Independent Review of Cost Forecasts

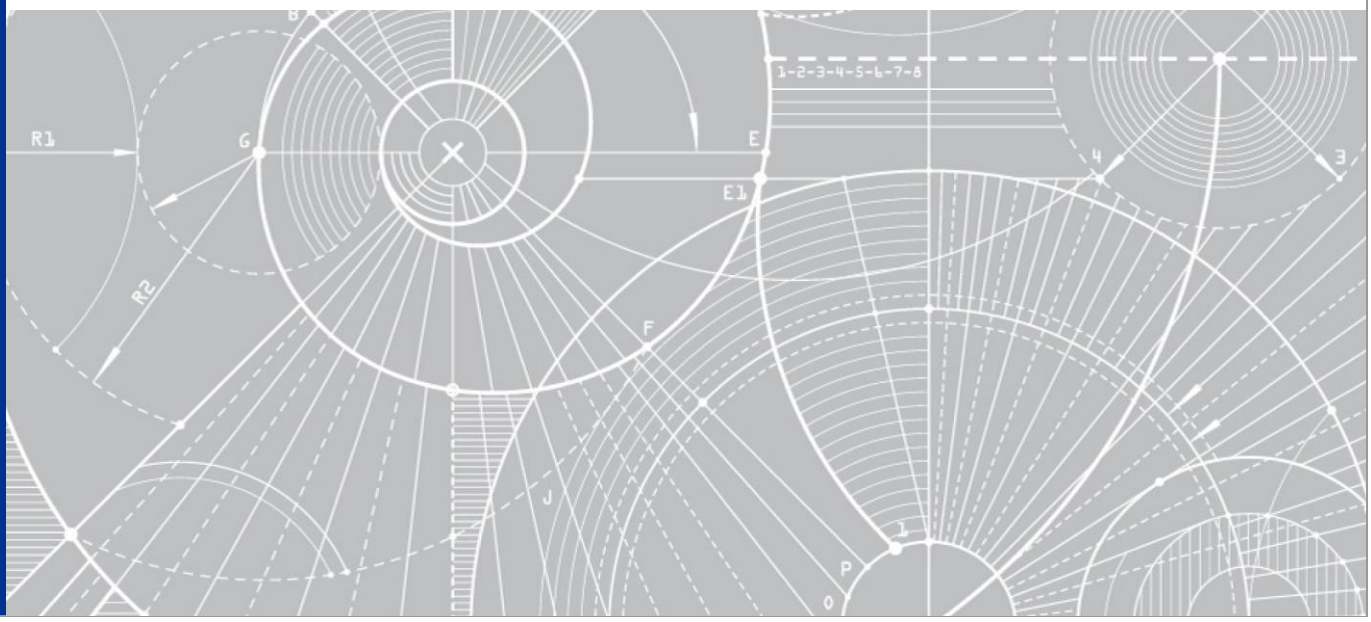
SEQWATER

Western Corridor Recycled Water Scheme

QE06934R002 | 5

Client Reference

24 July 2014



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Independent Review of Cost Forecasts

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Document history and status

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A	02/06/2014	For internal review	M Kench	S Hinchliffe	S Hinchliffe
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1	04/06/2014	Updated draft for client review	M Kench	S Hinchliffe	P Nixon
2	12/06/2014	Final report	M Kench	S Hinchliffe	P Nixon
3	19/06/2014	Final report incorporating additional information	M Kench	S Hinchliffe	P Nixon
4	1/07/2014	Final report incorporating final feedback from Veolia	M Kench	S Hinchliffe	P Nixon
5	24/07/2014	Final report incorporating amendments	M Kench	S Hinchliffe	P Nixon

Contents

Important note about your report

The sole purpose of this report and the associated services performed by Jacobs are to review the Western Corridor Recycled Water Scheme budget proposal for the 2014/15 financial year in accordance with the scope of services set out in the contract between Jacobs and the Client. That scope of services, as described in this report, was developed with the Client.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, Jacobs 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.

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The information and analysis provided in this report has been inhibited by the client imposed time and budget constraints.

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Executive Summary

Jacobs undertook an independent review of the operating expenditure proposed for the Western Corridor Recycled Water (WCRW) Scheme for the 2014/15 financial year (FY). The WCRW Scheme consists of three Advanced Water Treatment Plants (AWTPs), Luggage Point, Gibson Island and Bundamba, and approximately 200 kilometres of large diameter transfer pipelines. The costs included within this review exclude Seqwater's internal costs, unless otherwise stated.

Jacobs' review focused on the following four high expenditure categories:

- One-off decommissioning costs
- Direct employee costs associated with ongoing operations and maintenance
- Preventative maintenance associated with ongoing operations and maintenance
- Service fees

Jacobs found the majority of expenditure reviewed to be prudent and efficient. However, there are areas in which Jacobs recommended savings could be made. The table below outlines the proposed savings from Jacobs review.

Table 0.1 : Proposed savings

Category	Saving	Comments
Decommissioning - Modifications	$375,000	Jacobs notes that these projects are still at the concept design stage. As such limited information is available on these items. Based on the limited information available, Jacobs considers the majority of the modification works to be prudent and efficient with the exception of the following: • PW connection to Oxley HL tank • Dinmore bypasses
Direct employee costs	N/A	Jacobs is of the opinion that expenditure on direct labour costs is prudent. Jacobs finds that there is currently insufficient information to find the direct labour costs to be efficient. As such, we conclude that the costs are not efficient. Jacobs suggests that there may be an opportunity to reduce the cost associated with ongoing O&M labour costs. Jacobs has insufficient information to recommend a reduction in costs.
Preventative Maintenance	$0	Jacobs is of the opinion that expenditure on preventative maintenance is prudent and efficient, based on the information provided.
Service Fee	N/A	Jacobs finds the service fee to be prudent. Jacobs understands that the O&M contract for the WCRW Scheme was competitively tendered. However, Jacobs has not sighted any documentation which outlines how tenders were called and assessed. Presently Jacobs has insufficient information to justify the service fee as efficient. Jacobs recommends that this documentation is provided for future audits.
Total	**$890,632**	

1. Introduction

Seqwater engaged Jacobs to review five separate budget proposals relating to the Western Corridor Recycled Water (WCRW) Scheme and the Gold Coast Desalination Plant (GCDP). The purpose of the review is to investigate and assess the budget proposals in context of prudency and efficiency as determined by the Queensland Competition Authority (QCA).

This report outlines Jacobs' findings from its review of the WCRW Scheme.

The WCRW Scheme consists of three Advanced Water Treatment Plants (AWTPs), and approximately 200 kilometres of large diameter transfer pipelines. The Luggage Point, Gibson Island and Bundamba AWTPs and connecting pipework is shown in **Figure 1.1**.

The project was created as to support water supplies at time of severe drought as one of a number of drought combatting initiatives. It produces Purified Recycled Water (PRW) from treated wastewater. The PRW has the potential for use by industry and for delivery into Wivenhoe Dam.

Seqwater retains responsibility for the scheme and Veolia Water Australia (Veolia) has a contract to operate the scheme.

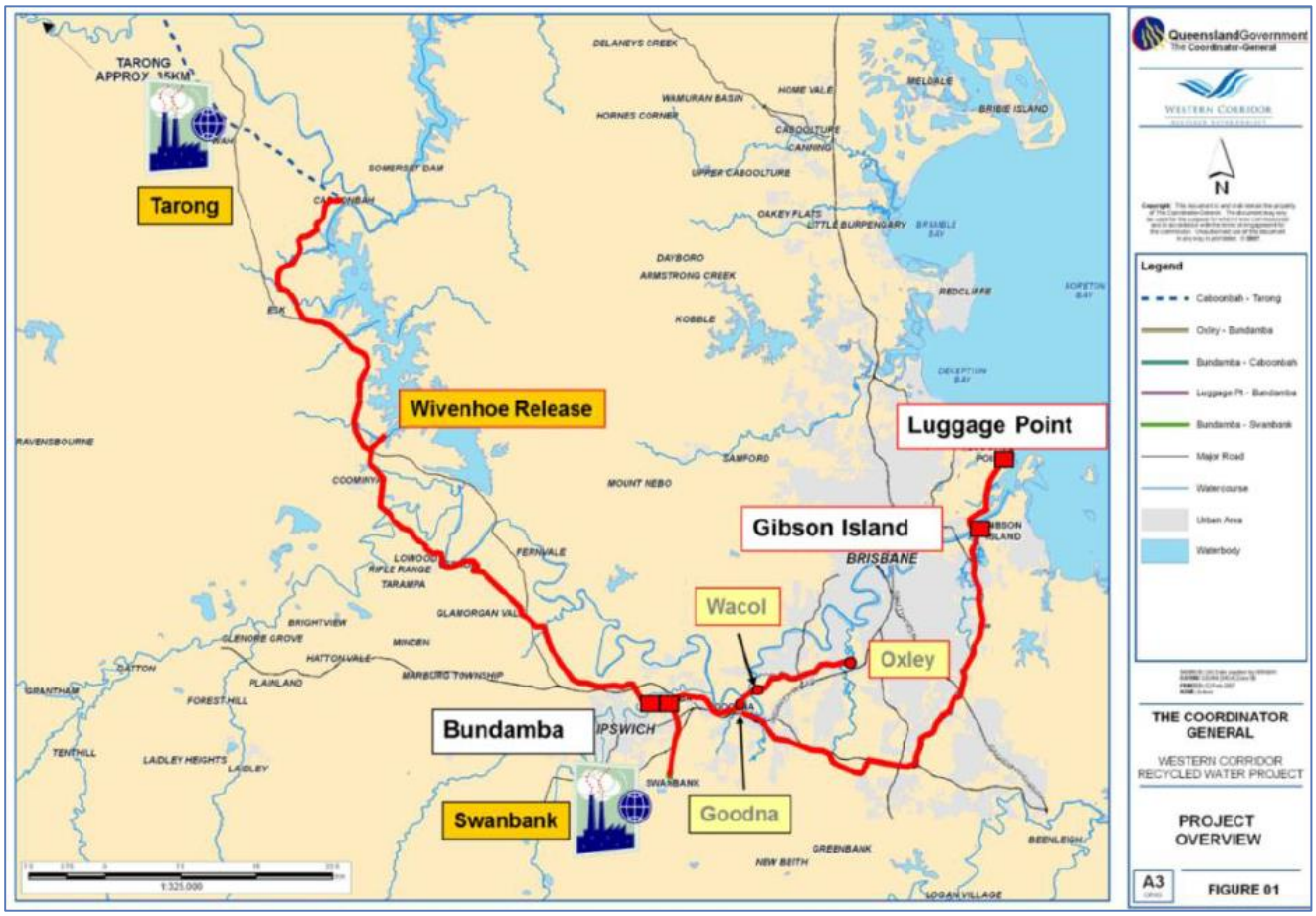

Figure 1.1 : Scheme overview

In December 2010, a decision was made by the State Government to place the Gibson Island AWTP and one of Bundamba's two AWTPs into standby.

In July 2013, a decision was made by the State Government to decommission the Scheme.

In February 2014, Seqwater steering committee accepted a recommendation from GHD (engineering consultants) to change the mode of decommissioning for the pipeline, such that the large diameter transfer pipelines were to be decommissioned and maintained in a static state with no regular turnover of these pipelines, ie no flow within the pipelines. In order to achieve this, works are required to prepare the pipeline for this mode of decommissioning. This includes works on the assets associated with the pump station (balance tanks, valves, pumps and connections to the potable water supply).

1.1 Scope of work

Seqwater requested an independent review of the operating expenditure proposed for the WCRW Scheme for the 2015 financial year (FY) and commissioned Jacobs to undertake this review. The review seeks to establish whether the proposed operating expenditure supports the business objectives of prudency and efficiency as defined and required by the QCA.

The budgets provided for review, are the budgets as provided by Seqwater's operations and maintenance sub-contractor. For the WCRW Scheme, these are the budgets as developed by Veolia. The costs reviewed are Veolia's Pre-Budget Submission for FY14/15. The costs included within this review exclude Seqwater's internal costs, unless otherwise stated.

The QCA's definitions for prudency and efficiency are included below for capital and operating costs. These definitions have been taken from the QCA's terms of reference for the last regulatory review. These definitions have been applied in this review.

Operating Costs

- Prudent - required to meet legal and regulatory obligations or contracts with customers; and
- Efficient - undertaken in a least-cost manner over the life of the relevant assets and is consistent with relevant benchmarks.

Capital Costs

- Prudent - required as a result of a legal obligation, new growth, renewal of existing infrastructure or it achieves an increase in the reliability or the quality of supply that is explicitly endorsed or desired by customers, external agencies or participating councils
- Efficient - capital expenditure is efficient if:
    - The scope of the works is the best means of achieving the desired outcomes after having regard to the options available, including more cost-effective regional solutions, the substitution possibilities between capital and operational expenditure and non-network alternatives such as demand management;
    - The standard of the works conforms to technical, design and construction requirements in legislation, industry and other standards, codes and manuals, Compatibility with existing and adjacent infrastructure is relevant as is consideration of modern engineering equivalents and technologies.
    - The cost of the defined scope and standard of works is consistent with conditions prevailing in the markets for engineering, equipment supply and construction.

To assess the proposed expenditure against the objectives of prudency and efficiency the following questions have typically been considered:

- Has the need for the expenditure been thoroughly investigated, and is it clearly defined, justified and documented?
- Is evidence of the need, including all reference material that demonstrates the need well documented and available?
- Have all feasible expenditure options been identified and analysed and has the least cost option been selected?
- Is there a sound appraisal process in place to allow for consistency and transparency in approach?

- Is the proposed operating costs accurate, capable of verification, consistent with internal costing method, and has variations to previous plans been explained?

2. Background

2.1 Basis of Plant Operation and Maintenance

Veolia has developed operation and maintenance costs for the WCRW Scheme based on a number of assumptions. These are included in **Appendix A**.

Table 2.1 outlines the assumptions have been made on the overall Scheme based on Version 7 of the *Scheme Shutdown Strategic Plan* (Veolia, May 2014). These assumptions apply Scheme wide and to the individual separable portions of the Scheme infrastructure (such as the AWTPs and pipelines).

Table 2.1 : Scheme wide assumptions

Assumption / Comment Number	Scheme Wide Assumptions/Comments
1	The Scheme is to be shut down and demobilised (mothballed) at lowest cost.
2	The Scheme is anticipated to be shut down for a period of 15 years or more.
3	The return to full service capability is to be capable of being achieved within 2 years of an instruction to do so (Restart time) without incurring excessive cost to do so.
4	The final supply of PRW to the Grid ceased in December 2013. Boron levels in PRW sourced from the Luggage Point AWTP are considered satisfactory for supply to the Swanbank power station. PRW supply to the Tarong power station is no longer required.
5	Specific area assumptions will be listed in the relevant document, for example, Maintenance Strategy Assumptions will be listed in the Maintenance Strategy Document. This includes the assumptions of equipment that will be required to be operated during the decommissioning period, along with the justification to support the operation.
6	In line with best business practices of being prudent and efficient, the maintenance strategy will need to consider a number of elements in determining the best outcome in managing these assets. This may include, but not be limited to; • Net Present Value • Risk to a successful restart of the Scheme • Maintenance of skillset to operate the Scheme • Environmental Impacts • Safety Impacts • Stakeholder Impacts
7	There exists a level of uncertainty/risk with the ability to successfully decommission such a Scheme for significant periods of time with predictable restart success. Given this and the minimal world-wide experience in placing membrane plants into standby mode, an iterative approach will be used. This prudent approach will be initially conservative in determining the most suitable manner to maintain the AWTP assets; however, investigations will progress in parallel to better understand the risk of successfully restarting the Scheme. The outcomes of these investigations will be documented in the Veolia Water Management Plans which are updated annually. Learnings from Gibson Island Decommissioning will be utilised for the shutdown and decommissioning of the remainder of the Scheme. As risks and costs are understood, the approach to the management of the Scheme will be adjusted. Approval by Seqwater is required prior to making the adjustments.
8	All licences and permits are to remain in place unless directed otherwise by Seqwater It is important to note that the nominal period of time required to gain ERA permits to operate an AWTP is 2 years. This should be taken into account when assessing the decommissioning mode options as the permits may have to be surrendered for certain modes.
9	The infrastructure is to be de-energised to the fullest extent possible.

Assumption / Comment Number	Scheme Wide Assumptions/Comments
10	Strategy changes on Seqwater's water security (Wivenhoe Dam levels etc.) may have an impact on the optimum decommissioning strategy for the Scheme.
11	The large diameter transfer pipelines are to be maintained in a static mode. Detailed investigation required for each of the sections of ROC, Raw Water and PRW Transfer pipelines to determine the required implementation methodology.
12	Workshops to be arranged to determine further strategic requirements/assumptions (following approval of this Project Strategic Plan) prior to finalising the Strategic Plan to include: • Risk review on decommissioning and restart risks; • Assessment of required security arrangements; • Assessment of requirements for grounds maintenance, and • Engineering reviews to determine decommissioning maintenance arrangements.
13	Where appropriate, third party reviews of engineering assessments, plans and processes proposed for decommissioning the Scheme will be carried out to ensure prudent and efficient practices.
14	There are stakeholder requirements for the static shutdown mode to be implemented before 30 June 2015. In parallel to the production of this report, Seqwater has been undertaking investigations to reduce the deadline for decommissioning to be completed by 30 March 2015.

3. Outline of budget

3.1 Overall budget

The proposed operating expenditure for WCRW Scheme for FY 2011/12 to FY 2028/29 is shown in the chart below and comprises Veolia's actual (as incurred) and budget costs for the fixed, variable and service fee components of expenditure.

Actual total operating costs (in real terms) for FY 2012/13 summate to [redacted].

Peak expenditures in the FY 2018/19 and FY 2023/24 forecasts relates to periodic spot expenditures associated with asset replacement and preventative maintenance activities as scheduled in the Contract Asset Renewal Management System (CARMS) employed by Veolia. These peak expenditure periods fall outside the scope of this assessment.

Figure 3.1 : WCRW Scheme Operating Cost Forecast

The operating cost for the WCRW Scheme assets consist of three key components of expenditure: variable expenditures, fixed expenditures and a services fee. The variable component comprises expenditures associated with energy usage, chemical treatment and cleaning, and sludge and waste disposal. As the scheme is being decommissioned, there are no variable costs for FY 2014/15. As such, Jacobs has not reviewed these variable costs further.

The fixed expenditure component refers to costs associated with routine operating and maintenance activities and makes up the majority of the total operating expenditure. A comparison between the fixed costs for the FY 2014/15 and previous years is not useful, as the mode of operation for the plants has changed.

3.2 Sample selection for detailed analysis

The WCRW Scheme expenditure for FY 2014/15 was reviewed anticipating the same level of scrutiny being required by Seqwater is required by the QCA for a regulatory review. To this extent, and taking into consideration time and budget constraints, Seqwater requested that the review consider at least 80% of the total budget value with a priority on the highest value items.

A breakdown of the FY 2014/15 budget, excluding decommissioning costs is shown in **Table 3.1**. Decommissioning costs are presented separately in **Table 3.2**.

Table 3.1 : FY 2014/15 cost breakdown by asset – O&M costs

	Veolia's Pre-Budget Submission FY 2014/15 Costs $000's					
	Bundamba	**Luggage Point**	**Gibson island**	**Network**	**Scheme Office**	**WCRW Total**
Variable Costs						
Variable Energy ^	417	289	231	199	-	1,136
Treatment Chemical	-	-	-	-	-	-
Sludge and Waste Disposal	-	-	-	-	-	-
Total Variable Costs	**417**	**289**	**231**	**199**	**-**	**1,136**
Fixed Costs						
Employee Cost - Direct	893	774	827	843	498	3,834
Employee Cost - Indirect	42	56	22	43	118	281
External Consultant Costs	-	-	-	6	36	42
Motor Vehicle Related Cost	76	96	34	188	137	531
Water Analysis & Lab Consumable	233	61	61	50	-	405
Repair & Maintenance - Preventative	279	202	189	1,094	1	1,765
Repair & Maintenance - Breakdown	31	31	31	124	-	217
Repair & Maintenance - Projects	-	-	-	-	-	-
Repair & Maintenance - Asset Replacement	97	-	10	62	-	168
Spare Parts	93	74	50	55	-	272
Plant Consumables and Rentals	31	47	27	62	-	167
Fixed Energy^	467	309	524	32	-	1,333
Office and IT Related Costs	173	132	100	202	162	769
Other Fixed Costs	86	79	59	335	130	689
Total Fixed Costs	**2,033**	**1,552**	**1,410**	**3,064**	**1,082**	**9,141**
Total Fixed & Variable excl Fee	**2,918**	**2,150**	**2,165**	**3,294**	**1,082**	**11,609**

Source: MWA Long Term OPEX Template 2015 including Demob v2. Note decommissioning costs are included within the Repair & Maintenance – Projects category. ^Additional energy costs provided by Seqwater

Table 3.2 : FY 2014/15 cost breakdown by asset – decommissioning costs

	Veolia's Pre-Budget Submission FY 2014/15 Costs $000's					
	Bundamba	**Luggage Point**	**Gibson island**	**Network**	**Scheme Office**	**WCRW Total**
Decommissioning costs (Repair & Maintenance – Projects)	1,483	3,985	343	6,813	-	12,624

Source: MWA Long Term OPEX Template 2015 including Demob v2. Note decommissioning costs are included within the Repair & Maintenance – Projects category.

The combined totals for both ongoing O&M and decommissioning costs are shown in **Table 3.3**.

Table 3.3 : FY 2014/15 cost breakdown by asset – combined costs

	Veolia's Pre-Budget Submission FY 2014/15 Costs $000's					
	Bundamba	Luggage Point	Gibson island	Network	Scheme Office	WCRW Total
Total Fixed & Variable excl Fee	**4,401**	**6,135**	**2,508**	**10,107**	**1,082**	**24,233**
Volumes Water (ML)	-	-	-	-	-	-

Jacobs undertook a high level review of the costs and from this review of the costs selected the following items for detailed review:

- Decommissioning budget – this is included in **Table 3.2** as the Repair & Maintenance – Projects budget
- Employee Cost - Direct
- Repair & Maintenance – Preventative
- Service fee
- A summary of these costs and the percentage of the total FY 2014/15 costs for the WCRW Scheme are shown in **Table 3.4**.

Table 3.4 : Sample selection

Categories	Veolia's Pre-Budget Submission FY 2014/15 Cost ($000's)	Percentage of WCRW Total Costs

These cost categories account for nearly 80% of the total fixed operating costs and, as such, formed the focus of our review. A further breakdown of costs and discussion of the prudency and efficiency of these costs is provided in the following sections.

3.3 Initial gap analysis

Jacobs SKM undertook an initial data review and gap analysis targeting the areas above. The information requested arising from this data and information gap analysis is presented in **Appendix B**. This information request was discussed with stakeholders from Seqwater and Veolia Water. As a result of this discussion a subsequent round of information was provided.

4. Overall assessment

Jacobs has sought data on other similar facilities to enable a high level benchmarking of the overall costs to be undertaken. However, it should be noted that very limited data is available on the asset maintenance costs of decommissioned recycled water facilities to enable a comprehensive benchmarking exercise to be undertaken. The most closely comparable plant is the Yuma Desalting Plant in Arizona, USA. The Yuma plant has capacity to treat 265 ML/d of brackish river water using media filtration and reverse osmosis processes. The plant has been maintained in "ready reserve" state for the majority of its 22-year life, with a start-up timeframe of 24-48 months.

Seqwater and Veolia have consulted with the operators of the Yuma plant and have visited the facility to share learnings on long term maintenance requirements and strategies. Veolia provided site notes from this trip undertaken in June 2011. A comparison of key items between the Yuma plant and the WCRW Scheme is shown below.

Table 4.1 : Comparison of the Yuma Desalting Plant and the WCRW Scheme

Area	Yuma Desalting Plant	WCRW Scheme (3 AWTPs and 200km pipeline)
Capacity	265 ML/d	232 ML/d (total for all 3 AWTPs)
Maintenance	Maintenance is undertaken when the plant is offline to enhance asset life.	Maintenance is undertaken when the plant is offline to enhance asset life.
Workforce	At 100% operation, a total site workforce of 100 people is envisaged.	Unknown
Decommissioning workforce	There are a total of 60 people on site during "decommissioning" which will drop to about 40 for "ready reserve".	There are 33 FTEs required for the decommissioning. This is in addition to the 33 FTEs undertaking O&M activities.
O&M workforce	The O&M Subcontractor has 42 people – 10 admin, 10 E&I, 10 maintenance, 10 operators. Veolia notes that this figure excludes engineering and management staff.	Veolia has 33 FTEs undertaking operations and maintenance. Veolia notes that this figure includes engineering and management staff. Specialist maintenance is sub contracted out.
Contracts	The operations are tendered every 5 years, and the operator commits a fixed price for labour. Parts and capital expenditure are agreed with the government on an ongoing basis.	The operations were tendered for a 15 year contract. Jacobs has not sighted the full contractual agreement, but understands that this is based on a cost plus arrangement.
PM	Detailed PM schedules have been derived over the years for each plant operating regime. At the start this was just to follow manufacturer's recommendations, although this has been optimized over time based on feedback from the field.	Veolia uses its CARMS system. Maintenance is based on manufacturer's recommendations and feedback following previous maintenance cycles.
O&M costs	On average the O&M contract is worth $4 million per year (assumed to be in 2012 $AUS). Veolia notes that this figure excludes the labour costs for engineering and management staff. There is $200,000-$1.5 million in capital expenditure and the total expenditures during "ready reserve" are $9-12M p.a. During the year prior to the 2007 ramp up, $30M was spent on recommissioning.	[redacted]

The information provided in **Table 4.1** demonstrates that there are a number of similarities between the Yuma Plant and the WCRW Scheme in terms of capacity, size of decommissioning workforce, and preventative maintenance scheduling. However, there is a material difference in O&M costs between the two sites. The reasons for this difference include the base year applied and the difference in cost of labour between Australia and the USA. Applying CPI as an escalator from 2012 to 2015 and applying a rough labour rate difference of 34% to the combined O&M and capital expenditure ($5 million) results in a total O&M contract of $7.9 million for

the Yuma Plant. [redacted]. However, it is noted that the WCRW Scheme comprises three geographically separate AWTPs, and as such, cost would be expected to be higher than for a single larger plant.

5. Decommissioning budget

The key components of the decommissioning budget are shown in **Table 5.1**.

Table 5.1 : FY 2014/15 decommissioning budget breakdown

	Veolia's Pre-Budget Submission FY 2014/15 Costs $000's					
	Bundamba	**Luggage Point**	**Gibson island**	**Network**	**Scheme Office**	**WCRW**
Existing Salary Staff	259	107	36	1,012	0	1,413
Consultants External Staff	13	221	13	377	0	625
Direct Labour	415	1,897	189	158	0	2,659
Chemicals	3	55	0	0	0	58
Power	0	175	0	50	0	225
Analysis	0	0	0	0	0	0
Consumables	16	40	2	590	0	648
Waste Disposal	365	685	43	1,035	0	2,128
Tools & Equipment	11	41	3	21	0	76
Contract Break Fees	25	50	0	0	0	75
Redundancy Costs	100	50	0	50	0	200
Static Mode Detailed Planning	0	0	0	300	0	300
Modification Works	30	20	0	2,093	0	2,143
R&M - Preventative	0	22	0	0	0	22
Total	**1,236**	**3,363**	**286**	**5,686**	**0**	**10,570**
Contingency	247	622	57	1,127	0	2,053
Management fee^	0	0	0	0	0	0
Total (Inc. contingency, but excluding management fee)	**1,483**	**3,985**	**343**	**6,813**	**0**	**12,623**

^Note: See Table 3.2 for details of management fee

Analysis of the data in the above table reveals that:

- The majority of the decommissioning costs are associated with the network and Luggage Point AWTP
- Across all assets, the highest costs are associated with labour costs (existing salary and direct labour), waste disposal and modification works.
- The costs associated with the labour and modification works are discussed in the following sections.

5.1 Provided information

Jacobs has been provided with the following documentation specifically relating to decommissioning costs:

- MWA Long Term OPEX Template 2015 including Demob
- MWA Long Term OPEX Template 2015 including Demob v2
- 140508 Luggage Point Resource Profile R1 (PDF)
- 140508 Networks Resource Profile R1 (PDF)
- 140515 BU Decommissioning Budget (Excel)
- 140515 GI Decommissioning Budget (Excel)

- 140515 LP Decommissioning Budget (Excel)
- 140515 NET Decommissioning Budget (Excel)
- 140515 WCRWS Closure Detail Baseline (PDF)
- 140515 WCRWS Closure Summary Baseline (PDF)
- 140519 Static Mode Closure Project Org Structure (Excel)
- Employee Chart V 5 (Excel)

5.2 Labour

The labour costs associated with decommissioning are divided between direct labour costs and existing salaried staff. As the decommissioning work is split between these two groups, these are discussed together in the following sections.

5.2.1 Direct labour costs

Table 5.2 shows a breakdown of the direct labour decommissioning costs.

Table 5.2 : Breakdown of direct labour decommissioning costs for FY 2014/15

Asset	Job Title	Hourly rate	Weeks	Total	Equivalent FTE
[redacted]					

Asset	Job Title	Hourly rate	Weeks	Total	Equivalent FTE
Total WCRW Scheme				**$2,659,280**	**19.5**

Source: 140515 BU Decommissioning Budget (Labour Tab), 140515 GI Decommissioning Budget (Labour Tab), 140515 LP Decommissioning Budget (Labour Tab), 140515 NET Decommissioning Budget (Labour Tab).

5.2.2 Existing salary costs

In addition to costs associated with direct labour costs, there are the labour costs associated with decommissioning which are allocated to salary staff for existing staff and new/external staff. It is important to consider both sources of costs to understand the overall costs associated with decommissioning. A summary of these costs is provided below.

Table 5.3 : Breakdown of existing salary decommissioning costs for FY 2014/15

	Bundamba	Gibson Island	Luggage Point	Networks
Decommissioning - Salary (Existing Staff)				
Decommissioning - Salary (Existing Staff)	1.75 FTEs	0.25 FTEs	0.75 FTEs	8.25 FTEs
Decommissioning - Salary (New/External Staff)				
Decommissioning - Salary (New/External Staff)	0.03 FTEs	0.03 FTEs	1.03 FTEs	1.53 FTEs

Source: 140515 BU Decommissioning Budget (Salary Staff Tab), 140515 GI Decommissioning Budget (Salary Staff Tab), 140515 LP Decommissioning Budget (Salary Staff Tab), 140515 NET Decommissioning Budget (Salary Staff Tab).

Jacobs has endeavoured to reconcile these costs with the *Western Corridor Scheduled Closure Project Org Structure.* A copy of this is provided in **Table 5.4.**

Table 5.4 : Western Corridor Scheduled Closure Project Org Structure

Name	Position*	Role*	Position (as referenced in decommissioning budgets) or comment^
Management			
	Project Manager	Coordinate project implementation, stakeholder communication	Using Ops Manager included in O&M labour
	Scheduler		Planner
Asset Management			
	Decommissioning Asset Manager	Leads development of asset management plans and responsible for determining asset dormant states and exercising requirements and implementing changes to CMMS	Not specifically identified in demob costs in Employee Chart v5
	Projects/Asset Engineer	Managing major contract works including chemical removals, tank cleaning and modification works (project management).	Asset engineer

Name	Position*	Role*	Position (as referenced in decommissioning budgets) or comment^
Vacant - recruitment approved by SEQW	Asset Engineer	Required to commence engineering value assessments for scheme M&E assets, development of asset condition assessment plans for each site and assist the Decommissioning Asset Manager with increased work scope (Networks and LP AWTP).	Asset engineer
Bundamba AWTP			
[redacted]	Decommissioning Engineer	Site project management (develop/manage schedule, develops plans and ITCs)	Decommissioning engineer
[redacted]	Decommissioning Supervisor	Site and labour supervision	Not specifically identified in demob costs in Employee Chart v5
Gibson Island AWTP			
[redacted]	Decommissioning Engineer	Site project management (develop/manage schedule, develops plans and ITCs)	Using Process Operations Engineer included in O&M labour
[redacted]	Decommissioning Supervisor	Site and labour supervision	Not specifically identified in demob costs in Employee Chart v5
Pipeline Networks			
Vacant - recruitment approved by SEQW	Decommissioning Engineer	Static mode investigations, optimise and manage schedule, develop decommissioning ITCs, etc.	Decommissioning Engineer
[redacted]	Decommissioning Supervisor - 1	Site and labour supervision	Worker 1 - Supervisor
Vacant	Decommissioning Supervisor - 2	Additional supervisor required to meet scheduled closure date.	Operation Supervisor
Luggage Point AWTP			
Vacant	Decommissioning Engineer	Site project management (develop/manage schedule, develops plans and ITCs)	Decommissioning Engineer
Vacant	Decommissioning Supervisor - 1	Site and labour supervision	Decommissioning Supervisor - 1
Vacant	Decommissioning Supervisor - 2	Additional supervisor required to meet scheduled closure date.	Decommissioning Supervisor - 2
Scheduled Closure Direct Labour Pool			
Operator/Maintainers	Operator/Maintainers currently at all WCRWP sites - 10 people	Currently employed operators/maintainers across all WCRWP sites.	Total 23 operators
Vacant - Operator/Maintainers required	Operator/Maintainers required to deliver schedule - 13 people	Additional direct labour required to deliver scheduled closure activities according to schedule.	

*Source: * Western Corridor Scheduled Closure Project Org Structure ^Employee Chart v5*

Jacobs has attempted to reconcile the budgeted costs against the roles of those undertaking the decommissioning. Jacobs notes that there have been multiple changes in the decommissioning strategy and

shutdown schedule, so that it is possible differences between data sources are due to changes to assumptions occurring subsequent to the source being developed.

As shown in **Table 5.4,** Jacobs has been able to reconcile the majority of the roles, with the following exceptions:

- Plant manager – 1 FTE included within costs (*Employee Chart v5*), but not within *Western Corridor Scheduled Closure Project Org Structure*. Reason provided as follows:
    - Additional O&M role (not included in O&M costs) until completion of decommissioning works (existing role, required to manage team; HR, IR, financial delegations, stakeholder management, etc.)
- Network Ops Specialist – 0.5 FTE included within costs (*Employee Chart v5*), but not within *Western Corridor Scheduled Closure Project Org Structure*. Reason provided as follows:
    - Additional O&M role (not included in O&M costs) until completion of decommissioning works (existing role, required for engineering input until completion of decommissioning works)
- Decommissioning Engineer– 1 FTE excluded within costs (*Employee Chart v5*), but included within *Western Corridor Scheduled Closure Project Org Structure*. Reason provided as follows:
    - Using Process Operations Engineer included in O&M labour

Decommissioning Supervisor – two decommissioning supervisors excluded within costs (*Employee Chart v5*), but included within *Western Corridor Scheduled Closure Project Org Structure*. No reason provided.

A summary of the total number of FTEs associated with decommissioning is shown in **Table 5.5.**

Table 5.5 : Decommissioning - Total FTEs for FY 2014/15

Additional FTEs	Bundamba	Gibson Island	Luggage Point	Networks	WCRW
Labour - Workers	3	2	12	0	17
Labour - Supervisors	0	0	1.5	1	2.5
Salary - Existing Staff	1.75	0.25	0.75	8.25	11
Salary - New/External Staff	0.03	0.03	1.03	1.53	2.62
Total	**4.78**	**2.28**	**15.28**	**10.78**	**33.12**

Jacobs requested additional information to support the need for the additional FTEs at Luggage Point and associated with the network. Responses received are discussed in the following sections.

5.3 Commentary on Labour Costs

Veolia has provided resource profiles (*140508 Luggage Point Resource Profile R1* and *140508 Networks Resource Profile R1*) and decommissioning program (*1405015 WCRWS Closure Summary Baseline* and *140515 WCRWS Closure Detail Baseline*) to support the decommissioning costs outlined above. These baselines were provided based on the original scheduled decommissioning date of 30 June 2015. As noted in Section 2.1, this timeframe has been subsequently revised. In addition, Veolia notes that the figures presented are the actual hours required to complete tasks and do not include any unproductive time, such as training, annual leave, meetings, admin duties, wet days etc.

5.3.1 Luggage Point

The Luggage Point resource profile shows the planned work hours for decommissioning of Luggage Point AWTP between July 2014 and June 2015. The profile outlines a reasonably steady work load of approximately

300 hours per week between August 2014 and January 2015, a peak of approximately 700 hours per week in February and March 2015, and then a decline in hours until completion of commissioning in June 2015.

Although the program does not specify work hours for each task, it does indicate the quantity of tasks that are required to be performed. The quantity of tasks is considered by Jacobs to correlate with the resource profile in so far as this can be ascertained. Decommissioning activities are split into two areas – "Decommissioning Early Work" and "Final Decommissioning Work". Decommissioning Early Work comprises decommissioning of a number of process units where multiple units are installed (for example, six of the eleven MF trains will be decommissioned during this first phase), and is programmed to occur from July 2014 until February 2015. Final Decommissioning Work includes decommissioning of the remainder of the process plant, and is programmed from January 2015 until June 2015. This strategy is considered appropriate, since the early works reduce the magnitude of the resourcing peak in February and March 2015.

Jacobs questioned whether there was any possibility to increase the scope of the early works, and therefore further smooth the resourcing profile away from the peak months. Veolia has responded that it is not possible as the plant will run until December 2014.

From the Scheme Shutdown Strategic Plan, Jacobs understands that the Luggage Point AWTP will reduce operational plant capacity to the minimum possible (a single RO train de-rated to 18.6ML/d or lower) when supply to Swanbank ceases to enable production of PRW for remaining pipeline and AWTP flushing/cleaning works. At this point, the surplus capacity infrastructure will be ready to be decommissioned to the Optimised Decommissioned Standby mode. Jacobs recommends that Seqwater continue to review the requirement for the production of PRW, and hence, the ability to bring forwards the decommissioning works.

[redacted].

5.3.2 Networks

The networks resource profile shows the planned work hours for decommissioning of the WCRWS network between September 2014 and June 2015. The profile shows a steadily increasing work load to a peak of approximately 400 work hours per week in December 2014, a decline to approximately 100 work hours per week in March 2015, and a reasonably steady work load of approximately 100-150 hours per week until completion of commissioning in June 2015.

As with the Luggage Point data, the program does not indicate work hours for each task, but it does indicate the quantity of required tasks. The program shows the network divided in to discrete sections, with similar tasks to be performed in each section, i.e. swabbing of pipelines, cleaning of tanks and filling with chemically dosed recycled water. The program is considered to be logical, but again, we would question whether there might be potential to improve efficiency by reducing the peaks in the resource profile by moving the decommissioning dates for particular sections of the network.

[redacted].

5.3.3 Management and supervisors

Jacobs is concerned that there may be double counting of resources between the decommissioning budget and the O&M budget. There are five resources which appear both in the O&M list within *Employee Chart V5* and the *Western Corridor Scheduled Closure Project Org Structure*. These are shown in **Table 5.6.**

Table 5.6 : Potential duplication of positions

Role	Name	Position in *Western Corridor Scheduled Closure Project Org Structure*	O&M Position in *Employee Chart V5*	Utilisation from *Employee Chart*
Role 1	Kon Hadjandonis	Project Manager	Plant/Operations Manager	100%
Role 2	Gavin Warry	Decommissioning Asset Manager	Reliability Engineer	100%
Role 3	Kersval Naidoo	Process Operations Engineer	Decommissioning Engineer	100%
Role 4	Tony Yates	Operations Supervisor	Decommissioning Supervisor	50%
Role 5	Matthew Tremble	Ops Supervisor	Decommissioning Supervisor - 1	50%

The current Plant/Operations Manager (as identified in the *Employee Chart V5*) is listed as the project manager for the decommissioning (in the *Western Corridor Scheduled Closure Project Org Structure*). In addition, a second FTE has been costed as the Bundamba and Networks Plant Manager, which is noted as an additional O&M role until completion of decommissioning works to undertake an existing role (required to manage team; HR, IR, financial delegations, stakeholder management, etc). Jacobs also notes that the Operations Manager from the GCDP currently also spends at least half of his time at the WCRW Scheme.

In response to the above comments, Veolia responded that the role of the plant/operations manager role is different to the GCDP Ops Manager role (in particular, responsible for two separate contracts/operations) and that the role of the Bundamba and Networks Plant Manager is again different to the GCDP Ops Manager role. [redacted].

For the Decommissioning Asset Manager and the operations supervisors, based on the latest information provided Jacobs believes that the costs for these resources are included with O&M costs and are not double counted.

Regardless of the above, Jacobs understands from Veolia that the management costs will reduce in future years. For example, from 1 July 2015 when the scheme is fully shutdown the [redacted].

5.4 Modification Works

5.4.1 Provided information

The following documents were provided for review by Jacobs specifically regarding the pipeline modifications:

- Scheme Shutdown and Decommissioning Project Strategic Plan (Veolia Water, May 2014, V7)
- Western Corridor Recycled Water Scheme - Network Decommissioning Scope (GHD, March 2014)
- 140515 NET Decommissioning Budget (Excel, no date)

Table 5.7 provides a cost breakdown for pipeline modification works.

Table 5.7 : Cost breakdown for modifications

Tasks	Description	Cost	Veolia Comments
PRW to GWO RW Pipeline Connections		$195,000	Part of original scope, based on recent tender estimates

Tasks	Description	Cost	Veolia Comments
Pipeline modifications	Installation of WQ sampling, hot tap points (for RVs/cameras) and fill/draw tapings, pipeline modifications to isolate redundant assets whilst maintaining HGL above pipe obvert, modifications to enable chemical dosing and future neutralisation	$180,000	
PW connections concept design assessment	Detailed investigation of each proposed PW supply connection and assess each option (cost, time, benefits, risks) to provide recommendation on implementation	$50,000	
PW connection to Oxley HL tank	Detailed design and construction, 300 to 500mm connection from QUU	$500,000	
Connection from SRWP to Bundamba RWST + pipeline diversion upgrades at WWTPs	Design and install cross connection from SRWP into Bundamba RW tank, install temporary pump on Bundamba RW tank for filling/turning over GWO RW pipeline, design/modifications for reverse flows, pipeline diversions at WWTPs for disposal to QUU	$0	Assume not req'd if PW connection at Oxley is made
Dinmore bypasses	Design and install bypasses around Dinmore RW and ROC tanks	$500,000	As per GHD report, may not be required
SRWP connection to Bundamba PRW tanks	Install connection from SRWP into Bundamba PRW tanks to allow pumping in both easterly (reverse) + westerly directions	$500,000	Detailed design and construction
Repair/modification to LP to GI RW pipeline	The RW Pipeline between Luggage Pt and Gibson Island was damaged during commissioning – a section of GRP piping leading into the tank at Gibson Island. This has not been repaired, and the existing low-flow turnover water leaves the RW pipeline upstream of … [note incomplete in original spreadsheet]	$100,000	
PW connection to GI tank via 600 pipeline in Paringa Road	Install connection of PW into GI tank via 600 pipeline in Paringa Road.	$67,500	As per GHD report
Total		**$2,092,500**	

Source: *140515 NET Decommissioning Budget*

Jacobs has reviewed the proposed modification works and provides the following comments on individual modifications.

Table 5.8 : Jacobs analysis of proposed modifications

Tasks	Cost	Prudency	Efficiency
PRW to GWO RW Pipeline Connections	$195,000	Jacobs agrees that the connection is required to allow the decommissioning to occur. As such the work is considered prudent.	Jacobs could not find a breakdown of these costs. Given that the rates are based on recent tender estimates, there are considered to be efficient.
Pipeline modifications	$180,000	Jacobs agrees that there will need to be modifications and works at each air valve in order to implement the proposed decommissioning strategy. As such the work is considered prudent.	The extent of these works (inlet/withdrawal connections, sampling etc) is not quantified anywhere. However, based on our understanding of the works and the large number of assets, Jacobs is satisfied that the costs are efficient.

Tasks	Cost	Prudency	Efficiency
PW connections concept design assessment	$50,000	Jacobs believes that the need for the connection investigation and design assessments is dependent on whether any works have been completed thus far. On the basis that these have not been completed, Jacobs considers the work to be prudent.	The cost for undertaking this work is a considered high, but not significantly so and given that there are a number of work activities that need to be considered, Jacobs is satisfied that the costs are efficient.
PW connection to Oxley HL tank	$500,000	Jacobs questions the size of the connection required. Depending on the means of operation, Jacobs recommends the use of the smallest pipe that would allow tank filling between turn over flows (which we assume will be small –not draining the tank, and periodic - not more than once a month). Without performing any type of calculation, as this is outside of the scope of works, Jacobs suggests that a 300 mm diameter or lower may be more appropriate.	Jacobs believes the cost for this item is too high. We do not have sufficient detail to provide a budget estimate (e.g. length of connection, filling rate required). In lieu of this we suggest a reduction in cost of around 40% (Revised total $200,000).
Connection from SRWP to Bundamba RWST + pipeline diversion upgrades at WWTPs	$0	As stated by Veolia, this is not required if potable water connection is made at Oxley. Jacobs agrees that this is not needed and therefore that no costs are included.	As stated by Veolia, this is not required if potable water connection is made at Oxley. Jacobs agrees that this is not needed and therefore that no costs are included.
Dinmore bypasses	$500,000	Jacobs agrees that there is a need for a bypass.	The cost estimate lists a lump sum price of $500k and a note: 'Verbal advice from Veolia'. Jacobs has not seen any further evidence of cost assessment. Based on the assumption of up to 30m of OD1086, we believe the costs to be high and recommend a reduction of 15% (Revised total $425,000).
SRWP connection to Bundamba PRW tanks	$500,000	Jacobs agrees that there is considerable work to do on a brown field site to enable revers flow.	Jacobs believe that the cost for this item is reasonable and hence efficient.
Repair/modification to LP to GI RW pipeline	$100,000	Jacobs notes that the source spreadsheet contains incomplete information. We would be interested to know where the current turn over flows 'leave' to? Regardless, from review of the plan, to initiate turn over from Gibson back to Luggage, the pipe will need to be repaired. As such the work is considered prudent.	Jacobs believe that the cost for this item is reasonable and hence efficient.
PW connection to GI tank via 600 pipeline in Paringa Road	$67,500	Jacobs agrees that works are required to provide water source.	Jacobs believe that the cost for this item is reasonable and hence efficient.

Jacobs notes that these projects are still at the concept design stage. As such limited information is available on these items. Based on the limited information as presented above, Jacobs considers the majority of the modification works to be prudent and efficient with the exception of the following:

- PW connection to Oxley HL tank
- Dinmore bypasses

The recommended overall cost reduction for these work items is $375,000.

5.5 Summary

Decommissioning costs represent $12.6 million of the FY 2014/15 costs. The highest costs are associated with labour costs (existing salary and direct labour), waste disposal and modification works. Jacobs has specifically reviewed the labour and modification works.

Labour costs and supporting information are presented in a number of sources for the WCRW Scheme. Jacobs has attempted to reconcile the budgeted costs against the roles of those undertaking the decommissioning. We have been able to reconcile the majority of the roles. Jacobs notes that there have been multiple changes in the decommissioning strategy and shutdown schedule, which is likely to account for some of the differences between sources.

Jacobs finds the majority of the labour costs to be prudent and efficient, with the following exceptions. [redacted].

In terms of modifications, Jacobs notes that these projects are still at the concept design stage. As such limited information is available on these items. Based on the limited information as presented above, Jacobs considers the majority of the modification works to be prudent and efficient with the exception of the following:

- PW connection to Oxley HL tank
- Dinmore bypasses

The recommended overall cost reduction for these work items is $422,900.

6. Direct employee costs (O&M)

This section covers the direct employee costs of the ongoing operations and maintenance costs.

6.1 Provided information

Jacobs has been provided with the following documentation specifically relating to employee costs:

- Employee Chart (Excel)
- Employee Chart v5 (Excel)
- Employee Costs – Direct (Excel)
- Employee Costs - Direct v2 (Excel)
- Employee Costs - Direct v2 (Excel) – Revised version provided subsequent to Jacobs' draft report
- WCRW Org Charts as at May 2014 (Veolia, PowerPoint)

In addition, 28 position descriptions have been provided.

Table 6.1 provides a further breakdown of direct employee costs based on the latest provided information.

Table 6.1 : Employee cost breakdown for FY 2014/15

Employee Costs - Direct	Veolia's Pre-Budget Submission FY 2014/15 Costs ($'000s)					
	Bundamba	Luggage Point	Gibson Island	Networks	Scheme Office	WCRW Total
76400 - Salaries & Wages	816	713	706	765	417	3,417
76405 - Bonuses	59	48	72	67	37	283
76410 - Allowances - Meal	1	-	-	1	-	2
76425 - Overtime	17	13	-	10	-	40
76520 - Contractors - Full/Part Time (LONG TERM)	-	-	49	-	44	93
Total	893	774	827	843	498	3,835

Source: *Employee Costs - Direct v2*

Jacobs has attempted to reconcile this with other data sources. A comparison is shown below.

Table 6.2 : Comparison of direct costs between sources for FY 2014/15

Employee Costs - Direct	Veolia's Pre-Budget Submission FY 2014/15 Costs ($'000s)					
Source	Bundamba	Luggage Point	Gibson Island	Networks	Scheme Office	WCRW Total
Employee Costs - Direct v2 (Revised)	893	774	827	843	498	3,835
MWA Long Term OPEX Template 2015 including Demob v2	893	774	827	843	498	3,834

There is agreement between the cost data provided in the two latest information sources (*Employee Costs - Direct v2* (Revised) and *MWA Long Term OPEX Template 2015 including Demob v2*).

A comparison of the historical employee costs between 2013 (actual) and 2015 (forecast), is shown in **Table 6.3**.

Table 6.3 : Employee cost trend

Employee Cost – Direct ($'000s)	Veolia Actual FY 2012/13	Veolia Forecast FY 2014/15	Percentage change
Bundamba	$2,186	$893	-59%
Gibson Island	$490	$827	69%
Luggage Point	$1,727	$774	-55%
Networks	$1,219	$843	-31%
Scheme Office	$1,536	$498	-68%
Total	$7,158	$3,834	-144%

Table 6.3 shows that between FY 2012/13 and FY 2014/15, there has been a decrease in the direct employee costs. However, it is noted that, over this period, there have been significant changes to the operation of the plants which will account for some if not all of the changes.

The largest cost component of the direct employee costs is salaries and wages, as would be expected. To support this cost, Veolia has provided both an organisational structure and a breakdown of FTEs.

Table 6.4 : Employee numbers

Source	Employee Numbers						
	Bundamba	Luggage Point	Gibson Island	Networks	Scheme Office	Shared	WCRW Total
Employee Chart	8	4	6	7	10	10	45
WCRW Org Charts as at May 2014	14	15	^	9	0	7	45

^Included within Luggage Point count

Jacobs has compared the employee numbers across both sources. Whilst the numbers vary across categories, the overall numbers are consistent. However, there is a significant difference in the roles undertaken by these resources across the different schemes. Of the 45 resources included in *Employee Chart*, only 27 are included are included in *WCRW Org Charts as at May 2014.* Those typically not included are listed as either Shared or Scheme Office resources. As such it is likely these will be shown in different organisational structure. The most significant difference is in the number of operators. As the names of operators are not provided in *Employee Chart,* it is difficult to make direct comparisons.

Table 6.5 : Operators numbers

Source	Operator numbers						
	Bundamba	Luggage Point	Gibson Island	Networks	Scheme Office	Shared	WCRW Total
Employee Chart – number of employees	4	2	3	2	0	0	11
Employee Chart – number of FTEs	3.5	2	3	2	0	0	10.5
WCRW Org Charts as at May 2014	10 + 1 vacant	6	^	4	0		20

^Included within Luggage Point count

6.2 Prudency assessment

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

- Operations and maintenance of existing infrastructure

Veolia is required to operate and maintain the infrastructure as required to meet the agreed decommissioning strategy. The engagement of labour to operate and maintain the infrastructure under the responsibility of Veolia is required to fulfil its obligations and therefore Jacobs is of the opinion that expenditure on direct labour costs is prudent.

6.3 Efficiency assessment

Jacobs notes that three are four full time maintenance supervisors (one for each AWTP and one for networks) and three part time operations supervisors (50% utilised for each AWTP). In addition there a number of operators on each site.

Jacobs understands that the equivalent of 10.5 FTE operators (listed within *Employee Chart v5*) are required to undertake O&M tasks. Jacobs requested evidence of the tasks performed by these individuals, in the form of a. task breakdown or similar, providing evidence of the need for these FTEs.

In response, Veolia stated:

> *This has not been prepared as yet due to unknown elements of the tasks, changing scope of demob etc.*

As such it is difficult to understand the basis of how this number of FTEs has been established. Jacobs recommended that Veolia confirms to Seqwater the number of operators on each site, and how the need for the number of operators is assessed. Jacobs further recommended that Veolia submits any routine activity lists undertaken by the operators to Seqwater to provide further justification for the need for operators. Veolia has agreed that this is required, and has stated that his information will be provided in due course.

In June 2012, SKM undertook a benchmarking review of fixed and variable operating costs for the then grid service providers (Seqwater, Linkwater and WaterSecure)[1]. In this review, SKM developed a number of metrics regarding employee numbers and costs.

Applying these metrics, at the time of that review, WaterSecure (responsible at the time for both the WCRW Scheme and the GCDP) compared favourably. 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. As such, employee costs were relatively low.

In this review, Jacobs has reviewed the following metrics, using the actual FTE numbers from Veolia Water.

- Total employee cost as a proportion of total operating expenditure
- Total employee cost as a proportion of total full-time equivalents
- The results of this are presented in the following sections. The following benchmarking metrics were considered, but not applied for the reasons as presented in **Table 6.6**.

Table 6.6 : Benchmarking metrics

Metric	Reason not applied
Total operating expenditure as a proportion of water supplied data	The WCRW Scheme is being decommissioned, whereby no water is being produced. As such, this metric is not considered to be relevant for the WCRW Scheme.
Total operating expenditure as a proportion of non-current assets	The WCRW Scheme contains new assets; as such it does not have a high value of non-current assets. This metric is not considered to be relevant for the WCRW Scheme.
Total operating expenditure as a proportion of total revenue	The WCRW Scheme is being decommissioned, whereby no water is being produced. As such, this metric is not considered to be relevant for the WCRW Scheme.

[1] Gird Service Charges 2012-13: Phase 1 – 2011/12 Fixed and Variable Operating Expenditure Benchmark Review (SKM, June 2012)

Metric	Reason not applied
Total revenue as a proportion of total full-time equivalents	The WCRW Scheme is being decommissioned, whereby no water is being produced. As such, this metric is not considered to be relevant for the WCRW Scheme.
Total full-time equivalents as a proportion of non-current assets	The WCRW Scheme contains new assets; as such it does not have a high value of non-current assets. This metric is not considered to be relevant for the WCRW Scheme.
Water supplied as a proportion of total full-time equivalents	The WCRW Scheme is being decommissioned, whereby no water is being produced. As such, this metric is not considered to be relevant for the WCRW Scheme.

6.3.1 Total employee cost as a proportion of total operating expenditure

Figure 6.1 presents a comparison of the proportion of the total employee cost to the total operating expenditure for a number of Australian water utilities based on data collected in FY 2011/12.

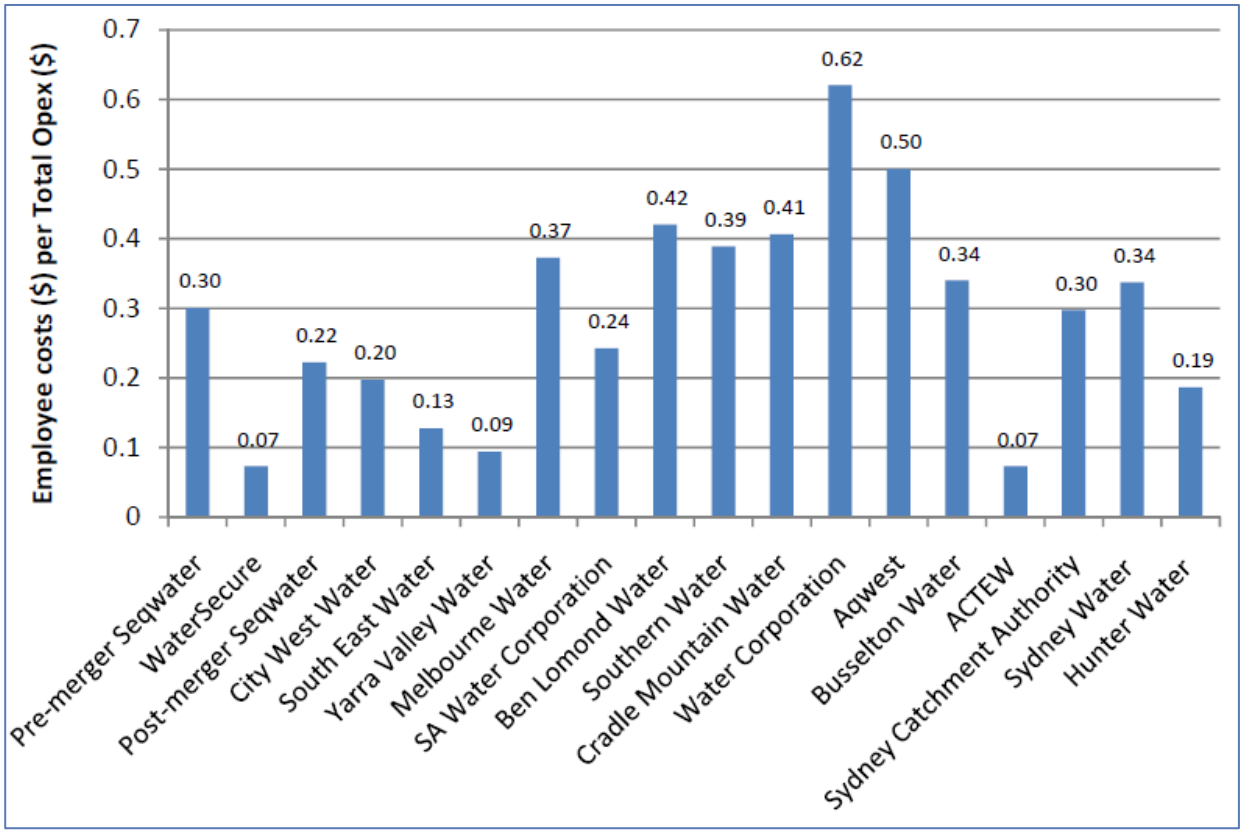

Figure 6.1 : Total employee cost as a proportion of total operating expenditure (Source: Gird Service Charges 2012-13: Phase 1 – 2011/12 Fixed and Variable Operating Expenditure Benchmark Review (SKM, June 2012))

For the WCRW Scheme for FY 2014/15, the ratio of total employee cost [redacted]. Note that this does not include any operating costs experienced by Seqwater for which values are not available to Jacobs.

Given that employee costs form a large percentage of operating costs, Jacobs does not expect that these ratios should have changed substantially from 2012, in that both employee costs and operating costs generally grow at a similar rate.

The total employee costs for Veolia as a proportion of total operating expenditure are in line with industry averages for operational assets.

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

Figure 6.2 presents a comparison of the proportion of the total employee cost to the total of full-time equivalents for a number of Australian water utilities based on data collected in FY 2011/12. 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.

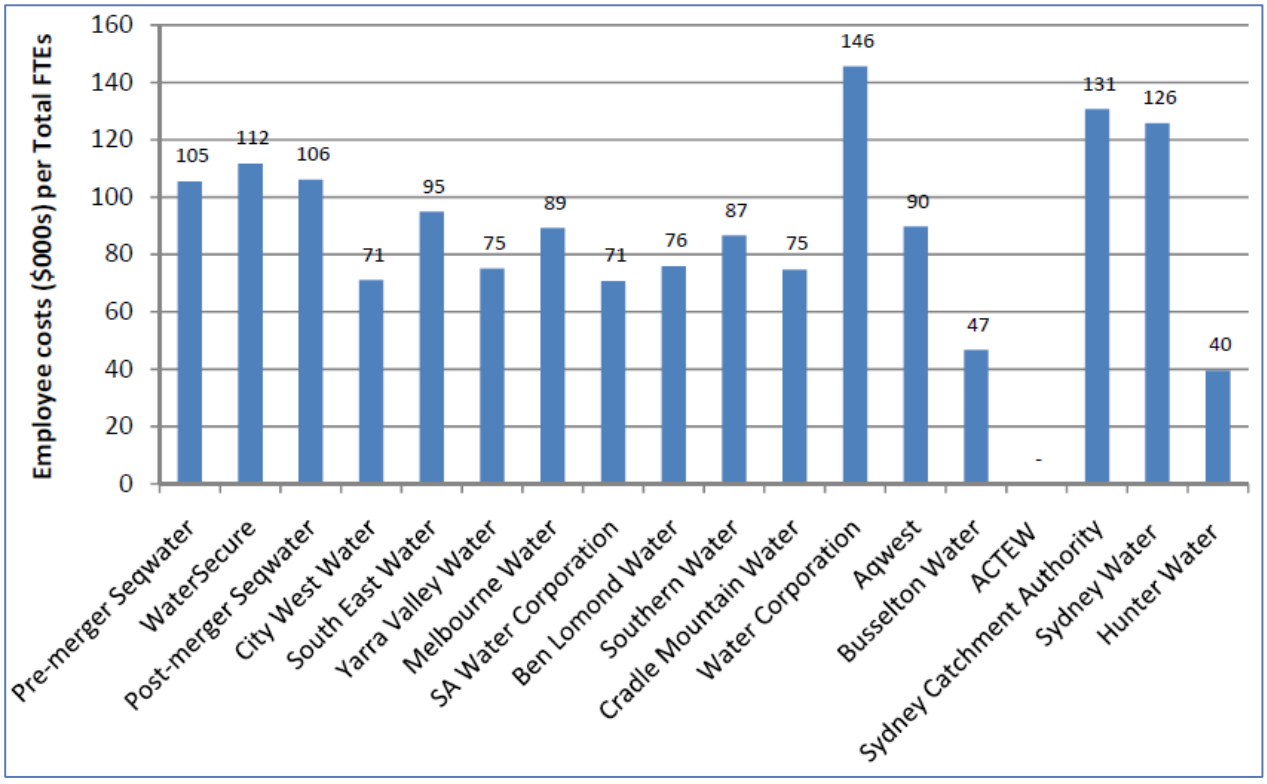

Figure 6.2 : Total employee cost as a proportion of total full-time equivalents (Source: Gird Service Charges 2012-13: Phase 1 – 2011/12 Fixed and Variable Operating Expenditure Benchmark Review (SKM, June 2012))

On the basis of the number of FTEs from *Employee Chart,* an average cost per FTE has been developed for each AWTP and networks.

Table 6.7 : Average FTE costs for FY 2014/15

	Operator numbers						
	Bundamba	Luggage Point	Gibson Island	Networks	Scheme Office	Shared	WCRW Total
[redacted]							
[redacted]							
[redacted]							

On the basis of similar investigations recently undertaken, Jacobs considers that the annual increase in salary rates should be between 2.3 and 3% per annum for the period from FY 2011/12 to FY 2014/15. [redacted]. This metric places the WCRW Scheme at the top end of the costs. However, in considering this, it should be noted that the AWTPs utilises high technology plant, and as such, employees must be highly skilled.

On the basis of the above, Jacobs considers that the costs per FTE are high when compared across the overall water industry.

6.4 Summary

Jacobs concludes that there is a need to undertake ongoing maintenance to meet the requirements of the agreed decommissioning strategy. The engagement of labour to operate and maintain the infrastructure under the responsibility of Veolia is required to fulfil its obligations and therefore Jacobs is of the opinion that expenditure on direct labour costs is prudent.

Jacobs finds that there is currently insufficient information to find the direct labour costs to be efficient. As such, we conclude that the costs are not efficient. Jacobs suggests that there may be an opportunity to reduce the cost associated with ongoing O&M labour costs. Jacobs has insufficient information to recommend a reduction in costs.

7. Preventative maintenance (O&M)

This section covers the preventative maintenance costs of the ongoing operations and maintenance costs.

A breakdown of repair and maintenance costs budgeted for FY 2014/15 is tabulated in **Table 7.1** from the spreadsheet *MWA Long Term OPEX Template 2015 including Demob*.

Table 7.1 : Repair and maintenance costs for FY 2014/15

Category	Veolia's Pre-Budget Submission FY 2014/15 Costs ($'000s)					
	Bundamba	Luggage Point	Gibson Island	Network	Scheme Office	WCRW Total
Repair & Maintenance – Preventative	279	219	189	1,094	1	1,782
Repair & Maintenance - Breakdown	31	31	31	124	-	217
Repair & Maintenance - Projects	1,483	3,730	343	6,763	-	12,319
Repair & Maintenance - Asset Replacement	97	-	10	62	-	168
Spare Parts	93	74	50	55	-	272
Total	**1,983**	**4,054**	**623**	**8,098**	**1**	**14,758**

A breakdown of the preventative maintenance tasks that contribute to the figure above is provided in spreadsheets *BUN R&M*, *GIB R&M*, *LUG R&M* and *NET R&M*. The spreadsheets contain some details of which parties will be conducting the maintenance activities, but the information is not complete.

Jacobs has focussed on areas with the highest dollar values assigned. The tasks with the highest dollar values are listed in **Table 7.2**.

Table 7.2 : Significant preventative maintenance activities

Location	Description	Supplier	Total over FY 2014/15 ($'000s)

Jacobs understands that frequency of tasks is determined by:

- Vendor recommendation
- RCM
- Feedback following previous maintenance cycles

7.1 Prudency assessment

Vegetation control, landscaping and lawns at AWTPs and pump stations

Jacobs considers it prudent to take basic vegetation control measures at the AWTP and pump station sites. Jacobs has sighted the WCRW Scheme Easement Management Plan (Veolia, undated), which supports this need. The following is an extract from the WCRW Scheme Easement Management Plan:

> *Freehold sites pertain to those that are bordered by chain wire fencing and house important WCRWS infrastructure such as pumps, balance tanks and surge tanks. These are generally high profile sites where presentation and security is of the highest priority. Freehold sites are found both within, alongside and outside the usual WCRWS easement areas. The land management works inside these freehold sites is limited to mowing, garden bed maintenance, existing native plant management and care and weed control.*
>
> *Freehold sites must be managed to a high standard. Garden beds must house healthy native plants, all hard stand and vegetation interfaces edged and trimmed and general vegetation kept in a neat and tidy appearance.*

Vegetation control, repairs and weed mapping surveys at network easements

Jacobs understands that the terms of the Development Approval for the network's easements stipulates that Seqwater maintains the easements and conducts weed mapping surveys, and therefore the spending in these areas is prudent. Jacobs has sighted the WCRW Pipeline Native Vegetation Easement Rehabilitation Policy and the WCRW Scheme Easement Management Plan, which supports this need. The following are extracts from the WCRW Scheme Easement Management Plan:

> *Natural Areas must be stable and managed to ensure they resemble their pre cleared ecological condition. Their floristic composition should be analogous to the intact bushland adjacent to the easement. The area should be ecologically robust and capable of providing reliable habitat and passage for the local native plant and animal populations.*
>
> *Open Space Areas consist of 30 different areas along the WCRWS easement. Open Space Areas refer to a 10m wide section only which is 5m either side of the underground location of the WCRWP pipe. Management of Open Space Areas is primarily driven by the need to provide safe and reliable access to the WCRWS infrastructure, reduce bushfire hazards and control listed weeds.*

Painting of site equipment for corrosion mitigation

Veolia has advised that the equipment at Luggage Point and Gibson Island, in particular, is subject to corrosion due to the marine environment. This will also remain the case whilst the plant is decommissioned. As such, we consider it prudent to undertake sufficient inspections and remedial works to maintain the equipment in good condition.

Cathodic protection inspections and repairs

AS 2832.1 states that yearly cathodic protection inspections and checks are required for buried pipes. Expenditure is therefore prudent to comply with the Standard and the Queensland Electrical Safety Regulations.

7.2 Efficiency assessment

Table 7.3 shows the contract details associated with significant maintenance activities, along with evidence of competitive tendering provided to Jacobs.

Table 7.3 : Contract details for significant preventative maintenance activities

Location	Description	Supplier	Total over FY 2014/15 ($'000s)	Contract Number	Evidence Provided

Vegetation control, landscaping and lawns at AWTPs and pump stations

The vegetation control tasks are proposed to be carried out by a landscape maintenance contractor. Use of a contractor for these duties is considered prudent, since such skills are outside Veolia's core operations and a specialist contractor would have the necessary resources that can be shared across sites.

The scope of works in these tasks are unaffected by the operating condition of the WCRW system, and as such it is expected that the costs to undertake the tasks would be similar to those incurred in recent years. Veolia has advised that the budgeted costs for FY 2014/15 are consistent with actual expenditure in FY 2013/14.

Jacobs understands that the large scale contracts are awarded by a competitive tendering process on an annual basis. Jacobs has been provided with the Tender Acceptance Recommendation for contract VWO-171-NW, which covers grass and weed maintenance at freehold sites. Based on a review of the information, Jacobs considers that the costs are efficient.

Vegetation control, repairs and weed mapping surveys at network easements

The vegetation control tasks are proposed to be carried out by a landscape maintenance contractor. Weed mapping surveys will be conducted by a flora professional. Use of a contractor for these duties is considered

prudent, since such skills are outside Veolia's core operations and a specialist contractor would have the necessary resources and can share such across sites.

The scope of works in these tasks are unaffected by the operating condition of the WCRW system, and as such it is expected that the costs to undertake the tasks would be similar to those incurred in recent years. Veolia has advised that the budgeted costs for FY 2014/15 are consistent with actual expenditure in FY 2013/14.

As above, Jacobs understands that the large scale contracts are awarded by a competitive tendering process on an annual basis. Vegetation control, repairs and weed mapping surveys at network easements are undertaken under a number of contracts including:

- VWO-069-NW (Easement Maintenance – Land Maintenance, $310,800)
- VWO-199-NW (Swanbank Line Stabilisation Plan, $37,346)
- VWO-201-WC (Easement weed mapping, $43,279)
- VWO-427-WC (WCRWP Easement Mowing and Weed Control, no cost information available)
- VWO-171-NW (Freehold Assets Grass and Weed Maintenance, $198,392) (as discussed above).

Jacobs has been provided with the Tender Acceptance Recommendation for each contract or an explanation where this has not been provided. From review of the documentation provided for VWO-069-NW and VWO-199-NW, Jacobs considers that a competitive tendering process has been followed and as such the costs are efficient. For VWO-201-WC, it is unclear whether only one tenderer was asked to provide a quotation or whether only one tenderer responded. For VWO-427-WC, Jacobs understands that the original request for tender for this work was completed in January 2010 and was prior to the implementation of the current Procurement Plan for the WCRW Scheme. The extension options on this agreement were utilised due to the good performance of the contractor, and to maintain a number of different contractors in the area of grounds maintenance to provide good coverage should something happen to one of the other suppliers. Jacobs understands that the agreement expires July 2014 and will go to tender.

Based on a review of all the above information, Jacobs considers that the costs are efficient.

Painting of site equipment for corrosion mitigation

Painting and corrosion control activities will be undertaken by an external contractor. We consider the decision to use a contractor for these activities to be appropriate, since a specialist contractor would have the necessary skills and resources.

The costs budgeted for painting of equipment at the AWTP sites appear high (approximately [redacted] across the three sites). Veolia has advised that significant efforts are required to keep corrosion under control at Luggage Point and Gibson Island AWTPs in particular. The two sites are located close to the mouth of the Brisbane River, and the majority of the equipment at Luggage Point is located outdoors. As such, the atmosphere is relatively aggressive. The budgeted costs for FY 2014/15 are consistent with actual expenditure in recent years. The decommissioned state of the WCRW system will have minimal effect on the rate of corrosion.

Veolia has advised that there is currently one contractor working full time across the treatment plants undertaking painting and corrosion control activities. Painting of site equipment for corrosion mitigation is undertaken under contract VWO-212-WC. Jacobs has been provided with the Tender Acceptance Recommendation for this contract. Whilst it is clear that three tenders were received, no details of how the tenderer was selected are included in this form. Based on the value of one contractor working full time, the costs are considered reasonable and therefore we consider the budget for corrosion mitigation to be efficient. Jacobs recommends that further detail on tender evaluation be provided if required for any future audits.

Cathodic protection inspections and repairs

AS 2832.1 requires that the cathodic protection inspection and maintenance procedures be carried out by suitably qualified and experienced persons. [redacted]

The scope of works in these tasks are unaffected by the operating condition of the WCRW system, and as such it is expected that the costs to undertake the tasks will be similar to those incurred in recent years. Veolia has confirmed that the budgeted figures for FY 2014/15 are consistent with recent expenditure, and therefore we consider the budget to be efficient.

As for all other works undertaken by subcontractors, Jacobs requested evidence of how services are procured in order to validate that costs are efficient. In response to Jacobs' query regarding the tendering of this contract Seqwater stated that: *"This tender was conducted in 2008 prior to the implementation of Tender Acceptance Recommendation forms."* In addition Seqwater provided the 'Tender / Quotation Evaluation Form'. From review of the documentation, Jacobs considers that a competitive tendering process has been followed and as such the costs are efficient. Jacobs recommends returning to the market to test the efficiency of the costs at the completion of the contract.

7.3 Summary

The highest value preventative maintenance activities considered in this section are required, regardless of the operational status of the WCRW system. As such, we find the work to be prudent. The budgeted costs are consistent with actual spending in recent years. Following a review of tender assessments, we find that a process is in place to review tenders. Although full evidence was not supplied for all tenders, on the balance of the information reviewed, Jacobs finds the costs to be efficient. Jacobs notes that a number of contracts are close to expiry and recommends returning to the market to test the efficiency of the costs at the completion of the contracts.

8. Service Fee

Table 8.1 tabulates the overall service fee for the WCRW Scheme for each asset and for the overall scheme.

Table 8.1 : FY 2014/15 service fee by asset

	Veolia's Pre-Budget Submission FY 2014/15 Costs $000's					
	Bundamba	Luggage Point	Gibson island	Network	Scheme Office	WCRW Total
Total Fixed & Variable excl. Fee	4,401	6,135	2,508	10,107	1,082	24,233
[redacted]						
[redacted]						

The service fee of [redacted] is applied to all fixed and variable costs associated with the WCRW Scheme including demobilisation (including Employee Cost – Direct, Employee Cost – Indirect, External Consultant Costs, Motor Vehicle Related Cost, Water Analysis & Lab Consumable, Repair & Maintenance – Preventative, Repair & Maintenance – Breakdown, Repair & Maintenance – Projects, Repair & Maintenance - Asset Replacement, Spare Parts, Plant Consumables and Rentals, Office and IT Related Costs and Other Fixed Costs). In addition, the fee is applied to energy costs, even though energy is procured directly by Seqwater.

8.1 Prudency assessment

Whilst not specifically set out in the prudency requirements of the QCA, Jacobs considers that it is necessary for Seqwater's O&M contractor to be able to recover overhead costs. As such, Jacobs finds the service fee to be prudent.

8.2 Efficiency assessment

Jacobs requested that Veolia provides supporting evidence of the [redacted] service fee, including its application for services procured by Seqwater. In response, Veolia provided an extract of the Deed of Amendment to the Operation and Maintenance Agreement Western Corridor Recycled Water Project.

The applicable of a [redacted] service fee associated with Shutdown and Demobilisation is outlined in Clause 46.2(i)(v) the Deed of Amendment to the Operation and Maintenance Agreement Western Corridor Recycled Water Project. Clause 46.2(i)(v) of the Deed of Amendment to the Operation and Maintenance Agreement Western Corridor Recycled Water Project states:

> *(v) subject to clause 46.2(i)(iv), from the date the Shutdown and Demobilisation is first implemented, the Operator will be entitled to:*
>
> *(A) reimbursement of its Actual Operating Costs associated with the Infrastructure that is subject to the Shutdown and Demobilisation plus a service fee of [redacted] of those Actual Operating Costs*
>
> *(B) payment of the reduced Charges agreed in accordance with clauses 46.2(i)(i) and 46.2(i)(ii) or determined in accordance with clause 46.2(i)(iii)*

Jacobs notes that this service fee has been applied to all fixed and variable costs. Jacobs notes that there is no specific reference to energy costs. This may be covered in a separate area of the contract. Jacobs recommends that Seqwater investigate whether the service fee should apply to services procured directly by Seqwater.

Jacobs understands that the O&M contract for the WCRW Scheme was competitively tendered. However, Jacobs has not sighted any documentation which outlines how tenders were called and assessed. Presently Jacobs has insufficient information to justify the service fee as efficient. Jacobs recommends that this documentation is provided for future audits.

Appendix A. Veolia's cost assumptions for operation and maintenance costs

VEOLIA
WATER

23 April 2014

WCRW Representative
Seqwater
PO Box 16146
City East QLD 4002

Attention: Ms Alex Fisher

Ref: OP0120-0031-08-Y14-000292

Dear Alex,

Re: WCRW FY 2014-2028 Forecast Costs

In response to your letter dated 28 March 2014 please find attached the 2014 – 2028 WCRW Forecast Submission.

Given the time frame in which Veolia has had to develop this submission a number of assumptions have been developed. These assumptions have been discussed and agreed with Stevo Vlaisavljevic. The methodology and assumptions used to develop the forecast and are attached.

The CAPEX template provided by Seqwater has been substituted by output from Veolia's Contract Asset Renewal Management System (CARMS), as agreed with Stevo Vlaisavljevic and are attached.

Veolia understand that Seqwater has an obligation to release the data and clause 57.1 of the Operations and Maintenance Agreement would allow this to occur. Veolia recommends that the data be presented to QCA with the as rolled up, high level figures. As an example Fixed Costs and Variable Costs categories with the contract margin included in these categories.

Should you require any further information or have questions from QCA, please do not hesitate to contact Brendan Gair on 0431 028 941.

Yours sincerely,

Ben Bowen
Regional Manager

Veolia Water Australia Pty Ltd
ABN 99 061 161 279
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Brisbane QLD 4000 AUSTRALIA
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www.veoliawater.com.au

WCRW ASSUMPTIONS:

Operational Assumptions:

- Whole scheme scheduled shutdown to June 2028;
- No items in restart list to be actioned;
- Assets will be replaced as needed to meet a 2 year return to service, safety, environmental and as needed to maintain the dormant state;
- Dormant state will not change to 2028;
- Easement maintenance to continue;
- Allowance for storm damage to easement.

Economic Assumptions:

- All costs are in 2014 (Dec 2013) dollars with the exception of 2013 being in 2013 dollars and 2015 being in 2015 dollars;
- Veolia did not produce 2013 Actual figures and SEQW has not provided these figures. 2013 invoiced amounts (claim) have been used in the template provided;
- Veolia did not produce 2014 Q2 figures and SEQW has not provided these figures; 2014 invoiced amounts (claim) and Veolia's Q3 submission have been used in the template provided;
- 2015 Budget figures per Veolia's submission have been entered for 2015. Veolia has not been advised of any adjustments made to these figures by SEQW;
- Costs separated per the Opex template provided by SEQW;
- No regulatory/statutory changes, with the exception of Superannuation Guarantee (Administration) Act;
- No allowance made for foreign exchange movement;
- Cost codes used in monthly claims used to map to cost categories provided by Seqwater in templates;
- SEQW provided asset useful lives have not been used in calculations.

Variable Costs Assumptions:

Variable Electricity:

- Electricity costs to be calculated by SEQW;
- Per operating parameters variable costs will be $nil from 2015 onwards.

Treatment Chemicals:

- Per operating parameters variable costs will be $nil from 2015 onwards.

Cleaning Chemicals:

- Per operating parameters variable costs will be $nil from 2015 onwards.

Sludge and Waste Disposals:

- Per operating parameters variable costs will be $nil from 2015 onwards.

Fixed Costs Assumptions:

Employee Cost – Direct:

- Includes Superannuation Guarantee Charge increases up to 12% by 2020.
- Head count to remain constant from 2017 onwards.

Employee Cost – Indirect:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures.

External Consultant Costs:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures.

Motor Vehicle Related Costs:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures.

Water Analysis & Lab Consumables:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures.

Repair & Maintenance - Preventative:

- Costs are based on components of the 2015 Budget, Asset Refurbishment costs and others;
- Hourly rates for mechanical and electrical contractors remain constant;
- Service contracts remain constant in scope for all forecast periods;
- Preventative maintenance includes Corrective Maintenance costs;

Repairs & Maintenance - Breakdown:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures.

Repairs & Maintenance – Projects

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures

Repairs & Maintenance - Asset Replacement:

- Asset replacement is per Veolia's System CARMs process not SEQW's provided useful/design lives, as agreed with Stevo Vlaisavljevic;
- No major failures of civil structures;
- No major failures of electrical equipment;
- Replacement of critical control systems equipment only on failure or lack of spares;
- No replacement of any failed assets, unless required under the decommissioned state. Failed assets to go onto restart list and not actioned.

Spare Parts:

- Costs to remain constant from 2016 onwards;
- 2015 figures have been understated as some costs were applied to Plant Consumables and Rentals.

Plant Consumables and Rentals:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures.

Fixed Electricity:

- Electricity costs to be calculated by SEQW.

Office and IT Related Costs:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures.

Other Fixed Costs:

- Costs to remain constant throughout period;
- Costs are based on 2015 Budget submission figures;
- Networks also include $210k and $7k per annum for Cleaning Chemicals and Sludge and Waste Disposal respectively. These costs where previously allocated to Variable Costs however due to the Demobilisation of the Project costs are now classified as Fixed.

<u>General Assumptions:</u>

Shutdown Assumptions:

- GI and Bundamba shutdown works completed end of December 2014;
- LP and pipeline networks shutdown works completed end of June 2015;
- Scheme shutdown as per Strategic Plan (all AWTPs shutdown and static pipeline network)
- Pipeline decommissioning scope in accordance with GHD report (Network Decommissioning Scope - March 2014)
- RW pipelines to be swabbed - concept level costs
- ROC pipelines will not require swabbing
- PRW pipelines will not require swabbing
- Installation of interconnection from SRP to Bundamba to supply potable water for eastern and western pipelines - concept level costings
- Installation of potable water connection at Oxley RWPS to supply potable water for GWO RW and Bundamba ROC pipelines - concept level costings
- PRW pipelines filled with PRW and replenished with potable water (without chemicals)
- RW and ROC pipelines filled with chemically dosed PRW and replenished with chemically dosed potable water

- Concept level costings provided for pipeline decommissioning detailed planning and investigation works
- Installation of interconnection from PRW to GWO RW pipeline at Woogaroo St - concept level costings
- RW, PRW and ROC pipelines to be camera inspected to determine condition prior to hibernation - concept level costings
- Existing O&M staff retained to complete physical shutdown works (minimal reliance on contractors).
- MF and RO membranes removed at all sites
- All M&E equipment retained, left in-situ or stored on site
- M&E equipment maintained in accordance with dormant state PMs determined when placing GI into standby mode to retain value of assets
- Source water quality monitoring undertaken as per existing arrangements
- Concept level costings provided for management of pipelines during dormant state (detailed planning and investigations yet to be completed)

Care and Maintenance Assumptions:

- The following systems are to remain operational;

Area	***Reason***
All buildings, fencing and security	Buildings remain operational as they cannot be removed from service. Security and fencing is operational to control unauthorized access to the site.
Cathodic Protection Systems	To manage corrosion of relevant equipment
All electrical and control systems	To enable the periodic running of electrically powered assets in a standby state and to maintain site power.
Site earthing systems	Associated with the above
Trade Waste Systems	Part of the site storm water system and environmental control.
AWTP Standby Generators	To supply backup power to the administration building and offices
Compressed Air Systems (at minimum capacity)	To enable the periodic running of pneumatically powered assets in a decommissioned state.
PLC & SCADA systems	To enable process control and alarming for active plant systems.

Site Storm Water Systems	To prevent the flooding of the site due to storm water retention and to enable a controlled site drainage of storm water.
Fire detection and suppression systems	To satisfy statutory requirements and protect the site against catastrophic failure due to fire.
Raw Water quality on-line analysers	To provide continued analysis of upstream wastewater plant treatment performance, in particular to assess any possible performance risks for the plant on restart.
Service Water System	To provide service water for the various plant areas.

Appendix B. Initial data review and gap analysis

Date 13 May 2014

Subject **Independent cost review - WCRW**

The following is a list of questions from Jacobs SKM regarding the WCRW Scheme forecast costs. The responses from Veolia based on a meeting held on the 13 May 2014 are recorded in blue.

The questions below refer in part to the two provided spreadsheets: 15 years CARMS Costs and MWA Long term OPEX Template 2014-03-19.

1) Please confirm that the Asset Refurbishment total is allocated to R&M - Preventative while Asset Replacement is allocated to R&M - Asset Replacement (as indicted in Row 8 of the 15 years CARMS Costs spreadsheet. As such, please explain the difference in costs for R&M – Preventative for the two sheets (e.g. for Gibson Island, MWA Long term OPEX Template states $180 for FY2015, 15 years CARMS Costs has no costs assigned).

   The MWA Long term OPEX Template 2014-03-19 spreadsheet values for R&M - Preventative also contains information from other spreadsheets. **These are to be provided.**

2) We are required to review 80% of the R&M – Preventative costs for WCRW assets for FY2015 (focusing on Gibson Island in particular). Please can you provide a breakdown, for these costs to allow a sample to be selected and reviewed? This may be a version of the CARMS model which reconciles with the MWA Long term OPEX Template (or vice versa, if the CARMS model contains the correct numbers).

SKM will review the most significant values from the CARMS model and other supporting documents. Please provide information to allow items to be selected for detailed review.

3) For the items selected we will require details of the task frequency and details of who is performing the tasks (including which tasks are contracted out).

4) Please provide an organisation chart

5) Please provide information on the size of each crew and number of crews.

6) Please provide information on the skill set of each crew.

7) We are required to review 80% of the operational staffing costs for WCRW assets for FY2015. We have assumed these comprise of the “Employee Cost – Direct” (Row 16 MWA Long term OPEX Template). Please can you provide a breakdown of operational staffing costs for each WCRC asset to allow a review to be undertaken, including:

   - Identification of tasks undertaken by staff
   - Identification of critical and non-critical staff

Appendix C. Organisation structure

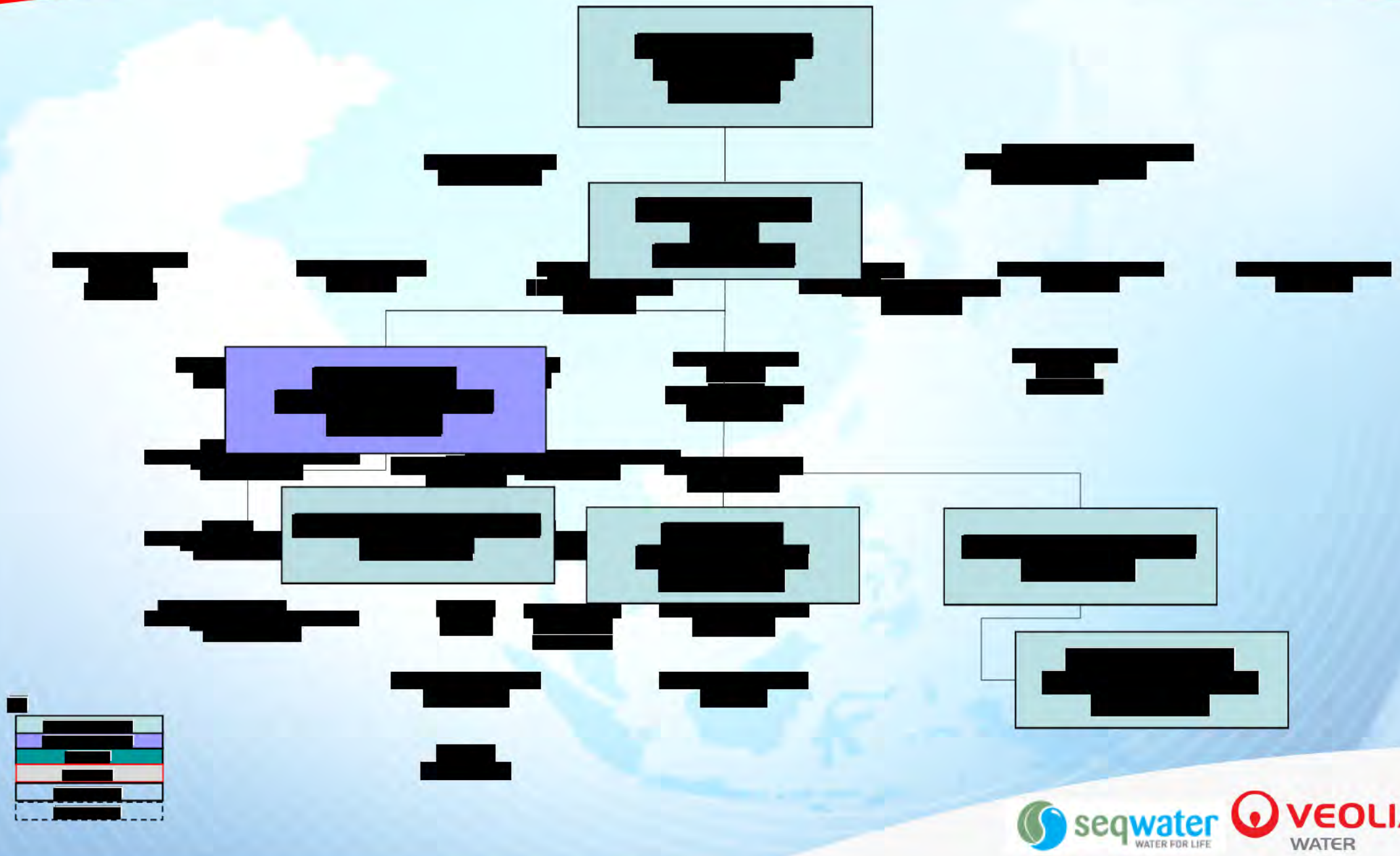
Organisation Charts
Queensland

May 2014

VEOLIA
WATER

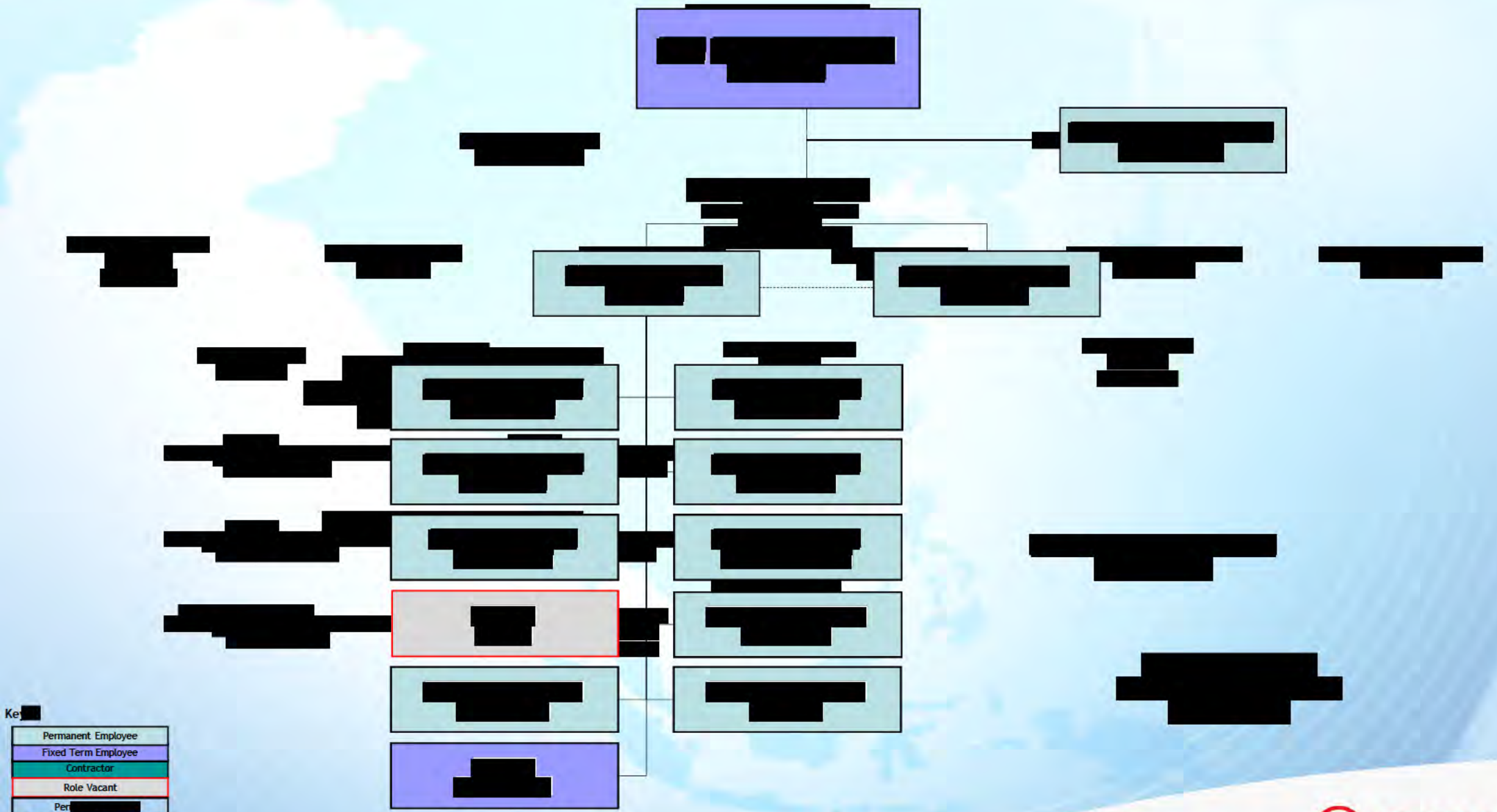
Western Corridor Recycled Water Project

Operations



Western Corridor Recycled Water Project

Bundamba AWTP



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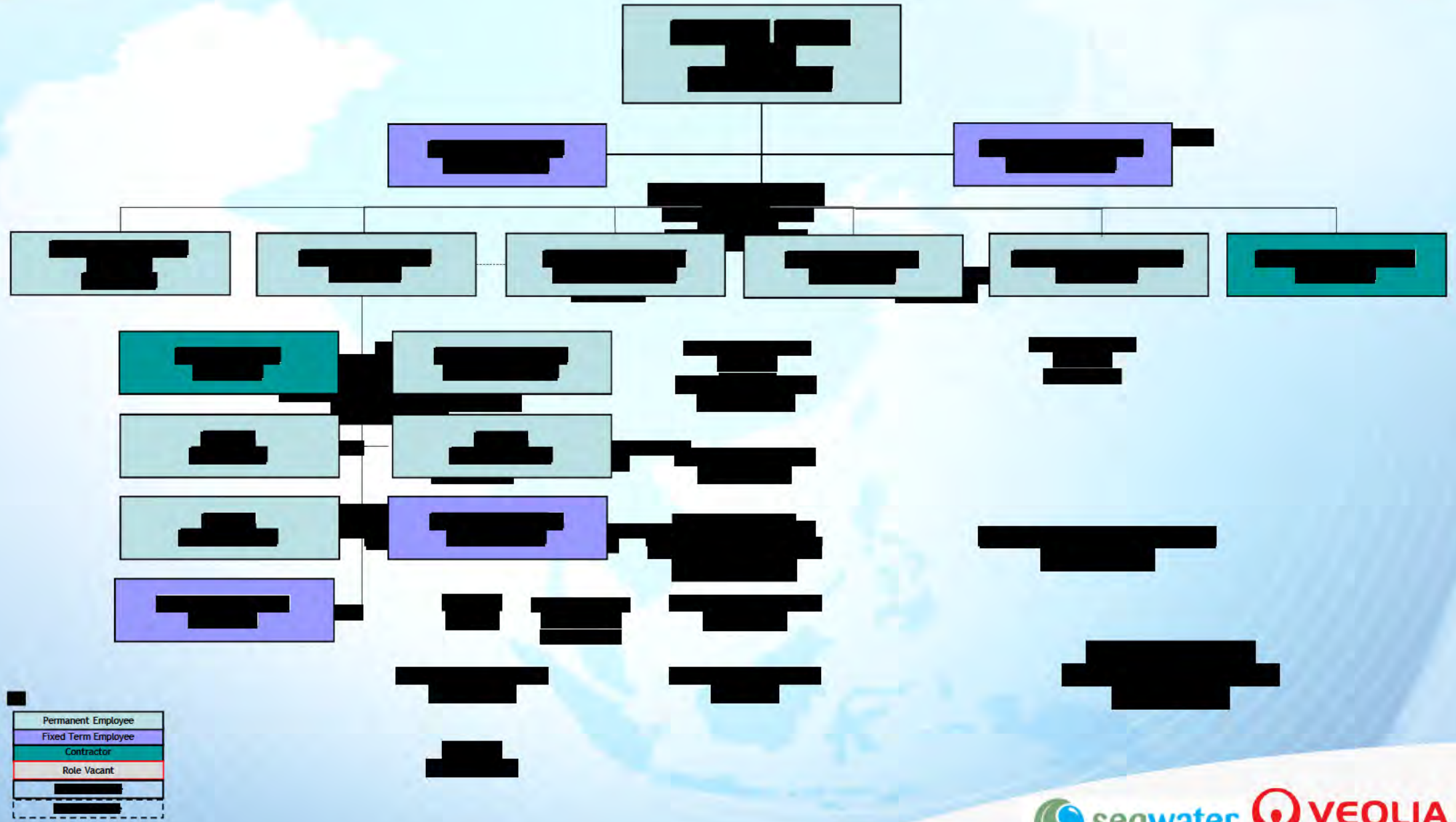
VEOLIA WATER

Western Corridor Recycled Water Project

Luggage Point & Gibson Island AWTPs



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Network