracts with Veolia Water contemplates changes in operating conditions such as mothballing and decommissioning of plant, given the paradigm shift in the operating conditions and changes to corporate structure of the owner of the plant that have occurred since the agreements were entered into, we believe that it would be prudent to review these agreements. We consider a review of particular importance given that the agreements incorporate mechanisms to determine operating costs and hence have an impact on the efficiency, or otherwise, of those costs. The timeliness of the need to review these contracts is also underlined by the 15 year term of the Western Corridor Recycled Water Scheme operation and maintenance agreement in the context of forecasts by the Water Grid Manager that there is only a very small chance (2.6 per cent) that purified recycled water will be required to supplement drinking water in the next 10 years.

Nevertheless, we understand that these are established contracts and must be honoured by WaterSecure in their current form unless there is mutual agreement to any proposed changes.

6.3.2. De-commissioning of assets

As stated above, both the Gold Coast Desalination Plant and Western Corridor Recycled Water Scheme were built in a time of drought. Subsequent rainfall has meant ample availability of water from the dams and reduced reliability on desalination and purified recycled water to supply water to South-East Queensland. Consequently WaterSecure is required to de-mobilise (i.e. mothball) part of the Western Corridor Recycled Water Scheme and to place the Gold Coast Desalination Plant into ‘hot standby’ mode.

Demobilising an advanced water treatment plant or placing a desalination plant into 'hot standby' is not a common occurrence in the water industry, worldwide. As such, there is no established best practice method that can be followed by WaterSecure.

All of the operating cost information that has been gathered to date has been for the plants operating at a normal capacity. These costs do not directly translate where the output of a plant is significantly reduced, or where part of the plant is mothballed.

There is an acknowledgement that much work is required to determine the most cost effective ways to operate plants at a significantly reduced output, and to de-mobilise others. WaterSecure has commenced this process and will evaluate several options looking at a range of timeframes in order to determine the optimum method of operation.

6.3.3. Timing

For the Western Corridor Recycled Water Scheme, many of the operating costs are provided through WaterSecure's operator, Veolia Water. Veolia Water is not contractually obliged to provide the draft information until 31 March each year. WaterSecure then has 60 working days to review the budgets and make adjustments as necessary through discussion with Veolia Water and to produce a final budget. For this regulatory assessment the Authority requires a submission by 31 March. WaterSecure has advised that it is only through a good working relationship with Veolia Water that it was able to provide sufficient information for this year's regulatory review.

WaterSecure has a separate and different budget timeframe and process for the budget agreement for the Gold Coast Desalination Alliance, which is specified within the Project Alliance Agreement. Under the Project Alliance Agreement, the Alliance (Veolia, John Holland and WaterSecure) is not required to prepare annual budgets. Nevertheless, the Alliance Contractor is assisting WaterSecure in preparing a budget for 2012. The timeframe for completion is aligned with the Western Corridor Recycled Water Scheme 60 day review period.

The budget information is therefore in draft form, and should be considered as such. In parallel with this assessment WaterSecure is analysing the draft budgets which typically involves operational task analysis, benchmarking, peer reviews and overall budget moderation.

We have based our assessment of prudency and efficiency on the information that is presently available. It is acknowledged however, that it likely that these budgets will be refined and efficiency gains identified during WaterSecure's 60 working day review. We further understand that there are mechanisms in the Direction Notice to the Authority for overspend and under spend of expenditure to be reviewed at the conclusion of the regulatory period.

6.4. Sample selection

In undertaking a review of prudency and efficiency of operating expenditure we have selected a sample of costs for detailed investigation. The sample is shown in **Table 4** below. Our sample includes the top two or three expenditure items for each of the assets as well as two overhead costs.

Our sample excludes owner costs, which are largely prescribed and are not a controllable cost. Our selected sample comprises 41 per cent of total operating costs, less owner costs.

Table 4 WaterSecure's operating expenditure sample selection

Asset	Category	Cost (2011-2012)
Bundamba AWTP	Fixed, operational project management	$2,480,484
Bundamba AWTP	Fixed costs, employee costs	$2,143,000
Luggage Point AWTP	Fixed, operational project management	$2,037,616
Luggage Point AWTP	Fixed costs, employee costs	$1,856,000
Luggage Point AWTP	Plant defects	$3,200,000
Gibson Island AWTP	Fixed, operational project management	$369,720
Gibson Island AWTP	Fixed costs, employee costs	$347,000
Gibson Island AWTP	Mothballing costs	$1,626,906
Network	Fixed, operational project management	$1,751,740
Network	Fixed costs, repairs and maintenance	$1,679,000
Tugun Desalination	Variable, electricity	$4,882,708
Tugun Desalination	Fixed costs, repairs and maintenance	$4,660,000
Overhead	Business services	$8,134,883
Overhead	Operational services	$5,151,958
Total sample (14 Operating costs)		**$40,321,015**
Total operating costs (excl owner costs)		**$98,981,882**
Total sample/Total operating costs		**41%**

6.5. Operational project management costs

Our sample includes Operational Project Management Costs for the following assets:

- Bundamba Advanced Water Treatment Plant
- Luggage Point Advanced Water Treatment Plant
- Gibson Island Advanced Water Treatment Plant
- Network

6.5.1. Description

This category represents the Fixed Operational Project Management Costs. These costs relate to three specific areas of costs associated with running the Bundamba plant. They are:

- Profit and overhead margin on the operational costs as per the Operation and Maintenance Agreement between Veolia Water and WaterSecure.
- Allocation of costs for Veolia Water's office in the city including employee costs, office repairs and maintenance, energy, office and IT related costs and motor vehicle expenses (as a proportion of the overall operating costs for Veolia Water and for the project)
- Any research and development costs eg upcoming or approved initiatives/projects for the next financial year.

6.5.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's Submission to the Authority
- Supporting information showing a breakdown of operational project management costs for Bundamaba, Luggage Point and Gibson Island advanced water treatment plants and for the network.

6.5.3. Prudency assessment

This operating expenditure is required to meet the Grid Instructions as set out from the SEQWater Grid Manager. This is required to maintain the obligations set under the Grid Contract to meet the required water quality and volume for the Tarong and Swanbank power stations. The relative clauses from the Grid Contract with respect to availability of supply and water quality are shown below.

> *C8.1 Service provider must supply Manufactured Water to the Water Grid Manager at the Supply Points in accordance with this Contract, Grid Instructions and Operating Instructions issued to the Service Provider in accordance with the Market Rules and all Approved Operating Protocols.*
>
> *C9.1 (a) Service Provider must ensure that all Manufactured Water supplied to Water Grid Manager at the Supply Points under this Contract meets the Quality Requirements.*

Research and Development is not a specific requirement of the Grid Contract. However it is a part of the Operation and Maintenance agreement with Veolia Water.

> *C15.5 Research and Development*

a) *The parties acknowledge that they intend to enter into a separate agreement in relation to the research and development activities set out in the Research and Development Plan, which agreement will deal with issues such as intellectual property Rights created from or in respect of such research and development activities.*

b) *The operator will*

   i. *Carry out research and development activities in accordance with the Research and Development Plan*

   ii. *Prepare and submit to western Corridor Recycled Water a research and development report at the end of each year during the Term*

During our interviews with WaterSecure we were advised that research and development primarily relate to the pilot advanced water treatment plant. Costs for research and development include both labour and materials. The pilot plant is used to assess and test chemical and operating protocols in order to evaluate the opportunity improve the quality of the product water and improve operational efficiency. An example shown to us is research into reducing the boron content of the purified recycled water, which is of concern for the power stations that use the purified recycled water.

Whilst research and development is not prescribed in the Grid Contract, SEQ System Operating Plan or SEQ Water Grid Operating Strategy, or in any Standards of Service identified by WaterSecure we deem it to be a prudent activity. The research and development program plays an important role in helping WaterSecure meet the water quality requirements of the end users both now and in the future in a cost effective manner.

We conclude that this expenditure is prudent.

6.5.4. Efficiency

Calculation of costs

The allocation of scheme office costs and research and development expenditure is based on the percentage of the total operational cost of each asset, given all assets and infrastructure apart of the western corridor recycled scheme (as shown below).

$$\text{Allocation percentage (\%)} = \frac{Total\ Operating\ Costs\ of\ each\ asset}{Total\ Operating\ Costs\ of\ WCRW}$$

Labour costs are built up in a zero base budget each year. We were advised that some staff at Veolia Water's city office may work on projects other than the Western Corridor Recycled Water Scheme, or the Gold Coast Desalination Plant. In these circumstances, full time hours are not charged to Western Corridor Recycled Water assets or Desalination Plant.

Research and development costs are also built up from a zero base budget each year to complete a series of projects in the research and development program. Research and development costs are apportioned across all of the Western Corridor Recycled Water assets, as the learning's from research and development can equally be applied at each of the advanced water treatment plants.

Benchmarking of costs

WaterSecure will undertake internal benchmarking and analysis of these costs during its 60 working day review of the proposed budget. This work is in progress at the time of writing of this report.

Operational Project Management costs represent 22 per cent of the overall operating cost for Bundamba Advanced Water Treatment Plant (less owner costs). By comparison, our internal benchmarks developed from other water utilities and electricity supply utilities suggest Operational Project Management Costs (less the profit margin) between 15 and 20 per cent of operating expenditure to be acceptable. We therefore consider the operational project management costs for the Western Corridor Recycled Water scheme to be reasonable.

Delivery of service

WaterSecure has entered into an Operation and Maintenance Agreement with Veolia Water. Milestones within the contract are linked to the achievement of Practical Completion and Final Completion. Veolia Water will operate and maintain the plant for 15 years, with options for 5 year extensions.

The allocation of operational project management costs across the Western Corridor Recycled Water assets are shown for each WaterSecure asset in **Table 5** below.

- **Table 5 WaterSecure's asset allocation of project management costs**

	Operation Project Management	Total operating expenditure (excl. owners costs)	Operational Project Management / Total Operating Expenditure (excl. Owners Costs)	Percentage allocation of Scheme office and Research and Development
Bundamba AWTP	$2,480,484	$8,714,000	37.2%	37.5%
Luggage Point AWTP	$2,037,616	$7,669,000	32.7%	29.0%
Gibson Island AWTP	$369,720	$1,047,000	4.5%	6.5%
Network	$1,751,740	$6,002,000	25.6%	27.0%

Efficiency gains and synergies

No direct efficiency gains or synergies have been identified by WaterSecure for this year's budget.

Comment on any potential efficiency gains is outside of our scope of works.

None-the-less the imminent merger with Seqwater, potential synergies have been identified. Veolia Water currently operates the Noosa Water Treatment Plant and there may be an opportunity to create efficiencies. Variable cost elements, such as electricity and chemicals were also identified as having potential for cost efficiencies through economies of scale purchases.

6.5.5. Summary

The expenditure for operational project management is prudent. WaterSecure has clear obligations in the Grid Contract to produce and supply purified recycled water to meet specified demands. The operational project management costs are for the oversight, reporting and project management of the treatment plant and network operations. Research and development as included in this cost category is an important activity in ensuring that present and future customer requirements for the product water will be met.

The expenditure for project management is efficient. A comparison of the relative proportion of operational project management costs with our internal benchmarks shows the costs to be comparable with other utilities of this size.

6.6. Employee costs

Our sample of operational costs includes Employee Costs for the following Western Corridor Recycled Water Scheme assets:

- Bundamba Advanced Water Treatment Plant
- Luggage Point Advanced Water Treatment Plant
- Gibson Island Advanced Water Treatment Plant

6.6.1. Description

This category represents the employment costs for personnel directly relating to the operation of the Advanced Water Treatment Plants. All of these personnel are employed by Veolia Water.

Employee Costs comprise of direct costs (salaries and wages, bonuses) and indirect costs (allowances, fringe benefit taxes, payroll tax, staff clothing and uniforms, training). In **Table 6** below we illustrate the proposed expenditure for the above three areas for each of the assets in our sample.

- **Table 6 Breakdown of Employee Costs**

Asset	FTE[1]	Direct Costs	Indirect Costs	Total Employee Costs
Bundamba	18.2	$2,054,000	$89,000	$2,143,000
Luggage Point	16.5	$1,787,000	$69,000	$1,856,000
Gibson Island	2.9	$337,000	$10,000	$347,000

1. Average FTE for the financial year based on 150 hours per FTE per month

6.6.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's Submission to the QCA, WaterSecure, 31st March 2011
- Employee Costing Spreadsheet, WaterSecure, Provided 21st April 2011
- Minutes from study tour to Yuma Desalting facility

6.6.3. Prudency assessment

- It is noted in the *SEQ Water Grid Operating Strategy (Version 3, February 2011)* that the production from Gibson Island Advanced Water Treatment Plant will be reduced for 2011/12:
  - *"Purified recycled water production will be matched to demand, subject to operational constraints*
  - *Purified recycled water be supplied from the Luggage Point Advanced Water Treatment Plant and one stage of the Bundamba Advanced Water Treatment Plant*
  - *The Gibson Island Advanced Water Treatment Plant and one stage of the Bundamba Advanced Water Treatment Plant be de-mobilised"*

Further, WaterSecure is required to ensure that purified recycled water is available to be provided to Wivenhoe should storage fall below critical levels:

> *"WaterSecure prepare and implement a Readiness Risk Management Plan to ensure that the WCRWS is available to augment Wivenhoe Dam immediately upon key Water grid storages falling to 40 per cent of combined capacity, with oversight as proposed by the Commission"*

In response, WaterSecure states in its *Strategic and Operating Plan 2011-2012* that it will maintain Gibson Island Advanced Water treatment Plant at reduced levels while allowing for the plant to be re-mobilised within 18 months if required.

> *"Therefore one of WaterSecure's core roles will consist of ensuring the operation and maintenance of the standby and mothballed assets in a cost effective way in order to respond efficiently when requested by the Water Grid Manager.*

Mothballing the assets to minimise the need for major renewal expenditure upon remobilisation will be reduced through detailed asset management and also allowing 18 months for remobilisation."

In our opinion the expenditure for Employee Costs is prudent for all of the assets in the operating cost sample, as labour is required to both operate and maintain the advanced water treatment plants.

6.6.4. Efficiency assessment

Calculation of costs

The number of employee hours is initially estimated by Veolia Water, and are moderated and approved by WaterSecure through a 60 working day review period (currently taking place). These costs include the direct salaries and wages in addition to indirect employment costs such as sick leave, training, public holidays, long service leave, superannuation, workers compensation and payroll tax.

We reviewed the salary increases and consider them to be reasonable.

Delivery of service

WaterSecure has entered into an Operation and Maintenance Agreement with Veolia Water. The initial stage of the contract is scheduled to finish June 2011 and enter a two year second stage defects liability period. Following this, Veolia Water will operate and maintain the plant for 15 years, with options for 5 year extensions. Due to this contractual arrangement this is considered the only feasible method for delivering this service in 2011/12.

Bundamba and Luggage Point

WaterSecure undertakes a detailed analysis of the labour requirements at each of its advanced water treatment plants each budget review period. This includes both a bottom up analysis (a task analysis) and a top down review (review of operator hours across all of WaterSecure's assets).

Advanced water treatment plants of the type at Bundamba and Luggage Point are an emerging technology. There is little published benchmarking data available to verify staffing requirements. A further complication is added when the operation of a partially mothballed plant needs to be considered. We have been advised that WaterSecure is actively seeking benchmarking data including sending representatives to other recycled water plants to compare operational data.

In the absence of benchmarking data we have examined WaterSecure's review process and consider this to be thorough. In our consideration the steps undertaken by WaterSecure to verify staffing requirements represents good practice given the information that is available.

On the evidence provided as described above we are satisfied that the employee costs for Bundamba and Luggage Point are not excessive, and are in keeping with a least cost method of delivery.

Gibson Island

The draft budgets provide for 4.9 FTEs to undertake the decommissioning from July to December, then 1.9 FTEs from January to June.

The small number of FTEs at Gibson Island reflects the instructions for this plant to be mothballed (de-mobilised). In our discussions with WaterSecure it was agreed that mothballing of advanced water treatment plants is not a task often undertaken around the world. Consequently, there is little in the way of a proven method and benchmark costs to undertake and maintain the advanced water treatment plant in a mothballed state. WaterSecure has advised that it is currently investigating alternative strategies for mothballing of the Gibson Island Plant, however we are satisfied that the indicated number of employees will be required irrespective of the mothballing strategy, as all of the mothballing strategies require some degree of ongoing maintenance at the plant. Alternatives such as de-manning the plant altogether are not considered feasible due to the requirement to undertake some upkeep on the equipment and protect the investment that has been made. The staffing levels are also shown to decrease from 735 hours per month whilst decommissioning is occurring, to 285 hours per month once the decommissioning has been completed (January 2012).

WaterSecure has also undertaken a study tour of a mothballed desalting plant in Yuma, Arizona. The purpose of the tour was to investigate what would be considered reasonable staffing levels at a mothballed plant. When compared to the Yuma plant we consider the proposed staffing levels at Gibson Island to be reasonable.

Efficiency gains and synergies

No efficiency gains or synergies have been identified by WaterSecure.

6.6.5. Summary

The expenditure for employee costs is prudent. WaterSecure has clear obligations in the Grid Contract to produce and supply purified recycled water to meet specified demands. Employees are required to both operate and maintain the advanced water treatment plants.

We acknowledge the lack of published benchmarking data for staffing levels of advanced water treatment plants, and consider the steps taken by WaterSecure to verify staffing requirements to be good practice given the information that is available. We conclude that the proposed staffing levels for the plants in their new mode of operation are reasonable, and the salaries, benefits and other allowable costs are commensurate with current industry conditions. We therefore consider this expenditure to be efficient.

6.7. Plant defects

Our sample includes Plant Defect costs for Luggage Point Advanced Water Treatment Plant.

6.7.1. Description

This category represents the expenditure associated with the plant defects provision for the infrastructure of the Luggage Point Advanced Water Treatment Plant.

The plant defects budget, put forward by WaterSecure for the financial year 2011/12 is $3,200,000.

6.7.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's submission to the QCA
- Luggage Point Advanced Water Treatment Plant defects Spreadsheet, WaterSecure dated April 2011
- Notes and minutes from Formal interview with WaterSecure , SKM dated 15th April 2011

6.7.3. Prudency

Through our discussions with WaterSecure it was established that the expenditure in this category is for the repair of minor maintenance items and plant modification requirements to meet changing operating conditions discovered after practical completion of the treatment plant. This expenditure has been classed as required for defects rectification. However we are of the view that use of the word 'defects' is not wholly consistent with the nature of the expenditure described as the expenditure is not able to be recovered from the equipment suppliers or construction contractors under a normal defects liability clause.

The repair of minor defects is required to ensure the efficient and safe operation of the Luggage Point advanced water treatment plant. Where warranties on equipment are available these have been utilised. We therefore conclude that this expenditure is prudent.

We also accept the precedent in reviews undertaken by the Queensland Water Commission that expenditure of this type was accepted as prudent.

6.7.4. Efficiency

Calculation of costs

WaterSecure has advised that an allowance for defects provision of 4 per cent of capital costs was made in the Construction Agreement. This amounted to $8,420,900. Of this $4,994,948 has been spent to date.

In a spreadsheet provided by WaterSecure, $715,000 in liability works for 2011/12 is itemised. These items are reproduced in **Table 7** below.

Table 7 Identified defects for WaterSecure's plant defects budget

Identified Defect	Cost Estimate ($)
Alliance defects	$5,000
Rubber lining Flocculator feed pipe (Clarifier A and B)	$226,000
Rubber Lining of feed Pipe (Clarifier C and D) and Pump Refurbishment	$130,000
Change VT pumps for Refurbishment	$3,000
Pumps Coating	$350,000
Total Identified defects	**$715,000**

Source: Veolia Water Luggage Point defects spreadsheet

WaterSecure has advised that the items in the above table are defects that have been identified thus far. The budget estimate of $3,200,000 is an estimate of defects repair expenditure for the year. The sum has been estimated based on defects expenditure WaterSecure has incurred at its other water treatment facilities.

In our opinion estimating the expenditure based on experience at the other advanced water treatment plants is a satisfactory approach.

Benchmarking of costs

No internal benchmarking has been conducted into the provisional costs of the various cost elements.

We have reviewed the cost elements within the defects projects identified by WaterSecure and confirm that the unit rates for the activities identified are comparable with current market rates.

Delivery of service

During the defects liability period the Alliance Contractor conducts defect rectification, unless the owner (i.e. WaterSecure) determines otherwise. In this instance, WaterSecure is proposing to engage the Alliance Contractor for defects rectification. We consider this approach consistent with standard industry practice given the existing contractual arangement between WaterSecure and its Alliance Contractor.

Efficiency gains and synergies

No efficiency gains or synergies have been identified by WaterSecure.

6.7.5. Summary

The expenditure for defects repair is prudent. The repair of plant defects is necessary to ensure the safe and efficient operation of its advanced water treatment plants. In undertaking previous reviews

of operating expenditure the Queensland Water Commission has also accepted the prudency of this expenditure.

The expenditure for defects repair is efficient on the basis that the construction contract does not allow for rectification of defects of this nature to be recovered under a defects liability period or under a latent defects clause. While WaterSecure has identified a list of defects to be repaired it is the nature of this expenditure that other items will be identified through the course of the year. We accept the estimate of expenditure based on experience at other treatment plants. We have considered the unit rates used in the estimate of known repair items and consider these to be in line with market rates. Further, WaterSecure has the opportunity to approach the market to complete repairs which would represent the least cost method of delivering this service.

Given the relatively unknown nature of this expenditure we would recommend that the Authority examines defects repair expenditure at the conclusion of the 2011/12 financial year for over spend or under spend.

6.8. Mothballing costs

Our sample of operational costs includes Mothballing Costs for Gibson Island Advanced Water Treatment Plant.

6.8.1. Description

This category represents the schedule of costs associated with the proposed mothballing of Gibson Island Advanced Water Treatment Plant.

In December 2010, the Queensland Government announced changes to the operating strategy for demand for Western Corridor Recycled Water schemes. Water will be met from the Luggage Point and one of the Bundamba advanced water treatment plants. The Gibson Island plant will be de-mobilised (mothballed) as a result.

The combined savings from the 'mothballing' of WaterSecure's Western Corridor Recycled Water assets is approximately $5 million.

The proposed maximum expenditure involved for mothballing Gibson Island advanced water treatment plant is $1,534,647 and will take up to 6 months, depending on the extent of work required.

The plant is to be shutdown and handed over for mothballing as of the 1st July 2011. This is provided that the plant has achieved practical completion and handover by then. The demonstration plant is not to be mothballed and is to remain available for trials should this be required.

Additional details, as per the WaterSecure brief to Veolia Water, of the mothballing include:

- Plant is not to be re-commissioned for a minimum of 5 years.
- A minimum of 18 months notice is required for re-commissioning
- Demonstration plant is not to be mothballed, but remains open for trials should this be required

6.8.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's Submission to the Authority
- Operating Budget for 2011/12 - Brief to Veolia Water Australia (Stage 1)
- 2011-12 WCRW Budget Methodology & Clarification required from WS 22_02
- NPV analysis for mothballing costs
- Minutes from study tour to Yuma Desalting facility

6.8.3. Prudency assessment

- It is noted in the *SEQ Water Grid Operating Strategy (Version 3, February 2011)* that the production from Gibson Island Advanced Water Treatment Plant will be reduced for 2011/12:
  - *"Purified recycled water production will be matched to demand, subject to operational constraints*
  - *Purified recycled water be supplied from the Luggage Point Advanced Water Treatment Plant and one stage of the Bundamba Advanced Water Treatment Plant*
  - *The Gibson Island Advanced Water Treatment Plant and one stage of the Bundamba Advanced Water Treatment Plant be de-mobilised"*

This expenditure is consistent with the Operating Strategy and is prudent.

6.8.4. Efficiency assessment

Calculation of costs

The calculation of costs has originated from a high level assessment undertaken on the Bundamba advanced water treatment plant. Bundamba 1A was also instructed by the Queensland Government to undergo closure due to the strong water position. Similar closure processes will be undertaken for both plants, which allow assessments conducted on Bundamba 1A to be used as a guide for mothballing costs for the Gibson Island plant.

A bottom up approach was used for the expenditure assessment. Input into the budget setting process being predominately from Veolia with WaterSecure reviewing and approving all budget inputs.

Benchmarking of costs

WaterSecure has advised that strategy for mothballing Gibson Island Advanced Water Treatment Plant is a draft at this stage. WaterSecure will undertake internal benchmarking and analysis of these costs during its 60 working day review of the proposed budget. This work is in progress at the time of writing of this report. The review will include an analysis of a range of mothballing options over a range of time periods.

We further acknowledge that mothballing of newly constructed advanced water treatment plants is not common practice in the industry. As such, there are no best practice guidelines or lessons learned that can be applied. To gain further insight and first-hand knowledge, WaterSecure representatives have undertaken a study tour the Yuma Desalting facility in Arizona, USA. This plant is currently in a mothballed state. WaterSecure advised us that they have used the knowledge gained from the tour to inform options for mothballing Gibson Island.

Given the low likelihood of the purified recycled water from Gibson Island Advanced Water Treatment Plant being required in the next ten years an alternative approach is to leave the plant in its current state and undertake no maintenance at all.

WaterSecure is currently undertaking an option analysis for the most cost effective way to mothball the Gibson Island Advanced Water Treatment Plant. The analysis includes a net present value calculation for two principal options for management of the treatment membranes, considering a 5 year and 10 year mothballing duration. The two principal options are:

- Disposal of the RO membranes
- Preservation of the RO membranes.

Under these two principal options are a number of variations to the options or sub-options:

- Storage for 5 years
- Store for reuse at Luggage Point Advanced Water Treatment Plant
- Store for 1 year
- Preserve in-situ with SBS
- Preserve in-situ with Isothiazollin

All of these options include a number of common costs including external costs to move to mothballing modes, costs to dispose of microfiltration membranes, contract break fees, legal costs and HR costs.

In addition, WaterSecure has sought tenders for parties wishing to purchase the used membranes.

Due to the timing of this review (detailed previously) this analysis has not been finalised. The draft analysis shows two options as preferable, depending on the duration of the net present value analysis. Through our conversations with WaterSecure a number of uncertainties exist that impact on WaterSecure's ability to determine the preferred mothballing option – in particular, the duration that plant will need to be mothballed. For a short mothballing period, (ie less than 5 years) preserving the RO membranes is preferable. For a mothballing duration from 5 to 10 years, disposing of the RO membranes and repurchasing at a later date is the least cost option.

A breakdown of the two mothballing cost options is shown in the table below.

Activity	RO membrane disposal	Preserve RO membranes in-situ
Costs to move to mothball mode	$409,020	$409,020
Disposal of microfiltration membranes	$129,000	$129,000
Costs to dispose of RO membranes	$215,605	-
Costs to preserve RO membranes	-	$256,653
Misc costs (contract break fee, legal fee, redunacy cost, contingency, Veolia Water Service fee etc)	$722,677	$739,974
Total	**$1,476,302**	**$1,534,647**

We consider that the degree of research and analysis undertaken by WaterSecure to be considerable. However, until the analysis is complete, a conclusion on what may be considered to be efficient costs for mothballing of the plant cannot be reached. To this end, we conclude that efficient expenditure will not exceed $1,534,647.

Delivery of service

WaterSecure has entered into an Operation and Maintenance agreement with Veolia Water for a period of 15 years. Due to this contractual arrangement this is considered the only feasible method for delivering this service in 2011/12.

Efficiency gains and synergies

The decision process of the various aspects of mothballing Gibson Island Advanced Water Treatment Plant will include the following, expected to be implemented in the next 60 working days of budget review:

- A financial review on disposal verses preservation of membranes (Micro-filtration and Ultra Filtration), both in-situ and off site, is required for the three timeframes: 3, 5, 10 years. Improvement of membranes in future years markets will be considered in the final decision.

- Document plans (including the list of all equipment) for how equipment will be prepared, stored and maintained during the mothballing period.
- Include a disposal verses preservation of equipment (other than membranes) review, which details the preferred solution and which option will deliver the best cost effectiveness.

Included in the decision to mothball the Gibson Island and Bundamba advanced water treatment plants were the estimated savings of $12 million a year, as quoted within WaterSecure's submission to the Authority. The estimated savings have been subsequently advised to us as being $5 million per year by Veolia Water.

6.8.5. Summary

The expenditure for mothballing is prudent. The SEQ Grid operating Strategy places a clear obligation on WaterSecure to de-mobilise the Gibson Island Advanced Water Treatment Plant.

We consider that the efficient expenditure for mothballing Gibson Island Advanced Water Treatment Plant to be $1,534,647. WaterSecure is currently undertaking a rigorous evaluation of six strategies. We consider the process undertaken by WaterSecure to develop the mothballing expenditure to be exhaustive and representative of good practice, particularly considering the lack of industry information available worldwide. The efficient expenditure range above represents the two least cost options.

6.9. Repairs and maintenance

Our sample of operational costs includes Repairs and Maintenance Costs for the following assets:

- Network
- Tugun Desalination Plant

6.9.1. Description

WaterSecure is contracted to operate and maintain the Western Corridor Recycled Water Scheme. The scheme consists of three advanced water treatment plants and a pipeline originally envisaged to supply purified recycled water to Wivenhoe dam to augment drinking water supplies, and to Swanbank and Tarong power stations. However, as sufficient water is currently stored in Wivenhoe to meet drinking water requirements the network is only used to supply the power station customers at present.

Repairs and maintenance are undertaken on WaterSecure's network and include civil, electrical, mechanical and land maintenance activities. These works are undertaken by Veolia Water as part of its Operation and Maintenance Agreement with WaterSecure and includes:

- Planned maintenance
- Repairs and maintenance projects
- Reactive (unplanned) maintenance in the case of break downs
- Stockpiling of critical spare parts

The proposed expenditure for repairs and maintenance of the network in 2011/12 is $1,679,000, comprising of $1,147,000 in planned maintenance, $327,000 of unplanned maintenance and $205,000 for stockpiling critical spares.

Repairs and maintenance are also undertaken on the Tugun (Gold Coast) Desalination Plant by WaterSecure through its Project Alliance Agreement with Veolia Water and John Holland. The proposed expenditure for repairs and maintenance of the desalination plant in 2011/12 is $4,660,000.

6.9.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's Submission to QCA, Water Secure, dated 31st March 2011
- Gold Coast Desalination Project: Design build Operate Project Alliance Agreement
- Operating Costs cost breakdown spreadsheet (provided in the formal interview with WaterSecure), 15 April 2011

6.9.3. Prudency assessment

Maintaining the operation of the Western Corridor Recycled Water Network and Desalination Plant is fundamental to WaterSecure's ability to provide bulk desalinated and purified recycled water services and therefore remain compliant with the Grid Contract. Failure to undertake the necessary maintenance works may lead to pipeline breakdown which would place WaterSecure's ability to supply either purified recycled water or drinking water in accordance with the terms and conditions of the Grid Contract at risk. Additionally, the maintenance is required to ensure that the required standards in terms of reliability and quality of water supply are maintained.

The relevant clauses within the Grid Contract are detailed below:

> *C8.1 Service provider must supply Manufactured Water to the Water Grid Manager at the Supply Points in accordance with this Contract, Grid Instructions and Operating Instructions issued to the Service Provider in accordance with the Market Rules and all Approved Operating Protocols.*

C9.1 (a) Service Provider must ensure that all Manufactured Water supplied to Water Grid Manager at the Supply Points under this Contract meets the Quality Requirements.

WaterSecure has identified the following maintenance activities for the Network:

- Responsive maintenance in the event of breakdown - $317,000
- Repairs and maintenance of the raw water pumping stations - $412,704
- Repairs and maintenance of the raw water network - $51,011
- Repairs and maintenance of the treated water pumping stations - $396,046
- Repairs and maintenance of the treated water network - $234,637
- Servicing of maintenance equipment - $19,050
- Stockpiling of critical spare parts - $199,500

WaterSecure has also supplied a list of transactions undertaken in the previous six months by the alliance partners on the Gold Coast Desalination Plant, to identify the nature of repairs and maintenance costs that are likely to be incurred in the forthcoming financial year.

In our opinion the above repairs and maintenance activities are representative of works required to fulfil WaterSecure's obligations under the Grid contract and hence, this expenditure is prudent.

6.9.4. Efficiency assessment

Calculation of costs

Repairs and maintenance costs are initially estimated by the operator and moderated and approved by WaterSecure through a 60 working day review process (currently in progress). WaterSecure has provided spreadsheets detailing the calculation methodology. The cost is calculated from the unit rates for replacement and a specified maintenance frequency.

The Western Corridor Recycled Water Scheme will be running at 40 ML/day, approximately 17 per cent of the capacity of the scheme as originally designed. It would therefore be expected that the failure mode profile for the assets will change. Whilst the frequency repairs and maintenance of equipment will be less than during nominal operations (e.g. the running time of mechanical equipment (eg pumps) will be significantly reduced with consequently less wear and tear) other failure modes such as corrosion will become more prominent. WaterSecure has advised that they are currently investigating maintenance activities for the adjusted failure mode profile. Whilst some initial adjustments have been made, further refinement will come with further understanding of the asset risks. In some cases WaterSecure is required to maintain the assets in certain ways for the validity of equipment warranties.

We have been advised that such considerations have been taken into account in the formation of the repairs and maintenance schedule. WaterSecure, through its operator, has revised the frequency of repairs and maintenance to reflect reduced operating conditions. In many cases, the trigger for maintenance is the duration that equipment has been in service, rather than the length of time that equipment has been run.

From our analysis of the information provided, for the Gold Coast Desalination Plant, the Alliance Contractor has established a Target Outturn Cost (see Section 4.4) based on its previous years Actual Operating Costs, as per its Alliance Contractor.

We have examined the unit rates for repairs and maintenance for both the Western Corridor Recycled Water Scheme and the Gold Coast Desalination Plant and consider these to be reflective of current market conditions.

We see a future opportunity for efficiency gains in WaterSecure's repairs and maintenance program through greater engagement with the Water Grid Manager. For example, the Water Grid Manager can advise on the length of time the water grid can operate efficiently with a particular Advanced Water Treatment Plant offline. The time period may be sufficient to allow for the procurement and installation of an asset due to breakdown. The change to 'run to fail' from the current 'preventative maintenance' strategy has the potential to generate cost savings.

We recommend that WaterSecure engages with the Water Grid Manager early in the development of its maintenance programs and shows evidence that the above maintenance strategy has been considered for future regulatory assessments.

Delivery of service

WaterSecure has entered into an Operation and Maintenance Agreement with Veolia Water for a period of 15 years for the Western Corridor Recycled Water Scheme.

Similalry WaterSecure has entered into an Alliance Agreement with Veolia Water and John Holland for the Gold Coast Desalination Plant.

Efficiency gains and synergies

No efficiency gains or synergies have been identified by WaterSecure.

6.9.5. Summary

The expenditure for repairs and maintenance is prudent. WaterSecure has obligations in its Grid Contract to supply purified recycled water at the required quantities and quality. We consider the establishment of a routine repairs and maintenance system a key part of meeting this obligation.

We have examined WaterSecure's repairs and maintenance program and consider the unit rates and frequency of repairs to be reasonable for both the Western Corridor Recycled Water Scheme and the Gold Coast Desalination Plant.

6.10. Electricity costs

Our sample of operational costs includes Electricity Costs for the Gold Coast Desalination Plant.

6.10.1. Description

This category represents the variable electricity costs associated with the Gold Coast Desalination costs. The proposed expenditure for the electricity costs at the Gold Coast Desalination Plant is $4,882,708 which is made up of $3,346,466 of what is known as 'black power' and $1,536,242 of associated 'green power' costs.

Black power is an agreed variable charge cost between the operator and electricity provider which is known as Tariff 43. The additional green power cost is due to the plant being commissioned as a dedicated 'green' infrastructure asset as announced by Queensland Government during construction of the plant. This extra cost is based on the variable energy use of the plant.

In December 2010, the Queensland government announced changes to the operating strategy for WaterSecure assets in response to the region's strong water security position. The Gold Coast Desalination plant will move to a 'hot standby' mode, whereby production will be reduced to the minimum required to keep the plant operational and ready to ramp up to 100 per cent capacity within 72 hours.

Given the plant was originally designed for three scenarios 100 per cent, 66 per cent and 33 per cent, additional analysis is being undertaken to find the optimal power consumption when under the operation standard of 'hot standby'.

6.10.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's Submission to the Authority
- Energy Calculation – Desalination Plant spreadsheet (information provided during formal interview with WaterSecure)
- Origin Energy Tax invoice – Account Summary for Tugun Desalination Plant

6.10.3. Prudency assessment

This activity is required due to three key drivers:

- Capacity to deliver to the SEQ Water Grid Manager
- Volume to meet demand by SEQ Water Grid Manager
- Water quality as per the project alliance agreement for the Gold Coast desalination project

Energy is required to undertake the treatment processes and to convey water and hence meet the obligations under the grid Contract, SEQ system operating plan and the Water Grid Manager Operating Strategy.

Given the above, this expenditure is considered prudent.

6.10.4. Efficiency assessment

Calculation of costs

The calculation of costs is a bottom up process. WaterSecure provided energy calculation spreadsheets for the proposed use as per the Grid Instructions from the SEQ Water Grid Manager.

The forecasted use for the 'hot standby' Gold Coast desalination plant was for the following production volumes shown in **Table 8** :

- **Table 8 Forecasted production volumes for Gold Coast desalination plant**

Scenario	Assumptions	Volume – ML/year
Baseline: Flushing of Membranes, pipeline & reservoir turnover	2 x 25 ML per week	2,600
Contingency: Cover water Quality Issues	3 x 3 week periods at 66% capacity	5,530
Contingency: Cover Seqwater plant issues	3 weeks at 33% capacity	924
Total		**9,054**

Calculation of costs was based on the above scenarios to happen throughout the year. The demand charges were assumed as worst case in terms of running either side of the billing period end date for the 66 per cent capacity runs required.

Potential savings by running the plant during the standby months in off peak times was calculated as approximately $200,000. This is provided that the contingencies mentioned above are run throughout the summer months.

Benchmarking of costs

WaterSecure will undertake internal benchmarking of the costs in the near future. A desalination plant in Perth has recently been identified as an option to benchmark efficiency and effective specific consumption of power. At the time of writing no formal work has progressed.

In our analysis it was taken into account and understood that the situation currently presented to the desalination operating team is outside of the original operating specifications.

Delivery of service

The Gold Coast Desalination Plant is operating through a Project Alliance Agreement with John Holland and Veolia Water as the Alliance Contractor. The Project Alliance is for a duration of 10 years post Practical Completion with a 5 year option.

In regards to the contract with the current electricity provider, Gold Coast desalination plant operates under the Tariff 43 contract with Origin Energy.

This tariff is for large installations. It is particularly suitable for customers using more than 200,000 kWh per month, when their load factor is in the range 35 per cent to 75 per cent and off-peak period use ranges between 20 per cent and 75 per cent.

Chargeable demand is maximum demand recorded in the previous month; or 60 per cent of highest demand from previous 11 months; or 400 kW, whichever is the greatest.

If electricity is purchased under this Demand Tariff, then the whole installation has to be supplied on this tariff. Customers on this tariff may be able to reduce their energy costs by moving nonessential load away from their peak usage period. **Table 9** shows the rates used for supply at the Gold Coast desalination plant; these include a 5 per cent High Voltage rebate for the site.

- **Table 9 Tariff 43 rates for Gold Coast Desalination (incl. the 5% High Voltage Rebate)**

Description	GST Exclusive	GST inclusive	Units
Energy Charge (7am – 11pm, Monday - Friday inclusive)	13.0245	14.4572	c/kWh
Other Times	5.2060	5.7787	c/kWh
Demand Charge per kW	13.1765	14.6259	$/kW
Service Charge To Property	108.71	120.6681	$

WaterSecure investigated the option to find a competitive rate in the open market which would be financially more attractive than their current situation. Though due to the risk of the demand changing WaterSecure decided to remain with the Tariff 43 option. Combination of the market electricity prices and the lack of confidence in the demand strategy for the future provided too much exposure to financial loss.

As such we consider the expenditure to be efficient.

Efficiency gains and synergies

No efficiency gains or synergies have been identified by WaterSecure.

However given the imminent merger with Seqwater, an opportunity for a reduced contract for the future years will be explored.

6.10.5. Summary

The expense item is considered prudent given the nature of the expenditure being a direct force behind achieving the key drivers and obligations set by the SEQ Water Grid Manager and Water Quality performance requirements.This expenditure is considered efficient given the current operating environment and uncertainty around the forecasted demand volumes as per the Water Grid instructions.

6.11. Overheads – Business Services

6.11.1. Description

Business services are defined by WaterSecure as the costs built up from the following areas of the budget:

- Chief Financial Officer
- Accounting
- Human resources
- Commercial
- Information Technology

The forecast operating expenditure for the 2011-12 period is $8,134,883 for the Business Services overhead group. The budget for the 2010/11 period was $18,301,537, with the 2010/11 Forecast currently at $12,957,139. A comparison is shown below in **Table 10**.

Table 10 Business Services – Overheads expenditure

Description	2010/11 budget	2010/11 forecast	2011/12 Budget
Business Services - Overheads	$18,302,000	$12,957,000	$8,135,000

6.11.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's Submission to the Authority
- Overheads budget (provided post the formal interview with WaterSecure)

6.11.3. Prudency assessment

Business Services are not specifically identified in the Grid Contract, the SEQ System Operating Plan or the SEQ Water Grid Manager's Operating Strategy.

The costs incurred however are a direct result of operating the business to provide services for the SEQ Water Grid Manager.

One proposed expenditure was identified as a questionable listing to be included in the operating expenditure. Included in the consultants operating group was an expenditure listed as Transition merger for a value of $40,000. SKM understood that any costs associated to the merger with Seqwater were to be dealt separately from this budget review.

Apart from the Transition merger expenditure, we see the remaining expenditure items as prudent expenditure.

6.11.4. Efficiency assessment

Calculation of costs

Each Business Services area of the budget disaggregates their cost by expenditure fields that originate from the accounting programme Finance 1. This allows for a standardised approach to expenditure reporting and forecasting. The itemised list and associated operating expenditure for Business Services is shown in **Table 11**.

Table 11 Business Services expenditure fields

Description	2010/11 Budget
Salary and Wages	$1,667,582
Payroll OnCosts	$547,103
Other Employee related Expenses	$31,179
Training & Development	$310,348
Recruitment Expenses	$153,600
Travel Expenses	$8,840
Consultants	$582,400
Audit Fees – External*	$630,000
Audit Fees – Other	-
Legal Fees	$120,000
Contractors – Outsourced	$20,000
Telecommunications	$155,210
Advertising/Promotion/public relations	-
Postage, Freight and Storage	$7,200
Stationery Printing Books & Publications	$49,440
Other Supplies and Services	$125,900

Description	2010/11 Budget
Property Equipment & Maintenance Costs	$3,256,880
Grants and Subsidies	-
Miscellaneous Expenses	$1,200
Queensland Water Commission Levy	-
Queensland Competition Authority Levy	-
Depreciation and Amortisation	$444,000
Asset Write Downs, losses & Decrements	-
QTC Financing Costs	$24,000
Total Overhead Costs	**$8,134,882**

*Note that External audit fees include both Alliance audits and Queensland Audit Office (QAO) audits.

WaterSecure has six dedicated areas of overheads within their corporate structure. They include the following:

- Business Services,
- Technical Services
- Executive Services
- Operational Services
- Corporate Services
- Office Management

Each section represents their costs in the same way as Business Services as described in this section. The following table shows the overhead expenditure attributed to each of the sections making up the Business Services overheads. Also shown in **Table 12** is a comparison of next financial year's forecasted budget with the current budget and forecasted remaining spend.

- **Table 12 Business Services Overheads breakdown.**

Description	2010/11 Budget	2010/11 Forecast	2011/12 Forecast Budget
Accounting	$1,790,566	$1,698,649	$1,319,213
Commercial	$3,650,034	$2,183,072	$1,375,795
Chief Financial Officer	$9,364,566	$9,399,056	$428,594
Information Technology	$2,586,920	$2,222,660	$3,981,154
Human Resources	$909,451	$851,000	$1,030,126
Totals	**$18,301,537**	**$12,957,139**	**$8,134,882**

Benchmarking of costs

The costs in the entire entity overheads budget are for the employment of 56.4 full time equivalents.

For the business services sector, only 15.6 full time equivalents are associated with the expenditure. A total of the employee related expenses can be shown below in **Table 13** with an overhead of $159,763 per full time equivalent

- **Table 13 Business Services Full Time Equivalents**

Corporate Overhead Costs 2011/12 Budget	Business Services
Salary and Wages	$1,667,582
Payroll OnCosts	$547,103
Other Employee related Expenses	$31,179
Training & Development	$310,348
Total Employee related Expenses	$2,556,212
Associated FTEs	16

To gain a benchmark on the cost associated with the various costs involved within each overhead budget, a comparison to LinkWater's expenditure was used. These values were considered efficient in our review as well as in supporting evidence from a commissioned report by KPMG on the corporate costs of LinkWater. **Table 14** shows the comparison of audit expenditure for the two businesses. The audit costs for WaterSecure in regards to their total operating expenditure is of similar magnitude to that of LinkWater.

- **Table 14 Audit fees benchmarking**

Corporate Entity	Audit Fees	Total Overhead Costs	Audit / Overheads (%)
LinkWater Audit Fees	$396,000	$15,889,000	2.50
WaterSecure Audit fees	$630,000	$20,070,000	3.14

A comparison of the external consultancy fees for both entities is shown in **Table 15**. The expenditure on consultants is similar when related to entire operating expenditure. As a result of this assessment the itemised list as provided by WaterSecure is considered efficient.

Taxation advisory and audit related consultancy fees were highlighted as a sub group for comparative assessment with the remaining consultants grouped together and compared. The results are shown below in **Table 15**.

- **Table 15 Consultant fees benchmarking**

Corporate Entity	Consultancy Fees	Total Operating Expenditure (less allowable costs)	Consultancy Fees / Operating expenditure (%)
Tax Audit and Advisory Consultants:			
LinkWater	$314,000	50,853,000	0.6
WaterSecure	$280,000	98,982,000	0.3
Consultants:			
LinkWater	$260,000	50,853,000	0.5
WaterSecure	$302,000	98,982,000	0.3

The IT costs were reviewed due to the costs being over a 200 per cent increase in expenditure when compared with the 2010/11 budget. Following an assessment of the itemised IT costs, these costs were deemed prudent. A benchmarking analysis was performed to show efficiency in WaterSecure's expenditure. Similar costs of LinkWater were used to gain a relative efficiency. These results are shown in **Table 16** below. The IT costs were also analysed against the segregated overheads budget for each entity, as a further benchmarking.

- **Table 16 IT costs benchmarking**

Corporate Entity	IT costs	Overheads Budget	IT Costs/Overheads Budget (%)	Total Operating Expenditure	IT Costs/ Operating expenditure (%)
LinkWater IT Costs	$1,974,00	$15,890,000	12.4	$50,853,000	3.88
WaterSecure IT Costs	$3,376,000	$20,071,000	16.8	$98,982,000	3.41

*Note the IT costs were exclusive of salary costs and employee related expenses

Given that the expenditures compared are of similar nature and that the assessment regarded as high level rather than extremely focused on detail, these expenditures are considered efficient.

Delivery of service

These costs relate to the employment of personnel where WaterSecure has elected to undertake service delivery in house.

Efficiency gains and synergies

WaterSecure has not specified any efficiency gains or synergies at present.

6.11.5. Summary

The expenditure for Business Services is prudent. All of the Business Service activities are necessary for WaterSecure to fulfil its obligations in the Grid Contract, as well as regulatory compliance and legal obligations.

The expenditure for Business Services is efficient. The benchmarking that has been undertaken points to the proposed expenditure being comparable with organisations of similar size to WaterSecure. The bulk of activities are undertaken by in-house labour, with consultants engaged only where specialist knowledge is required or for short term peaks in workload.

6.12. Overheads – Operational Services

6.12.1. Description

Operational services are defined by WaterSecure as the cost built up from the following areas of the budget:

- Operations Office
- Operations Management
- Operations PRW
- Operations Desalination
- Land Management
- Environment
- Asset Management
- Transition Management (operational support)

The forecasted budget for the 2011/12 period is shown in **Table 17**. The budget and forecast for the 2010/11 financial year is also shown in **Table 17** for comparison.

- **Table 17 Operational Services – Overheads expenditure**

Description	2010/11 Budget	2010/11 Forecast	2011/12 Forecast Budget
Operational Services-Overheads	$3,904,000	$3,593,0000	$5,152,000

6.12.2. Provided documentation

The key reference documents used for this review are:

- WaterSecure's Submission to the Authority
- Overheads budget (provided post the formal interview with WaterSecure)

6.12.3. Prudency assessment

This operating expenditure is required to meet the Grid Instructions as set out from the SEQ Grid Manager. This is required to maintain the obligations set out under the Grid Contract to meet the

required water quality and volume for the Tarong and Swanbank power stations. The relative clauses from the Grid Contract with respect to availability of supply and water quality are shown below.

> *C8.1 Service provider must supply Manufactured Water to the Water Grid Manager at the Supply Points in accordance with this Contract, Grid Instructions and Operating Instructions issued to the Service Provider in accordance with the Market Rules and all Approved Operating Protocols.*
>
> *C9.1 (a) Service Provider must ensure that all Manufactured Water supplied to Water Grid Manager at the Supply Points under this Contract meets the Quality Requirements.*

Operational Services provide oversight for the plant's operations that have been contracted out. In our opinion the provision of such oversight is required to both administer the contracts and to ensure compliance with Grid Contract and other legal obligations. As such we consider this expenditure to be prudent.

6.12.4. Efficiency assessment

Calculation of costs

Each Operational service area of the budget disaggregates their cost by expenditure fields that originate from the accounting programme Finance 1. This allows for a standardised approach to expenditure reporting and forecasting. The itemised list and associated operating expenditure for Business Services is shown in **Table 18.**

- **Table 18 Business Services expenditure fields**

Description	2010/11 Budget
Salary and Wages	$2,598,000
Payroll OnCosts	$632,000
Other Employee related Expenses	$44,000
Training & Development	$118,000
Recruitment Expenses	
Travel Expenses	$19,000
Consultants	$1,606,000
Audit Fees - External	
Audit Fees - Other	$145,000
Legal Fees	$60,000
Contractors - Outsourced	$234,000
Telecommunications	
Advertising/Promotion/public relations	
Postage, Freight and Storage	
Stationery Printing Books & Publications	$3,000

Description	2010/11 Budget
Other Supplies and Services	$31,000
Property Equipment & Maintenance Costs	$29,000
Grants and Subsidies	
Miscellaneous Expenses	($366,000)
Queensland Water Commission Levy	
Queensland Competition Authority Levy	
Depreciation and Amortisation	
Asset Write Downs, losses & Decrements	
QTC Financing Costs	
Total Overhead Costs	**$5,152,000**

WaterSecure has six dedicated areas of Overheads within their corporate structure. They include the following:

- Business Services,
- Technical Services
- Executive Services
- Operational Services
- Corporate Services
- Office Management

Each Overhead area above represents their costs in the same way as Operational Services. The following table shows the overhead expenditure attributed to each of the sections s making up the Operation Services overheads. Provided in **Table 19** is a comparison of next financial year's forecasted budget with the current budget and forecasted remaining spending.

- **Table 19 Operational Services Overheads breakdown**

Description	2010/11 Budget	2010/11 Forecast	2011/12 Forecast Budget
Operations Office	$430,076	$644,193	$604,267
Operations management	$557,712	$518,048	$803,688
Operations PRW	$416,176	$220,449	$370,306
Operations Desalination	$579,040	$421,116	$425,724
Land Management	$0	$197,653	$688,886
Environment	$852,202	$820,296	$1,227,644
Asset Management	$293,562	$234,687	$351,174
Transition Management / Operation Support	$775,153	$536,241	$680,289
Total Overheads	**$3,903,921**	**$3,592,683**	**$5,151,978**

Benchmarking of costs

The costs in the entire entity overheads budget are for the employment of 56.4 full time equivalents.

For the operational services sector, only 21.6 full time equivalents are associated with the expenditure. A total of the employee related expenses is shown below in Table 20 with an overhead of $156,982 per full time equivalent.

- **Table 20 Operational Services Full Time Equivalents**

Corporate Overhead Costs 2011/12 Budget	Operational Services
Salary and Wages	$2,598,374
Payroll OnCosts	$631,513
Other Employee related Expenses	$43,072
Training & Development	$117,860
Total Employee related Expenses	$3,390,819
Associated FTEs	21.6
Employee Expenses per FTW	$156,982

The consultant fees associated with the operational services overheads budget was benchmarked against LinkWater's similar overhead allocation. **Table 21** and **Table 22** below show the comparison of WaterSecure and LinkWater consultancy costs as a ratio of the overall Operational services budget.

- **Table 21 LinkWater consultant fee benchmarking – Operational services**

LinkWater Consultants Review	Consultant Costs - 2011/12 Budget	Value/Budget	Overall Overhead Expenditure
Infrastructure planning			
Corridor Management	-	-	$334,875
GIS	-	-	$413,266
Infrastructure Planning	$474,005	43.92%	$1,079,172
Land Management	$240,000	71.04%	$337,824
Systems Modelling	$405,021	55.21%	$733,607
Operational services GM	$8,400	0.45%	$1,877,670
Service Delivery			
Consolidated Assets	-	-	-
Network Operations	-	-	$1,139,464
SCADA control	-	-	$454,267
Service Delivery	$350,004	33.21%	$1,054,038
Water Quality	$440,006	29.98%	$1,467,838
Strategic Asset Management	$380,002	33.17%	$1,145,791
Total	**$1,917,436**	**19.10%**	**$10,037,812**

- **Table 22 WaterSecure consultant fee benchmarking - Operational services**

WaterSecure's Consultancy Costs	Consultant Costs 2011/12 Budget	Value/Budget	Overall Overhead Expenditure
Operations Office	-	-	$604,267
Operations management	$300,000	37.33%	$803,688
Operations PRW	$24,000	6.48%	$370,306
Operations Desalination	$50,000	11.74%	$425,724
Land Management	$80,400	11.67%	$688,886
Environment	$651,400	53.06%	$1,227,644
Asset Management	$150,000	42.71%	$351,174
Transition Management / Operation Support	$350,000	51.45%	$680,289
Total	**$1,605,800**	**31.17%**	**$5,151,978**

The results show that the ratios are similar in magnitude however given that LinkWater's overall budget for overheads is larger than WaterSecure's – it can be expected that the LinkWater ratio would be slightly less.

The final benchmark was an analysis of the salary rise from the previous year's budget to the forecasted budget of 2011/12, as shown in **Table 23.**

- **Table 23 Salary benchmarking**

Overhead Sector	2010/11 Salary Budget	2010/11 Salary Forecast Budget	Forecasted/Forecasted Budget	Salary Increase (%)
Operations Office	$267,780	$252,826	$188,208	-25.56%
Operations management	$275,556	$283,703	$341,400	20.34%
Operations PRW	$231,972	$138,273	$238,932	72.80%
Operations Desalination	$287,724	$170,758	$238,068	39.42%
Land Management	$0	$81,812	$387,016	373.06%
Environment	$249,444	$312,875	$336,456	7.54%
Asset Management	$129,996	$46,503	$137,244	195.13%
Transition Management / Operation Support	$541,860	$734,480	$269,078	-63.36%
Total	**$1,984,332**	**$2,021,230**	**$2,136,402**	**5.70%**

Given that the expenditure compared are of similar nature and that the assessment regarded as high level rather than extremely focused on detail, these expenditures are considered efficient.

Delivery of service

These costs relate to the employment of personnel where WaterSecure has elected to undertake service delivery in house.

Efficiency gains and synergies

WaterSecure has not specified any efficiency gains or synergies at present.

6.12.5. Summary

The expenditure for operational services is prudent. Operational Services provide oversight for the plant's operations that have been contracted out. In our opinion the provision of such oversight is required to both administer the contracts and to ensure compliance with Grid Contract and other legal obligations. As such we consider this expenditure to be prudent.

The expenditure for operational Services is efficient. The bulk of activities are undertaken by in-house labour, with consultants engaged only where specialist knowledge is required or for short term peaks in workload. We consider this to represent the least cost method for delivering this service. Additionally our benchmarking shows the magnitude of this expenditure to be reasonable.

We recognise that WaterSecure (and other Grid Entities) are still very much is a transition phase. The number of staff currently employed in the Operational Service division is a reflection of the need for WaterSecure to fully understand newly acquired assets from water reforms. Following this initial peak in workload we would expect that staffing levels would be reviewed to be consistent with company requirements.

6.13. Allocation of overhead costs

WaterSecure reports overheads separately. Hence no allocation of overhead costs to asset classes is required.

6.14. Summary

The assessment of prudency and efficiency for the sample of operating costs is summaries in **Table 24**.

- **Table 24 Overview of prudency and efficiency for sample selection**

Project	Cost 2011/12	Prudency	Efficiency
Operational project management Bundamba AWTP Luggage Point AWTP Gibson Island AWTP Network	 $2,480,484 $2,037,616 $369,720 $1,751,740	Prudent	Efficient
Employee Costs Bundamba AWTP Luggage Point AWTP Gibson Island AWTP	 $2,143,000 $1,856,000 $347,000	Prudent	Efficient
Plant Defects Luggage Point AWTP	 $3,200,000	Prudent	Efficient
Mothballing Costs Gibson Island AWTP	$1,626,906	Prudent	Efficient – based on WaterSecure's revised costs subsequent to its submission of up to 1,534,647
Repairs and Maintenance Network Tugun Desalination Plant	 $1,679,000 $4,660,000	Prudent	Efficient
Electricity Tugun Desalination Plant	 $4,882,708	Prudent	Efficient
Overheads Business Services Operational Services	 $8,134,883 $5,151,958	Prudent	Efficient

7. Capital Expenditure

This section contains the review of prudency and efficiency of WaterSecure's proposed capital expenditure for the 2011/12 financial year. The section includes the following sub-sections:

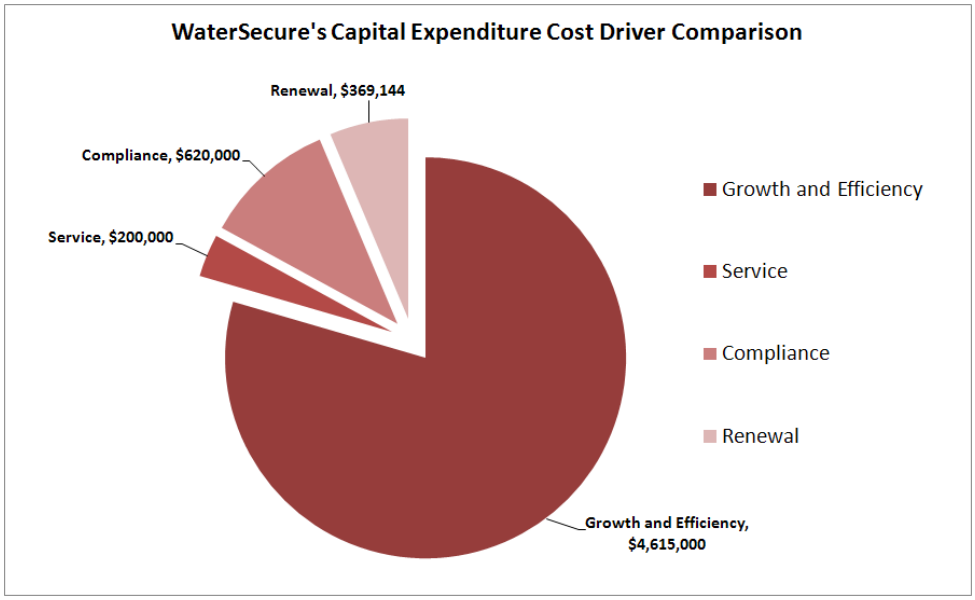
- Overview of WaterSecure's capital expenditure for 2011/12
- SKM's sample selection
- Overview of prudency and efficiency of WaterSecure's capital expenditure
- Detailed prudency and efficiency reviews of the each selected sample
- Summary and recommendations

7.1. Overview of capital expenditure

The Authority required that to assess the prudency of capital expenditure, WaterSecure 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 in response to increased demand, growth or variations required by a customer
- *Service* - capital expenditure associated with upgrading service outcomes to improve asset efficiency; reliability or increase the anticipated life of an asset to prevent a service non-compliance or capacity shortfall
- *Compliance* - capital expenditure associated with the replacement and or enhancement of an asset to prevent a non-compliance with legislative requirements such as the Water Act, Water Market Rules, Grid Services Contract, Water Quality Guidelines and OH&S
- *Renewal* - capital expenditure associated with the replacement and or enhancement of an asset that is currently compliant with service performance standards and legislative requirements but faces an unacceptable risk of future non compliance

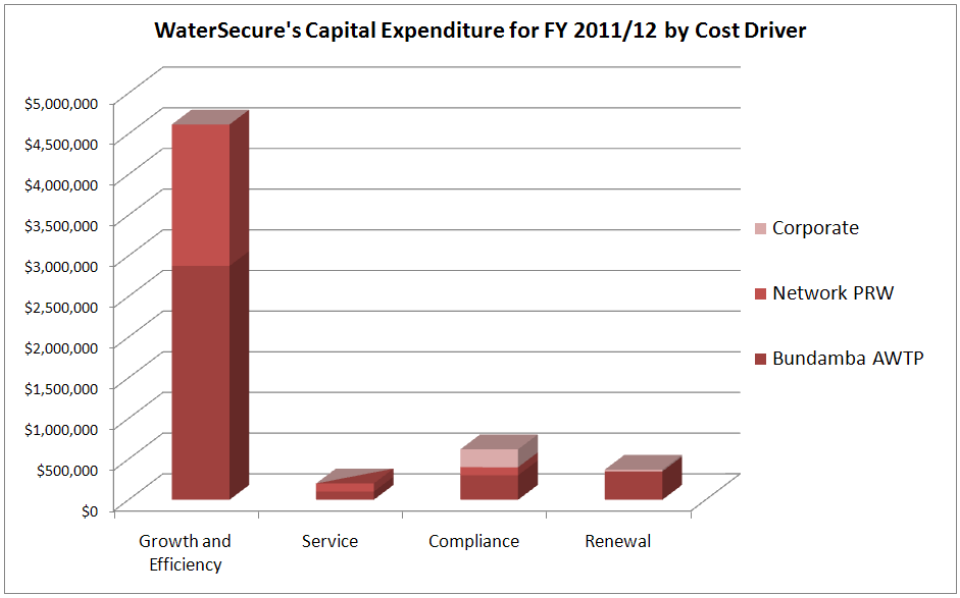
The breakdown of cost, cost driver and project allocation for the 2011/12 budget can be seen in **Figure 4** below.



Source: Capital plan spreadsheet - WaterSecure, provided by QCA on 8th April 2011

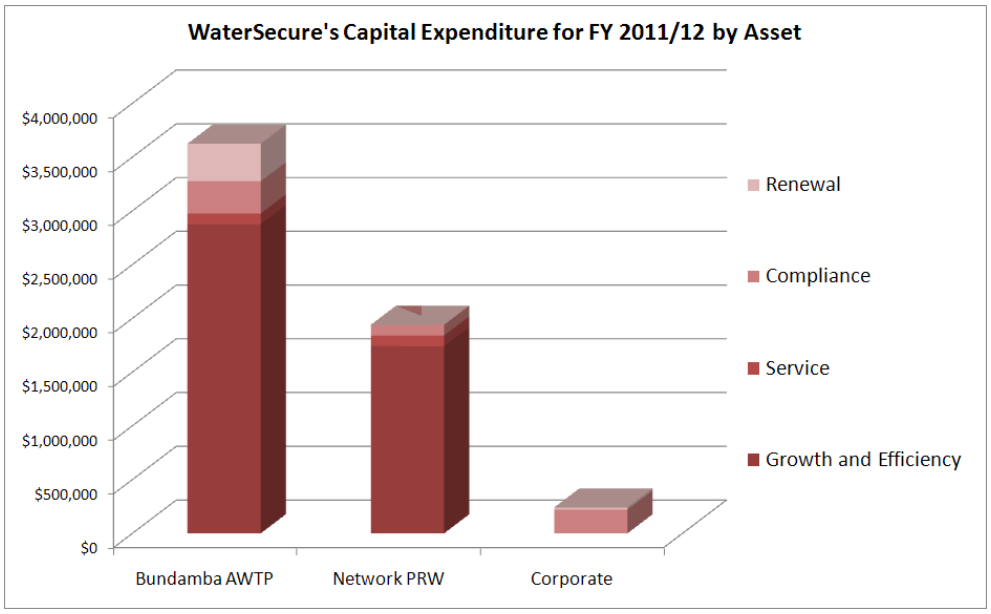
- **Figure 4 WaterSecure's capital expenditure by cost driver**

WaterSecure has proposed that all allocated capital expenditure to be spent on three major areas of its asset base; Corporate, Bundamba Advanced Water Treatment Plant and the pure recycled water network. The cost breakdown of cost drivers attributable to WaterSecure's assets is shown in **Figure 5**.



- **Figure 5 WaterSecure's capital expenditure by cost driver**

A comparison on the proposed capital expenditure for each WaterSecure asset and the proportion attributable to each cost driver is shown in **Figure 6** below.



- **Figure 6 WaterSecure's capital expenditure by asset**

7.2. Costs in Aggregate

WaterSecure's capital expenditure covers infrastructure and non infrastructure assets including projects from both Western Corridor Recycled Water scheme and the Gold Coast Desalination Plant. **Table 25** shows the proposed capital projects for the 2011/12 budget including their location, cost driver and estimated cost.

- **Table 25 WaterSecure's major capital expenditure for 2011/12**

Location	Project Description	Cost Driver	Cost
Bundamba AWTP	Bundamba SCADA Integration Control System Upgrade	Efficiency	$1,500,000
Network PRW	Swanbank cross connection pipeline	Efficiency	$1,500,000
Bundamba AWTP	Chemical Storage Area Covers	Efficiency	$800,000
Bundamba AWTP	Network storage shed	Efficiency	$575,000
Bundamba AWTP	HV Fire alerts	Compliance	$300,000
Corporate	Environmental weed hygiene wash down bay's (4)	Compliance	$220,000
Network PRW	Karawatha Forrest Access Track	Efficiency	$200,000
Corporate	Replacement of support motor vehicles	Renewal	$180,000
Network PRW	Dinmore surge tank overflow protection	Compliance	$100,000
Bundamba AWTP	ROC waste water pumps	Service	$100,000
Network PRW	Swanbank treated water transfer pump	Service	$100,000
Bundamba AWTP	1A Microfiltration Tank No 1 Sump Pump	Renewal	$53,264
Bundamba AWTP	1A Microfiltration Tank No 2 Sump Pump	Renewal	$53,264
Network PRW	Wacol analyser pump control	Efficiency	$40,000
Corporate	Office Equipment, Furniture and Fittings	Renewal	$20,000
Bundamba AWTP	Raw Water Infeed – Ammonia Sulphate Mixer	Renewal	$15,654
Bundamba AWTP	Raw Water Infeed – Goodna Ammonia Sulphate Mixer	Renewal	$15,654
Bundamba AWTP	Raw Water Infeed – Goodna Sodium Hypochlorite Mixer	Renewal	$15,654
Bundamba AWTP	Raw Water Infeed – Sodium Hypochlorite Mixer	Renewal	$15,654
Total Capital Expenditure for 2011/12 budget			**$5,804,000**

Source: Capital plan spreadsheet - WaterSecure, provided by QCA on 8th April 2011

7.3. Sample selection

As part of this analysis, a sample of the capital expenditure projects for the 2011/12 budget have been analysed in detail in terms of their prudency and efficiency. The capital expenditures sample selection chosen by SKM for detailed analysis is shown below in **Table 26**. These projects are

assessed in detail in the following sections with an overview of the final assessment found in **Table 27**.

Table 26 WaterSecure's capital expenditure sample selection

Asset	Category	Cost (2011-2012)
SCADA Integration System	Non-infrastructure	$1,500,000
Swanbank cross connection pipeline	Efficiency	$1,500,000
Bundamba Advanced Water Treatment Plant – Chemical Storage Area Covers	Growth	$800,000
Network Storage Shed	Growth	$575,000
HV Fire alerts	Compliance	$300,000
Environmental weed hygiene wash down bays	Compliance	$220,000
Karawatha Forrest Access Track	Efficiency	$200,000
1A Microfiltration Tank No 1 Sump Pump	Renewal	$53,264
1A Microfiltration Tank No 2 Sump Pump	Renewal	$53,264
Raw Water Infeed – Ammonia Sulphate Mixer	Renewal	$15,654
Raw Water Infeed – Goodna Ammonia Sulphate Mixer	Renewal	$15,654
Raw Water Infeed – Goodna Sodium Hypochlorite Mixer	Renewal	$15,654
Raw Water Infeed – Sodium Hypochlorite Mixer	Renewal	$15,654
Total Sample (13 projects)		**$5,264,144**
Total Non Drought Capex		**$5,804,144**
Total sample/Total Non Drought Capex		**91%**

The sample has been selected based on the overall value of costs within the 2011/12 budget and to be representative of the various categories of costs.

7.4. Overview of prudency and efficiency

Table 27 shows an overview of the final assessment made for each project of the project sample chosen for assessment of prudency and efficiency. A full summary with recommendations for each project can be found in the following sections of this report.

- **Table 27 Overview of prudency and efficiency of capital expenditure sample selection**

Project	Cost 2011/12	Prudent	Efficient
Bundamba SCADA Integration Program	$1,500,000	Prudent	Efficient
Swanbank cross connection pipeline	$1,500,000	Prudent	Efficient
Bundamba Advanced Water Treatment Plant – Chemical Area Storage Covers	$800,000	Not all elements are prudent	Efficient
Network Storage Shed	$575,000	Insufficient information to assess prudency and efficiency.	
HV Switchroom Fire Alert System	$300,000	Prudent	Efficient
Environmental weed hygiene wash down bays	$220,000	Insufficient information to assess prudency and efficiency.	
Karawatha Forrest Access Track	$200,000	Insufficient information to assess prudency and efficiency.	
Bundamba Advanced Water Treatment Plant Renewals sump pumps	$106,528	Prudent	Efficient
Bundamba Advanced Water Treatment Plant Renewals - chemical mixers	$62,616	Insufficient information to assess prudency and efficiency.	

7.5. Bundamba SCADA Integration System

7.5.1. Capital expenditure

Table 28 shows the proposed cost of the Bundamba SCADA Integration System project within the 2011/12 budget.

- **Table 28 Capital expenditure - Bundamba SCADA Integration System**

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$1,500,000
WaterSecure – Executive management Team Information Paper (dated 11 April 2011)	Veolia Water variation: $955,000 WaterSecure variation: $378,000 Total variation: $1,334,000

We note that this capital expenditure is a variation of an ongoing project. The original budget for the project was $1,796,000. WaterSecure has provided documentation outlining the variation required to complete the project, which comprises both Veolia Water and WaterSecure costs.

7.5.2. Project description

The Bundamba Control System Rectification and Integration Project was originally a project defined in a business case established by WaterSecure in February 2009. The main objectives of the project are to standardise the control systems across the Bundamba Advanced Water Treatment Plant to reduce the amount of operating support required and the associated costs, and to provide a more reliable plant with reduced potential safety, environmental and equipment damages incidences.

The design and construction of the Bundamba Advanced Water Treatment Plant was fast tracked to meet first water delivery dates of August 2007 (Stage 1A) and June 2008 (Stage 1B). As a consequence, the plant was built and commissioned with two separate SCADA systems. This has resulted in a number of performance issues. The Bundamba Advanced Water Treatment Plant Business Case (Rev 11, May 2010) identifies a number of operational incidents and identifies faulty control system interlocking as the root cause in many cases.

The original business case was prepared with inputs from both WaterSecure and Veolia Water. The business case proposed a seven person team to understand the work for a project completion, 12 months from the June 2010 start date.

The object of the project is to provide consistency and visibility on the way in which the plant runs. Veolia Water's expectation is integration of the 1A and 1B SCADA and rectification of process control issues with the implementation of the WaterSecure operating 'Shell' were appropriate.

The capital expenditure which we have been asked to review is based on a variation of the original budget to realign and reset the Bundamba Control System Rectification and Integration System. WaterSecure has stated that the original business case initiatives, goals and drivers are to be reinstated and a higher level of scrutiny will be applied on the project program to achieve these outcomes required.

7.5.3. Provided documentation

The key reference documents used for this review are:

- Regulatory Submission to the Queensland Competition Authority, WaterSecure, March 2011
- Appendix 1 of the Regulatory Submission to the Queensland Competition Authority – Water Secure 2011-12 Cost Driver Information, WaterSecure, March 2011
- Appendix 15 of the Regulatory Submission to the Queensland Competition Authority – Capital Program Non-Infrastructure: Bundamba Control System Rectification ad Integration Project Briefing to CEO. WaterSecure, dated 26th February 2011

- Memorandum: Bundamba Advanced Water Treatment Plant SCADA Integration and Rectification Project. Veolia Water, dated 11th April 2011
- Executive Management Team Information Paper – Bundamba Control System Variation. WaterSecure, dated 11th April 2011, including Attachment 3 - single sheet manning level chart for post project implementation operational staff rostering with hand calculations in PDF pertaining to projected manpower cost savings and Attachment 4 – NPV assessment
- Change Proposal for Control System Integration and Rectification of Bundamba Advanced Water Treatment Plant, Veolia Water, 25 May 2010
- Memorandum: Bundamba Advanced Water Treatment Plant SCADA Integration and Rectification Project, Justification Summary for QCA, 30 June 2011

7.5.4. Prudency assessment

Cost drivers

The main driver for the SCADA integration system at Bundamba Advanced Water Treatment Plant is stated as efficiency within WaterSecure's Capital Plan. A full description of the cost drivers is provided in **Section 7.1**.

As stated above, the benefits of implementing the SCADA System Integration and Rectification Project are a control system that:

- Is capable of unattended operation for a planned period of time
- Is updated to a technical level that meets the standards of the WaterSecure operating 'Shell' and is therefore consistent across the remaining Western Corridor Scheme, ensuring it can be clustered as part of the scheme wide centralised control
- Will improve the reliability of treated water quality and water volumes to meet the contractual agreements of the SEQ Water Grid Manager

The Executive Management Team Information Paper sets out the efficiencies of the updated system. Currently Bundamba is required to be manned 24 hours a day, 7 days a week. However, the proposed changes would allow a switch to 8/5 operations, which are defined as follows:

- The plant is only manned from Monday to Friday 7.00am to 3.30pm
- No manning at all Saturday and Sunday
- After hours call-outs and dial-outs are kept within guidelines determined by WaterSecure and Veolia operations Team
- Remote access will be available to provide operators with control and monitoring so that they can respond to dial out alarms and changes in production demand

WaterSecure has calculated that if the system is capable of supporting 8/5 operation, cost savings of $438,000 per annum can be achieved. These cost savings are based on freeing up operators to undertake maintenance work that is currently being performed by external contractors.

The Bundamba Advanced Water Treatment Plant SCADA Integration and Rectification Project, Justification Summary for QCA Memorandum outlines the current manning hours and the proposed reduction in manning. These calculations show that an average of 3.7 operators will be able to undertake maintenance work that is currently outsourced. We understand that WaterSecure met with Veolia Water to discuss this rostering chart and method used to calculate the cost savings and was satisfied with the method used. It is understood that these calculations take into consideration the reduction in operators that will occur as part of the mothballing of Stage 1B. However, it is unclear whether the operators that will become available during this process will be capable of undertaking maintenance activities that are currently outsourced. As such it is assumed that any resources not redeployed to maintenance activities will not continue to be deployed at this site. Following the implementation of this project, it is expected that annual maintenance costs will be reduced by $438k (in addition to reduced maintenance costs due to mothballing) or that the average number of operators will be reduced from 11 to 6.5 FTEs.

As part of the Executive Management Team Information Paper – Bundamba Control System Variation, WaterSecure has provided a net present value assessment based on the estimated cost savings ($438k per annum) and the proposed variation cost ($1,276k). On this basis, the project shows a repayment of capital expenditure by 2015. Subsequently we consider this project to be prudent.

Decision making process

In WaterSecure's memorandum briefing to the CEO (26 February 2011), five options were detailed including a high level cost estimate of each option. These options included:

- A 'top down' complete implementation and 100 per cent compliance with WaterSecure's standards (as per the original scope of works)
- A 'top down' partial implementation (a rectification of the current project direction, however sacrificing original scope)
- A 'bottom up' complete implementation (rectifying device level control and then addressing process groups individually)
- A 'bottom up' partial implementation (a rectification of the current project direction, however sacrificing original scope)
- A third party 'bottom up' complete implementation (cost estimate – not included)

Included in the options assessment was a benefit and risk assessment of each option. This assessment takes into account the varied time required by each option, the overall outcome achieved and the possible technical and directional issues previously encountered with the use of Veolia Water.

Veolia Water's preferred option as outlined in its business case and developed by the lead engineer for the project was for a 'top down' complete implementation as per the original business case. Additionally, WaterSecure's preferred option under this business case was for use of a third party for complete implementation and integration. We understand that in reviewing the business case options, WaterSecure's executive team decided to proceed with using Veolia Water to deliver the project under the existing agreements in place with Veolia Water, rather than to risk using another contractor.

7.5.5. Efficiency assessment

The scope of works

The project will proceed with:

- Full implementation of the SCADA Shell and 100 per cent compliance with the WaterSecure standards
- The development of detailed Functional Description Specifications (FDS) for each process area (excluding vendor FDSs)
- Re-writing the PLC/SCADA code as per the FDSs to improve the control system interlocking plus improved plant operability and increased redundancy by integrating the systems into one single plant
- The SCADA overview screens will be sanitised to remove non standard Genies. The final arrangement of the Overview screen will be assessed at a later date
- SCADA mimic screens will be modified to remove non standard genies and match the WaterSecure standards

The above scope of works represents the best outcome for WaterSecure out of the options assessed in regards to alignment with the original business case and project drivers.

As previously noted, Bundamba Stage 1B is due to be mothballed. SKM queried the requirement for the scope of works given that Stage 1B is to be mothballed and hence there would be no requirement for the two SCADA systems (for 1A and 1B to be compatible). However, we recognise that the two Bundamba Stages, 1A and 1B, were designed to be operated as a single plant. As such there are shared/common elements across the two plants. In addition, we understand that mothballing will involve shutting down half of the overall operations – not just a single plant. Based on the Memorandum: Bundamba Advanced Water Treatment Plant SCADA Integration and

Rectification Project, Justification Summary for QCA, dated 30 June 2011, we understand that the only parts of the Stage 1B operation that will, in effect, be mothballed are the microfiltration, reverse osmosis and ultra filtration units, all of which are controlled by their own PLCs and are not part of this project. Therefore we conclude that the mothballing of Stage 1B does not impact on the project scope or negate the need to undertake this project.

The Memorandum: Bundamba Advanced Water Treatment Plant SCADA Integration and Rectification Project (11 April 2011) states that Veolia Water "*have identified complexities and additions to scope that were not understood*". These complexities are not mentioned in the WaterSecure Executive Management Team Information Paper. We have not sighted justifications for accepting the variation as valid. Good industry practice would dictate that any large variations to a project, as is the case here, should be rigorously questioned. This may have occurred and have been resolved, but has not been demonstrated in the documentation presented during our review. As such we believe that there is merit in WaterSecure undertaking further investigation into the cause of the proposed variation.

In WaterSecure's memorandum briefing to the CEO (26 February 2011), it is stated that the Veolia Water team has "*invested a significant amount of time in developing their own standards*". Based on conversations with WaterSecure we understand that these out of scope items have now been removed from the variation, however, no supporting information has been provided to support this statement.

Standards of service

The project will achieve 100 per cent compliance with the WaterSecure standards, as stated above.

Project cost

The project cost comprises Veolia Water and WaterSecure costs. The greatest costs are associated with the Veolia Water component of the project. Based on the proposed resourcing schedule and the provided costs, we find the hourly rates to be reasonable and therefore conclude that the project is efficient.

7.5.6. Timing and deliverability

The target completion date for the works is expected for March 2012. It is noted that this is nine months post the original completion date.

A detailed project program has been developed however key items have been identified as constraints to the execution of the project. These include:

- A fully operational plant - restricting access and manipulation of the live system

- The number of programmers that can work on the system at any one time due to the fact that multiple systems are contained within the one PLC's and the majority of systems spread across multiple PLCs, therefore restricting work to only a few systems at a time
- Only being able to work on 1A or 1B process at a time
- Unavailability of plant to test rectified process systems after the Queensland floods
- Plant production schedules

Due to the capacity of the plants far exceeding supply requirements and with the mothballing of the stage 1B plant, these constraints are not considered to be a major risk to the overall delivery of the project.

Software upgrade and integration projects are notoriously hard to keep within scope. This is evidenced through the original project results and the issues witnessed in regards to delivery and goals achieved.

A risk to delivery of the project has been identified by WaterSecure's lead engineer for this project as being the use of Veolia Water. Within Appendix 15 of the Regulatory Submission to the Queensland Competition Authority – Capital Program Non-Infrastructure: Bundamba Control System Rectification and Integration Project Briefing to CEO, we note WaterSecure's concerns in the ability of Veolia Water to deliver the remaining scope. This is reinforced with the preferred option of WaterSecure as outlined in its business case and developed by the lead engineer for the project to use an undisclosed third party to deliver the project. This option was preferred prior to any cost estimation or identification of possible contractors.

7.5.7. Efficiency gains

As described above, the primary cost driver is the cost benefits associated with a reduction in operatives.

7.5.8. Allocation of overhead costs

WaterSecure's systems of allocating overhead costs are through an overall entity wide scope rather than on a project by project case.

7.5.9. Summary

The project is required to reduce the amount of operating support required and the associated costs, and to provide a more reliable plant with reduced potential safety, environmental and equipment damages incidences. Therefore we conclude that the project is prudent.

Based on the proposed resourcing schedule and the provided costs, we find the hourly rates to be reasonable and therefore conclude that the project is efficient.

7.6. Swanbank Cross-Connection Pipeline

This project involves the design and construction of a cross connection to allow water to be supplied from the Luggage Point and Gibson Island Advanced Water Treatment Plants to the Swanbank Power Station.

7.6.1. Capital expenditure value

Table 29 shows the proposed cost of the Swanbank Cross Connection Pipeline Project within the 2011/12 budget.

Table 29 Capital expenditure - Swanbank Cross-Connection Pipeline

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$1,500,000
Veolia Water Business Case	$980,000-$1,200,000

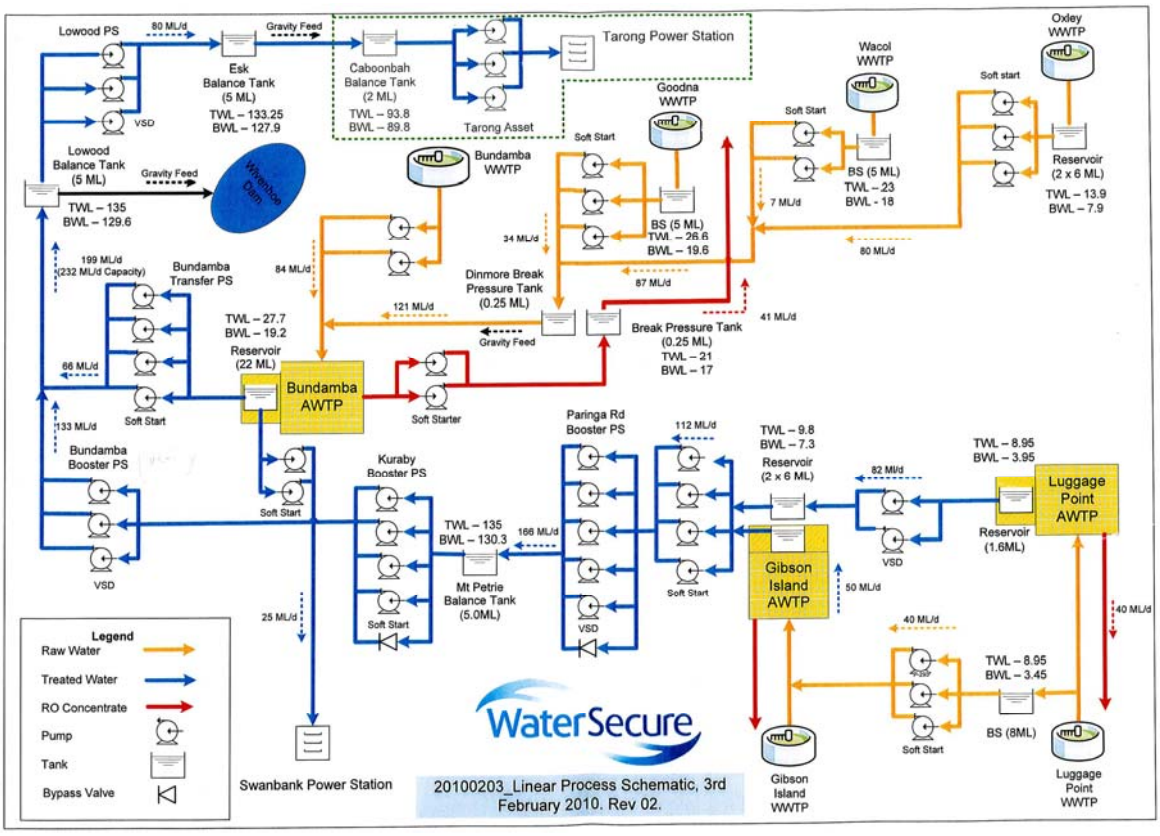
The difference between the amount quoted in the Veolia Water business case and the budget submitted to the Authority is assumed to be WaterSecure's internal costs.

7.6.2. Project description

This project involves the design and construction of a cross connection to allow water to be supplied from the Luggage Point AWTP to the Swanbank Power Station. Under normal operating conditions there is no cross connection and the Swanbank Power Station is supplied by Bundamba Advanced Water Treatment Plant. **Figure 7** shows a schematic of WaterSecure's purified recycled water network.

As discussed in Veolia Water's Change Proposal, during the initial scope of works for the Western Corridor Recycled Water Scheme a cross connection was included. However, during later designs the cross connection was removed as it was assumed that Swanbank Power Station would have an adequate supply from Bundamba and from pre-existing sources. In December 2010, the Queensland Government announced changes to the operating strategy, where the demand for the Western Corridor Recycled Water scheme's water will be met from the Luggage Point and one of the Bundamba advanced water treatment plants. The creation of a cross connection will provide greater operational flexibility to allow the Swanbank Power Station to be supplied by up to 25ML/day from the Luggage Point Advanced Water Treatment Plant and from the Stage 1A Bundamba Advanced Water Treatment Plant.

It is understood that, following flood damage to the council water treatment plants, it has not been possible to obtain raw water for production of purified recycled water at the Bundamba Advanced Water Treatment Plant, a temporary cross connection has been installed to allow the feed of recycled water from the Luggage Point Advanced Water Treatment Plant. This project is to create a permanent cross connection in this system.



- **Figure 7 WaterSecure PRW Schematic(Source: Appendix 5, Regulatory Submission to the Queensland Competition Authority (WaterSecure, March 2011))**

7.6.3. Provided documentation

The key reference documents used for this review are:

- Regulatory Submission to the Queensland Competition Authority (WaterSecure, March 2011)
- Change Proposal: Swanbank Cross Connection Pipeline at Bundamba Advanced Water Treatment Plant (Veolia Water, 27 September 2010) including:
  - Business Case
  - Cardno Proposal
  - Budget Approval/Variation Form

7.6.4. Prudency assessment

Cost drivers

The cost driver identified for this project is efficiency. The focus of this project is to provide increased operational flexibility. No evidence of increased efficiencies (e.g. reduced pumping costs) has been identified within the attached documentation. Hence it is thought that the cost driver of compliance may be more appropriate.

We recommend that WaterSecure reconfirms the cost driver for this project as being compliance.

Decision making process

The project is currently within the initial project identification stage. A Change Proposal has been developed by Veolia Water. We understand that this is being reviewed as part of WaterSecure's processes. A business case has yet to be developed by WaterSecure.

Three options have been considered:

- Option 1 – Cross connection from Mt Petrie to the Bundamba Advanced Water Treatment Plant Product Water Tank
- Option 2 – Cross connection from Mt Petrie to the Bundamba-Swanbank pipeline
- Option 3 – Cross connection from Mt Petrie to both the Bundamba Advanced Water Treatment Plant Product Water Tank and to the Bundamba-Swanbank pipeline

Whilst three options for the cross connection layout have been considered, no options have been examined considering the 'do nothing' option, e.g. considering options for supply from pre-existing sources, as mentioned within the Change Proposal. This may have been covered within the initial options analysis undertaken by an external consultant, however this information was not presented to us at the time of the review.

Option 3 was selected as the preferred option due to increased operational flexibility. This option is essentially a combination of Options 1 and 2 and allows for two connections. One connection is to the Bundamba Advanced Water Treatment Plant Product Water Tank, where it can be on pumped to Swanbank Power Station, and the second connection is to the Bundamba-Swanbank pipeline, allowing water to be supplied by gravity. This option has increased operational flexibility as it allows for the supply to continue, even if the Bundamba Advanced Water Treatment Plant Product Water Tank is out of service.

Veolia Water's business case identities that the viability of the preferred option, Option 3, needs to be confirmed during detailed design. This includes confirmation of the ability to supply flow by gravity from Mt Petrie to the Swanbank power station under high flow scenarios when the pressure in the Mt Petrie main may be low. If gravitational flow is not possible, only a single connection to

the Bundamba Advanced Water Treatment Plant Product Water Tank is practicable, which is effectively Option 1.

The proposed delivery strategy for this project has two phases:

- Phase 1 the preparation of detailed design construction drawings
- Phase 2 the tender, construction, testing and commissioning of the new system

Veolia Water has obtained a quotation from an external consultant, Cardno, for the detailed design of the cross connection.

During the concept design phase, we would expect to see the viability of each option confirmed and then a robust financial analysis undertaken of viable options to determine the preferred option. This should include consideration of operation costs, such as pumping. We note that this is not currently shown within proposed design method documented by Cardno. However, we also note that this proposal was only based on the initial two options (Options 1 and 2). We recommend that the concept design process includes a consideration of alternative supplies to the Swanbank Power Station and, as mentioned, a financial analysis of viable options.

WaterSecure has provided supporting evidence that an additional supply is required (in addition to the Bundamba AWTP and from pre-existing sources). This information is described as follows.

We note that paragraph 8.3 (Rule) of the Queensland Water Commission South East Queensland System Operating Plan, Release 3.2 dated 2nd March 2011 states:

"*Subject to operational constraints:*

(1) CS Energy Limited shall be supplied with water sourced in accordance with the following priorities:

- *Water is to be supplied from the Western Corridor Recycled Water Scheme, before*
- *Water is to be supplied from the Warill Valley Water Supply Scheme, before*
- *Water is to be supplied from Wivenhoe Dam.*

..."

We recognise that this places a priority to supply water from the Western Corridor Recycled Water Scheme but it does not state that it should solely be supplied from the Western Corridor Recycled Water scheme and hence, in its own right, does not provide justification for additional assets in order to meet that priority preference.

However, and in addition, we have received a letter from SEQ Water Grid Manager to WaterSecure (dated 14th July 2011) detailing the requirement for this Bundamba AWTP cross

connection as part of the package of de-mobilising the Gibson Island AWTP and one stage of the Bundamba AWTP. This letter states: *"the requirement for this connection was based on advice from WaterSecure and acknowledged and accepted by the SEQ Water Grid Manager."*

We considered that this letter constitutes approval from the SEQ Water Grid Manager for this project, and therefore may be considered as an instruction for the project to be undertaken. Hence we conclude that the project is prudent under the grounds of compliance with that instruction.

Notwithstanding the above, we recommend that WaterSecure proceeds with detailed design to verify whether the selected option for the cross connection is technically feasible in respect of gravity flow.

7.6.5. Efficiency assessment

The scope of works

The scope of works is currently to construct a cross connection to supply up to 25 ML/day from the Luggage Point Advanced Water Treatment Plant to Swanbank Power Station. This will require the installation of a new section of pipeline and associated fittings and valves. It is stated that the pipe sizes will be confirmed in detailed design. It is noted that Diagram 2 shows a flow meter, however this is not included in the listed items within the business case scope of works although it is recognised that costs are provided as a range of potential costs. Nevertheless it is not clear whether a flow meter has been included in the project costs or not. The scope of works is due to be further developed during the concept and detailed design phase.

Based on the simple schematic drawings provided, the scope of work proposed is considered sufficient to create a cross connection between the Mt Petrie to the Swanbank Power Station. The sizing of the pipelines and associated valves will depend, in part, on the required flow. During concept and detailed design, we understand that flows of 25 ML/day and 50 ML/day are to be considered.

Project cost

According to the Change Proposal, the project costs for the design, construction and commissioning of Option 3 are estimated to be within the range of $980,000 to $1,200,000 ex GST (+/- 20 per cent subject to final design). This cost is broken down as shown in **Table 30**.

- **Table 30 Breakdown of project costs**

Item	Cost	Comment
Phase 1		
Detailed design: direct costs	$45,000	Based on estimate from Cardno for $45,000
Survey, geotechnical investigations and environmental survey	$35,000	Based on estimate from Cardno for a provisional sum of $35,000
Veolia Water fees	$10,400	Costs passed onto WaterSecure on a cost plus overhead recovery and profit basis
Phase 1 Total	$90,400	It is unclear whether any contingencies are also applied
Phase 2		No cost breakdown is available for phase 2.

The costs the works have been based on prices obtained from the market, however it is not clear whether this work has been competitively tendered.

As noted above, the scope of works is due to be finalised during the concept and detailed design phase. We have undertaken some high level benchmarking based on the following indicative scope:

- 150 m of DN1200 mm
- 30 m of DN800 mm MSCL pipe
- Two DN1200mm valves (presumed to be gate valves)
- One DN800 mm butterfly valve
- Three valve pits and associated flanges, bends, cabling and thrust blocks

On the basis of the scope above, we have estimated the project costs to be in the range of $0.7 million to $1.65 million. Therefore we determine that the costs at this stage of the project development, as not being projected to exceed $1.44 million, are efficient.

In order to finalise the project costs, a detailed design is required to be completed. This will determine whether the longer pipeline cross connection is required (allowing gravitation flow) or whether only a shorter connection to the Bundamba Advanced Water Treatment Plant Product Water Tank is feasible (Option 1). If the detailed design results in a reduced scope of works, an adjustment will be required to the overall budget at the end of the financial year.

7.6.6. Policies and procedures

The initial business case has been developed by Veolia Water. This has not yet been translated into WaterSecure documentation.

7.6.7. Timing and deliverability

The business case provides the following program for the works:

- Detailed design - 6 weeks
- Tender preparation, issue, response and evaluation – 4 weeks
- Construction and commissioning – 10 weeks

It is noted that long lead times for major equipment could affect the overall project time lines. However, the lead times on long lead time items such as large diameter flow meters and valves are unlikely to prevent the delivery of the project within the 2011/12 financial year.

The requirement for any shut downs should also be considered during detailed design. However, as the Advanced Water Treatment Plants are not supplying recycled water a full capacity, a planned temporary shutdown is considered to be feasible.

7.6.8. Efficiency gains

No efficiency gains have been detailed for this project.

7.6.9. Allocation of overhead costs

WaterSecure's systems of allocating overhead costs are through an overall entity wide scope rather than on a project by project basis.

7.6.10. Summary

WaterSecure has received a letter from SEQ Water Grid Manager to WaterSecure detailing the requirement for this Bundamba Advanced Water Treatment Plant cross connection as part of the package of de-mobilising the Gibson Island Advanced Water Treatment Plant and one stage of the Bundamba Advanced Water Treatment Plant. We considered that this letter constitutes approval from the SEQ Water Grid Manager for this project, and therefore may be read as an instruction for the project to be undertaken. Hence we conclude that the project is prudent under the grounds of compliance with that instruction. Notwithstanding the above, we recommend that WaterSecure proceeds with detailed design to verify whether the preferred option for the cross connection is technically feasible.

We conclude that the costs for the current scope of works are of the correct order of magnitude and are therefore efficient. Given that the current concept for design is based on a number of assumptions such as the ability for the required flow to be provided by gravity flow alone, we recommend that these assumptions be tested and verified and, in order to finalise the project costs, a detailed design is required to be completed. If the detailed design results in a reduced scope of works, an adjustment will be required to the overall budget at the end of the financial year.

7.7. Bundamba Advanced Water Treatment Plant Chemical Area Covers Project

This project is for the design and construct of permanent covers over the existing chemical storage areas of Bundamba Advanced Water Treatment Plant1A and 1B.

7.7.1. Capital expenditure value

Table 31 shows the proposed cost of the Bundamba Advanced Water Treatment Plant Chemical Area Covers project within the 2011/12 budget.

- **Table 31 Capital expenditure - Bundamba AWTP Chemical Area Covers**

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$800,000
Business Case	$816,000

7.7.2. Project description

Stage 1A and 1B of Bundamba Advanced Water Treatment Plant each have outdoor uncovered chemical storage areas. This exposes the chemical storage equipment to harsh weather conditions including extremes of temperature as well as storms and strong winds. This affects the asset integrity and life of the equipment. This also affects the quality of the chemicals, especially chemicals which are heat sensitive.

Current operational issues due to weather include:

- Sodium Hypochlorite forming chlorates due to hot weather
- Vaporisation of chemicals, in particular Hydrogen Peroxide, in dosing lines which causes problems with pumps
- Operators must frequently manually de-gas the pumps
- Operators must frequently spend the time testing and often neutralising fluids prior to pumping out bunds after rain events

Following the inclusion of Aqueous Ammonia in the 1A chemical storage area, there are additional safety concerns with vaporisation of the chemical in hot water.

WaterSecure proposes to design and construct permanent covers over the 1A and 1B chemical storage areas.

7.7.3. Provided documentation

The key reference documents used for this review are:

- Regulatory Submission to the Queensland Competition Authority March 2011
- Bundamba AWTP Chemical Storage Area Covers Project Business Case, WaterSecure dated 27th of September 2010
- Change Proposal VP33: Bundamba AWTP Chemical Area Covers Project, WaterSecure dated 6th May 2011

7.7.4. Prudency assessment

Cost drivers

WaterSecure has identified the cost driver for this project as *efficiency*.

The conclusion that this project is driven by efficiency is supported by the following evidence in that by providing a permanent cover over the chemical storage area:

- The amount of time operators must spend degassing dosing lines/pumps and pumping out bunds after rain events is reduced
- The aging and vaporisation of chemicals due to exposure to high temperatures is reduced
- The life of assets is extended by removing exposure to adverse weather and UV light
- The risk of asset damage and chemical loss due to hail/storm damage is reduced
- The OH&S risk of continually having liquid in bunds is reduced
- The frequency of repairs and maintenance is reduced
- The damage to instruments and gauges due to exposure to UV light is reduced

The above detail shows that the project is appropriately driven by efficiency.

Decision making process

An option analysis was undertaken by WaterSecure to identify the required course of action for the project. The options were:

- Option 1 - do nothing
- Option 2 - provision of permanent covers over 1A and 1B chemical storage areas.

Option 1 was deemed to involve an unacceptable level of risk therefore WaterSecure recommended that Option 2 be implemented for the following reasons:

- Estimated savings of $42,000 per year on average (excluding hidden costs)
- Increased chemical quality due to shading from direct sunlight and decreasing temperature fluctuations
- Increased operator availability for maintenance activities
- Decreased chemical wastage due to vaporisation

- Increased asset reliability and life due to protection from weather
- Reduced OH&S s risk
- Reduced cost associated with alarm related call outs when the plant is unattended.

Whilst we agree that project drivers are clearly identified and support the need for a permanent cover over the chemical storage areas, the business case has not taken into the consideration the decision to mothball Bundamba stage 1B. Further information is required to support the need for the covering of the chemical area for stage 1B given that this plant will not be used in the foreseeable future.

Based on the Veolia Water business case provided, we understand that stage 1A has a separate outdoor uncovered chemical storage area. On the basis that the covering of the chemical area for stage 1A works will not be affected by the mothballing of stage 1B, these works are considered to be prudent. However, it is recommended that the scope of works for stage 1A is reviewed in view of the mothballing of stage 1B to ascertain the exact requirements for chemical storage for stage 1A.

7.7.5. Efficiency assessment

The scope of works

The project is to design and construct covers for the chemical storage areas of Bundamba Advanced Water Treatment Plant stages 1A and 1B. This includes three separate chemical storage areas, two in stage 1A and one in stage 1B. The aim being to protect against direct sunlight and weather by constructing permanent covers over the storage areas.

A summary of the proposed scope of works is shown below:

- Design of a new permanent covers over the stage 1A and 1B chemical storage areas
- Construction of new permanent covers over the stage 1A and1B chemical storage areas
- Update of drawings related to the new permanent covers over the storage areas
- Installation/relocation of lighting protection equipment

The target completion date has been estimated for October 2011.

A description of the proposed chemical storage area covers including general specifications and dimensions can be found in **Table 31**.

- **Table 32 Tendered Lump Sum Total for Chemical Covers**

Description	LxWxH (m)	Roof Area(m^2)	No. Of Columns	Proposed Cost ($)
Plant 1A – Cover 1	62 x 10 x 6	627	18	See below
Plant 1A – Cover 2	25 x 15 x 7.5	375	8	See below
Total for Plant 1A*				**$346,220**
Plant 1B – Cover 1	71 x 10 x 6.1	791	24	$270,900
Total for Plant 1B*				**$270,900**

*please note: Cost breakdown can be found in Table 33

The design includes internal columns for the longer spans with the frame being predominately manufactured steel with metal sheeting for the roof.

Project cost

The information provided on the project costs included a breakdown of the lump sum amount of the winning tenderer. **Table 33** below outlines the various elements included in the Lump Sum total.

- **Table 33 Tendered Lump Sum Total for Chemical Covers**

Item	Description	Total
1A.01	Engineered Design Plans, Compliance and Council Qleave	$21,600
1A.02	Materials and Fabrication	$174,396
1A.03	Erection and Reseal of Bund Walls	$47,607
1A.04	Safety Issues	$26,568
1A.04	Electrical	$76,049
1B.01	Engineered Design Plans, Compliance and Council Qleave	$16,000
1B.02	Materials and Fabrication	$154,793
1B.03	Erection and Reseal of Bund	$34,750
1B.04	Safety Issues	$13,500
1B.05	Electrical	$51,857
	Sub Total	$617,120
	GST	$61,712
Total of Tendered Lump Sum		**$678,832**

SKM undertook benchmarking of a selection of the proposed costs to verify that the tender was competitively priced. The costs chosen to benchmark were items 1A.02 Materials and Fabrication and 1A.03 Erection and Reseal of Bund Walls and the similar items of stage 1B of **Table 33**. SKM independently priced these items based on the information provided within the business case and with prices sourced through Rawlinsons Australian Construction Handbook, 2010. The benchmarked costs can be found in **Table 34**.

- **Table 34 Benchmarking of Proposed Costs of Chemical Storage Area Covers 1A and 1B**

Description	Unit	Unit Rate*	Rawlinsons Estimate ($)	Tender Price ($)
Plant 1A – Cover 1				
Roofing	627 m^2	$181.2 m^2	$113,612	
Columns	108 m	$7200/tonne	$20,373	
Bund Re-seal	627 m^2	$3 m^2	$1,881	
Plant 1A – Cover 2				
Roofing	375 m^2	$181.2 m^2	$67,950	
Columns	60 m	$7200/tonne	$11,318	
Bund Re-seal	375 m^2	$3 m^2	$1,125	
Total for Materials, Fabrication, Erection and Bund Reseal – Plant 1A			**$216,260**	**$222,003**
Plant 1B – Cover 1				
Roofing	791 m^2	$181.2 m^2	$143,329	
Columns	146 m	$7200/tonne	$27,617	
Bund Re-seal	791 m^2	$3 m^2	$1,125	
Total for Materials, Fabrication, Erection and Bund Reseal – Plant 1B			**$172,071**	**$189,543**

*based on values found in Rawlinsons Australian Construction Handbook, 2010

The costs associated with the materials, fabrication, erection and the reseal of the bunds are shown to be within reasonable estimating provision. SKM considers that the prices for both Bundamba Plant 1A and 1B covers are efficient.

7.7.6. Policies and procedures

The initial business case has been developed by Veolia Water. This has not yet been translated into WaterSecure documentation.

We understand that WaterSecure has developed the following project templates for documenting the development of capital projects:

- Concept Development (Project Proposal)
- Project Definition (Initial Business Case)
- Project Procurement (Final Business Case)
- Manage the Project (Project Status Report)
- Project close Out (Acceptance Certificate and Project Review and closure Report)

We would expect to see a final business case produced by WaterSecure.

7.7.7. Timing and deliverability

The project is to be delivered within the 2011/12 financial year. The current estimate of time and dates are for the project to run from August 2011 – October 2011.

7.7.8. Efficiency gains

The preferred option estimates a saving of $42,000 annually through savings in operator labour costs and equipment replacement costs.

A summary of the estimated cost savings are shown in **Table 35**.

Table 35 Estimated cost savings

Description	Savings
Annual cost for pumping out bunds (labour)	$24,500
Annual cost for pumping out bunds (Equipment Costs)	$7,000
Annual cost for de-gassing lines/pumps	$10,400
Total Savings annually	**$42,000**

7.7.9. Allocation of overhead costs

WaterSecure's systems of allocating overhead costs are through an overall entity wide scope rather than on a project by project basis.

7.7.10. Summary

Whilst we agree that project drivers are clearly identified for the need for a permanent cover over the chemical storage areas, the business case has not taken into consideration the decision to mothball Bundamba Stage 1B. Further information is required to support the need for the covering of the chemical area for Stage 1B given that this plant will not be used in the foreseeable future.

Based on the Veolia Water business case provided, we understand that Stage 1A has a separate outdoor uncovered chemical storage area to that of Stage 1B. On the basis that the covering of the chemical area for Stage 1A works will not be affected by the mothballing of Stage 1B, these works are considered to be prudent. However, it is recommended that the scope of works for Stage 1A is reviewed in view of the mothballing of Stage 1B to ascertain the exact requirements for chemical storage for Stage 1A.

The scope of works for chemical storage area 1B is not considered prudent based on the recent decision to mothball stage 1B of the plant.

Based on benchmarking of the proposed costs of the chemical storage covers for both Stages 1A and 1B, the proposed costs are considered efficient. This is based on evidence that the costs

presented in the tender are of competitive nature and are of the right order of magnitude given the scope of works.

On the basis of the above, we suggest the following value should be adopted for the chemical storage covers for Stage 1A.

- **Table 36 Costs for chemical storage covers for Stage 1A only**

Item	Description	Total
1A.01	Engineered Design Plans, Compliance and Council Qleave	$21,600
1A.02	Materials and Fabrication	$174,396
1A.03	Erection and Reseal of Bund Walls	$47,607
1A.04	Safety Issues	$26,568
1A.04	Electrical	$76,049
Sub Total		**$346,220**
Contingency	15%	$51,933
Sub Total		**$398,153**
Fee	15%	$59,723
Total		**$457,876**

7.8. Network Storage Shed

This project is to supply a facility to allow storage of expensive network assets at Bundamba Advanced Water Treatment Plant.

7.8.1. Capital expenditure value

Table 37 shows the proposed cost of the Network Storage Shed project within the 2011/12 budget.

- **Table 37 Capital expenditure –Network Storage Shed**

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$575,000
Business Case- Network Storage Shed	$268,000
Revised cost estimate – submitted 14/07/11	$370,000

The difference between the cost within the supporting documentation and the submission to the Authority has not been explained.

7.8.2. Project description

This project is for the construction of a storage yard to facilitate the network maintenance function. This facility will be used to store spare pipe lengths and other network spares such as pit lids, pipe

fittings and valves as well as emergency response equipment. This facility will ensure stock and equipment are managed effectively and efficiently.

7.8.3. Provided documentation

The key reference documents used for this review are:

- Regulatory Submission to the Queensland Competition Authority March 2011
- Network Storage Shed Business Case, WaterSecure dated 22nd of October 2010

7.8.4. Prudency assessment

Cost drivers

Efficiency is the nominated cost driver for the project. The basis of this classification is due to the requirement of the network shed to be used to improve response to emergency situations and on the improvement of the level of storage capacity and quality of spare network assets. SKM agrees with this classification.

Decision making process

The business case prepared by Veolia Water for the Network Storage shed – proposed a two option analysis assessment.

- Option 1 - do nothing.
- Option 2 – the provision through detailed design and construction of a galvanised work shed

An initial analysis of the two options is detailed below.

Option 1 fails to address the following:

- Management of stores as equipment is being kept in shipping containers
- Equipment damaged due to weather
- The reduced life of the assets and equipment
- Risk of theft
- No onsite wash down area
- Unable to store required amount of spares
- Difficulties in controlling stock levels
- Over buying of spares due to not knowing what is in stock
- Health and Safety issues with the equipment/spares being stored incorrectly
- Deterioration and reduced life of emergency ”must have” spares

- Emergency response hindered due to all material and equipment storied in various locations

Option 2 provided the following advantages:

- Decrease the likelihood of theft
- No equipment damage
- A specific wash down area for cleaning of vehicles (seed spreading prevention)
- Designated area for storage
- Designated work area for the Network personnel
- Enhance stock holding and provide better audit controls
- Emergency spares kept in a manner that will maintain their condition thereby reducing replacement frequency and cost
- Tools and equipment condition able to be maintained thereby reducing replacement frequent and cost
- Faster response to emergency situations as everything is stored at a central location

The option analysis assessed Option 2 as the preferred option for WaterSecure. The benefits of the preferred option are listed below:

- Financial costs saving on equipment
- Faster response to emergency situations
- Safety to personnel working in the designated area

The analysis also stated that the Network Storage Shed be investigated further to reduce associated long term running costs and create a safe working environment for all staff.

We have identified that a number of the above need justification items are linked to stock control improvement. We do not consider that the method for storing stock should impact on the ability to control stock levels. In particular it should not be a contributor to the over buying of spares due to not knowing what is in stock. As such, stock control is not considered to be an adequate justification for the project. We accept, however, that if the location has insufficient security to prevent stock loss due to theft then this will impact on the ability of Veolia Water to have knowledge of stock levels. If this is the major driver then it would be appropriate that an alternative option of improving overall security levels for the site be considered.

Further, the need for additional office space for network personnel has not been adequately justified. On the basis of the lack of evidence in the form of cost savings arising from addressing issues such as stock deterioration, tools and equipment condition maintenance and cost avoided through lower cost compliance in respect of prevention of the spreading of seeds on the network to

support the project justification together with the lack of adequate justification of the need for additional office space, we find the project not to be prudent.

7.8.5. Efficiency assessment

The scope of works

The proposed solution is to construct a 26m by 26m galvanised steel storage facility with a 10m by 6m office space attached to accommodate the network personnel. The shed will be located beside the Bundamba Advanced Water Treatment Plant.

As part of the work, an access road is also proposed to allow delivery vehicles including semi trailers, access to the storage area.

The following functions are required of the network storage facility:

- All weather access by semi trailer, forklift, loader
- Parking of up to 6 vehicles
- Outdoor storage for 12 (13m) lengths of 800mm – 1450mm pipe
- UV protected storage for 6 (13m) lengths of 800mm – 1450mm pipe
- Indoor storage for operations &maintenance items such as valves, electronic parts, generators, pit pumps, welders, ladders etc.
- Adequate lighting for 24 hour access

We agree that the scope of works is sufficient to meet the project need, although as noted above, some of the project drivers are more linked to stock control issues, than for a need for a storage shed, ie difficulties in controlling stock levels and over buying of spares due to not knowing what is in stock.

Project cost

The project cost estimate, as prepared by Veolia Water, is outlined in **Table 38**:

- **Table 38 Cost Estimate for Network Storage Shed**

Item	Quantity	Unit	Rate	Total
Galvanised Shed	572	m^2	$140	$80,080
Office Space	60	m^2	$140	$8,400
Amenities	1	Item		$25,000
Electrical	1	Item		$20,000
Shelving	1	Item		$35,000
Wash down bay including interceptor pit	1	Item		$20,000
Pavement (incl. Prime seal & Asphalt)	3964	m^2	$30	$118,920
Total				**$267,580**

Source: Veolia Water Business Case: Network Shed

SKM has compared the rates provided against published rates (*Australian Construction Handbook*, Rawlinsons, 2011). Based on a comparison of published costs for a bulk storage shed (steel framed with a metal deck roof and metal clad walls) at $\$200/m^2$, the costs for the shed are reasonable. In addition, the unit costs for the pavement appear reasonable, assuming that a base course has been included.

As shown in **Table 37**, the cost submitted to the Authority for this project was $575,000. WaterSecure acknowledges the cost difference between the initial budget estimate for this project and the value of the detailed cost estimate provided to the Authority. WaterSecure states that this project has been subject to refinement and re-scoping resulting in the lower than expected direct cost estimate. WaterSecure has advised us that the detailed cost estimate provided did not include project management or contingency costs as would typically be factored into such a cost estimate. On this basis, WaterSecure has clarified the cost estimate proposed to be:

- **Table 39 Revised Cost Estimate for Network Storage Shed**

Item	Cost
Detailed project scope	$268,000
20% contingency	$53,600
Subtotal	$321,600
WaterSecure's and Veolia's project management and margin costs	$48,240
Total	$370,000

We note that this amount ($370 k) is still lower than the value submitted to the Authority.

In conclusion find the project not to be efficient.

7.8.6. Policies and procedures

The initial business case has been developed by Veolia Water. This has not yet been translated into WaterSecure documentation.

7.8.7. Timing and deliverability

The project start date is estimated for July 2011 with a 3 month program. At present no itemised program has been created, this is due to the limited information available.

However, given the simplicity of the project, we consider that a 3 month program is adequate.

7.8.8. Efficiency gains

The only efficiency gain identified includes a reduction in expenses on equipment. This would be realised through the reduction in risk of theft and the extension of asset life through appropriate storage. No information has been provided to confirm that theft has been a problem in the past.

Other gains include a shorter response time for emergency situations as the network operation group and associated equipment would be stored in the one location. No study or evidence is provided to support this benefit.

7.8.9. Allocation of overhead costs

WaterSecure's systems of allocating overhead costs are through an overall entity wide scope rather than on a project by project case.

7.8.10. Summary

The project is considered not to be prudent due to the lack of evidence of cost avoidance to support the project justification. We also find that one of the drivers, stated by WaterSecure as being the primary driver ie that of improved ability to control stock and avoid over ordering spares not to be a relevant driver for the project. In addition, inadequate information has been provided regarding the scope of works, eg additional office space for network personnel has not been adequately justified.

Whilst a revised cost estimate has been provided we note that this amount ($370 k) is still lower than the value submitted to the Authority. We therefore find the project not to be efficient as set out in WaterSecure's submission to the Authority.

7.9. High voltage fire alerts at Bundamba Advanced Water Treatment Plant

This project is a fire suppression system for the high voltage Switchroom of Bundamba Advanced Water Treatment Plant.

7.9.1. Capital expenditure value

Table 35 shows the proposed cost of the Bundamba Advanced Water Treatment Plant high voltage switchroom fire system project within the 2011/12 budget.

- **Table 40 Capital expenditure - Bundamba Advanced Water Treatment fire system**

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$300,000
Business Case	$284,000

7.9.2. Project description

This project is for a fire alert and suppression system for the high voltage switchroom located at Bundamba Advanced Water Treatment Plant. The switchroom houses the high voltage cables and switchgear for the plant, and currently has no fire alert or suppression system in place.

The purpose of the project is to supply, deliver, install and commission a fire alert and gas suppression system in the Bundamba Advanced Water Treatment Plant high voltage switchroom to reduce the risk to WaterSecure of the following:

- Loss and damage to building and electrical equipment
- Significant disruption to plant operation

7.9.3. Provided documentation

The key reference documents used for this review are:

- Regulatory Submission to the Queensland Competition Authority March 2011
- Additional change proposal: VP23 Bundamba Advanced Water Treatment Plant High Voltage Switchroom Fire System Project

The above change proposal document included the following letter and attachments:

- Attachment 1 – Project Proposal (included Budget Estimate Form)
- Attachment 2 – Budget Variation Form

7.9.4. Prudency assessment

Cost drivers

The cost driver identified for this project was compliance. The main focus of the project is to increase the safety of plant personnel and to mitigate the damage of elements imperative to plant operation. We agree that the cost driver for this project is compliance.

Decision making process

WaterSecure's decision making process included an assessment as to why a fire alert and suppression system was not included in the original contract. The defect was raised and proposed to be covered as a part of the defect management system, however the claim was rejected due to not being defined as a defect under the contract. The fire suppression system is proposed as a capital project (as stated within the Change Proposal). The reason for the omission of the fire alert and suppression system works from the original concept design and detailed works is not known.

A risk analysis was undertaken in regards to the option of “do nothing”. The Bundamba high voltage room is classed as a high risk area that is currently unprotected from fire. This conclusion was reached given damage from fire could result in:

- Significant cost to repair
- Long time to repair or replace electrical equipment
- Loss of production

The installation of the fire alert and suppression system will mitigate the risk and minimise the damage to assets and loss of production to more acceptable limits.

Veolia Water approached three subcontractors to submit a tender for the proposed system. Two tenders were submitted and the third party declined to submit due to insufficient manpower and time constraints.

7.9.5. Efficiency assessment

The scope of works

The works is principally focused on providing a reliable solution to mitigate the risk of fire within the high voltage switchroom. The work includes all electrical/control systems and installation works associated with the fire detection, alarm and suppression system at the Bundamba Advanced Water Treatment Plant main high voltage switchroom.

A summary of the scope of works is as follows:

- Fire Alarm and VESDA Detection system
- Illuminated warning signs and controls
- Smoke detectors
- Inergen gas cylinders and pipework
- Inergen gas system Sub-FIPs

In addition, the provision of an authorised medium voltage switching engineer to be present during all works within the MV switchroom is included in the project costs. This person will provide the required directions to an installation personnel in order to maintain electrical and personnel safety.

We understand from the Building Code of Australia that there is no requirement to provide a fire suppression system, in a switchroom unless:

- The room is not fire isolated from surrounding plant equipment or occupied spaces and/or
- The switchboard is supplying power to ‘life safety’ equipment ie electrical fire pumps etc

However, it is typical industry practice that high voltage switchrooms are designed and built with fire alert and suppression systems. Given that the project is industry standard, we conclude that the works are prudent.

We have reviewed of the scope of works and conclude that the system proposed by the winning tender options is sufficient and will fulfil the scope of works.

Project cost

The estimated project cost is $283,658, which is made up of sub-contractors, consultants and internal costs and overhead and profit margins as per Veolia Water's agreement with WaterSecure. The cost estimate for the high voltage switchroom fire alert and suppression system is shown in **Table 41**.

Table 41 Cost Estimate for the HV Switchroom Fire Alert and Suppression System

Item No.	Description	Lump Sum Amount (Ex. GST)
1.0 Design, Manufacture, Supply, Delivery, Install and Commission of Fire Suppression System		
1.1	HV Switchroom Fire systems – Protect Management, Engineering, Drafting, Manuals	$5,438
1.2	Supply and install – VESPA detection systems	$6,538
1.3	Supply and install – Smoke Detectors	$770
1.4	Supply and Install - Gas Suppression control equipment, Gas Cylinders and pipework	$120,195
1.5	Supply and install – Gas Suppression	Incl above
1.6	Supply and Installation – Signage, Audible and Visual Displays	$6,867
1.7	Interconnection between the risk area Control Module to the MFIP (Underground or Wireless)	$14,190
1.8	Interconnection between the Control room MFIP and PLC SCADA system	$2,187
1.9	Interconnection between the HV Switchroom Control module and the E001 MV switchgear incomer C/Bs Trip circuitry	$606
1.10	Interconnection between the HV Switchroom Control module and the E-001 MV Switchgear electrical supervision while working within the MV Switchroom	$8,824
	Sub Total	**$165,635**
2.0 Testing and Commissioning		
2.1	System Testing and commissioning	$1,795
2.2	Room Integrity Test	$1,540
3.0 Miscellaneous		
3.1	Sealing of Roof Penetrations	$2,636
4.0 Maintenance Agreement		
4.1	12 Months maintenance agreement (details of service to be provided)	$3,044
Total		**$174,650**

We have reviewed the scope of works and the associated costs. There are several alternative systems available on the market, one such option would be FM200 which could be marginally cheaper and requires less space for the gas bottles than the two systems offered, however the FM200 gas leaves a residue after discharge where as the other two systems do not. We therefore consider that the two systems offered are the most cost effective for the installation.

It is noted that the tender costs are over 12 months old, and there is likely to be a cost uplift when/if there is a retender.

Table 42 shows the project budget as per Veolia Water's Project Budget Approval form. These costs show the contingencies and the various Veolia Waters internal management fees that make up the total proposed budget for the project.

- **Table 42 Veolia Water's costs as per Project Budget Approval Form**

Item No.	Description	Lump Sum Amount (Ex. GST)
Veolia Internal Costs		
	Veolia Water Time Costs	$10,024
External Costs		
	Sub Contractors	$182,870
	Consultants	$21,592
Total Net Project Budget (including contingency and management fee)		**$283,658**

It is noted that the submission to the Authority is for $300,000. It is assumed that the cost difference is due to WaterSecure's internal costs.

Based on the information provided, we consider the costs to be efficient.

7.9.6. Policies and procedures

The initial business case has been developed by Veolia Water. This has not yet been translated into WaterSecure documentation.

7.9.7. Timing and deliverability

The estimated program for the supply, delivery and commissioning of the fire alert and gas suppression system is eight to ten weeks following the date of approval to proceed. Therefore we conclude that it would be possible to deliver the project within the 2011/12 financial year.

7.9.8. Efficiency gains

No efficiency gains have been detailed for this project.

7.9.9. Allocation of overhead costs

WaterSecure's systems of allocating overhead costs are through an overall entity wide scope rather than on a project by project basis.

7.9.10. Summary

SKM considers that it is good industry practice to install this type of system for high voltage switchboards and as such we conclude that the capital expenditure for the high voltage switchroom fire alarm and suppression system is prudent.

Based on our knowledge of fire protection systems, we consider the project costs to be efficient. The scope of works is deemed suitable for the existing plant, and the costs are based upon competitive tender rates.

7.10. Environmental Weed Hygiene Wash Down Bays

This project involves the installation of environmental weed hygiene wash down bays at Gold Coast Desalination Plant and at each of three advanced water treatment plants.

7.10.1. Capital expenditure value

Table 43 shows the proposed cost of the project. This capital expenditure is forecasted to be included within the 2011/12 budget.

- **Table 43 Capital expenditure - Bundamba Advanced Water Treatment Plant Environmental Wash Down Bays**

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$220,000

7.10.2. Project description

The key reference document used for this review is:

- Regulatory Submission to the Queensland Competition Authority March 2011

The information is limited to the proposed budget as supplied in the original submission to the Authority.

Cost driver

The stated cost driver for this project is compliance. No information has been provided to allow an assessment of whether this cost driver is correct.

The scope of works

No information has been provided in regards to the project description to allow an assessment of prudency to be undertaken.

Project cost

The proposed budget for the project is $220, 000. Currently no information has been provided on the scope of works of the project to allow an assessment of efficiency to be undertaken.

7.10.3. Summary

There is insufficient information to assess the need for the project. Hence we are unable to determine whether the project is prudent. There is insufficient information on the scope of works and the associated costs of the project to determine whether the costs are efficient.

7.11. Karawatha Forest Access Track

This project is to reinstate and upgrade the Karawatha forest access track.

7.11.1. Capital expenditure value

Table 44 shows the proposed cost of the upgrade and reinstatement of the Karawatha forest access track. This estimated cost of the project is for inclusion within the 2011/12 budget.

- **Table 44 Capital expenditure - Karawatha Forest Access Track**

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$200,000

7.11.2. Project description

The key reference document used for this review is:

- Regulatory Submission to the Queensland Competition Authority March 2011

The information is limited to the proposed budget and brief scope of works as supplied in the original submission to the Authority.

Cost driver

The stated cost driver for this project is efficiency. No information has been provided in regards to the project description to allow an assessment of whether this cost driver is correct. Information is required on the need to reinstatement and upgrade the track, including details of the resulting efficiencies.

The scope of works

The scope of works includes the supply of all equipment, services, consumables, approvals and plants to upgrade and maintain the Karawatha forest access track. No further details of the works are available, including the type and length of track.

Project cost

The proposed budget for the project is $200,000 as per the Project Budget Approval and Variation Form. The available information on the scope of works of the project is insufficient to allow an assessment of efficiency to be undertaken.

7.11.3. Summary

There is insufficient information to assess the need for the project; hence we are unable to determine whether the project is prudent. There is insufficient information on the scope of works and the associated costs of the project to determine whether the costs are efficient.

7.12. Renewals Expenditure at Bundamba Advanced Water Treatment Plant

This project is for the replacement and renewal of several key assets of the Bundamba Advanced Water Treatment Plant. Items requiring replacement include:

- Two submersible sump pumps for the microfiltration train
- Four feed mixers of the chemical dosing systems

7.12.1. Capital expenditure value

The proposed capital expenditure of the project is estimated at $169,145. **Table 45** shows the proposed cost of the renewals project within the 2011/12 budget.

- **Table 45 Capital expenditure - Bundamba Advanced Water Treatment Plant Renewals Expenditure**

Source	Capital Expenditure - 2011/12
Regulatory Submission to the QCA	$169,145
Business Case	$169,145

7.12.2. Project description

This project involves the replacement of two sump pumps and four chemical mixers within the Bundamba Advanced Water Treatment Plant.

7.12.3. Provided documentation

The key reference documents used for this review are:

- Regulatory Submission to the Queensland Competition Authority March 2011
- Veolia Water Asset Management Plan, 2010
- Attachment 3 – additional information supplied from WaterSecure to the Authority on June 2011

7.12.4. Prudency assessment

Cost drivers

WaterSecure has identified efficiency as the cost driver for this project as renewal. We agree that this cost driver is correct for this project.

Decision making process

The two sump pumps and four chemical mixers have all been subjected to the asset condition and risk assessment process outlined within Veolia Water's Asset Management Plan, with both the condition and criticality of the asset assessed.

Sump Pumps

The condition assessment of both the submersible sump pumps is as follows:

- Poor for condition (rating 5)
- Low for criticality (rating 2)

This ranks these assets as a high risk to operations. The pumps have corroded resulting in holes in the outer casing, allowing contaminated water to enter the cooling jacket. Veolia Water has estimated that this failure will cause the pump to catastrophically fail within 6 months.

Veolia Water has also stated that all other pumps of the same make have been replaced due to this issue. The pumps within Bundamba Stage 1B were replaced by the alliance as a defect, with the pumps lasting only 3.5 years.

The decision making process for assets requiring replacement include:

- *Option 1*: Do nothing – the asset will eventually fail – leading to downtime.
- *Option 2*: Replace – replacing the asset will restore the asset's function
- *Option 3*: Overhaul – this option is not economically sound as replacement parts and labour total to more than the replacement cost

Option 2 was identified as the preferred option. Veolia Water has identified that refurbishment is not considered a viable option as the failure of the protective coating and resulting short asset life are inevitable. Replacement of the volute and casing with full 316 stainless steel casing and volute is the recommended option.

Based on the provided asset condition assessments and the replacement of all other similar pumps on site due to this defect, SKM agrees that the replacement of the sump pumps, with pumps more suited to the working environment is required. Therefore this aspect of the project is prudent.

Chemical mixers

The condition assessment of the large diameter mixers is as follows:

- Fair for condition (rating 4)
- High for criticality (rating 3)

This ranks this asset as an extreme risk to operations. Veolia Water has predicted that there is severe deterioration to the mixer lining. The raw water that flows through the mixer is quite aggressive and may have damaged the mixer lining or the stationary blades. Veolia Water has identified that failures on similar units have resulted in the lining dislodging and damaging downstream assets.

The decision making process for the assets requiring replacement include:

- *Option 1*: Do nothing – if the asset integrity fails, the plant may be shutdown and be unable to receive raw water. This will severely restrict production. If the lining or stationary blades break away from the casing of the mixer they may cause significant damage to downstream assets.
- *Option 2*: Replace – replacing the asset will resolve the issue of the damaged assed and will allow the plant to run at full capacity.
- *Option 3*: Reline – relining the mixer will resolve the issue of damage to the lining. To reline the mixer, it will need to be removed and repaired off site. This will impact on plant production.

For the mixers, a detailed inspection is required to identify and confirm the asset condition. Pending these results of the inspection, Veolia Water's preferred option is Option 2. Veolia Water has stated that the

> *"determination to replace the assets will be made after the condition assessment has been completed and that the normal procedure is to assess the assets prior to the proposal to replace the asset. ... If the condition assessment determines not to replace, then we will defer this replacement by a period determined by the condition assessment. Therefore these items may be removed from the program."*

On the basis that the preferred option of replacement of the chemical mixers has been determined on an assumed asset condition, rather than a proven asset condition, the replacement of these assets

is not yet considered to be justifiable. We recommended that WaterSecure undertakes the condition assessment of these four mixers to determine the condition of the linings.

7.12.5. Efficiency assessment

The scope of works

Scope of works for the project includes the replacement of two sump pumps and four chemical mixers. Included in the scope of works is the requirement that all new assets are to be commissioned and all relevant documentation updated.

Project cost

The estimated cost for the Bundamba Advanced Water Treatment Plant renewals project are shown in **Table 46**. Each item identified as a possible renewal is shown as a line item including cost associated. The costs shown include parts and installation labour, commissioning and replacement cost of new asset. These costs have been indexed from the original construction costs as supplied by WaterSecure.

- **Table 46 Cost Estimate for the Bundamba Advanced Water Treatment Plant Renewals Project**

Item	Asset Cost
Pumps	
PMP1701 – 1A Microfiltration Tank 1 - Sump Pump	$53,264
PMP1702 – 1A Microfiltration Tank 2 – Sump Pump	$53,264
Sub Total - Pumps	**$106,528**
Mixers	
MIX0621 –Infeed Ammonium Sulphate Mixer	$15,654
MIX0622 –Infeed Sodium Hypochlroite Mixer	$15,654
MIX0631 – Goodna Infeed Ammonium Sulphate Mixer	$15,654
MIX0632 – Goodna Infeed Sodium Hypochlrite Mixer	$15,654
Sub Total – Mixers	**$62,616**
Total	**$169,145**

Given the limited knowledge available for each asset – only a high level cost estimate could be conducted.

Given that the pumps proposed:

- Are a replacement of the existing asset given refurbishment is not considered viable
- Are manufactured from 316 stainless steel to meet the required operating condition
- Are of an indicative size of a 15kW submersible pump

The costs proposed seem reasonable given the high level assessment. The size and limited details given relate to the magnitude of the costs, however the limited description of installation and commissioning process minimises the ability to accurately compare or benchmark costings. We consider the costs to be of the right magnitude, given that their origin is from the original construction costs as supplied by Water Secure.

Insufficient information is available to assess the efficiency of the mixers. Details of the diameters of the mixers are required.

7.12.6. Policies and procedures

The initial business case has been developed by Veolia Water. This has not yet been translated into WaterSecure documentation.

7.12.7. Timing and deliverability

The estimated program for the Bundamba Advanced Water Treatment Plant renewals project is proposed to run from July 2011 to September 2011. This time frame is a high level estimate given the lead times on assets and the time required for commissioning. Given the simplicity of the task, the replacement of the identified assets is considered viable within the proposed timeframe.

7.12.8. Efficiency gains

No efficiency gains have been detailed for this project. Given that the expenditure cost driver is renewal – this is to be expected.

7.12.9. Allocation of overhead costs

WaterSecure's systems of allocating overhead costs are through an overall entity wide scope rather than on a project by project basis.

7.12.10. Summary

The capital expenditure for the sump pumps for the Bundamba renewals project is considered to be prudent. The capital expenditure associated with the chemical mixers is not considered to be prudent; the replacement of the chemical mixers is based on an assumed asset condition, rather than a proven asset condition. We recommended that WaterSecure undertakes a condition assessment of these four mixers to determine the condition of the linings.

The costs associated with the sump pumps for the Bundamba renewals project are considered to be efficient. Insufficient information has been provided on the mixers to allow an assessment of efficiency. Information on the size (diameter) of mixers is required.

On the basis of the above, we suggest the sump pump costs alone are prudent and efficient costs and should be included in the regulatory budget submission.

- **Table 47 Prudent and efficient costs**

Item	Asset Cost
Prudent and efficient costs	
Sump pumps	**$106,528**
Insufficient information to assess	
Mixers	**$62,616**

7.13. Overall summary

Given the detailed assessment of each capital expenditure project in the above sections, **Table 48** shows an overview of the decisions made by SKM and a brief summary of the justifications behind our decision.

- **Table 48 Overview of prudency and efficiency of capital expenditure sample selection**

Project	Cost 2011/12	Prudent	Efficient
Bundamba SCADA Integration Program	$1,500,000	Prudent	Efficient
Swanbank cross connection pipeline	$1,500,000	Prudent	Efficient
Bundamba Advanced Water Treatment Plant – Chemical Area Storage Covers	$800,000	Not all elements are prudent	Efficient
Network Storage Shed	$575,000	Insufficient information to assess prudency and efficiency	
HV Switchroom Fire Alert System	$300,000	Prudent	Efficient
Environmental weed hygiene wash down bays	$220,000	Insufficient information to assess prudency and efficiency	
Karawatha Forrest Access Track	$200,000	Insufficient information to assess prudency and efficiency	
Bundamba Advanced Water Treatment Plant Renewals sump pumps	$106,528	Prudent	Efficient
Bundamba Advanced Water Treatment Plant Renewals - chemical mixers	$62,616	Insufficient information to assess prudency and efficiency	

For four of the eight capital projects above, insufficient information was available to establish the prudency and efficiency within the timeframes of the reviews. To enable a complete assessment, further information is required**.** We understand that one element contributing to the insufficiency of information is the timing of the review. At the time of our review, the projects had been proposed

by Veolia Water, but have not yet been reviewed by WaterSecure. It is understood that review of these projects would be undertaken to WaterSecure prior to WaterSecure finally approving the undertaking these works.

8. Conclusion

This section is a short summary and conclusion of the above report. Brief details in regards to information adequacy and the assessment of operating and capital expenditure are shown below.

8.1. Information adequacy

WaterSecure has supplied comprehensive supporting information to enable us to complete an assessment of the prudency and efficiency for a sample of operating costs. No deficiencies in the operational cost data supplied in respect of the Authority's requirements are noted.

Due to existing contractual arrangements, final budgets are not available for this review. The operating expenditure provided to the Authority is in draft form only. WaterSecure is currently undertaking a 60 working day review of the draft budgets.

Eight capital expenditure projects were selected for analysis. Information provided was limited for four of the eight projects (the Bundamba AWTP Chemical Area Covers Project, the Network Storage Shed Project, the Karawatha Forest Access Track Project, and the Environmental Weed Hygiene Wash Down Bays) with only an initial business case or change proposal from Veolia Water being available for review for these projects. Insufficient information has been received on four projects, resulting in SKM not being able to complete an assessment of prudency and/or efficiency for these projects.

Examples of the insufficiency of information provided for these four projects include:

- Limited agreement between the costs submitted to the Authority and the costs within the supporting documentation for the Bundamba AWTP – Network Storage Shed project
- Undefined scope of works, eg for the Karawatha Forest Access Track Project, no details have been provided of type or dimensions of work to be undertaken to enable a reasonable cost estimation or comparison to be made.
- Limited cost driver information regarding the justification behind the need for the capital project and limited evidence of options assessment into the appropriate design or solution to the expenditure, in particular for the Environmental Weed Hygiene Wash Down Bays Project.

8.2. Operating expenditure

Table 49 presents an overview of prudency and efficiency reviews of WaterSecure's operating expenditure.

- **Table 49 Summary of prudency and efficiency of operating costs**

Project	Cost 2011/12	Prudency	Efficiency
Operational project management Bundamba AWTP Luggage Point AWTP Gibson Island AWTP Network	 $2,480,484 $2,037,616 $369,720 $1,751,740	Prudent	Efficient
Employee Costs Bundamba AWTP Luggage Point AWTP Gibson Island AWTP	 $2,143,000 $1,856,000 $347,000	Prudent	Efficient
Plant Defects Luggage Point AWTP	 $3,200,000	Prudent	Efficient
Mothballing Costs Gibson Island AWTP	 $1,626,906	Prudent	Efficient
Repairs and Maintenance Network Tugun Desalination Plant	 $1,679,000 $4,660,000	Prudent	Efficient
Electricity Tugun Desalination Plant	 $4,882,708	Prudent	Efficient
Overheads Business Services Operational Services	 $8,134,883 $5,151,958	Prudent	Efficient

We have assessed all of the expenditure in our operating cost sample to be prudent. We also consider the expenditure to be efficient with the following qualification: efficient expenditure for Mothballing Gibson Island is $1,534,647.

8.2.1. Recommendations

We see a future opportunity for efficiency gains in WaterSecure's repairs and maintenance program through greater engagement with the Water Grid Manager. For example, the Water Grid Manager can advise on the length of time the water grid can operate efficiently with a particular advanced water treatment plant offline. The time period may be sufficient to allow for the procurement and installation of an asset due to breakdown. The change to 'run to fail' from the current 'preventative maintenance' strategy has the potential to generate cost savings.

We recommend that WaterSecure engages with the Water Grid Manager early in the development of its maintenance programs and show evidence that the above maintenance strategy has been considered for future regulatory assessments.

We recognise that WaterSecure (and other Grid Entities) are still very much is a transition phase. The number of staff currently employed in the Operational Service division is a reflection of the need for WaterSecure to fully understand newly acquired assets from water reforms. Following this initial peak in workload we recommend that staffing levels are reviewed by WaterSecure to be consistent with company requirements.

8.3. Capital expenditure

An overview of the prudency and efficiency of each capital expenditure project is shown below in **Table 50**. A brief justification of the assessment is included within the summary column.

- **Table 50 Overview of prudency and efficiency of capital expenditure projects**

Project	Cost 2011/12	Prudent	Efficient
Bundamba SCADA Integration Program	$1,500,000	Prudent	Efficient
Swanbank cross connection pipeline	$1,500,000	Prudent	Efficient
Bundamba Advanced Water Treatment Plant – Chemical Area Storage Covers	$800,000	Not all elements are prudent	Efficient
Network Storage Shed	$575,000	Insufficient information to assess prudency and efficiency	
HV Switchroom Fire Alert System	$300,000	Prudent	Efficient
Environmental weed hygiene wash down bays	$220,000	Insufficient information to assess prudency and efficiency	
Karawatha Forrest Access Track	$200,000	Insufficient information to assess prudency and efficiency	
Bundamba Advanced Water Treatment Plant Renewals sump pumps	$106,528	Prudent	Efficient
Bundamba Advanced Water Treatment Plant Renewals - chemical mixers	$62,616	Insufficient information to assess prudency and efficiency	

The following projects have been assessed as prudent and efficient:

- **Bundamba SCADA Integration Program**
  - Prudency – The project is required to reduce the amount of operating support required and the associated costs, and to provide a more reliable plant with reduced potential safety, environmental and equipment damage incidences. Therefore we conclude that the project is prudent.
  - Efficiency – Based on the proposed resourcing schedule and the provided costs, we find the hourly rates to be reasonable and therefore conclude that the project is efficient.

- **Swanbank Cross-Connection Pipeline**
  - Prudency – WaterSecure has received a letter from SEQ Water Grid Manager to WaterSecure detailing the requirement for this Bundamba AWTP cross connection as part of the package of de-mobilising the Gibson Island AWTP and one stage of the Bundamba AWTP. We considered that this letter constitutes approval from the SEQ Water Grid Manager for this project, and therefore may be read as an instruction for the project to be undertaken. Hence we conclude that the project is prudent under the grounds of compliance with that instruction. Notwithstanding the above, we recommend that WaterSecure proceeds with detailed design to verify whether the preferred option for the cross connection is technically feasible.
  - Efficiency – We conclude that the costs for the current scope of works are of the correct order of magnitude and are therefore efficient. Given that the current concept for design is based on a number of assumptions such as the ability for the required flow to be provided by gravity flow alone, we recommend that these assumptions be tested and verified and, in order to finalise the project costs, a detailed design based is required to be completed. If the detailed design results in a reduced scope of works, an adjustment will be required to the overall budget at the end of the financial year.
- **Bundamba AWTP – HV Switchroom Fire Alert System**
  - Prudency – Whilst we question the reasons behind why the works were not included in the original concept design given industry standards, we believe it is typical industry practice to install this type of system for high voltage switchboards and as such we conclude that the capital expenditure for the high voltage switchroom fire alarm and suppression system is prudent.
  - Efficiency – Based on our knowledge of fire protection systems, we consider these costs to be efficient. The scope of works is deemed suitable for the existing plant, and the costs are based upon competitive tender rates.

For the following projects, insufficient information has been provided to assess the prudency and efficiency of the works:

- **Bundamba AWTP – Chemical Area Storage Covers**
  - Prudency – Whilst we agree that project drivers are clearly identified for the need for a permanent cover over the chemical storage areas, the business case has not taken into consideration the decision to mothball Bundamba Stage 1B. Further information is required to support the need for the covering of the chemical area for Stage 1B given that this plant will not be used in the foreseeable future. Based on the Veolia business case provided, we understand that Stage 1A has a separate outdoor uncovered chemical storage

areas to that of Stage 1B. On the basis that the covering of the chemical area for Stage 1A works will not be affected by the mothballing of Stage 1B, these works are considered to be prudent. However, it is recommended that the scope of works for Stage 1A is reviewed in view of the mothballing of Stage 1B to ascertain the exact requirements for chemical storage for Stage 1A. The scope of works for chemical storage area 1B is not considered prudent based on the recent decision to mothball Stage 1B of the plant.

- Efficiency – Based on benchmarking of the proposed costs of the chemical storage covers for both Stages 1A and 1B, the proposed costs are considered efficient. This is based on evidence that the costs presented in the tender are of competitive nature and are of the right order of magnitude given the scope of works.

- **Network Storage Shed**
  - Prudency – The project is considered not to be prudent due to the lack of fiscal evidence demonstrating costs savings arising from protection of stock to support the project justification. We also find that one of the drivers stated by WaterSecure as being the primary driver, ie that of improved ability to control stock and avoid over ordering spares, not to be a relevant driver for the project. In addition, inadequate information has been provided regarding the scope of works, eg additional office space for network personnel has not been adequately justified.
  - Efficiency – Whilst the costs submitted in the supporting documentation are reasonable and in line with industry norms, the costs in the supporting documentation are less than the cost submitted to the Authority for this project. Whilst a revised cost estimate has been provided we note that this amount ($370 k) is still lower than the value submitted to the Authority. We therefore find the project not to be efficient.
- **Tugun Desalination Plant – Environmental Hygiene Wash Down Bund**
  - There is insufficient information to assess the need for the project, hence we are unable to determine whether the project is prudent.
  - There is insufficient information on the scope of works and the associated costs of the project to determine whether the costs are efficient.
- **Karawatha Forest Track Access**
  - There is insufficient information to assess the need for the project, hence we are unable to determine whether the project is prudent.
  - There is insufficient information on the scope of works and the associated costs of the project to determine whether the costs are efficient.
- **Bundamba AWTP – Renewals Expenditure**
  - Prudency – The capital expenditure for the sump pumps for the Bundamba renewals project is considered to be prudent. The capital expenditure associated with the chemical

mixers is not considered to be prudent; the replacement of the chemical mixers is based on an assumed asset condition, rather than a proven asset condition. We recommended that WaterSecure undertakes the condition assessment of these four mixers to determine the condition of the linings.

- Efficiency – The costs associated with the sump pumps for the Bundamba renewals project are considered to be efficient. Insufficient information has been provided on the mixers to allow an assessment of efficiency. Information on the size (diameter) of mixers is required for this assessment to be completed.

For a number of the capital projects above, insufficient information was available to establish the prudency and efficiency within the timeframes of the reviews. To enable a complete assessment, further information is required, as described above. We understand that one element contributing to the insufficiency of information is the timing of our review. At the time of our review, the above projects had been proposed by Veolia Water, but have not yet been reviewed by WaterSecure. As such, we understand that the costs that we have reviewed are not necessarily the final costs that will be incorporated into the budget.

WaterSecure has stated that as these projects were at the very early stage of "identification", a high level estimate was submitted by Veolia Water to determine whether to proceed with the detailed business case development, including cost benefit analyses etc. Business cases were not yet completed by WaterSecure given the early stages of this project. It is understood that the completion of business cases would be undertaken prior to WaterSecure finally approving the undertaking these works. Hence we conclude that we have insufficient information to determine whether the final budget costs will be efficient.

Appendix A Terms of Reference

Component 1 - Information adequacy

1) The consultant should assess whether the information provided by each GSP:
    e) Meets the information requirements required by the Authority
    f) Is sufficient for assessing prudency and efficiency of operating and capital expenditure
2) The consultant should liaise with the GSPs at the earliest opportunity to seek any further information required to assess prudency and efficiency.
3) If the information provided by any GSP is not sufficient for assessing prudency and efficiency, the consultant should assess the capacity of each GSP to provide improved information, including:
    a) An assessment of each GSP's capacity to demonstrate prudency of capital and operating expenditure. This may include an assessment of asset performance standards, condition assessment procedures and business case processes.
    b) An assessment of each GSP's capacity to demonstrate efficiency of capital and operating expenditure. This may include an assessment of procurement processes and overhead allocation methodologies.
    c) Identification of any obstacles (internal or external to the GSPs) preventing the provision and justification of capital and operating expenditure information to the Authority.
    d) Estimation of an appropriate timeframe (if any) in which the GSPs should be reasonably expected to improve their internal information systems and processes to the standard required to meet the Authority's information requirements.

Component 2 – Prudency and Efficiency of Operating Expenditure

1) The consultant must assess whether each of the entities' operating costs from 1 July 2010 and those proposed for 2011/12 are prudent and efficient. In doing so, the consultant must:
    a) assess whether the entities' policies and procedures for Operating expenditure represent good industry practice;
    b) assess the standards of service adopted by each GSP and whether these standards have been approved by external agencies. The consultant should identify where standards of service vary from industry benchmarks;
    c) assess whether the GSPs' operating expenditure is prudent. Operating expenditure is prudent if it is required to meet the GSP's requirements relating to:
        i. its Grid Contract;
        ii. the South East Queensland System Operating Plan;

iii. the forecast required supply under the WGM's Operating Strategy; or

iv. its standard of service;

d) develop cost benchmarks for assessing the efficiency of operating expenditure. The benchmarks must be developed for total operating costs as well as the key cost categories of maintenance, electricity, chemicals and staffing. The benchmarks may be informed by other water businesses, or similar regulated utility businesses;

e) assess whether the GSPs' operating expenditure is efficient. 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. In assessing efficiency, the consultant must have regard to the conditions prevailing in relevant markets, historical trends in operating expenditure and the potential for efficiency gains or economies of scale; and

f) assess the appropriateness of any allocation methodology of overhead operating costs.

2) The assessment of prudency and efficiency of operating expenditure will review:

a) the GSPs' operating expenditure in aggregate, against available benchmarks; and

b) a representative sample, to be agreed with the Authority, of each GSP's forecast operating costs. The sample should include the top 10 per cent of operating expenditure items by value and at least 50 per cent of the total operating expenditure.

Component 3 – Prudency and Efficiency of Capital Expenditure

1) The consultant must assess the prudency of the following forecast capital expenditure:

a) Post-commissioning capital expenditure projects on drought assets to be commenced after 1 July 2011; and

b) Non-drought capital expenditure to be commenced after 1 July 2011.

2) Capital expenditure is prudent if it is required as a result of a legal obligation, growth in demand, renewal of existing infrastructure that is currently used and useful, or it achieves an increase in the reliability or the quality of supply that is explicitly endorsed or desired by the WGM.

3) The assessment of prudency of capital expenditure will review a representative sample, to be agreed with the Authority, of each GSP's forecast capital expenditure. The sample should include all capital expenditure projects exceeding $2 million in value, the top 10 per cent of capital expenditure projects by value and at least 50 per cent of total capital expenditure.

4) The consultant must assess the efficiency (cost-effectiveness) of the following forecast capital expenditure:

a) Post-commissioning capital expenditure on drought assets to be incurred after 1 July 2011, whether commenced in a previous period or not; and

b) Non-drought capital expenditure to be incurred after 1 July 2011, whether commenced in a previous period or not.

5) Capital expenditure is efficient if:

a) 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 the substitution possibilities between capital expenditure and operating expenditure and non-network alternatives such as demand management;

b) 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; and

c) 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.

6) The consultant must also assess:

a) whether the entities' policies and procedures for capital expenditure represent good industry practice. In particular, the policies and procedures must reflect strategic development plans, integrate risk and asset management planning, corporate directives, be consistent with external drivers, and incorporate robust procurement practices;

b) the deliverability and timing of the capital expenditure program, having regard to the policies and procedures for capital expenditure going forward;

c) whether the capital expenditure forecasts encompass any efficiency gains or economies of scale, and identify a prudent and efficient level of these gains with reference to appropriate benchmarks; and

d) whether corporate or overheads costs have been appropriately assigned to capital expenditure projects.

7) The assessment of efficiency of capital expenditure will review a representative sample, to be agreed with the Authority, of each GSP's forecast capital expenditure. The sample should include all capital expenditure projects exceeding $2 million in value, the top 10 per cent of capital expenditure projects by value and at least 50 per cent of total capital expenditure.

Appendix B Gap Analysis

Reference	Information Requirement	Compilance		Missing Data	Why this information is required?	Comments
1.1	**Cost Allocation Principles**					
	For 2011/12, WaterSecure's information should be disaggregated between:					
	(a) each infrastructure asset type:					
	(i) advanced water treatment plants (AWTPs) (Bundamba 1A, Bundamba 1B, Luggage Point and Gibson Island AWTPs);	Fully Compilant	🟢			information for Gibson island is Limited due to it not being at practical completion yet. Water Secure anticipates a May 2011 completion. Currently not forecasted in the Veolia Budget 2011/2012, Remaining plants have all $/ML - Appendix 1 Cost Driver Spreadsheet
	(ii) desalination plant (Tugun)	Fully Compilant	🟢			Total Cost per ML for desalination itemised including; Owners and Operation Costs - Appendix 1 Cost Driver Spreadsheet
	(iii) pipeline networks;	Fully Compilant	🟢			not disaggregated into Northern, Eastern Pipelines or any of the smaller lines. However the entire PRW system is grouped as a whole. Cost itemised into Owner and Operational Costs. - Appendix 1 Cost Driver Spreadsheet
	(b) non-infrastructure asset types including land, buildings, SCADA facilities and other infrastructure; and	Fully Compilant	🟢			Entity Overheads itemised under Fixed - Business, Technical, Executive, Operational, Corporate Services and Office Management - Appendix 1 Cost Driver Spreadsheet
	(c) drought and non-drought related capital expenditure.	Fully Compilant	🟢			Each infrastructure project is shown as either Drought or Non Drought infrastructure - Appendix 1 Cost Driver Spreadsheet
1.2	**Demand/Volume**					
	WaterSecure should provide both the volume capacity of each asset and the forecast demand volume for each asset type. This should be sufficient information to enable all operating costs to be derived on a $/ML basis for each asset identified.					
	(i) advanced water treatment plants (AWTPs) (Bundamba 1A, Bundamba 1B, Luggage Point and Gibson Island AWTPs);	Fully Compilant	🟢			AWTP Bundamba - 66ML/day Capacity, AWTP Luggage point - 66 ML/day Capacity, Gibson Island AWTP 100ML/day (filters at 50% plant capacity), - Main Report - Submission to the QCA. Note these assets are currently not running at capacity nor are they forecasted to.
	(ii) desalination plant (Tugun)	Fully Compilant	🟢			Gold Coast Desalination - 133 ML/day - note this asset is not running at capacity.
	(iii) pipeline networks;					Appendix 4 - SEQ System Operating Plan mentions the Northern Pipeline - and rules which apply . No mention however is made to the Eastern Connector pipeline - as yet.
	Forecast volume is to be confirmed against the Water Grid operational plans.					
	(i) advanced water treatment plants (AWTPs) (Bundamba 1A, Bundamba 1B, Luggage Point and Gibson Island AWTPs);	Fully Compilant	🟢			AWTP's Bundamba 1A and Gibson Island will be mothballed. Therefore no forecasted volume can be asked for. Appendix 7 - Veolia Budget Volume Instruction has the forecasted Daily and annual requirements for the power plants (WCRW scheme) and Grid requirements expected (as a minimum) for the Gold Coast Desal
	(ii) desalination plant (Tugun)	Fully Compilant	🟢			The information is provided as a "production volume for 2011/2012 budget requirements" - Appendix 7 Veolia Water Budget Volume Instruction. Its my understanding that a monthly notification is given to both entities, of a proposed water requirement from the SEQWGM - given a emergent situation a feedwater notification is produced. Which the entity has one business day to respond and agree or apply for a variation as such to the volume and timing of water required. This is then approved by the SEQWGM.
	(iii) pipeline networks;	Fully Compilant	🟢			As such the SEQ "system operating plan" outlines the rules for supply for the Northern Interconnector Pipeline - Appendix 4 - SEQ System Operating Plan. No mention however is made to the Eastern Connector pipeline - as yet.
1.3	**Capital Expenditure**					
	WaterSecure must provide details of forecast capital expenditure for 2011/12, allocated between:	Partially Compliant	🟡			See comments below.
	(a) infrastructure and non-infrastructure related items	Fully Compilant	🟢			Seperate Tabs in the Cost Driver Spreadsheet - Appendix 1 - Cost Driver Spreadsheet
	(b) drought and non-drought assets	Fully Compilant	🟢			Specified in Appendix 1 - Cost Driver Spreadsheet
	(c) new and post-completion (ongoing) assets	Fully Compilant	🟢			Current assets are costed in two groups, one being Existing_Infrastructure and New_Capex_Infrastructure - Appendix 1 - Cost Driver Spreadsheet
	Information to be provided should include: (a) asset name;	Fully Compilant	🟢			Compliant - Appendix 1
	(b) asset type or class (WTP, dam, pipeline);	Fully Compilant	🟢			Compliant - Appendix 1
	(c) asset location;	Fully Compilant	🟢			Compliant - Appendix 1

	(d) construction start date;	Fully Compilant				No info as yet - for projects entered ion the Cost Driver Information Spreadsheet - expected start dates for forecasted projects are shown in Capital Program 2011/20-12 - Appendix 15 - Capital Program_Infrastructure
	(e) date to be commissioned;	Fully Compilant				For the Existing Infrastructure - there is dates that projects were commisioned, for the infrastructure projects which are new and forecasted in costs - have no absolute start note, nor have a date of 'to be commisioned' - there is however expected start and end dates from Capital Program 2011/20-12 - Appendix 15 - Capital Program_Infrastructure
	(f) asset life;	Fully Compilant				Compliant - Appendix 1
	(g) cost of debt;	Fully Compilant				WACC set at cost of debt - Section 4.5 of main report - Submission to QCA. - as per government policy. Additional information held at section 5.3.1.1 of main submission - including forecast for the next 5 financial years. Also for book rate forecasts povided by the Queensland Treasury Corporation see Appendix 6
	(h) capital cost;	Fully Compilant				Compliant - Appendix 1
	(i) government contributions, donated and gifted assets; and	Fully Compilant				Single value figure of government contributions/grant/donation/subsidies however not broken down into repsective entity.
	(j) capitalised interest.	No Information Provided				Information in regards to the inclusion of Capitalised interest into the Capital costs- is not defined - more information/detail/itemised individual cost is required or clarified
	In reporting capital expenditure, GSPs should: (a) individually list capital expenditure projects greater than $2 million in value;	Fully Compilant				Each project is listed Separately - no 'other' category as seen yet.
	(b) capital expenditure projects less than $2 million can be aggregated on an asset by asset basis as 'Other';	Fully Compilant				Each project is listed Separately - no 'other' category as seen yet.
	(c) where the value of 'Other' projects exceeds $20 million for a single asset, disaggregate until 'Other' is less than $20 million.	Fully Compilant				Each project is listed Separately - no 'other' category as seen yet.
	Prudency					
	For the purposes of establishing the prudency of capital expenditure, each GSP must identify the proportion of capital expenditure for each item attributable to the following cost drivers:					Is this not going to be asked for when the project list is defined?
	(a) Growth					
	(b) Service					
	(c) Compliance					
	(d) Renewal					
	Efficiency		none			
	For the purpose of establishing efficient capital expenditure, information is required on:		none			This may only be provided for individual projects chosen as part of the selected sample
	(a) project outlines defined early in the development of a project, through to defined requirements for business cases and final approvals;		none			
	(b) fully supported capital expenditure approval documentation incorporating:		none			
	(i) definition of the project, background, the project need and requirement. Documentation of project need and justification should be based on the detailed discussion of viable and realistic project alternatives instead of focusing only on a “preferred option”;		none			
	(ii) 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;		none			
	(iii) description of the cost drivers for the project (e.g. demand, compliance, renewals, improvements);		none			
	(iv) where capital is constrained, explanation of why a given project is proposed over others that may adhere to the above requirements; and		none			
	(v) defined cost estimating procedures, including the treatment of contingencies.		none			
	The GSPs should address and document, preferably within one document, at least the following issues for planned projects:		none			
	(a) the drivers that triggered the project;		none			
	(b) the options which are likely to address the drivers;		none			
	(c) selection of the recommended option;		none			
	(d) the approved project cost and on what basis;		none			
	(e) assessment against the internal (e.g. economic, technical, environmental) and external (e.g. Regulatory) tests;		none			
	(f) the risks and how are they to be managed;		none			
	(g) the critical success factors for the project; and		none			
	(h) the approval process.		none			
	To achieve the required level of supporting documentation, it is expected that the GSPs will provide:					
	(a) asset registers;					
	(b) grid instructions;					
	(c) asset management strategies;					

	(d) procurement policies; and					
	(e) capital expenditure business cases and cost-benefit assessments.					
1.4	**Contributed, Donated and Gifted Assets**					
	GSPs must provide for each asset type identified, details of:					
	(a) estimated contributed, donated and gifted assets for the year ending 30 June 2012 and estimated actuals for the year ending 30 June 2011;	No Information Provided	⚫			Donations and Gifted Contributions are shown for the Current Assets and Projects - Appendix 1 - Cost Driver Spreadsheet. However for the proposed projects no column or note has been made to disclose possible payments - clarificationis required on the definitive contribution and/or in the case where no contrbution is to be had - a note made informing of the fact.
	(b) estimated capital contributions (cash and infrastructure charges) approved under the Integrated Planning Act 1997 for the year ending 30 June 2012 and estimated actuals for the year ending 30 June 2011;	No Information Provided	⚫	see above	see above	no estimated capital contributions fapproved or detailed to be approved under the integrated planning Act 1997.
	(c) estimated planning scheme policy charges received for the year ending 30 June 2012 and estimated actuals for the year ending 30 June 2011; and	No Information Provided	⚫	see above	see above	no planning scheme policy charges or details mentioned
	(d) details of the method adopted by the entity for the forecast of contributed, donated and gifted assets and capital contributions (cash and infrastructure charges).	No Information Provided	⚫	see above	see above	No details of method are inlcuded
1.5	**Operating Costs**					
	(b) cost type (variable, semi-fixed and fixed costs); and					Compliant - Appendix 1 - Cost Driver Spreadsheet
	(c) cost category - Operating costs aligned to the cost categories are summarised in Table 5.1 (see seperate tab)	Partially Compliant	🟡			see Attached Spreadsheet - minor gaps in information
	Operating Cost Efficiency					
	To facilitate assessment of the efficiency of operating costs, WaterSecure should provide details of:	Fully Compilant	🟢			Compliant - Appendix 1 - Cost Driver Spreadsheet
	(a) for variable costs, $/ML;	Fully Compilant	🟢			Compliant - Appendix 1 - Cost Driver Spreadsheet
	(b) for energy costs, kW/ML and cost per kW	Fully Compilant	🟢			Compliant - Appendix 1 - Cost Driver Spreadsheet
	(c) for labour costs, the FTEs, $/FTE, overtime hours per FTE, and cost per overtime hour;	No Information Provided	⚫			Overtime for FTE - is not shown.
	(d) for water quality monitoring, number of tests and cost per test; and	Fully Compilant	🟢			Compliant - Appendix 1 - Cost Driver Spreadsheet
	(e) for entity overheads, costs per FTE	Fully Compilant	🟢			Compliant - Appendix 1 - Cost Driver Spreadsheet

List
Fully Compilant
Partially Compliant
Fails to Comply
No Information Provided
Other

Key Asset	*Cost Driver*	*Cost Type*	*Cost category*	*Cost item*	*Provided*	*Comment*
					(Y/N/P)	
AWTP, Network, Desal		Variable	Electricity	Consumables, chemicals, cleaning chemicals	Y	
			Treatment Chemicals	Consumables, chemicals, cleaning chemicals	Y	
			Cleaning Chemicals	Consumables, chemicals, cleaning chemicals	Y	
			Sludge and Waste Disposal	Chemicals, fluoridisation	Y	
		Fixed	Employee Costs	Indirect, Direct	Y	
			External Consultants	Green energy, black energy	Y	
			Water Ananlysis	Testing, Consumables	Y	
			Repairs and Maintenance	Planned,. Projects, Unplanned, Spare Parts	Y	
			Plant Consumables	Manual, Automated, Third Party	Y	
			Rentals	Mechanical, Electrical, Civil, Labour	Y	
			Fixed Energy	Demand Charge, Other Power	Y	
			Office and IT	IT, Office Costs	Y	
			Motor Vehicles		Y	
			Other Fixed Costs	Asset Disposal, Bond Description, Depreciation, Waste Disposal, entertainment, Establishmen Costs, External Consultants, Insurance, Marketing and Promotion, Other operating Costs, Safety, Subscriptions, Travel and Accomadation	Y	
			Operational Project Management	Project management margin, Scheme office, Research and Development	Y	
		Owner Costs	Depreciation		Y	
			Finance Costs	Interest Charges	Y	
			Insurance		Y	
			Property Rates		P	
			Property Utilities		P	
			Plant Defect Maintenance	Plant Defects, Network Defects	P	
			Communications		P	
			Other		P	
Entity Wide		Overheads	Business Services	Accounting, Commercial, CFO, IT,HR	Y	
			Technical Services	Technical office, IP, Research and Development, water Quality	Y	
			Executive Services	SEO, Directors	Y	
			Operations Services	Operations office, operations, management, operations PRW, operations desalination, operations support, environment, asset management	Y	
			Corporate Services	Corporate office, legal, stakeholder relations, record management, communications, compliance management	Y	
			OfficeManagement	Rent, Insurance	Y	
		Working Capital			Y	
		Other	QWC, QCA Levies		Y	

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