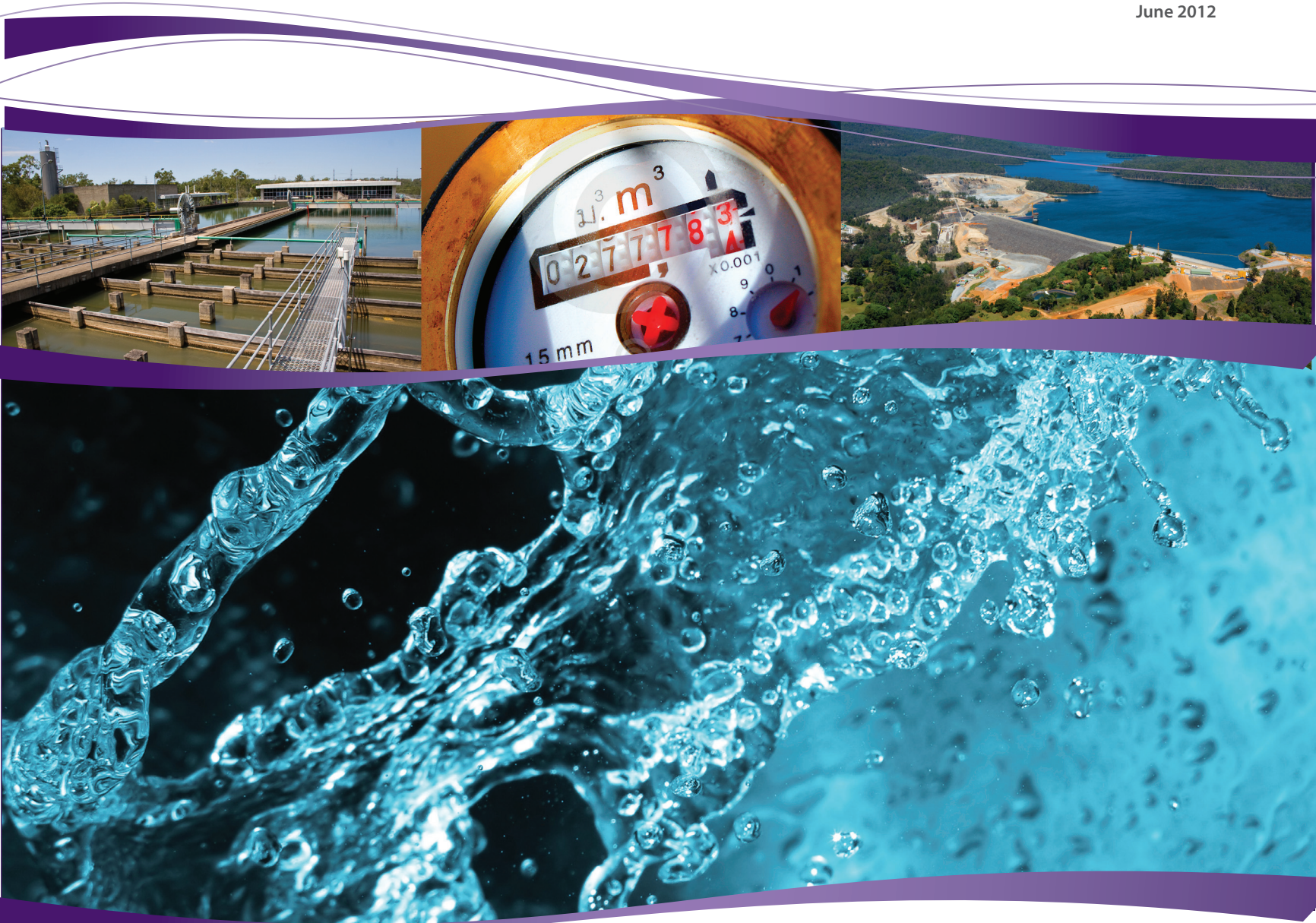


Grid Service Charges 2012-2013:
**Phase 1 - 2011/12 Fixed and
Variable Operating Expenditure
Benchmark Review**

Grid Service Provider: LinkWater

June 2012





Grid Service Charges 2012-2013

PHASE 1 – 2011/12 FIXED AND VARIABLE OPERATING EXPENDITURE REVIEW – SEQWATER

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- 7 June 2012

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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.

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1. Executive summary

The Queensland Competition Authority (the Authority) commissioned Sinclair Knight Merz Pty Ltd (SKM) to undertake a benchmarking review of the 2011/12 fixed and variable operating expenditure of the two Grid Service Providers (GSPs) - Seqwater and LinkWater. In addition SKM has been commissioned to identify potential duplications of effort relating to fixed operating costs between GSPs, their contractors and the SEQ Water Grid Manager and to identify any potential efficiency improvements and areas for potential operating cost savings as a result of the Seqwater-WaterSecure merger on 1 July 2011.

This review forms part of the Authority's process to undertake interim price monitoring for these monopoly utilities. SKM's review of the (two utilities) prudency and efficiency of capital expenditure and operating expenditure (of the two utilities) is documented in separate reports to the benchmarking review reports.

SKM has produced a report for each of the utilities. This report pertains to the benchmarking review of 2011/12 fixed and variable operating expenditure of Seqwater, the analysis of the potential duplication of effort between Seqwater, their alliance contractors and the SEQ Water Grid Manager and the assessment of potential efficiency gains arising from the Seqwater-WaterSecure merger.

1.1. Background

On 1 July 2008, the Queensland Government implemented a series of reforms in the SEQ water industry by establishing new bulk water entities, Seqwater, WaterSecure and LinkWater that together owned and operated the SEQ Water Grid. On 1 July 2011 WaterSecure merged with Seqwater to form a single bulk water supply authority called Seqwater. The bulk water transmission system is owned and operated by LinkWater.

1.2. Benchmarking Methodology

Information provided by Seqwater and the former WaterSecure for the 2011/12 price monitoring was reviewed and benchmarking metrics were developed. To gather information on comparator water utilities a number of approaches were adopted including: approaching the regulator within other jurisdictions; approaching water utilities owning and operating similar assets in other jurisdictions via their regulator; approaching water utilities directly; accessing public domain data/information; and drawing on SKM in house data/information. The benchmarking was broken down into three sections – corporate level, asset group level and asset specific level.



A number of issues were encountered during this process including a lack of availability of data and coarseness of data from reference water utilities. In contrast SKM appreciates the support provided by Seqwater and its staff in responding to its requests for information. For the corporate level, information was gathered from a number of national and international water utilities. Asset specific information from external water utilities was only provided by Ben Lomond Water in Tasmania for two dams and two water treatment plants. Due to the limited information obtained on comparator organisations in the time available to conduct this exercise, at the time of production of this draft report, a limited number of conclusions can be drawn.

1.3. Corporate level benchmarking

The corporate level benchmarking undertaken covers Seqwater as a whole. Information available for Seqwater included total expenditure, total operating costs, total variable costs and number of FTEs employed. Information collected from other national and international water utilities to be able to compare metrics included:

- Total operating expenditure (\$)
- Water supplied (ML)
- Employee costs (\$)
- Total revenue (\$)
- Number of full-time equivalents
- Non-current asset value (\$)

Making use of the above information the following metrics were developed for each of the national and international water utilities and the values compared to those of the pre and post merger Seqwater and WaterSecure:

- Total operating expenditure as a proportion of total water supplied
- Total operating expenditure as a proportion of non-current assets
- Total employee cost as a proportion of total operating expenditure
- Total operating expenditure as a proportion of total revenue
- Total revenue as a proportion of total full-time equivalents
- Total full-time equivalents as a proportion of non-current assets
- Total water supplied as a proportion of the total full-time equivalents
- Total employee cost as a proportion of the total full-time equivalents



The majority of the comparator utilities have a larger suite of water and wastewater services than Seqwater offers. Where possible, this has been taken into consideration when comparing the various metrics developed in the narrative of this report.

The conclusion from this study is that Seqwater is efficient in organisational issues and spending, has an effective workforce and utilises its asset efficiently. In short, the benchmarks indicate that Seqwater's business operations are in keeping with what would be expected of an efficient operator undertaking bulk water storage and treatment activities.

SKM notes that the majority of the organisations approached expressed an interest in participating in the benchmarking process and it is SKM's opinion that if additional time were allowed for the organisations to respond and additional effort is put into progressing responses from the organisations, a more robust benchmarking exercise will be capable of being undertaken.

1.4. Benchmarking by Asset Grouping

The asset group benchmarking covers dams, water treatment plants and advanced water treatment plants. Metrics were developed for all of Seqwater asset groups however a benchmarking comparison was only undertaken for dams and water treatment plants as no information was available on advanced water treatment plants, experiencing the same operational constraints as those of Seqwater, at the time of writing this draft report. The operating costs per GL storage capacity for the Seqwater dams (\$5,197/GL) are slightly higher than that of Ben Lomond Water's dams (\$3,637/GL). The operating cost per ML treated for the Seqwater water treatment plants (\$641/ML) are significantly higher than that of Ben Lomond Water's water treatment plants (\$153/ML).

1.5. Asset specific benchmarking

The asset specific benchmarking covers a selection of dams, water treatment plants, advanced water treatment plants and the Tugun Desalination Plant as agreed between SKM, the Authority and Seqwater at the commencement of this benchmarking exercise. Metrics were developed for all selected Seqwater assets however a benchmarking comparison was only undertaken for dams and water treatment plants as no information was available on advanced water treatment plants, experiencing the same operational constraints of those of Seqwater, at the time of writing this draft report.

The operating costs per GL for Lake McDonald (Seqwater) were compared to operating costs per GL storage capacity for Curries Dam (Ben Lomond Water). The comparison indicates that the operating costs per GL storage capacity associated with Lake McDonald (\$91,110/GL) are significantly higher than Curries Dam (\$2,411/GL). This may be attributed to differences in the type and size of dam, the type of outlet structure, the catchment type, size and condition, rainfall



within the catchment and the actual ML per year yield from the dam, much of which is unknown. The operating costs per ML water treated for Lowood (Seqwater) were compared to operating costs per ML for Mt Leslie and Reatta Road water treatment plants (Ben Lomond Water). The comparison indicates that the operating costs per ML water treated for Lowood (\$170/ML) is comparable to and of the same order as that of Mt Leslie (\$186/ML) and Reatta Road (\$134/ML).

1.6. Duplication of effort – GSPs, contractors and Water Grid Manager

A review of the roles and responsibilities of Seqwater, its alliance contractors and the SEQ Water Grid Manager was conducted to identify potential areas of duplication of effort. Organisational charts and descriptions of objectives and responsibilities for each of the positions were provided for review. This data was analysed for common objectives roles and responsibilities.

SKM identified a number of activities where sufficient potential duplication of effort exists between the Seqwater, its alliance contractors and the SEQ Water Grid Manager to warrant further investigation as set out in **Table 1**. SKM has also undertaken a subjective analysis as to the level of potential duplication of effort and hence likely cost savings arising from removal of that duplication of effort. SKM has represented this assessment by using the legend ‘L’, ‘M’ and ‘H’ to represent low, medium or high levels of duplication and hence levels of potential cost savings. This same legend may also be read as a recommended order of priority for any future investigation into actual cost savings that may be achieved through removal of any duplication of effort.

■ Table 1 Summary of areas of potential duplication of effort

Activity	SEQ Water Grid Manager	Seqwater	Veolia Water	Cost Savings Potential
Administration	✓	✓	✓	M
Agency Contract Management	✓	✓		H
Asset Engineering		✓	✓	M
Asset Maintenance EMC		✓	✓	L
Asset Maintenance I&C	✓	✓	✓	L
Asset Planning Strategic	✓	✓		H
Asset Planning Capital		✓	✓	H
Compliance Management and Regulation	✓	✓		M
Corporate Governance	✓	✓		L
Corporate Knowledge Management	✓	✓		M
Corporate Support	✓	✓		M
Environment and Sustainability		✓	✓	L
Finance	✓	✓	✓	M



Activity	SEQ Water Grid Manager	Seqwater	Veolia Water	Cost Savings Potential
Human Resource Management	✓	✓	✓	L
Information and Communication Technology	✓	✓	✓	M
Legal Services	✓	✓		L
Operations WTP		✓	✓	L
Procurement		✓	✓	L
Project Delivery		✓	✓	M
Relationship management	✓	✓		M
Research		✓	✓	L
Risk Management	✓	✓		M
Water Quality Management	✓	✓	✓	M

These areas that are assessed as having a material degree of duplication of effort between the SEQ Water Grid Manager and Seqwater are:

- Asset Planning with a strategic focus involving the SEQ Water Grid Manager’s Operations Unit and Seqwater’s Asset Delivery Department
- Water Quality Management involving the SEQ Water Grid Manager’s Operations Unit, Seqwater’s Water Quality and Environment team and Veolia Water’s Technical Process Laboratory
- Asset Maintenance I&C looked at the responsibilities for SCADA; Seqwater has a number of areas that have part responsibility for this activity with no one point of accountability for the system. The SEQ Water Grid Manager has a guidance role in the SCADA sphere
- Relationship management (public relations, stakeholder management) is another area where both organisations have developed a capability that has some duplication of effort when presenting to the public view

Some of these areas may be related to inter-organisational support for a developing business process and would need a more in-depth study to establish how each organisation and organisational team contributes to the holistic water grid business process in supporting the objectives of the water grid.

1.7. Seqwater-WaterSecure merger - potential efficiency improvements

SKM reviewed the organisational structures and roles and responsibilities of the pre merger Seqwater and WaterSecure, as well as their major alliance contracts to identify potential efficiency



improvements that may be capable of being realised post merger. The merger of Seqwater and WaterSecure is viewed as a horizontal merger and therefore has limited scope for efficiencies to be realised in the short term. Most of the potential efficiencies to be gained are considered to be of a medium to long term nature in the areas of systems and infrastructure, premises, insurances, fleet, electricity, chemical costs and sludge and waste disposal contractual amalgamation. SKM considers that material efficiency gains could be realised within the medium to long term once legacy agreements expire or are re-negotiated. Further work is required to determine the quantum of savings arising from these potential efficiency gains. The potential cost savings and expected term of realisation is summarised in **Table 2**.

■ **Table 2 Summary of potential efficiency gains, realisation periods and cost savings potential**

Activity	Realisation Period	Cost Savings Potential
Systems and infrastructure	2 to 10 years	\$\$\$
Premises	2 to 5 years	\$\$
Insurances	1 to 2 years	\$\$
Fleet	2 to 5 years	\$
Electricity	2 to 5 years	\$\$
Chemical costs	2 to 5 years	\$\$
Sludge and waste disposal	2 to 5 years	\$

In addition to the above it is inevitable that there will be a degree of duplication and overlap of activities in corporate functions common to any business activity such as finance, human resources, health and safety, corporate management.

1.8. Summary and conclusions

SKM has conducted benchmarking of Seqwater’s 2011/12 fixed and variable operating expenditure against comparator water utilities in so far as is possible with the information available at the time of writing this draft report. The information provided by Seqwater was sufficient to develop the proposed metrics. However for comparator organisations the limited information available restricted the metrics that could be developed for the benchmarking exercise. To support further studies it is recommended that an extended benchmarking study is conducted over a longer duration than the current study to allow the capture of relevant information from other water utilities to enable the development of relevant comparator metrics.

SKM has reviewed the roles and responsibilities for Seqwater, their major contractors and the SEQ Water Grid Manager to identify potential areas of duplication of effort. A number of areas have been identified where there is considered to be duplication of effort including asset planning strategic and water quality management of sufficient magnitude to warrant further and more detailed investigation.



SKM has reviewed the roles and responsibilities of the pre merger Seqwater and WaterSecure to identify potential efficiency improvements that may be capable of being realised post merger. Opportunities for post merger efficiency gains have been identified in a number of areas in the medium to long term including rationalising of premises and major procurement contracts such as electricity, chemical and sludge disposal.



2. Introduction

The Queensland Competition Authority (the Authority) is required to recommend the Grid Service Charges (GSCs) to be applied in 2012/13. GSCs represent the amount payable by the South East Queensland Water Grid Manager (SEQ Water Grid Manager) to the two separate Grid Service Providers (GSPs): Seqwater and LinkWater; for declared water services.

To assist it in this process, the Authority has appointed SKM to:

- Conduct a review of available information on operating cost categories for functional and corporate cost centres and for specific asset operation and maintenance, benchmark costs using benchmark metrics such as \$/ML storage against similar entities with similar assets, investigate for any duplication of effort and investigate for any potential efficiency gains from the Seqwater-WaterSecure merger
- Conduct a review of available information, undertake a gap analyses, conduct interviews with the GSPs, prepare information requests, undertake a review of policies and procedures and standards of service, undertake assessments of prudence and efficiency of capital and operating expenditure and conduct a review of allocation of overhead costs

The consultancy consists of two phases:

- Phase 1:
 - Fixed and variable OPEX review – SKM has been requested to review available information on operating cost categories for functional and corporate cost centres and for specific asset operation and maintenance, benchmark costs using benchmark metrics such as \$/ML storage against similar entities with similar assets, investigate for any duplication of effort, investigate for any potential efficiencies
- Phase 2:
 - Component 1: Operational Expenditure – SKM has been requested to review available information, undertake a gap analysis, undertake GSP interviews, undertake a review of policies and procedures and standards of service, undertake assessments of prudence and efficiency of operating expenditure and conduct a review of allocation of overhead costs
 - Component 2: 2011/12 Estimated Actual Capital Expenditure – SKM has been requested to review available information, undertake a gap analyses, undertake GSP interviews, undertake a review of supporting documentation and undertake assessments of prudence and efficiency of selected capital expenditure projects
 - Component 3: 2012-13 Forecast Operational Expenditure – SKM has been requested to review available information, undertake a gap analyses, undertake GSP interviews, review of supporting documentation, undertake a review of policies and procedures, undertake



assessments of prudence and efficiency of selected capital expenditure projects and conduct a review of allocation of overhead costs

2.1. Terms of reference

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:

- Costs associated with capital repayment/depreciation have been excluded from this review
- Quantification of potential duplication of effort between the SEQ Water Grid Manager, the entities and their alliance contractors

2.2. Report overview

This report addresses the benchmarking review, duplication of effort of effort (between Seqwater, the SEQ Water Grid Manager and LinkWater's alliance contractor's) review and potential merger efficiency gains (between Seqwater and WaterSecure) for Seqwater. The benchmarking review and duplication of effort review for LinkWater is contained in a separate report¹.

This report is structured as follows:

- Background
- Benchmarking methodology
- Corporate level benchmarking
- Benchmarking by asset grouping
- Asset specific benchmarking
- Duplication of effort – GSPs, contractors and SEQ Water Grid Manager
- Seqwater-WaterSecure merger – potential efficiency improvements
- Summary and conclusions

¹ Grid Service Charges 2012-2013: Phase 1 – 2011/12 Fixed and Variable Operating Expenditure Review – LinkWater, Draft, SKM, February 2012



3. Background

3.1. Water Reform and Grid Entities

On 1 July 2008, the Queensland Government implemented a series of reforms in the South East Queensland (SEQ) water industry by establishing new bulk water entities that own and operate the SEQ Water Grid. Seqwater owns all dams, groundwater infrastructure and water treatment plants in the SEQ Water Grid in SEQ while WaterSecure owned the desalination plant at the Gold Coast and the Western Corridor Recycled Water Scheme.

On 1 July 2011 Seqwater and WaterSecure merged with Seqwater to form a single bulk water supply authority. The bulk water transmission system is owned by LinkWater.

In addition to the bulk water entities, 10 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 wastewater disposal services to customers in their respective areas.

Finally, the reforms also established the roles of the Authority in respect of regulating prices and the SEQ Water Grid Manager.

3.2. The role of the Authority

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

Under the South East Queensland Water Market Rules (the Market Rules), the Authority is required to recommend the Grid Service Charges (GSCs) for the period from 1 July 2012 until 30 June 2013. The Authority is required to provide a report to the Price Regulator setting out its recommendations on GSCs and such information as is reasonably required, to support its recommendations, by no later than 30 June 2012.

GSCs are paid by the SEQ Water Grid Manager to the two 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 GSC 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 and provides a mechanism to share the costs of the SEQ Water Grid, by acting as the single buyer of bulk water services and the single seller of bulk water for urban purposes. It sells a



wholesale ‘pool’ product, reflecting the portfolio cost of supplying retailers with a defined security and quality of supply at a defined bulk supply node.

The SEQ Water Grid Manager sells potable water to the three council-owned retail-distributors at a price determined under the SEQ Bulk Water Price Path. A 10-year price path has been projected for bulk water prices, based on assumed interest rates and consumption patterns by the Queensland Government. 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.

3.4. Background to Seqwater

Seqwater is the bulk water supplier for SEQ. It owns, operates and maintains dams and their catchments, water treatment plants, advanced water treatment plants and the Tugun Desalination Plant and related infrastructure. Seqwater’s assets base includes 25 dams, 46 operational water treatment plants, 47 weirs, 14 ground-water bore fields, three advanced water treatment plants and a desalination plant across SEQ.



4. Benchmarking Methodology

This section of the report describes the process that SKM undertook to identify and benchmark the corporate wide costs (based on the 2011/12 price determination approved costs) of Seqwater against key cost parameters at relevant comparator water utilities.

To identify expenditure areas and assets to benchmark, initially, the previous benchmarking study² was reviewed. Areas to benchmark were identified as being a disaggregation of high level benchmarks previously reviewed, together with new corporate cost areas, asset grouping (ie all water treatment plant) and individual asset (ie Landers Shute Water Treatment Plant).

An internal brainstorming exercise was undertaken to determine the information requirements and potential metrics. A comprehensive list of benchmarking metrics was developed and submitted to the Authority and Seqwater for consideration and comment. Benchmarks suggested included total fixed costs (asset management)/ML water delivered and energy cost/ML water produced. A reduced list of benchmarking metrics was subsequently identified and agreed and is set out in **Table 3**.

■ Table 3 Agreed metrics

Metrics	
Corporate	Total fixed costs (administrative/functional)/ML water delivered Total fixed costs (administrative/functional)/ML water stored Total Corporate Overhead (administration/functional)/ML produced/delivered/stored Corporate (administration and functional) costs by asset type and by major asset Contractor costs by asset type and by major asset FTE(administrative/functional)/ML water delivered FTE(administrative/functional)/FTE(total) FTE(administrative/functional)/km linear asset FTE(administrative/functional)/total asset value FTE(administrative/functional)/GL storage capacity (total) And as above for each administrative/functional activity eg FTE(HR)/FTE(total)
Operational	Operational costs/total corporate (overhead costs) Major asset operating costs/asset value by asset type (storage, treatment, transportation) and by major asset Total O&M costs/ML produced/delivered Total O&M costs/ML stored Energy cost/ML water produced/delivered Energy cost/ML water stored

² Grid Service Charges 2011-2012: Assessment of Capital and Operating Expenditure, Grid Service Provider: Seqwater, July 2011 and
Grid Service Charges 2011-2012: Assessment of Capital and Operating Expenditure, Grid Service Provider: WaterSecure, July 2011



Metrics
Chemical cost/ML water produced/delivered
Chemical cost/ML water stored
Sludge handling/disposal/ML water produced/delivered
Sludge handling/disposal/ML water stored
Total maintenance costs/total asset value
Major asset maintenance costs/asset value by asset type and by major asset
Planned maintenance costs/unplanned maintenance costs by major asset

The benchmarking has been conducted at three levels: corporate level; asset group level; and specific asset level. The corporate level benchmarking looks at Seqwater as a whole, the asset group level benchmarking looks at the asset groups as a whole ie dams, water treatment plants and advanced water treatment plants, and the asset specific benchmarking addresses a number of selected individual assets from each of the asset groups. The assets selected were submitted to the Authority and Seqwater for comment and approval prior to evaluation.

A review of all provided information and information submitted to the Authority by Seqwater for the 2011/12 period for fixed and variable operating expenditure was completed and information gaps identified. To address the information gaps, information requests were sent to Seqwater. The information received from Seqwater was reviewed and metrics developed. The identified information requirements are outlined below in **Table 4**.

■ **Table 4 Information requirements**

Assets	Information Requested	Information Received
Whole of business	Organisational structure	✓
	Description of roles and responsibilities of all business units	✓
	FTEs and expenditure per business unit	✓
	Total value of all assets	✓
	Fleet costs allocated to business unit	Costs not allocated
Water Treatment Plants	Landers Shute WTP Capacity ML/day	✓
	Noosa WTP Water treated ML/day	✓
	Molendinar WTP Operational status	✓
	Mudgeeraba WTP Asset Value (replacement)	✓
	North Pine WTP Asset age	✓
	Mt Crosby East WTP FTE staff allocated to asset	FTEs not allocated
	Lowood WTP FTE contractors allocated to asset	Hours only allocated
	Esk WTP Planned and unplanned maintenance costs	✓
	All other WTP Variable costs – electricity, chemical, sludge	✓
	Allocation of corporate costs to asset	Costs not allocated



Assets	Information Requested	Information Received
Advanced Water Treatment Plants/ Desalination Plant		
Bundamba AWTP	Capacity ML/day	✓
Gibson Island AWTP	Water treated ML/day	✓
All other AWTP	Operational status	✓
Tugun Desalination Plant	Asset Value (replacement)	✓
	Asset age	✓
	FTE staff allocated to asset	FTEs not allocated
	FTE contractors allocated to asset	Hours only allocated
	Planned and unplanned maintenance costs	✓
	Variable costs – electricity, chemical, sludge	✓
	Allocation of corporate costs to asset	Costs not allocated
Dams		
North Pine Dam	Capacity (GL)	✓
Somerset Dam	Yield (ML/day)	
Wivenhoe Dam	Managed catchment area (km ²)	✓
Baroon Pocket Dam	Asset Value (replacement)	✓
Lake McDonald	Asset age	✓
All other dams	FTE staff allocated to asset	FTEs not allocated
	FTE contractors allocated to asset	Hours only allocated
	Planned and unplanned maintenance costs	✓
	Variable costs	✓
	Allocation of corporate costs to asset	Costs not allocated
Major Contractors		
	Contract (if appropriate)	✓
	Organisational structure/description of department roles and responsibilities for contractors (eg, alliance contractors)	✓
	Activities related to fixing operating costs activities of each contractor, ie asset management, planning, capital project business case development, engineering design, project management, operation and maintenance activities	✓
	Total FTE's	✓
	FTE's per activity	✓

Seqwater does not currently allocate FTEs to assets or allocate corporate costs to assets and as such was unable to provide this information. Seqwater discussed the issue of cost allocation in its 2011-12 Grid Service Charges Submission³, which states:

³ Seqwater 2011/12 Grid Service Charges Submission to the Queensland Competition Authority: Business and Regulatory Issues, March 2011



“The QWC has previously not allocated costs to various non-regulated activities on the basis that these activities are relatively minor. Seqwater has continued this approach for 2011-12.

Nonetheless, Seqwater anticipates that further work may be required for allocating these costs within the organisation as it implements its broader cost allocation approach as part of the implementation of its financial system.”

Where no information has been provided on the FTEs allocated to an asset no FTEs were included, however where the labour cost for staff has been provided the number of FTEs were calculated based on the average costs per FTE (excluding upper management) provided in Seqwater’s 2011/12 Grid Service Charges Submission.

For future investigations, to facilitate the capture of benchmarking information in relation to the allocation of overheads and FTEs to assets, there would be merit in the Authority agreeing with LinkWater and Seqwater the data to be captured and mechanism for apportionment of costs.⁴

4.1. Comparator water utility metrics

To develop metrics for comparator water utilities a number of approaches were adopted. These included approaching the regulator within other jurisdictions as such the South Australia Essential Services Commission and the Independent Pricing and Regulator Tribunal of New South Wales, approaching water utilities owning and operating similar assets in other jurisdictions via their regulator, approaching the water utilities directly, accessing public domain data/information and drawing on in house data/information.

4.1.1. Water utilities approached

Regulators in other Australian states were approached regarding their willingness and ability to provide information on assets similar to those selected to be reviewed for Seqwater. The response was generally positive however not all of the regulators had relevant information that could be provided. Following discussion and receipt of advice from the Authority only asset specific information was requested from regulators and water utilities outside SEQ. Water utilities to be approached were determined on the basis of the type of assets they own, operate and maintain. In this respect whether the water utility provided bulk services or water and wastewater direct to customers was not relevant. Requests for information were sent to:

- the Independent Pricing and Regulatory Tribunal of New South Wales (IPART)
- the Essential Services Commission Victoria (ESA VIC)

⁴ We consider that the structure and format of this FTE and component cost breakdown allocation would need to be discussed and agreed between the Authority and GSPs before Seqwater could develop systems to achieve this.



- the Office of the Tasmanian Economic Regulator (OTTER)
- South Australia Water
- Economic Regulatory Authority Western Australia (ERA WA)
- Melbourne Water

Water utilities approached directly (for example where its relevant regulator was unable to assist) included the Sydney Catchment Authority, Northern Territory Power and Water Corporation, Western Australia Water Corporation and Western Australia’s two water boards (Busselton and Aqwest). Requests for information have also been sent to Queensland’s Wide Bay Water and the Gladstone Area Water Board (GAWB).

Additionally a review of information available in the public domain from regulators and water utilities, both nationally and internationally, was conducted. However it should be noted that there is limited publicly available information that is relevant that can be used to support this exercise. Information in the public domain, particularly information provided in regulator’s reports, relates more to standards of service than operating expenditure and asset specific information.

4.1.2. Response to information requests

At the time of writing of the draft report, information was received from the Office of the Tasmanian Energy Regulator (OTTER) for Ben Lomond Water only. Ben Lomond Water provides water and wastewater services to the northern region of Tasmania. They own, operate and maintain all assets within the water and wastewater network including dams, water treatment plants, reservoirs, trunk mains and wastewater treatment plants.

Assets that information was provided on were the Mt Leslie Water Treatment Plant, Retta Road Water Treatment Plant, Curries Dam and Chimney Saddle Dam. An overview of the information provided is outlined below in **Table 5**.

■ **Table 5 Ben Lomond Water information**

Asset	Capacity	FTEs	Total OPEX (\$m)	Overhead costs (\$m)	Asset value (RAB) (\$)
Mt Leslie WTP	20 ML/day	1.5	302,842	170,332	7,955,973
Reatta Road WTP	20 ML/day	1.5	371,676	54,939	2,565,971
Curries Dam	12 GL	0.1	28,930	203,664	9,517,000
Chimney Saddle Dam	0.3 GL	0.1	15,800	13,124	613,025

The information received on Ben Lomond Water assets was at a relatively high level and therefore the metrics able to be developed were limited.



No other information had been provided from other regulators and water utilities as at the time of writing this draft report.

4.1.3. Other information sources

Information and comparative data has been obtained from a number of other sources. The majority of this data is publicly available information from local, interstate and some international sources.

The comparative data and information was compiled from numerous sources, including:

- Sydney Water - Annual Report 2011 (Sydney Water, 2011)
<http://www.sydneywater.com.au/Publications/Reports/AnnualReport/2011/downloads/download.cfm?DownloadFile=../pdf_files/full_annual_report.pdf>
- South Australian Water Corporation Annual Report: For the year ending 30 June 2011 (SA Water, 2011) <<http://www.sawater.com.au/NR/rdonlyres/47D668BC-2489-4514-ADB4-FA1A6E9B9E89/0/SAWaterAnnualReport1011.pdf>>
- Metropolitan Melbourne Water Price Review 2009: Melbourne Water Determination – Services Other Than Metropolitan Drainage and Diversion Services, 1 July 2009 – 30 June 2013 (Essential Services Commission, June 2009) <http://www.esc.vic.gov.au/NR/rdonlyres/3ACADDA8-E633-4728-97DC-339E3988514B/0/DTRMWDeterminationMetropolitanMelbournewaterpricereview2009_20090625.pdf>
- Tasmanian Water and Sewerage State of the Industry Report 2009-10 (Office of the Tasmanian Economic Regulator, March 2011) <[http://www.economicregulator.tas.gov.au/domino/otter.nsf/LookupFiles/11949_Tasmanian_Water_and_Sewerage_State_of_the_Industry_Report_2009-10_110415.pdf/\\$file/11949_Tasmanian_Water_and_Sewerage_State_of_the_Industry_Report_2009-10_110415.pdf](http://www.economicregulator.tas.gov.au/domino/otter.nsf/LookupFiles/11949_Tasmanian_Water_and_Sewerage_State_of_the_Industry_Report_2009-10_110415.pdf/$file/11949_Tasmanian_Water_and_Sewerage_State_of_the_Industry_Report_2009-10_110415.pdf)>
- Water Corporation Annual Report 2011 (Water Corporation, 2011)
<http://www.watercorporation.com.au/files/PublicationsRegister/6/2011_Annual_Report.pdf>
- June Return 2011 (Dee Valley Water, 2011)
<<http://www.deevalleywater.co.uk/article.php?id=154>>
- Annual Report and Financial Statements 2011, (South West Water, 2011)
<http://www.southwestwater.co.uk/media/pdf/j/q/110634_SWW_AR_2011_10.pdf>
- Thames Water Utilities Finance Limited: Annual Report & Financial Statements for the Period ended 31 March 2011, (Thames Water Utilities Limited, June 2011)
<<http://www.thameswater.co.uk/cps/rde/xbcr/corp/2011-twul-financials-full-year-statements-31-mar.pdf>>



- Dŵr Cymru Cyfyngedig Annual report and financial statements for the year ended 31 March 2011, (Dŵr Cymru Cyfyngedig, June 2011)
<http://www.dwrcymru.com/eng/library/company_reports/2011/dcc_statutory_accounts_2011.pdf>
- 2011 Annual Review (Wessex Water, 2011)
<<http://www.wessexwater.co.uk/WorkArea/DownloadAsset.aspx?id=7449>>
- Annual Report & Accounts 2011 (Bristol Water, May 2011)
<<http://www.bristolwater.co.uk/pdf/aboutUs/companyReports/bwAnnualReport11.pdf>>
- Comprehensive Budget Report Fiscal Year 2011: Portland, Maine (Portland Water District, 2011) <[http://www.pwd.org/pdf/2011% 20Final% 20Budget.pdf](http://www.pwd.org/pdf/2011%20Final%20Budget.pdf)>

4.1.4. Incomplete data and information

Prior to the development of the metrics a review of the data was undertaken. From this review, the following issues were identified:

- Incomplete Data – not all information requested from Seqwater has been received. This is due to limitations on the data able to be supplied, ie the information has not been collected before and hence Seqwater has no mechanism to collect and collate this data in the time available. This limits the extent of the metrics able to be developed
- Inconsistent Data – the additional information provided by the Seqwater is not consistent with information provided by Seqwater and WaterSecure individually for the 2011/12 review, with differences identified between each authority regarding cost centres and components of cost for each overall centre. As our review is based on the information received during the 2011/12 review this constrains the effectiveness of comparisons
- Coarseness of Data – the Authority instructed SKM to request information at the asset level, ie site-by-site information, rather than at Seqwater’s corporate or asset group level, from water utilities beyond LinkWater and Seqwater. This has limited the effectiveness of any comparison SKM was able to undertake on asset grouping basis and on a whole of organisation basis



5. Corporate level benchmarking

5.1. Background information

For the corporate level benchmarking exercise the information received as part of the Water Grid Service Charges Review 2011/12 assessment and responses to requests for information were reviewed by SKM. The information received previously and in response to the additional information requests were compiled to allow for the development of metrics. The complete data set is provided in **Appendix B**.

Seqwater and WaterSecure were separate utilities during the last review (Water Grid Service Charge Review 2011/12) and as such submitted separate submissions. As this assessment is based on the data submitted for the 2011/12 period, Seqwater and WaterSecure have been treated as separate organisations. A sample of the information used in the development of metrics is included below in **Table 6** for Seqwater and **Table 7** for WaterSecure.

■ Table 6 Sample information - Seqwater

Data	Value	Unit
Total operating expenditure	\$163,700,000	\$
Total fixed operating costs	\$146,800,000	\$
Total variable operating costs	\$16,900,000	\$
Dam operating costs	\$38,800,000	\$
Treatment plant operating costs	\$46,900,000	\$
Business overhead operating costs	\$26,400,000	\$
Corporate overhead operating costs	\$34,900,000	\$
Total water supplied	261,591 ML	ML
Total staff employed	466.2	FTE
Total staff employed - Administration	142.2	FTE
Total staff employed - Functional	77.0	FTE
Total staff employed - Operational	247.0	FTE

Note: The administration staff group represents those employees that support the Corporate Overhead functions, ie Health and Safety, Fleet Management, etc, while the functional staff group represents those employees that support the Business Overhead function, ie Asset Services Management, Capital Planning and Engineering.



■ **Table 7 Sample information - WaterSecure**

Data	Value	Unit
Total operating expenditure	\$86,100,000	\$
Total fixed operating costs	\$73,000,000	\$
Total variable operating costs	\$13,100,000	\$
Fixed operating costs	\$36,800,000	\$
Owner costs operating costs	\$16,100,000	\$
Overhead operating costs	\$20,100,000	\$
Total water supplied	14,562 ML	ML
Total staff employed	56.2	FTE
Total staff employed - Administration	28.6	FTE
Total staff employed - Functional	6.0	FTE
Total staff employed - Operational	21.6	FTE

Note: The administration staff group represents those employees that are employed within the Executive Services, Business Services, Corporate Services and Office Management business units, while the functional staff are those employed within the Technical Services business unit.

5.2. Metrics developed

A number of corporate level benchmarks were developed based on the information available. These relate to FTEs, fixed operating costs variable costs, total operating expenditure, water delivered, employee cost, total revenue and total full-time equivalents. The fixed operating cost activities identified by the Authority, as stated within the project brief, being asset management, capital planning, engineering services, planned and unplanned maintenance and administration, have been aligned with appropriate business units within Seqwater and WaterSecure, **Table 8**.

■ **Table 8 Alignment of fixed operating cost activities**

Fixed operating cost activity	Seqwater business unit	WaterSecure business unit
Asset management	Asset Services Management	Service provided by Veolia Water
Capital planning	Strategic Planning	Service provided by Veolia Water
Engineering services	Engineering	Service provided by Veolia Water
Planned and unplanned maintenance	WTP and Dam overheads	Service provided by Veolia Water
Administration	Fleet Management, Insurance, Rates and Taxes, Commercial & Economics, Corporate Relations, Executive Management, Finance, Health & Safety, Human Resources, Information Services, Legal Services, Rent, Management - Integration Costs	Executive Services, Business Services, Corporate Services and Office Management
Other	NA	Technical Services and Operations



The corporate metrics developed for Seqwater and WaterSecure are outlined below in **Table 9** and **Table 10** respectively. The total fixed costs are the costs associated with all aspects of the business excluding operational costs while the total corporate costs are the costs associated with administration, IT and leasing premises and operational and staff costs.

■ **Table 9 Corporate metrics - Seqwater**

Metric	Numerator	Denominator	Value	Unit
Total operating expenditure /ML water supplied	\$163,700,000	261,591 ML	625.79	\$/ML
Total fixed operating costs /ML water supplied	\$146,800,000	261,591 ML	561.18	\$/ML
Total variable operating costs /ML water supplied	\$16,900,000	261,591 ML	64.60	\$/ML
Dam operating costs/ML water supplied	\$38,800,000	261,591 ML	148.32	\$/ML
Treatment plant operating costs/ML water supplied	\$46,900,000	261,591 ML	179.29	\$/ML
Business overhead operating costs/ML water supplied	\$26,400,000	261,591 ML	100.92	\$/ML
Corporate overhead operating costs/ML water supplied	\$34,900,000	261,591 ML	133.41	\$/ML
FTE (total)/ML water supplied	466.2	261,591 ML	0.0018	FTE/ML
FTE (Asset Management)/ML water supplied	30.7	261,591 ML	0.00012	FTE/ML
FTE (Asset Management)/FTE (total)	30.7	466	0.066	Ratio
FTE (Capital Planning)/ML water supplied	6.1	261,591 ML	0.000023	FTE/ML
FTE (Capital Planning)/FTE (total)	6.1	466	0.013	Ratio
FTE (Engineering Services)/ML water supplied	40.2	261,591 ML	0.00015	FTE/ML
FTE (Engineering Services)/FTE (total)	40.2	466	0.086	Ratio
FTE (Maintenance)/ML water supplied	247.0	261,591 ML	0.00094	FTE/ML
FTE (Maintenance)/FTE (total)	247.0	466	0.53	Ratio
FTE (Administration)/ML water supplied	142.2	261,591 ML	0.00054	FTE/ML
FTE (Administration)/FTE (total)	142.2	466	0.31	Ratio

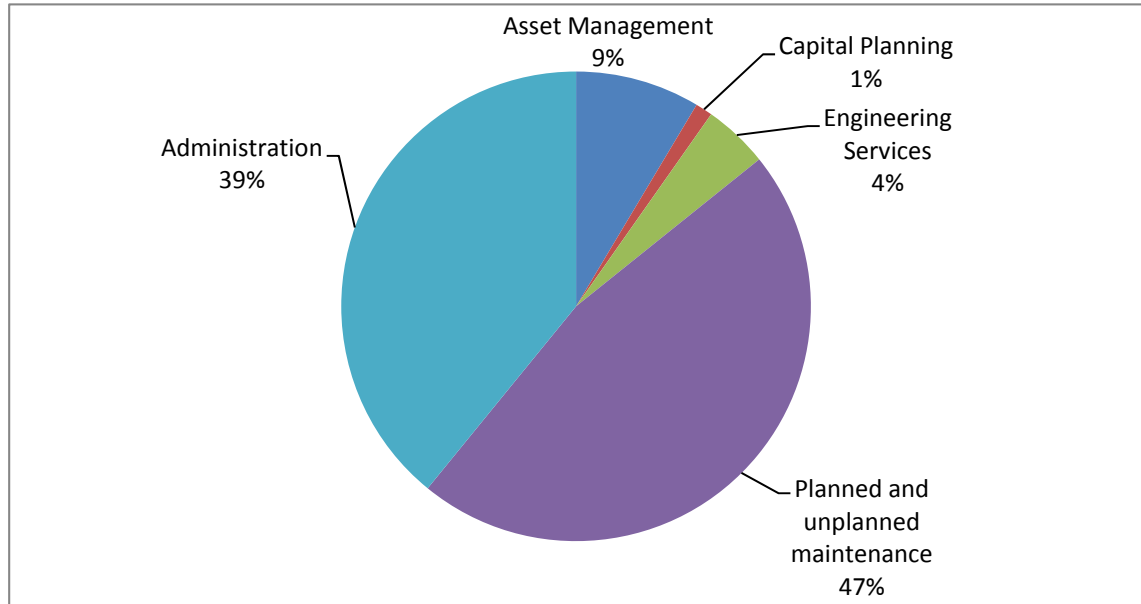


■ **Table 10 Corporate metrics - WaterSecure**

Metric	Numerator	Denominator	Value	Unit
Total operating expenditure /ML water supplied	\$86,100,000	14,562 ML	5,912.65	\$/ML
Total fixed operating costs /ML water supplied	\$73,000,000	14,562 ML	5,013.05	\$/ML
Total variable operating costs /ML water supplied	\$13,100,000	14,562 ML	899.60	\$/ML
Fixed operating - fixed costs/ML water supplied	\$36,800,000	14,562 ML	2,527.13	\$/ML
Fixed operating - owner costs/ML water supplied	\$16,100,000	14,562 ML	1,105.62	\$/ML
Fixed operating - overhead costs/ML water supplied	\$20,100,000	14,562 ML	1,380.30	\$/ML
FTE (total)/ML water supplied	56.2	14,562 ML	0.0039	FTE/ML
FTE (Asset Management)/ML water supplied	NA	14,562 ML	NA	FTE/ML
FTE (Asset Management)/FTE (total)	NA	56.2	NA	Ratio
FTE (Capital Planning)/ML water supplied	NA	14,562 ML	NA	FTE/ML
FTE (Capital Planning)/FTE (total)	NA	56.2	NA	Ratio
FTE (Engineering Services)/ML water supplied	NA	14,562 ML	NA	FTE/ML
FTE (Engineering Services)/FTE (total)	NA	56.2	NA	Ratio
FTE (Maintenance)/ML water supplied	NA	14,562 ML	NA	FTE/ML
FTE (Maintenance)/FTE (total)	NA	56.2	NA	Ratio
FTE (Administration)/ML water supplied	28.6	14,562 ML	0.002	FTE/ML
FTE (Administration)/FTE (total)	28.6	56.2	0.51	Ratio
FTE (Other)/ML water supplied	27.6	14,562 ML	0.0019	FTE/ML
FTE (Other)/FTE (total)	27.6	56.2	0.49	Ratio

Since Seqwater and WaterSecure have now been merged into a single entity, there is little value in contrasting the metrics of each water utility and as such SKM has not undertaken such an analysis.

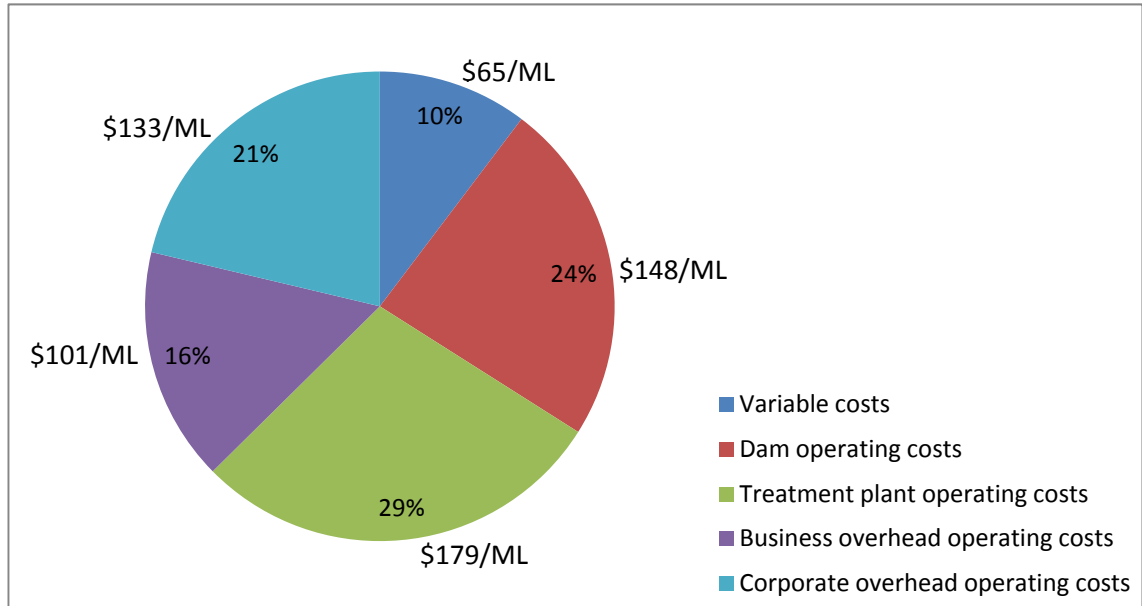
Figure 1 indicates that Seqwater's total operating costs associated with planned and unplanned maintenance account for approximately 47% of all costs with administration the next highest at over 39% of all costs.



■ **Figure 1 Total costs by activity – Seqwater**

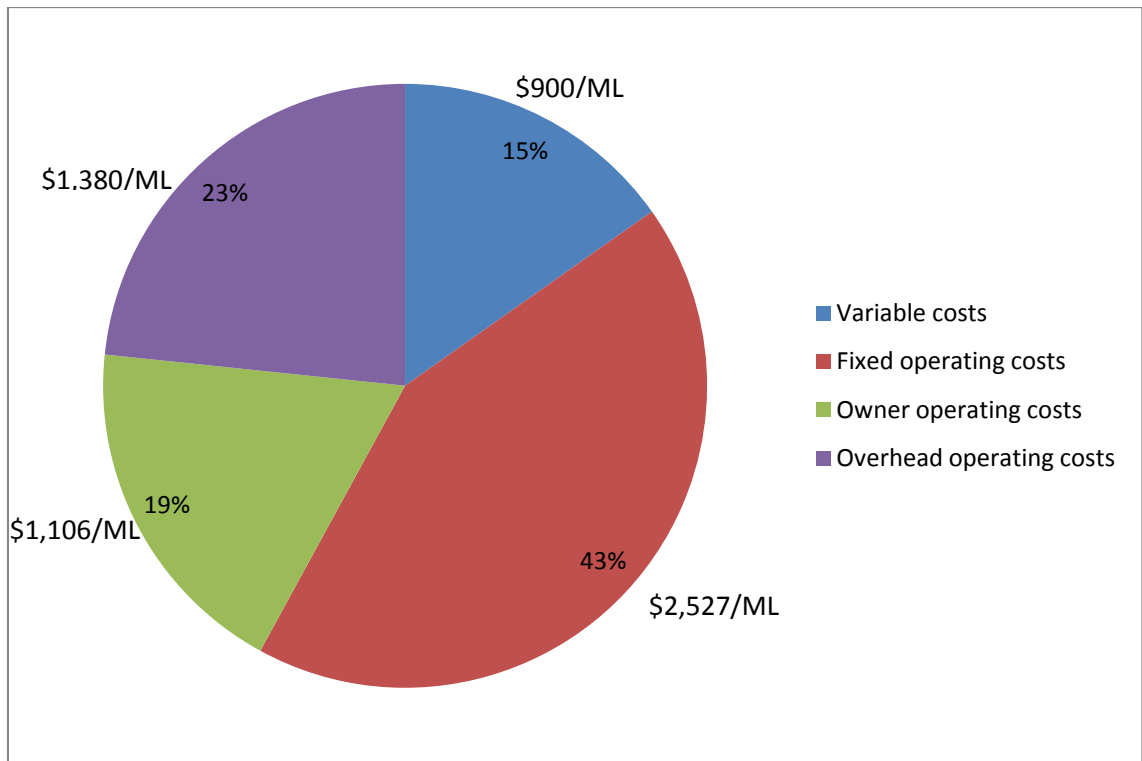
A breakdown by activity has not been presented for WaterSecure as the asset management, capital planning, engineering services, and planned and unplanned maintenance activities are undertaken by Veolia Water on behalf of WaterSecure.

Figure 2 presents the breakdown of total operating costs (variable, dam operation, treatment plant operation, business overhead and corporate overhead costs) for Seqwater as a percentage per ML water supplied. The figure indicates that the treatment plant operating costs represents the largest cost group of the organisation.



■ **Figure 2 Percentage breakdown of costs per ML water supplied - Seqwater**

Figure 3 presents a breakdown of total operating costs (variable, fixed, owner and overhead costs) for WaterSecure as a percentage per ML water supplied. The figure indicates that the fixed operating costs represent the largest cost group of the organisation.



■ **Figure 3 Percentage breakdown of operational costs per ML water supplied – WaterSecure**

5.3. Comparator water utility metrics

No corporate level cost information was requested from regulators or water utilities approached through the Authority or approached directly due to time constraints and in recognition of the type of data that may be readily available from other regulators. The publicly available information is limited to relatively high level information published in regulatory reviews and utility annual reports. Due to limited information there are “gaps” in the benchmarking information. It should also be noted that the comparison entities have different business models to those of Seqwater and WaterSecure. It is therefore anticipated that although a comparison can be made that it will require the reader to take into consideration the business model and how this relates to the business model of Seqwater and WaterSecure. SKM has based our interpretation of the data on the differences within the business model.

5.3.1. Benchmark comparison and discussion – Australian Entities

Information for a number of water utilities within other Australian states and territories were gathered, these included Melbourne Water, Ben Lomond Water, Sydney Water, the South Australian Water Corporation and WA Water Corporation. Information collected included:

- Total operating expenditure (\$)



- Water supplied (ML)
- Employee costs (\$)
- Total revenue (\$)
- Number of full-time equivalents
- Non-current asset value (\$)

The services provided by each of the utilities are outlined in **Table 11**. As all of the water utilities provide a different suite of services to their customers, the services provide by other utilities do not necessarily directly align with those provided by Seqwater. As such the metrics should not be considered as directly comparable.

■ **Table 11 Services provided by utilities**

Service	Water Utility															
	Seqwater	Sydney Water	Hunter Water	Melbourne Water	SA Water Corporation	Ben Lomond Water	Southern Water	Cradle Mountain Water	WA Water Corporation	Aqwest	Busselton Water	Power and Water	ACTEW	City West Water	South East Water	Yarra Valley Water
Water storage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Water treatment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Bulk transmission		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Re-chlorination		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
Distribution		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retail		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wastewater collection		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
Wastewater treatment		✓	✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓
Advanced water treatment	✓													✓	✓	✓
Desalination	✓	✓							✓							
Other services (eg electricity)												✓	✓			



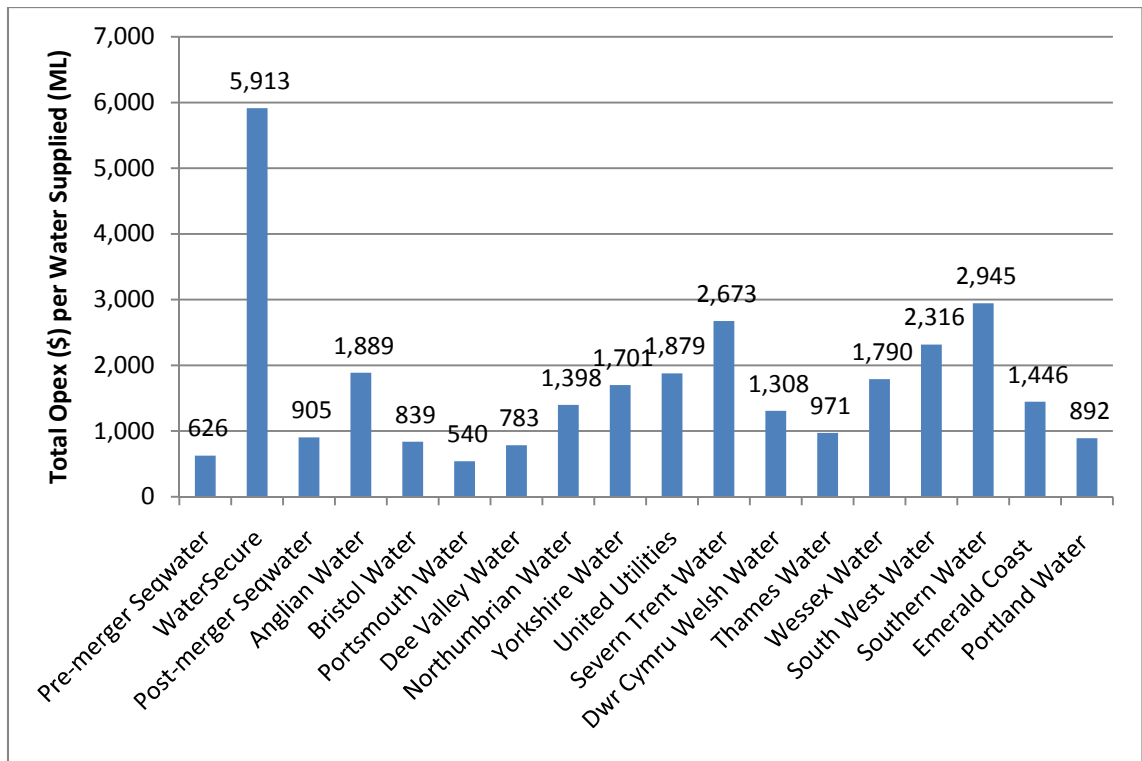
5.3.1.1. Total operating expenditure as a proportion of water supplied

SKM has developed a metric that details the proportion of the total operating expenditure to the water supplied. **Table 12**, below, presents the information used to develop the metric.

■ **Table 12 Total operating expenditure as a proportion of water supplied data**

Water utility	State	Total operating expenditure (\$)	Water supplied (ML)
Pre-merger Seqwater	QLD	163,700,000	261,591
WaterSecure	QLD	86,100,000	14,562
Post-merger Seqwater	QLD	249,800,000	276,153
City West Water	Vic	134,113,000	89,875
South East Water	Vic	372,000,000	123,251
Yarra Valley Water	Vic	376,400,000	123,476
Melbourne Water	Vic	201,400,000	351,761
SA Water Corporation	SA	456,393,000	196,666
Ben Lomond Water	Tas	33,297,000	19,158
Southern Water	Tas	76,436,000	41,517
Cradle Mountain Water	Tas	30,549,000	16,265
Water Corporation	WA	707,128,000	358,995
Aqwest	WA	6,452,011	5,690
Busselton Water	WA	3,988,073	4,222
ACTEW	ACT	106,509,000	40,914
Sydney Catchment Authority	NSW	107,992,000	416,944
Sydney Water	NSW	1,119,653,000	515,903
Hunter Water	NSW	101,910,000	73,449

The values of these proportions are visually represented in **Figure 4**. This metric provides a high-level indication to the efficiency of the various entities in respect of total costs incurred in the supply of water. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics of the other Australian entities, a lower proportion of operating expenditure to water supplied indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 4 Total operating expenditure as a proportion of water supplied - National**

Figure 4 indicates that the pre-merger and post-merger costs per ML for Seqwater are substantially lower than the majority of the reference utilities, with the exception of Busselton Water, Melbourne Water and the Sydney Catchment Authority. It is not unexpected that the costs per ML supplied for Seqwater are more comparable to Busselton Water as Busselton Water only provides water services and hence is more directly comparable to Seqwater than, say, Southern Water which provides water services and wastewater services. The significantly lower overall cost per ML for the Sydney Catchment Authority is also to be expected as this entity supplies untreated water to utilities, such as Sydney Water, for subsequent treatment and distribution to consumers and hence does not incur the costs associated with water treatment that Seqwater incurs. SKM notes that the cost/ML ratio for Melbourne Water is much lower than the majority of the reference utilities. This may be attributed to the low energy water supply system in Melbourne, ie the vast majority of the water supply system is gravity fed, and therefore requires less energy and hence lower operating expenditure that a system that relies more heavily on pumping.

The pre-merger cost per ML associated with the operation of WaterSecure are much higher than those of reference utilities; this again is to be expected and is due to nature of the business, WaterSecure’s asset base (high relative cost advanced water treatment plants and a desalination plant) as compared to the asset base of the reference utilities (conventional water treatment



facilities) and the quantity of water supplied over the period (ie not all of WaterSecure's plants were operational during the assessment period).

SKM notes that the comparator water entities excluding Sydney Catchment Authority have a full suite of water services as indicated in Table 11 and it is therefore expected that the proportion of total operating expenditure to water supplied should be proportionally higher for these entities than for an entity such as Seqwater which deals with storage and treatment of bulk water only. Apart from Melbourne Water, Busselton Water and Sydney Catchment Authority the operating cost per ML metric developed for Seqwater is lower than that for the other comparator entities.

SKM considers that, based on the above information, the post-merger Seqwater total operating expenditure as a proportion of water supplied is consistent with those of an efficient operator.

5.3.1.2. Total operating expenditure as a proportion of non-current assets

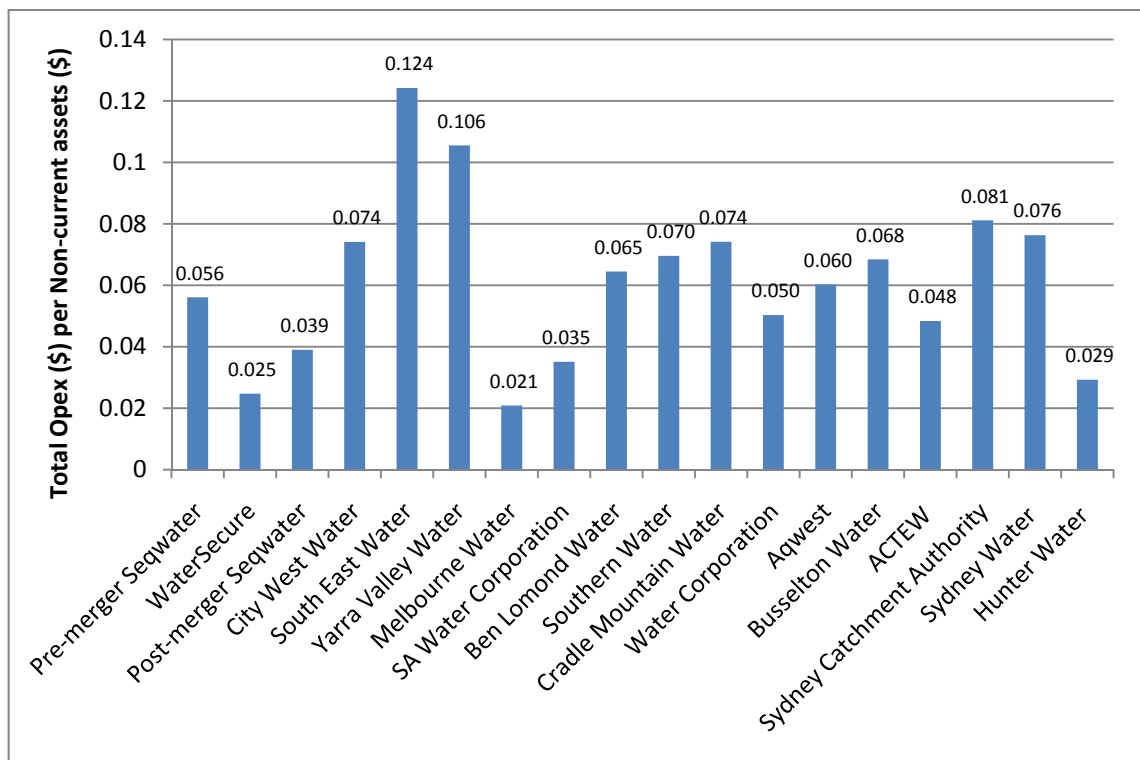
SKM has developed a metric that compares the proportion of the total operating expenditure to the non-current assets (as represented by property, plant and equipment). **Table 13**, below, presents the information used to develop this metric.

■ Table 13 Total operating expenditure as a proportion of non-current assets data

Water utility	State	Total operating expenditure (\$)	Non-current assets (\$)
Pre-merger Seqwater	QLD	163,700,000	2,918,672,000
WaterSecure	QLD	86,100,000	3,479,532,247
Post-merger Seqwater	QLD	249,800,000	6,398,204,247
City West Water	Vic	134,113,000	1,809,910,000
South East Water	Vic	372,000,000	2,995,095,000
Yarra Valley Water	Vic	376,400,000	3,566,300,000
Melbourne Water	Vic	201,400,000	9,644,800,000
SA Water Corporation	SA	456,393,000	13,004,403,000
Ben Lomond Water	Tas	33,297,000	516,218,000
Southern Water	Tas	76,436,000	1,098,503,000
Cradle Mountain Water	Tas	30,549,000	411,763,000
Water Corporation	WA	707,128,000	14,060,000,000
Aqwest	WA	6,452,011	107,058,158
Busselton Water	WA	3,988,073	58,263,514
ACTEW	ACT	106,509,000	2,199,941,000
Sydney Catchment Authority	NSW	107,992,000	1,330,920,000
Sydney Water	NSW	1,119,653,000	14,675,087,000
Hunter Water	NSW	101,910,000	3,481,657,000



The values of this metric are visually represented in **Figure 5**. The metric provides a high-level indication of the operating expenditure efficiency of the various entities in maintaining their assets. In interpreting the results for Seqwater and Water Secure and comparing them with the metrics of the other Australian entities, a lower proportion of operating expenditure to non-current-assets indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient in maintaining those assets (assuming that that level to which assets are maintained is consistent, that the assets are being maintained correctly and not simply being allowed to decline in condition).



■ **Figure 5 Total operating expenditure as a proportion of non-current assets - National**

Figure 5 indicates that the pre-merger and post-merger ratios of total operating expenditure as a proportion of asset value for Seqwater are comparable to the majority of the comparator utilities. The pre-merger ratio for WaterSecure is one of the lowest when compared to the comparator utilities. This is not unexpected due to the high value asset base (ie advanced water treatment plants and a desalination plant) of WaterSecure and the fact that the assets are new.

SKM notes that the total operating expenditure to asset value ratio for Melbourne Water is much lower than the majority of the reference utilities. This may be attributed, in part, to the low energy water supply system in Melbourne, ie the vast majority of the water supply system is gravity feed, and therefore has a lower energy requirement and a resulting lower operating expenditure arising from lower electricity costs.



SKM considers that, based on the above information, the post-merger Seqwater total operating expenditure as a proportion of non-current asset value is consistent with that expected of an efficient operator.

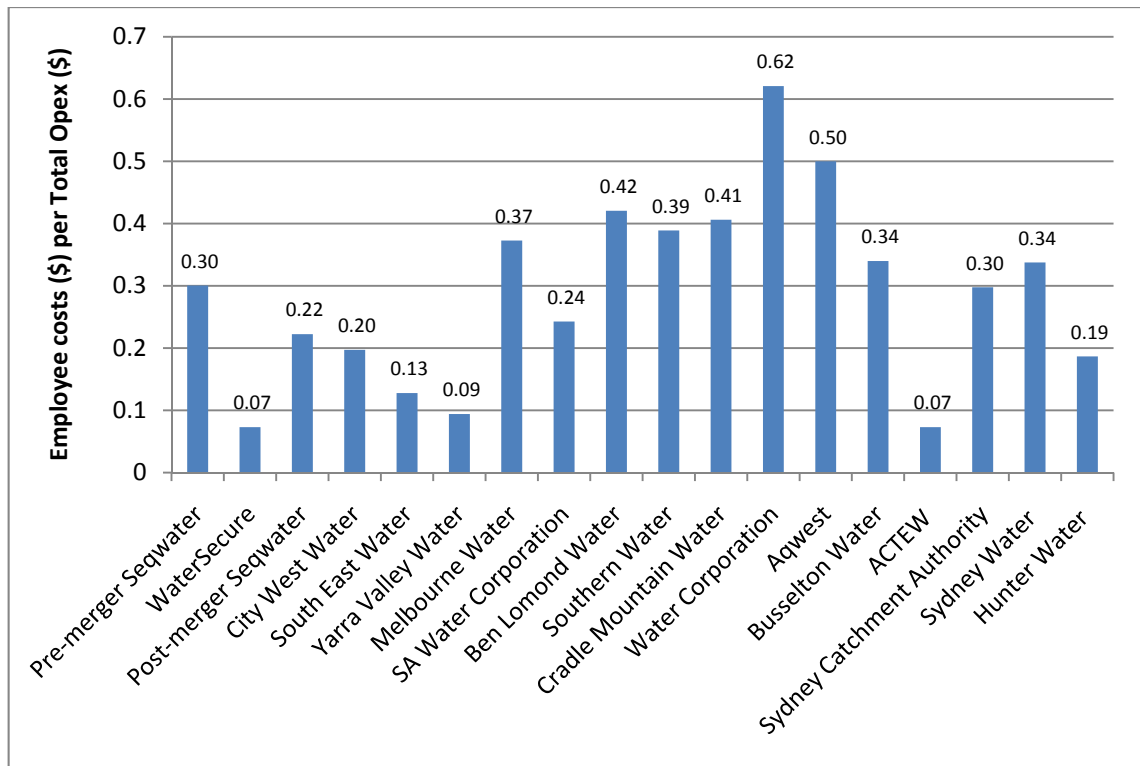
5.3.1.3. Total employee cost as a proportion of total operating expenditure

SKM has developed a metric that compares the proportion of the total employee cost to the total operating expenditure. **Table 14**, below, presents the information used to develop the metric.

■ Table 14 Total employee cost as a proportion of total operating expenditure data

Water utility	State	Employee costs (\$)	Total operating expenditure (\$)
Pre-merger Seqwater	QLD	49,167,520	163,700,000
WaterSecure	QLD	6,274,482	86,100,000
Post-merger Seqwater	QLD	55,442,002	249,800,000
City West Water	Vic	26,441,000	134,113,000
South East Water	Vic	47,465,000	372,000,000
Yarra Valley Water	Vic	35,345,000	376,400,000
Melbourne Water	Vic	75,065,000	201,400,000
SA Water Corporation	SA	110,773,000	456,393,000
Ben Lomond Water	Tas	14,003,000	33,297,000
Southern Water	Tas	29,718,000	76,436,000
Cradle Mountain Water	Tas	12,408,000	30,549,000
Water Corporation	WA	439,000,000	707,128,000
Aqwest	WA	3,226,154	6,452,011
Busselton Water	WA	1,355,160	3,988,073
ACTEW	ACT	7,770,000	106,509,000
Sydney Catchment Authority	NSW	32,149,000	107,992,000
Sydney Water	NSW	377,906,000	1,119,653,000
Hunter Water	NSW	19,010,000	101,910,000

The values of these metrics are visually represented in **Figure 6**. This metric provides a high-level indication to the productivity of the staff employed of the various entities. In interpreting the results for Seqwater and WaterSecure and comparing them with metrics derived for the other Australian entities, a lower proportion of employee cost to operating expenditure indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient and its staff more highly utilised and hence productive.



■ **Figure 6 Total employee cost as a proportion of total operating expenditure - National**

Figure 6 indicates that the pre-merger and post-merger staff costs to total operating cost metric for Seqwater are comparable to the majority of the comparator utilities. The pre-merger ratio for WaterSecure is one of the lowest when compared to the reference utilities; this is not unexpected due to the business model that WaterSecure implemented by contracting out a significant proportion of its activities and roles to Veolia Water.

The relative high value for Melbourne Water is as expected since the operational expenditure is lower due to the vast majority of their water supply system being gravity fed. SKM has no explanation for the exceptional high value for Water Corporation (Western Australia) except that staff salaries and employment costs may be higher than in Eastern States as a result of the mining boom.

SKM considers that, based on the above information, the post-merger Seqwater total employee cost as a proportion of total operating expenditure is consistent with that of an efficient operator.



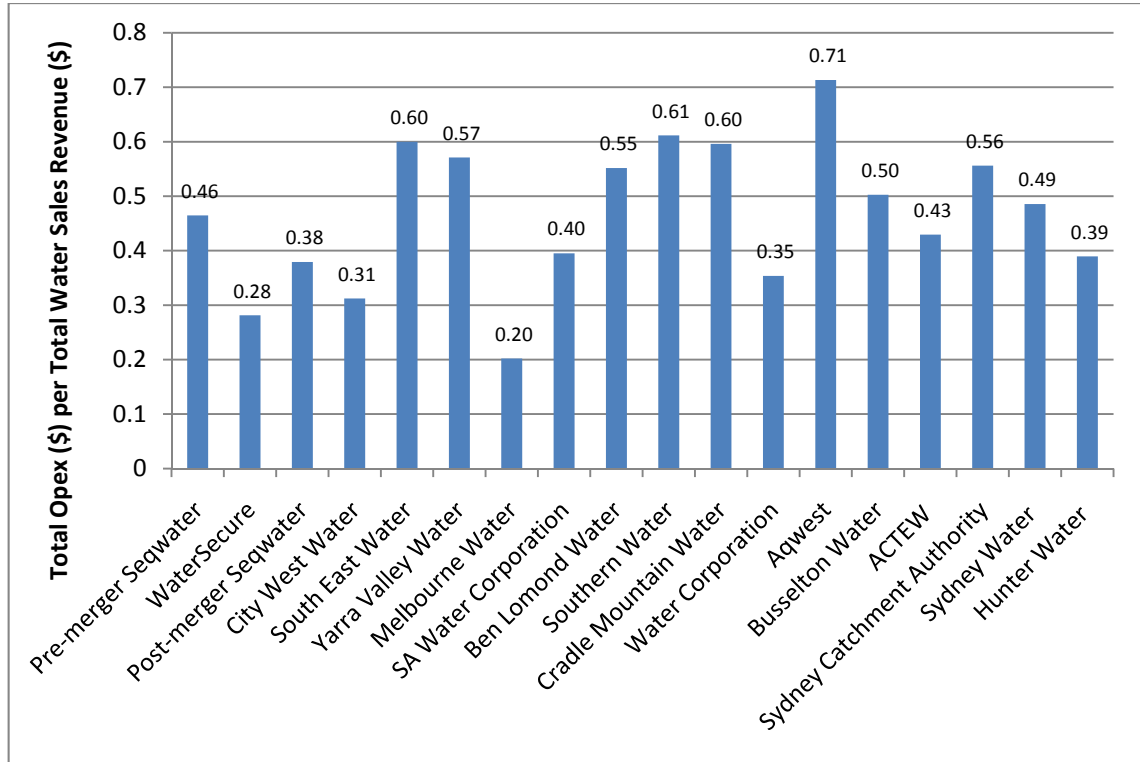
5.3.1.4. Total operating expenditure as a proportion of total revenue

SKM has developed a metric that compares the proportion of the total operating expenditure to the total revenue. **Table 15**, below, presents the information used to develop the metrics.

■ **Table 15 Total operating expenditure as a proportion of total revenue data**

Water utility	State	Total operating expenditure (\$)	Total Revenue (\$)
Pre-merger Seqwater	QLD	163,700,000	352,202,000
WaterSecure	QLD	86,100,000	305,887,725
Post-merger Seqwater	QLD	249,800,000	658,089,725
City West Water	Vic	134,113,000	429,667,000
South East Water	Vic	372,000,000	620,055,000
Yarra Valley Water	Vic	376,400,000	659,130,000
Melbourne Water	Vic	201,400,000	997,300,000
SA Water Corporation	SA	456,393,000	1,154,703,000
Ben Lomond Water	Tas	33,297,000	60,338,000
Southern Water	Tas	76,436,000	124,989,000
Cradle Mountain Water	Tas	30,549,000	51,249,000
Water Corporation	WA	707,128,000	1,999,330,000
Aqwest	WA	6,452,011	9,046,131
Busselton Water	WA	3,988,073	7,932,726
ACTEW	ACT	106,509,000	248,000,000
Sydney Catchment Authority	NSW	107,992,000	194,218,000
Sydney Water	NSW	1,119,653,000	2,305,962,000
Hunter Water	NSW	101,910,000	261,707,000

The values of this metric for each utility analysed are visually represented in **Figure 7**. This metric provides a high-level indication to the efficiency of the various entities in delivering water. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics of the other Australian entities, a lower proportion of operating expenditure to total revenue indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 7 Total operating expenditure as a proportion of total revenue - National**

Figure 7 indicates that the pre-merger and post-merger operating expenditure to total revenue ratio for Seqwater and the pre-merger ratio for WaterSecure are lower than the majority of the comparator utilities, with pre-merger WaterSecure the lowest, post-merger Seqwater the second lowest and pre-merger Seqwater fourth lowest. This may be attributed to the nature of the services provided by these utilities compared to the reference utilities, ie water treatment and manufactured water compared to water treatment, water distribution, wastewater collection and wastewater treatment.

From **Table 15** it can be seen that only the following three of the comparator entities do not supply waste water services: Aqwest, Busselton Water and Sydney Catchment Authority and hence the operating cost to water revenue costs ratio for these entities may be considered to be closer comparator metrics to those of Seqwater than those of the other entities.

SKM notes that the ratios for a number of utilities, such as South East Water and Yarra Valley Water, are greater than one. This may be attributed to the utilities providing both water and wastewater services to their customers and as such the operating expenditure for the utilities includes both water and wastewater whereas the revenue is only that associated with water provision. The information available did not distinguish between the operational expenditure for water and wastewater services.



SKM considers that, based on the above information, the post-merger Seqwater total operating expenditure as a proportion of total revenue is consistent with that of an efficient operator.

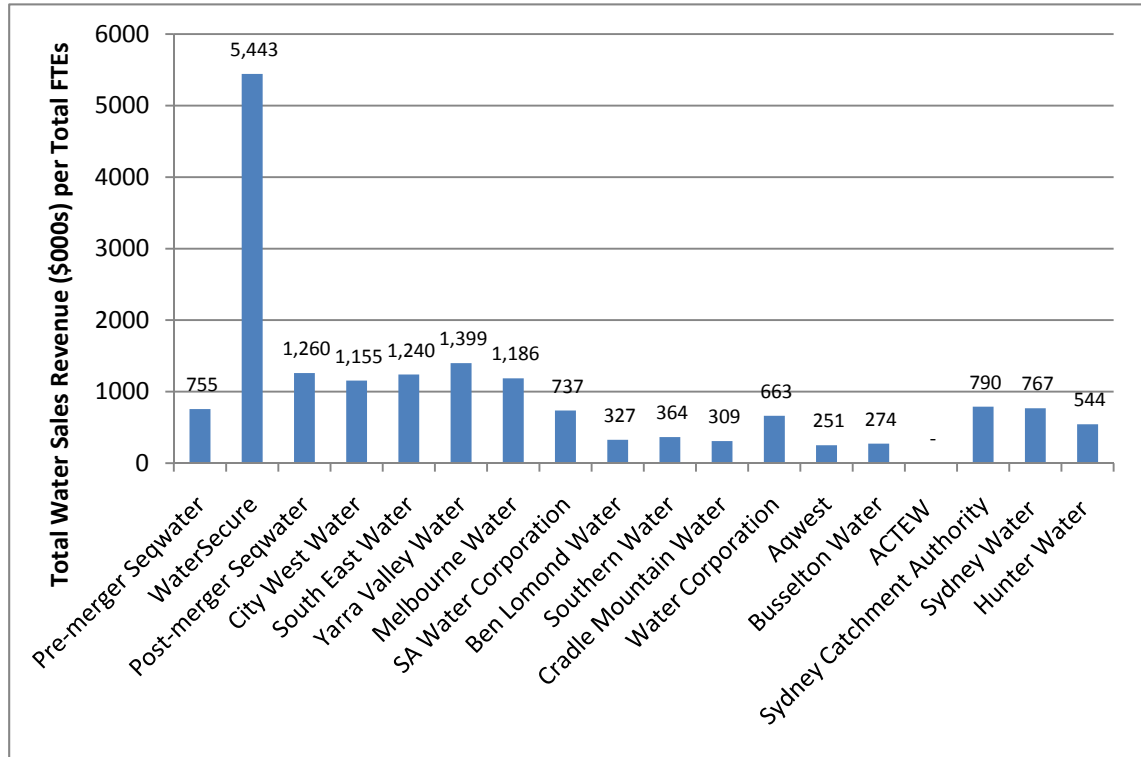
5.3.1.5. Total revenue as a proportion of total full-time equivalents

SKM has developed a metric that details the proportion of the total revenue to the total full-time equivalents. **Table 16**, below, presents the information used to develop the metrics.

■ Table 16 Total revenue as a proportion of total full-time equivalents data

Water utility	State	Total Revenue (\$)	Total FTEs
Pre-merger Seqwater	QLD	352,202,000	466
WaterSecure	QLD	305,887,725	56
Post-merger Seqwater	QLD	658,089,725	522
City West Water	Vic	429,667,000	372
South East Water	Vic	620,055,000	500
Yarra Valley Water	Vic	659,130,000	471
Melbourne Water	Vic	997,300,000	841
SA Water Corporation	SA	1,154,703,000	1,567
Ben Lomond Water	Tas	60,338,000	184
Southern Water	Tas	124,989,000	343
Cradle Mountain Water	Tas	51,249,000	166
Water Corporation	WA	1,999,330,000	3,015
Aqwest	WA	9,046,131	36
Busselton Water	WA	7,932,726	29
ACTEW	ACT	248,000,000	-
Sydney Catchment Authority	NSW	194,218,000	246
Sydney Water	NSW	2,305,962,000	3,005
Hunter Water	NSW	261,707,000	481

The values of these metrics are visually represented in **Figure 8**. This metric provides a high-level indication to the efficiency of the various entities in terms of staff productivity. In interpreting the results for Seqwater and WaterSecure and comparing these results with the metrics of the other Australian entities, a higher proportion of the total revenue to total full-time equivalents indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient and that staff have a higher degree of utilisation and hence are more productive.



■ **Figure 8 Total revenue as a proportion of total full-time equivalents - National**

Figure 8 indicates that the pre-merger and post-merger ratios for Seqwater and the pre-merger ratio for WaterSecure are higher than the majority of the comparator utilities with the exception of the Sydney Catchment Authority. This may be attributed to the nature of the services provided by Seqwater compared to the reference utilities, ie water treatment and manufactured water services employing staff only associated with these functions compared with water treatment, water distribution, wastewater collection and wastewater treatment services with staff associated with all aspects. The pre-merger ratio for WaterSecure is also influenced by the high number of staff employed by Veolia Water which was not included in the number of total full-time equivalents.

SKM considers that, based on the above information, the post-merger Seqwater total revenue as a proportion of total full-time equivalents is consistent with that of an efficient operator.

5.3.1.6. Total full-time equivalents as a proportion of non-current assets

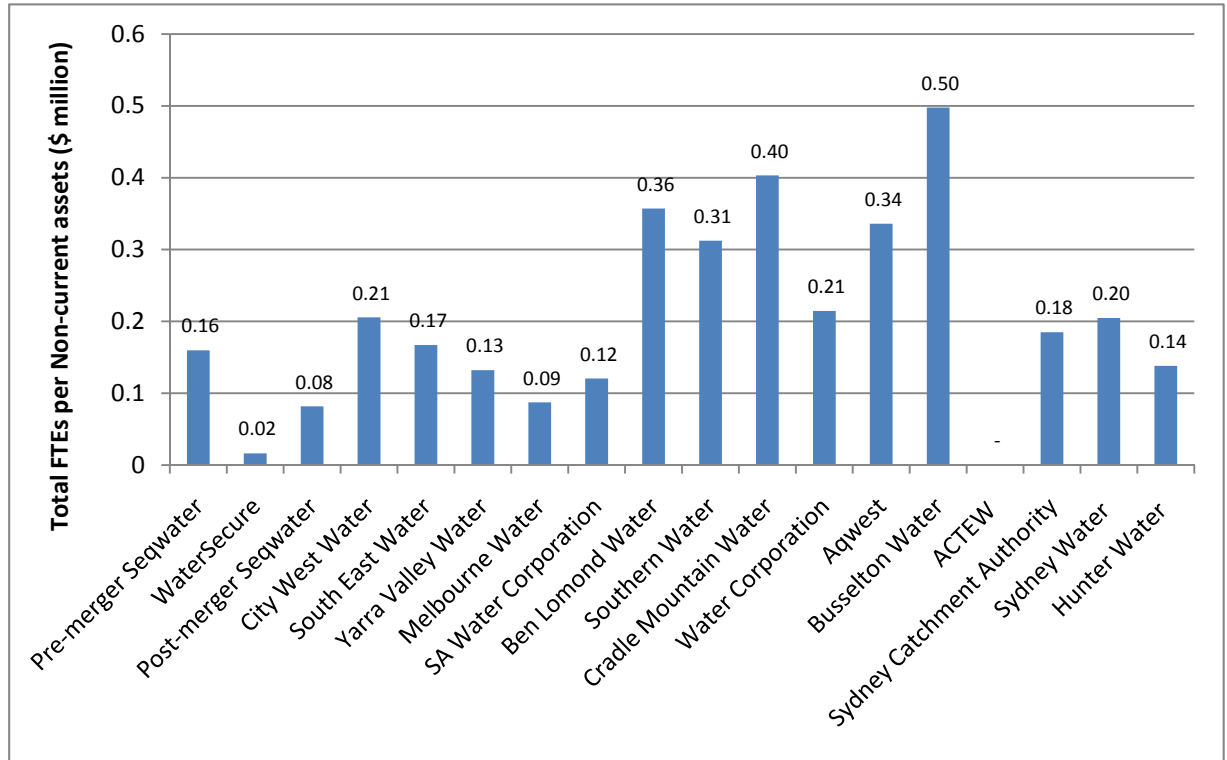
SKM has developed a metric that contrasts the proportion of the total full time equivalents to the non-current assets (as represented by property, plant and equipment). **Table 17**, below, presents the information used to develop the metrics.



■ **Table 17 Total full-time equivalents as a proportion of non-current assets data**

Water utility	State	Total FTEs	Non-current assets (\$)
Pre-merger Seqwater	QLD	466	2,918,672,000
WaterSecure	QLD	56	3,479,532,247
Post-merger Seqwater	QLD	522	6,398,204,247
City West Water	Vic	372	1,809,910,000
South East Water	Vic	500	2,995,095,000
Yarra Valley Water	Vic	471	3,566,300,000
Melbourne Water	Vic	841	9,644,800,000
SA Water Corporation	SA	1,567	13,004,403,000
Ben Lomond Water	Tas	184	516,218,000
Southern Water	Tas	343	1,098,503,000
Cradle Mountain Water	Tas	166	411,763,000
Water Corporation	WA	3,015	14,060,000,000
Aqwest	WA	36	107,058,158
Busselton Water	WA	29	58,263,514
ACTEW	ACT	-	2,199,941,000
Sydney Catchment Authority	NSW	246	1,330,920,000
Sydney Water	NSW	3,005	14,675,087,000
Hunter Water	NSW	481	3,481,657,000

The values of these metrics are visually represented in **Figure 9**. This metric provides a high-level indication to the efficiency of the workforce and effectiveness of asset utilisation. In interpreting the results and comparing the metrics for Seqwater and WaterSecure with those of the other Australian entities, a lower proportion of total full time equivalents to non-current assets indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity has small number of staff relative to the size of the entity.



■ **Figure 9 Total full-time equivalents as a proportion of non-current assets - National**

Figure 9 indicates that the full time equivalents as a proportion of non-current assets for pre-merger Seqwater is comparable to the majority of the comparator utilities. The metric for the pre-merger WaterSecure is the lowest, with the post-merger ratio for Seqwater the second lowest when compared to the comparator utilities. This can be attributed to WaterSecure’s high value asset base (ie advanced water treatment plants and a desalination plant) and the relatively low number of full-time equivalents (as mentioned earlier the number of staff employed by Veolia Water have not been included).

The three water entities (Ben Lomond Water, Southern Water and Cradle Mountain Water) are both within Tasmania and the high ratio value could be ascribed to the terrain and the associated additional cost arising from such.

SKM considers that, based on the above information, the pre-merger Seqwater’s total full-time equivalent as a proportion of non-current assets metric is consistent with that of an efficient operator.



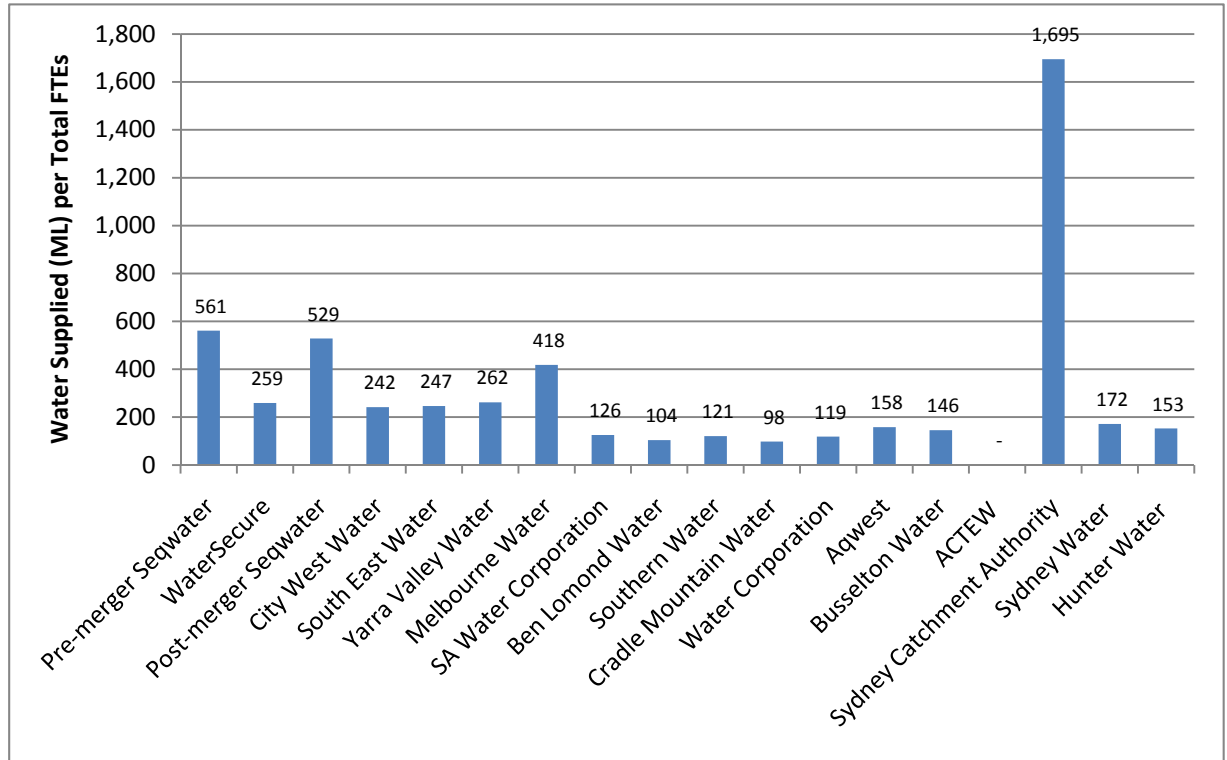
5.3.1.7. Water supplied as a proportion of total full-time equivalents

SKM has developed a metric that contrasts the proportion of the water supplied to the total full time equivalents. **Table 18**, below, presents the information used to develop the metrics.

■ **Table 18 Water supplied as a proportion of total full-time equivalents data**

Water utility	State	Water supplied (ML)	Total FTEs
Pre-merger Seqwater	QLD	261,591	466
WaterSecure	QLD	14,562	56
Post-merger Seqwater	QLD	276,153	522
City West Water	Vic	89,875	372
South East Water	Vic	123,251	500
Yarra Valley Water	Vic	123,476	471
Melbourne Water	Vic	351,761	841
SA Water Corporation	SA	196,666	1,567
Ben Lomond Water	Tas	19,158	184
Southern Water	Tas	41,517	343
Cradle Mountain Water	Tas	16,265	166
Water Corporation	WA	358,995	3,015
Aqwest	WA	5,690	36
Busselton Water	WA	4,222	29
ACTEW	ACT	40,914	-
Sydney Catchment Authority	NSW	416,944	246
Sydney Water	NSW	515,903	3,005
Hunter Water	NSW	73,449	481

The values of these metrics are visually represented in **Figure 10**. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics of the other Australian water entities, a higher proportion of water supplied to the total full time equivalents indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 10 Water supplied as a proportion of total full-time equivalents - National**

Figure 10 indicates that the pre-merger and post-merger metrics for Seqwater are higher than the majority of the reference utilities, with the post-merger Seqwater ratio the second lowest and pre-merger Seqwater ratio third lowest. This may be attributed to the nature of the services provided by these utilities compared to the reference utilities, ie water treatment and manufactured water compared to water treatment, water distribution, wastewater collection and wastewater treatment.

SKM notes that the metric for the Sydney Catchment Authority is significantly higher than the other reference utilities. This may be attributed to the fact that a significant quantity of water is supplied by the Sydney Catchment Authority with a relatively small number of employees as no treatment of the water is conducted.

SKM notes that the water supplied as a proportion of total full-time equivalents for a number of utilities, such as Cradle Mountain Water and Sydney Water, are less than 200. This is attributed to the utilities providing both water and wastewater services to their customers and as such the total full-time equivalents includes staff associated with both water and wastewater services.

SKM considers that, based on the above information, the post-merger Seqwater water supplied as a proportion of total full-time equivalents is consistent with that of an efficient operator.



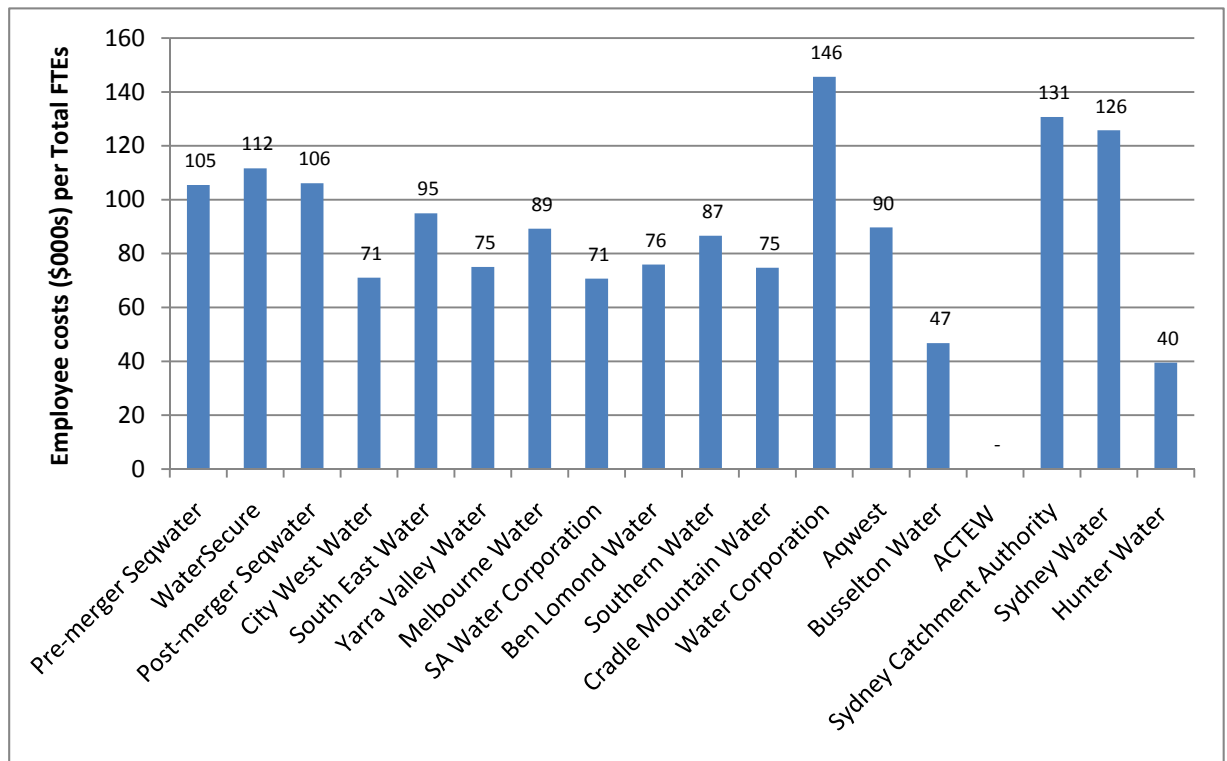
5.3.1.8. Total employee cost as a proportion of total full-time equivalents

SKM has developed a metric that contrasts the proportion of the total employee cost to the total of full-time equivalents. **Table 19**, below, presents the information used to develop the metrics.

■ **Table 19 Total employee cost as a proportion of total full-time equivalents data**

Water utility	State	Employee costs (\$)	Total FTEs
Pre-merger Seqwater	QLD	49,167,520	466
WaterSecure	QLD	6,274,482	56
Post-merger Seqwater	QLD	55,442,002	522
City West Water	Vic	26,441,000	372
South East Water	Vic	47,465,000	500
Yarra Valley Water	Vic	35,345,000	471
Melbourne Water	Vic	75,065,000	841
SA Water Corporation	SA	110,773,000	1,567
Ben Lomond Water	Tas	14,003,000	184
Southern Water	Tas	29,718,000	343
Cradle Mountain Water	Tas	12,408,000	166
Water Corporation	WA	439,000,000	3,015
Aqwest	WA	3,226,154	36
Busselton Water	WA	1,355,160	29
ACTEW	ACT	7,770,000	-
Sydney Catchment Authority	NSW	32,149,000	246
Sydney Water	NSW	377,906,000	3,005
Hunter Water	NSW	19,010,000	481

The values of these metrics are visually represented in **Figure 11**. In interpreting the results for WaterSecure and Seqwater and comparing them with the metrics of the other Australian water entities, a lower proportion of total employee cost to total full-time equivalents indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 11 Total employee cost as a proportion of total full-time equivalents - National**

Figure 11 indicates that the pre-merger and post-merger ratios for Seqwater and the pre-merger ratio for WaterSecure are comparable with the majority of the reference utilities.

SKM notes that the metrics for Busselton Water and Hunter Water are significantly lower than the reference utilities indicating relative lower salaries for employees. SKM has not been able to determine the reason for the lower than expected metrics for Busselton Water and Hunter Water.

SKM notes that the total employee cost as a proportion of total full-time equivalents for Water Corporation (Western Australia), Sydney Catchment Authority and Sydney Water are significantly higher than the other comparator utilities. SKM considers that this could be attributed to higher cost of living of the centurms, Sydney and Perth.

SKM considers that, based on the above information, the post-merger Seqwater total employee cost as a proportion of total full-time equivalents is consistent that of an efficient operator.



5.3.2. Benchmark comparison and discussion – international entities

Information for a number of overseas water utilities was gathered, these include: Yorkshire Water; Anglian Water Services, United Utilities; Severn Trent Water; Thames Water; Southern Water in the United Kingdom together with a number of smaller United Kingdom based utilities such as Bristol Water, Portsmouth Water and Dee Valley. Information was also gathered from two water utilities from the United States of America: Emerald Coast Utilities Authority; and Portland Water District. Information collected included:

- Total operating expenditure (\$)
- Water supplied (ML)
- Employee costs (\$)
- Total revenue (\$)
- Number of full-time equivalents
- Non-current asset value (\$)

Exchange rates of 1 GBP = 1.48 AUD, 1 USD = 0.9 AUD and 1 CAD = 0.9 AUD (as at 28/02/2012) were used for the conversion of Great British pounds, American dollars and Canadian dollars to Australian dollars.

The services provided by each of the utilities are outlined in **Table 20**. As all of the water utilities provide a different suite of services to their customers which do not align directly with those provided by Seqwater the metrics developed should not be considered as directly comparable.



■ Table 20 Services provided by utilities

Service	Water Utility															
	Seqwater	Anglian Water Services	Bristol Water	Portsmouth Water	Dee Valley Water	Northumbrian Water	Yorkshire Water	United Utilities	Severn Trent Water	Dwr Cymru Welsh Water	Thames Water	Wessex Water	South West Water	Southern Water	Emerald Coast Utilities Authority	Portland Water District
Water storage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Water treatment	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bulk transmission		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Chemical dosing		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Distribution		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Retail		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wastewater collection		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wastewater treatment		✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Advanced water treatment	✓															
Desalination	✓										✓					
Other - Electricity								✓								



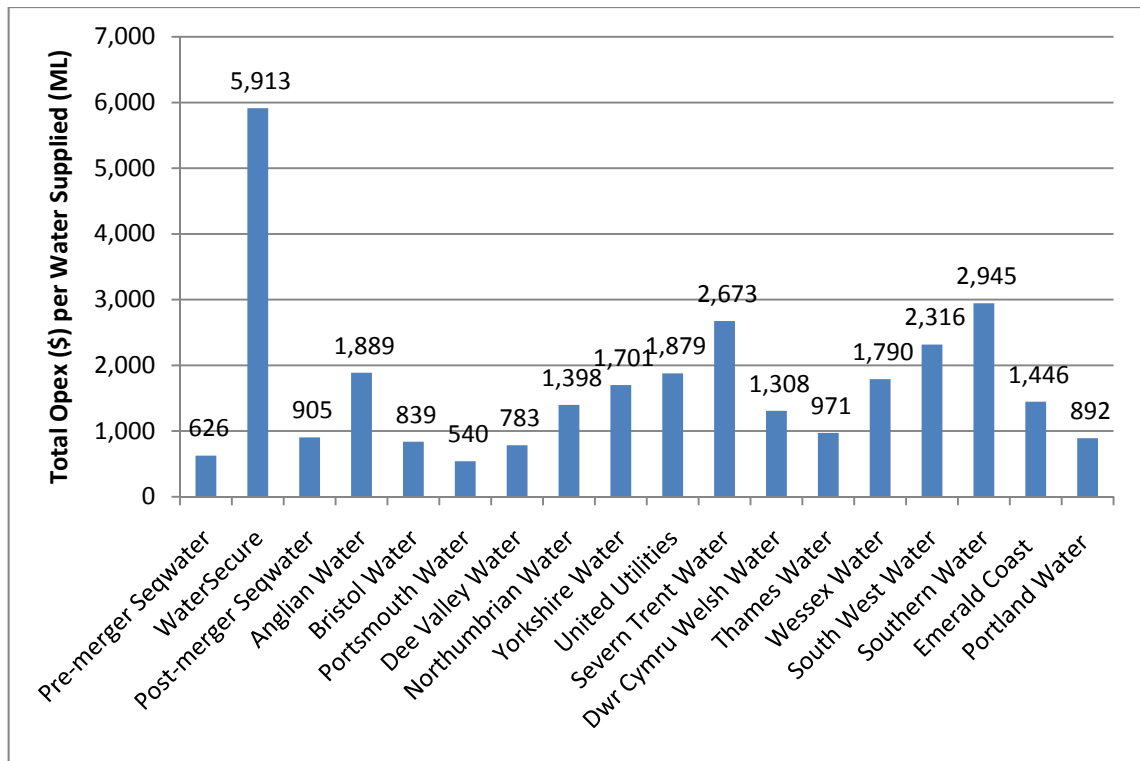
5.3.2.1. Total operating expenditure as a proportion of water supplied

SKM has developed a metric that details the proportion of the total operating expenditure to the water supplied. **Table 21**, below, presents the information used to develop the metrics.

■ **Table 21 Total operating expenditure as a proportion of water supplied data**

Water utility	Country	Total operating expenditure (\$)	Water supplied (ML)
Pre-merger Seqwater	Aus - QLD	163,700,000	261,591
WaterSecure	Aus - QLD	86,100,000	14,562
Post-merger Seqwater	Aus - QLD	249,800,000	276,153
Anglian Water	UK	682,481,310	361,324
Bristol Water	UK	73,103,100	87,147
Portsmouth Water	UK	31,119,900	57,612
Dee Valley Water	UK	16,944,690	21,637
Northumbrian Water	UK	637,833,000	456,250
Yorkshire Water	UK	814,086,000	478,628
United Utilities	UK	1,371,657,000	730,000
Severn Trent	UK	1,756,356,000	657,000
Dwr Cymru Welsh Water	UK	388,962,000	297,475
Thames Water	UK	921,837,000	949,000
Wessex Water	UK	185,514,000	103,660
South West Water	UK	381,318,000	164,611
Southern Water	UK	619,164,000	210,240
Emerald Coast	USA	57,543,750	39,788
Portland Water	USA	22,908,117	25,686

The values of these proportions are visually represented in **Figure 12**. This metric provides a high-level indication to the efficiency of the various entities in respect of total costs incurred in the supply of water. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics of the other international entities, a lower proportion of operating expenditure to water supplied indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 12 Total operating expenditure proportional to total water supplied - International**

From **Figure 12** above SKM draws the conclusion that the pre-merger Seqwater was on par with Bristol Water and Portsmouth Water, however it is to note that both of the entities does however have the following additional service lines: bulk transmission, chemical dosing, distribution and retail.

The total operating expenditure proportional to the total water supplied for post-merger Seqwater compared to the other (all excluding Bristol Water and Portsmouth Water) UK comparator utilities does indicate that the post-merger Seqwater is within range taking into consideration that Seqwater has a reduced service line.

The two USA comparator utilities indicate that the post-merger Seqwater is within range taking into consideration that Seqwater has a reduced service line.

SKM considers that, based on the above information, the post-merger Seqwater total operating expenditure as a proportion of total water supplied is consistent to those of an efficient operator.

5.3.2.2. Total operating expenditure as a proportion of non-current assets

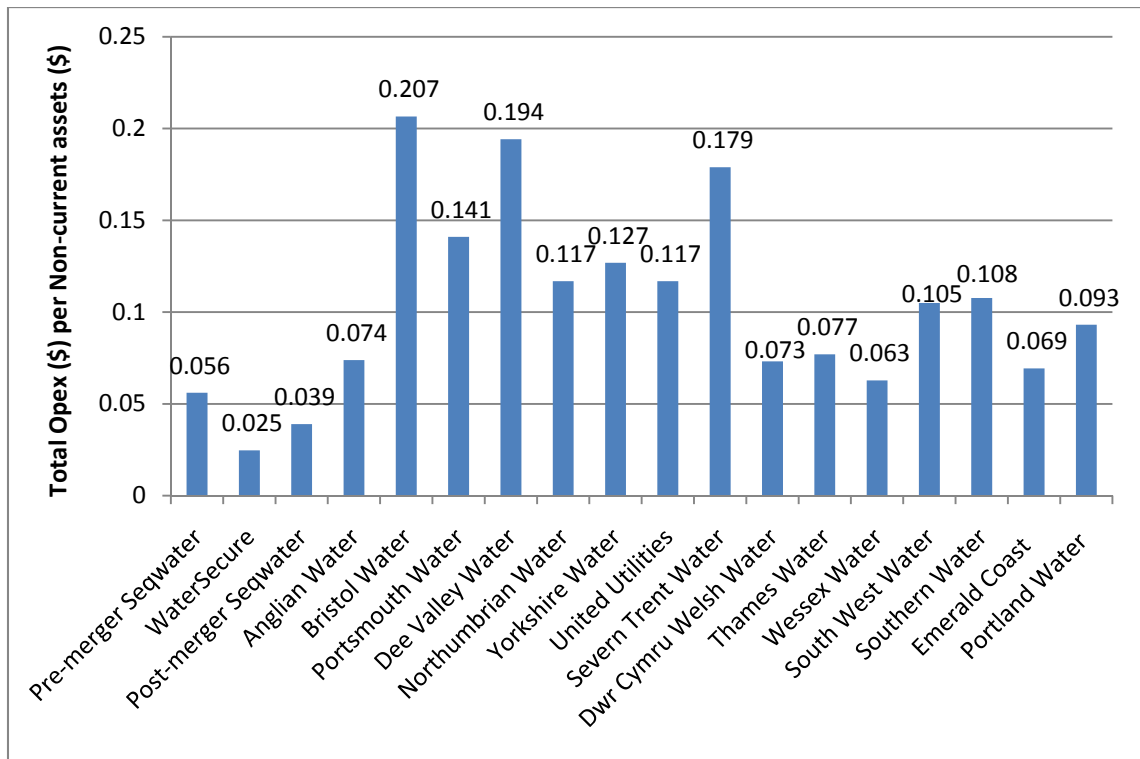
SKM has developed a metric that details the proportion of the total operating expenditure to the non-current assets. **Table 22**, below, presents the information used to develop the metrics.



■ **Table 22 Total operating expenditure as a proportion of non-current assets data**

Water utility	Country	Total operating expenditure (\$)	Non-current assets (\$)
Pre-merger Seqwater	Aus - QLD	163,700,000	2,918,672,000
WaterSecure	Aus - QLD	86,100,000	3,479,532,247
Post-merger Seqwater	Aus - QLD	249,800,000	6,398,204,247
Anglian Water	UK	682,481,310	9,243,213,000
Bristol Water	UK	73,103,100	353,829,000
Portsmouth Water	UK	31,119,900	220,689,630
Dee Valley Water	UK	16,944,690	87,273,900
Northumbrian Water	UK	637,833,000	5,457,081,000
Yorkshire Water	UK	814,086,000	6,417,285,000
United Utilities	UK	1,371,657,000	11,736,804,870
Severn Trent	UK	1,756,356,000	9,817,248,000
Dwr Cymru Welsh Water	UK	388,962,000	5,317,872,000
Thames Water	UK	921,837,000	11,973,591,000
Wessex Water	UK	185,514,000	2,956,023,000
South West Water	UK	381,318,000	3,633,546,000
Southern Water	UK	619,164,000	5,751,081,000
Emerald Coast	USA	57,543,750	830,045,899
Portland Water	USA	22,908,117	246,034,142

The values of these proportions are visually represented in **Figure 13**. This metric provides a high-level indication to the spend efficiency of the various entities in maintaining their assets. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics of the other international entities, a lower proportion of operating expenditure to non-current-assets indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient in maintaining those assets (assuming that that the assets are being maintained correctly and not simply being allowed to decline in condition).



■ **Figure 13 Total operating expenditure as a proportion of non-current assets - International**

Figure 13 indicates that Pre-merger Seqwater total operating expenditure as a proportion of non-current assets is comparable to those of Anglian Water, Dwr Cymru Welsh Water, Wessex Water and Emerald Coast. As stated above the non-current assets of WaterSecure was of a very high value and therefore the total operating expenditure as a ratio of non-current assets metric for WaterSecure is lower than similar metrics of the comparator utilities.

SKM considers that, based on the above information, the post-merger Seqwater total operating expenditure as a proportion of non-current assets metric is consistent to that of an efficient operator.

5.3.2.3. Total employee cost as a proportion of total operating expenditure

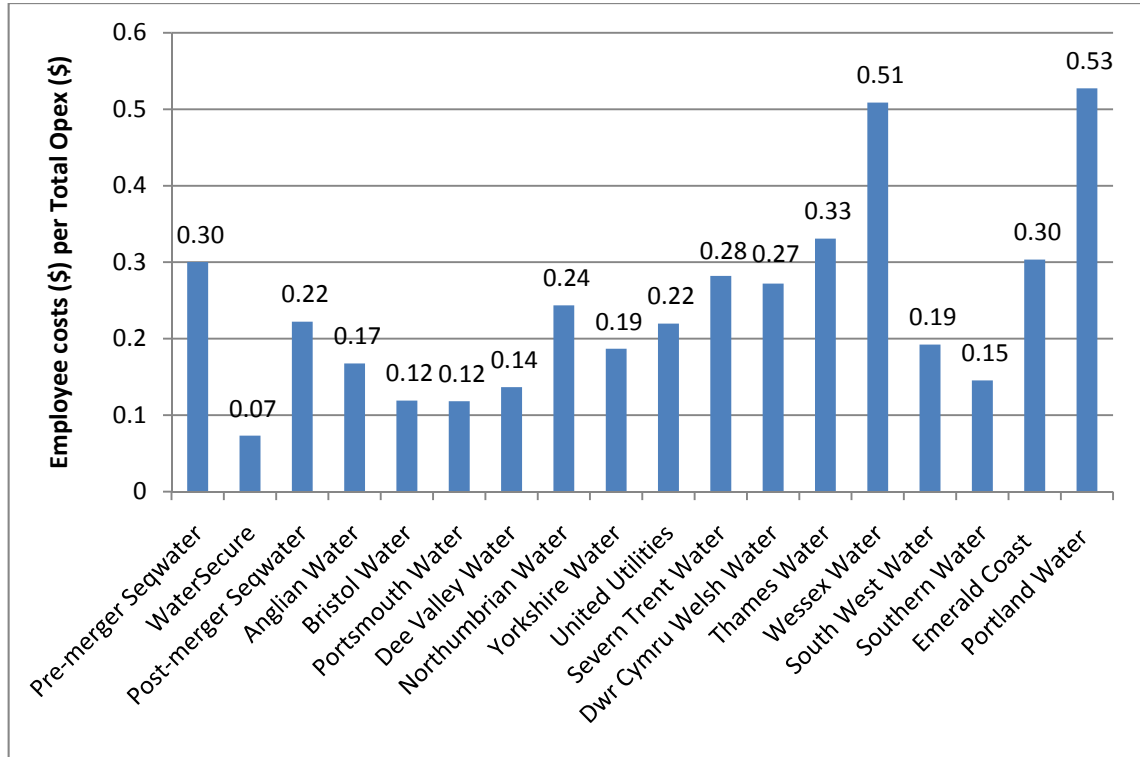
SKM has developed a metric that details the proportion of the total employee cost to the total operating expenditure. **Table 23**, below, presents the information used to develop the metrics.



■ **Table 23 Total employee cost as a proportion of total operating expenditure data**

Water utility	Country	Employee costs (\$)	Total operating expenditure (\$)
Pre-merger Seqwater	Aus - QLD	49,167,520	163,700,000
WaterSecure	Aus - QLD	6,274,482	86,100,000
Post-merger Seqwater	Aus - QLD	55,442,002	249,800,000
Anglian Water	UK	114,351,300	682,481,310
Bristol Water	UK	8,711,220	73,103,100
Portsmouth Water	UK	3,676,470	31,119,900
Dee Valley Water	UK	2,313,780	16,944,690
Northumbrian Water	UK	155,379,000	637,833,000
Yorkshire Water	UK	152,145,000	814,086,000
United Utilities	UK	301,497,000	1,371,657,000
Severn Trent	UK	495,390,000	1,756,356,000
Dwr Cymru Welsh Water	UK	105,840,000	388,962,000
Thames Water	UK	305,025,000	921,837,000
Wessex Water	UK	94,374,000	185,514,000
South West Water	UK	73,353,000	381,318,000
Southern Water	UK	90,111,000	619,164,000
Emerald Coast	USA	17,463,914	57,543,750
Portland Water	USA	12,081,735	22,908,117

The values of these proportions are visually represented in **Figure 14**. This metric provides a high-level indication to the productivity of the staff employed by the various entities. In interpreting the results for Seqwater and Water Secure and comparing them with the metrics for the other international entities, a lower proportion of employee cost to operating expenditure indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient and its staff more highly utilised and hence productive.



■ **Figure 14 Total employee cost as a proportion of the total operating expenditure - International**

Figure 14 indicate that pre-merger Seqwater had one of the higher ratios compared to those of the comparator organisations. SKM does however note that the data used in comparing the organisations does not reflect the percentage of cost that each utility spend on contractors. In the case of WaterSecure it is know that Veolia Water undertook a considerable component of the tasks and hence skews the data.



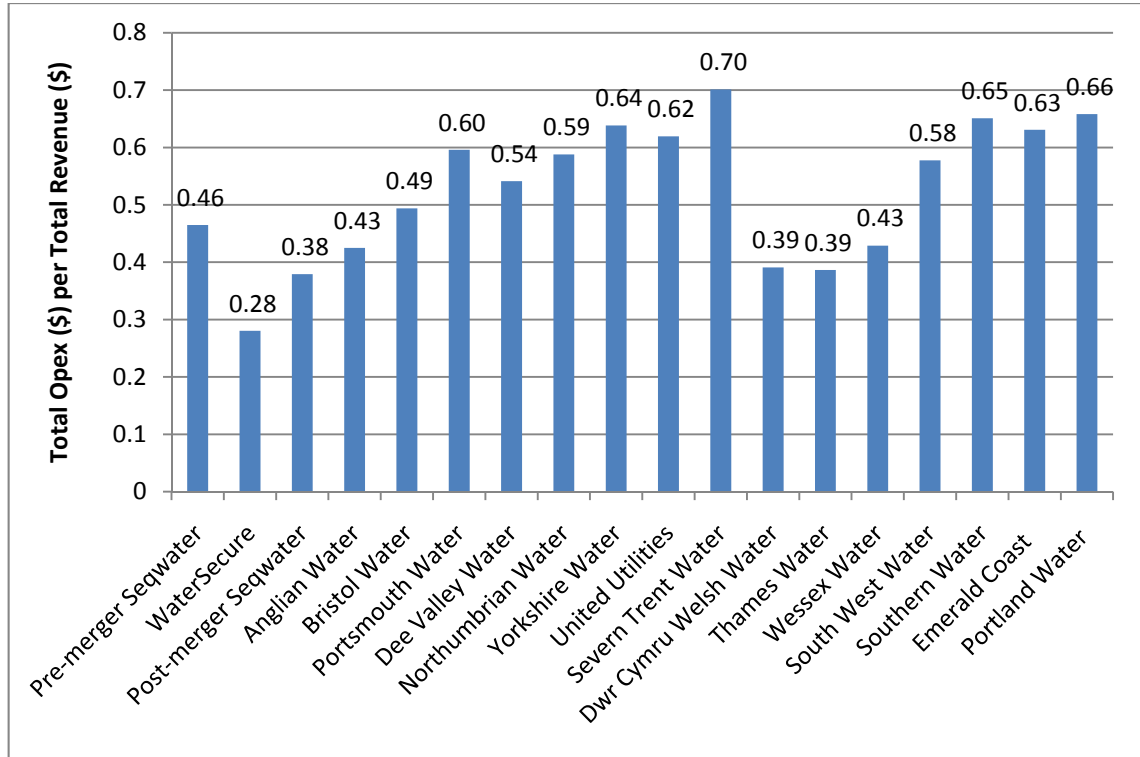
5.3.2.4. Total operating expenditure as a proportion of total revenue

SKM has developed a metric that details the proportion of the total operating expenditure to the total revenue. **Table 24**, below, presents the information used to develop the metrics.

■ **Table 24 Total operating expenditure as a proportion of total revenue data**

Water utility	Country	Total operating expenditure (\$)	Total Revenue (\$)
Pre-merger Seqwater	Aus - QLD	163,700,000	352,202,000
WaterSecure	Aus - QLD	86,100,000	305,887,725
Post-merger Seqwater	Aus - QLD	249,800,000	658,089,725
Anglian Water	UK	682,481,310	1,605,681,000
Bristol Water	UK	73,103,100	148,029,000
Portsmouth Water	UK	31,119,900	52,207,050
Dee Valley Water	UK	16,944,690	31,299,240
Northumbrian Water	UK	637,833,000	1,085,007,000
Yorkshire Water	UK	814,086,000	1,275,078,000
United Utilities	UK	1,371,657,000	2,214,654,960
Severn Trent	UK	1,756,356,000	2,504,733,000
Dwr Cymru Welsh Water	UK	388,962,000	994,749,000
Thames Water	UK	921,837,000	2,385,957,000
Wessex Water	UK	185,514,000	432,474,000
South West Water	UK	381,318,000	660,177,000
Southern Water	UK	619,164,000	951,237,000
Emerald Coast	USA	57,543,750	91,207,212
Portland Water	USA	22,908,117	34,804,193

The values of these proportions are visually represented in **Figure 15**. This metric provides a high-level indication to the efficiency of the various entities in delivering water. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics of the other international entities, a lower proportion of operating expenditure to total revenue indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 15 Total operating expenditure proportional to total revenue - International**

Figure 15 indicates that the pre-merger and post-merger operating expenditure to total revenue ratios for Seqwater and the pre-merger ratio for WaterSecure are lower than the comparable ratios of the majority of the comparator utilities, with pre-merger WaterSecure the lowest, post-merger Seqwater the second lowest and pre-merger Seqwater fifth lowest. This may be attributed to the nature of the services provided by these utilities (pre-and post-merger Seqwater and WaterSecure) compared to the comparator utilities, ie water treatment and manufactured water compared to water treatment, water distribution, wastewater collection and wastewater treatment.

SKM considers that, based on the above information, the post-merger Seqwater total operating expenditure as a proportion of total revenue is consistent to that of an efficient operator.



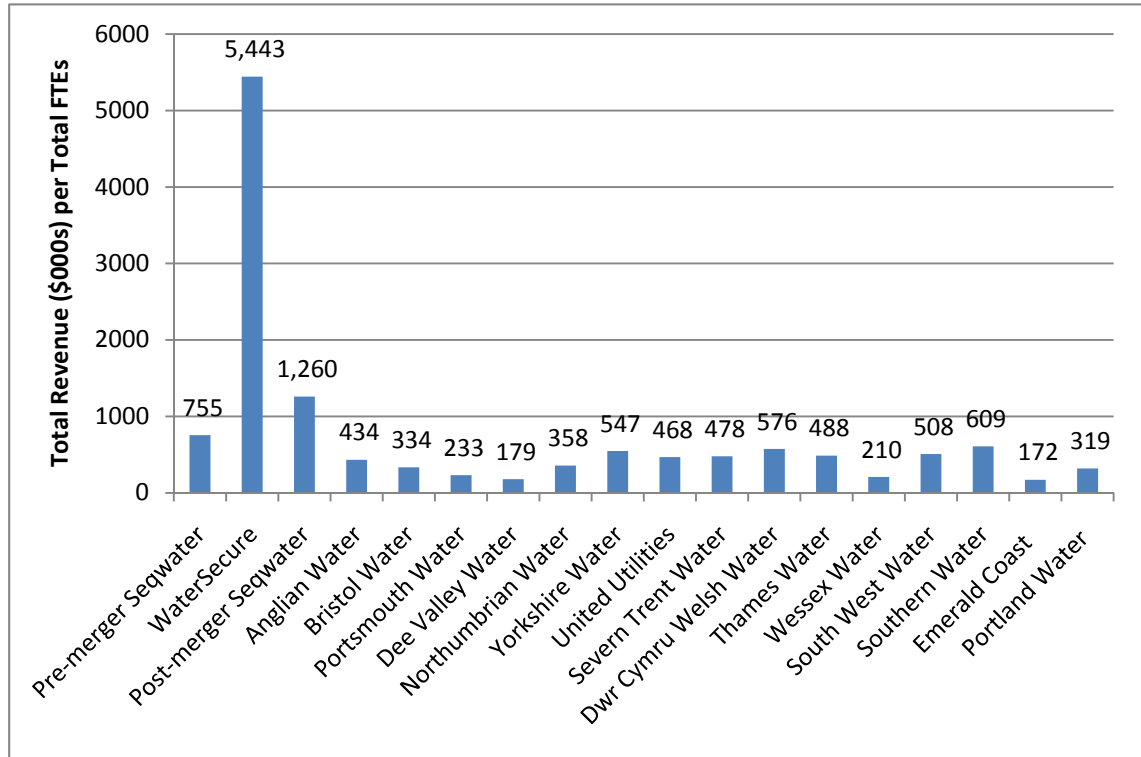
5.3.2.5. Total revenue as a proportion of total full-time equivalents

SKM has developed a metric that details the proportion of the total revenue to the total full-time equivalents. **Table 25**, below, presents the information used to develop the metrics.

■ **Table 25 Total revenue as a proportion of total full-time equivalents data**

Water utility	Country	Total Revenue (\$)	Total FTEs
Pre-merger Seqwater	Aus - QLD	352,202,000	466
WaterSecure	Aus - QLD	305,887,725	56
Post-merger Seqwater	Aus - QLD	658,089,725	522
Anglian Water	UK	1,605,681,000	3,700
Bristol Water	UK	148,029,000	443
Portsmouth Water	UK	52,207,050	224
Dee Valley Water	UK	31,299,240	175
Northumbrian Water	UK	1,085,007,000	3,031
Yorkshire Water	UK	1,275,078,000	2,329
United Utilities	UK	2,214,654,960	4,735
Severn Trent	UK	2,504,733,000	5,237
Dwr Cymru Welsh Water	UK	994,749,000	1,727
Thames Water	UK	2,385,957,000	4,886
Wessex Water	UK	432,474,000	2,061
South West Water	UK	660,177,000	1,300
Southern Water	UK	951,237,000	1,562
Emerald Coast	USA	91,207,212	530
Portland Water	USA	34,804,193	109

The values of these proportions are visually represented in **Figure 16**. This metric provides a high-level indication to the efficiency of the various entities in terms of staff productivity. In interpreting the result for Seqwater and comparing it with the other international entities, a higher proportion of the total revenue to total full-time equivalents indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient and that staff have a higher degree of utilisation and hence are more productive.



■ **Figure 16 Total revenue proportional to full-time equivalent staff - International**

Figure 16 indicates that the pre-merger Seqwater had a total revenue to full-time equivalent staff ratio that was within the same range as some of the comparator utilities. The information available indicates that a large proportion of WaterSecure’s tasks were outsourced to Veolia Water and this could be the reason for WaterSecure and the post merger Seqwater having such a high ratio compared to the other organisations.



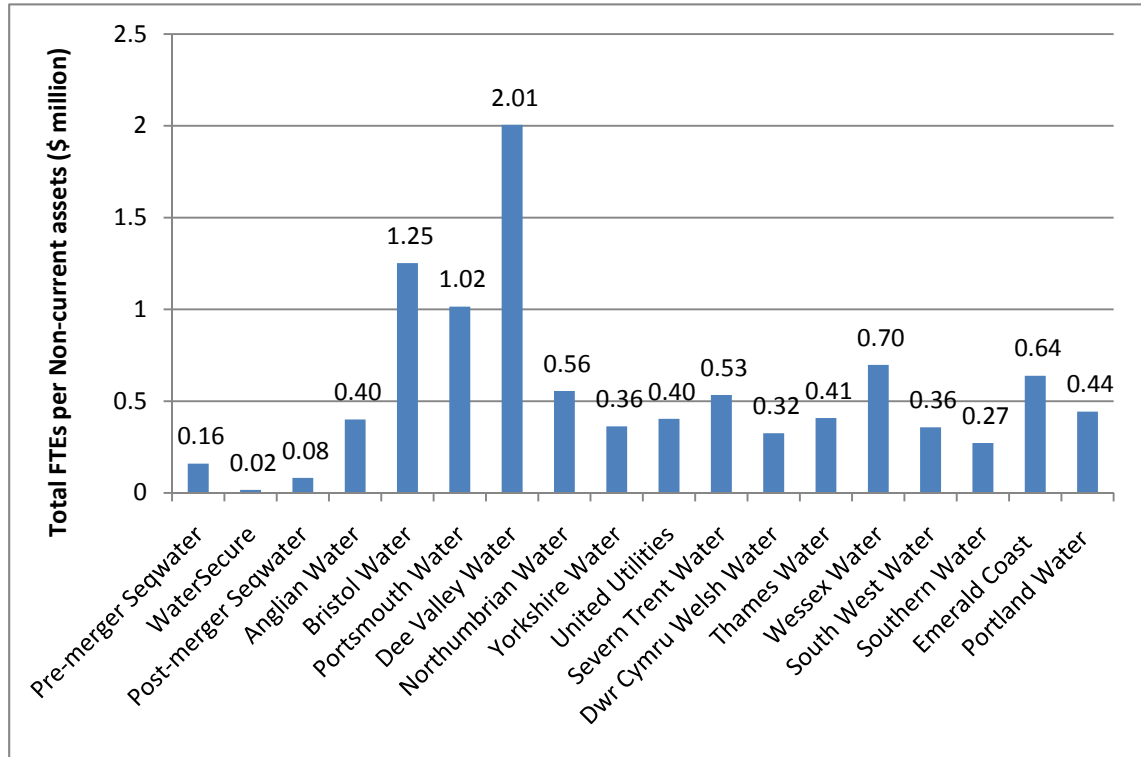
5.3.2.6. Total full-time equivalents as a proportion of non-current assets

SKM has developed a metric that details the proportion of the total full time equivalents to the non-current assets. **Table 26**, below, presents the information used to develop the metrics.

■ **Table 26 Total full-time equivalents as a proportion of non-current assets data**

Water utility	Country	Total FTEs	Non-current assets (\$)
Pre-merger Seqwater	Aus - QLD	466	2,918,672,000
WaterSecure	Aus - QLD	56	3,479,532,247
Post-merger Seqwater	Aus - QLD	522	6,398,204,247
Anglian Water	UK	3,700	9,243,213,000
Bristol Water	UK	443	353,829,000
Portsmouth Water	UK	224	220,689,630
Dee Valley Water	UK	175	87,273,900
Northumbrian Water	UK	3,031	5,457,081,000
Yorkshire Water	UK	2,329	6,417,285,000
United Utilities	UK	4,735	11,736,804,870
Severn Trent	UK	5,237	9,817,248,000
Dwr Cymru Welsh Water	UK	1,727	5,317,872,000
Thames Water	UK	4,886	11,973,591,000
Wessex Water	UK	2,061	2,956,023,000
South West Water	UK	1,300	3,633,546,000
Southern Water	UK	1,562	5,751,081,000
Emerald Coast	USA	530	830,045,899
Portland Water	USA	109	246,034,142

The values of these proportions are visually represented in **Figure 17**. This metric provides a high-level indication to the efficiency of the workforce and asset utilisation. In interpreting the results for Seqwater and Water Secure and comparing them with the metrics for the other international entities, a lower proportion of total full time equivalents to non-current assets indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity has small number of staff relative to the size of the entity.



■ **Figure 17 Full-time equivalents proportional to the non-current asset value - International**

Figure 17 indicates that pre-and post merger Seqwater and WaterSecure have a comparatively low ratio of full-time equivalent to non-current asset value.

The service lines of a utility have a significant impact in determining the number of staff required to undertake the operations and maintenance tasks required. Another factor that impacts on the full-time equivalent to non-current asset value ratio is the extent to which the utility relies on outsourcing of tasks. This information is not typically available in the public domain and therefore has not been taken into consideration.



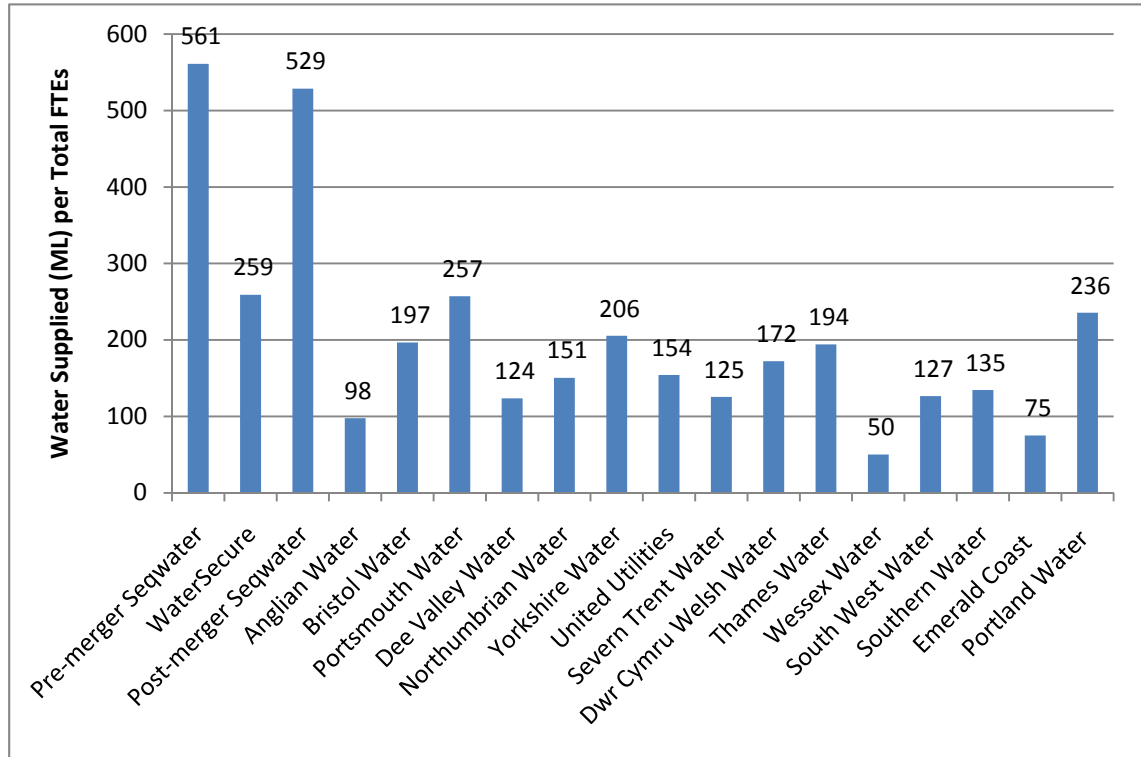
5.3.2.7. Water supplied as a proportion of total full-time equivalents

SKM has developed a metric that details the proportion of the water supplied to the total full time equivalents. **Table 27**, below, presents the information used to develop the metrics.

■ **Table 27 Water supplied as a proportion of total full-time equivalents data**

Water utility	Country	Water supplied (ML)	Total FTEs
Pre-merger Seqwater	Aus - QLD	261,591	466
WaterSecure	Aus - QLD	14,562	56
Post-merger Seqwater	Aus - QLD	276,153	522
Anglian Water	UK	361,324	3,700
Bristol Water	UK	87,147	443
Portsmouth Water	UK	57,612	224
Dee Valley Water	UK	21,637	175
Northumbrian Water	UK	456,250	3,031
Yorkshire Water	UK	478,628	2,329
United Utilities	UK	730,000	4,735
Severn Trent	UK	657,000	5,237
Dwr Cymru Welsh Water	UK	297,475	1,727
Thames Water	UK	949,000	4,886
Wessex Water	UK	103,660	2,061
South West Water	UK	164,611	1,300
Southern Water	UK	210,240	1,562
Emerald Coast	USA	39,788	530
Portland Water	USA	25,686	109

The values of these proportions are visually represented in **Figure 18**. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics of the other international water entities, a higher proportion of water supplied to the total full time equivalents indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 18 Total water supplied proportional to total full-time equivalents - International**

Figure 18 indicates that pre-and post merger Seqwater have significantly higher total water supplied to full-time equivalents metric compared to those of the comparator utilities. This is as expected since the comparator utilities have additional service lines to those of Seqwater.

SKM considers that the reason that the total water supplied to full-time equivalents ratio of WaterSecure is lower than pre-and post merger Seqwater is due to the desalination plants being in hot-standby mode.

SKM considers that, based on the above information, the post-merger Seqwater total water supplied as a proportion of total full-time equivalents metric is consistent to those of an efficient operator.



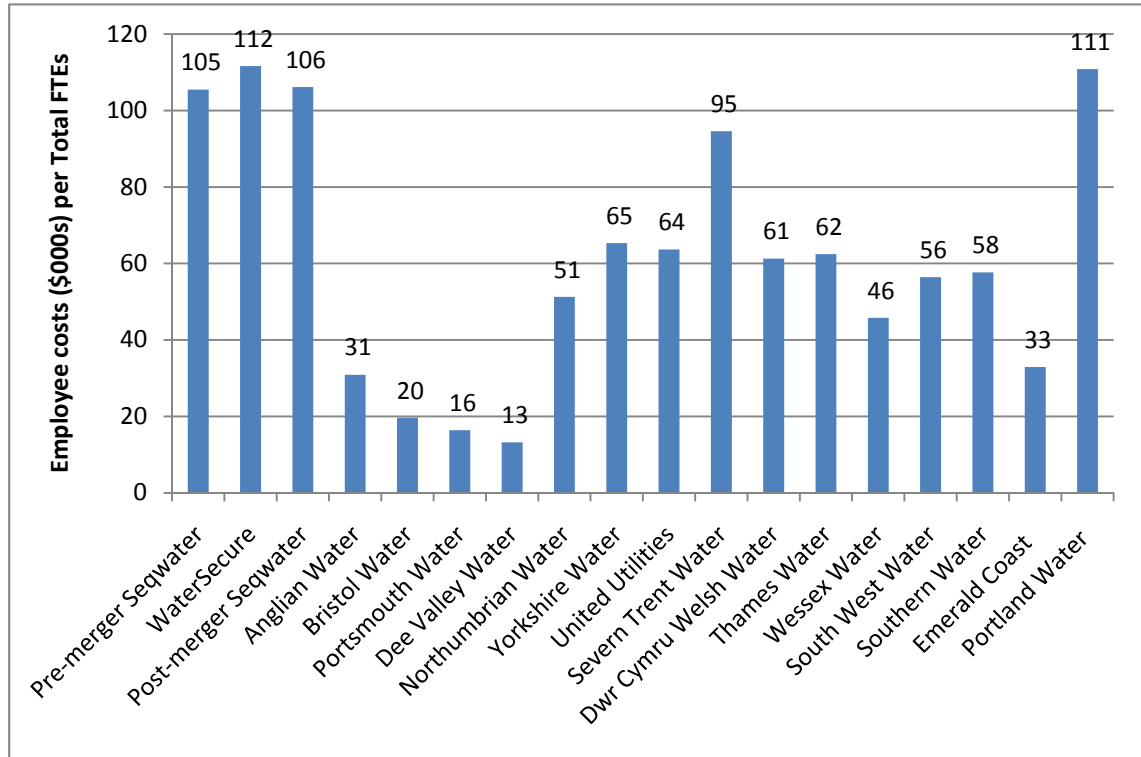
5.3.2.8. Total employee cost as a proportion of total full-time equivalents

SKM has developed a metric that details the proportion of the total employee cost to the total full-time equivalent. **Table 28**, below, presents the information used to develop the metrics.

■ **Table 28 Total employee cost as a proportion of total full-time equivalents data**

Water utility	Country	Employee costs (\$)	Total FTEs
Pre-merger Seqwater	Aus - QLD	49,167,520	466
WaterSecure	Aus - QLD	6,274,482	56
Post-merger Seqwater	Aus - QLD	55,442,002	522
Anglian Water	UK	114,351,300	3,700
Bristol Water	UK	8,711,220	443
Portsmouth Water	UK	3,676,470	224
Dee Valley Water	UK	2,313,780	175
Northumbrian Water	UK	155,379,000	3,031
Yorkshire Water	UK	152,145,000	2,329
United Utilities	UK	301,497,000	4,735
Severn Trent	UK	495,390,000	5,237
Dwr Cymru Welsh Water	UK	105,840,000	1,727
Thames Water	UK	305,025,000	4,886
Wessex Water	UK	94,374,000	2,061
South West Water	UK	73,353,000	1,300
Southern Water	UK	90,111,000	1,562
Emerald Coast	USA	17,463,914	530
Portland Water	USA	12,081,735	109

The values of these proportions are visually represented in **Figure 19**. In interpreting the results for Seqwater and WaterSecure and comparing them with the metrics for the other international water entities, a lower proportion of total employee cost to total full-time equivalents indicates broadly, for a given operation size, maintenance schedule and distribution network, that the entity is more efficient.



■ **Figure 19 Total employee cost proportional to total full-time equivalents - International**

Figure 19 indicates that:

- The pre and post merger organisations employee costs to the full time equivalent metrics for Seqwater and WaterSecure are comparable which may be expected given that both operate under identical market conditions in South East Queensland
- The values for the UK water entities vary significantly, however they are all lower than the metrics for WaterSecure and Seqwater
- The values for the USA water entities vary significantly with one being significantly lower and the other comparable to the metrics for Seqwater and WaterSecure

5.4. Conclusions on corporate level benchmarking

The robustness of the benchmarking undertaken in the previous sections is limited by the difficulty in identifying suitable comparable organisations and the availability of sufficiently detailed information that is consistent with the data obtained from Seqwater and WaterSecure.

There are a number of variables that impact on the effectiveness of the comparisons between the different utilities. These include not only differences in services provided but also differences in: operating environments; regulatory approaches; geographies; climatic conditions; and water



resource management issues. The comparator utilities that were identified by SKM vary appreciably in size, roles, responsibilities and customer bases.

Nonetheless, SKM has been able to establish a range of reasonable “high level” operating expenditure benchmarks to enable a comparison to be drawn between Seqwater and the comparator utilities both nationally and internationally. These comparisons generally indicate that Seqwater’s performance in relation to organisational efficiency, spend efficiency, workforce effectiveness and asset utilisation are broadly within the same range as the comparator utilities, as summarised below in **Table 29**.

■ **Table 29 Summary of benchmarking**

Metric	National organisations	International organisations
Total operating expenditure as a proportion of water supplied	Consistent with that expected of an efficient operator	Consistent with that expected of an efficient operator
Total operating expenditure as a proportion of non-current assets	Consistent with that expected of an efficient operator	Consistent with that expected of an efficient operator
Total employee cost as a proportion of total operating expenditure	Consistent with that expected of an efficient operator	Insufficient information
Total operating expenditure as a proportion of total revenue	Consistent with that expected of an efficient operator	Consistent with that expected of an efficient operator
Total revenue as a proportion of total full-time equivalents	Consistent with that expected of an efficient operator	Insufficient information
Total full-time equivalents as a proportion of non-current assets	Consistent with that expected of an efficient operator	Insufficient information
Water supplied as a proportion of total full-time equivalents	Consistent with that expected of an efficient operator	Consistent with that expected of an efficient operator
Total employee cost as a proportion of total full-time equivalents	Consistent with that expected of an efficient operator	Insufficient information



6. Benchmarking by Asset Grouping

This section addresses benchmarking at an asset grouping level for dams, water treatment plants and advanced water treatment plants.

Seqwater has advised that planned maintenance activities are scheduled activities, whereas unplanned maintenance activities are broken down into two components based on point of identification. The planned activities are identified during scheduled maintenance activities and the unplanned activities are as a result of plant failure.

6.1. Dams

This section addresses the benchmarking of Seqwater’s dams and catchment areas as an asset group. Dams serve the primary purpose of providing a consistent water supply; however they can also be used for flood control, irrigation and recreation. As such some of the costs associated with the dam operation and maintenance may arise from functions other than water supply.

6.1.1. Seqwater metrics

Seqwater owns, operates and maintains 26 dams. The dams vary in construction type, year constructed, capacity and managed catchment area. They also vary in the extent they provide flood control facility, supply to irrigators and recreational facilities. Information to develop metrics for the asset grouping of dams has been requested and provided for all dams. An overview of the information provided on the Seqwater dam’s asset group is outlined below in **Table 30**.

■ Table 30 Dam asset group information

Capacity (GL)	ML yield	Catchment area (km ²)	Average age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
5,066	656,995	17,093	35	21,167,129	4,137,369	1,026,912	2,308,731,365

Seqwater did not provide information to determine the number of full-time equivalents that are associated to the dam assets for the reasons outlined earlier in this report, that is that there is no allocation of staff costs or numbers to specific assets.

Metrics developed for dams are outlined below in **Table 31**.

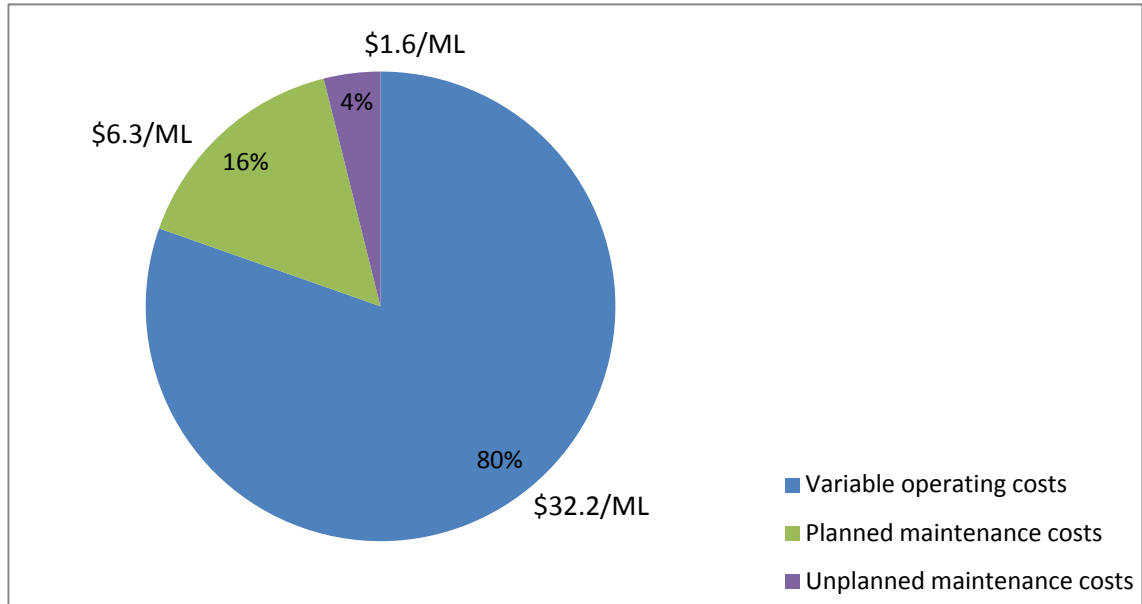


■ **Table 31 Dam asset group metrics**

Metric	Value	Unit
Variable operating costs/Variable operating costs (Total)	0.12	Ratio
Variable operating costs/Asset value	0.0092	Ratio
Variable operating costs/ML yield	32.22	\$/ML
Variable operating costs/Storage capacity (GL)	4,178.03	\$/GL
Planned maintenance costs/Asset value	0.0018	Ratio
Planned maintenance costs/ML yield	6.30	\$/ML
Planned maintenance costs/Storage capacity (GL)	816.65	\$/GL
Unplanned maintenance costs/Asset value	0.00044	Ratio
Unplanned maintenance costs/ML yield	1.56	\$/ML
Unplanned maintenance costs/Storage capacity (GL)	202.69	\$/GL
Total maintenance costs/Asset value	0.0022	Ratio
Total maintenance costs/ML yield	7.86	\$/ML
Total maintenance costs/Storage capacity (GL)	1,019.34	\$/GL
Planned maintenance costs/Unplanned maintenance costs	4.03	Ratio
(Total maintenance costs/Age)/ML yield	0.22	\$/ML
Total variable operating & maintenance costs/Asset value	0.011	Ratio
Total variable operating & maintenance costs/ML yield	40.08	\$/ML
Total variable operating & maintenance costs/Storage capacity (GL)	5,197.37	\$/GL

Seqwater does not allocate corporate overhead costs to assets as it has not been required to do so in the past and that an allocation mechanism, agreed with the Authority, does not currently exist to enable allocation of such costs in the time available for this review. As such, a breakdown of expenditure within the asset grouping can only be determined for operational expenditure, as presented below in **Figure 20**. The figure indicates that the variable costs associated with dam operations which include maintenance of all dams, operation of gated dams, catchment management, water quality monitoring and testing and recreation management comprises the most significant portion of the operational costs.

The ratio of planned maintenance cost to unplanned maintenance cost indicates that 25% of all costs are as a result of a failure of an item resulting in maintenance work that has not been scheduled to be undertaken. The ratio of planned maintenance cost to unplanned maintenance cost highlights the fact that Seqwater has limited historical information on its assets. Seqwater has indicated that a process of gathering data and setting up of a complete scheduled maintenance plan are receiving attention. SKM considers that the gathering of data and setting up of a complete scheduled maintenance plan is prudent. As Seqwater matures it is expected that the planned maintenance cost to unplanned maintenance cost ratio will increase.



■ **Figure 20 Percentage breakdown of operational costs per ML water yield for dams**

6.1.2. Comparator water utility asset group metrics

Information to develop comparator water utility metrics for the asset grouping of dams has been provided by the Office of the Tasmanian Economic Regulator for Ben Lomond Water for two dams. The information provided on the dams is at a relatively high level, as outlined below in **Table 32**.

■ **Table 32 Ben Lomond Water dam information**

Water storage capacity (GL)	Average age	FTE	Total OPEX (\$)	Overhead cost (\$)	Asset value (\$)
12.3	40	0.2	44,730	216,789	10,130,025

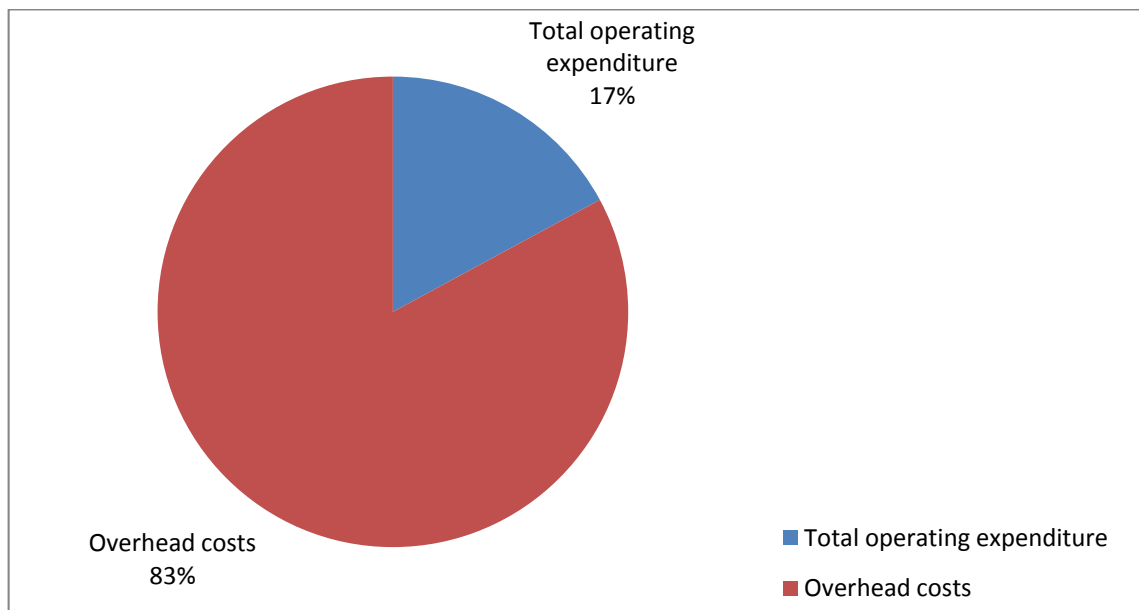
The limited data provided restricts the metrics which can be developed and their comparability to the metrics developed for the Seqwater dams. The metrics developed for the dams are outlined below in **Table 33**.



■ **Table 33 Ben Lomond Water dam metrics**

Metric	Value	Unit
Total operating expenditure/Asset value	0.0044	Ratio
Total operating expenditure/Storage capacity (GL)	3,636.59	\$/GL
Overhead costs/Asset value	0.021	Ratio
Overhead costs/Storage capacity (GL)	17,625.08	\$/GL
Total costs/Asset value	0.026	Ratio
Total costs/Storage capacity (GL)	21,261.67	\$/GL
(Total costs/Age)/Storage capacity (GL)	531.54	\$/GL

The breakdown of the expenditure for the asset group of Ben Lomond Water dams is presented below in **Figure 21**. The figure indicates that the overhead costs associated with the Ben Lomond dams exceed significantly the operational costs.



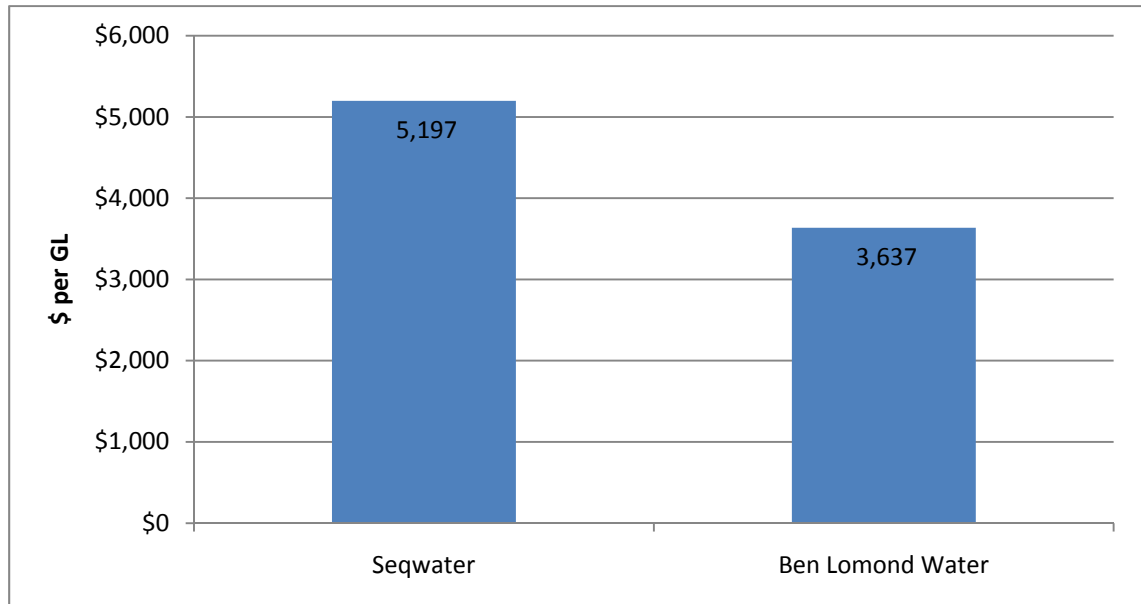
■ **Figure 21 Percentage breakdown of total operating costs per GL water for Ben Lomond Water dams**

6.1.3. Benchmark comparison and discussion

At the time of development of the draft report, benchmark information had only been provided by OTTER for two of the Ben Lomond Water dams. As such SKM’s benchmark comparison has been restricted to comparing Seqwater’s dam asset grouping with those of Ben Lomond Water. **Figure 22** presents the comparison between the operating costs per GL water storage capacity for the dam asset group. The figure indicates that for the asset grouping of dams Seqwater’s operating cost per ML capacity is 43% higher than that of Ben Lomond Water’s. This higher cost may be associated with the sample size taken for Ben Lomond Water (two) compared to Seqwater (26) or the



variables associated with dams such as type, size, outlet type, managed catchment area and condition of the catchment.



■ **Figure 22 Comparison of asset grouping operating expenditure per GL water storage capacity**

6.1.4. Conclusions on dam costs benchmarking

No definitive conclusions can be drawn from the dam benchmarking due to the limited information being available to compare the Seqwater metrics to at the time of writing this draft report, other than that the two water utilities operating costs per GL storage capacity for dams as an asset group is within the same order of magnitude.

6.2. Water treatment plants

This section addresses metrics specific to traditional water treatment plants as an asset group. Water treatment plants serve the primary purpose of treating water (eg from dams, rivers or aquifers) to standard acceptable for distribution to the water supply network and consumption by the public.

6.2.1. Seqwater metrics

Seqwater owns, operates and maintains 51 water treatment plants. The plants vary in capacity, age and source water quality. It should be noted that source water quality together with drinking water regulations and age of plant dictates the technology employed and hence the operating costs of the plants. As such plant comparison metrics should be viewed in this light and hence may not necessarily be considered as being directly comparable. Information to develop metrics for the



asset grouping of water treatment plants has been requested and provided for all water treatment plants. An overview of the information provided on the Seqwater water treatment plants asset group is outlined below in **Table 34**.

■ **Table 34 Water treatment plant asset group information**

Capacity (ML/d)	Water treated (ML)	Average age	Variable operating costs (\$)	Total maintenance costs (\$)	Asset value (\$)
2,036	240,187	32	136,842,803	18,020,780	2,210,312,873

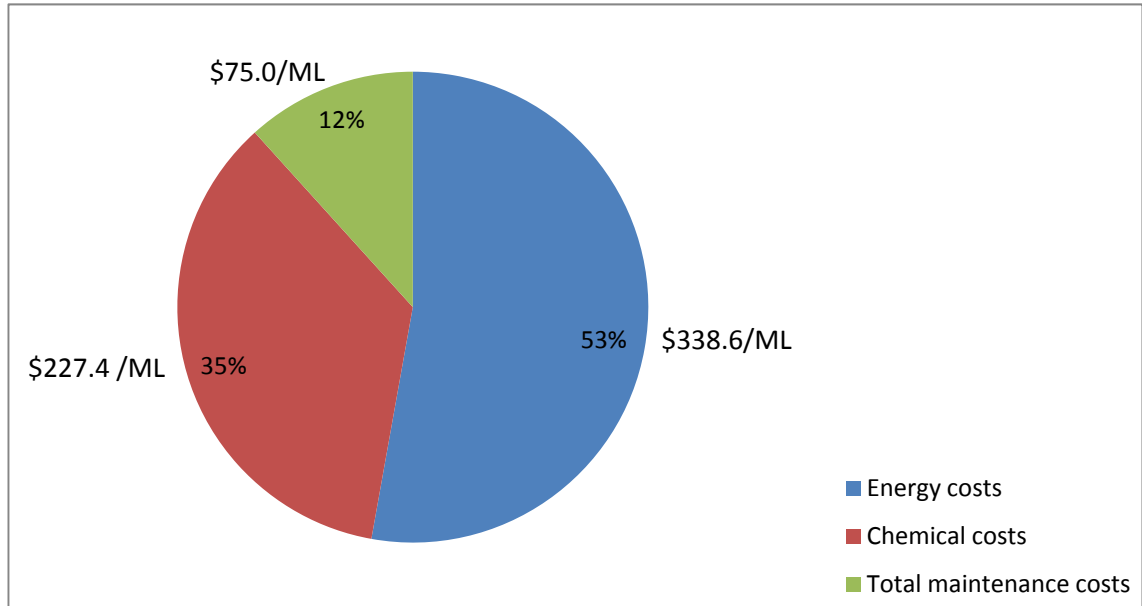
Metrics developed for plants are outlined below in **Table 35**.

■ **Table 35 Water treatment plant metrics**

Metric	Value	Unit
Variable operating costs/Variable operating costs (Total)	0.81	Ratio
Energy costs/Energy costs (total)	0.92	Ratio
Chemical costs/Chemical costs (total)	0.94	Ratio
Sludge costs/Sludge costs (total)	NA	Ratio
Energy costs/ML water treated	338.59	\$/ML
Chemical costs/ML water treated	227.42	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Variable operating costs/Asset value	0.062	Ratio
Variable operating costs/ML water treated	569.73	\$/ML
Total maintenance costs/Asset value	0.0082	Ratio
Total maintenance costs/ML water treated	75.03	\$/ML
(Total maintenance costs/Age)/ML water treated	2.37	\$/ML
Total variable operating & maintenance costs/Asset value	0.070	Ratio
Total variable operating & maintenance costs/ML water treated	644.76	\$/ML

Seqwater did not provide a split between the planned and unplanned maintenance cost associated for all of their water treatment plants. SKM is therefore unable to comment on the efficiency of the scheduled maintenance activities.

As mentioned earlier Seqwater does not allocate corporate overhead costs to assets, as such a breakdown of expenditure within the asset grouping can only be determined for operational expenditure, as presented below in **Figure 23**. It indicates that the energy costs associated with water treatment plant operations comprises the most significant portion of the operational costs.



Note: Only total maintenance cost are shown in the above figure as the split between planned and unplanned maintenance for water treatment plants as a group was not provided.

- **Figure 23 Percentage breakdown of operational costs per ML water treated for water treatment plants**

6.2.2. Comparator water utility asset group metrics

As mentioned, at the time of development of this draft report, information to develop comparator water utility metrics for the asset grouping of water treatment plants had only been provided by the Office of the Tasmanian Economic Regulator for Ben Lomond Water for two plants. The information provided on the water treatment plants is limited to a relatively high level, as outlined below in **Table 36**.

- **Table 36 Ben Lomond Water water treatment plant information**

Treatment plant capacity (ML/day)	Water volume treated (ML)	Average age	FTE	Total OPEX (\$)	Overhead cost (\$)	Asset value (RAB) (\$)
40	4,396	33	3	674,518	225,268	10,521,944

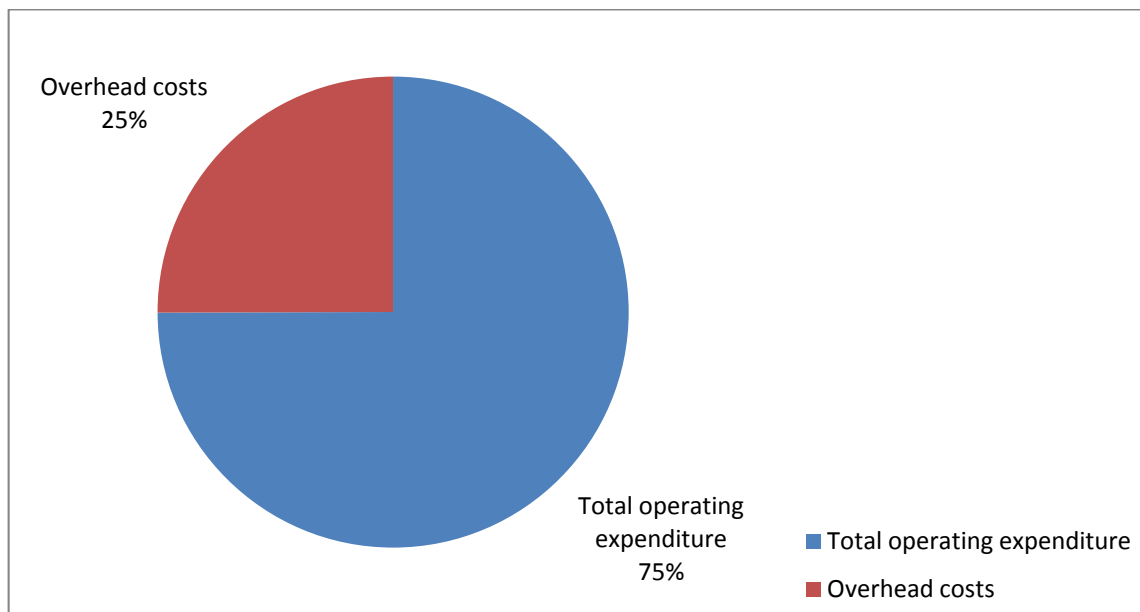
The limited data provided restricts the metrics which can be developed and their comparability to the metrics developed for the Seqwater water treatment plants. The metrics developed for water treatment plants are outlined below in **Table 37**.



■ **Table 37 Ben Lomond Water water treatment plant metrics**

Metric	Value	Unit
Total operating expenditure/Asset value	0.064	Ratio
Total operating expenditure/ML water treated	153.44	\$/ML
Overhead costs/Asset value	0.021	Ratio
Overhead costs/ML water treated	51.24	\$/ML
Total costs/Asset value	0.086	Ratio
Total costs/ML water treated	204.68	\$/ML
(Total costs/Age)/ML water treated	6.20	\$/ML

The breakdown of the expenditure for the asset group of Ben Lomond Water water treatment plants is presented below in **Figure 24**. The figure indicates that the total operational costs associated with the Ben Lomond water treatment plants exceed significantly the overhead costs.



■ **Figure 24 Percentage breakdown of total operating costs per ML water for Ben Lomond Water water treatment plants**

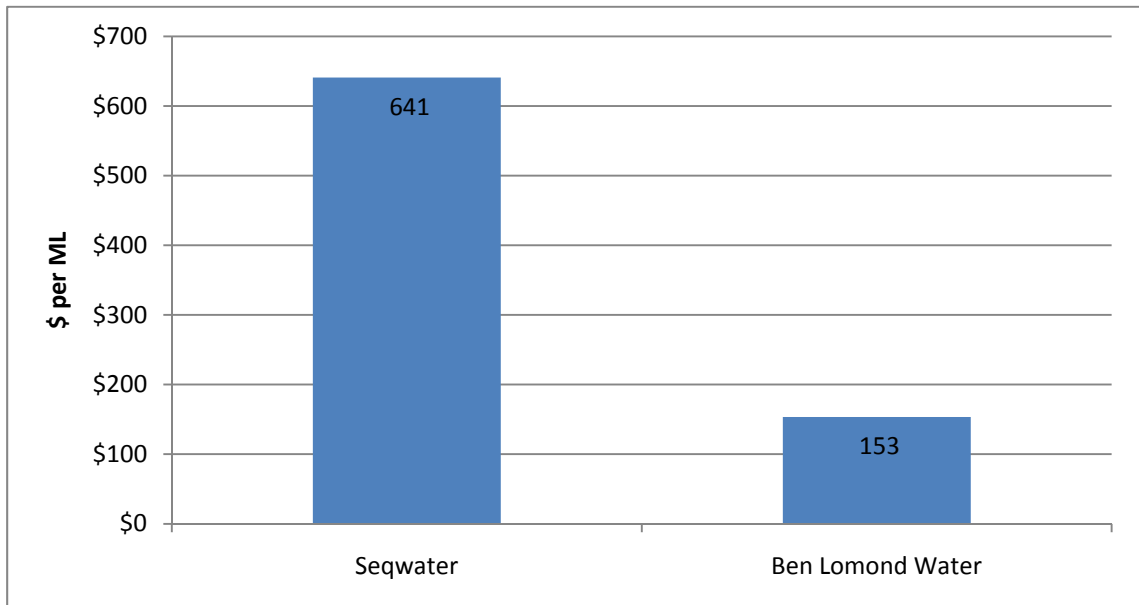
6.2.3. Benchmark comparison and discussion

As mentioned previously, at the time of development of the draft report, benchmark information had only been provided by OTTER for two of the Ben Lomond Water’s water treatment plants. As such SKM’s benchmark comparison has been restricted to comparing Seqwater’s water treatment plants asset grouping with those of Ben Lomond Water.

Figure 25 presents the comparison between the operating costs per ML water treated for the water treatment plant asset group. The figure indicates that for the asset grouping of water treatment



plants Seqwater's operating cost per ML treated is significantly higher than that of Ben Lomond Water's. This may be associated with the sample size taken for Ben Lomond Water (two) compared to Seqwater (51) or the variables associated with water treatment plants such as production capacity, amount of water treated, technology used and age. The combine treatment capacity and the combine water treated for Seqwater exceeds significantly that of Ben Lomond Water which potentially biases the data.



■ **Figure 25 Comparison of asset grouping operating expenditure per ML water treated**

6.2.4. Conclusions on water treatment plant costs benchmarking

No definitive conclusions can be drawn from the water treatment plant benchmarking due to the limited information being available to compare the Seqwater metrics to at the time of writing this draft report. However, the comparison does indicate that Seqwater has higher operating costs per ML water treated for water treatment plants as an asset group compared to that of Ben Lomond Water.

6.3. Advanced water treatment plants

This section will cover metrics specific to advanced water treatment plants as an asset group. Advanced water treatment plants serve the primary purpose of treating treated wastewater from traditional wastewater treatment plants to a standard acceptable for in-direct re-use.

6.3.1. Seqwater metrics

Seqwater owns, operates and maintains three advanced water treatment plants. All of the plants were developed recently in response to the SEQ drought of 2001 to 2009. The advanced water



treatment plants vary in capacity and operational status. Information to develop metrics for the asset grouping of advanced water treatment plants has been requested and provided for all advanced water treatment plants. An overview of the information provided on the Seqwater advanced water treatment plants asset group is outlined below in **Table 38**.

■ **Table 38 Advanced water treatment plant asset group information**

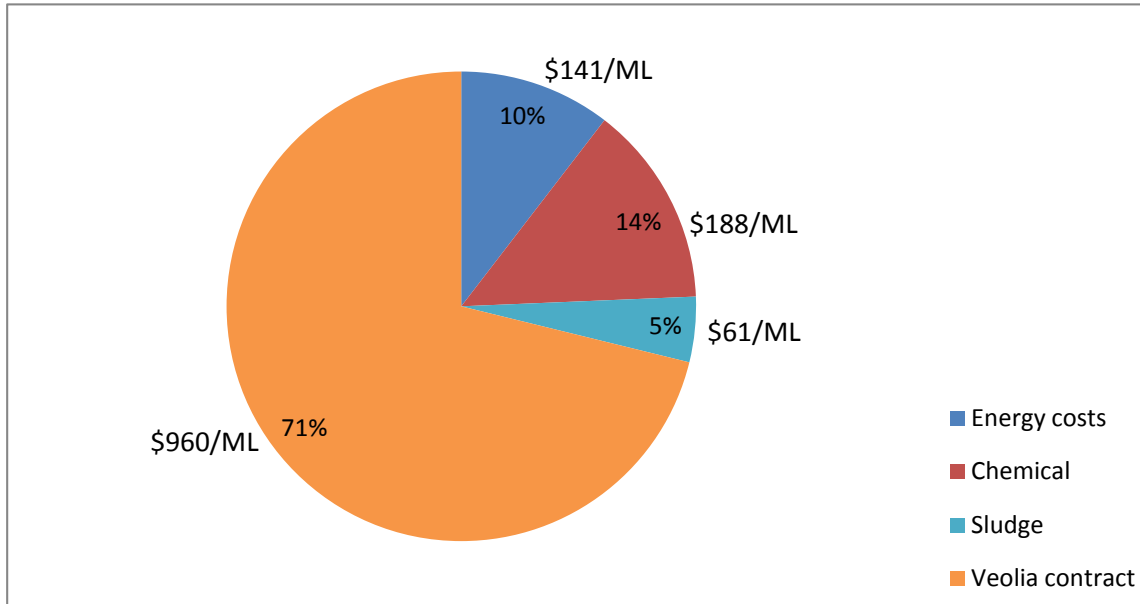
Capacity (ML/d)	Water treated (ML)	Average age	Variable operating costs (\$)	Veolia contract costs (\$)	Asset value (\$)
226	14,600	2.3	5,678,962	14,017,073	1,152,097,251

Metrics developed for advanced water treatment plants are outlined below in **Table 39**.

■ **Table 39 Advanced water treatment plant metrics**

Metric	Value	Unit
Variable operating costs/Variable operating costs (Total)	0.033	Ratio
Energy costs/Energy costs (total)	0.023	Ratio
Chemical costs/Chemical costs (total)	0.047	Ratio
Sludge costs/Sludge costs (total)	0.79	Ratio
Energy costs/ML water treated	140.75	\$/ML
Chemical costs/ML water treated	187.54	\$/ML
Sludge costs/ML water treated	60.68	\$/ML
Variable operating costs/Asset value	0.0049	Ratio
Variable operating costs/ML water treated	388.97	\$/ML
Veolia contract costs/Asset value	0.012	Ratio
Veolia contract costs/ML water treated	960.07	\$/ML
(Veolia contract costs/Age)/ML water treated	411.46	\$/ML

A breakdown of expenditure within the asset grouping can only be determined for operational expenditure as Seqwater does not allocate corporate costs. **Figure 26**, below indicates that the costs associated with Veolia Waters' operation and maintenance contract comprises the most significant portion of the operational costs for advanced water treatment plant operations.



■ **Figure 26 Percentage breakdown of operational costs per ML water treated for advanced water treatment plants**

6.3.2. Comparator water utility asset group metrics

No information has been provided by interstate regulators or water utilities at the time of drafting of this report to enable the development of comparable metrics or benchmarks for these assets. Obtaining of comparable benchmark data is complicated by the fact that WaterSecure (now Seqwater) was, at the time of its 2011/12 submission, operating the plants in hot standby, reduced operating mode or in the process of mothballing as a result of the SEQ drought breaking in 2009. The benchmarking of advanced water treatment plants is further complicated by the unique nature of the plants in that there are virtually no other advanced water treatment plants in the world of this type that are operated in hot standby mode.

6.3.3. Benchmark comparison and discussion

At the time of development of the draft report, no benchmark information had been provided for advanced water treatment plants. As such no benchmarking comparison can be conducted and hence no definitive conclusions drawn in this area.

6.4. Asset group benchmarking overall summary

At the time of development of the draft report, benchmark information had only been provided by OTTER for Ben Lomond Water on dams and water treatment plants. As such SKM's benchmark comparison has been restricted to comparing Seqwater's dam and water treatment plant asset groupings with those of Ben Lomond Water. This limited information results in no definitive conclusions being able to be drawn from the benchmarking at the time of writing this draft report.



7. Asset specific benchmarking - Dams

This section will cover benchmarking at an asset specific level of dams. The assets identified and agreed with the Authority have been addressed individually.

7.1. Wivenhoe Dam

The Wivenhoe Dam is built on the Brisbane River approximately 80 km north west of Brisbane. It was designed by the Water Resources Commission and construction commenced in 1984 with the primary function of providing a safe and reliable water supply to South East Queensland. It has a zoned earth and rock fill embankment dam and a controlled outlet with five steel crest gates.

It has a storage capacity of 1,165 GL and a 7,020 km² catchment area. Water from the Wivenhoe Dam is released to the Brisbane River from which it is extracted by the Mt Crosby Water Treatment Plants. In addition to water supply security, Wivenhoe Dam is capable of containing flood waters up to a capacity of 2,615 GL, ie 1,450 GL above its storage capacity to provide flood mitigation for downstream communities including Brisbane and Ipswich.

7.1.1. Seqwater metrics

An overview of the information provided for Wivenhoe Dam is outlined below in **Table 40**.

■ Table 40 Wivenhoe Dam information

Dam	Capacity (GL)	ML yield	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Wivenhoe	1,165	279,000	27	5,870,556	613,129	13,619	370,731,636

Metrics developed for Wivenhoe Dam are outlined below in **Table 41**.

■ Table 41 Wivenhoe Dam metrics

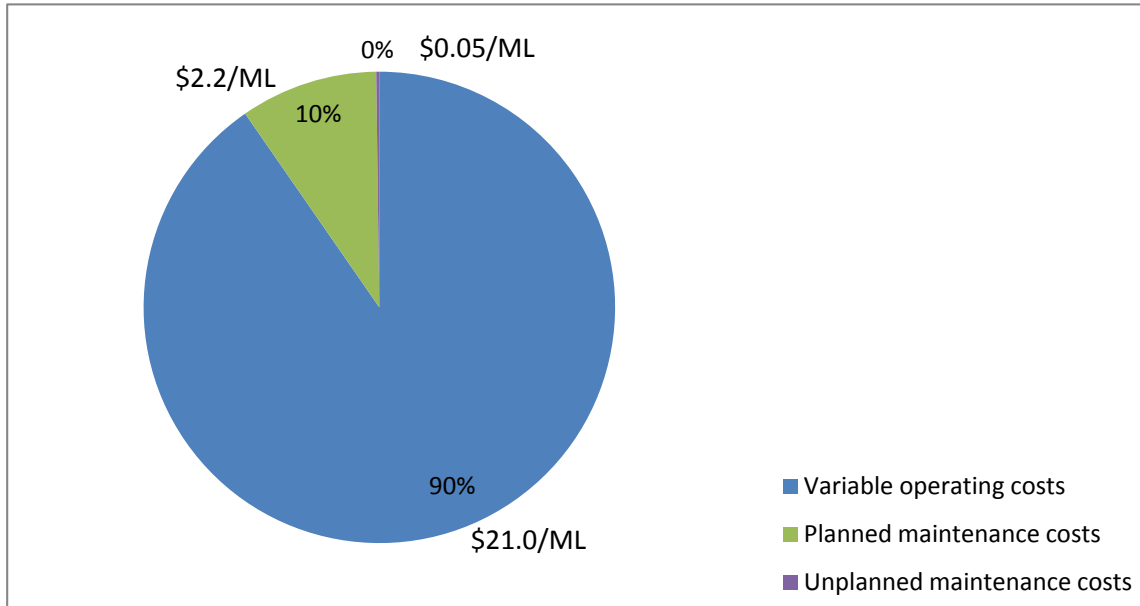
Metric	Value	Unit
Asset value/ML yield	1,328.79	\$/ML
FTE/ML yield	0.000068	FTE/ML
FTE/Storage capacity (GL)	0.016	FTE/GL
Variable operating costs/ML yield	21.04	\$/ML
Variable operating costs/Asset value	0.016	Ratio
Variable operating costs/Storage capacity (GL)	5,039.10	\$/GL
Planned maintenance costs/Asset value	0.0017	Ratio
Planned maintenance costs/ML yield	2.20	\$/ML
Planned maintenance costs/Storage capacity (GL)	526.29	\$/GL
Unplanned maintenance costs/Asset value	0.000037	Ratio



Metric	Value	Unit
Unplanned maintenance costs/ML yield	0.049	\$/ML
Unplanned maintenance costs/Storage capacity (GL)	11.69	\$/GL
Total maintenance costs/Asset value	0.0017	Ratio
Total maintenance costs/ML yield	2.25	\$/ML
Total maintenance costs/Storage capacity (GL)	537.98	\$/GL
Planned maintenance costs/Unplanned maintenance costs	45.02	Ratio
(Total maintenance costs/Age)/ML yield	0.083	\$/ML
Total variable operating & maintenance costs/Asset value	0.018	Ratio
Total variable operating & maintenance costs/ML yield	23.29	\$/ML
Total variable operating & maintenance costs/Storage capacity (GL)	5,577.08	\$/GL

As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 27**. **Figure 27** indicates that the variable costs associated with dam operations comprise the most significant portion of the operational costs. The small portion of costs associate with unplanned maintenance indicates that the planned maintenance schedule may be working effectively.

The ratio of planned maintenance cost to unplanned maintenance cost indicates that 2.2% of all costs are as a result of a failure or significant deterioration of an item that results in maintenance being undertaken that has not been scheduled. The ratio of planned maintenance cost to unplanned maintenance cost highlights the fact that Seqwater has emphasised the risk of Wivenhoe Dam and has accordingly set in place a rigorous maintenance schedule.



■ **Figure 27 Percentage breakdown of operational costs per ML water yield for Wivenhoe Dam**

7.1.2. Comparator water utility asset metrics

Information on dams provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Wivenhoe Dam. It has been suggested that SunWater’s Burdekin Dam is comparable in size (however it does not have radial gates) and hence it is recommended that SunWater is approached to provide benchmarking data in Phase 3 of this assignment.

7.1.3. Benchmark comparison and discussion

At the time of development of the draft report, the benchmark information provided for dams was not comparable to Wivenhoe Dam; as such no benchmarking comparison has been conducted.

7.1.4. Conclusions on Wivenhoe Dam costs benchmarking

No conclusions can be drawn from the dam benchmarking for Wivenhoe Dam due to no comparable dam information being available at the time of writing this draft report.

7.2. North Pine Dam

The North Pine Dam is built across the North Pine River, located in Petrie, northwest of Brisbane. It was opened in August 1976 and contributes approximately 100 ML per day to South East Queensland’s water supply. It is a concrete gravity dam with earth fill embankments and a controlled outlet with five spillway gates.



The North Pine Dam has a storage capacity of 214 GL and has a 348 km² catchment area. It is responsible for the water security of Moreton Bay and Brisbane’s northern suburbs. North Pine Dam is solely used for water supply and does not provide any flood mitigation.

7.2.1. Seqwater metrics

An overview of the information provided for North Pine Dam is outlined below in **Table 42**.

■ Table 42 North Pine Dam information

Dam	Capacity (GL)	ML yield	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
North Pine	214	59,000	36	2,037,177	308,938	44,062	111,377,354

Metrics developed for North Pine Dam are outlined below in **Table 43**.

■ Table 43 North Pine Dam metrics

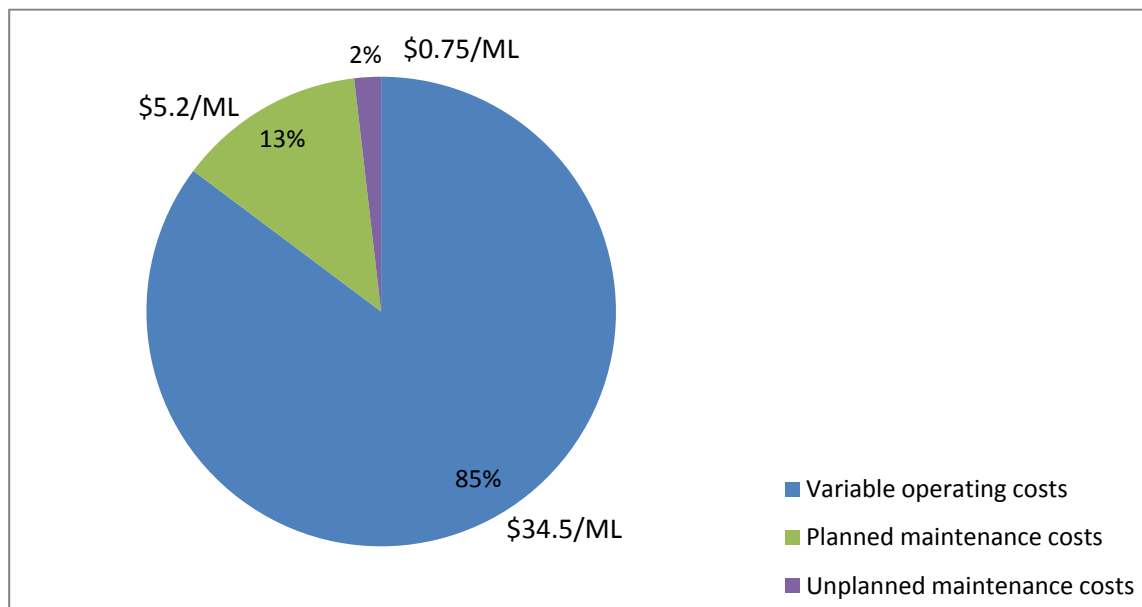
Metric	Value	Unit
Asset value/ML yield	1,887.75	\$/ML
FTE/ML yield	0.000118	FTE/ML
FTE/Storage capacity (GL)	0.032	FTE/GL
Variable operating costs/ML yield	34.53	\$/ML
Variable operating costs/Asset value	0.018	Ratio
Variable operating costs/Storage capacity (GL)	9,506.10	\$/GL
Planned maintenance costs/Asset value	0.0028	Ratio
Planned maintenance costs/ML yield	5.24	\$/ML
Planned maintenance costs/Storage capacity (GL)	1,441.60	\$/GL
Unplanned maintenance costs/Asset value	0.0004	Ratio
Unplanned maintenance costs/ML yield	0.75	\$/ML
Unplanned maintenance costs/Storage capacity (GL)	205.61	\$/GL
Total maintenance costs/Asset value	0.0032	Ratio
Total maintenance costs/ML yield	5.98	\$/ML
Total maintenance costs/Storage capacity (GL)	1,647.21	\$/GL
Planned maintenance costs/Unplanned maintenance costs	7.01	Ratio
(Total maintenance costs/Age)/ML yield	0.17	\$/ML
Total variable operating & maintenance costs/Asset value	0.021	Ratio
Total variable operating & maintenance costs/ML yield	40.51	\$/ML
Total variable operating & maintenance costs/Storage capacity (GL)	11,153.31	\$/GL

A breakdown of expenditure within the asset grouping can only be determined for operational expenditure as Seqwater does not allocate corporate costs, as presented below in **Figure 28**. **Figure**



28 indicates that the variable costs associated with dam operations comprise the most significant portion of the operational costs.

The ratio of planned maintenance cost to unplanned maintenance cost indicates that 14% of all costs are as a result of a failure or significant deterioration of an item that requires maintenance to be undertaken that has not been scheduled. The ratio of planned maintenance cost to unplanned maintenance cost highlights the fact that Seqwater has limited condition information on its assets. Seqwater has indicated that a process of gathering data and setting up of a complete scheduled maintenance plan are receiving attention. SKM considers that the gathering of data and setting up of a complete scheduled is prudent.



■ **Figure 28 Percentage breakdown of operational costs per ML water yield for North Pine Dam**

7.2.2. Comparator water utility asset metrics

Information on dams provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to North Pine Dam as such no benchmarking comparison has been conducted.

7.3. Somerset Dam

The Somerset Dam is located on the Stanley River, northwest of Brisbane. Construction began in 1935 and was completed in 1959. It is a mass concrete gravity dam with a controlled outlet with eight radial gates.



It has a storage capacity of approximately 380 GL and has a 1,340 km² managed catchment area. In addition to Somerset Dam’s primary function of water storage, it has hydro power stations which are equipped for electricity generation. In the event of heavy rainfall, Somerset Dam is capable of holding a further 155 GL to mitigate downstream flooding.

7.3.1. Seqwater metrics

An overview of the information provided for Somerset Dam is outlined below in **Table 44**.

■ Table 44 Somerset Dam information

Dam	Capacity (GL)	ML yield	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Somerset	380	279,000	59	1,509,574	781,667	95,194	103,049,108

Metrics developed for Somerset Dam are outlined below in **Table 45**.

■ Table 45 Somerset Dam metrics

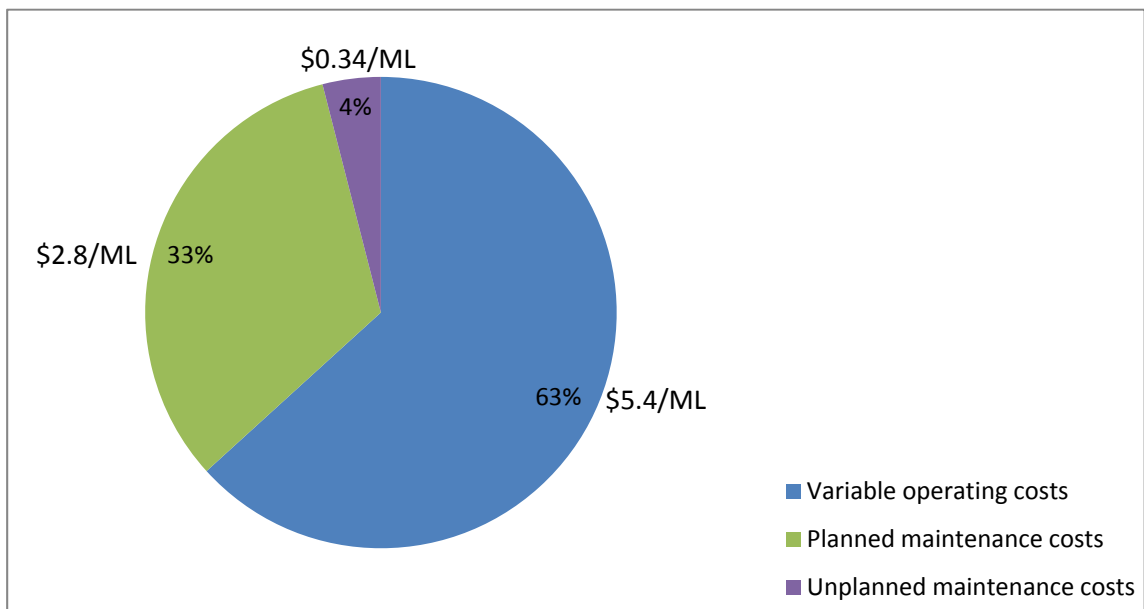
Metric	Value	Unit
Asset value/ML yield	369.35	\$/ML
FTE/ML yield	0.000012	FTE/ML
FTE/Storage capacity (GL)	0.009	FTE/GL
Variable operating costs/ML yield	5.41	\$/ML
Variable operating costs/Asset value	0.015	Ratio
Variable operating costs/Storage capacity (GL)	3,974.14	\$/GL
Planned maintenance costs/Asset value	0.0076	Ratio
Planned maintenance costs/ML yield	2.80	\$/ML
Planned maintenance costs/Storage capacity (GL)	2,057.84	\$/GL
Unplanned maintenance costs/Asset value	0.00092	Ratio
Unplanned maintenance costs/ML yield	0.34	\$/ML
Unplanned maintenance costs/Storage capacity (GL)	250.61	\$/GL
Total maintenance costs/Asset value	0.0085	Ratio
Total maintenance costs/ML yield	3.14	\$/ML
Total maintenance costs/Storage capacity (GL)	2,308.45	\$/GL
Planned maintenance costs/Unplanned maintenance costs	8.21	Ratio
(Total maintenance costs/Age)/ML yield	0.053	\$/ML
Total variable operating & maintenance costs/Asset value	0.023	Ratio
Total variable operating & maintenance costs/ML yield	8.55	\$/ML
Total variable operating & maintenance costs/Storage capacity (GL)	6,282.59	\$/GL

As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 29**. **Figure 29**



indicates that the variable costs associated with dam operations comprise the most significant portion of the operational costs.

The ratio of planned maintenance cost to unplanned maintenance cost indicates that 12% of all costs are as a result of a failure or significant deterioration of an item that requires maintenance to be undertaken that has not been schedule. The ratio of planned maintenance cost to unplanned maintenance cost highlights the fact that Seqwater has limited condition information on its assets. Seqwater has indicated that a process of gathering data and setting up of a complete scheduled maintenance plan are receiving attention. SKM considers that the gathering of data and setting up of a complete scheduled is prudent.



■ **Figure 29 Percentage breakdown of operational costs per ML water yield for Somerset Dam**

7.3.2. Comparator water utility asset metrics

Information on dams provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Somerset Dam as such no benchmarking comparison has been conducted.

7.4. Baroon Pocket Dam

The Baroon Pocket Dam is located on the Obi Obi Creek approximately 7 km east of Maleny in South East Queensland. It was constructed in 1989 creating a 3.8 km² freshwater lake, fed by Obi Obi creek and its tributaries. It has an earth and rock fill embankment with central clay core and an uncontrolled ogee crest outlet.



The Baroon Pocket Dam has a storage capacity of 61 GL and has a 74.3 km² managed catchment area. The water contained within the dam is used to feed the Landers Shute Water Treatment Plant and supplies water to Buderim, Maroochydore, Caloundra, Beerburrum and surrounding areas.

7.4.1. Seqwater metrics

An overview of the information provided for Baroon Pocket Dam is outlined below in **Table 46**.

■ **Table 46 Baroon Pocket Dam information**

Dam	Capacity (GL)	ML yield	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Baroon Pocket	61	36,500	23	425,283	224,509	31,015	47,377,832

Metrics developed for Baroon Pocket Dam are outlined below in **Table 47**.

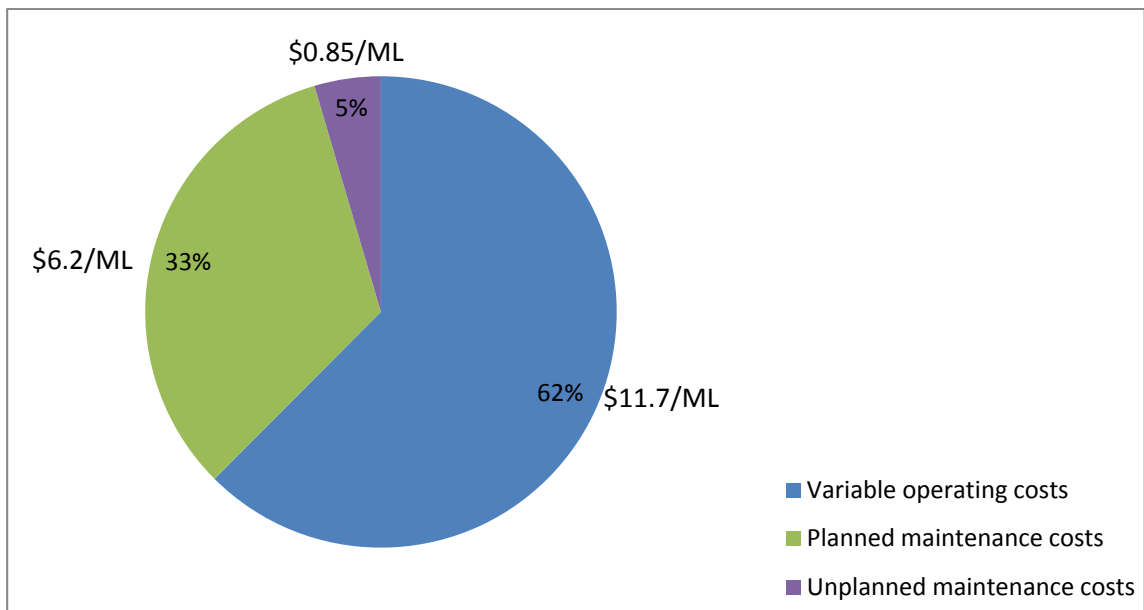
■ **Table 47 Baroon Pocket Dam metrics**

Metric	Value	Unit
Asset value/ML yield	1,298.02	\$/ML
FTE/ML yield	0.000044	FTE/ML
FTE/Storage capacity (GL)	0.026	FTE/GL
Variable operating costs/ML yield	11.65	\$/ML
Variable operating costs/Asset value	0.009	Ratio
Variable operating costs/Storage capacity (GL)	6,971.85	\$/GL
Planned maintenance costs/Asset value	0.0047	Ratio
Planned maintenance costs/ML yield	6.15	\$/ML
Planned maintenance costs/Storage capacity (GL)	3,680.48	\$/GL
Unplanned maintenance costs/Asset value	0.000655	Ratio
Unplanned maintenance costs/ML yield	0.85	\$/ML
Unplanned maintenance costs/Storage capacity (GL)	508.44	\$/GL
Total maintenance costs/Asset value	0.0054	Ratio
Total maintenance costs/ML yield	7.00	\$/ML
Total maintenance costs/Storage capacity (GL)	4,188.92	\$/GL
Planned maintenance costs/Unplanned maintenance costs	7.24	Ratio
(Total maintenance costs/Age)/ML yield	0.30	\$/ML
Total variable operating & maintenance costs/Asset value	0.01	Ratio
Total variable operating & maintenance costs/ML yield	18.65	\$/ML
Total variable operating & maintenance costs/Storage capacity (GL)	11,160.77	\$/GL



A breakdown of expenditure within the asset grouping can only be determined for operational expenditure as Seqwater does not allocate corporate costs, as presented below in **Figure 30**. **Figure 30** indicates that the variable costs associated with dam operations comprise the most significant portion of the operational costs.

The ratio of planned maintenance cost to unplanned maintenance cost indicates that 13.8% of all costs are as a result of a failure or significant deterioration of an item that requires maintenance to be undertaken that has not been schedule. The ratio of planned maintenance cost to unplanned maintenance cost highlights the fact that Seqwater has limited condition information on its assets. Seqwater has indicated that a process of gathering data and setting up of a complete scheduled maintenance plan are receiving attention. SKM considers that the gathering of data and setting up of a complete scheduled is prudent.



■ **Figure 30 Percentage breakdown of operational costs per ML water yield for Baroon Pocket Dam**

7.4.2. Comparator water utility metrics

Information on dams provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Baroon Pocket Dam as such no benchmarking comparison has been conducted.

7.5. Lake McDonald

Lake McDonald is located in the Noosa hinterland immediately east of Cooroy and 14 km west of Noosa Heads. The lake was completed in 1964 and is fed by Six Mile Creek. It is an earth and rockfill dam with an uncontrolled ogee crest outlet.



Lake McDonald has a storage capacity of approximately 8 GL and has a 49 km² managed catchment area. Water from the lake is supplied to the Noosa Water Treatment Plant and distributed to the Noosa region.

7.5.1. Seqwater metrics

An overview of the information provided for Lake McDonald is outlined below in **Table 48**.

■ Table 48 Lake McDonald information

Dam	Capacity (GL)	ML yield	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Lake McDonald	8	3,495	48	635,598	12,237	82,681	4,421,134

Metrics developed for Lake McDonald are outlined below in **Table 49**.

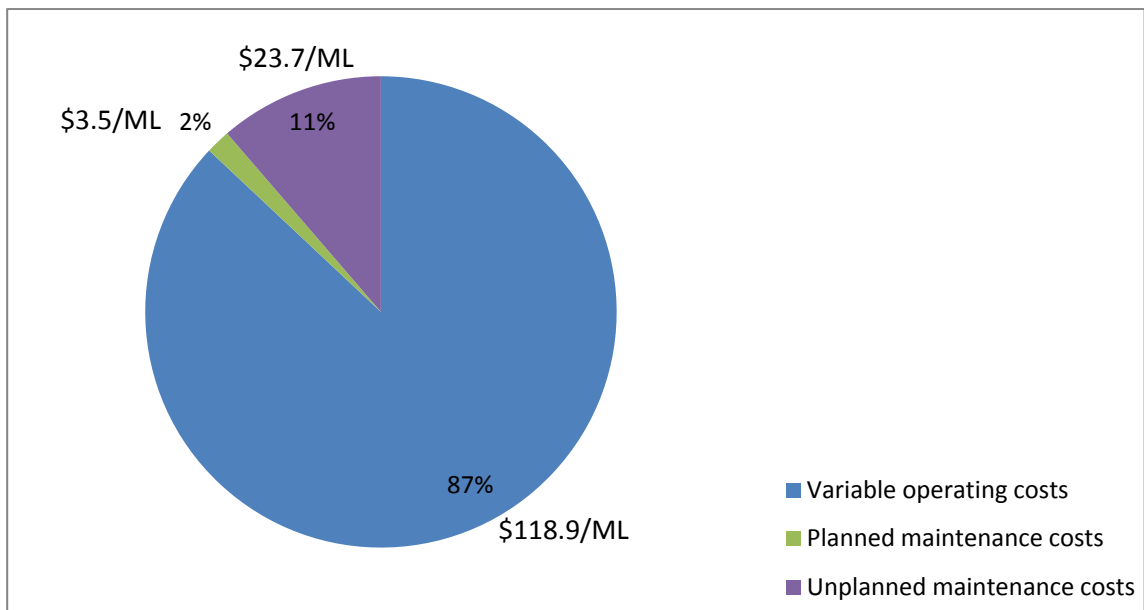
■ Table 49 Lake McDonald metrics

Metric	Value	Unit
Asset value/ML yield	1,264.99	\$/ML
FTE/ML yield	0.00054	FTE/ML
FTE/Storage capacity (GL)	0.24	FTE/GL
Variable operating costs/ML yield	181.86	\$/ML
Variable operating costs/Asset value	0.14	Ratio
Variable operating costs/Storage capacity (GL)	79,271.39	\$/GL
Planned maintenance costs/Asset value	0.0028	Ratio
Planned maintenance costs/ML yield	3.50	\$/ML
Planned maintenance costs/Storage capacity (GL)	1,526.19	\$/GL
Unplanned maintenance costs/Asset value	0.019	Ratio
Unplanned maintenance costs/ML yield	23.66	\$/ML
Unplanned maintenance costs/Storage capacity (GL)	10,311.92	\$/GL
Total maintenance costs/Asset value	0.021	Ratio
Total maintenance costs/ML yield	27.16	\$/ML
Total maintenance costs/Storage capacity (GL)	11,838.11	\$/GL
Planned maintenance costs/Unplanned maintenance costs	0.15	Ratio
(Total maintenance costs/Age)/ML yield	0.57	\$/ML
Total variable operating & maintenance costs/Asset value	0.17	\$
Total variable operating & maintenance costs/ML yield	209.02	\$/ML
Total variable operating & maintenance costs/Storage capacity (GL)	91,109.50	\$/GL



As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 31**. **Figure 31** indicates that the variable costs associated with dam operations comprise the most significant portion of the operational costs.

The ratio of planned maintenance cost to unplanned maintenance cost indicates that almost all of the costs are as a result of a failure or significant deterioration of an item that requires maintenance to be undertaken that has not been schedule. The ratio of planned maintenance cost to unplanned maintenance cost highlights the fact that Seqwater has limited condition information on its assets. Seqwater has indicated that a process of gathering data and setting up of a complete scheduled maintenance plan are receiving attention. SKM considers that the gathering of data and setting up of a complete scheduled is prudent.



■ **Figure 31 Percentage breakdown of operational costs per ML water yield for Lake McDonald**

7.5.2. Comparator water utility asset metrics

Information to develop comparator water utility metrics for specific assets has been provided by the Office of the Tasmanian Economic Regulator for Ben Lomond Water Curries Dam. Curries Dam has a capacity of 12 GL and was constructed in 1980. The information provided on Curries Dam is limited to a relatively high level, as outlined below in **Table 50**.



■ **Table 50 Curries Dam information**

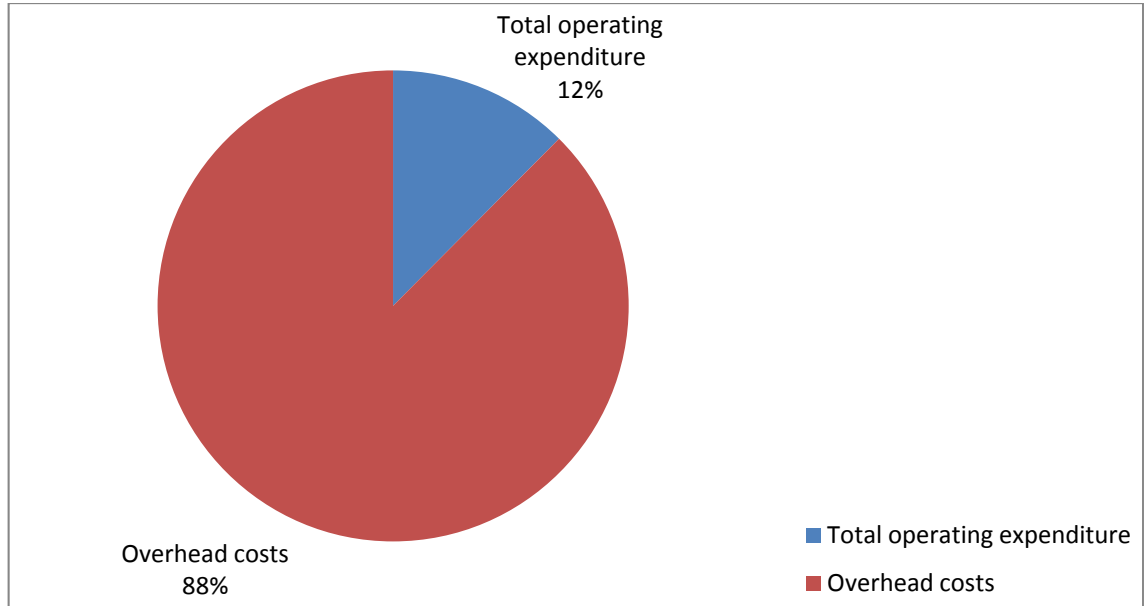
Dam	Water storage capacity (GL)	Age	FTE	Total OPEX (\$)	Overhead cost (\$)	Asset value (RAB) (\$)
Curries Dam	12	32	0.1	28,930	203,664	9,517,000

The limited data provided restricts the metrics which can be developed and their comparability to the metrics developed for Lake McDonald. The metrics developed for Curries Dam is outlined below in **Table 51**.

■ **Table 51 Curries Dam metrics**

Metric	Value	Unit
Asset value/Storage capacity (GL)	793,083.33	\$/GL
FTE/Storage capacity (GL)	0.0083	FTE/GL
Total operating expenditure/Storage capacity (GL)	2,410.83	\$/GL
Total operating expenditure/Asset value	0.0030	Ratio
Overhead costs/Storage capacity (GL)	16,972.01	\$/GL
Overhead costs/Asset value	0.021	Ratio
Total costs/Storage capacity (GL)	19,382.84	\$/GL
Total costs/Asset value	0.024	Ratio
(Total costs/Age)/Storage capacity (GL)	605.71	\$/GL

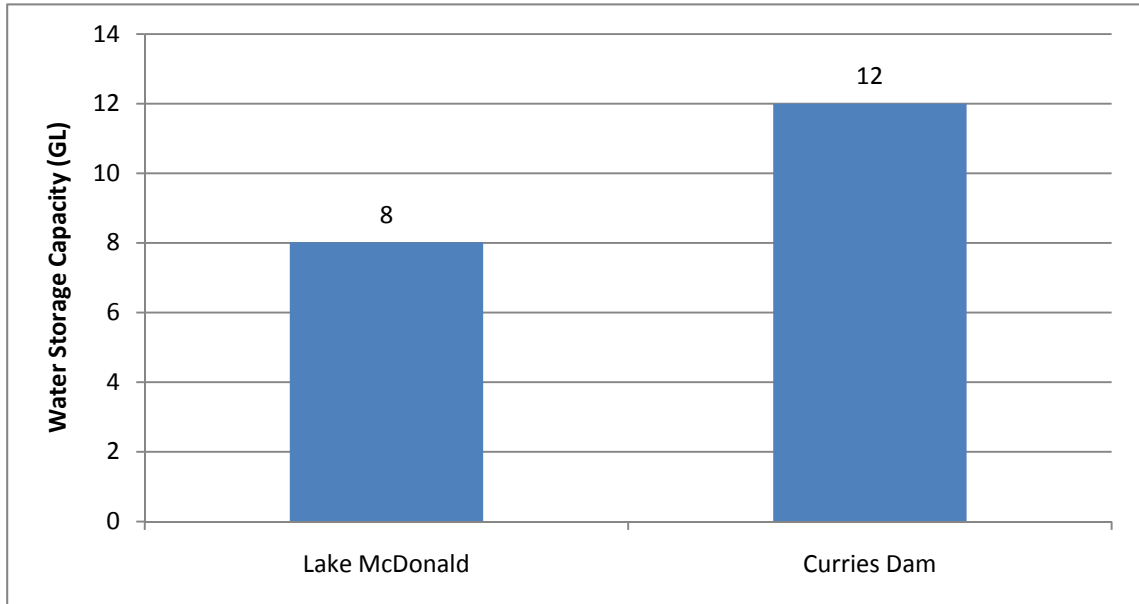
The breakdown of the expenditure per GL storage capacity for Curries Dam is presented below in **Figure 32**. The overheads costs associated with the operation of Curries Dam greatly outweigh the total operating expenditure. SKM considers that it would require a fuller breakdown of the overhead costs to comment on its comprehensive level of overhead costs to other costs and to compare with Seqwater operation and maintenance costs.



■ **Figure 32 Percentage breakdown of operational costs per GL water storage capacity for Curries Dam**

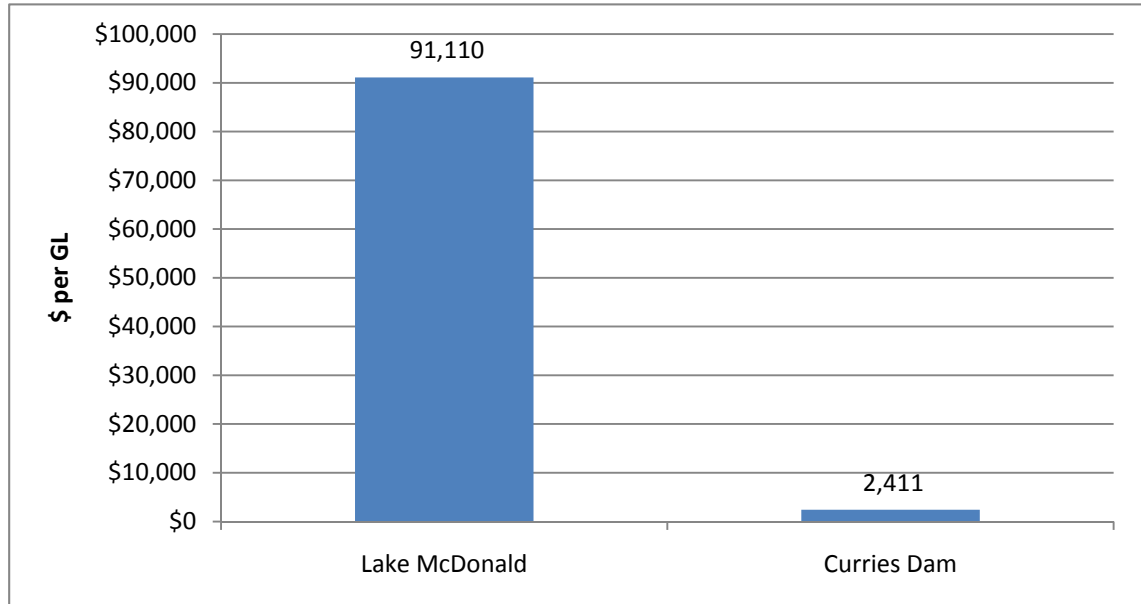
7.5.3. Benchmark comparison and discussion

At the time of development of the draft report, benchmark information had only been provided by OTTER, on behalf of Ben Lomond Water, for one comparable dam, Curries Dam. As such a benchmarking comparison has only been undertaken between Lake McDonald and Curries Dam. **Figure 33** presents the water storage capacities of the two dams. Further breakdown of overhead costs would be required to comment on the comparative level of these overhead costs and to compare with Seqwater operation and maintenance costs.



■ **Figure 33 Water storage capacity of Lake McDonald and Curries Dam**

For Curries Dam, ML yield has not been provided. As such, a comparison has been undertaken based on the GL water storage capacity of the dams. **Figure 34** presents a comparison between the operating costs per GL water storage capacity for Lake McDonald and Curries Dam. The figure indicates that the operating cost per GL water storage capacity for Lake McDonald is significantly higher than Curries Dam. This may be attributed to differences in the type and size of dam, the type of outlet structure, the catchment type, size and condition, rainfall within the catchment and the actual ML per year yield from the dam.



■ **Figure 34 Comparison of operating expenditure per GL water storage capacity**

7.5.4. Conclusions on Lake McDonald costs benchmarking

No definitive conclusions can be drawn from the Lake McDonald costs benchmarking due to limited information available on the specifics of Curries Dam to determine if it is a truly comparable asset at the time of writing this draft report. However, the comparison indicates that Seqwater has higher operating costs per GL water stored for Lake McDonald than Ben Lomond Water has for Curries Dam.

7.6. Summary and conclusions on dam benchmarking

At the time of development of the draft report, benchmark information had only been provided by OTTER for Ben Lomond Water on two dams; Curries Dam (12 GL) and Chimney Saddle Dam (0.3 GL). As such SKM’s benchmark comparison has been restricted to comparing Lake McDonald to Curries Dam as Chimney Saddle Dam too small to be comparable.

The ratio of planned maintenance cost to unplanned maintenance cost except for Wivenhoe Dam indicates that a large component of all costs are as a result of a failure or an item that has not been scheduled and requires to be undertaken. The ratio of planned maintenance cost to unplanned maintenance cost highlights the fact that Seqwater has limited condition information on its assets. Seqwater has indicated that a process of gathering data and setting up of a complete scheduled maintenance plan are receiving attention. SKM considers that the gathering of data and setting up of a complete scheduled is prudent.



This limited information results in no definitive conclusions being able to be drawn from the benchmarking at the time of writing this draft report.



8. Asset specific benchmarking – Water treatment plants

This section will cover benchmarking at an asset specific level of water treatment plants. The assets identified and agreed with the Authority have been addressed individually.

8.1. Landers Shute Water Treatment Plant

The Landers Shute Water Treatment Plant is situated in Maleny and sources raw water from the Baroon Pocket Dam. The Landers Shute Water Treatment Plant was built in 1989 and is responsible for servicing approximately 150,000 properties which includes the townships of Buderim, Maroochydore, Caloundra, Beerburrum and their surrounding areas. When operating at full capacity, the treatment plant is capable of producing 140 ML of potable water per day.

8.1.1. Seqwater metrics

For the Landers Shute Water Treatment Plant no information was provided on the sludge treatment or disposal costs. An overview of the information provided for Landers Shute Water Treatment Plant is outlined below in **Table 52**.

■ Table 52 Landers Shute Water Treatment Plant information

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Landers Shute	140	27,187	23	1,169,041	1,259,000	1,737,000	44,021,815

Metrics developed for Landers Shute Water Treatment Plant are outlined below in **Table 53**.

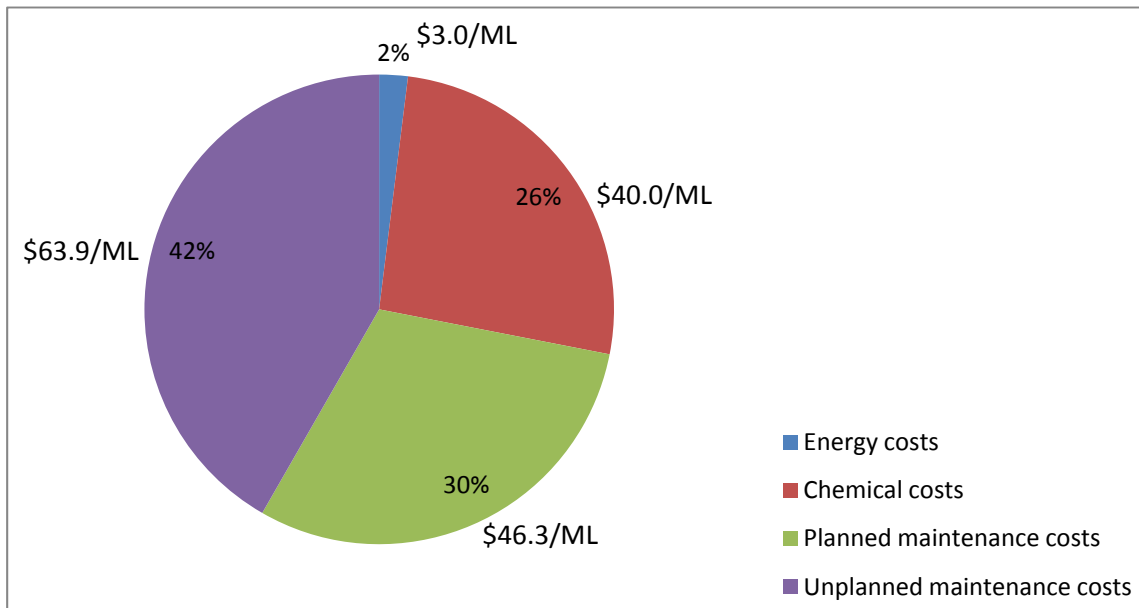
■ Table 53 Landers Shute Water Treatment Plant metrics

Metric	Value	Unit
Asset value/ML water treated	1,619.22	\$/ML
FTE/ML water treated	0.00023	FTE/ML
FTE/Capacity (ML/d)	0.044	FTE/ML
Variable operating costs/ML water treated	43.00	\$/ML
Variable operating costs/Asset value	0.027	Ratio
Energy costs/ML water treated	3.00	\$/ML
Chemical costs/ML water treated	40.00	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	0.029	Ratio
Planned maintenance costs/ML water treated	46.31	\$/ML
Unplanned maintenance costs/Asset value	0.039	Ratio



Metric	Value	Unit
Unplanned maintenance costs/ML water treated	63.89	\$/ML
Planned maintenance costs/Unplanned maintenance costs	0.72	Ratio
Total maintenance costs/Asset value	0.068	Ratio
Total maintenance costs/ML water treated	110.20	\$/ML
(Total maintenance costs/Age)/ML water treated	4.79	Ratio
Total variable operating & maintenance costs/Asset value	0.095	Ratio
Total variable operating & maintenance costs/ML water treated	153.20	\$/ML

A breakdown of expenditure within the asset grouping can only be determined for operational expenditure as Seqwater does not allocate corporate costs, as presented below in **Figure 35**. The planned maintenance cost to unplanned maintenance cost ratio indicates that the scheduled maintenance plan has not been fully developed. Seqwater has indicated that very limited historical data was transferred to the newly formed pre-merger Seqwater. SKM considers that the gathering of data and setting up of a complete scheduled is prudent.



■ **Figure 35 Percentage breakdown of operational costs per ML water treated for Landers Shute Water Treatment Plant**

8.1.2. Comparator water utility asset metrics

Information on water treatment plants provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Landers Shute Water Treatment Plant as such no benchmarking comparison has been conducted.



8.2. Noosa Water Treatment Plant

The Noosa Water Treatment Plant was completed in 1968 and upgraded in 1999. It is located on the northern side of Lake McDonald, immediately east of Cooroy and approximately 14 km west of Noosa Heads. The plant sources water from Lake McDonald and supplies potable water to the Noosa region. When operating at full capacity, the treatment plant is capable of producing 45 ML of potable water per day.

8.2.1. Seqwater metrics

The Noosa Water Treatment Plant is operated by Veolia Water under an operation and maintenance contract. Specific details of this contract have not been provided, nor a breakdown of expenses within the contract. Due to this only a limited number of the metrics were able to be developed. An overview of the information provided for Noosa Water Treatment Plant is outlined below in **Table 54**.

■ Table 54 Noosa Water Treatment Plant information

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Noosa	45	5,947	44	856,368	NA	NA	39,503,637

Metrics developed for Noosa Water Treatment Plant are outlined below in **Table 55**. Due to the limited information available on the plant the metrics developed do not provide much value to the benchmarking exercise.

■ Table 55 Noosa Water Treatment Plant metrics

Metric	Value	Unit
Asset value/ML water treated	6,642.62	\$/ML
FTE/ML water treated	NA	FTE/ML
FTE/Capacity (ML/d)	NA	FTE/ML
Variable operating costs/ML water treated	144.00	\$/ML
Variable operating costs/Asset value	0.022	Ratio
Energy costs/ML water treated	NA	\$/ML
Chemical costs/ML water treated	NA	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	NA	Ratio
Planned maintenance costs/ML water treated	NA	\$/ML
Unplanned maintenance costs/Asset value	NA	Ratio
Unplanned maintenance costs/ML water treated	NA	\$/ML
Planned maintenance costs/Unplanned maintenance costs	NA	Ratio
Total maintenance costs/Asset value	NA	Ratio



Metric	Value	Unit
Total maintenance costs/ML water treated	NA	\$/ML
(Total maintenance costs/Age)/ML water treated	NA	Ratio
Total variable operating & maintenance costs/Asset value	NA	Ratio
Total variable operating & maintenance costs/ML water treated	NA	\$/ML

8.2.2. Comparator water utility asset metrics

Information on water treatment plants provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Noosa Water Treatment Plant as such no benchmarking comparison has been conducted.

8.3. Molendinar Water Treatment Plant

The Molendinar Water Treatment Plant was completed in 1983 and is a conventional water treatment facility located in Nerang on the Gold Coast. The plant sources water from the Hinze Dam and supplies water to most of the Gold Coast. The plant is capable of producing 180 ML of potable water per day.

8.3.1. Seqwater metrics

For the Molendinar Water Treatment Plant no information was provided on the sludge treatment or disposal costs. An overview of the information provided for Molendinar Water Treatment Plant is outlined below in **Table 56**.

■ Table 56 Molendinar Water Treatment Plant information

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Molendinar	180	21,684	29	1,040,832	124,000	625,000	35,970,800

Metrics developed for Molendinar Water Treatment Plant are outlined below in **Table 57**.

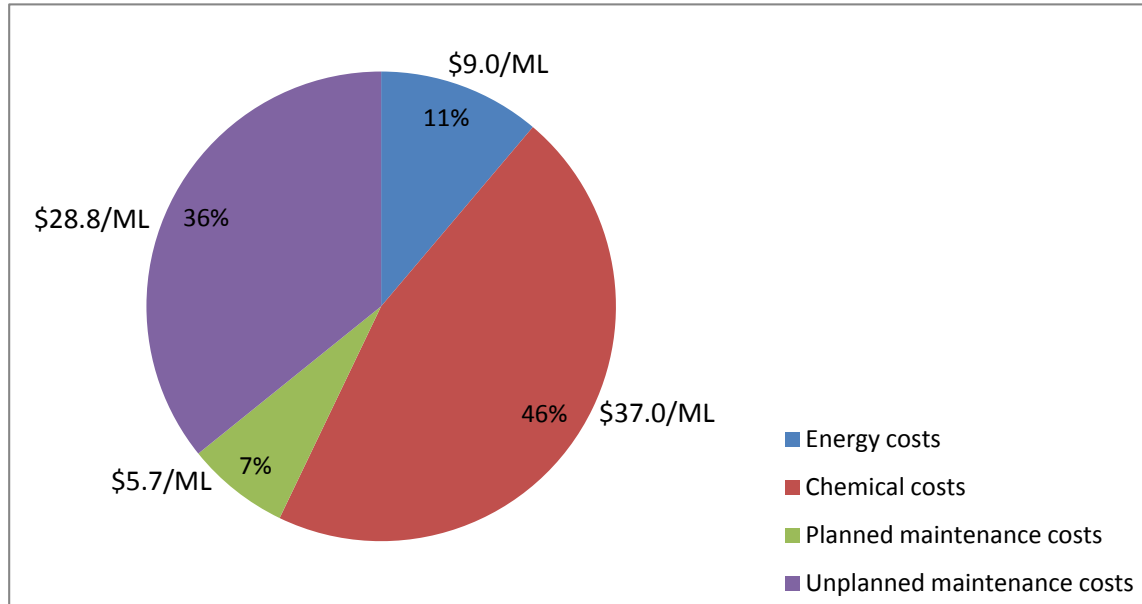


■ **Table 57 Molendinar Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	1,658.86	\$/ML
FTE/ML water treated	0.00072	FTE/ML
FTE/Capacity (ML/d)	0.086	FTE/ML
Variable operating costs/ML water treated	48.00	\$/ML
Variable operating costs/Asset value	0.029	Ratio
Energy costs/ML water treated	9.00	\$/ML
Chemical costs/ML water treated	37.00	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	0.0034	Ratio
Planned maintenance costs/ML water treated	5.72	\$/ML
Unplanned maintenance costs/Asset value	0.017	Ratio
Unplanned maintenance costs/ML water treated	28.82	\$/ML
Planned maintenance costs/Unplanned maintenance costs	0.20	Ratio
Total maintenance costs/Asset value	0.021	Ratio
Total maintenance costs/ML water treated	34.54	\$/ML
(Total maintenance costs/Age)/ML water treated	1.19	Ratio
Total variable operating & maintenance costs/Asset value	0.050	Ratio
Total variable operating & maintenance costs/ML water treated	80.54	\$/ML

As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 36**. The figure indicates that the chemical costs associated with the operation of the plant accounts for the largest portion of expenditure. This could be associated with the quality of the water being treated at the plant.

The planned maintenance cost to unplanned maintenance cost ratio indicates that the scheduled maintenance plan has not been fully developed. Seqwater has indicated that very limited historical data was transferred to the newly formed pre-merger Seqwater. SKM considers that the gathering of data and setting up of a complete scheduled is prudent



■ **Figure 36 Percentage breakdown of operational costs per ML water treated for Molendinar Water Treatment Plant**

8.3.2. Comparator water utility asset metrics

Information on water treatment plants provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Molendinar Water Treatment Plant as such no benchmarking comparison has been conducted.

8.4. Mudgeeraba Water Treatment Plant

The Mudgeeraba Water Treatment Plant was completed in 1967 and is located on the Gold Coast. The plant receives water from the little Nerang Dam and the Hinze Dam for distribution of potable drinking water to Mudgeeraba and south to Coolangatta. When operating at full capacity, the treatment plant is capable of producing 110 ML of potable water per day.

8.4.1. Seqwater metrics

For the Mudgeeraba Water Treatment Plant no information was provided on the sludge treatment or disposal costs. An overview of the information provided for Mudgeeraba Water Treatment Plant is outlined below in **Table 58**.



■ **Table 58 Mudgeeraba Water Treatment Plant information**

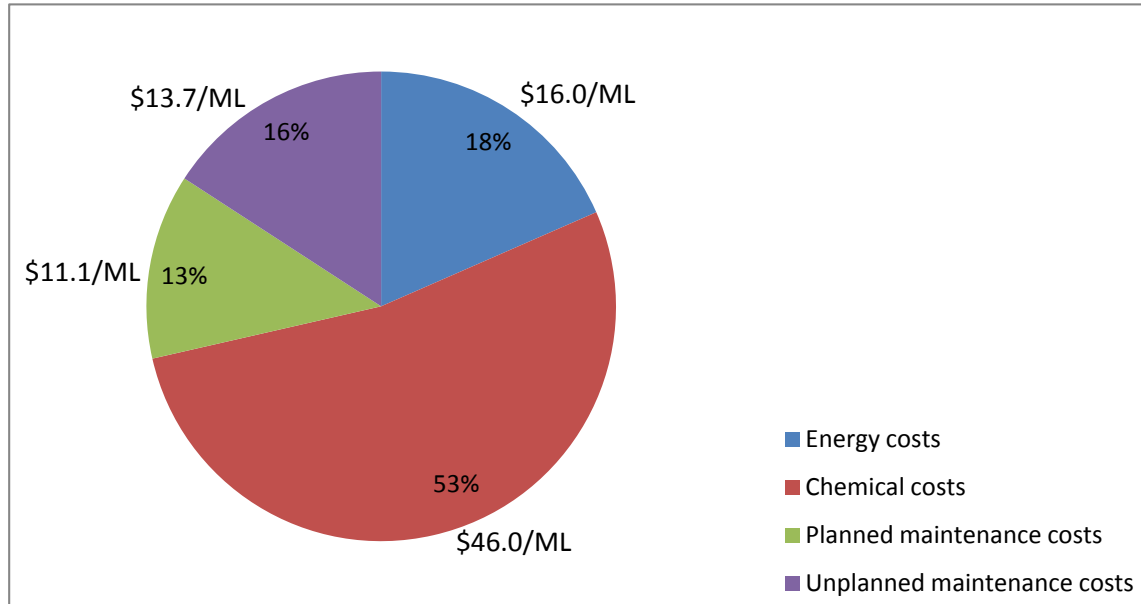
Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Mudgeeraba	110	21,684	45	1,344,408	240,000	298,000	16,673,151

Metrics developed for Mudgeeraba Water Treatment Plant are outlined below in **Table 59**.

■ **Table 59 Mudgeeraba Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	768.91	\$/ML
FTE/ML water treated	0.00023	FTE/ML
FTE/Capacity (ML/d)	0.046	FTE/ML
Variable operating costs/ML water treated	62.00	\$/ML
Variable operating costs/Asset value	0.081	Ratio
Energy costs/ML water treated	16.00	\$/ML
Chemical costs/ML water treated	46.00	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	0.014	Ratio
Planned maintenance costs/ML water treated	11.07	\$/ML
Unplanned maintenance costs/Asset value	0.018	Ratio
Unplanned maintenance costs/ML water treated	13.74	\$/ML
Planned maintenance costs/Unplanned maintenance costs	0.81	Ratio
Total maintenance costs/Asset value	0.032	Ratio
Total maintenance costs/ML water treated	24.81	\$/ML
(Total maintenance costs/Age)/ML water treated	0.55	Ratio
Total variable operating & maintenance costs/Asset value	0.11	Ratio
Total variable operating & maintenance costs/ML water treated	86.81	\$/ML

A breakdown of expenditure within the asset grouping can only be determined for operational expenditure as Seqwater does not allocate corporate costs, as presented below in **Figure 37**. The figure indicates that the chemical costs associated with the operation of the plant accounts for the largest portion of expenditure. This could be associated with the quality of the water being treated at the plant.



■ **Figure 37 Percentage breakdown of operational costs per ML water treated for Mudgeeraba Water Treatment Plant**

8.4.2. Comparator water utility asset metrics

Information on water treatment plants provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Mudgeeraba Water Treatment Plant as such no benchmarking comparison has been conducted.

8.5. North Pine Water Treatment Plant

The North Pine Water Treatment Plant was constructed in 1976 and is located downstream and adjacent to the North Pine Dam, northwest of Brisbane. The treated water is supplied to Moreton Bay and Brisbane’s northern suburbs. When operating at full capacity, the treatment plant is capable of producing 250 ML of potable water per day.

8.5.1. Seqwater metrics

For the North Pine Water Treatment Plant no information was provided on the sludge treatment or disposal costs. An overview of the information provided for North Pine Water Treatment Plant is outlined below in **Table 60**.

■ **Table 60 North Pine Water Treatment Plant information**

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
North Pine	250	28,897	36	1,415,953	678,000	1,981,000	46,439,385



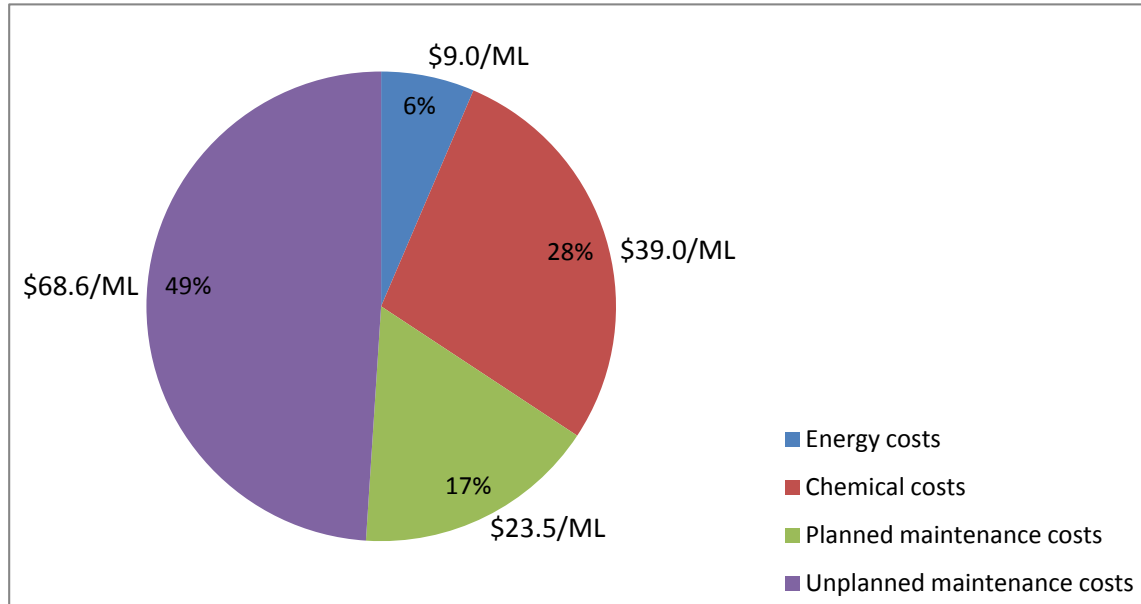
Metrics developed for North Pine Water Treatment Plant are outlined below in **Table 61**.

■ **Table 61 North Pine Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	1,607.07	\$/ML
FTE/ML water treated	0.00032	FTE/ML
FTE/Capacity (ML/d)	0.037	FTE/ML
Variable operating costs/ML water treated	49.00	\$/ML
Variable operating costs/Asset value	0.030	Ratio
Energy costs/ML water treated	9.00	\$/ML
Chemical costs/ML water treated	39.00	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	0.015	Ratio
Planned maintenance costs/ML water treated	23.46	\$/ML
Unplanned maintenance costs/Asset value	0.043	Ratio
Unplanned maintenance costs/ML water treated	68.55	\$/ML
Planned maintenance costs/Unplanned maintenance costs	0.34	Ratio
Total maintenance costs/Asset value	0.057	Ratio
Total maintenance costs/ML water treated	92.02	\$/ML
(Total maintenance costs/Age)/ML water treated	2.56	Ratio
Total variable operating & maintenance costs/Asset value	0.088	Ratio
Total variable operating & maintenance costs/ML water treated	141.02	\$/ML

As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 38**.

The planned maintenance cost to unplanned maintenance cost ratio indicates that the scheduled maintenance plan has not been fully developed. Seqwater has indicated that very limited historical data was transferred to the newly formed pre-merger Seqwater. SKM considers that the gathering of data and setting up of a complete scheduled is prudent



■ **Figure 38 Percentage breakdown of operational costs per ML water treated for North Pine Water Treatment Plant**

8.5.2. Comparator water utility asset metrics

Information on water treatment plants provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to North Pine Water Treatment Plant as such no benchmarking comparison has been conducted..

8.6. Mt Crosby Eastbank Water Treatment Plant

The Mt Crosby water treatment plants are located on the Brisbane River at Mt Crosby. There are two plants located at Mt Crosby, the Eastbank and the Westbank treatment plants. Both plants source water from the Mt Crosby Weir on the Brisbane River, which is supplied by releases from Wivenhoe Dam. The Mt Crosby Eastbank Water Treatment Plant was first used in 1892 and when operating at full capacity is capable of producing 700 ML of treated water per day. Water from the plant is then supplied to the Greater Brisbane area.

8.6.1. Seqwater metrics

For the Mt Crosby Eastbank Water Treatment Plant no information was provided on the sludge treatment or disposal costs. An overview of the information provided for Mt Crosby Eastbank Water Treatment Plant is outlined below in **Table 62**.



■ **Table 62 Mt Crosby Eastbank Water Treatment Plant information**

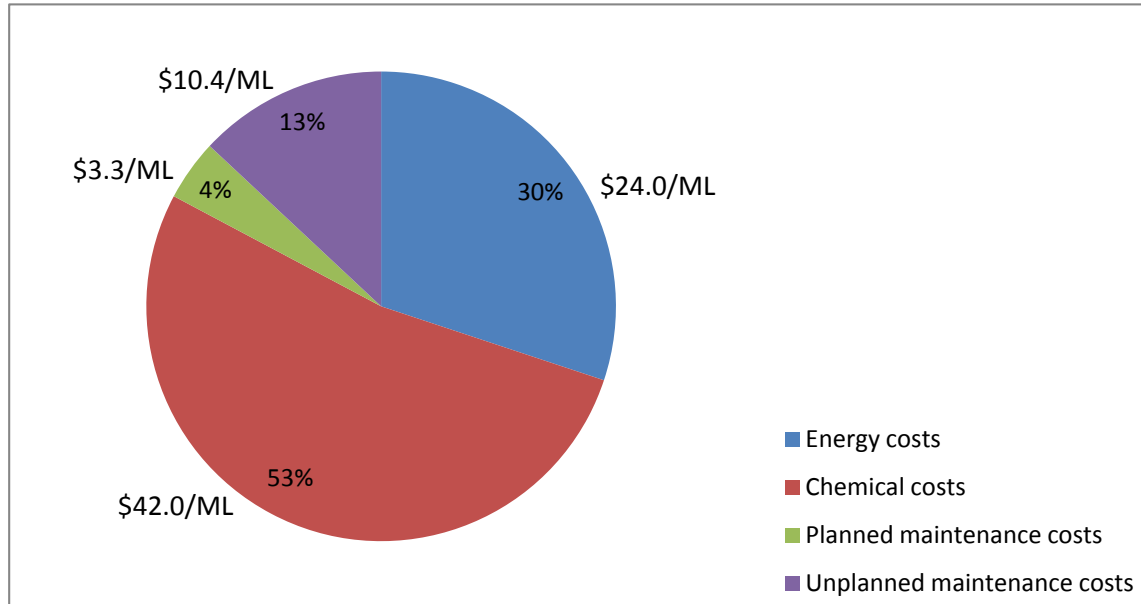
Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Asset value (\$)
Mt Crosby Eastbank	700	97,787	28	6,453,942	327,000	1,016,000	91,779,089

Metrics developed for Mt Crosby Eastbank Water Treatment Plant are outlined below in **Table 63**.

■ **Table 63 Mt Crosby Eastbank Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	938.56	\$/ML
FTE/ML water treated	0.00031	FTE/ML
FTE/Capacity (ML/d)	0.043	FTE/ML
Variable operating costs/ML water treated	66.00	\$/ML
Variable operating costs/Asset value	0.070	Ratio
Energy costs/ML water treated	24.00	\$/ML
Chemical costs/ML water treated	42.00	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	0.0036	Ratio
Planned maintenance costs/ML water treated	3.34	\$/ML
Unplanned maintenance costs/Asset value	0.011	Ratio
Unplanned maintenance costs/ML water treated	10.39	\$/ML
Planned maintenance costs/Unplanned maintenance costs	0.32	Ratio
Total maintenance costs/Asset value	0.015	Ratio
Total maintenance costs/ML water treated	13.73	\$/ML
(Total maintenance costs/Age)/ML water treated	0.49	Ratio
Total variable operating & maintenance costs/Asset value	0.085	Ratio
Total variable operating & maintenance costs/ML water treated	79.73	\$/ML

As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 39**. The figure indicates that the chemical costs associated with the operation of the plant accounts for the largest portion of expenditure. This could be associated with the quality of the water being treated at the plant being to a higher standard than typical.



■ **Figure 39 Percentage breakdown of operational costs per ML water treated for Mt Crosby Eastbank Water Treatment Plant**

8.6.2. Comparator water utility asset metrics

Information on water treatment plants provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Mt Crosby Eastbank Water Treatment Plant as such no benchmarking comparison has been conducted.

8.7. Lowood Water Treatment Plant

The Lowood Water Treatment Plant was constructed in 1989 and is located on the Brisbane River in Lowood. The treated water is supplied to Lowood and surrounding areas. When operating at full capacity, the treatment plant is capable of producing 19.5 ML of potable water per day.

8.7.1. Seqwater metrics

For the Lowood Water Treatment Plant no information was provided on the sludge treatment or disposal costs, also only a total maintenance figure was provided, as opposed to the split between planned and unplanned maintenance. Due to this a number of the metrics developed for the other treatment plants were not able to be developed. An overview of the information provided for Lowood Water Treatment Plant is outlined below in **Table 64**.

■ **Table 64 Lowood Water Treatment Plant information**

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Total maintenance costs (\$)	Asset value (\$)
Lowood	19.5	2,490	23	249,000	173,727	6,712,131

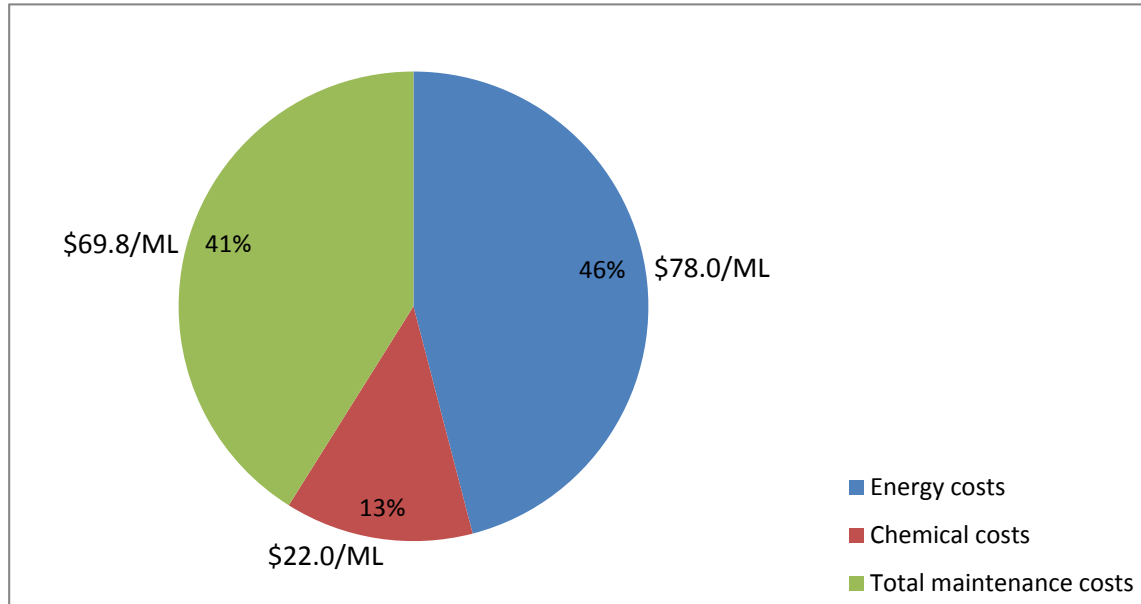


Metrics developed for Lowood Water Treatment Plant are outlined below in **Table 65**.

■ **Table 65 Lowood Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	2,695.63	\$/ML
FTE/ML water treated	0.0000019	FTE/ML
FTE/Capacity (ML/d)	0.00024	FTE/ML
Variable operating costs/ML water treated	100.00	\$/ML
Variable operating costs/Asset value	0.037	Ratio
Energy costs/ML water treated	78.00	\$/ML
Chemical costs/ML water treated	22.00	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	NA	Ratio
Planned maintenance costs/ML water treated	NA	\$/ML
Unplanned maintenance costs/Asset value	NA	Ratio
Unplanned maintenance costs/ML water treated	NA	\$/ML
Planned maintenance costs/Unplanned maintenance costs	NA	Ratio
Total maintenance costs/Asset value	0.026	Ratio
Total maintenance costs/ML water treated	69.77	\$/ML
(Total maintenance costs/Age)/ML water treated	3.03	Ratio
Total variable operating & maintenance costs/Asset value	0.063	Ratio
Total variable operating & maintenance costs/ML water treated	169.77	\$/ML

A breakdown of expenditure within the asset grouping can only be determined for operational expenditure as Seqwater does not allocate corporate costs, as presented below in **Figure 40**. The figure indicates that the energy costs associated with the operation of the plant accounts for the largest portion of expenditure with the total maintenance costs a close second. This could be associated with the process used at the plant to treat.



■ **Figure 40 Percentage breakdown of operational costs per ML water treated for Lowood Water Treatment Plant**

8.7.2. Comparator water utility asset metrics

Information to develop comparator water utility metrics for specific assets has been provided by the Office of the Tasmanian Economic Regulator for Ben Lomond Water for two water treatment plants, the Mt Leslie Water Treatment Plant and the Reatta Road Water Treatment Plant. The Mt Leslie Water Treatment Plant is a dissolved air flotation plant which was constructed in 1996 and when operating at full capacity can treat 20 ML/day. The Reatta Road Water Treatment Plant is a clarifier plant which was constructed in 1962 and when operating at full capacity can also treat 20 ML/day. The information provided on the Mt Leslie and the Reatta Road water treatment plants is limited to a relatively high level, as outlined below in **Table 66**.

■ **Table 66 Mt Leslie and the Reatta Road water treatment plants information**

Plant	Process type	Plant capacity (ML/day)	Water volume treated (ML)	Age	FTE	Total OPEX (\$)	Overhead cost (\$)	Asset value (RAB) (\$)
Mt Leslie	DAF	20	1,625	16	1.5	302,842	170,332	7,955,973
Reatta Road	Clarifier	20	2,771	50	1.5	371,675	54,936	2,565,971

The limited data provided restricts the metrics which can be developed and how comparable they are to the metrics developed for Lake McDonald. The metrics developed for the plants are outlined below in **Table 67**.

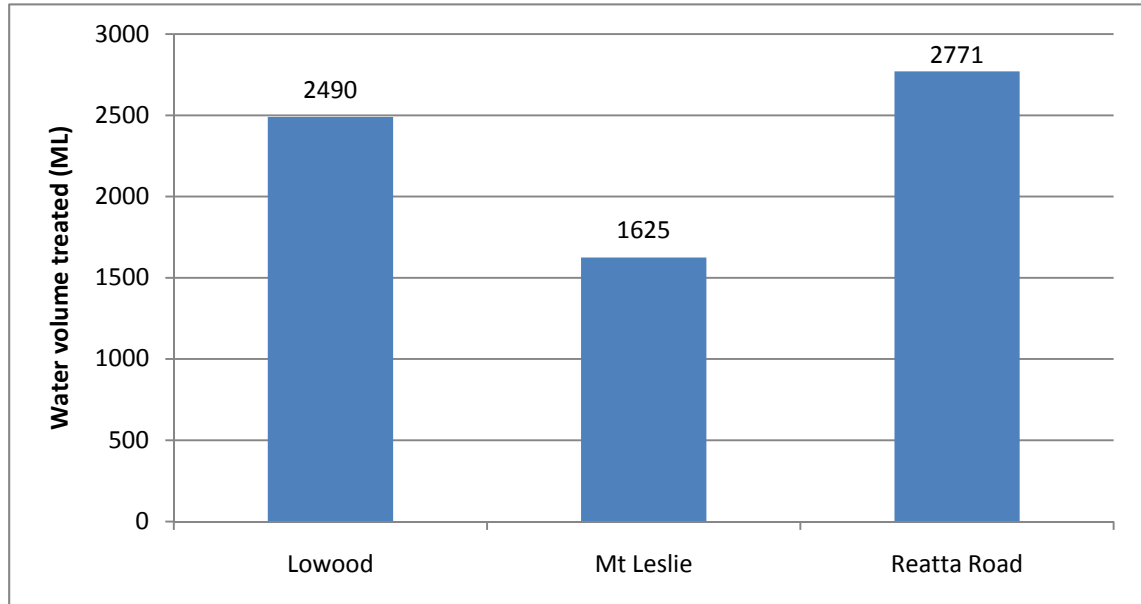


■ **Table 67 Mt Leslie and Reatta Road water treatment plant metrics**

Metric	Mt Leslie	Reatta Road	Unit
Asset value/ML water treated	4,895.98	926.01	\$/ML
FTE/ML water treated	0.00092	0.00054	FTE/ML
FTE/Capacity (ML/d)	0.075	0.075	FTE/ML
Total operating expenditure/ML water treated	186.36	134.13	\$/ML
Total operating expenditure/Asset value	0.038	0.14	Ratio
Overhead costs/ML water treated	104.82	19.83	\$/ML
Overhead costs/Asset value	0.021	0.021	Ratio
Total costs/ML water treated	291.18	153.96	\$/ML
Total costs/Asset value	0.059	0.17	Ratio
(Total costs/Age)/ML water treated	18.20	3.08	\$/ML

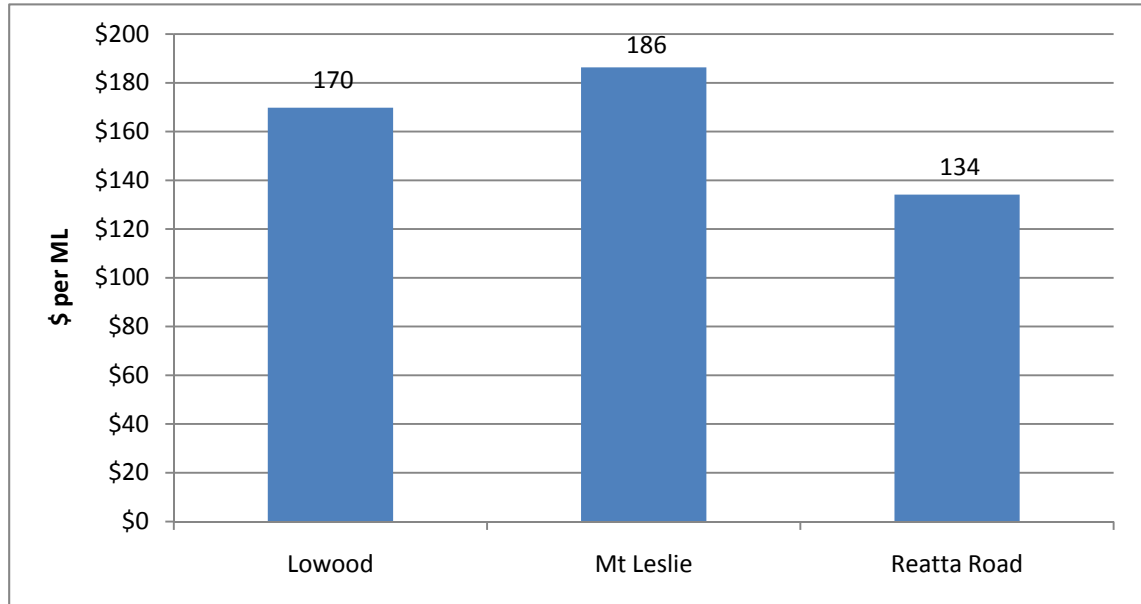
8.7.3. Benchmark comparison and discussion

At the time of development of the draft report, benchmark information had only been provided by OTTER, on behalf of Ben Lomond Water, for two comparable water treatment plants, Mt Leslie and Reatta Road. As such a benchmarking comparison has only been undertaken between Lowood, Mt Leslie and Reatta Road. **Figure 41** presents the ML of water treated by the plants, which is comparable.



■ **Figure 41 Water volume treated for Lowood, Mt Leslie and Reatta Road Water Treatment Plants**

Figure 42 presents a comparison between the operating costs per ML water treated for Lowood, Mt Leslie and Reatta Road water treatment plants. The figure indicates that the operating cost per ML water treated for Lowood treatment plant is comparable with that of Mt Leslie and Reatta Road water treatment plants.



■ **Figure 42 Comparison of operating expenditure per ML water treated**

8.7.4. Conclusions on Lowood Water Treatment Plant costs benchmarking

No definitive conclusions can be drawn from the Lowood Water Treatment Plant costs benchmarking due to limited information available on the breakdown of costs within the operating expenditure of Mt Leslie and Reatta Road treatment plants to determine if they are truly comparable. However the comparison, in so far as it can be made, indicates that the operating costs per ML water treated for Lowood Water Treatment Plant are comparable with those of Mt Leslie and Reatta Road treatment plants.

8.8. Esk Water Treatment Plant

The Esk Water Treatment Plant was constructed in 1971 with treated water is supplied to the local area. When operating at full capacity, the treatment plant is capable of producing 1 ML of potable water per day.

8.8.1. Seqwater metrics

For the Esk Water Treatment Plant no information was provided on the sludge treatment or disposal costs or FTE numbers associated with the plant. Also only a total maintenance figure was provided, as opposed to the split between planned and unplanned maintenance. Due to this a limited number of the metrics was able to be developed. An overview of the information provided for Esk Water Treatment Plant is outlined below in **Table 68**.



■ **Table 68 Esk Water Treatment Plant information**

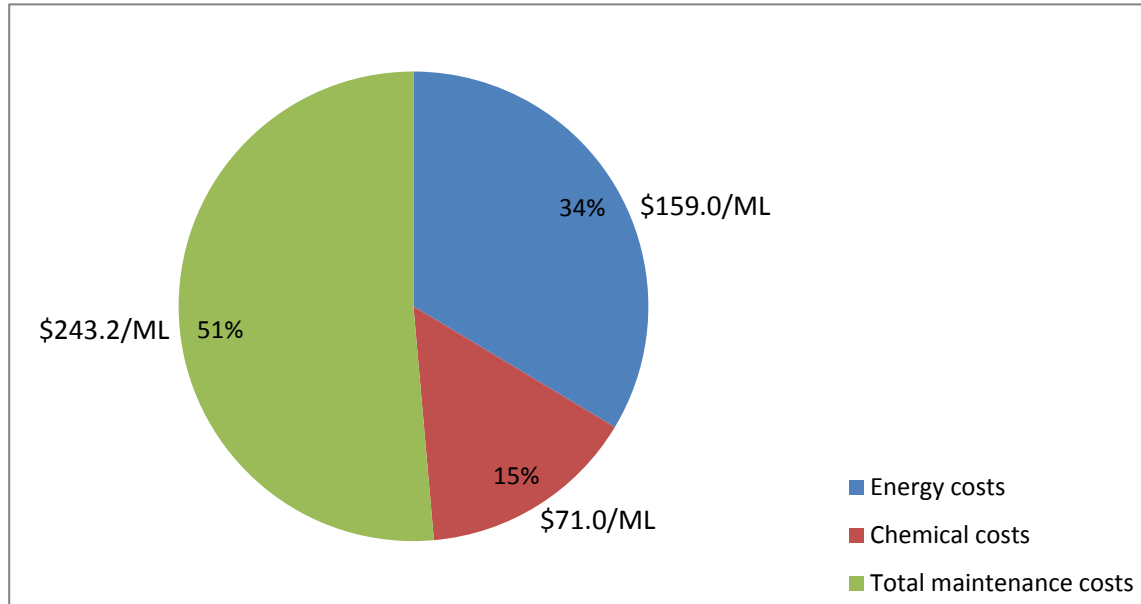
Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Total maintenance costs (\$)	Asset value (\$)
Esk	1	192	41	44,160	46,685	3,963,824

Metrics developed for Esk Water Treatment Plant are outlined below in **Table 69**.

■ **Table 69 Esk Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	20,644.92	\$/ML
FTE/ML water treated	NA	FTE/ML
FTE/Capacity (ML/d)	NA	FTE/ML
Variable operating costs/ML water treated	230.00	\$/ML
Variable operating costs/Asset value	0.011	Ratio
Energy costs/ML water treated	159.00	\$/ML
Chemical costs/ML water treated	71.00	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Planned maintenance costs/Asset value	NA	Ratio
Planned maintenance costs/ML water treated	NA	\$/ML
Unplanned maintenance costs/Asset value	NA	Ratio
Unplanned maintenance costs/ML water treated	NA	\$/ML
Planned maintenance costs/Unplanned maintenance costs	NA	Ratio
Total maintenance costs/Asset value	0.012	Ratio
Total maintenance costs/ML water treated	243.15	\$/ML
(Total maintenance costs/Age)/ML water treated	5.93	Ratio
Total variable operating & maintenance costs/Asset value	0.023	Ratio
Total variable operating & maintenance costs/ML water treated	473.15	\$/ML

As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 43**. The figure indicates that the maintenance costs associated with the operation of the plant accounts for the largest portion of expenditure.



■ **Figure 43 Percentage breakdown of operational costs per ML water treated for Esk Water Treatment Plant**

8.8.2. Comparator water utility asset metrics

Information on water treatment plants provided by interstate regulators or water utilities at the time of drafting of this report is not comparable to Esk Water Treatment Plant as such no benchmarking comparison has been conducted.

8.9. Summary and conclusions on water treatment plant benchmarking

At the time of development of the draft report, benchmark information had only been provided by OTTER for Ben Lomond Water on two water treatment plants; Mt Leslie (20 ML/day) and Reatta Road (20 ML/day). As such SKM's benchmark comparison has been restricted to comparing Lowood Water Treatment Plant to Mt Leslie and Reatta Road water treatment plants. This limited information results in no definitive conclusions being able to be drawn from the benchmarking at the time of writing this draft report.



9. Asset specific benchmarking – Advanced water treatment plants

This section will cover benchmarking at an asset specific level of water treatment plants. The assets identified and agreed with the Authority have been addressed individually.

9.1. Bundamba Advanced Water Treatment Plant

The Bundamba Advanced Water Treatment Plant was constructed in 2007 and is located in Bundamba, Ipswich. It is part of the indirect potable reuse (IPR) scheme and receives treated wastewater from the Bundamba, Wacol, Oxley and Goodna wastewater treatment plants. The treatment plant plays a key role in the delivery of an alternative water supply to the South East Queensland region.

The Bundamba Advanced Water Treatment Plant provides purified recycled water to the Swanbank Power Station for use in their cooling processes for power generation and further helps to alleviate pressures on existing dams and infrastructure and can supply water to the Tarong and Tarong North Power Stations. When operating at capacity the plant can produce 60 ML/day.

9.1.1. Seqwater metrics

An overview of the information provided for the Bundamba Advanced Water Treatment Plant is outlined below in **Table 70**.

■ Table 70 Bundamba Advanced Water Treatment Plant information

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Veolia contract costs (\$)	Asset value (\$)
Bundamba	60	7,300	4	2,673,990	7,173,416	426,991,673

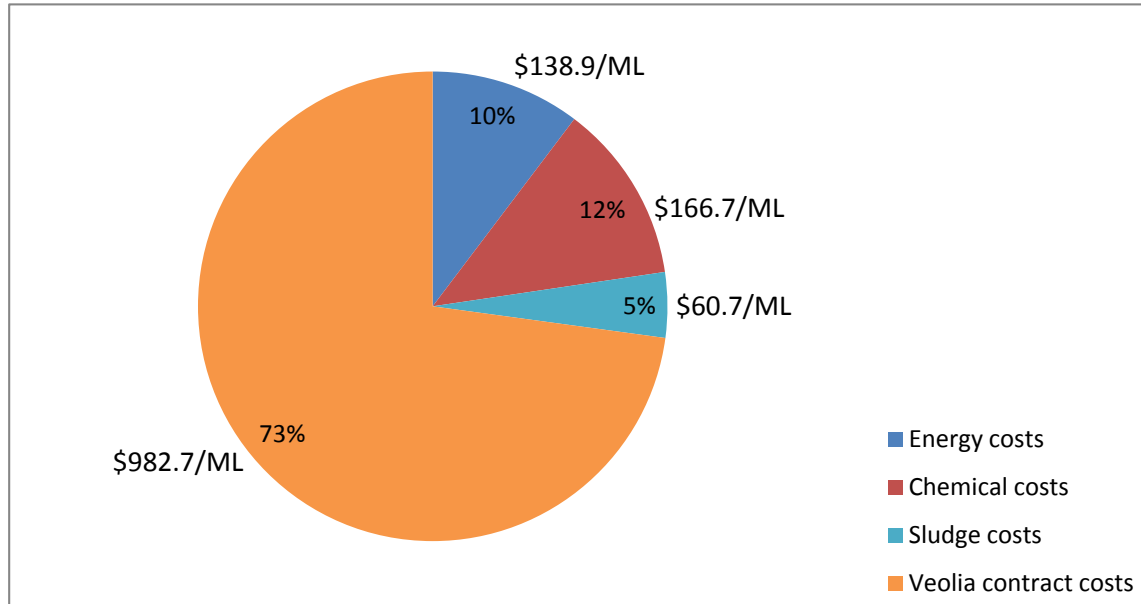
Metrics developed for Bundamba Advanced Water Treatment Plant are outlined below in **Table 71**.



■ **Table 71 Bundamba Advanced Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	58,492.01	\$/ML
FTE/ML water treated	NA	FTE/ML
FTE/Capacity (ML/d)	NA	FTE/ML
Variable operating costs/ML water treated	366.30	\$/ML
Variable operating costs/Asset value	0.0063	Ratio
Energy costs/ML water treated	138.90	\$/ML
Chemical costs/ML water treated	166.71	\$/ML
Sludge costs/ML water treated	60.68	\$/ML
Veolia contract costs/Asset value	0.017	Ratio
Veolia contract costs/ML water treated	982.66	\$/ML
(Veolia contract costs/Age)/ML water treated	245.66	\$/ML

A breakdown of expenditure within the asset grouping can only be determined for operational expenditure as Seqwater does not allocate corporate costs, as presented below in **Figure 44**. The figure indicates that costs associated with the Veolia Water contract accounts for the largest portion of operating expenditure. This is to be expected as the contract covers all maintenance costs as well operational staff costs.



■ **Figure 44 Percentage breakdown of operational costs per ML water treated for Bundamba Advanced Water Treatment Plant**

9.1.2. Comparator water utility asset metrics

No information on advanced water treatment plants had been provided by interstate regulators or water utilities at the time of drafting of this report. As such no benchmarking has been undertaken for the Bundamba Advanced Water Treatment Plant.

9.2. Gibson Island Advanced Water Treatment Plant

The Gibson Island Advanced Water Treatment Plant was constructed in 2007 and is located at Murarrie, close to the mouth of the Brisbane River. It is part of the indirect potable reuse (IPR) scheme and receives treated wastewater from Gibson Island Wastewater Treatment Plant. The function of the plant is to purify treated wastewater into recycled water to allow for increased availability of secondary treated wastewater in periods of drought.

The Gibson Island Advanced Water Treatment Plant can supply water to the Tarong and Tarong North Power Stations. When operating at full capacity, the treatment plant is capable of treating 100 ML of recycled water per day. The plant has been decommissioned since the breaking of the drought.

9.2.1. Seqwater metrics

A limited number of metrics were able to be developed for the plant due to its operational status. An overview of the information provided for the Gibson Island Advanced Water Treatment Plant is outlined below in **Table 72**.



■ **Table 72 Gibson Island Advanced Water Treatment Plant information**

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Veolia contract costs (\$)	Asset value (\$)
Gibson Island	100	0	1	0	1,183,110	399,302,429

The metrics developed for Gibson Island Advanced Water Treatment Plant are outlined below in **Table 71**. Due to the limited information available on the plant, the metrics developed do not provide much value to the benchmarking exercise.

■ **Table 73 Gibson Island Advanced Water Treatment Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	NA	\$/ML
FTE/ML water treated	NA	FTE/ML
FTE/Capacity (ML/d)	NA	FTE/ML
Variable operating costs/ML water treated	NA	\$/ML
Variable operating costs/Asset value	NA	Ratio
Energy costs/ML water treated	NA	\$/ML
Chemical costs/ML water treated	NA	\$/ML
Sludge costs/ML water treated	NA	\$/ML
Veolia contract costs/Asset value	0.0030	Ratio
Veolia contract costs/ML water treated	NA	\$/ML
(Veolia contract costs/Age)/ML water treated	NA	\$/ML

9.2.2. Comparator water utility asset metrics

No information on advanced water treatment plants had been provided by interstate regulators or water utilities at the time of drafting of this report. As such no benchmarking has been undertaken for the Gibson Island Advanced Water Treatment Plant.

9.3. Summary and conclusions on Advanced Water Treatment Plant benchmarking

At the time of development of this draft report, no benchmark information had been provided on assets comparable to Seqwater’s advanced water treatment plants. This limited information results in no definitive conclusions being able to be drawn from the benchmarking.



10. Asset specific benchmarking – Desalination Plant

This section will cover benchmarking at an asset specific level of desalination plants. As there is only one desalination plant, Tugun, it has been addressed individually.

10.1. Tugun Desalination Plant

The Tugun Desalination Plant is a reverse osmosis plant located on the Gold Coast. The plant sources seawater through a 2.2 km intake tunnel with an intake structure on the sea floor 1.4 km out to sea. The plant can supply water to the Gold Coast and other areas of South East Queensland as part of the South East Queensland Water Grid. When operating to full capacity, the plant is capable of producing 133 ML/day. The plant is currently on hot standby.

This operating condition makes benchmarking plant costs very difficult as operation of desalination plant in standby mode is not often undertaken around the world. WaterSecure previously undertook a study tour of the Yuma Desalting Plant in Arizona to investigate what would be considered reasonable staffing levels at a mothballed plant for comparison with Gibson Island Advanced Water Treatment Plant. Benchmarking may be undertaken against the Yuma Desalting Plant in Phase 3, if costs to maintain the plant in ‘mothball’ condition are made available. SKM has only been able to identify cost estimates required to bring the plant back up to partial or full operating capacity (see <http://www.usbr.gov/lc/yuma/facilities/ydp/YDPdemrun07.pdf>)

10.1.1. Seqwater metrics

An overview of the information provided for the Tugun Desalination Plant is outlined below in **Table 74**.

■ **Table 74 Tugun Desalination Plant information**

Plant	Capacity (ML/d)	Water treated (ML)	Age	Variable operating costs (\$)	Veolia contract costs (\$)	Asset value (\$)
Tugun	133	9,054	3	6,118,150	11,595,551	966,144,286

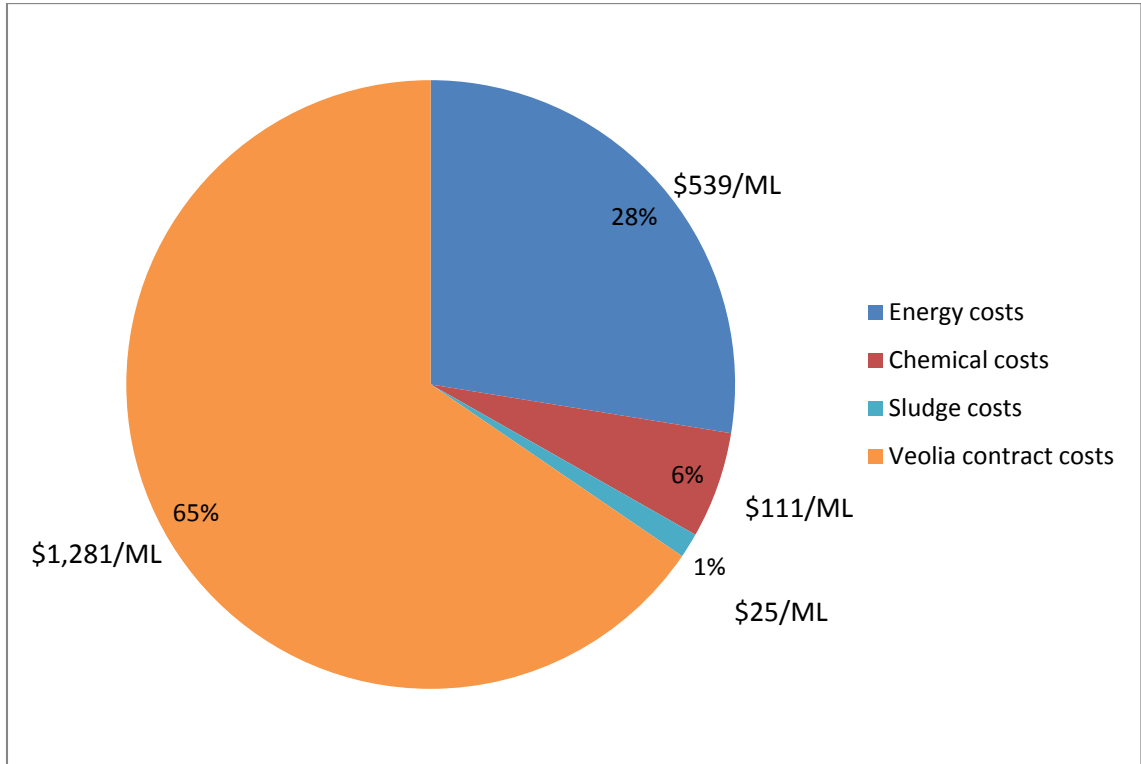
Metrics developed for Tugun Desalination Plant are outlined below in **Table 75**.



■ **Table 75 Tugun Desalination Plant metrics**

Metric	Value	Unit
Asset value/ML water treated	106,709.11	\$/ML
FTE/ML water treated	NA	FTE/ML
FTE/Capacity (ML/d)	NA	FTE/ML
Variable operating costs/ML water treated	675.75	\$/ML
Variable operating costs/Asset value	0.0063	Ratio
Energy costs/ML water treated	539.23	\$/ML
Chemical costs/ML water treated	110.67	\$/ML
Sludge costs/ML water treated	25.84	\$/ML
Veolia contract costs/Asset value	0.012	Ratio
Veolia contract costs/ML water treated	1,280.71	\$/ML
(Veolia contract costs/Age)/ML water treated	426.90	\$/ML

As Seqwater does not allocate corporate overhead costs to assets a breakdown of expenditure can only be determined for operational expenditure, as presented below in **Figure 45**. The figure indicates that costs associated with the Veolia Water contract accounts for the largest portion of operating expenditure. This is to be expected as the contract covers all maintenance costs as well operational staff costs.



■ **Figure 45 Percentage breakdown of operational costs per ML water treated for Tugun Desalination Plant**

10.1.2. Comparator water utility asset metrics

No information on desalination plants had been provided by interstate regulators or water utilities at the time of drafting of this report. As such no benchmarking has been undertaken for the Tugun Desalination Plant.

10.2. Summary and conclusions on Tugun Desalination Plant benchmarking

At the time of development of this draft report, no benchmark information had been provided on assets comparable to Seqwater's advanced water treatment plants. This limited information results in no definitive conclusions being able to be drawn from the benchmarking at the time of writing this draft report.



11. Duplication of effort – Seqwater, contractors and SEQ Water Grid Manager

This section deals with the analysis and identification of potential duplication of effort relating to fixed operating costs between Seqwater, its contractors and the SEQ Water Grid Manager.

11.1. Methodology

The functions of the organisations were characterised by key words and key activities obtained from organisational charts and functional descriptions (since the assets owned and operated by Seqwater are different to those of LinkWater, the list of key activities identified for Seqwater is slightly different to that identified for LinkWater). This information, when analysed, provided the following list of key activities shown in **Table 76**. These activities were then used to compare effort across Seqwater, Seqwater alliance contractors and the SEQ Water Grid Manager.

■ Table 76 Key Activities and Descriptions

Key Activity	Description
Administration	General administration and other support services
Agency Contract Management	Management of water grid participants contracts
Asset Engineering	Engineering support for assets
Asset maintenance EMC	Maintenance of electrical, civil and mechanical assets
Asset maintenance Instrumentation and Control (I&C)	Maintenance & support for SCADA and instrumentation
Asset Planning Capital	Planning and approvals for capital investment for assets
Asset planning Strategic	Management of the asset portfolio with development of long term plans
Compliance Management and Regulation	Management of compliance systems and management of regulatory issues
Corporate Governance	Board support, corporate legal counsel, corporate regulatory support ,Office of the CEO
Corporate Knowledge management	Management of records
Corporate Support	General corporate support.
Environment and Sustainability	Environmental and sustainability services
Facilities Management	Building management, land management.
Finance	Financial management , transaction processing
Fleet	Supply and support for fleet
Human Resource Management	HR and organisational development
Information and Communication Technology	Information and Communication Technology
Legal Services	Legal Services
Operations Dams	Dam operations
Operations pipe networks	Transport network operations
Operations WTP	Water treatment operations



Key Activity	Description
Procurement	Purchasing contract management
Project Delivery	Delivery of capital projects
Recreation Facility Management	Fore shore, vegetation and recreation facilities management
Relationship management	Stake holder management & public relations
Research	Research technology
Risk Management	Risk management, insurance
Water Quality Management	Water quality testing and compliance
Work Place Health and Safety	Organisation safety and compliance

11.2. Overview of Seqwater information

Seqwater provides bulk water to the SEQ Water Grid and is responsible for the operation and maintenance of all water storage and treatment facilities that supply water to the grid. Seqwater provided a very detailed organisational chart and functional descriptions for each of their teams. The post merger organisation consists of the following departments (shown in **Figure 46**, with the Technical Warranty and Development department having been added to the pre-merger Seqwater structure):

- Organisational Development - provides human resources, training, business strategic planning and projects, Work Place Health and Safety and communications
- Business Services - provides computer systems, finance, economic regulation, property and regulation, Procurement, legal and risk, projects, governance, compliance, records and information
- Asset Delivery - provides program management, asset policy and strategy, integrated asset planning, strategic maintenance and project delivery
- Water Delivery - provides water treatment plant operations, dam operations, water quality, environment and maintenance
- Technical Warranty and Development (manufactured water assets) - research and technology development, project closure services for the manufactured water assets, strategic asset readiness for desalination plants, operational Integration with the grid and engineering support



■ **Figure 46 Seqwater Organisational Chart**

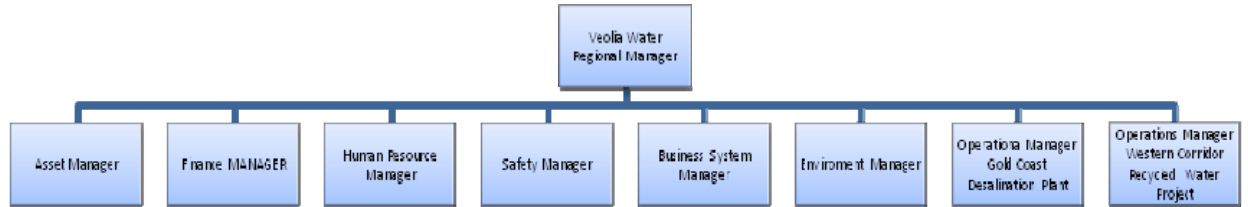
11.3. Overview of Alliance Contractor information

Veolia Water is the service provider for the manufactured water assets (Tugun Desalination plant and the Western corridor recycled water assets) and the Noosa Water Treatment Plant. SKM has been provided with a Veolia Water organisational chart for the manufactured water assets however this did not include staff for the Noosa Water Treatment Plant.

The Veolia Water organisation consists of the following (shown in **Figure 47**):

- Regional Manager – supports to the other groups for Queensland facilities
- Asset Manager – provides engineering support for the operations areas
- Finance Manager – finance support for Queensland operation
- Human Resource Manager – HR support for the Queensland operation
- Safety Manager – safety support for the Queensland operation
- Business systems Manager – systems support for Queensland operation
- Environment Manager – environmental management support
- Operations Manager Gold Coast Desalination Plant – desalination plant operations
- Operations Manager Western Corridor recycled water project – Western Corridor recycled water operations

Seqwater also engages a number of contractors via a panel to supply maintenance services for the non manufactured water assets. They are engaged on a job by job basis to carry out physical work activities. As such SKM is of the view that there is minimal duplication of effort between Seqwater and it non-alliance contractors.



■ **Figure 47 Veolia Water Organisational Chart**

11.4. Overview of SEQ Water Grid Manager Information

An extract from the SEQ Water Grid Manager’s plans describes the activities of the SEQ Water Grid Manager as:

“The SEQ Water Grid Manager holistically manages the water supply chain and its capacity to deliver high-quality drinking water to customers. By performing this important role regional water security is maintained for the entire South East Queensland community.”

The SEQ Water Grid Manager is responsible for the establishment of “normal” operational plans and instructing the physical operation of the water grid to ensure water supply security. The SEQ Water Grid Manager also has the lead role in the management of whole of grid emergency situations.

The SEQ Water Grid Manager has a central role in the water market being the sole purchaser of potable bulk water and the sole supplier to water distribution and retail organisation.

The organisational structure shown in **Figure 48** consists of the following departments:

- Governance and Regulatory Compliance - provides business development, legal services, compliance reporting and board support
- Finance and Corporate Services - provides accounting and finance, human resource, administration and records management
- Operations - focuses on water quality, system capacity, policy and economics
- SEQ Water Grid Communications
- Risk and Technology - risk and emergency management, program delivery, ICT support



■ **Figure 48 SEQ Water Grid Manager Organisation**

SKM’s assessment of the activities, where there is potential for duplication of effort to exist, is provided in the following section (**Section 11.5**).

11.5. Analysis of information and discussion on potential duplication

SKM’s assessment of the activities where potential duplication of effort exists is provided in this section. SKM has also undertaken a subjective analysis as to the level of potential duplication of effort and hence likely cost savings arising from removal of that duplication of effort. SKM has represented this assessment in the following table by using the legend ‘L’, ‘M’ and ‘H’ to represent low, medium or high levels of duplication and hence levels of potential cost savings. This same legend may also be read as a recommended order of priority for any future investigation into actual cost savings that may be achieved through removal of any duplication of effort.



■ Table 77 Detailed evaluation of duplication of potential analysis across activity areas and organisational functions

Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Administration	The communication unit and Governance and Regulatory compliance units have some of the administration staff.	Administration functions are dispersed within the departments	Administration Purchasing and Reception	Each of the organisations has its independent administration functions focused on providing support to its organisation. There would be similar skills and function duplication but addressing the individual need for each organisation. The existence of these services in each organisation by its nature would suggest that there is some duplication of effort and cost that would not be evident if a whole of grid organisation were to provide the same service.	M
Agency Contract Management	Governance and Regulatory Compliance, Contracts- The function is to manage standardised contracts between the SEQ Water Grid Manager and Grid Participants and customers to ensure compliance, and manage related issues as they arise.	Business Services-- The Business Services Projects team manages projects that generally impact functions across Seqwater. The majority of projects involve liaison and negotiation with the distribution/retail entities, LinkWater and/or the Water Grid Manager. Projects usually involve infrastructure ownership and associate property issues or commercial matters		Both Seqwater and the SEQ Water Grid Manager have roles to facilitate the management of interagency contract management. Seqwater and WGM have functions on each side of the transaction. WGM develops and issues the instructions or contract, Seqwater takes the contract/instruction and turns this into operational activity. Previous organisations automated this process based on reservoir levels, hence there is a duplication of effort in this area, a manual process versus a semi automated process. The assets for the automation are also now in separate water entities. This function would not be required if the water grid was managed as a whole and not as individual commercial organisations. Effort duplication in this case is an outcome of the water reform process and the contractual nature of the relationship of the water grid participants.	H



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Asset Engineering		<p>Seqwater has two areas, One in the Technical Warranty and Development Department dealing with the manufactured water assets. The other in Asset Delivery – Strategic Maintenance. This team provides engineering solutions for renewals replacements and maintenance for non manufactured water assets.</p>	<p>Veolia Water's Team addresses the functional requirement of the day to day operations of the manufactured water assets,</p>	<p>Seqwater and Veolia Water have engineering support teams. Seqwater has two areas, One in the Technical Warranty and Development Department dealing with the manufactured water assets. The other is contained within the Strategic Asset maintenance team of Asset Delivery, this group deals with the "natural water production assets"</p> <p>Veolia Water's Team addresses the functional requirement of the day to day operations of the manufactured water assets, building business cases for equipment changes to improve operation and managing the project delivery for approved projects</p> <p>Seqwater contractually (contracts novated by WaterSecure in the merger) has the responsibility to provide a management mechanism by which the Veolia proposals are approved or rejected or modified to an acceptable outcome.</p> <p>This activity merits further investigation, as in SKM's view there is duplication of effort in this activity.</p>	M
Asset Maintenance EMC (Electrical, Mechanical and Civil)		<p>Seqwater has two groups with different responsibilities in this area.</p> <p>The first is within the Asset Delivery department and resides predominately within the Strategic</p>	<p>The manufactured water assets are maintained by Veolia Water under an operations and maintenance contract. This contract is managed by the Technical Warrantee</p>	<p>Asset maintenance is a core function for Seqwater and resides in a number of groups with responsibility for different assets and areas, similar functions exist in Veolia and Seqwater, and however the skill base is different dealing with different technologies and different assets.</p> <p>There is a duplicate business process used by the different organisations although on different assets, some gain may be achieved by</p>	L



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
		<p>Asset Maintenance team; they are responsible for the planning and strategy component of asset maintenance.</p> <p>The second group is within the Water delivery department. This part of the service is delivered by two teams.</p> <p>Group Support and Catchment services deliver vegetation and overall maintenance to recreation facilities.</p> <p>The infrastructure Maintenance team provides the electrical, mechanical and civil maintenance to all active assets except the manufactured water assets. This team carries out the maintenance strategy developed by the Strategic Asset Maintenance team.</p> <p>This service is</p>	<p>and development department of Seqwater.</p>	<p>combining this maintenance activity business process, however it is likely to be small</p> <p>As such, duplication of effort in this area would be small based on the split of assets addressed by the different groups across the organisations.</p>	



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Asset Maintenance I&C	Risk and Technology unit, influence grid wide SCADA and technology adoption	<p>delivered through a panel of local contractors.</p> <p>The Buildings and facilities team of Seqwater provide maintenance management for corporate office space and leased buildings.</p> <p>Business Services, ICT services-- SCADA inter-site network management and support</p> <p>Water Delivery, Infrastructure Maintenance-- SCADA Maintenance</p> <p>Asset Delivery – SCADA systems project delivery</p>	Control Engineering and maintenance and Instrumentation –for manufactured water assets	<p>Instrumentation and Control services are supplied in a number of different areas</p> <p>Seqwater has components in Technical Warrantee and Development, Infrastructure maintenance, Information and Communication Technology, Project Delivery and Integrated asset Planning.</p> <p>The SEQ Water Grid Manager also has an interest in this area via the Risk and Technology Unit. In addition LinkWater also has a strong interest in this technology.</p> <p>This activity area would merit further review as SKM considers that there is likely to be some duplication of effort in this activity.</p>	\$L - Gains are through provision of better service through a consolidated effort
Asset Planning Strategic	The SEQ Water Grid Manager provides a holistic view to strategic planning through the policy team	The Asset Delivery Department within Seqwater has the responsibility for strategic planning for the asset portfolio. This is split across the		The SEQ Water Grid Manager provides a holistic view to strategic planning through the policy team of the Operations Department, This also flows into the area of Seqwater's Asset deliver and has a significant potential for duplication of effort.	H



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Asset Planning Capital	of the Operations Department	Asset Policy and strategy team, the Integrated Asset Planning Team and Program Management Office and to a lesser extent the Strategic Maintenance Team	Veolia Water provides, via the operation and maintenance contract, proposal development and project management for approved projects to Seqwater through the Technical Warrantee and Development Department	This function is primarily assigned to the Integrated Asset Planning team and Project Delivery Team of Seqwater. Veolia Water provides via the operation and maintenance contract, proposal development and project management for approved projects to Seqwater through the Technical Warrantee and Development Department. There is merit in further review of this activity for duplication of effort between Veolia and Seqwater. SKM considers that there is likely to be material duplication of effort in this activity.	H



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Compliance Management and Regulation	Governance and Regulatory Compliance, Business Performance Reporting-- Manage and coordinate compliance reporting across all business units.	Business Services, Governance and Compliance To provide oversight and leadership in Seqwater's corporate governance and compliance programs including establishing the appropriate framework & programs, reporting, monitoring and ongoing improvement. Projects -- Current projects include compliance activities relating to the Market Rules such as ensuring compliance with all metering standards. Office of the CEO - ASIC Reporting		Compliance and regulatory activities are covered by three teams in Seqwater, Business Services department - Governance and Compliance team and Projects team (business Improvement). The Office of CEO (Seqwater) also provides compliance reporting for corporate matters. The SEQ Water Grid Manager has a Governance and Regulatory Compliance Department containing functions for compliance reporting. The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.	M
Corporate Governance	The SEQ Water Grid Manager provides this functionality via the Governance and Regulatory	Seqwater Provides this function via the Business Services department, Governance and Compliance team and		Corporate governance is an organisation dependent business process and is directed at the organisational goals and objectives, Skill for this activity would be common between organisations The existence of these services in each	L



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Corporate Knowledge Management	<p>Compliance department for board management functions and operational planning via the Operations Unit. The Risk and Technology unit provide a governance function for grid technology coordination.</p> <p>Finance and Corporate Services, Knowledge and Records Management</p>	<p>for Assets via the Asset Policy and Strategy team in the Asset Delivery Department.</p> <p>Asset Delivery, Asset Policy and Strategy-GIS information management , activities associated with the alignment of assets, asset management practices, procedures and data management across the asset portfolio Business Services - Records & Information Management</p>		<p>organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.</p> <p>Seqwater has this function in two groups. The Business Services department's Knowledge and Records Management teams provides the corporate function while the Asset Policy and Strategy team within the Asset Delivery Department provides this service for asset dependant knowledge and records. Whereas this function resides in the Finance and Corporate Services function in the SEQ Water Grid Manager.</p> <p>The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.</p>	M



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Corporate Support	Finance and Corporate Services-- policy, document and knowledge management, human resources, workforce planning and office administration.	Organisation Development - Strategy plans and operational plan compliance		Seqwater and the SEQ Water Grid Manager provide the corporate support function through their respective departments (Process Improvement, Strategy and Sustainability for Seqwater. Finance and Corporate Services for the SEQ Water Grid Manager), hence similar skills are required in both organisations The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.	M
Environment and Sustainability		The Strategy and Sustainability team provides the sustainability focus. The environmental focus being provided by the Water Quality and Environment team	Business Systems, OH&S environment - Environmental management and reporting	The Strategy and Sustainability team for Seqwater provides the sustainability focus with the environmental focus being provided by the Water Quality and Environment team with in the Water Delivery department. Veolia Water provides the operational environmental focus for the manufactured water assets through the Environment Manager. There is duplication of skills for this activity, however Veolia is focused on the manufactured water assets and therefore effort duplication would be low.	L
Facilities Management		Seqwater provides buildings, land and fleet management through the Property and Facilities Team with in the Business Services department.		Seqwater provides buildings, land and fleet management through the Property and Facilities Team within the Business Services department. No duplication of effort was observed for this activity.	-



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Finance	Finance and Corporate Services Providing financial support and operation, encompassing treasury, financial management, management planning, reporting and analysis.	Facilities – Management and administration of Accommodation Facilities and CBD built assets on behalf of Seqwater and affiliated entities. Business Services- Finance Transaction management – accounts payable and receivable and cash reconciliation; Financial reporting – tax, external audit, statutory accounts, policy advice, external reporting and depreciation; Payroll functions; Management accounting – budget preparation, regulatory reporting, monthly management reporting and system management.	Finance Manager – Finance Management Accounting; Project Accountant	Both The SEQ Water Grid Manager and Seqwater have finance groups that provide support for the effective operation of their respective organisations. Veolia Water Also has a team to address this function. The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.	M



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Fleet	Not Addressed in organisational information - assumed to be via QFleet	The Property and Facilities Team with in the Business Services department provide fleet management for Seqwater.	No information provided	The Property and Facilities Team with in the Business Services department provide fleet management for Seqwater. As fleet management only exists within Seqwater (probably due to the size of the fleet) SKM have not been able to assess the effort for this activity.	-
Human Resource Management	Finance and Corporate Services - Human Resources	Organisational development - people and culture Human Resources, learning and development, Hr information and metric reporting, Industrial Relations	HR and Training	Seqwater, Veolia Water and the SEQ Water Grid Manager have HR services to facilitate the management of their staff. The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.	L
Information and Communication Technology(ICT)	Risk and Technology unit ICT and project delivery services at both an organisational and whole-of-Grid level	Business Services ICT services- server and network infrastructure, network architecture	Business Systems , OH&S environment- Business Systems Management	Seqwater, Veolia Water and the SEQ Water Grid Manager provide ICT services to support their respective organisations. The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.	M
Legal Services	Governance and Regulatory Compliance- Legal- lead the legal drafting and preparation of a wide range of	Business Services- Legal and Risk This role works with the water delivery and TWAD team but also works closely with the compliance, risk and		The SEQ Water Grid Manager and Seqwater provide legal services via the Governance and regulatory Compliance department and Business Services department. The existence of these services in each organisation by its nature would suggest that	L



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Operations Dams	commercial arrangements for the SEQ Water Grid Manager.	insurance teams. Claims – to internally and proactively manage all potential and actual claims and litigation and deliver commercial and constructive outcomes that suit the risk profile and strategic direction of Seqwater Office of the CEO - Corporate Counsel		there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service. No duplication of effort was identified for this activity.	-
Operations Pipe Networks		Seqwater operates a number raw water pipe lines that are managed by the water treatment plant teams.	Veolia Water via the Operations and maintenance contract with Seqwater operates the WCRC scheme connecting pipe work.	The operations are on different assets, common skill sets are required. Duplication of effort is not indicated for this activity.	-



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Operations WTP		Seqwater is the sole operator of water treatment plants, this functionality is delivered by a) the Water Delivery Department via the north and south Water Treatment teams. b) Noosa water treatment plant is also under an operations and maintenance agreement with Veolia Water. This is managed by the Northern Water Treatment Team.	The Technical Warrantee and development department (Seqwater) manage the manufactured water assets via the operations and maintenance contract with Veolia Water who provide all operations staff	Similar skill sets are required by both organisations for this function. Duplication of skills is a desired outcome; however duplication of effort for this activity would be negligible because of the segregation of assets.	L
Procurement		Procurement functions for Seqwater are primarily delivered through the Procurement team with in the Business Services department. Major Capital Work's procurement is facilitated through the Project Delivery team in Asset Delivery.	Veolia Water also provides a procurement function for issues covered under the operations and maintenance contract for manufactured water asset	Procurement skills would be similar across the organisation, functions like contracts for energy and chemicals and other similar materials and services would be duplicated.	L



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Project Delivery		Seqwater's Project Delivery team has primary responsibility for capital project delivery tasks	For the manufactured water assets, Technical Warrantee and development have responsibility for project closure. Veolia Water has opposite numbers for defects management and transition projects.	Due to the nature of the business process employed in the delivery of projects, it is likely that duplication of effort would occur. A detailed look at the business process would be needed to confirm this. SKM recommends this activity be investigated further.	M
Recreation Facility Management		Seqwater is the sole provider of this function, this is facilitated through the group support and catchment services team with in Water Delivery.		No duplication of effort has been indicated for this activity.	-
Relationship Management	SEQ Water Grid Communications Unit Media-Providing an effective media relations function for SEQ Water Grid Manager. Communications-Providing SEQ Water Grid	Organisation Development - Corporate and community relations - Internal and external communications and stake holder engagement		Both the SEQ Water Grid Manager and Seqwater have this service provided by individual teams, Seqwater by the Corporate and Community Relations team with in organisational development. The water grid manger provides this through the SEQ Water Grid Communications unit. The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of	M



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
	Manager branding, marketing and proactive communication activities.			grid organisation were to provide the same service.	
Research		the Technical Warrantee and Development department host this function	Veolia Water also manages the operation of a pilot plant.	Seqwater facilitates this function via the Technical Warrantee and Development department, Veolia Water also manages the operation of a pilot plant. No duplication of effort is indicated for this activity.	L
Risk Management	The SEQ Water Grid Manager has a risk focus combined with emergency management.	Seqwater has risk management located within the legal and risk team with a focus on insurance, fraud and critical infrastructure and risk education.		Risk management has the potential for duplication of effort. The two teams appear to be focused on organisation dependant functions that are wide enough to be partially duplicated. A business process review would be needed to validate this view. SKM recommends this be reviewed.	M
Water Quality Management	Operations unit- Water Quality, Water Quality Monitoring and compliance	Water Delivery- Water Quality and Environment The Water Quality team manages and implements the overarching global water quality for Seqwater, and ensures they are aligned with the expectations of key	Technical Process Laboratory Laboratory & Water Quality	Seqwater, Veolia Water and The SEQ Water Grid Manager have water quality responsibilities. Seqwater has a Water Quality and Environment team. Veolia Water looks at the manufactured water assets with the Environment Management Team along with their Technical Process laboratory. The SEQ Water Grid Manager also provides Water Quality functions underneath the Operations unit. This activity would merit a further investigation to	M



Activity key	SEQ Water Grid Manager	Seqwater	Veolia Water	Discussion and Recommendation	Cost Savings Potential
Work Place Health and Safety		<p>stakeholders. This team is responsible for lab services, data management, implementation of drinking water management plans and environmental compliance</p>	<p>Business Systems , OH&S Environment - Safety Manager</p>	<p>identify the areas that would be duplicated.</p>	-
		<p>Organisational Development- Work Place Health & safety To ensure Seqwater has WHS systems and processes that comply with Workplace Health and safety legislation and other requirements and that these systems facilitate the management of WHS risk within Seqwater's business and operation.</p>		<p>Organisation safety and compliance is provided by Veolia Water For their Operational and Maintenance contract responsibilities for the manufactured water assets. The Seqwater managed assets are serviced by the Work place Health and Safety team in the Organisational Development department.</p> <p>The existence of these services in each organisation by its nature would suggest that there is a duplication of effort and a duplication of some cost that would not be evident if a whole of grid organisation were to provide the same service.</p>	



11.6. Summary and conclusions – duplication of effort analysis

A summary of the organisational duplication analysis is provided below in **Table 78** below in which those areas where no appreciable duplication of effort has been identified have been omitted

■ Table 78 Summary of organisational duplication of effort analysis

Activity	SEQ Water Grid Manager	Seqwater	Veolia Water	Cost Saving Potential
Administration	✓	✓	✓	M
Agency Contract Management	✓	✓		H
Asset Engineering		✓	✓	M
Asset Maintenance EMC		✓	✓	L
Asset Maintenance I&C	✓	✓	✓	L
Asset Planning Strategic	✓	✓		H
Asset Planning Capital		✓	✓	H
Compliance Management and Regulation	✓	✓		M
Corporate Governance	✓	✓		L
Corporate Knowledge Management	✓	✓		M
Corporate Support	✓	✓		M
Environment and Sustainability		✓	✓	L
Finance	✓	✓	✓	M
Human Resource Management	✓	✓	✓	L
Information and Communication Technology	✓	✓	✓	M
Legal Services	✓	✓		L
Operations WTP		✓	✓	L
Procurement		✓	✓	L
Project Delivery		✓	✓	M
Relationship management	✓	✓		M
Research		✓	✓	L
Risk Management	✓	✓		M
Water Quality Management	✓	✓	✓	M

SKM has identified a number of key activities that will merit investigation to understand to what degree overlaps may exist. It could be argued that for functions of a corporate nature (finance, human resources etc) there will inevitably be some level of duplication and hence inefficiency arising from having multiple organisational support functions within the water grid. Further there would be an element of the corporate overhead costs arising from this arrangement that would be associated with the areas of functional duplication.

Based on the information provided and SKM's knowledge of the industry the following areas of activity that are undertaken by both Seqwater and the SEQ Water Grid Manager have been



identified as those areas that display the highest amount of duplication of effort and hence cost savings potential of all 29 areas assessed. SKM considered these areas to be of highest priority for any future investigation to establish, definitively, the extent of duplication and any corresponding gains in efficiency and hence cost savings that would arise from removal of that duplication.

The activities fall into two groups: corporate functions and principal functions.

Corporate functions:

- Corporate functions such as: Corporate Support; Human Resource Management; Finance exist across both organisations and contain sufficient numbers of full time equivalents as to merit further investigation
- Compliance Management and Regulation, Seqwater has three teams involved with compliance management and regulation with the SEQ Water Grid Manager having one department involved with this activity. The existence of these services in each organisation by its nature would suggest that there is a duplication of effort in this area
- Corporate Knowledge, two departments in Seqwater and one within the SEQ Water Grid Manager is involved with this activity
- Corporate Support: Seqwater and the SEQ Water Grid Manager provide the corporate support function through their respective departments (Process Improvement, Strategy and Sustainability for Seqwater. Finance and Corporate Services for the SEQ Water Grid Manager), hence similar skills are required in both organisations leading to duplication of effort
- Information and Communication Technology, Seqwater and the SEQ Water Grid Manager provide ICT services to support their respective organisations leading to duplication of expenditure in this area
- Relationship Management (public relations, stakeholder management) is another area where both organisations have developed a capability that has some duplication of effort when presenting to the public view
- Risk Management, the separate teams in Seqwater and the SEQ Water Grid Manager are focused on organisation dependent functions that have a wide scope suggesting that appreciable duplication of effort is likely

Principal functions:

- Agency Contract Management, both Seqwater and the SEQ Water Grid Manager have roles to facilitate the management of interagency contract management. This function would not be required if the water grid was managed as a whole



- Asset Planning with a strategic focus involving the SEQ Water Grid Manager's Operations Unit and Seqwater's Asset Delivery Department
- Water Quality Management, Seqwater through its Water Quality and Environment team and , the SEQ Water Grid Manager's Operation Unit have water quality responsibilities leading to duplication of effort in this area

Some of these areas may be related to inter-organisational support for a developing business process and would need a more in-depth study to establish how each organisation and organisational team contributes to the holistic water grid business process in supporting the objectives of the water grid.

Based on the information provided and SKM's knowledge of the industry the following areas of activity that are undertaken by both Seqwater and Seqwater's alliance contractors have been identified as those areas that display the highest amount of duplication of effort and hence cost savings potential of all 29 areas assessed. SKM considered these areas to be of highest priority for any future investigation to establish, definitively, the extent of duplication and any corresponding gains in efficiency and hence cost savings that would arise from removal of that duplication.

The activities also fall into two groups: corporate functions and principal functions.

Corporate functions:

- Asset Engineering, Seqwater contractually has the responsibility to provide a management mechanism by which the Veolia proposals are approved or rejected or modified to an acceptable outcome leading to duplication of effort
- Corporate functions such as: Corporate Support; Human Resource Management; Finance exist across both organisations and contain sufficient numbers of full time equivalents as to merit further investigation
- Information and Communication Technology: Seqwater and Veolia Water provide ICT services to support their respective organisations leading to duplication of expenditure in this area

Principal functions:

- Project Delivery, Seqwater's project delivery team has primary responsibility for delivery of capital projects, however, Veolia Water is also responsible for project closures and defects liability periods leading to an area of likely duplication of a business process.
- Water Quality Management, Seqwater and Veolia Water both have water quality responsibilities, again leading to an area of duplication of effort



- Asset planning for capital projects is also an area where both organisations have developed capability and may have capability duplication based on project delivery methodology. Each organisation is responsible for different assets, duplication of effort is likely where the two business process converge for approval and authorisation to proceed



12. Seqwater-WaterSecure merger - potential efficiency improvements

The scope for Phase 1 includes identifying any potential efficiency improvements and achievable operating cost (fixed and variable) savings as a result of the merger between Seqwater and WaterSecure on 1 July 2011. This section addresses operating cost savings that have been realised and considers future potential improvements and achievable cost savings that are expected to take place arising from the merger of the two utilities. In this section, SKM discusses potential merger efficiency gains in a qualitative manner; the relatively brief nature of SKM's analysis of potential efficiency gains precludes a quantitative analysis. As such SKM is not able to present a projected quantum cost saving arising from efficiency gains.

In undertaking this analysis, SKM has reviewed organisational structures, roles and responsibilities, as well as major alliance contracts to assess potential efficiency improvements that may be capable of being realised post merger.

12.1. Documents Reviewed

The following documents have been reviewed in undertaking the efficiency gains due to the merger:

- 2011-12 Operating Cost review – Information Paper (Seqwater, January 2012)
- Seqwater 2011-12 Grid Service Charges – Submission to the Queensland Competition Authority: Business and Regulatory Issues (Seqwater, March 2011)
- The Role of Efficiency in Merger Analysis (Sahil Gupta, 15 July 2002) <www.inter-lawyer.com>

12.2. Background to Merger

The merger of WaterSecure and Seqwater was announced on 5 December 2010, with initiation set for 1 July 2011.

As part of the merger the requirements of Government were that:

- Employees that transferred from WaterSecure to Seqwater were to receive the same terms and conditions of employment
- There were to be no forced redundancies for transferred staff under the terms of their enterprise bargaining agreements (EBA) for a three year period

Under these terms it is not expected that any short term (one to two years) efficiency gains in relation to fixed staff will be experienced.



12.2.1. Resourcing

The requirements, from Government, as set out above also created a situation where the fixed resources from the two utilities had to be pooled. One of the challenges faced by the merged entity was how to efficiently deal with the resources from both of the entities. The sections below describe some of these challenges that were faced by the newly merged organisation; Seqwater and how they were addressed.

12.2.1.1. Operations and maintenance

The resourcing of the operations and maintenance functions follow a variety of approaches/models. This is attributed to historical arrangements that have been adopted by the merged Seqwater.

Advance Water Treatment Plants

The operations and maintenance for the Gold Coast Desalination Plant (GCDP) is outsourced to the Gold Coast Desalination Alliance which comprises WaterSecure, John Holland and Veolia Water. This contract stipulates that Veolia Water provides the operations staff and resources for the GCDP under the alliance arrangements.

The operation of the Western Corridor Recycled Water Scheme (WCRWS) was also outsourced to Veolia Water under an existing contract that was novated to Seqwater.

Both of the above contracts stipulate that Veolia Water is responsible for procuring all inputs and supplies for the plants, including fleet, chemicals, laboratory testing and labour. However WaterSecure was to procure the electricity for the GCDP. As part of the GCDP contract arrangement the Alliance was also responsible for the insurances, property costs and the cost of audits. The arrangements continue post-merger under the terms of the contracts as described above.

As such, under the existing contractual arrangements there is little scope for efficiency improvements through, eg pooling contracts for supplies such as chemicals other than through negotiated agreement with Veolia Water. There is an opportunity to combine the electricity supply contract for the GCDP and the AWTPs with other electricity contracts put in place by Seqwater. However, given the operational status of these plants (hot standby, mothballed, reduced capacity) and hence the un-predictability of the demand contract, there is little likelihood of significant savings being achieved through pooling these contracts in the competitive energy market.

Conventional Water Treatment Plants

All but one of Seqwater's water treatment plants (WTPs) and water storages are operated using internal labour. The majority of Seqwater's operational workforce has been inherited from the previous asset owners. The Noosa WTP is the exception where the operations and maintenance is



outsourced to Veolia Water Australia. This contract was inherited by Seqwater from the previous council owner.

Seqwater outsources some of their routine maintenance tasks to contractors where needed. It also outsources the delivery of renewals of certain projects. As such there is little scope for efficiency improvements in operational staffing levels, other than through natural wastage as staff leave and are not replaced. There may be potential efficiency improvements achieved through combining the outsourcing operation and maintenance contracts when these contracts expire or come up for re-negotiation/extension.

12.2.1.2. Corporate and Overhead

In an organisation such as Seqwater there are a range of corporate functions that are required to support the service delivery in ensuring that the corporate and regulatory obligations are met. Seqwater generally makes use of internal resources to perform these functions; however specialist advice is contracted in on a needs basis. As part of the merger all of WaterSecure's corporate resources were integrated into Seqwater. As such, and given the extant Enterprise Bargaining Agreement there is little scope for efficiency improvements in operational staffing levels, other than through natural wastage as staff leave and are not replaced until the existing three-year workplace guarantee expires on 1st July 2014. Seqwater will be in a position to determine the workforce required once this three year period has lapsed.

12.2.2. Organisational Structure

The merger did not require substantial changes to the organisational structure of Seqwater (Pre-merger). All of WaterSecure's staff was incorporated within equivalent work groups within Seqwater. Except for the Technical Warranty and Development group that was kept as is from the WaterSecure structure. The Technical Warranty and Development group is responsible for managing the handover, completion and ongoing operation of the WCRWS and GCDP.

The merger experienced no transition of responsibilities of staff that relates to the direct workforce tasked with the operations and maintenance of the water supply assets, between work sites. A contributing factor to this is the fact that both the GCDP and WCRWS are discreet plants located separate to other Seqwater infrastructure. For this reason no efficiency gains were experienced due to the direct workforce between the two entities merging their responsibilities.

12.3. Fixed Operating Cost Potential Cost Saving

The following definition of efficiency is stated in The Role of Efficiency in Merger Analyses as referenced above:



“Efficiency - it is an improvement in the utilization of existing assets that enables the combined firm to achieve lower costs in producing a given quantity and quality of goods and services. Efficiencies may result from achieving economies of scale, combined production plants, integrating procurement, transportation and distribution facilities, and pooling research and development resources.”

The merger of Seqwater and WaterSecure can be classified as a horizontal merger. A horizontal merger is defined as where two or more entities that performs more or less the same core function merges opposed to a vertical merger is where entities that are dependent, within the same supply chain, merges.

SKM considers that multi-plant economies could be experienced as a result of the merger. The multi plant economies could be realised in situations where the merged entity is able to negotiate a reduced price on services or products due to an increase in requirement. The most notable long term (five to ten year) economies that can be achieved are through coordinated purchasing or production. In this section the potential cost savings will be discussed and note those that have already been achieved.

12.3.1. Board and Executive Management Costs

The merger led to a direct reduction in the number of board members and executive managers. The number of board members pre-merger was five members for Seqwater and five members for WaterSecure. The number of board members post merger was reduced to seven, a total reduction of three members. The five board members of the pre-merger Seqwater have remained and the two additional board members were part of WaterSecure’s board. SKM considers that a further reduction of two members can be realised as the board member appointment period is limited to three years and no new Board positions were required to be created as a result of the merger.

The number of FTEs within the executive management pre-merger was 15.3 for Seqwater and 11 for WaterSecure. The total number of FTEs post merger for the executive management is 15.5 a net reduction of 10.8 FTEs.

The cost savings attributed to the above reduction in board members and executive staff was “factored into the WaterSecure proposed operating cost for the 2011-12 GSCs, where some \$2M was removed” as stated within the Information Paper as referenced above. The cost saving has therefore already been realised in that it was incorporated within WaterSecure’s fixed operating budget and also into the merged budget. SKM considers the reduction in executive management to be good practice. SKM considers that more cost savings can be achieved in reducing the number of board members back to five.



12.3.2. Employees

The total number of employees for the combined entity is typically expected to reduce post a merger through, for example, efficiency gains by removing duplication. It would therefore normally be expected that there would be savings in labour cost, when a merger takes place. Seqwater has provided a table within the Information Paper as referenced above that shows the various changes to the FTEs per group attributed to the merger. The Information Paper states:

“...approximately 19.7 FTE positions in WaterSecure were not transferred to the post-merger Seqwater, and these were offset by approximately 10.2 FTEs in new positions in the post-merger Seqwater.”

The above number of FTE reductions include for the reduction in board members and executive management (net reduction of 10.8 FTE). A net positive growth of 0.5 FTEs was experienced with the merger and this outcome is most probably ascribed to staff moving within an FTE allocation (for example, from part time to full time or vice versa).

No additional cost savings, except for the \$2 million attributed to board member and executive manager reduction, due to labour cost was realised. SKM considers this to be in line with the directive from Government that no forced redundancies would take place. SKM considers the efficiency gains experienced to be classed as short term gains and would not expect significant further gains other than as may arise through “natural wastage” arising from staff changing employer or retiring and not being replaced until staff levels commensurate with the requirements of the merged organisation are reached. That is we would expect that over the next few years, more staff will leave Seqwater than will be recruited into Seqwater. It is however, very difficult to quantify what this reduction would be without undertaking a thorough analysis of Seqwater’s business and staffing needs in the various departments. FTE values of comparable entities are not readily available and therefore no comparison has been drawn.

12.3.3. Systems and Infrastructure

The two entities, WaterSecure and Seqwater, operated by making use of different business models and maintained different types of assets. In maintaining different types of assets different business processes and systems were used to support these assets. In the period, from 5 December 2010 to 1 July 2011, leading up to the merger, consideration was given on how to transition the processes in place to a merged entity. Only the finance system (including the asset management system) and telephony system was integrated at the time of the merger.

The merged entity currently operates a number of duplicate business support systems. The reason for the duplication is twofold: to preserve the historic information and to continue to support the business operations. It is expected that the support systems will be rationalised over time and this is



expected to realise a cost saving due to only having a single business support system. However SKM agrees with Seqwater's sentiment that Seqwater will incur ongoing licensing fees and maintenance cost to preserve the historic data unless this historic data can be ported onto a common platform. There may therefore be merit in Seqwater evaluating whether this could be achieved, thereby allowing it to abandon its legacy systems and hence avoid paying licence and maintenance fees for such.

Seqwater has indicated that by consolidating the networks at locations close to the pre merger WaterSecure site a cost saving could be expected. SKM agrees with the statement from Seqwater that savings could occur where single, larger capacity network infrastructure could be utilised, instead of the existing smaller, parallel infrastructure for example creating a regional hub and spokes.

At present the post merger Seqwater has two data centres. The data centre that was used by WaterSecure was outsourced and has a remaining three years until contract determination (we understand there is no 'break clause' in the existing contract). This data centre does not have the capacity to service the post merger Seqwater. The post merger Seqwater has established a data centre that has the capacity to service the merged structure. The legacy WaterSecure data centre is maintained at present and used as a test environment. Seqwater indicated that the cost of maintaining the legacy WaterSecure data centre is offset to the cost of establishing a separate test environment. SKM considers this approach to be efficient until such time as the contract expires. SKM is of the opinion that additional efficiencies arising from closure of the WaterSecure data centre could be realised in the medium (two to five years) to long term (five to ten years).

12.3.4. Premises

Information presented to SKM is limited to the office space within Brisbane CBD. The office space that Seqwater (Pre-merger) occupied was:

- 240 Margaret St - Building is owned by Seqwater. Two areas of the floor space is leased to separate tenants
- 340 Adelaide St - This building was leased by Seqwater following the January 2011 floods to house the flood operations centre to ensure it would not be impacted by major floods as was the case with 240 Margaret St
- Mineral House - This building houses the flood operations centre

The office space that was occupied by WaterSecure was:

- 95 North Quay

Since the merger took effect the accommodation arrangements were re-organised. This re-organisation included moving all the pre-merger WaterSecure personnel to the 240 Margaret St



premise. This required that the Asset Delivery group be moved to the 95 North Quay premise due to limited space.

The lease of 95 North Quay expires August 2014. The information provided by Seqwater indicates that a legal review found that there would be costs involved in terminating the lease early. SKM considers it prudent to explore the following option in relation to accommodation: Terminate the lease with the tenants of 240 Margaret St and relocate all personnel from 95 North Quay to the freed space at 240 Margaret St. The following is to be considered as part of this option

- Investigating sub-letting 95 North Quay and whether the lease agreement will allow it
- Leaving the premise vacant may yield the following direct cost savings: reduced energy cost; reduced cost for cleaning services; and savings regarding reduced cost in relation to maintenance and potentially rates
- Indirect cost savings in regard to having the whole organisation within a single building will arise from the increased opportunity for interaction that leads to increased communication

The information presented by Seqwater did not include efficiency gains that could be experienced by grouping depots and other facilities together. SKM considers it prudent that the grouping of depots and other facilities be investigated to determine any potential efficiency gains.

SKM considers the potential cost saving of a more medium term (two to five year) nature and expect that the gains would be realised within three to five years.

12.3.5. Supplies and Services

Both Seqwater (pre-merger) and WaterSecure sourced a number of common materials, particularly chemicals and electricity. Both chemical and electricity cost is deemed to be variable operating cost and will be discussed as part of the variable operating cost saving section (section 12.4).

Seqwater, post merger, has maintained parallel insurances for the first year (2011/2012). The decision to maintain this arrangement was due to a number of outstanding claims under the insurances. SKM considers it good practice to have parallel insurances for the first year post merger to enable claims arising under the different insurance policies to be realised. Seqwater has indicated that a combined insurance policy for 2012/13 will be sought by going to the market place. By combining the risk and asset base it is expected that a cost saving will be realised.

The remaining supplies and services that are sourced by Seqwater are relatively minor. Seqwater indicated that where possible suppliers have been reduced to a single supplier and that all contracts are integrated within a single contract register and a single procurement process has been implemented. Seqwater has inherited duplicate suppliers and has indicated that these contracts will be reviewed once the contract terms allow them to.



Seqwater has realised some short term, within the first year of the merger, efficiency gains to date. SKM considers that potential cost savings could realise within the medium term once the legacy contracts expire or are renegotiated.

12.4. Variable Operating Cost Potential Cost Saving

12.4.1. Electricity

The provision of electricity is procured through a number of differ arrangements. The most notable arrangements are those for the water treatment plants and the Gold Coast Desalination Plant (GCDP).

The procurement contract for the electricity supply for the water treatment plants was secured through a tender process in 2010 and is for the term to December 2013. This contract was reviewed as part of the 2011/12 grid service charges and was noted as bringing about substantial reduction to electricity cost.

The GCDP's electricity is procured under Notified Tariffs (Tariff 43). Non-residential customers of ENERGEX whom consumes more than 100 MWh per year will no longer be able to secure electricity by way of Notified Tariffs after 1 July 2012. For this reason Seqwater has started the process to secure electricity from the contestable market for the GCDP. The electricity procurement for the WCRWS will also be required to be reviewed by Veolia Water and consented by Seqwater under the contract terms.

Seqwater has indicated in the Information Paper as referenced above that consideration has been given as to how to obtain best value in securing power for the GCDP. This includes opportunities for a joint energy procurement for the WCRWS and the GCDP. As mentioned in section 12.2 above, SKM considers that, given the operational status of these plants (hot standby, mothballed, reduced capacity) and hence the un-predictability of the demand contract there is little likelihood of significant savings being achieved through pooling these contracts in the competitive energy market over the existing tariff arrangements.

SKM considers that further potential cost savings could be realised by contracting for all power requirements within a single contract. This will only be able to be realised post December 2013 and will require that Veolia Water buys in on grouping the electricity cost together. By increasing the size of the portfolio, overall demand profile will become more predictable (as the un-predictable load profile of the GCDP and WRCWS will be offset to some extent by the more predictable nature of Seqwater's other, controllable loads). Generally in the competitive energy market, the more predictable the load profile the better the c/kWh rate that can be achieved for the energy component of the electricity supply contract.



12.4.2. Chemicals

The water treatment plants chemicals are procured by way of a competitively tendered contract. This is the same contract that was in place for the 2011/12 review of the grid service charges. The contract contains periodic rise and fall provisions, most of the rise and fall provisions are set between December and February each year. The rise and fall components take into account a range of factors that include electricity cost.

The chemical cost for both the GCDP and WCRWS is procured by Veolia Water in terms of the agreement. Veolia Water procures chemicals through a competitive tender process.

SKM considers that potential cost savings could be realised by bulking all the chemical requirements together. The bulking of all the chemical requirements will only be able to be realised should Seqwater and Veolia Water agree to a joint chemical procurement process. SKM considers that these potential savings could be achieved in the medium to long term. SKM considers that that by procuring a larger volume of chemicals a discounted rate could be secured. SKM considers that the market will determine the extent of the savings to be realised and therefore SKM is not in position to quantify the extent of the saving to be expected, however SKM does expect a cost saving to be realised.

12.4.3. Sludge and Waste Disposal

Veolia water is responsible for the sludge and waste disposal from the GCDP and WCRWS.

The 2011/12 GSCs submission included for the sludge and waste disposal from the WTPs as a fixed operating cost. Seqwater has advised that at present the provision of waste and sludge disposal is scheduled to be tendered in March 2012. Seqwater is expecting a reduction in cost associated with sludge and waste removal. Seqwater is also investigating streamlining its operations and locking in methods of disposal that may lead to a reduction in waste and sludge disposal cost.

SKM considers that a potential cost savings could be realised by grouping all the sludge and waste disposal into one contract, however not expecting a huge reduction in overall costs.

12.5. Conclusion

The merger of Seqwater and WaterSecure is viewed as a horizontal merger and therefore has limited scope for efficiencies to be realised in the short term. As discussed above most of the potential efficiencies to be gained are considered to be of medium to long term.

The areas identified in the previous sections that have been identified as having potential efficiency gains and associated cost savings are summarised in **Table 79** below. The legend to the cost



savings potential column is: \$ - minimal cost savings potential, \$\$ - some cost savings potential and \$\$\$ - major cost savings potential.

■ **Table 79 Summary of potential efficiency gains, realisation periods and cost savings potential**

Activity	Realisation Period	Cost Savings Potential
Systems and infrastructure	2 to 10 years	\$\$\$
Premises	2 to 5 years	\$\$
Insurances	1 to 2 years	\$\$
Fleet	2 to 5 years	\$
Electricity	2 to 5 years	\$\$
Chemical costs	2 to 5 years	\$\$
Sludge and waste disposal	2 to 5 years	\$

SKM agrees with Seqwater that most of the above efficiency gains are restricted by the existence of legacy agreements. SKM therefore considers that the potential efficiency gains could be realised within the medium to long term once these legacy agreements expire or are re-negotiated.



13. Summary and conclusions

SKM has undertaken a review of the 2011/12 fixed and variable operating expenditure of Seqwater with the aim of: benchmarking Seqwater against key cost parameters at relevant comparator water utilities; identifying any duplication of effort relating to fixed operating costs between Seqwater, its contractors and the SEQ Water Grid Manager; and identifying any potential efficiency improvements leading to potential operating cost savings as a result of the Seqwater-WaterSecure merger on 1 July 2011. The following section presents our conclusions from this review.

13.1. Benchmarking Methodology

Benchmarking was undertaken based on the fixed and variable operating expenditure of Seqwater for the 2011/12 period. Information provided by Seqwater and the former WaterSecure was reviewed and benchmarking metrics were developed. Limited information was compiled on national and international comparator water utilities due to the limited time available for the organisations to respond to requests for information. This restricted the comparisons that could be made between Seqwater and other similar organisations.

SKM notes that the majority of the organisations approached expressed an interest in participating in the benchmarking process and it is SKM's opinion that if additional time were allowed for the organisations to respond and additional effort is put into progressing responses from the organisations, than a more robust benchmarking exercise will be capable of being undertaken.

The benchmarking was broken down into three sections – corporate level, asset group level and asset specific level. A number of issues were encountered during this process including availability of data and coarseness of data. Due to the limited information obtained, at the time of production of this draft report, limited conclusions can be drawn.

13.2. Corporate level benchmarking

The corporate level benchmarking undertaken covers Seqwater as a whole. Information available for Seqwater included total expenditure, total operating costs, total variable costs and number of FTEs employed. Information collected from other national and international water utilities to be able to compare metrics included:

- Total operating expenditure (\$)
- Water supplied (ML)
- Employee costs (\$)
- Total revenue (\$)
- Number of full-time equivalents



- Non-current asset value (\$)

Making use of the above information the following metrics have been developed for each of the national and international water utilities and the values compared to that of the pre and post merger Seqwater and WaterSecure:

- Total operating expenditure as a proportion of total water supplied
- Total operating expenditure as a proportion of non-current assets
- Total employee cost as a proportion of total operating expenditure
- Total operating expenditure as a proportion of total revenue
- Total revenue as a proportion of total full-time equivalents
- Total full-time equivalents as a proportion of non-current assets
- Total water supplied as a proportion of the total full-time equivalents
- Total employee cost as a proportion of the total full-time equivalents

The vast majority of the comparator utilities have a larger suite of water and wastewater services than Seqwater offers. This has been taken into consideration when comparing, qualitatively, the various metrics developed.

The conclusion from this study is that Seqwater is efficient in organisational issues and spending, has an effective workforce and utilises its asset efficiently. In short, the benchmarking performed indicates that Seqwater's costs are comparable to the costs expected of an efficient operator.

13.3. Benchmarking by Asset Grouping

Benchmarking was undertaken for dams and water treatment plants only due to no information being available on advanced water treatment plants as an asset group. The operating costs per GL storage capacity for the Seqwater dams are 43% higher than that of Ben Lomond Water's dams. This cost difference may be associated with the sample size taken for Ben Lomond Water (two) compared to Seqwater (26) or the variables associated with dams such as type, size, outlet type, managed catchment area and condition of the catchment, which are unknown for the Ben Lomond Water dams. The difference is not considered material as it is within the same order of magnitude, taking into account the level of comparability that may be attributed to the source data. The operating cost per ML treated for the Seqwater water treatment plants are significantly higher than that of Ben Lomond Water's water treatment plants. SKM attributes this, in large, to the sample size taken for Ben Lomond Water (two) compared to Seqwater (51) and/or the variables associated with water treatment plants such as production capacity, amount of water treated, technology used and age.



13.4. Asset specific benchmarking

Benchmarking was again only undertaken for dams and water treatment plants only due to no information being identified in the time available on individual advanced water treatment plants or desalination plants. The operating costs per GL for Lake McDonald (Seqwater) were compared to operating costs per GL for Curries Dam (Ben Lomond Water). The costs associated with Lake McDonald are significantly higher than Curries Dam (\$91,110/GL vs. \$2,411/GL). SKM considers that some, if not all of the differences can be attributed to differences in the type and size of dam, the type of outlet structure, the catchment type, size and condition, rainfall within the catchment and the actual ML per year yield from the dam, much of which is unknown. In order to take these aspects into account a more thorough and extensive benchmarking exercise will need to be undertaken taking into account these variations. The operating costs per ML water treated for Lowood (Seqwater) were compared to operating costs per ML for Mt Leslie and Reatta Road water treatment plants (Ben Lomond Water), with the costs for Lowood comparable to that of Mt Leslie and Reatta Road (\$170/ML vs. \$186/ML and \$134/ML).

13.5. Duplication of effort – Seqwater, contractors and Water Grid Manager

A review of the roles and responsibilities of Seqwater, its alliance contractors and the SEQ Water Grid Manager was conducted to identify potential areas of duplication of effort. Organisational charts and descriptions of objectives for each of the positions were provided for review. This data was analysed for common objectives and areas of responsibilities between the different organisations.

SKM identified a number of activities where potential duplication of effort exists between Seqwater, its alliance contractors and the SEQ Water Grid Manager. These activities need further review, for example through conducting audits within the businesses, to establish to what extent of duplication of effort exists and to quantify the potential cost savings that may arise as a result of removal of these areas of duplication.

A summary of the identified areas of potential duplication of effort is provided in **Table 80**.



■ **Table 80 Summary of areas of potential duplication of effort**

Activity	SEQ Water Grid Manager	Seqwater	Veolia Water	Cost Savings Potential
Administration	✓	✓	✓	M
Agency Contract Management	✓	✓		H
Asset Engineering		✓	✓	M
Asset Maintenance EMC		✓	✓	L
Asset Maintenance I&C	✓	✓	✓	L
Asset Planning Strategic	✓	✓		H
Asset Planning Capital		✓	✓	H
Compliance Management and Regulation	✓	✓		M
Corporate Governance	✓	✓		L
Corporate Knowledge Management	✓	✓		M
Corporate Support	✓	✓		M
Environment and Sustainability		✓	✓	L
Finance	✓	✓	✓	M
Human Resource Management	✓	✓	✓	L
Information and Communication Technology	✓	✓	✓	M
Legal Services	✓	✓		L
Operations WTP		✓	✓	L
Procurement		✓	✓	L
Project Delivery		✓	✓	M
Relationship management	✓	✓		M
Research		✓	✓	L
Risk Management	✓	✓		M
Water Quality Management	✓	✓	✓	M

13.6. Seqwater-WaterSecure merger - potential efficiency improvements

The organisational structures and roles and responsibilities of the pre merger Seqwater and WaterSecure, as well as their major alliance contracts, fleet arrangement, major procurement contracts and premises were reviewed to identify potential efficiency improvements that may be capable of being realised post merger. The merger is viewed as a horizontal merger and therefore has limited scope for efficiencies to be realised in the short term. Most of the potential efficiencies to be gained are considered to be of medium to long term respect of rationalisation of: systems;



infrastructure; premises; insurances; fleet; and in amalgamation of electricity, chemical and sludge and waste disposal contracts. The potential cost savings and expected term of realisation is summarised in **Table 81**

■ **Table 81 Summary of potential efficiency gains, realisation periods and cost savings potential**

Activity	Realisation Period	Cost Savings Potential
Systems and infrastructure	Medium to long term	\$\$\$
Premises	Medium term	\$\$
Insurances	Short term	\$\$
Fleet	Medium term	\$
Electricity	Medium term	\$\$
Chemical costs	Medium term	\$\$
Sludge and waste disposal	Medium term	\$

Note: Short term is considered as a one to two year period, medium term a 2 to five year period and long term a five to ten year period.

13.7. Conclusions

SKM has conducted benchmarking of Seqwater’s 2011/12 fixed and variable operating expenditure against comparator water utilities as far as possible with the information available at the time of writing this draft report. The information provided by Seqwater was sufficient to develop the proposed metrics however, for comparator organisations, the limited information available restricted the metrics that could be developed for the benchmarking exercise. To support further studies it is recommended that an extended benchmarking study is conducted to allow the capture of relevant information from other water utilities to enable the development of relevant comparator metrics. The benchmarking undertaken, however, suggests that Seqwater’s costs are generally comparable to comparator water utilities when taking into account differences in business structure and asset specifications.

In respect of the review of duplication of effort, SKM has identified a number of areas that warrant further and more detailed investigation, in particular in the areas of asset planning and capital planning.

In respect of the identification of potential merger efficiencies of effort, SKM has identified a number of areas that have potential efficiency improvements in the medium to long term including, in particular in the areas of rationalising of premises and amalgamating major procurement contracts such as electricity, chemicals and sludge disposal.



Appendix A Terms of Reference

Phase 1 – 2011-12 fixed and variable operating expenditure (Opex) review

The Authority requires a detailed review of the current level of fixed operating costs (including overhead and fixed employee costs) and variable costs incurred by the GSPs. The assessment would be performed on data submitted by the bulk entities for the 2011/12 period, as well as additional data requested from the GSPs as appropriate.

The consultancy is intended to build upon the review of operating costs conducted during the 2011/12 GSC investigation. The consultancy will:

- a) benchmark the GSPs against key cost parameters at relevant comparator organisations and good industry practice. Benchmark assessments may include parameters such as FTEs to water volume ratio, FTE to asset capacity ratio, maintenance to asset value ratio, operational costs to overhead costs ratio, total fixed costs to water volume ratio etc;
- b) identify any duplication of effort relating to fixed operating costs between GSPs, their contractors and the WGM; and
- c) identify any potential efficiency improvements and achievable operating cost (fixed and variable) savings as a result of the Seqwater-Water Secure merger on 1 July 2011.

The consultant will use a bottom up, needs-based assessment of costs on a functional level in order to understand what costs within a function are directed to which activities.

While noting that non-direct (indirect and overhead) cost categories are not standardised across the GSPs, the consultancy will review the following fixed operating cost activities:

- a) Asset Management;
- b) Capital Planning;
- c) Engineering Services;
- d) Planned and unplanned maintenance; and
- e) Administration.

The consultancy will review all component costs of the above activities including internal and external (contractor's) costs to identify potential efficiency improvements.

In order to establish the basis for an assessment of the GSP's proposed overhead and fixed employee costs, the consultant will need to outline:

- a) the services provided by the bulk entities' head offices;



- b) major overhead and fixed employee cost categories and their key cost drivers (and how they are tied into the GSP's respective business objectives);
- c) high level indicators to assess the relative efficiency of cost components using appropriate comparators, good industry practice and available benchmarking data. Examples of such indicators could include FTEs as a proportion of overhead costs, overhead costs as a percentage of total operating costs, or proprietary benchmarking tools which establish rates of efficiency; and
- d) given constraints related to employee retention, how the Authority could assess the potential for efficiency gains once the GSP's provide their projected expenditure for 2012-13. This could include quantum and timing of any potential efficiency gains.

In regard to variable costs, the consultancy should review potential savings in energy and chemical costs, within the constraints of demand forecasts defined by the Government.

The Authority's objective is to have this phase complete by 29 February 2012.

Phase 2 – 2012-13 GSC Draft Report investigation

The Authority is required to publish a Draft Report detailing recommended Grid Service Charges for 2012-13 by 30 April 2012. The Authority requires assistance in assessing the prudence and efficiency of the GSP's proposed capital and operating costs for 2012-13.

Phase 2 will commence following the receipt of the GSP's information submissions on 29 February 2012, to be completed by 23 March 2012. Phase 2 is comprised of three components.

Component 1 – Prudence and Efficiency of 2012-13 forecast Operating Expenditure

The consultant must assess whether each of the GSPs' submitted operating costs proposed for 2012-13 are prudent and efficient. The assessment of prudence and efficiency of operating expenditure will review a representative sample, to be agreed with the Authority, of each GSP's forecast operating costs. The sample should include the top 10% of operating expenditure items by value and, preferably, at least 50% of the total operating expenditure.

In assessing prudence and efficiency, the consultant must:

- a) assess whether the GSPs' policies and procedures for operational 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 where appropriate refer to broader benchmark analysis of Phase 1;



- 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; and
 - iii. production forecasts for the regulatory period are to consistent with the grid instructions forecast in the Operating Strategy (or any successor documents) and any relevant information provided to the GSPs in accordance with the system operating plan;
- d) 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
- e) assess the appropriateness of any allocation methodology of overhead operating costs.

Component 2 – Prudence and Efficiency of 2011/12 estimated actual Capital Expenditure

The consultant must assess the prudence and efficiency of 2011/12 non-drought⁵ capital expenditure for each GSP that:

- a) was not submitted to the Authority as part of GSPs' forecast capital expenditure during the 2011/12 GSC investigation; and
- b) is material, where materiality is defined as exceeding \$2 million;

The Authority does not expect that this will be a large number of items, but may include some material capital expenditure to rectify damage caused by the January 2011 floods that was not included in the GSPs' 2011/12 submissions.

The consultant must also assess the efficiency only of the 2011/12 non-drought capital expenditure for each GSP that:

- a) was submitted to the Authority as part of GSPs' forecast capital expenditure during the 2011/12 GSC investigation; and
- b) differs significantly (more than 30%) from the forecast costs submitted by the GSP during the 2011/12 investigation.

⁵ Non-drought capital expenditure refers to capital expenditure that was not required as part of the Water Regulation 2002 or the Regional Water Security Program. As a consequence, it excludes many of the largest capital expenditure projects undertaken by the GSPs, such as the Hinze Dam raising or the Northern Pipeline Interconnector Stage 2.



Again, the Authority does not expect that this will be a large number of items. If the total number of items to be reviewed exceeds 15, the Authority will agree a representative sample with the consultant.

Component 3 – Prudence and Efficiency of 2012-13 forecast Capital Expenditure

The consultant must assess the prudence and efficiency of a representative sample of 2012-13 forecast non-drought capital expenditure for each GSP. The sample, to be agreed with the Authority, should include all capital expenditure projects exceeding \$2 million in value, the top 10% of capital expenditure projects by value and at least 50% of total capital expenditure.

For any capital expenditure project that was commenced in 2011/12, but will incur expenditure during 2012-13, the consultant must take into account the Authority findings in its investigation of 2011/12 GSCs.

The definition of prudence and efficiency to be adopted by the consultant are the same as those in Component 2 above.

The consultant must also assess:

- a) whether the entities' policies and procedures for forecasting 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 incorporated robust procurement practices;
- b) whether corporate or overheads costs have been appropriately assigned to capital expenditure projects.

For the purposes of the Phase 2 review, capital expenditure is prudent if it required as a result of a legal obligation, growth in demand (consistent with the grid instructions forecast in the Operating Strategy (or any successor documents) and any relevant information provided to the GSPs in accordance with the system operating plan); renewal of existing infrastructure that is currently used and useful, or it achieves an increase in reliability or quality of supply that is explicitly endorsed or desired by the WGM.

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 capex and opex and non-drought 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 references to relevant interstate and international benchmarks and information sources. For example, the source of comparable units 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.

Phase 3 – 2012-13 GSC Final Report investigation

Following the publication of the Authority's Draft Report, the Authority will receive submissions from GSPs and other stakeholders. These submissions may include updated information or challenge the technical findings included in the Authority's Draft Report.

The consultant must assist the Authority in responding to stakeholder submissions by:

- a) considering its Phase 2 recommendations in light of new information; and
- b) responding to technical matters included in stakeholder submissions.

The extent of work required for Phase 3 will depend on the complexity of submissions received from stakeholders.

Phase 3 will commence in May 2012 after the receipt of stakeholder submissions and will be complete by mid-June 2012. More precise dates will be negotiated with the consultant as the project progresses.



Appendix B Seqwater Data

Seqwater Asset Informaiton

Asset Type	Asset	Capacity	Unit	Status	Year completed	Asset Age	Asset Value (\$)	Water treated (ML)	Yield of Dam (ML/Year)	Managed Catchment Area (km ²)	Inundated Area (km ²)	Waterline Length (km)	Staff (FTEs)	Contractors (FTEs)	Planned maintenance costs (\$)	Unplanned maintenance costs (\$)	Total Electricity costs (\$)	Total Chemical costs (\$)	Sludge handling costs (\$)
Advanced Water Treatment Plants	Bundamba AWTP	60	ML/d	Operational	2008	4	\$ 426,991,673	7300	—	—	—	—	—	—	—	7,173,415.99	\$ 1,013,970	\$ 1,216,983	\$ 442,964.00
	Gibson Island AWTP	100	ML/d	De-commissioned	2011	1	\$ 399,302,429	0	—	—	—	—	—	—	—	1,183,110.00	\$ -	\$ -	\$ -
	Luggage Point AWTP	66	ML/d	Operational	2010	2	\$ 325,803,149	7300	—	—	—	—	—	—	—	5,660,547.00	\$ 1,040,980	\$ 1,521,028	\$ 442,964.00
Desalination Plant	Tugun Desalination Plant	133	ML/d	Hot Standby	2009	3	\$ 966,144,286	9054	—	—	—	—	—	—	—	11,595,551.00	\$ 4,882,188	\$ 1,002,006	\$ 233,955.36
Water Treatment Plants	Landers Shute WTP	140	ML/d	Operational	1989	23	\$ 44,021,815	27187	—	—	—	—	6	—	\$ 1,259,000	\$ 1,737,000	\$ 81,561	\$ 1,087,480	NA
	Noosa WTP	45	ML/d	Operational	1968	44	\$ 39,503,637	5947	—	—	—	—	NA	NA	NA	NA	NA	NA	NA
	Molendinar WTP	180	ML/d	Operational	1983	29	\$ 35,970,800	21684	—	—	—	—	16	—	\$ 124,000	\$ 625,000	\$ 195,156	\$ 802,308	NA
	Mudgeeraba WTP	110	ML/d	Operational	1967	45	\$ 16,673,151	21684	—	—	—	—	5	—	\$ 240,000	\$ 298,000	\$ 346,944	\$ 997,464	NA
	North Pine WTP	250	ML/d	Operational	1976	36	\$ 46,439,385	28897	—	—	—	—	9	—	\$ 678,000	\$ 1,981,000	\$ 260,073	\$ 1,126,983	NA
	Mt Crosby East WTP	700	ML/d	Operational	1984	28	\$ 91,779,089	97787	—	—	—	—	30	—	\$ 327,000	\$ 1,016,000	\$ 2,346,888	\$ 4,107,054	NA
	Lowood	20	ML/d	Operational	1989	23	\$ 6,712,131	2490	—	—	—	—	NA	0	\$ 173,727	\$ 194,220	\$ 54,780	NA	
	Esk	1	ML/d	Operational	1971	41	\$ 3,963,824	192	—	—	—	—	NA	NA	\$ 46,685	\$ 30,528	\$ 13,632	NA	
	Residual (Balance)	590	ML/d	Vary	1996	16	\$ 1,925,249,041	34319	—	—	—	—	NA	132	—	9,515,368	\$ 77,869,811	\$ 46,433,607	NA
Dams	North Pine Dam	214	GL	—	1976	36	\$ 111,377,354	—	59000	348	21	167	7	—	\$ 308,938	\$ 44,062	—	—	—
	Somerset Dam	380	GL	—	1953	59	\$ 103,049,108	—	279000	1340	42	237	3	—	\$ 781,667	\$ 95,194	—	—	—
	Wivehoe Dam	1165	GL	—	1985	27	\$ 370,731,636	—	279000	7020	201	NA	19	—	\$ 613,129	\$ 13,619	—	—	—
	Wivenhoe Dam flood capacity	2615	GL	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Baroon Pocket Dam	61	GL	—	1989	23	\$ 47,377,832	—	36500	67	0	26	2	—	\$ 224,509	\$ 31,015	—	—	—
	Lake McDonald	8	GL	—	1964	48	\$ 4,421,134	—	3495	49	3	38	2	—	\$ 12,237	\$ 82,681	—	—	—
	Residual (Balance)	623	GL	—	1995	17	\$ 1,671,774,301	—	NA	8269	97	NA	30	0.14	\$ 2,196,889	\$ 760,341	—	—	—

From QCA report:

Seqwater

ML Water Supplied	261,591
Total Fixed Operating	\$ 146,800,000
Variable Operating Costs	\$ 16,900,000
Fixed Operating - Dams	\$ 38,800,000
Fixed Operating - Treatment Plants	\$ 46,900,000
Fixed Operating - Business Overheads	\$ 26,400,000
Fixed Operating - Corporate Overheads	\$ 34,900,000

WaterSecure

ML Water Supplied	14,562
Total Fixed Operating	\$ 72,700,000
Variable Operating Costs	\$ 13,100,000
Fixed Operating - Fixed	\$ 36,800,000
Fixed Operating - Owner Costs	\$ 16,100,000
Fixed Operating - Overheads	\$ 20,100,000

Seqwater Budget Informaiton

Business Unit	Sub-Business Unit	Employee costs (\$)	Supplies and Services (\$)	Other costs (\$)	BU Total budget (\$)	FTEs
Business Overheads	Asset Services Management	\$ 3,237,364.00	\$ 5,660,956.00	\$ -	\$ 8,898,320.00	30.7
	Engineering	\$ 4,238,752.00	\$ 410,723.00	\$ -	\$ 4,649,475.00	40.2
	Fleet Management	\$ 112,396.00	-\$ 1,294,657.00	\$ -	\$ 112,396.00	1.1
	Insurance	\$ -	\$ -	\$ 2,763,429.00	\$ 2,763,429.00	0.0
	Rates and Taxes	\$ -	\$ -	\$ 6,382,400.00	\$ 6,382,400.00	0.0
Corporate Overheads	Commercial & Economics	\$ 419,379.00	\$ 874,998.00	\$ -	\$ 1,294,377.00	4.0
	Corporate Relations	\$ 868,288.00	\$ 642,266.00	\$ -	\$ 1,510,554.00	8.2
	Executive Management	\$ 3,875,020.00		\$ 2,039,203.00	\$ 5,914,223.00	36.7
	Finance	\$ 3,731,042.00	\$ 1,060,589.00	\$ -	\$ 4,791,631.00	35.4
	Health & Safety	\$ 1,518,103.00	\$ 1,391,106.00	\$ -	\$ 2,909,209.00	14.4
	Human Resources	\$ 1,154,294.00	\$ 939,532.00	\$ -	\$ 2,093,826.00	10.9
	Information Services	\$ 2,181,984.00	\$ 4,404,080.00	\$ -	\$ 6,586,064.00	20.7
	Legal Services	\$ 1,135,680.00	\$ 3,006,951.00	\$ -	\$ 4,142,631.00	10.8
	Rent	\$ -	\$ -	\$ 1,606,400.00	\$ 1,606,400.00	0.0
	Management - Integration Costs	\$ -	\$ -	\$ 440,690.00	\$ 440,690.00	0.0
	Strategic Planning	\$ 640,302.00	\$ 572,188.00	\$ -	\$ 1,212,490.00	6.1
Treatment Plant Overheads - Unallocated	WTP Labour	\$ 14,029,791.00		\$ 9,783,280.00	\$ 23,813,071.00	133.0
	WTP Operations Mngt	\$ 1,370,009.00	\$ 1,237,596.00		\$ 2,607,605.00	13.0
	Sustainable Water Mngt	\$ 664,311.00	\$ 1,101,629.00		\$ 1,765,940.00	6.3
Dam Overheads - Unallocated	Dam Labour	\$ 9,990,805.00		\$ 8,537,817.00	\$ 18,528,622.00	94.7
	Dam Operations Mngt		\$ 518,806.00		\$ 518,806.00	0.0
	Flood Control Operations		\$ 1,117,000.00		\$ 1,117,000.00	0.0
TOTAL		\$ 49,167,520.00	\$ 21,643,763.00	\$ 31,553,219.00	\$ 103,659,159.00	466.2

Note: Number of FTEs extracted from Table 13 of Seqwater's 2011-12 GSC Submission (p82). Number of FTEs per unit calculated based on total number of FTEs from Seqwater's report divided by the total employee costs to determine salary per FTE (\$ 105,464)

WaterSecure Budget Informaiton

Expenditure	Business Unit					
	Exceutive Services	Business Services	Corporate Services	Office Management	Technical Services	Operations
Employee costs (\$)	\$ 74,263.00	\$ 1,667,582.00	\$ 1,274,823.00	\$ -	\$ 659,440.00	\$ 2,598,374.00
Payroll Oncosts	\$ 18,645.00	\$ 547,103.00	\$ 318,806.00	\$ -	\$ 161,563.00	\$ 631,513.00
Other employee related expenses	\$ 787.00	\$ 31,179.00	\$ 17,143.00	\$ -	\$ 8,648.00	\$ 43,702.00
Training and Development	\$ 1,688.00	\$ 310,348.00	\$ 42,872.00	\$ -	\$ 53,146.00	\$ 117,860.00
Recruitment Expenses	\$ -	\$ 153,600.00	\$ -	\$ -	\$ -	\$ -
Travel Expenses	\$ -	\$ 8,840.00	\$ 33,400.00	\$ -	\$ 31,180.00	\$ 18,580.00
Consultants	\$ -	\$ 582,400.00	\$ 534,000.00	\$ -	\$ 230,000.00	\$ 1,605,800.00
Audit Fees - External	\$ -	\$ 630,000.00	\$ -	\$ -	\$ -	\$ -
Audit Fees - Other	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 145,000.00
Legal Fees	\$ -	\$ 120,000.00	\$ 600,000.00	\$ -	\$ 10,000.00	\$ 60,000.00
Contractors - Outsourced	\$ -	\$ 20,000.00	\$ -	\$ -	\$ 102,000.00	\$ 234,000.00
Telecommunications	\$ -	\$ 155,210.00	\$ -	\$ -	\$ -	\$ -
Advertising/Promotion/Public Relations	\$ -	\$ -	\$ 298,000.00	\$ -	\$ -	\$ -
Postage, Freight and Storage	\$ -	\$ 7,200.00	\$ 6,000.00	\$ -	\$ -	\$ -
Stationery Priniting Books & Publications	\$ -	\$ 49,440.00	\$ 146,000.00	\$ -	\$ -	\$ 3,000.00
Other Supplies and Services	\$ 352,000.00	\$ 125,900.00	\$ 24,800.00	\$ -	\$ 44,400.00	\$ 31,050.00
Property Equipment & Maintenance Costs	\$ -	\$ 3,256,880.00	\$ 99,000.00	\$ -	\$ -	\$ 29,170.00
Grants and Subsidies	\$ -	\$ -	\$ 80,000.00	\$ -	\$ 465,000.00	\$ -
Miscellaneous Expenses	\$ -	\$ 1,200.00	\$ -	\$ -	\$ -	-\$ 366,091.00
Depreciation and Amortisation	\$ -	\$ 444,000.00	\$ -	\$ -	\$ -	\$ -
QTC Financing Costs	\$ -	\$ 24,000.00	\$ -	\$ -	\$ -	\$ -
Total Overhead Costs	\$ 447,383.00	\$ 8,134,882.00	\$ 3,474,844.00	\$ 1,096,450.00	\$ 1,765,377.00	\$ 5,151,958.00
FTEs	1.0	15.6	12.0		6.0	21.6

SINCLAIR KNIGHT MERZ
SKM