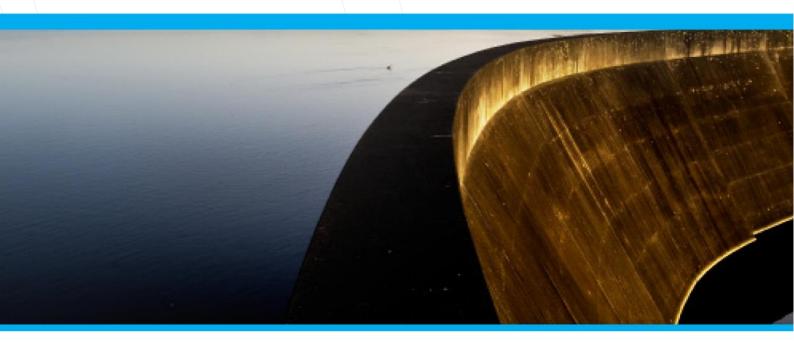
Seqwater Bulk Water Prices 2015 to 2018

Submission to the Queensland Competition Authority

Issued: 31 July 2014

Final









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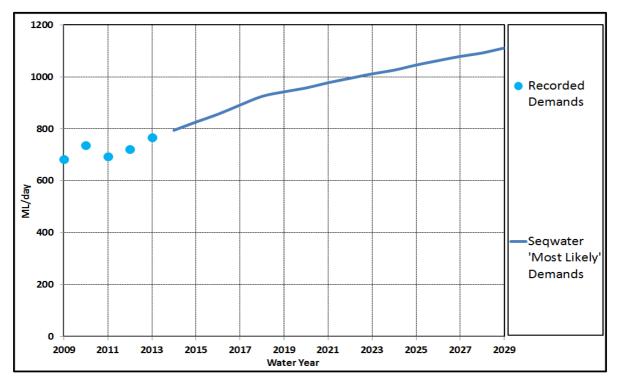
- Appendix A: Bulk Water Supply System Interim Operating Strategy 2014-2029
- Appendix B: Annual Operations Plan, May 2014
- Appendix C: SKM review of GCDP operating and capital cost forecasts
- Appendix D: SKM review of WCRWS operating and capital cost forecasts
- Appendix E: PWC Cost escalation forecasts- Final report, May 2014
- Appendix F: Dams and Weirs Capital Works Program



EXECUTIVE SUMMARY

Seqwater provides the following bulk water price submission to the Queensland Competition Authority (QCA) for the recommendation of prices for the final three financial years (2016 to 2018) of the Queensland Government's 2008-2018 bulk water price path. This submission relates to Seqwater's proposed operating and capital expenditures over financial years 2014 to 2028, as required by the Queensland Treasurer's Ministerial Referral Notice issued 6 May 2014.

Seqwater has forecast water demand to the financial year (FY) 2028, and concomitantly developed its strategy to meet this demand. The long term demand forecast of 185 litres/person/day for residential and 91 litres/person/day for non-residential demand (Seqwater "Most Likely") has been adopted as mandated by the Treasurer's Ministerial Referral Notice.



Seqwater's strategy to meet this projected demand forms the basis of the expenditure forecasts. At a high level the bulk water supply system currently has sufficient surplus water supply available such that significant investment in new supply sources will likely not be required before 2028, however this will be dependent on inflows and consumption patterns.

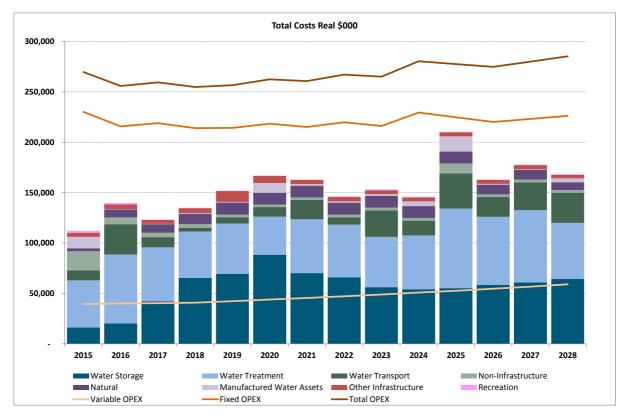
While there is generally also sufficient treatment and transport capacity, upgrades will be required at the North Pine WTP (\$35M- FY14 dollars, in 2023) and Mt Crosby WTP (\$77M-FY14 dollars, in 2027) to meet increasing peak demands. It is important to note that these forecasts are premised on normal weather conditions (water inflow sequences) and as such



do not include expenditure which may be required in the event of significant drought or flood events.

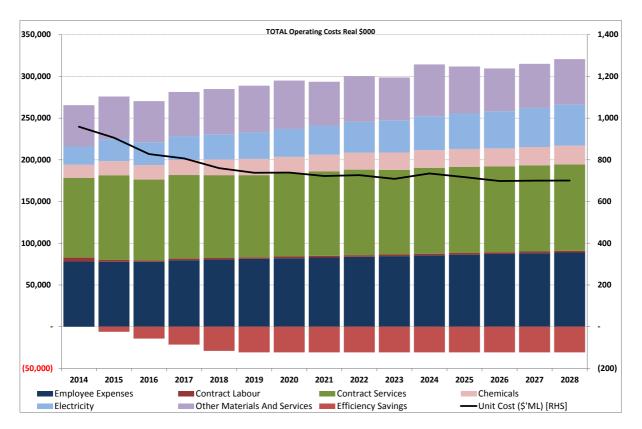
This submission also sets out Seqwater's service and regulatory obligations and associated costs of same. Seqwater's dam safety/improvement obligations are a major driver for capital expenditure over the period of this submission (refer below).

The following figure summarises the capital (bars) and operating (lines) expenditure forecasts in real FY14 terms.



The following graph displays that on a unit basis (\$/ML real) costs are declining in real terms out to FY28.





Key components of this submission include:

Dam safety/improvement capital investment program: The Department of Energy and Water Supply (DEWS) have issued dam safety conditions for the 26 referable dams owned and operated by Seqwater. The conditions require Seqwater to ensure that each dam is kept safe, maintained and operated in accordance with guidelines issued under the Water Supply (Safety and Reliability) Act 2008.

The dam safety/improvement program is a requirement to meet both legislative and best practices standards given a number of drivers such as changes to downstream populations, better understanding of catchment hydrology, best practice design criteria and improved knowledge of seismic risk and their consequences.

Seqwater has performed an extensive portfolio risk assessment of its dams resulting in \$615M (FY14 dollars) of forecast capital expenditure out to FY28 to meet its obligations under these conditions.

Efficiency opportunities: Following the merger of the previous Bulk Water entities into Seqwater and with 18 months of stable operations as a consolidated entity, Seqwater is moving to further optimise its cost base. Development of cost optimisation targets is underway. Preliminary organisation-level goals and associated fiscal targets have been developed and are included in this submission, resulting in prudent, efficient and sustainable future savings of \$30.8M pa (in FY14 dollars) delivered over 4 years to FY19.



Manufactured water assets operating modes: In July 2013 the Government approved changes to the operating modes of the Gold Cost Desalination Plant ('Hot Standby') and Western Corridor Recycled Water Scheme, limiting/mitigating future use of these assets (depending on key storage level triggers). The Western Corridor Recycled Water Scheme has been decommissioned and placed into care and maintenance mode, significantly reducing future expenditure. Combined changes to the operating modes of these assets reduce ongoing annual operating cost by \$3.4M (or 11%) from FY14 to FY16.

Material issues which Seqwater believes need to be considered in future regulatory reviews when considering this submission to ensure a fiscally responsible/stable long term approach include:

Future price path debt and price reviews: The Referral Notice asks the QCA to recommend an approach for future regulatory reviews for rules and procedures for determining the price path debt. Seqwater has proposed an approach that ensures efficient costs are recovered over the period to FY28, with the price path debt re-based at each review based on actual capital costs, rate of return (as directed) and revenues during the prior period, and incorporating costs arising from unforseen events or new imposts. For future reviews, Seqwater accepts that it should manage within the efficient operating cost allowance for the period (subject to the above adjustments).

Rate of return: Seqwater receives a cost of debt rate of return for its regulated assets compared to other regulated entities which typically target a higher commercial rate of return which includes an equity component. This is a departure from common regulatory practice where regulated entities receive an efficient benchmark commercial rate of return (for example, as applies for the Gladstone Area Water Board which also provides bulk treated water). A commercial rate of return ensures that prices fully reflect the economically efficient cost of providing the good/service, and accords with national competition policy reforms (including the National Water Initiative). Seqwater believes beyond this regulatory period it is important based on normal commercially accepted principals that the rate of return be reconsidered. Seqwater acknowledges this is a policy issue for Government, and outside the scope of this review.

System augmentation: The Water Security Program which will provide a 30 year strategic view of the SEQ regional water supply and demand balance is scheduled for completion in July 2015. This will be fundamental in determining when and in what form, major supply augmentations may be required. Seqwater will include such investment as are prudently justified in future regulatory submissions.

Long-term manufactured water assets use: The Government has approved certain specific and limited future use of the manufactured water assets. To satisfy future demand operation of these assets, in particular the Western Corridor Recycled Water Scheme, may



present a more efficient alternative supply side response compared to potentially new major supply augmentations. Seqwater will continue to work towards maximising the value of the manufactured water assets based upon Government policy on this matter.



PART A – INTRODUCTION AND OVERVIEW CHAPTER 1 INTRODUCTION

1.1 PURPOSE

Seqwater supplies bulk drinking water in South East Queensland (SEQ), and charges SEQ service providers at rates specified in the bulk water price path. These service providers then reticulate that bulk treated water to their residential and commercial customers.

The bulk water price path commenced in FY09, and followed a series of institutional reforms and asset transfers from councils and SunWater to create a number of state-owned bulk water businesses to supply water in SEQ.

The bulk water price path was set over a 10 year period, with real increases to FY18. From FY19 onwards, prices were to remain in real terms for a further 10 years until FY28. Prices are set to recover bulk water costs as determined by Government over this 20 year period.

The price path is NPV neutral, with under-recovery in the early years to be recovered in the later years by applying the set return on debt as prescribed by the Referral Notice.

Prices have been set for the FY14 and FY15 years, and indicative prices have been published based on long-term (to FY28) cost and demand forecasts for the FY16 to FY18 years (thereafter prices are then assumed to grow at CPI).

Seqwater provides bulk water services in SEQ. In doing so, Seqwater stores and treats water from dams, weirs and bores. Seqwater also manages two manufactured water assets (MWAs), namely the Gold Coast Desalination Plant (GCDP) and the Western Corridor Recycled Water Scheme (WCRWS). Seqwater is also responsible for managing generally limited catchments which surround the water sources and extensive recreation facilities at dams.

The Queensland Competition Authority (QCA) Act 1997 provides for the Treasurer to declare bulk water supply activity as a monopoly business and refer investigation and recommendation of bulk water prices to the QCA (also known as the Economic Regulator).

The Price Regulator (the Minister for Energy and Water Supply) provides input to the QCAs investigation as directed by the Treasurer.

1.2 MINISTERIAL REFERRAL NOTICE

The Treasurer issued a Referral Notice to the QCA, dated 5 May 2014, setting out certain requirements for the QCA's investigation. The Notice directs the QCA to:



- 1. recommend Prices for the remaining three years of the 10-year bulk water price path from FY16 to FY18
- 2. recommend the price path and impact on bulk water debt of extending the price path arrangements for Redland, Sunshine Coast and Noosa Councils by two years
- 3. recommend mid-price path review triggers and other mechanisms to manage cost and volume risks outside the control of Seqwater in order to provide Seqwater with cost recovery certainty
- recommend an appropriate approach for reviews of expenditure for the period following 1 July 2015, including rules and procedures for determining the price path debt and cost recovery position throughout the price path, and providing Seqwater with cost recovery certainty
- 5. provide a Draft Report to the Treasurer and the Minister for Energy and Water Supply by 30 November 2014, and a Final Report by 31 March 2015.

Note the Referral Notice relates to the QCA, and not directly to Seqwater. In this submission Seqwater has endeavoured to address Referral Notice content to effect a transparent and timely investigation.

1.3 SUBMISSION OUTLINE

This is the new Seqwater's first submission as a fully consolidated Bulk Water entity. Seqwater's previous submission in February 2012 was made under a structure in which Seqwater supplied bulk water services to the SEQ Water Grid Manager (WGM) with LinkWater providing water transportation services through pipelines into the distribution system. The WGM then sold treated water to the council-owned retail SEQ service providers (Unitywater, Allconnex Water and Queensland Urban Utilities), and other industry customers. The new Seqwater has rebuilt and reshaped planning, corporate functions, integrated operations over a once disaggregated industry structure to more efficiently provide services to customers.

FY14 represents the first full financial year that the merged entity has prepared a single, integrated budget and forecast of its operating and capital costs. That integrated budget reflects the efficiencies that have been achieved since the merger and the priorities for further improvement. It has been developed from a zero base, providing the basis of this submission.

This submission is structured to first provide an overview of the merged business, then Seqwater's detailed expenditure proposals and then discusses the broader regulatory and pricing issues.

This submission is prepared in response to the Referral Notice and is structured as follows:



- part A (chapters 2-3): an overview of Seqwater and its service and regulatory obligations
- part B (chapters 4-5): operating strategy to FY28 how Seqwater will deliver services against this strategy
- part C (chapters 6-8): how Seqwater developed its expenditure forecasts and forecast capital and operating expenditure to FY28
- part D (chapters 9-10): component inputs to price forecast development (RAB, cost summary and proposed price path triggers)
- part E (chapter 11): price path deficit accounting and methodology.



CHAPTER 2 SEQWATER

2.1 THE ENTITY

Seqwater is a Queensland Government Statutory Authority. As set out in the Statement of Obligations and Bulk Water Supply Code, it is responsible for ensuring a safe, secure and reliable water supply for SEQ, as well as managing catchment health and providing recreational facilities to the community.

Seqwater was established on 1 January 2013 as part of water reform under the South East Queensland Water (Restructuring) Act 2007 (Restructuring Act) through a merger of the SEQ Water Grid Manager, LinkWater and the former Seqwater. The organisation has also taken on the regional water security responsibilities previously performed by the Queensland Water Commission (QWC). Under the Restructuring Act, Seqwater is responsible to the Minister for Energy and Water Supply.

2.2 CUSTOMER BASE

Seqwater has various obligations that at a high level could be summarised as being to deliver secure and reliable bulk urban water supply services for the SEQ region, which comprise the following local government areas:

- Brisbane City Council
- Gold Coast City Council
- Ipswich City Council
- Lockyer Valley Regional Council
- Logan City Council
- Moreton Bay Regional Council
- Redland City Council
- Scenic Rim Regional Council
- Somerset Regional Council
- Sunshine Coast Regional Council
- any local government area that may be included under regulation.

Seqwater is not necessarily restricted to only providing bulk water supply services to these local government areas as additional areas may be declared through a regulation under the provisions of the Water Act 2000.

As the bulk water service provider to the SEQ region, Seqwater's major customers are SEQ Council owned service providers, who supply water in the following council areas and pay the relevant bulk water price consistent with the path.



Seqwater also supplies water as required to Toowoomba Regional Council and Stanwell Corporation. The conditions of supply are set under Bulk Water Supply Agreements, approved by the Minister of Energy and Water Supply.

Registered Bulk Water Customers	Customer's Business		
Queensland Urban Utilities	Distributor - Retailer		
Unitywater	Distributor - Retailer		
Redland City Council	Distributor - Retailer		
Logan City Council	Distributor - Retailer		
Gold Coast City Council	Distributor - Retailer		
Toowoomba Regional Council	Local Government		
	Electrical Power Generators:		
Stanwell Corporation Limited	 Tarong & Tarong North Power Stations, Nanango 		
	b. Swanbank Power Station, Ipswich		

Table 1: Registered bulk water customers

Seqwater also provides water services to approximately 1,200 rural irrigators operating within seven water supply schemes. The irrigation customers are rural landholders and businesses with water access entitlements (WAE). The QCA recently reviewed and recommended prices to be paid by these irrigators. Irrigation customers exist in four of Seqwater's water supply schemes which also provide bulk water supply:

- Logan River Water Supply Scheme
- Central Brisbane River Water Supply Scheme
- Warrill Valley Water Supply Scheme
- Mary Valley Water Supply Scheme.

Irrigators also exist in three other water supply schemes, which solely supply irrigation water. The irrigation components of Seqwater's business are not included in this submission.

Finally, Seqwater supplies raw water to other bodies such as local sporting clubs and water boards that directly hold WAE from dams.

Seqwater also manages and maintains recreation assets which are located on its property or utilise its assets. These costs form part of bulk water costs to be recovered from the price path, as per the Referral Notice.

2.3 ASSETS

Seqwater's network stretches from Noosa on the Sunshine Coast, to Tugun on the Gold Coast, North Stradbroke Island in the east to Gatton in the west. This network currently delivers around 750 megalitres per day (ML/day) of potable bulk water from Seqwater's



Water Treatment Plants (WTPs) to a number of SEQ service providers and ultimately to homes and businesses in SEQ. Figure 1 and Table 2 below present a summary of the diverse range of regulated water supply assets which are owned and managed by Seqwater.

Seqwater's assets include:

Asset type	Asset type	Number
Water storage	Dams	26
	Weirs	51
	Off-stream storages & lagoons	6
Groundwater	Bores and bore fields	10
Pipelines/network	Bulk water supply pipelines	600km
Water treatment	Water treatment plants	51
	Desalination plants	1
	Advanced water treatment plants	3
	Recycled water pipeline network	1
	Other water treatment plants (recreation sites)	7

Table 2: Seqwater assets summary

Seqwater also owns water access entitlements (WAE) that authorise it to divert water from streams, and treat and supply to customers.

While Seqwater owns the above infrastructure, the vast majority of the dam catchment land is owned or controlled by others.

2.3.1 WATER STORAGES

Seqwater owns 26 dams, 47 weirs and 6 off-stream storages and lagoons across SEQ. Seqwater also owns the land inundated by those dams, up to the flood margin, but does not generally own other land in the dam catchment. This is a fundamental difference between the Seqwater operating environment and those of comparable Metropolitan water authorities such as exist in Melbourne and Sydney.

At some storages (such as Wivenhoe and Somerset dams) Seqwater owns some limited land holdings beyond the flood margin as a result of acquisitions at the time of construction, some of which is leased for commercial activities including farming. These revenues are discussed in Chapter 8.

Seqwater hold the WAE from water supply schemes that enable it to divert water and supply bulk water to SEQ service providers.



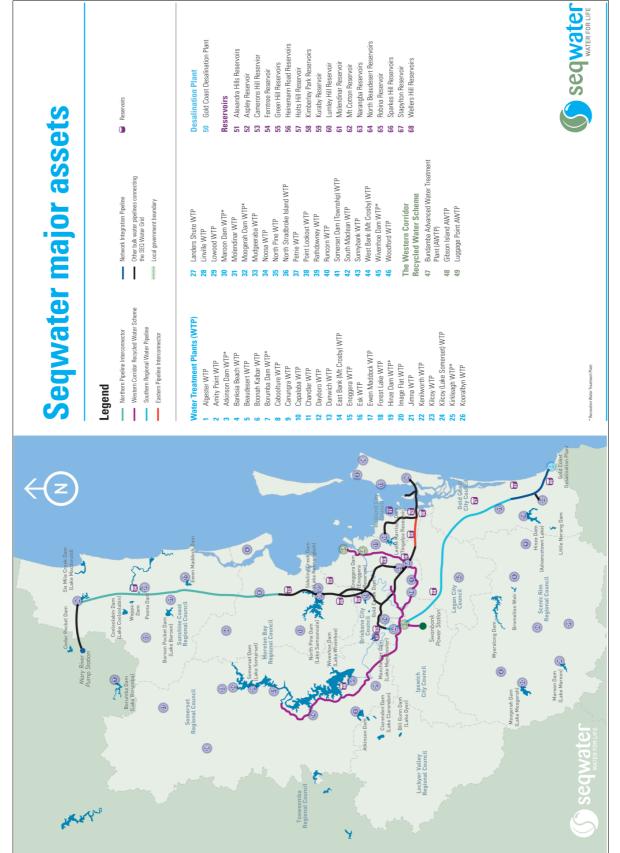


Figure 1: major assets map



2.3.2 GROUNDWATER BORES

Sequater manages six groundwater bore areas. The majority of these groundwater bore fields were constructed in response to the recent drought by local governments or other entities and were transferred to Sequater upon completion.

The majority of groundwater bores, and associated treatment infrastructure, constructed during the drought are permanently decommissioned due to cost and reliability issues. The only newly constructed groundwater bore field currently able to be used is Bribie Island, however it is currently temporarily shutdown due to low water levels. Note the largest groundwater borefield is on North Stradbroke Island and has been operating for many years (pre the recent drought) and continues in service as a baseload facility due to the resilient nature of the aquifer and relatively more efficient cost to operate.

2.3.3 WATER SUPPLY

Seqwater owns a diverse set of assets to treat and transport drinking water, including a mix of interconnected WTPs, stand-alone WTPs, recreation area WTPs and Manufactured Water Assets (MWAs). Seqwater is responsible for the management, operations and maintenance of these assets.

Since the merger, costs, complexity and risks have been reduced by ceasing supply from 10 WTPs. Mothballing or decommissioning of less efficient assets in favour of utilising system connections has been a focus of the individual and now combined entities.

The bulk treated water supply system

The bulk treated water supply system stretches from Noosa in the north to Tugun in the south, North Stradbroke Island in the east and Ipswich in the west. That system consists of 12 WTPs, 600km of bulk treated water transport pipeline, 36 reservoirs and associated monitoring and control systems. Seqwater manages the supply system in real time, ensuring that the daily treated water demand is met in the most cost effective manner, having regard to WTP operating costs, bulk water transport costs and supply system resilience. The operating philosophy of how these assets are utilised is described in the biannual Operating Plan.

Isolated WTPs

Twenty stand-alone WTPs service communities of very different sizes. These WTPs vary significantly in terms of treatment complexity, production run times, levels of automation and supply resilience. Beaudesert WTP, for example, has a design capacity of 4.93 ML/day, taking raw water from the Logan River through eight treatment process steps into a 0.5 ML treated water storage. By way of comparison, the Amity Point WTP has a design capacity of 1.38 ML/day and takes raw water from two bores through three process steps into a 1.14 ML



treated water storage. Sequater operates the isolated WTPs only long enough each day to store sufficient water in the treated water storages to meet the communities' needs.

Recreation area WTPs and WWTPs

Eight WTPs and three Wastewater Treatment Plants (WWTPs) are provided for visitors to Seqwater's recreational areas. The fluctuating and low total volumes from these plants make them expensive to operate. Seqwater is investigating other options to supply drinking water to these areas. For example Seqwater has recently completed an investigation of the Atkinson's Dam WTP and is working with QUU to recommend cessation of potable supply.

2.3.4 UNREGULATED ASSETS AND SERVICES

Seqwater also owns a number of unregulated assets which provide services that are not subject to price regulation (consistent with past QCA reviews of Grid Service and irrigation charges). These are:

- 240 Margaret Street premises: Seqwater owns premises at 240 Margaret Street, Brisbane, which it has vacated (or largely vacated) as at 30 June 2014. This asset is not included in the RAB and the costs of the building are not part of bulk water costs considered in this submission. The Seqwater head office has moved to the ICON Tower in Ipswich
- hydroelectricity generation plants: Seqwater also owns a small hydroelectric generation plant at Somerset Dam (currently not generating, planned to be refurbished), and a larger hydroelectric generation plant at Wivenhoe (currently running). The Wivenhoe Dam plant is operated by Stanwell Corporation under a BOOT (build-own-operatetransfer) arrangement
- water access entitlements: Seqwater holds 3,000ML of medium priority WAE in the Mary Valley Water Supply Scheme. Seqwater sells water to irrigators and other users, typically on an annual basis.

Seqwater also owns a small hydroelectric generation plant at Landers Shute WTP, using water from Baroon Pocket Dam that passes through a turbine before being supplied into the treatment plant. The primary purpose of this hydroelectric plant is to provide power to run the treatment plant itself, reducing the need to source energy externally. As this hydroelectric plant is essentially integral to the operation of the WTP it is considered a regulated asset directly attributable to bulk water supply, and recoverable under the price path.

2.4 OPERATIONS APPROACH

Seqwater's current and preferred approach for operation of water storage and treatment assets is to use an internal operational workforce, the majority of which are from previous



asset owners and highly experienced in bulk water supply delivery. This approach is described in more detail in Chapters 5 and 8.

Sequater outsources the majority of routine maintenance tasks to contractors, and also outsources the delivery of renewals and other capital projects.

The operations and maintenance for the GCDP and WCRWS were outsourced under contractual arrangements that pre-date the merger. The outsourcing comprises:

- WCRWS Veolia manage, operate and maintain the assets under a long-term open book O&M service contract which originally expired on 11 July 2023. However as the WCRWS is being decommissioned into care and maintenance mode the terms of the original contract mandate that in such a situation the maximum contract duration is 20 years from the O&M start date (13 October 2013), that being no later than 13 October 2033
- GCDP Veolia and Seqwater operate GCDP through an open book alliance with Veolia on a cost plus pass through basis with contract expiry in 24 September 2020 (with a 5 year extension option at Seqwater's election). This contract formed part of a build-own-operate contract for the plant.

Under these contracts, Veolia is responsible for providing the operations staff and procuring all inputs and supplies except for electricity, insurances and property costs which are Seqwater's responsibility. For the purpose of this submission, the contracted operator for the GCDP and the WCRWS are referred to simply as Veolia.

Seqwater has a range of corporate functions required to support service delivery and meet its corporate and regulatory obligations. These functions are generally resourced internally, except where specialist advice is required.

2.5 ROLES AND RESPONSIBILITIES

Seqwater employs a conventional hierarchy structure with seven Groups filling either direct operational or functional support roles. A General Manager leads each Group and is accountable for the outputs and functions of the Group. Within each Group are Teams led by a Manager who is responsible for delivery. A summary of the Seqwater functional structure is presented below.

This structure has been in place since the beginning of FY14. The January 2013 merger resulted in substantial changes to Seqwater's organisational structure as significant new assets were included, and including the reduction in employee numbers that is described in Chapter 6. That structure is being continuously reviewed and refined to ensure efficiency and effectiveness. For example, the Information, Communications and Technology team



was restructured in mid-2014, reducing the number of managers from two to one and team leaders from seven to four.

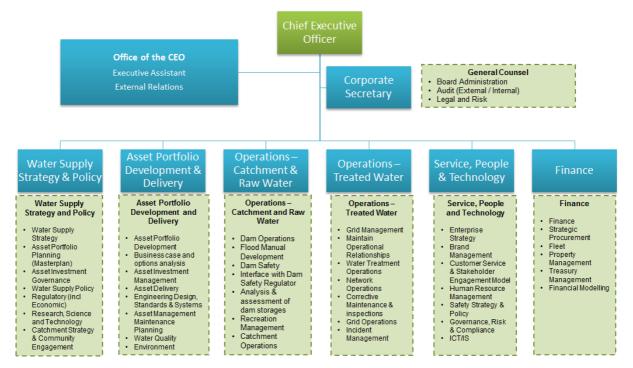


Figure 2: Seqwater functional structure

Brief summaries of the responsibilities and activities of each Group are summarised below. The teams within each Group are described in Chapter 8.

2.5.1 WATER SUPPLY STRATEGY AND POLICY (WSSP)

This Group is responsible for establishing the medium to long-term water supply strategy and policy direction for Seqwater. The Group in effect fills an "owner's" role in that it is responsible for establishing the service needs, including investment (for example based on demand drivers or legislative-driven requirements). The Group has a degree of independence from the direct operational Groups and challenges and reviews the proposed options generated to meet the requirements.

2.5.2 ASSET PORTFOLIO DEVELOPMENT AND DELIVERY (APDD)

The APDD Group is the second largest in Seqwater and is responsible for the planning and delivery of the infrastructure capital investment program across all asset types except MWAs, ICT and property, fleet and facilities. The Group provides the critical link in translating the business's strategic objectives into tangible plans at the asset level, and delivering these investments. In effect the APDD Group is responsible for the last stage of the investment pipeline, being the assessment of options to meet the requirements articulated by other sections of the business, and selection and delivery of the best option.



2.5.3 OPERATIONS CATCHMENTS AND RAW WATER (OCRW)

The Operations Catchments and Raw Water (OCRW) Group is responsible for managing all of Seqwater's dams, catchments and recreational areas.

2.5.4 OPERATIONS TREATED WATER (OTW)

The OTW Group is the largest group in Seqwater and is responsible for operation and maintenance of all treated water supply assets owned by Seqwater. OTW also performs some maintenance activities at dams and weirs (mostly for electrical and mechanical maintenance), and performs incident and security services for the whole organisation.

2.5.5 SERVICE, PEOPLE AND TECHNOLOGY (SPT)

The Group is responsible for all human resource, organisational culture, brand, workplace health and safety and information technology service provision.

2.5.6 CORPORATE FINANCE

The Group is responsible for all accounting activities (management, financial and statutory reporting and budget coordination) plus the procurement function and responsibility for the land portfolio and fleet/facility assets. Finance is also responsible for management of Seqwater's debt, including the relationship with the Queensland Treasury Corporation (QTC).

2.5.7 GENERAL COUNSEL

The Group is responsible for all governance, risk and compliance, audit and legal services provision. The Group also provides company secretariat services for the Seqwater Board.

2.5.8 OFFICE OF THE CHIEF EXECUTIVE

The Office of the Chief Executive Officer (CEO) is responsible for business leadership and managing and co-ordinating Seqwater's external relations function.

2.6 STRATEGIC DIRECTION

Seqwater's Strategic Plan 2013-2018 sets the direction for Seqwater to realise its vision and purpose and deliver against the priorities specified for each of the Outcome Areas (refer Figure 3 below). The focus of FY14 has been on bedding down the new operational structure of the business. Once implemented, the move towards detailed planning will see an increased focus on the development of effective performance measures and baseline Key Performance Indicators (KPIs). The focus will shift to the evolution of the strategic plan and five-year performance outlook as the Board and management continue to direct the transition from the old business model to the new.



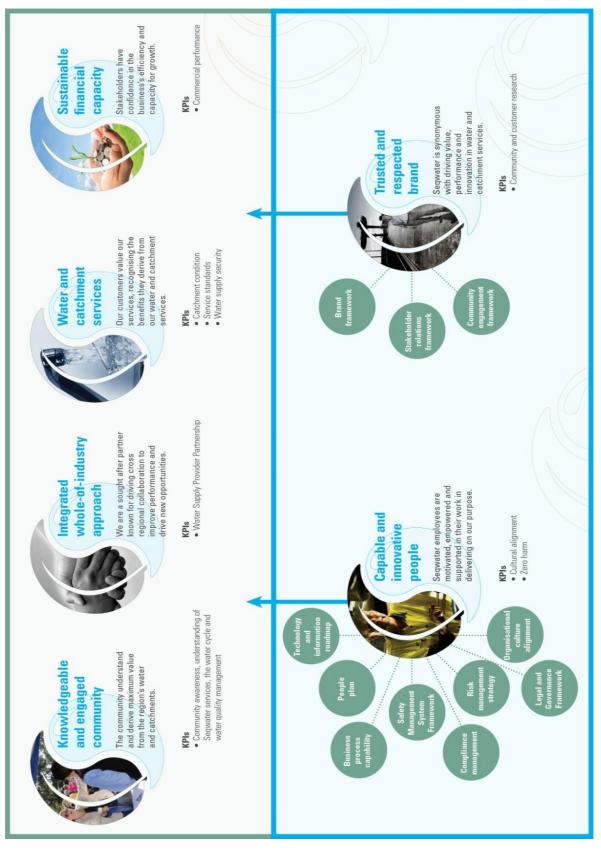


Figure 3: Seqwater's outcome areas



As noted in Seqwater's Operational Plan, performance will be monitored through the delivery of its strategic KPIs and reported quarterly to the Responsible Ministers. These will measure progress towards the outcome areas (refer Figure below).

Consistent with the Strategic Plan and Statement of Obligations, Seqwater has identified a range of policies and strategies to identify the guidance and direction requirements of the business in relation to planning for, managing and operating assets. The policy and strategy framework includes:

- a number of Policy Statements (externally facing, linked with legislative requirements) including Asset Management, Water Quality and Environment
- a suite of supporting policies (internally facing, providing direction and decision making guidance)
- a range of strategies that have been identified to drive implementation of the policies.

Where required, the purpose of the strategy level documents is to guide Seqwater on making least-cost decisions with respect to these issues. It is therefore considered that the development of policies and strategies is a critical component to ensuring that planning and investment are based upon prudent and efficient decision making. Where strategies or business cases identify that policy is driving additional cost, this will act as a trigger to review policy content.

The complementary suite of policies and strategies includes:

- Asset Management Policy Statement
- Water Quality Policy Statement
- Environment Policy Statement
- Access to Water and Assets Policy
- Cultural Heritage Policy
- Asset Information Strategy
- Catchment Land Management Strategy
- Non-Indigenous Cultural Heritage Strategy
- Aboriginal Cultural Heritage Strategy.

The identification of policies and strategies is based upon management priority and areas with a need for consistent direction. Therefore policies need to be reflective of the key drivers within the business, including regulations, service standards, obligations and risk appetite. As part of the evolution of the recently formed organisation, Seqwater is currently reviewing and refining all existing policies to ensure that they align with the key priorities and obligations of the business.



2.7 FINANCIALS

2.7.1 CAPITAL STRUCTURE

Seqwater is currently in a challenging financial position. As at May 2014 gearing is ~98% with the market value of net debt at 30 June 2014 of \$10,530M. Seqwater's strong operating metrics (FY14 EBIT margin of 39%) are however offset by interest expenses of \$534M for FY14, leaving little headroom for free cashflow coverage of the capital investment program. The vast majority of Seqwater's interest expense arises from the manufactured water assets, which currently generate minimal, or no production.

2.7.2 FINANCIAL SUSTAINABILITY

Seqwater's financial position is highly leveraged to market forces beyond its control. The business' revenues can be fairly variable (volume risks), and given its fixed costs and capital structure, financial sustainability is a far greater issue than for most other regulated businesses. Present debt levels result in long-term financial sustainability being driven by interest rates which are currently at historical lows, and while the term of Seqwater's debt pools average (modified duration May 2014) is 7 years, given the magnitude of Seqwater's debt interest rate movements remain a significant risk to sustainability.

In contrast to many other regulated business, Seqwater receives a cost of debt return on its asset base compared to a commercial rate of return for utilities with benchmark capital structures that include a return to equity. It is this low rate of return (results in lower bulk water prices) which currently results in Seqwater not recovering sufficient revenues to cover its costs, and requiring ongoing State support via its lender the Queensland Treasury Corporation.



CHAPTER 3 SERVICE AND REGULATORY OBLIGATIONS

3.1 REGISTERED SERVICES

Seqwater's role and functions are contained in the SEQ Water (Restructuring) Act 2007, Water Act 2000, Water Supply (Safety and Reliability) Act 2008, South East Queensland System Operating Plan (SOP), Statement of Obligations (SoO), Bulk Water Supply Code (Code) and Bulk Water Supply Agreements (Supply Agreements).

The Queensland Bulk Water Supply Authority (trading as Seqwater) is a registered service provider (SP507) under the Water Supply (Safety and Reliability) Act 2008 and provides water supplies from the following catchments and schemes:

Registered Water Services				
Catchments				
Mary Valley	Warrill Valley			
Mooloolah River	Lower Brisbane River			
Maroochy River	Tingalpa Creek			
Caboolture River	Logan / Albert Rivers			
North Pine River	Nerang River			
Upper Brisbane River	Brisbane Groundwater			
Stanley River	Bribie Island Groundwater			
Lockyer Valley (Upper, Central, Lower)	North Stradbroke Island Groundwater			
Schemes – Manufactured Water				
Western Corridor Recycled Water (WCRWS) Scheme	Gold Coast Desalination Plant (GCDP)			
Schemes – SEQ Water Supply Grid				
South East Queensland Water Grid (various regions)	Southern Regional Water Pipeline			
Northern Pipeline Interconnector	Network Integration Pipeline (Gold Coast)			
Eastern Pipeline Interconnector				

Table 3: Registered services

Seqwater's principal operations of bulk urban water supply and irrigation supply are governed by Interim Resource Operations Licenses and by contractual Arrangements with customers through the Bulk Water Supply Code and contracts with agricultural users.

Throughout this submission the following terminology applies to Seqwater's customers:

 Bulk Water Customers (BWC): Any entities which receive water (both potable and raw water) from Seqwater which are covered under the Minister's Referral Notice



- SEQ service providers: Entities which are Council owned (either by one or multiple councils) and retail bulk water directly to consumers (ie, potable water). Note this excludes raw water customers including power stations or Toowoomba Regional Council, but includes Distribution-Retail Entities
- Distribution-Retail Entities (DRE): Entities which are not local Governments (but are local Government owned) and are Seqwater customers which retail bulk water directly to consumers over multiple local Government (Council) areas (ie, Queensland Urban Utilities (QUU) and Unitywater).

Note the Referral Notice does not refer to Bulk Water Customers or provide a description of customers other than to state the QCA is to investigate bulk water prices relating to the relevant local government areas. For clarity not all Bulk Water Customers are covered by the Referral Notice as it only applies to pricing for relevant local government areas. The Referral Notice does however state that bulk water costs are to be offset by revenues from power stations and Toowoomba Regional Council.

3.2 **REGULATORY OBLIGATIONS**

This submission has regard to Seqwater's service and operating requirements. In summary, Seqwater's service and operating requirements are derived from the following legislative and regulatory instruments:

- SOP the SOP outlines the regional supply security requirements for the SEQ bulk water supply system, including level of service (LOS) objectives and operating rules.
- Supply Agreements Seqwater holds 19 year water supply agreements with each of the Bulk Water Customers. These agreements govern the commercial transactions between the parties, and contain water quality specifications and supply obligations to meet Bulk Water Customers' demand.
- Code regulates the supply of water and water services, between Seqwater (as operator of the bulk water supply system) and the Bulk Water Customers (as operators of the distribution-retail supply system), by providing for matters such as costs and pricing, metering obligations, emergency planning and a range of other operational matters.
- Operating Protocols document the agreed details for operational matters affecting supply at bulk supply points between Seqwater and the Bulk Water Customers, including demand forecasts, communication processes in relation to changes in water quality, operational capacity and constraint, pressure and flow rates, maintenance, supply interruptions and reservoir operating ranges.
- SoO outlines the obligations which Seqwater must consider in performing its functions, including but not limited to the following:



- Seqwater is to deliver bulk water services to consumers in a financially, socially and environmentally sustainable manner, taking into account the Australian Drinking Water Guidelines 2011
- Seqwater must meet or exceed its obligations under the Water Supply (Safety and Reliability) Act 2008 and where appropriate, relevant national water standards

The following sections set out the nature and extent of these service requirements.

Acts

- •Water Act 2000
- South East Queensland Water (Restructuring) Act 2007
- Water Supply (Safety and Reliability) Act 2008
- Environmental Protection Act 1994
- Sustainable Planning Act 2009
- Public Health Act 2005
- Water Fluoridation Act 2008
- •Various Acts relating to commercial, accounting and legal obligations such as: Corporation Act 2001, Queensland Competition Authority Act 1997, Financial Accountability Act 2009, Public Records Act 2002.

Instruments under the Acts and Policies

- •Water Supply Regulations, Water Regulation 2002, the Water (Transitional) Regulation 2012 and Dam Safety Regulation
- SEQ System Operating Plan
- •Bulk Water Supply Code
- Statement of Obligations
- •Water Resource Plans
- •Resource Operations Licences and Interim Resource Operations Licences
- •Resource Operations Plans
- State Planning Policy
- •SEQ Regional Plan
- •Environmental Protection (Water) Policy 2009

Water Supply Agreements

- •Bulk Water Supply contracts (Treated water, Raw water and Purified Recycled Water)
- •Rural Water Supply contracts (Raw water supply to Irrigation Customers) outside the scope of this WSAP

Protocols and Guidelines

- Operating Protocols
- •Australian Drinking Water Guidelines
- ANCOLD Guidelines
- State Water Authority Investment Guidelines

Figure 4: Seqwater's water supply obligations



3.3 SERVICE REQUIREMENTS

3.3.1 COST

The SOP includes a principle that water supply arrangements should maximise the efficient and cost effective service delivery. We aim to achieve:

- operational efficiency by matching supply to demand and using lower cost supply options wherever possible
- capital efficiency by clearly specifying the services required from key assets, over the short and medium term.

Relevantly, those considerations highlight where capital expenditure may be deferred or avoided due to:

- service not being required from an asset over the short to medium-term, enabling it to be demobilised
- the full capacity of an asset not being required over the short to medium-term, enabling renewals to be deferred.

In accordance with the SoO's objective of achieving water supplies at least cost to our customers, Seqwater is focused on running assets as efficiently as possible. Key operational changes made by Seqwater include the following:

- The Western Corridor Recycled Water Scheme (WCRWS) has been placed into 'care and maintenance' mode
- The Gold Coast Desalination Plant (GCDP) will to be operated in hot standby mode, with supply not required unless under emergency operations. To minimise operating costs, the minimum standby production has been reduced to 12 ML/d twice per week
- The Eastern Pipeline Interconnector (EPI) will be operated in an easterly direction, reducing the cost of operation of pump facilities.

The Code requires co-ordinated network planning between the bulk and the distribution sectors to achieve infrastructure planning (including water quality improvements) on a best value for money basis. Seqwater and the Bulk Water Customers via a Joint Working Group work together to identify opportunities to co-ordinate infrastructure, operations and optimisation of assets across the network and areas where water quality can be improved.

3.3.2 SUPPLY SECURITY

Maximum volume

The maximum volume of water Seqwater may enter into contracts to sell is 470,000 ML per annum.



Levels of Service objectives

Seqwater's Annual Operations Plan must demonstrate that all reasonable actions have been integrated to achieve the following desired LOS objectives:

- during normal operations sufficient water will be available to meet an average total urban demand of 375 litres per person per day (including residential, non-residential and system losses), of which 230 litres per person per day is attributed to residential demand
- medium level restrictions will not occur more than once every 25 years on average
- medium level restrictions need only achieve a targeted reduction in consumption of 15 per cent below the total consumption volume in normal operations
- the frequency of triggering drought response infrastructure will be not more than once every 100 years, on average
- the total volume of water stored by all key SEQ bulk water supply system storages will not decline to 10 per cent of their combined water storage capacity more than once every 1,000 years, on average
- the total volume of water stored by all key SEQ bulk water supply system storages will not decline to 5 per cent of their combined total water storage capacity more than once every 10,000 years, on average
- Wivenhoe, Hinze and Baroon Pocket Dams must not be permitted to reach minimum operating levels
- it is expected that medium level restrictions will last longer than six months no more than once every 50 years, on average.

This submission has been generated based on the LOS objectives listed above. The Department of Energy and Water Supply prescribed new LOS objectives on 3 July 2014. Seqwater has 12 months to consider the new LOS objectives and develop a Water Security Program, in line with obligations under the Water Act 2000. Note the new LOS objectives supersede the SOP. The LOS objectives must be reviewed within five years.

Risk criteria

Seqwater's Annual Operations Plan must demonstrate that all reasonable actions have been integrated to achieve the following risk criteria:

Volume of water stored by key SEQ bulk water	Probability of reaching volume of water stored		
supply system storages	Within 1 year	Within 3 years	Within 5 years
40%	Less than 0.2%	Not specified	Less than 5%
30%	Not specified	Less than 0.5%	Less than 1%

Table 4: System Operating Plan risk criteria



Operating rules

The SOP also outlines various waters supply operating rules that Seqwater must comply with when undertaking its responsibilities.

3.3.3 WATER QUALITY

Seqwater's obligations with respect to water quality are primarily contained in the:

- Water Supply (Safety and Reliability) Act 2008
- Supply Agreements, which includes legislative requirements such as the Public Health Regulation 2005
- the Australian Drinking Water Guidelines 2011 (ADWG).

Under the Water Supply (Safety & Reliability) Act 2008, Seqwater must:

- not carry out a drinking water service unless there is an approved drinking water quality management plan (DWQMP) to protect public health
- prepare, implement and comply with the approved DWQMP
- regularly review the DWQMP to ensure the plan remains relevant
- prepare and provide a report to the regulator for the financial year, within 120 business days after the end of the financial year to which it relates
- report to the Queensland Water Supply Regulator on non-compliances with water quality criteria and for certain prescribed incidents.

For water quality, there are health-related and aesthetic parameters.

Water quality criteria used for the assessment of compliance with the DWQMP is based on health-related guideline values in the ADWG and standards published in schedule 3A of the Public Health Regulation 2005 (current as at 1 March 2014). Health-related issues are treated as an absolute constraint on the SEQ bulk water supply system. If a particular operational response needs to be taken to ensure water delivered meets the health-related guideline values of the ADWG and to comply with the DWQMP, then those operational responses will be undertaken regardless of cost.

Aesthetic water quality issues are treated on a case by case basis, taking into account previous supplies, existing community expectations and the aesthetic guideline values in the ADWG. This is achieved by balancing between the costs of production and transport and the benefits associated with alternative mitigating responses. Operations may direct that water that contains elevated levels of taste and odour compounds be blended with water from another source that does not. These aesthetic parameters are specified as best endeavours targets in the Supply Agreements, based on the historic performance of the supplies that previously existed in those areas.



Bulk water supply agreements set out quality obligations. These are defined as any quality parameters applicable to the supply of Potable Water to the Bulk Water Customer under this agreement that may be prescribed by any Legislative Requirements, including any approved Drinking Water Quality Management Plan relating to the supply of that Potable Water that must be complied with by the Bulk Authority; and the Australian Drinking Water Guideline (ADWG) specifications.

Existing standards

The ADWG contains health and aesthetic limits for water quality parameters which apply to drinking water at the consumers' tap. The Bulk Water Supply Agreements identify that Seqwater will supply drinking water at the Bulk Supply Point of a quality that facilitates the achievement of the ADWG requirements at the customer tap. This is necessary for the SEQ service providers to achieve compliance with legislative requirements, including the ADWG specification.

Seqwater operates with a general water quality specification for supply of water from its treatment plants, designed to facilitate the supply of drinking water that complies with the ADWG guideline values at the consumers' tap. It provides a single specification against which current water quality performance and design basis may be assessed. The specification is consistent with the existing site based HACCP plans and where applicable the communication triggers in the Operating Protocols.

Health based targets

The ADWG currently specifies that pathogens (microorganisms that can cause illness) should not be detected in drinking water and that Escherichia coli (E. coli) should not be detected in a 100 mL sample. These guideline values are simply a quality assurance target for disinfection efficiency. They are not intended, or capable of providing, a quantitative measure of acceptability of the risk of illness from drinking water to the community.

The Australian water supply industry recognises that maintaining drinking water quality that has an acceptable risk of illness requires that concentration targets for micro-organisms are set based on similar principles as those set for chemicals, being Health Based Targets (HBTs).

HBTs are measureable health, water quality or performance objectives that are established based on an assessment of what constitutes an acceptable level of health risk in relation to pathogens in drinking water. The ADWG already contains HBTs for chemical and radiological parameters. In these cases, the HBTs are expressed as guideline values.

The National Health and Medical Research Council (NHMRC) has proposed that a HBT for pathogens in drinking water be introduced in the next edition of the ADWG and this is supported by the Water Services Association of Australia (WSAA). WSAA and NHMRC,



through the Water Quality Advisory Committee and the HBT working group are working together to produce the HBT guidance manual, which include the aforementioned performance objectives and treatment credits. The NHMRC have released a discussion paper on the introduction of HBTs for pathogens and are releasing a follow up this year, based on more recent work and the draft manual developed by WSAA. The next edition of the ADWG is expected in two to six years.

Seqwater has undertaken pilot assessments of the proposed HBT approach for a number of sites, as part of the development of the HBT manual. The pilot assessments indicate that the majority of Seqwater's WTPs are likely to fall in the 'safe' range under the proposed HBT approach. That is the treatment provided is likely to be safe, but improvement may be required over time to make the water 'unquestionably safe', that is compliant with the HBT.

Six WTP's are considered likely to fit in the 'marginal' zone, indicating that upgrade may be required in the medium term. However, there is significant uncertainty around the assessment in the safe and marginal range and Cryptosporidium monitoring is required to reduce this uncertainty.

Only four WTPs are likely to require upgrade as a priority as they fall above the 'marginal' zone. The prioritisation of these four plants (Dayboro, Linville, Kirkleigh and Kenilworth) is consistent with the existing site based HACCP plan risk assessments. These four WTPs have been prioritised in the capital program for action to remove the risk either by upgrade or alternate supply arrangements.

Pending the outcomes of Cryptosporidium monitoring, for all other WTPs it is proposed that HBTs be considered during the planning for any WTP upgrades. This enables Seqwater to balance water quality risk management, capital expenditure and risks associated with the potential for changes to the proposed HBT approach.

3.3.4 SUPPLY RELIABILITY

System reliability is assessed using two measures of asset performance:

- 1. system capacity, being potential system throughput, measured against average day and mean day maximum month demand
- 2. system reliability, being a measure of the continuity of supply from the SEQ bulk water supply system, measured by frequency and duration of failure to supply from the assets.

System capacity

Seqwater maintains a continual assessment of the short term capacity of water supply infrastructure based on a 12 month forward demand forecast. There are a number of issues



which can constrain the available capacity of Seqwater's water supply infrastructure, including:

- resource constraints such as water entitlements, including limits on transfers between sub regions or extractions from particular water sources
- restricted supply due to water quality issues, such as algal blooms in a dam or waterway
- maintenance or refurbishment of key infrastructure components
- timeframes for re-commissioning of standby or decommissioned assets.

Capacity is measured by asset, based on the following metrics:

- extraction capacity (ML/d)
- treated water storage (ML)
- treatment production (ML/d)
- transfer capacity (ML/d).

Seqwater works with the Bulk Water Customers to develop a shared view of the upcoming maintenance program to ensure sufficient capacity and resilience is available during maintenance periods. This sometimes has an impact on the sources of supply and transfer arrangements that are needed to meet Bulk Water Customers demands.

System reliability

Seqwater's operations aim to ensure sufficient capacity is available within the SEQ bulk water supply system to meet demand and water quality objectives in the event that key assets fail. Seqwater undertakes reliability assessments to determine vulnerabilities to loss of supply. Circumstances may include:

- unforeseen failures, such as a transformer explosion at a WTP or a switchboard fire at a distribution pump station
- foreseen partial failures, such as when temporary changes in raw water conditions reduce WTP production rate (high turbidity loads in the raw water supply associated with heavy rainfall events commonly contribute to this impact)
- bulk network failures, such as those associated with local power outages and mains bursts.

Seqwater has notification and timing obligations under the Supply Agreements and Operating Protocols in relation to supply interruptions due to planned/scheduled maintenance and interruptions or curtailments to supply in permitted instances such as to comply with an emergency declaration.

Asset management



The SoO requires Seqwater to develop and implement plans, systems and processes to manage its natural and built assets in ways which:

- allow Seqwater to supply services sustainably.
- maintain the level of service.
- minimise the whole of SEQ system cost.

Seqwater is currently undertaking a comprehensive review of its approach to asset management in order to improve and develop the systems and processes to evaluate the condition and capacity of water supply assets. Below are some of the key deliverables under Seqwater's new asset management framework:

- asset management policy
- asset management strategies
- asset management levels of service
- asset management plans
- asset class maintenance plans
- asset management compliance framework
- asset condition and criticality assessments
- system and asset performance reports
- scheduled and corrective maintenance deliverables.

The asset management framework will enable identification of current and future capacity shortfalls, service levels gaps, poor condition assets, unacceptable risks and efficiency opportunities.

3.3.5 DEMAND MANAGEMENT

Demand management following the merger is now a Seqwater responsibility under the Water Security Program requirements. Seqwater is developing a demand management plan, as part of the Water Security Program, to articulate the arrangements, strategies and measures for managing demand for water to facilitate the achievement of the desired level of service objectives for water security for SEQ (Water Act 2000 s.353).

It should be recognised that demand management is also a requirement for the SEQ service providers under the South-East Queensland (Distribution and Retail Restructuring) Act 2009 to have a Water Netserv Plan (s.99BJ) and that plan must "include information outlining the SEQ service provider's strategy for demand management for water" (s. 99BO). Hence, SEQ service providers will be working in collaboration with Seqwater in the development of the Demand Management Plan to ensure consistency and reduce duplication.

In addition to the Demand Management Plan, a Drought Response Plan will also be developed to focus on the measures (which will include demand management measures) to be undertaken during drought. These measures will also be developed in collaboration with



the SEQ service providers. This submission is based on demand forecasts using consumption rates as stated in the Referral Notice. Note these consumption rates are less than those in the previous LOS requirement as the current LOS (released 3 July 2014) does not specify a demand forecast. Moreover, many initiatives implemented to reduce water use during the drought and changes to consumption behaviours have resulted in sustained lower consumption than those specified in the LOS objectives (note this submission has been generated based on the LOS objectives applicable prior to DEWS prescribing new LOS objectives on 3 July 2014). Best available information on current and future consumption rates has been incorporated into the demand forecasts used in this submission and the Bulk Water Supply System Interim Operating Strategy. These forecasts are as per the Referral Notice.

3.3.6 NON-SERVICE REGULATION AND COMPLIANCE

As owner, manager and operator of the SEQ bulk water supply system, Seqwater is also responsible for:

- operating and maintaining flood mitigation infrastructure and undertaking flood operations and emergency management
- dam safety
- managing the catchments which surround its water sources
- recreational facilities and services
- planning for long term water supply for the region, including for growth.

There are legislative and regulatory obligations which relate to these and more generally to the operations of Seqwater as a business and statutory authority. These include workplace health and safety, laws relating to land ownership, the protection of the environment and cultural heritage, complying with Water Resource Plans, Resource Operations Plans, Resource Operations Licences and the terms and conditions of water entitlements, preparing and complying with flood mitigation manuals.

Complying with these various obligations also have an impact on the cost of supplying water.



PART B – WATER SUPPLY

CHAPTER 4 OPERATING STRATEGY

Seqwater's expenditure forecast to FY28 is largely driven by the operation of the bulk treated water supply system. The *Bulk Water Supply System Interim Operating Strategy 2014-2029* (the Interim Operating Strategy) determines how various assets within that system will be deployed, and identifies shortfalls in supply against a given demand profile (refer Appendix A). Importantly, these shortfalls are considered in terms of total system water supply adequacy (to achieve the LOS), and the capacity of assets to meet water demand at peak time.

In summary, the Interim Operating Strategy shows that:

- there are sufficient water sources to supply the projected SEQ demand, at the prescribed LOS, over the price path period to FY28. That is, no major augmentation to increase water sources (such as dams or desalination plants) is likely to be required
- greater operating emphasis will be given to certain water sources and water treatment plants to minimise costs over the period
- despite there being sufficient water sources to FY28, there is insufficient peak capacity in the system to meet demand growth. This means that some WTPs will need to be augmented to supply peak (maximum month and maximum day) demands. Some WTPs are being actively down-rated (reducing future capital expenditure) in areas where the connected networks can be used to meet demand and peaking factors.

This strategy forms the basis for the operating and capital cost forecasts presented later in this submission. This chapter first presents the demand forecast for SEQ to FY28, and then outlines the Operating Strategy that responds to this forecast.

4.1 DEMAND FORECAST

The demand forecast for SEQ has two important functions for this price path review:

- to inform the operating strategy and long-term requirements of the SEQ bulk supply system
- as an input to the calculation of the price path, as costs are to be recovered based on a projection of demand.

The Referral Notice requires the QCA to accept Seqwater's demand forecasts for this review, provided that Seqwater's forecast includes:

• a long term residential demand of 185 litres per person per day (l/p/d)



• a non-residential demand of 91 l/p/d, not including demand from power stations or Toowoomba Regional Council.

The timing of reaching the long term demand is to be accepted by the QCA, as advised by Seqwater.

The QCA is also to accept power station and Toowoomba Regional Council demand.

4.1.1 AVERAGE DEMAND

Seqwater developed a most likely demand forecast, taking into consideration several input factors including a projected rebound in consumption. The table at the end of this section highlights all the input factors taken into consideration.

The demand forecast profile is consistent with the Referral Notice requirement for demand being based on residential per capita usage of 185 Litres per person per day (I/p/d) and non-residential per capita usage being 91 I/p/d.

Seqwater anticipates that people may change their current behaviour with regard to water use over time, leading to the increased per capita consumption by the end of FY18. It assumes that per capita consumption will remain constant post FY18. From that time, total average demand is forecast to be 285 l/p/d, comprising:

- residential per capita usage of 185 l/p/d
- non-residential usage of 91 l/p/d (excluding power station and Toowoomba demand)
- growth in the total supply and distribution network loss volume as demand increases, equivalent to an extra 5 l/p/d by 30 June 2018
- power station demand of 4 l/p/d.

These forecasts have been developed in collaboration between Seqwater and SEQ Service Providers who formed a demand forecasting network to improve demand forecasts and reach a consolidation position about the most appropriate total SEQ forecast demand to be used by Seqwater for planning purposes. It was agreed in early CY13 that the Seqwater most likely demand scenario of 285 I/p/d by 30 June 2018 would be the single consensus forecast for demand in the SEQ region (note includes supply and distribution network losses and power station demand and is equivalent to 185 I/p/d residential and 91 I/p/d non-residential per capita usage).

The long-run population series that has been applied is the SEQ medium series profile sourced from the Queensland Office of Economic and Statistical Research (OESR). The SEQ low series profile was used for FY15 to align the opening demand position forecast with current actual demand trends.

The total forecast annual volume was calculated by multiplying each forecast local government area per capita usage by OESR population forecasts for that respective area.



For the purposes of validation the resultant 20 year demand profile (starting in FY14) was then compared to the local government area 20 year demand profiles provided by the SEQ service providers. This showed that the consolidated low scenario prediction from the SEQ service providers aligned closest with the Sequater most likely demand profile.

It is not anticipated that Toowoomba will require water supply from Wivenhoe for the short to medium term under average climatic conditions.

The following equation is how the total SEQ service provider customer demand for bulk water price path determination is derived.

Population x (Residential + Non Residential consumption) + Estimated Service Provider Non Revenue Water (includes losses) = SEQ Service Provider Demand

Demand by Council Area

The following table shows the break-up of demand by the current SEQ council areas

	Council	Res LPD	Non-Res LPD	Serviced Population	Res LPD	Non-Res LPD	Serviced Population
	Brisbane	167	112	1,098,733	181	125	1,175,568
	Gold Coast	197	83	544,424	214	93	621,543
	Ipswich	130	89	179,811	141	100	236,448
_	Lockyer Valley	101	164	23,384	110	184	28,793
Model	Logan	142	53	284,227	154	59	328,030
	Moreton Bay	165	47	375,368	179	52	420,684
2014	Redland	191	54	144,123	207	60	158,247
2	Scenic Rim	129	80	21,824	140	89	30,094
	Somerset	125	262	10,482	136	294	12,677
	Sunshine Coast						
	&						
	Noosa	197	79	296,738	214	89	343,125
	SEQ Weighted						
	Average				185	96	3,355,209

Note: Non-residential figures include distribution network system losses described above.

Table 5: Demand by SEQ council areas

The associated local government area volumetric demand has been broken down to the eleven local government areas to be used for pricing purposes.

The following table shows the forecast total annual volume (ML/annum) broken down to the local government areas. The volume excludes losses, power station and Toowoomba Regional Council demand.



Year (FY)	Brisbane	Gold Coast	Ipswich	Lockyer Valley	Logan	Moreton Bay	Scenic Rim	Somerset	Redlands	Sunshine Coast	Noosa
2013-14	106,425	56,806	17,308	1,855	20,923	27,026	1,585	1,487	12,658	25,700	5,287
2014-15	117,549	62,506	16,189	2,491	19,335	30,065	1,887	1,612	13,676	26,730	5,499
2015-16	121,425	65,416	17,357	2,644	20,259	30,141	2,036	1,704	14,216	28,061	5,773
2016-17	124,688	68,003	18,531	2,791	21,100	32,432	2,197	1,791	14,683	29,289	6,027
2017-18	128,275	70,771	19,879	2,946	22,016	34,982	2,389	1,886	15,181	30,734	6,185
2018-19	131,734	73,519	21,317	3,107	22,944	36,246	2,597	1,984	15,680	32,204	6,343
2019-20	133,327	75,237	22,532	3,232	23,542	36,977	2,779	2,062	15,946	33,224	6,410
2020-21	134,098	76,535	23,697	3,346	24,024	37,519	2,952	2,131	16,126	34,074	6,444
2021-22	135,165	78,003	24,993	3,472	24,581	38,132	3,141	2,207	16,339	35,005	6,494
2022-23	136,186	79,430	26,341	3,601	25,150	38,709	3,338	2,283	16,543	35,897	6,576
2023-24	137,485	81,075	27,827	3,744	25,791	39,383	3,553	2,368	16,789	36,893	6,674
2024-25	137,935	82,286	29,224	3,873	26,297	39,851	3,759	2,442	16,946	37,696	6,736
2025-26	138,663	83,730	30,763	4,013	26,875	40,414	3,985	2,527	17,144	38,594	6,814
2026-27	139,310	85,153	32,309	4,149	27,458	40,995	4,195	2,608	17,332	39,459	6,884
2027-28	140,303	86,782	33,929	4,290	28,126	41,683	4,397	2,691	17,553	40,395	6,964
2028-29	140,481	87,917	35,407	4,413	28,665	42,116	4,582	2,760	17,677	41,123	7,006
2029-30	140,959	89,276	37,038	4,548	29,292	42,631	4,785	2,839	17,842	41,960	7,067

Table 6: Forecast total annual volume by local government areas

Demand by supply zone (asset deployment and planning)

In order to conduct planning at an asset level, Seqwater requires forecast demand to be broken down to demand zones. The SEQ service providers have provided demand zone forecast information to Seqwater for demand zones within each local government area. Although each Service Provider had a different method for predicting future demands it was accepted that relative growth in each demand zone would be accurate. Therefore, Seqwater utilised the SEQ service provider relative growth information and pro-rated the service provider zone forecast information so that the demand for each Council area matched that of the OESR most likely demand forecast.

It is important to note that demand forecasting evolves as more information on consumer behaviour becomes available.

4.1.2 OTHER DEMAND

Water use by other customers (Toowoomba Regional Council, Power Stations, irrigators and riparian users (such as stock and domestic)) across SEQ are not included in the demand forecast for pricing purposes as they do not form part of the regulated bulk water price. However, the overall demands are considered for the operating strategy, in terms of the adequacy of the bulk water sources (dams and weirs). These demands are not relevant to WTPs and the network, as they draw water directly from storages / streams.

4.1.3 SUMMARY- FORECAST AVERAGE DEMAND

The total projected regional bulk water demand used in the *Interim Operating Strategy* is provided in Figure 5. Per capita consumption is expected to increase from current consumption to the 'Most Likely' demands based on 285 l/p/d by June 2018 and stabilize



thereafter. This is the same most likely demand based on residential demand of 185 l/p/d, non-residential demand of 91 l/p/d, an allowance for an increased loss volume as Service Provider demand increases and includes power station demand.

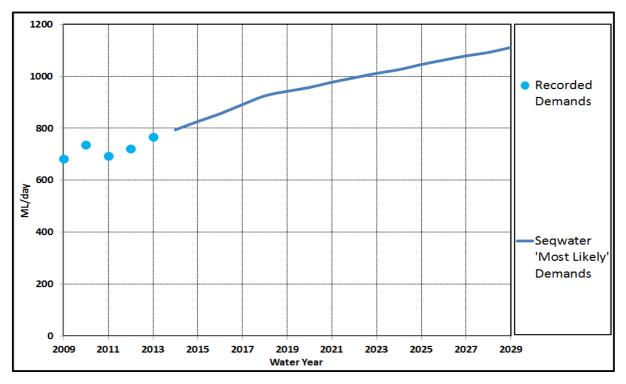


Figure 5: Projected regional average day demand

4.1.4 PEAK DEMAND

The bulk water supply system must be planned to effectively treat and transport water during high demand periods. This is being addressed through assessing the network capability during a peak month (referred to as a Mean Day of the Maximum Month (MDMM)).

Seasonal, daily and diurnal variability in water use across the system is an inherent feature of water supply and is directly related to a number of factors. For example, peak annual demands (i.e. MDMM and MD) occur around the summer months in SEQ and are primarily related to:

- increased outdoor residential water use. Those areas with greater temperature variability or more permeable soils tend to have higher Mean Day Maximum Month (MDMM): Average Day (AD) ratios
- increased transient/tourist populations during the summer months
- lower industrial/commercial activity. Seasonal and daily peaking is primarily related to residential consumption such as those communities with limited industrial and/or commercial consumption experience greater variability in seasonal demands



• smaller population size. Greater overall consumption variability is experienced in smaller communities not connected to the bulk water supply system.

The following peaking factors are used in the Interim Operating Strategy for system optimisation. These peaking factors have been developed as part of the portfolio planning criteria that will underpin the Water Security Program. The peaking factors have been calculated based on recent actual consumption data resulting in lower figures than currently recommended by the *Planning Guidelines for Water Supply and Sewerage - April 2010 - Chapter 6 amended March 2014.*

Subregion	MD:AD Peaking Factor	MDMM:AD Peaking Factor	3 (MD - MDMM)
Brisbane	1.6	1.3	0.9
Caboolture	1.8	1.4	1.2
Caloundra	1.8	1.4	1.2
Gold Coast	1.6	1.3	0.9
Ipswich	1.7	1.3	1.2
Image Flat	1.8	1.4	1.2
Logan	1.7	1.3	1.2
Maroochy	1.8	1.4	1.2
Noosa	1.8	1.4	1.2
Pine Rivers	1.7	1.4	0.9
Redcliffe	1.7	1.3	1.2
Redland	1.7	1.3	1.2
Standalones	1.9	1.5	1.2

Table 7: Adopted peaking factors for system operating strategy development

4.1.5 MAJOR GROWTH AREAS

As the bulk water supplier for SEQ, Seqwater maintains a strong awareness of the distribution of existing and future network demands, in particular new and emerging development corridors throughout the region, and continues to engage with the Service Providers on the most efficient means in servicing these areas. This understanding is developed primarily through our work with our customers on infrastructure planning and operational activities across the region.

Population growth within Brisbane will be largely by infill development (e.g. densification of the Brisbane central business district (CBD)), which will generally be supplied through existing infrastructure; whereas development throughout other parts of the region will be classified by new Major Developments Areas (MDAs) as essentially greenfield estates and will require largely network expansions by SEQ Service Providers.



4.1.6 DEMAND FORECASTS FOR PRICING PURPOSES

Water use by customers that do not form part of the regulated bulk water price across SEQ is not included in the demand forecast for pricing purposes. Those customers include the Toowoomba Regional Council, power stations, irrigators and riparian users, such as for stock and domestic purposes. However, the overall demands are considered for the Interim Operating Strategy, in terms of the adequacy of the bulk water sources (to meet the LOS objectives for water security). These demands are not relevant to WTPs and the network, as they draw water directly from storages and streams.

It is not anticipated that Toowoomba will require water supply from Wivenhoe for the short to medium term under average climatic conditions.

4.2 INTERIM OPERATING STRATEGY

Utilising the above demand projections and existing bulk water supply capability, the network was optimised to assess system operating requirements for each water treatment plant and major bulk transport element.

The bulk water supply treatment and transport capability was based on *Preliminary Asset Capability Statement Treatment and Transport Final Report (March 2014)* and summarised in

Table 8 and Table 9 below. This is the documented system capability assessments of the current portfolio of assets operating under normal operating conditions.

The Interim System Operating Strategy seeks to minimise major capital investment and overall variable operating costs by utilising existing asset capabilities, subject to system constraints (such as adopted minimum flows to achieve water quality objectives).

Parameters used to optimise include:

- variable operating cost of water treatment plants and pump stations. The variable operating costs as at March 2014 have been used for the analysis, on the basis that even though costs will increase, for the purpose of optimising the system the relativity between supply options is not expected to change as a result of updated costs
- 2. minimum and maximum operating constraints of water treatment plants and distribution mains (refer
- 3. Table 8 and Table 9).

This approach for development of the Interim System Operating Strategy is optimal for the business as currently the system is operating within its capability and hence there are no high-value, complicated life cycle based decisions to be made, and the short term the Interim System Operating Strategy is focussed on utilising existing capacity (business as usual).



Location	Water Treatment Plant	Current Maximum Capacity (ML/d)	Current Minimum Capacity (ML/d)	Current Source Allocations (ML/y)	Adopted Maximum Run Hours/day ¹	Adopted Maximum Capacity (ML/d)	Adopted Minimum Capacity (ML/d)	Source Allocations (ML/d)	Variable Operating Cost (\$/ML) 2014 \$	Comments
	Noosa	30.0	6.0	10,000	20	25.0	6.0	25	\$156	-
	Image Flat	23.6	8.6	16,500	20	19.7	8.6	20	\$ 71	-
Sunshine	Woodford	0.0	0.0	0	0	0.0	0.0	0	\$331	Decommissioned
Coast	Ewen Maddock	14.3	0.0	4,315	20	11.9	0.0	12	\$156	-
COast	Banksia Beach	4.5	1.8	1,570	20	3.8	1.8	4	\$228	-
	Caboolture	0.0	0.0	0	0	0.0	0.0	0	\$343	Decommissioned
	Landers Shute	140.0	36.0	36,495	23	134.2	36.0	100	\$ 60	-
Pine Rivers	Petrie	0.0	0.0	0	0	0.0	0.0	0	\$ 95	Decommissioned post FY14-demand transferred to NPI
Brisbane	Mt Crosby	750.0	150.0	278,725	23	718.8	150.0	719	\$ 95	Upgraded to 875 ML/d or 838ML/d (23hr) by 2028
DISDalle	North Pine	160.0	0.0	59,000	23	153.3	0.0	153	\$ 63	Upgraded to 250 ML/d or 238ML/d (23hr) by 2024
Redlands	Capalaba	23.0	5.0	7,640	20	19.2	5.0	19	\$182	WTP to be down- rated to minimise improvement requirements
	North Stradbroke Island	50.0	2.0	19,375	20	41.7	2.0	42	\$ 93	Pumps upgraded post 2014 (38ML/d prior)
	Molendinar	144.0	60.0	54,785	23	138.0	60.0	138	\$ 80	-
Gold	Mudgeeraba	80.0	30.0	29,210	24	80.0	30.0	80	\$141	-
Coast	Gold Coast Desalination Plant	133.0	3.4	46,000	23	125.0	3.4	125	\$745	Hot standby mode
Sub-Total		1,552	303		259	1,470	303	1,436		

Notes: Refer Preliminary Service Specifications and Planning Criteria Report. These will be finalised as part of the WSP (July 2015).

Table 8: Connected water treatment plants system planning parameters in cost optimisation model



Pipeline	Current Maximum Capacity (ML/d)	Current Minimum Capacity (ML/d)	Adopted Maximum Capacity (ML/d)	Variable Operating Cost (2014\$/ML)	Adopted Minimum Flow (ML/d)	Description
NPI Stage 2 from/into Noosa	35	-18	35	9 north	5	Supply to/from Noosa
Eudlo connection	69	-50	69	0	0	Supply from/to Landers Shute Zone
Caloundra St WQFM (+ve is South)	65	-65	65	17 south 65 north	-20	Main line for NPI Stage 1
Petrie Offtake	55	4	55	0	0	Boundary Road supply
North Pine to Narangba	107	-57	200	25	+/-4	North Pine to Narangba
Eastern Pipeline Interconnector (EPI)	22	-22	22	70 west, 20 east	+/-4	-
Southern Regional Water Pipeline (SRWP) Southern Leg	130	-86	130	25 north	+/-25	Molendinar outlet
Southern Regional Water Pipeline (SRWP) Central Leg	130	-86	130	35 north, 50 south	+/-10	Central Leg
Southern Regional Water Pipeline (SRWP) Northern Leg	90	-171	90	0	+/-25	Into Brisbane
Network Integration Pipeline	130	10	130	0	10	Tarrant Drive pump station to Molendinar WTP
Robina Mudgeeraba Mixing	50	0	110	0	0	Mudgeeraba into Robina
Houghton Highway Offtake	6	0	6	0	0	Bracken Ridge to Redcliffe
Nambour Off take	20	4	20	0	4	Mudgeeraba into Robina

 Table 9: Major bulk transport system planning parameters in cost optimisation model



As the operating limits of existing infrastructure is approached in the next decade, full life cycle costs will need to be assessed before making major investment decisions. The Interim System Operating Strategy is premised on including minimum system capability driven capital investment until the major strategic planning initiatives (Water Security Program and Integrated Master Plan) are completed.

For the purpose of this submission an interim 15 year strategy was developed. Further, whole of system integrated planning is being progressed through the development of the Water Security Program (July 2015).

Some of the key outcomes from this optimisation include:

- Petrie WTP to be decommissioned within the next five years with supply being provided via the Northern Pipeline Interconnector
- additional supply sources will be required for Beaudesert and Dayboro within the regulatory price path period.
 - for the Beaudesert WTP a pipeline connection has been assumed in bulk water supply system modelling to ensure there were no other infrastructure implications with this option elsewhere in the bulk water supply system. The capital program however forecasts an upgrade to the Beaudesert WTP as this defers the significantly larger upfront capital costs of the pipeline option. The costs and benefits of these options are being examined in detail as part of the next phase of planning, which may result in a pipeline being the preferred option. The least cost option has been assumed in this submission
 - for the Dayboro WTP, bulk water supply system modelling and the forward capital program both forecast this to remain a standalone WTP. Future options analysis will determine the preferred option for continued supply to the Dayboro area
- North Pine WTP to be upgraded to 250ML/d (24 hour capacity)in FY22 as per current long term planning report
- Mt Crosby WTP to be upgraded to 350ML/d (24 hour capacity) in FY27 as per current long term planning report.

The upgrades to the Mt Crosby and North Pine WTPs will be required to meet peak monthly demands. Given the criticality of WTPs in meeting these projected seasonal demands, it is imperative than Seqwater continue to actively monitor bulk water demands and particularly seasonal impacts to ensure any proposed system augmentation is adequately planned for. For example, Figure 6 below demonstrates that a 10% increase in peak seasonal demands would correspond with a further WTP upgrade being required as early as 2022.



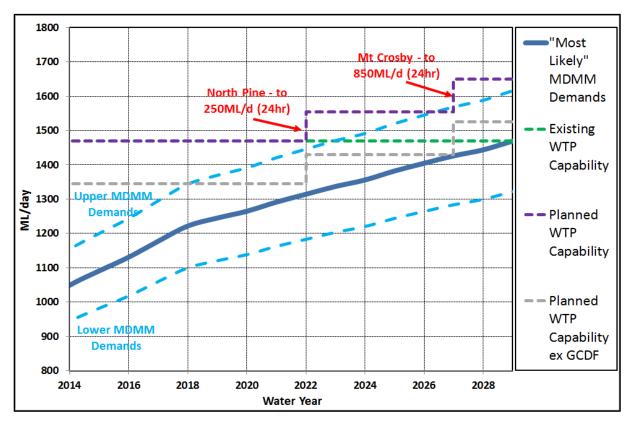


Figure 6: Connected bulk water supply system MDMM demands and WTP capability

Although the "Most Likely" MDMM demands suggest that the North Pine WTP may not be required until possibly 2029, for planning and budgeting purposes 2022 has been utilised as:

- MDMM events do not occur often and require extended hot and dry weather conditions. Peaking Factors have been estimated based on recent consumption patterns and are lower than experienced in the past
- predicting when a MDMM event may occur and to what extent will always rely on future weather patterns, economics and other externalities
- not being able to supply water as required by the end consumer during hot dry summer periods whilst the dams are full is deemed unacceptable and as such some caution is required especially when there can be long periods between MDMM events
- during events such as these there will be reliability issues if each and every plant is being operated at close to 100% capacity for a full month, hence any failure would result in demand shortfall immediately
- demands will be reviewed and dates reviewed as the proposed construction dates are approached, hence if the planning dates were suggested for 2029 demand shortfalls may occur prior to being reviewed.

The adopted approach is therefore to consider the upper demand as the earliest that the project may be required and to undertake ongoing reviews of system performance to



determine when it is prudent to progress actual implementation. Sequater plans on upper demands but does not proceed to invest until actual demands demonstrate need.

4.2.1 WATER SECURITY

As the Referral Notice requires 185 l/p/d residential and 91 l/p/d for non-residential demand, average total demand of 285 l/p/d has been used for this assessment.

The results summarised in the table below show that no major infrastructure investment is required to meet LOS criteria during the 15 year submission period. This will be investigated more fully in the Water Security Program period once the revised LOS requirements have been determined.

LOS Objectives (SOP Revision 5, 18 Dec 2012) ¹ . (based on percentage full for the 12 largest storages)	Current operation (299,750 ML/year– 2014 demands)	Future operation (411,150 ML/year– 2029 demands)
Medium level restrictions will not occur more than once every 25 years on average – 40%	1 in 445	1 in 40
The frequency of triggering drought response infrastructure will be not more than once every 100 years on average – 30%	1 in 35,663	1 in 293
The frequency that the total volume of water stored by all key SEQ bulk water supply system storages will not decline to 10 per cent of their combined water storage capacity more than once every 1,000 years, on average	NA	NA
The total volume of water stored by all key SEQ bulk water supply system storages must not be permitted to reach 5 per cent of the combined total water storage capacity of these storages	NA	NA

Note: 1 - the LOS objectives and requirements in the table above were current at the time of submission preparation. It should be noted that these were superseded in mid-July 2014 with the making of a new regulation, thereby superseding these requirements.

2 - NA means the simulation did not return any instance where the relevant trigger or storage levels were reached

Table 10: Compliance with long term criteria (desired Level of Service Objectives)

4.2.2 WESTERN CORRIDOR RECYCLED WATER SCHEME (WCRWS)

Under the current operating rules in the SOP, once volume of water stored by the key bulk water storages falls below 40%, the supply of Purified Recycled Water from the WCRWS:



"shall be maximised, subject to appropriate approvals from the Office of the Water Supply Regulator and operational constraints"¹

In December 2010, a decision was made by the State Government to place the Gibson Island Advanced Water Treatment Plant (AWTP) and part of Bundamba AWTP into standby and in June 2013, a decision was made by the State Government to decommission the entire WCRWS into care and maintenance mode (letter from shareholding Ministers to Seqwater, 28 June 2013), provided all assets are maintained to preserve the value and ensure readiness for restart at capacity when the combined level of the key water storages reach 40%.

The estimated probability of the WCRWS being required in response to the key bulk water storages reaching 40% in the next 10 years is currently around 1%. For the purposes of the Interim Operating Strategy, it has been assumed that the scheme will be recommissioned if required to achieve water security outcomes in line with the current State Government policy. For clarity, the expenditure forecasts in this submission assume that the WCRWS will remain in care and maintenance mode until FY28.

4.2.3 GOLD COAST DESALINATION PLANT (GCDP)

The GCDP is currently in "hot standby" mode, ready to increase production if and when required to address water quality issues in the central systems and more broadly in the event that key storages reach 60%, as per Government direction (refer letter from shareholding Ministers to Seqwater, 28 June 2013). The plant will be utilised as required over time to meet demand growth and as required to meet emergent situations such as during the floods in 2013, initially driven by summer demand peaks and thereafter increasingly as a baseload supply during droughts. The critical nature of the contingent supply capability of the GCDP to the supply system was demonstrated during the "Australia Day" floods of 2013 that caused the shutdown of the two Mt Crosby WTPs due to raw water turbidity. The rapid deployment of the GCDP to capacity helped prevent parts of SEQ from running out of drinking water.

In the 15 year Interim Operating Strategy the GCDP is scheduled to continue to be operated in accordance with the current "hot standby" production mode. The projected costs assume that (except where required to supplement Mean Day Max Month as set out below) Hot Standby operations will continue at two production runs of 12 ML/d per week, for the remainder of the period. However commencing in FY20, the GCDP will be required to support Mean Day Max Month demand levels. Forecasts suggest that by FY28 the GCDP will run at 47ML/d (compared to current Hot Standby production of 3.4ML/d and FY24 of 11.3ML/d) for approximately two months per year if hot and dry weather conditions occur.

¹ System Operating Plan (SOP; Revision 5), Department of Energy and Water Supply



The additional estimated operation requirements for peaks (specifically MDMM) are demonstrated in

Table 11, however these are probability based and will only occur for short periods if they occur at all. As such operating expenditure for this plant and all other plants has been based on fair weather operation or average operating conditions. When there are supply issues elsewhere in the system (such as raw water events, drought impacts) more expensive operating modes will be required to maintain supply including operation of the GCDP. As these events are inherently exceptional and unpredictable in terms of duration and extent of production required, these requirements are not included in projected costs. It should be noted that Seqwater expects to monitor actual supplementary production requirements, with a view to ensuring that any exceptional costs incurred by the need to run the GCDP will be recovered as appropriate.

Based on current storage levels, the GCDP has approximately a 15% probability of being required during a drought in the next 15 years, however as this submission is being based on fair weather and a drought may not occur in the next 15 years this additional operating expense has not been included (no contingency costs included for periodic weather events).

4.2.4 SYSTEM OPERATING SUMMARY

After considering all of the above it is expected that existing infrastructure will be required to operate in the following manner over the next 15 years as summarised in

Table 11, Table 12 and Table 13.



Water Treatment	Average Day Results				Commente		MDMM	Results		Comments	
Plant (ML/day)	2014	2019	2024	2029	Comments	2014	2019	2024	2029	Comments	
Noosa	6.0	9.3	6.0	6.0	Generally run at minimum due to unit cost - required to supply in 2019 to assist in minimum flow volumes in NPI	6.0	17.5	17.4	6.0	Run at minimum due to unit cost - required to supply in 2019 to 2024 assist in minimum flow volumes in NPI	
Image Flat	11.2	14.4	16.1	17.3	Generally run at minimum due to preferential supply from Landers Shute	17.2	19.7	19.7	19.7	Generally run at minimum due to unit cost	
Ewen Maddock	0.0	0.0	0.0	0.0	Not required under fair weather planning	0.0	0.0	0.0	0.0	Not required under fair weather	
Banksia Beach	1.8	1.8	1.8	1.8	Run at minimum due to unit cost	1.8	1.8	1.8	1.8	Run at minimum due to unit cost	
Landers Shute	89.7	100.0	79.2	91.2	Generally run near maximum due to unit cost - some changes to assist in minimum flow volumes in NPI	128.3	134.2	107.7	134.2	Generally run near maximum due to unit cost - some changes to assist in minimum flow volumes in NPI	
Petrie	17.4	0.0	0.0	0.0	Decommissioned post 2014	24.4	0.0	0.0	0.0	Decommissioned post 2014	
Mt Crosby	385.9	452.2	516.8	581.3	Base load increases as population increases	477.9	657.8	710.8	757.9	Peak loading increases as population increases	
North Pine	110.0	153.3	161.6	161.6	Generally run at maximum due to unit cost	153.3	153.3	222.5	238.0	Generally run at maximum due to low unit cost	
Capalaba	5.0	5.0	5.0	5.0	Generally run at minimum due to unit cost	5.0	5.0	5.0	5.0	Generally run at minimum due to high unit cost	
North Stradbroke Island	27.1	33.0	35.7	38.2	Generally run at maximum due to unit cost	37.9	41.7	41.7	41.7	Generally run at maximum due to low unit cost	
Molendinar	91.9	112.6	138.0	138.0	Run at maximum due to unit cost	132.0	138.0	138.0	138.0	Run at maximum due to low unit cost	
Mudgeeraba	48.8	57.5	62.3	67.3	-	61.6	72.7	80.0	80.0	-	
GCDP	3.4	3.4	3.4	3.4	Generally run at minimum due to unit cost	3.4	3.4	11.3	46.9	Expected to assist during peak summer demands if/when required	
Beaudesert	2.7	0.0	0.0	0.0	Decommissioned post 2014	4.1	0.0	0.0	0.0	Decommissioned post 2014	
Totals	801	942	1,026	1,111		1,049	1,245	1,356	1,469		

Note: The above table assumes that Beaudesert WTP is decommissioned in 2017 and includes network impacts due to supply from the network. For capital expenditure estimations in Chapter 7 the lower capital cost solution of upgrading and continuing operation of the WTP has been utilised until further investigation confirms either option. This has minimal impact on the overall operational costs of the system as with either option water still has to be treated and pumped to Beaudesert.

Table 11: Connected water treatment plants system operating outcomes from cost optimisation model



The standalone plants cannot be optimised within a bulk network environment as above, however the following production requirements have been estimated based on demands for capability and option assessments by APDD.

Water Treatment	A	verage Day	y Demand	S	M	DMM Dem	ands = 1.5 x	AD
Plant (ML/day)	2014	2019	2024	2029	2014	2019	2024	2029
Amity Point WTP	0.19	0.23	0.25	0.27	0.29	0.35	0.38	0.4
Dunwich WTP	0.34	0.41	0.45	0.47	0.51	0.62	0.67	0.71
Point Lookout WTP	0.54	0.63	0.67	0.7	0.81	0.94	1	1.05
Dayboro WTP	0.55	0.69	0.78	0.82	0.82	1.03	1.17	1.23
Kenilworth WTP	0.19	0.25	0.27	0.28	0.29	0.38	0.4	0.42
Kilcoy WTP	1.81	2.2	2.5	3.39	2.72	3.29	3.75	5.08
Esk/Toogoolawah WTP	0.69	0.8	0.89	0.91	1.03	1.2	1.34	1.36
Linville WTP	0.04	0.04	0.04	0.04	0.05	0.06	0.07	0.07
Somerset Town (at Dam) WTP	0.06	0.07	0.08	0.07	0.08	0.11	0.11	0.11
Lowood WTP	8.40	11.08	13.44	15.46	12.61	16.61	20.16	23.18
Jimna WTP	0.02	0.02	0.02	0.02	0.04	0.03	0.03	0.03
Kooralbyn WTP	0.48	0.59	0.75	0.87	0.71	0.89	1.12	1.31
Canungra WTP	0.28	0.45	0.61	0.74	0.42	0.68	0.92	1.11
Rathdowney WTP	0.05	0.05	0.05	0.05	0.08	0.07	0.07	0.07
Boonah-Kalbar WTP	1.5	1.85	2.39	2.89	2.25	2.77	3.58	4.33
Beaudesert WTP	2.7	4.3	6.0	7.9	4.1	6.5	9.0	11.9

Note: Although Beaudesert WTP has been assumed to be decommissioned in 2017 for network analysis, separate figures have been shown here to indicate WTP operations in the event that the WTP upgrade option occurs as assumed in the capital program forecast so as to minimise capital expenditure and likely maximise value.

Table 12: Standalone WTP operating assessment



Pipeline Element	A	verage D	ay Resu	ts		MDMM	Results		
(ML/day)	2014	2019	2024	2029	2014	2019	2024	2029	Comments
Noosa Offtake	8.8	8.0	12.1	13.1	15	7	19	21	NFD is +VE
Landers North in NPI	12.8	12.0	16.1	17.1	19	13	28	31	NFD is +VE
Landers Shute to NPI	32.9	29.2	-2.0	-0.8	49	35	15	5	Landers to NPI is +VE
Caloundra Street WQMF	-20.0	-17.2	18.2	17.9	-30	-22	13	25	NFD is +VE
South of Woodford in NPI	-18.6	-15.5	20.0	20.0	-28	-20	16	28	NFD is +VE
Supply into Petrie zone	0.0	22.0	23.5	24.5	0	31	33	34	
NPI to Nth Pine WTP	9.4	40.0	80.4	85.2	12	58	101	120	NFD is +VE
Nth Pine to Aspley Supply Main	71.5	79.1	44.3	36.7	100	46	56	61	
Ipswich Offtakes	4.0	26.2	34.0	43.4	25	34	44	56	Via SRWP offtakes
Eastern Pipeline Interconnector	-4.0	-4.0	-4.0	-4.0	-4	-8	-11	-15	WFD is +VE
Molendinar Pump Station	-25.0	-25.0	25.0	25.0	25	-25	-25	-25	NFD is +VE
Chambers Flat PS & WQMF	-29.0	-30.0	-19.1	-34.0	-23	-50	-60	-51	NFD is +VE
Swanbank Pump Station	-36.0	-42.5	-38.2	-60.3	-32	-67	-86	-86	NFD is +VE
Bundamba Pump Station	-40.0	-68.8	-72.3	-103.7	-57	-101	-130	-142	NFD is +VE
Network Pipeline into Molendinar WTP	10.0	10.0	10.0	10.0	10	10	25	48	-
Network Pipeline Mixing to Robina Reservoir	16.7	18.8	20.0	21.2	20	22	25	20	-

EFD: Eastern Flow Direction, NFD: Northern Flow Direction, SFD: Southern Flow Direction, WFD: Western Flow Direction, WQMF: Water Quality Management Facility

Table 13: Major bulk transport system operating outcomes in cost optimisation model

4.2.5 OPERATIONAL DECISION MAKING

The Interim Operating Strategy has been developed for use as a planning tool, and is a point-in-time forecast of the operational requirements for the bulk water system.

Day-to-day decision making about operation of this system occurs through a separate, but related regime.

An Annual Operating Strategy (required under the System Operating Plan) is established and reviewed every six months and demonstrates how Seqwater intends to meet the forecast water demands for the next 12 months having regard to an appropriate balance



between security and cost efficiency outcomes. The latest version is the Annual Operations Plan, May 2014 (refer Appendix B).

The Annual Operating Strategy is then taken into consideration by Operations – Treated Water when developing the Monthly Operating Supply Strategy (MOSS) which takes into account current demand variations such as higher summer demands and lower winter demands, current capability of water treatment plants due to maintenance activities and any other known variances. Each month a MOSS is developed based on service provider demand requirements and a Supply Information Notice (SIN) is developed for each service provider advising how and where water will be delivered from for the upcoming month.

As the MOSS and SIN are based on demand predictions and system capability the supply situation can change during the month due to weather changes. System capability can also change due to mechanical breakdowns or raw water quality variations. Operation of the system is monitored on a weekly basis to assess actual operation of the scheme compared to that determined by the MOSS and reasons for any changes recorded and assessed when determining the following MOSS.

The current process for determining how the system is operated on a daily basis (whilst meeting longer term objectives) is summarised in Figure 7.



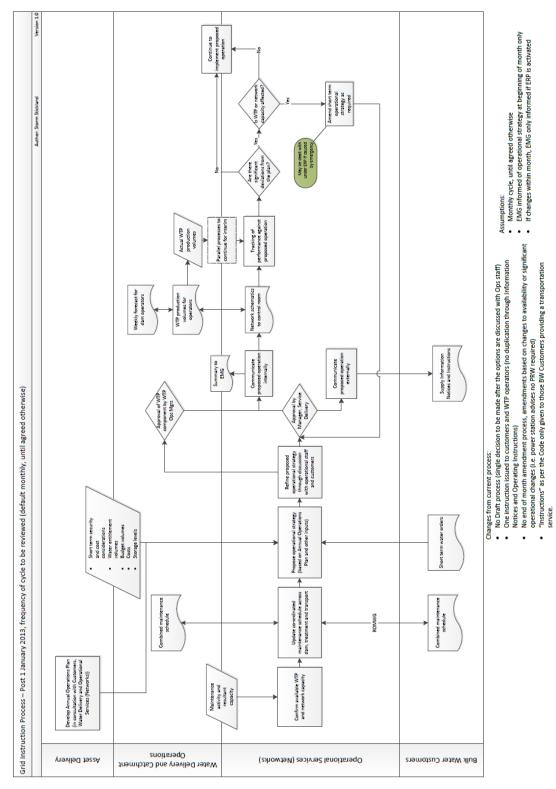


Figure 7: Operation process



CHAPTER 5 DELIVERY

The purpose of this chapter is twofold:

- to outline Seqwater's processes and responsibilities for performing long and medium-term planning, and how this informs short-term asset management
- to outline Seqwater's operations delivery processes for the operational Groups (ie, those directly responsible for operation or development of assets).

5.1 ASSET MANAGEMENT AND PLANNING PROCESSES

5.1.1 CURRENT SITUATION

Asset management

Significant structural reform has occurred in the South East Queensland water industry in the past nine years. Following the most recent merger of Seqwater, LinkWater and the South East Queensland Water Grid Manager in January 2013, by necessity, Seqwater has developed interim systems and is standardising its approach to planning for all asset classes and asset management more broadly, including capital works delivery. The ongoing initiatives are under the banner of a business wide Asset Management System (AMS) the delivery of which is outlined in the Strategic Asset Management Plan (SAMP) which will incorporate the interim Asset Management Framework (AMF). The AMF is outlined in Figure 8, and displays the key asset management deliverables aligned against the different phases of Seqwater's asset management cycle. Refinement and implementation of these activities are a work in progress and are planned for full implemented by June 2015. Once completed, the AMS (and manual) will encompass detailed planning processes, asset creation guidance and workflows. The strategies, assumptions and processes underpinning this AMS will be periodically reviewed for suitability, efficiency and prudency.

Until the new processes develop to maturity, Seqwater is undertaking long term planning under the interim AMF with the main activity being the WSP. The WSP will draw on work from both previously published entity-specific Water Supply Asset Plans (WSAPs), and a combined WSAP published by Seqwater in October 2013. This process is described more broadly in Section 5.1.2. Production of various versions of the WSP will be a cyclic activity for the organisation with a frequency yet to be determined; however it is worthy to note that update frequency may not be regular as this will depend on various drivers and how they play out over the coming years and decades. For example, a significant and extended drought or changes to government policy may trigger more frequent reviews to ensure investment is planned and staged appropriately. The current WSP cycle will culminate in a report and direction that is broader and more encompassing than anything



previously delivered by the individual entities. The major components of the WSP are legislatively driven and are described in more detail later in this chapter. The WSP will be published in the middle of CY15 (depending on DEWS processes). In summary, the WSP will outline, inter alia, the current and future requirements of the water supply infrastructure to meet customer and consumer demand in the context of various legislative requirements.

Medium term asset planning and short term asset management are also continuing under the interim AMF and the relationship between the AMF and the major planning components is outlined in Figure 10. This diagram represents an 'as is' state of the major structural elements and relationships, with some minor omissions, and has been included in this submission to clearly show how the various components of planning fit within the interim AMF.

The major components of the medium term planning activities are the 30 year Asset Portfolio Master Plan (APMP), the Asset Management Plans (AMPs) and supporting documents (including Asset Capability Statements), and the Long Term Planning Reports (LTPRs) with associated annual and five year investment plans. The current version of the 30 year APMP is a 'draft 15 year APMP as submitted for this pricing submission with the major elements and categories of expenditure described in detail in Chapter 7. In summary, the medium term plans will define the current needs of the system and how and when maintenance, upgrade and augmentation will occur within the context of the long term WSP and its major elements.

Long Term Planning reports identify the gaps between required system performance and current system capability, document options to resolve the asset capability gaps and outline asset improvements necessary to meet future demands. Asset Management Plans have a 10 to 30 year horizon for financial planning purposes. They identify renewals activities required to deliver optimum asset reliability and to maintain the original asset capability. This is done through the analysis of current and forecast asset condition, expected service life, reliability, maintenance, operations and whole-of-life asset cost.;

Where asset maintenance is not the most economic or feasible option of meeting asset condition or performance requirements to a satisfactory level over the required service life, options that have been considered include refurbishment, asset replacement or upgrade.

Investment recommendations resulting from Long Term Planning reports and Asset Management Plans are consolidated and optimised, to deliver a complete investment program as part of the Asset Portfolio Master Plan.

In terms of the second deliverable for this chapter, the Operations Delivery processes, these are outlined after the Planning delivery section detailing the management



philosophy for resourcing and maintenance strategies, responsibilities and 'in practice' procedures for Seqwater's operational Groups (ie, those directly responsible for operation or development of assets). The resourcing strategy for the MWAs and large contestable supply contract is also outlined. This chapter concludes with a brief description of the 'as is' state of Investment Governance within Seqwater.

Maintenance

Seqwater is likewise standardising its approach to maintenance activities which are being integrated through the development of the business wide AMS. Current Asset maintenance responsibility and delivery activities are summarised in Table 14.

Overall asset maintenance requirements identified through the Asset Management Plans are translated into discrete programs of work through Tactical Maintenance Plans. These Tactical Maintenance plans also consider asset replacement/ refurbishment schedules, current asset reliability, service delivery options and operational resourcing constraints to optimise the scheduling of maintenance activities. Whilst an Asset Management Plan may define the maintenance approach for a particular asset (eg. run to failure, periodic or condition-based maintenance according to OEM specifications, etc), it is the Tactical Maintenance plan that defines the specific frequency, maintenance schedule and delivery mechanism.

Function	Responsibility- Scope	Responsibility- Delivery	Delivery method
Conventional	WTPs		
Scheduled	Asset Capability &	Asset	Asset Maintenance supervision
(Infrastructure	Sustainability	Maintenance	of internal resources and
Maintenance)			M&MW Panel Services-
			percentage determined by OTW
Planned	Asset Maintenance with	Asset	Asset Maintenance supervision
	Asset Capability &	Maintenance	of internal resources and
	Sustainability (engineering		M&MW Panel Services-
	and technical guidance)		percentage determined by OTW
Reactive	Asset Maintenance with	Asset	Asset Maintenance supervision
	Asset Capability &	Maintenance	of internal resources and
	Sustainability (engineering		M&MW Panel Services-
	and technical guidance)		percentage determined by OTW
Scheduled	Asset Capability &	Onsite	Onsite Operational Team
(Operational	Sustainability	Operational	
Maintenance)		Team	
Supply System	n (pipelines)		



Function	Responsibility- Scope	Responsibility- Delivery	Delivery method
Scheduled	Asset Capability &	Operational &	Primarily Thiess with some
(Infrastructure	Sustainability (built on ex	Contractual	items (SCADA, CP, easements,
Maintenance)	LinkWater RCM	Performance	facilities) being delivered via
	Methodology)		Catchment Services and Asset
			Maintenance
Planned	Operational & Contractual	Operational &	Primarily Thiess with some out
	Performance with Asset	Contractual	of scope items being delivered
	Capability & Sustainability	Performance	via Catchment Services and
	(engineering and technical guidance)		Asset Maintenance
Reactive	Operational & Contractual	Operational &	Primarily Thiess with some out
	Performance with Asset	Contractual	of scope items being delivered
	Capability & Sustainability	Performance	via Catchment Services and
	(engineering and technical		Asset Maintenance
	guidance)		
Scheduled	Asset Capability &	Operational &	Primarily Thiess with some out
(Operational	Sustainability (built on ex	Contractual	of scope items being delivered
Maintenance)	LinkWater RCM	Performance	via Catchment Services and
	Methodology)		Asset Maintenance
Water Storage	S		
Scheduled	Asset Capability &	Asset	Asset Maintenance supervision
(Infrastructure	Sustainability	Maintenance	of internal resources and
Maintenance)			M&MW Panel Services
Planned	Asset Maintenance with	Asset	Asset Maintenance supervision
	Asset Capability &	Maintenance	of internal resources and
	Sustainability (engineering		M&MW Panel Services
	and technical guidance)		
Reactive	Asset Maintenance with	Asset	Asset Maintenance supervision
	Asset Capability &	Maintenance	of internal resources and
	Sustainability (engineering		M&MW Panel Services
	and technical guidance)		
Scheduled	Asset Capability &	Onsite	Onsite Operational Team
(Operational	Sustainability	Operational	
Maintenance)		Team	
Natural Assets	3	1	
Scheduled	Asset Capability &	Catchment	Catchment Services supervision
(Infrastructure	Sustainability	Services	of internal resources and
Maintenance)			Maintenance Panel Services



Function	Responsibility- Scope	Responsibility- Delivery	Delivery method					
Planned	Catchment Services with Asset Capability & Sustainability (engineering and technical guidance)	Catchment Services	Catchment Services supervision of internal resources and Maintenance Panel Services					
Reactive	Asset Maintenance with Asset Capability & Sustainability (engineering and technical guidance)	Catchment Services	Catchment Services supervision of internal resources and Maintenance Panel Services					
Manufactured All maintenance activities	Water Treatments Assets - Gold Coast Desalination Plant Seqwater maintains an open-book Alliance contract with the original constructor Veolia for delivery of management, operations and maintenance of the GCDP Seqwater retain review and approval of works with external auditors engaged to							
Manufactured All maintenance activities	review costs and claims. Nater Treatments Assets - Western Corridor Recycled Water Scheme Seqwater maintains an open-book O&M service contract with Veolia for delivery of management, operations and maintenance of the WCRWS. Maintenance schedules are determined by Veolia. Seqwater retain review and approval of works and external auditors are engaged to review costs and claims.							

Table 14: Asset maintenance responsibility and delivery

New statutory and institutional arrangements

With the closure of the Queensland Water Commission in January 2013, the regional water security planning functions of the Commission are progressively being transitioned to Seqwater. The *Water Act 2000* places a legislated obligation on Seqwater to undertake planning to ensure that it can meet demand for safe, secure, and reliable bulk water supply in SEQ. This is reflected in the Statement of Obligations which states that:

"Seqwater must plan and manage water in a total water cycle framework including its water supply catchments and Seqwater is to focus on the catchment, storage, treatment, recycled water and bulk transport component of the water cycle, to achieve best social, environmental and economic outcomes, in partnership with land owners and affected parties".

The *Water Act 2000* requires Seqwater to prepare a Water Security Program (WSP) one year after the regulation prescribing the desired level of service objectives² (LOS) is made

 $^{^2}$ The desired LOS objectives are a set of statements which outline the expected long term performance of a water supply system and commonly include statements about the frequency, severity and duration of restrictions. These are discussed in detail in Chapter 3.



by the Minister. Based on the current timelines, the regulation is likely to be made in early July 2014 such that the draft Seqwater WSP is likely to be submitted to the Department of Energy and Water Supply (DEWS) by July 2015.

The *Water Act 2000*, is very specific in relation to the content of the WSP, and requires Seqwater to present its arrangements, measures or strategies for:

- operating our assets for supplying water services to the region
- addressing future infrastructure needs (including building new or augmenting existing infrastructure)
- managing the infrastructure relevant to the operations
- managing demand for water
- responding to drought conditions.

Seqwater has commenced work in preparation for meeting these new obligations.

5.1.2 CONSOLIDATION POST-MERGER

Prior to the 2013 merger, Seqwater, LinkWater and the SEQ Water Grid Manager took varying approaches to asset management. However, both Seqwater and LinkWater produced a Water Supply Asset Plan (WSAP) in 2012 consistent with the obligations of *Schedule 5(2)* of the *South East Queensland System Operating Plan*. The purpose of the WSAP was and is to demonstrate the plans, programs of work and associated budgets, processes and procedures in place to ensure that the region's water supply needs can be met now and into the future, efficiently and cost-effectively. In October 2013, the merged Seqwater produced a combined WSAP.

The requirements of the SOP and therefore the requirement for a WSAP will be superseded by the Regulation and the Water Security Program. It is expected that the content of the WSAP will still provide a solid basis for future planning activities. Much of the asset management, planning and delivery material presented here is also summarised in the WSAP.

Since 2013 Seqwater has embarked on a program of aligning and integrating all operational and project activities. Critical amongst these activities has been the merger of the asset management systems.

Following the merger of Bulk Water entities in 2013, Seqwater commenced work on the development of an interim AMF which reflected the new structure and functions of the merged Seqwater entity.



Seqwater has been working towards full implementation of the AMF presented in Figure 8 below. The five phases of the AMF are:

- direction and strategic alignment
- system master planning and investment profile
- validation, planning and investment commitment
- implementation
- operations and management in use.

The AMF is being implemented through the development of the AMS to ensure that, with respect to asset investment and decision making:

- key business process improvements are guided by leading practice Asset Management Standards (International Infrastructure Management Manual, PAS 55 and ISO 55001)
- key business process documentation is standardised and guided by leading practice standards
- the role of input documentation is clearly articulated
- the interrelationship/s between processes, responsibilities and the deliverables are aligned with leading practice Asset Management Standards
- all these are institutionalised within the new organisational structure.

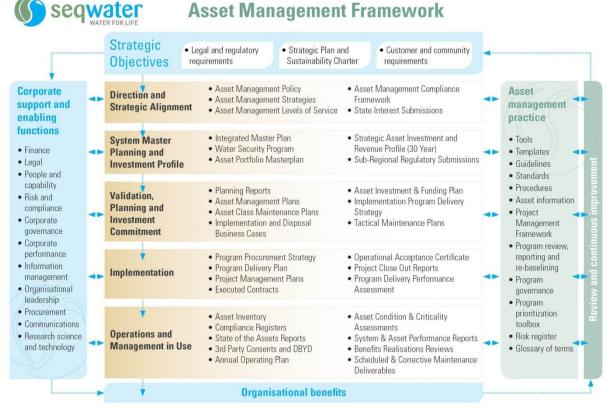


Figure 8: Asset Management Framework



Seqwater will continue to develop and improve its asset management practices. Further discussion on this is provided in the Future Arrangements section below.

Whilst "phasing in" a standardised approach for investment planning, the organisation is simultaneously reviewing its future practice and retrospectively reviewing and consolidating the outputs of previous practices to develop an accurate "baseline" of its asset portfolio and investment program. This is particularly significant given the long lifecycle of Seqwater's assets, long lead times for completion of relevant planning studies and the integration required following the merger of entities.

To establish this baseline asset portfolio, Seqwater has generated preliminary asset capability statements for both built and natural assets, which inform both planning and optimisation studies. The Preliminary Capability Statement studies were undertaken to provide a schedule of information about the performance of the various assets. Asset performance is assessed against the capability to meet certain service criteria. The service criteria and performance measures are embodied in the level of service standards. The overall capability assessment process has 2 stages, as illustrated below.

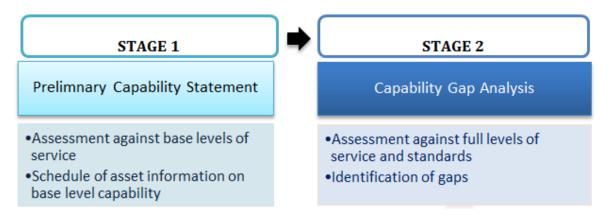


Figure 9: Capability assessment process

 Stage 1 (this study): The first stage involves the identification of the properties of an asset or key asset information by the assessment of the plant's capability to meet base levels of service (LOS) pertaining to reliability, quality, quantity, and vulnerability of water supply.

Examples of base levels of service used in this study are water quality standards, filter performance requirements and legislative requirements. The assessment was mainly focused on capacity and water quality requirements available at the time of study.

 Stage 2: The second stage is the referred to as the Asset Capability Gap Analysis stage. This stage, due for completion in Q4 2014/15, involves a more comprehensive assessment of an assets capability to meet full service and performance requirements.



A capability gap analysis is the key deliverable of this stage. Detailed and more comprehensive service standards are currently under development.

The capability assessment is complimentary to an asset condition assessment which focuses on the structural integrity of assets. The gaps identified lead to the identification of the most efficient options and costs which feed into the investment plan.

To generate a baseline asset investment plan, outputs from previous planning processes (ie. pre-merger processes) have been reviewed against the current system operating strategy and consolidated into a single asset investment program. Individual investment items have been aligned where benefits exist to do so and rationalised to eliminate duplication and conflicts where identified.

The resulting forward projections of capital investments across all infrastructure assets have subsequently been prioritised based on a range of criteria including delivery risks and constraints to provide a robust asset investment program.

5.1.3 PLANNING

Capital planning occurs for all assets groups within Seqwater:

- natural assets (catchments)
- water storage (dams and weirs)
- water treatment
- water transport
- manufactured water assets
- recreation
- irrigation (excluded from this review)
- monitoring and control systems (including inter-asset communications)
- non-infrastructure (information technology, fleet and property).

All capital investments must be prudent and efficient. All capital investments deliver on at least one of four key drivers (growth, improvements, compliance or renewals).

The AMF includes a phase of validation, planning and investment commitment. A critical component of this phase of asset management is the APMP. Seqwater has produced an APMP each year since 2011 with the scope and purpose evolving over time. These iterations of the APMP reflect the various stages in Seqwater's development as a business in gaining a greater understanding of our assets, their capability, performance and condition as well as understanding their risk profiles. For example the 2012 APMP focussed on rationalisation opportunities of water treatment plants to minimise risk and increase operational efficiency by using the investments in the connected infrastructure where possible.



The 2014 APMP is due for approval in mid-2014. This APMP will contain the first complete review and integration of long term infrastructure capital forecasting for the SEQ bulk water supply system. It will:

- provide a description of the long term master plan for investment in Seqwater's Asset groups identified above
- detail the forecast 15 Year Asset Investment Program
- provide context and strategic justification for the proposed investments.

The APMP will build on Seqwater's current platform of strategies, frameworks, policies and procedures. It will describe the projects required to maintain regional bulk water service requirements as identified in the Bulk Water Supply system Interim Operating Strategy 2014-2029, based on the current regulatory and contractual framework and asset capability.

The projects identified in the APMP and the Asset Investment Program are variously supported by planning reports, options analyses, designs and business cases approved in accordance with delegation levels and consistent with the phase of project development.

The APMP:

- integrates with the existing regional water planning framework including regional water security planning as described in the Water Supply Asset Plan
- is a key component of Seqwater's Asset Management Framework
- builds on planning work conducted by Seqwater and the previous entities of LinkWater, SEQ Water Grid Manager and the Queensland Water Commission
- is based on the current:
 - asset knowledge base
 - regulatory environment
 - best estimates of future demand
 - Seqwater risk profile.
- is a dynamic document, updated at controlled stages using the latest and best available information and then approved in accordance with standard governance protocols.

Figure 10 below shows the relationship of the APMP to other critical planning and asset management activities.



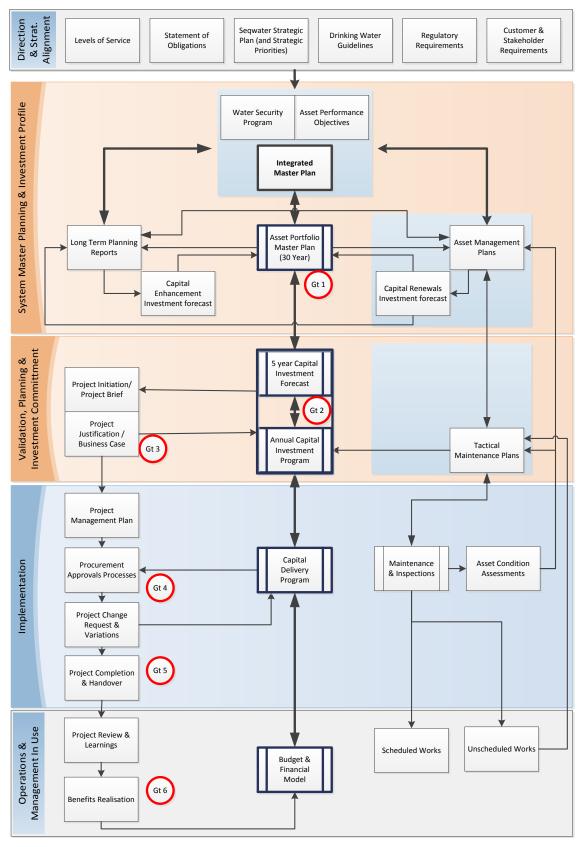


Figure 10: Asset Portfolio Master Plan- relationships to planning and asset management



Figure 11 shows some of the complexity, inter-relationships and cyclic nature of asset planning for Seqwater. This continuous cycle of planning can be seen by such relationships and feedback loops as follows:

- capability assessments and condition reports are a critical input into long term planning reports and asset management plans
- long term planning reports (LTPRs) must be consistent with the System Operating Strategy. Similarly, the System Operating Strategy requires input from the LTPRs
- the System Operating Strategy in turn must consider demand forecasts and service specifications consistent with regulatory, contractual and strategic drivers.

A suite of critical planning documents will be required to inform the water security program, which in turn will drive the system operating strategy and also be informed by it. These critical documents include the long term planning reports, APMP and AMPs.

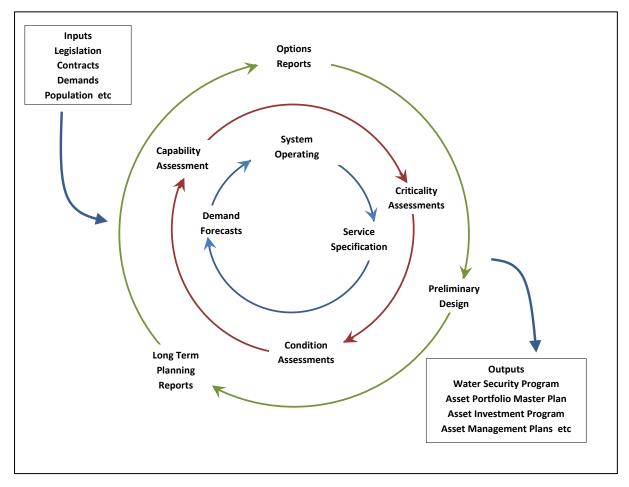


Figure 11: Planning cycles and relationships

Table 15 shows the purpose, responsibility and status for a number of the current asset management deliverables.



Deliverable	Purpose	Responsibility	Status/Notes
Water Security Program	 Water security requirements Planning Criteria Supply and Demand Forecasting Integrated Master Plan (Bulk water options portfolio and System Operations Plan) Infrastructure Management Plan Demand Management and Drought Response Plan 	Water Supply Planning (WSSP)	 In progress Completion July 2015
Asset Management System	Enhance the current asset management practices and provide a clear "line of sight" from the Strategic Plan's objectives to management of assets under a consistent framework	Policy, Strategy, Research & Innovation (WSSP)	 Subject to the Executive and Board approval, AMS development by mid CY15 to incorporate interim AMF, full implementation within subsequent three years. Delivery program detailed in SAMP.
Infrastructure Investment Program	Define infrastructure investments required to deliver service standard over the long term	Asset Planning (APDD)	 Developed in 2013 The 2014 update is currently in development
Long Term Planning Reports	Defines asset requirements to meet projected service levels. Gaps are defined as NEEDS and solutions options to address those NEEDS are assessed. To develop an optimized investment program for asset enhancements Closely related to Operating Strategy.	Asset Planning (APDD)	 Developed for water treatment assets Long Term Planning Reports for water transport and natural assets under development To be updated five yearly
Asset Management Plans	Define Needs and investment required to maintain asset capability and reliability	Asset Capability & Sustainability (APDD)	 Developed for all assets Refreshed annually with biannual review
Asset Capability Statement	Provides critical asset knowledge and forms the basis for making optimized planning decisions	Asset Capability & Sustainability (APDD)	 Preliminary statements developed for Built and Natural Assets
Asset Class Plans	Defines the asset management standards for a specific class of assets. Provides maintenance requirements for classes of assets as an input into Asset Management Plans	Asset Capability & Sustainability (APDD)	 Significant asset classes currently exist and planned for cyclical review Reviews will then occur on an as-needs basis or as determined by technology advances



Deliverable	Purpose	Responsibility	Status/Notes
			and service needs
Business Cases	Develop justification, scope, business needs and financial analysis and detailed recommendations for individual projects	Asset Planning, Asset Capability & Sustainability (APDD)	• Developed for upcoming investments following budget approval and prior to commencement
Asset Portfolio Master Plan and Asset Investment Program	Describe the long term master plan for investment in Seqwater's asset groups including the forecast Asset Investment Program. Provide context and strategic justification for the proposed investments.	Asset Planning (APDD)	 Current version in preparation First time an extended investment program has been prepared
Project Management Plans	Define specific project delivery approach and scope prior to the contract award.	Project Delivery (APDD)	 Developed for approved projects prior to their execution

Table 15: Purpose, responsibility and status of asset management deliverables

5.1.4 FUTURE ARRANGEMENTS

Implementation of the interim AMF commenced in mid-2013. As part of ongoing integration and improvement processes as outlined above, Seqwater is developing an Asset Management System (AMS) under a Strategic Asset Management Plan (SAMP) informed by leading practice standards, primarily guided by the ISO 55001 international standard for asset management, released in January 2014.

Seqwater's AMS will ensure ongoing continuous improvement of business process integration, planning and management of natural and built asset investments consistent with strategic organisation objectives. It also seeks to better leverage investment in Seqwater's research program to pursue the most efficient ways to address compliance risks in service delivery across source, store and supply functions as well as ensuring reliability and security of supply objectives are met.

While still in development, Figure 12 below outlines the relationship between key AMS elements, processes and documentation. Based on the ISO 55001 requirements, the primary AMS elements are comprised of:

- Seqwater's Asset Management Policy Statement
- Strategic Asset Management Plan (SAMP)
- Functional Asset Management plans (AMPs)
- Asset Management Objectives.

The AMS has been subdivided into the strategic and tactical/operational processes. The latter infrastructure management processes are marked as the APDD Capability below.



The remaining strategic (business management) processes include support (e.g. research), performance evaluation and improvement processes.

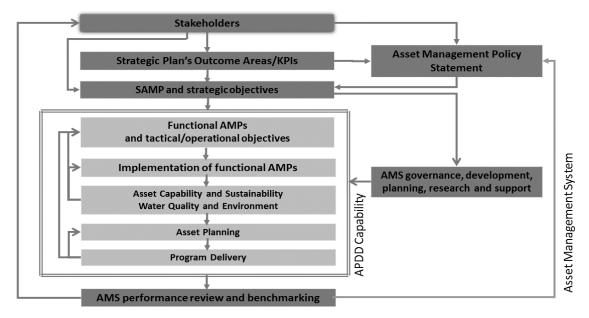


Figure 12: Relationship between the key AMS elements

Figure 13 depicts the planned 'end state' and the relationship between the AMS and other Seqwater management systems and their respective policy statements. The AMS is expected to be completed by mid-CY15.

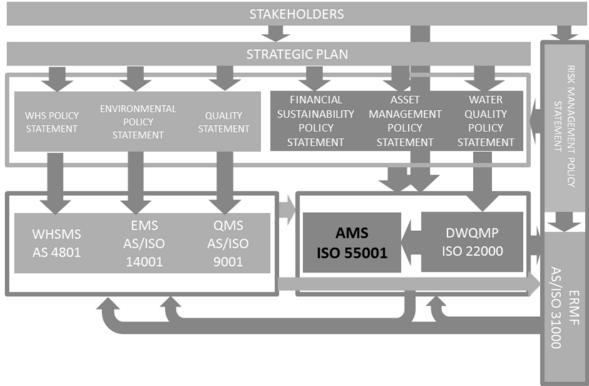


Figure 13: Organisational context ('the end state')



Seqwater as an entity has achieved certification to four standards: Water Quality (ISO 22000:2005), Safety (AS/ANZ 4801:2001), Environment (ISO 14001:2004) and Quality (ISO 9001:2008). Certification scope has been expanded from the head office and ex-LinkWater assets to WTPs the Molendinar and Mudgeeraba WTPs achieving certification to these four standards in July 2014. This is the first step in an ongoing program to certify all large WTPs (North Pine and Landers Shute are the next two WTPs to be assessed).

5.2 OPERATIONS DELIVERY

This section discusses the planning and delivery processes including resourcing and maintenance strategies, responsibilities and in practice procedures for Seqwater's operational Groups (ie, those directly responsible for operation of assets).

5.2.1 OPERATIONS- CATCHMENTS AND RAW WATER (OCRW)

The OCRW Group is responsible for key functions of dam operations, flood operations management, catchment and recreation management. The key elements of this are:

- the management of dams to ensure safe operation during normal water releases and flood releases
- monitoring and ensuring dam safety compliance
- maintain releases from dams to meet demand
- meeting resource operation plan compliance
- delivering water to irrigation customers
- ensuring water related data is recorded and stored
- maintain natural assets to meet compliance requirements and agreed land use outcomes
- manage public access and use of Seqwater sites.

These functions are undertaken by two operational teams, as described below.

Water Source Operations and Management (WSO&M)

The resourcing strategy for WSO&M is to have resources operating regionally to deliver the operational requirements, coupled with components of regulatory and functional requirements being managed across the whole organisation to optimise efficient operation and sharing of resources. Being a highly specialised field, resources are limited to some extent by availability of trained persons in hydrology, dam operations and dam safety. Although most operational activities are carried out in-house, consultants and contractors are utilised for most major studies and investigations. Consultants are also used when expertise or resources are not available in-house.



A minimum of 2 staff are permanently allocated to the major dams. These staff are also responsible for operations at the minor dams as required. During floods, there is a requirement for up to 10 staff to be available for 24 hour rotational duty. This is resourced through training staff from other Seqwater groups, who are on call, as back-up dam operators during floods and emergencies. This approach is in place to avoid having extra full time staff.

The FY15 forecast (and out to FY28) assumes "average" summer wet seasons and as such assumes an allowance for the operation of the Flood Operations Centre. Should a year be particularly dry or involve a major flood event, expenditure will adjust accordingly.

Minimum engineering staff is employed full time by the WSO&M team with most major studies being carried out through consultants. Dam Operators do operational and monitoring activities, and also some minor maintenance. Most of the major maintenance is undertaken through Asset Maintenance (Operation- Treated Water) with minor and major works activities coordinated through APDD-managed contractors as required.

Recreation and Catchment Services (RCS)

The RCS Team is responsible for the development and delivery of recreation and catchment maintenance services for Seqwater's operational recreation and catchment assets. The team ensures that asset management plans, processes, systems and practices are implemented in accordance with relevant regulatory requirements. This team is also responsible for the effective management of third party access and event approval at our sites.

Seqwater owns or controls approximately 60,000 hectares of land. These land holdings can be in the form of land required for operational infrastructure through to vacant land that is required to maintain the catchment for water supply purposes. Catchment maintenance activities include:

- grounds maintenance (mowing/slashing)
- terrestrial weed control
- aquatic weed control
- pest animal management
- fire management (fire breaks/prescribed burns)
- fauna management/rescues (fish/koalas)
- security control (illegal access)
- lease inspections
- dam embankment maintenance
- WTP grounds maintenance.

The catchments are maintained to meet:



- regulatory obligations for declared weeds
- Workplace Health and Safety obligations
- environmental compliance obligations
- water quality priorities
- prudent land management outcomes
- prudent conservation outcomes.

The use of our assets for recreational purposes is secondary to Seqwater's main function of water supply and treatment. Recreation pursuits must be managed in a sustainable and environmentally responsible manner to ensure that Seqwater's core responsibilities and accountabilities are not adversely impacted.

Notwithstanding that, an estimated 2 million people visit Seqwater recreation sites each year, and recreation bears the "public face" of Seqwater and is critical to the success of the organisation. Our water storages provide the majority of sites in South East Queensland for recreation on freshwater. In addition, our land holdings contribute approximately 50% of "greenspace" in South East Queensland (excluding areas of conservation). This means that our assets provide a "recreational landscape" of regional significance and the appropriate management of Recreation is critical to Seqwater's success.

The RCS Team is responsible for:

- recreation facilities maintenance
- recreation management and compliance
- third party access
- community and stakeholder engagement.

The recreation areas are managed and maintained to meet:

- public and infrastructure safety responsibilities
- environmental and water quality priorities
- community/social outcomes.

The Seqwater recreation review commenced in June 2013, and involves an extensive review of recreational activities and facilities at dams and catchments, covering 23 of Seqwater lakes. This review has included significant consultation in order to capture the diverse views and recreation needs of the local community, recreation users and special interest groups across the region. The recreation review project is due for completion end of December 2014.

The resourcing strategy for RCS is that the maintenance function for recreation areas, catchments, WTP grounds and dam embankments/grounds is centrally managed and coordinated for the entire SEQ region. Time is allocated to the relevant sub-service and



activity through work orders. The resourcing in most areas is considered lean and as such a portion of the work is contracted out to external suppliers to undertake. In-house staff plan, monitor and control all works undertaken. The team is heavily reliant on outsourced services to undertake required maintenance, and a panel of preferred service providers is used for Catchment Services requirements.

5.2.2 OPERATIONS- TREATED WATER (OTW)

The OTW Group is responsible for bulk treated water supply, asset maintenance and incident and security management. The key elements of this are:

- managing the supply system to efficiently meet treated water demand and maintain short term water supply security
- operating and maintaining Seqwater's WTPs
- operating and maintaining Seqwater's bulk treated water transport and storage system
- managing administrative support services, supply and logistics contracts for outsourced operations and maintenance activities
- monitoring and enforcing contractual compliance by operations and maintenance function service providers
- coordinating incident and emergency management activities by Seqwater and the other SEQ service providers in accordance with the Emergency Response Plan
- monitoring and managing group performance.

Seqwater's resourcing approach is focussed on:

- ensuring rostering and on-call staffing requirements provide adequate operational coverage to meet operational work efficiently and respond effectively for incidents and emergencies
- maintaining operational control and knowledge retention in key operational risk areas
- pursuing efficiency through market processes for clearly defined, marketable, functions
- procuring services for low volume, non-critical specialist services.

Conventional water treatment assets

Operational activities associated with conventional water treatment plants include:

- management of treatment process integrity
- manage site access and works control
- operational customer interface management
- operational monitoring
- plant day operations and operator maintenance



- WTP process training and advice
- admin, procurement, financial diligence and monitoring
- sub-regional operational management (including financial management).

The resourcing for conventional water treatment plants are driven by a number of factors including:

- large geographic area of asset distribution
- high diversity of treatment plant assets and operational requirements
- operational risk.

Resourcing for conventional treatment plant operations is delivered through in-house staff organised into three regional groups each comprising two subregions. Resource levels are determined by the operational requirements of assets, including production levels and times, and operational control, monitoring and responsiveness levels identified for each plant. The organisation has elected at this time to retain this function in-house to maintain operational control and flexibility, asset system and operational knowledge, and to most effectively manage the high risk associated with treatment plant operational failure.

Resourcing for treatment plants operations is based on regional teams sized and located to optimise efficiency between maintaining required staffing availability and familiarity for each plant, maintaining responsiveness and minimising travel time. Raw water quality, water treatment processes, treatment plant age and treated water storage volumes all impact staffing levels. The following examples illustrate these impacts:

- the Mt Crosby WTPs have a 24/7 roster as the largest treated water supply into the supply system. To meet this requirement, eight operators work three shifts of eight hours each day. Extensive monitoring, automation and control enable Mt Crosby operators to operate the Holt's Hill fluoridation and chloramination facility and North Pine WTP after hours
- the Lander's Shute WTP and Molendinar WTP are staffed seven days per week between 6:00am and 3:45pm. This compares to mid-sized plants such as Capalaba which are generally staffed approximately 10 hours per day Monday to Friday
- WTPs in non-urban areas such as Kenilworth WTP have significant travel times and more rudimentary water treatment process control. Operators travel between these non-urban plants as required. Response times for responding to water treatment process alarms are largely determined by the WTP's treated water storage volume.

Staffing levels vary between normal source water conditions and adverse conditions. In severe weather events where there are significant changes in water quality, operator shift numbers may be doubled with addition technical support from process engineers and maintenance teams.



Supply system control

Supply System Control includes:

- management of treated water transport within the bulk water supply system
- management of supply system access and works control
- SEQ service provider interface management
- operational monitoring of the treated water supply system
- operational supply system optimisation
- supporting field operational activities.

Resourcing for these functions is driven by:

- the high risk associated with supply system failure
- the complexity associated with the highly interconnected supply system
- the requirement for real time and continuous supply system management
- the varying level of automation and remote monitoring available across the treated water assets.

Seqwater maintains a 24/7 Supply System Control Room for these functions. Field operational tasks (e.g. valve operations and isolations) are conducted through the Network Operations and Maintenance Contract, currently with Thiess.

Asset maintenance – conventional WTPs

Maintenance of conventional WTPs is categorised as follows:

- scheduled maintenance preventative maintenance and inspection regimes based on asset age, condition, reliability or performance methodologies
- planned maintenance preventative or corrective maintenance based on inspections, reactive maintenance tasks, monitoring and operational observations, but which can be scheduled
- reactive maintenance breakdown maintenance to rectify operational asset failures required as a matter of urgency
- operator maintenance minor routine tasks suited to operator skillsets, attendance and availability.

Planned corrective maintenance may come about as a result of a discovery from a condition inspection or test or during the execution of a preventative maintenance routine. Alternatively it may be triggered by online condition or performance monitoring parameters, which give early indication of deterioration (such as vibration sensors). While these maintenance activities cannot themselves be easily planned, the inspections and condition monitoring activities that trigger them can be, and so is an in-built feature of the maintenance program.



Reactive maintenance usually comes about due to an asset failing to perform its function. It usually requires an immediate response, which cannot be planned and prioritised against other maintenance actives.

Operator maintenance is done by operators at the WTPs in each of the three regions to maximise the efficiency of site attendances and operational interactions. Asset Maintenance provides expertise for civil, mechanical, electrical, instrumentation, SCADA maintenance and repairs, including supervision of contractors and commissioning of new equipment. Administrative responsibilities include maintenance scheduling and operational procurement.

Conventional WTP maintenance is resourced through three regional teams supported by competitive tendering of tasks between pre-qualified service (panel) providers. Each regional team comprises a mechanical/civil capability, electrical capability and SCADA capability. Approximately 95 per cent of maintenance works is provided by external contractors. However internal resources undertake urgent, high risk, uncertain and out-of-hours tasks.

Under the Seqwater's procurement policy and procurement decision matrix, works up to \$0.5M in value may be allocated to qualified service (panel) providers supported at the agreed (competitively tendered) fixed panel rate. The practice employed by Asset Maintenance is to engage panel providers under the fixed rate for smaller and time critical jobs; and to seek competitive quotations from panel providers (and non-panel providers when appropriate) for non-routine critical tasks exceeding typically \$5,000 in value.

The maintenance panel also provides suitably experienced and competent resources on a medium term basis (>3 months) to deliver scheduled and planned maintenance based on medium term workload forecasts, enabling the function to resource up or down based on forecast requirements and internal resource availability.

Individual contract orders are generated by Asset Maintenance who undertake the purchase-to-pay activities including contract management of the contractor. Governance activities undertaken by the Procurement Team include an annual analysis of the procurement spend on contract leakage, volume of transactions and spend across suppliers on this panel arrangement. The Risk and Governance Team also undertake operational and compliance internal auditing on procurement activities for Seqwater.

Maintenance delivery – supply system

Maintenance of the supply system is out-sourced through a competitively tendered operations and maintenance contract with Thiess Services. Thiess delivers the field activities through a field workforce comprising Operator-Maintainers with field mobile technology devices. This allows real time scheduling of both operational and maintenance tasks to the workforce for maximum efficiency whilst responsive to operational needs.



This covers the following functions:

- field operational actions (estimated to be only 5-10% of total contract costs)
- maintenance scheduling
- management, support and reporting
- scheduled and reactive maintenance.

Annual and monthly work schedules are issued under this contract, comprising two components – a predetermined fixed fee for scheduled maintenance, and a variable schedule of rates component for reactive and planned works identified and authorised by Seqwater for works to a threshold value

Manufactured water treatments assets

Through acquisition of WaterSecure (a government owned entity), Seqwater inherited operations and maintenance arrangements with Veolia for the manufactured water schemes.

Gold Coast Desalination Plant

Seqwater maintains an open-book Alliance contract with the original constructor Veolia for delivery of management, operations and maintenance of the GCDP. The contracts provide for pass-through of service related costs annually budgeted and approved through an Alliance management structure with Seqwater, including roles of Alliance Leadership Team, Alliance Project Management Team and overseen on a daily basis by a Seqwater MWA Contract Specialist. Maintenance schedules are determined by Veolia. Seqwater retain review and approval of works. External auditors are engaged to review costs and claims. Seqwater are engaged in the deciding process for all commitments and subcontracts relating to the Alliance.

The Alliance allows for variation of services and production levels based on Seqwater's ongoing requirements with the current overarching objective of providing operational capability of 33% within 24 hours and 100% with 72 hours of notice (in accordance with the requirements in the Interim Operating Strategy, as outlined in Section 4.2).

Western Corridor Recycled Water Scheme

Seqwater maintains an open-book operations and maintenance service contract with Veolia for delivery of management, operations and maintenance of the WCRWS. The contracts provides for pass-through of service related costs annually budgeted and approved by Seqwater, overseen on a daily basis by a Seqwater MWA Contract Specialist. Maintenance schedules are determined by Veolia. Seqwater retain review and approval of works. External auditors are engaged to review costs and claims.



The WCRWS is currently entering a planned 15 year shutdown phase. The ongoing costs associated with the maintenance of the assets to fulfil the agreed planning assumption of a two year lead time to restart are currently being developed.

Contractual management and compliance

OTW maintains a centralised contract management function for the daily administration, management and compliance and performance monitoring of all major contracts (as outlined above) and goods and services contracts for the support of operations and maintenance functions. These include:

- energy contracts competitively tendered two-year tariff arrangements structured to suit operational requirements and opportunities to achieve efficiency savings
- chemical contracts competitively tendered and benchmarked rise and fall contracts for individual chemical products
- sludge disposal competitively tendered service provision with seven discrete works packages based on product and location
- logistics and spares preferred supplier arrangements for nominated spares and consumables
- maintenance panel competitive tendering of tasks between pre-qualified service providers for scheduled and planned maintenance.

Incident and security management

Under the Bulk Water Supply Code, the Minister for Energy and Water Supply requires Seqwater to develop, implement and maintain a Bulk Authority Emergency Response Plan (ERP) which coordinates emergencies across the water supply system as a whole. The ERP is part of Seqwater's emergency management framework put in place to guide effective emergency response and decision making. This framework IS supported by specific operational, contingency and business continuity plans to account for reasonably foreseeable events. Examples of these plans include asset loss contingency plans, drinking water quality management plans, flood manuals and emergency action plans.

During emergencies Seqwater must provide the interface with relevant Queensland Government departments and disaster management agencies. It is through this interface Seqwater is able to align its response and recovery efforts with the requirements of regulators and local, district and state disaster managers.

Resourcing for Incident and Security Management is provided almost entirely through business as usual line management. A small Incident and Security Management team coordinates training, tests, rehearsals and exercises. The team also maintain an incident reporting hotline, conduct risk assessments, support situation awareness and provide advice to incident and emergency managers. Staff required for responding to incidents



and emergencies are drawn from across Seqwater, either in the staff members' normal role or forming an Emergency Management Team.

5.3 INVESTMENT SUPPORT AND GOVERNANCE

Seqwater has a range of internal processes, standards, policies, templates and structures in place to define, operate and govern its business. The principal items relevant to this submission which provide guidance to the allocation of financial resources and governance thereof include (but are not limited to):

- Delegations Policy Statement and Delegations and Authorisations Manual
- annual budget process including endorsement from Managers and General Managers
- Procurement Policy Statement and Procedure
- Investment and Procurement Committee (Board sub-committee)
- Investment Review Group (Executive sub-committee).

Seqwater's policies and procedures are retained in Seqwater's internal document control system. These policies include or are supported by additional procedures either in practice or under development. Copies of each policy are available on request. Seqwater's expenditure challenge, review and approvals processes are dependent upon the category of expenditure, being operating or capital in nature.

5.3.1 INVESTMENT DECISION PROCESS AND APPROVALS

Seqwater employs an annual budget process to establish the following financial year's budget for both operating and capital expenditures. The budget process results in the approval by the Board of operating expenditures, with capital costs (at the planned macro level for infrastructure) being endorsed and subsequently requiring approval via development of business cases in line with the Delegations and Authorisations Manual to gain expenditure approval.

The key forums for approval of capital expenditure above General Manager limits (\$0.75M for GM APDD and OTW; \$0.5M for other GMs) are the Investment Review Group (Executive review and endorsement of all capital investments) and the Investment and Procurement Committee which approves capital expenditure above the \$2M CEO limit. Charters outlining the operation of these forums are available upon request.

Additionally Seqwater performs a business-wide quarterly reforecast of operating costs to monitor performance against plan and to ensure financial resources are being allocated efficiently and in line with Board approvals.



Any non-routine or exceptional expenditure is approved in line with the Delegations and Authorisations Manual.

Investment Review Group (IRG)

Seqwater conducts an Executive forum to effect Seqwater's key outcome area of sustainable financial capacity and govern application of the Delegations and Authorisations Manual. The IRG provides:

- a formalised, structured Executive directed review of proposed capital investments above GM approval level
- oversight of rigour in business case development, specifically scoping and assessment of alternatives, including non-investment solutions and risk assessments
- oversight of alignment with strategic asset and broader whole of business plans
- executive (and Board) comfort that capital is being invested in the highest priority areas and is balanced with residual risks and efficiency opportunities, is compliant with authorities and maximises returns to deliver lowest cost supply
- preparation for future regulatory reviews.

Permanent IRG members are the GM Water Supply, Strategy & Policy, GM Asset Portfolio Development & Delivery and the CFO. Agreement from all is required to endorse a proposed investment.

Within the capital investment governance process, the IRG is the forum for coordinating challenge and review of all proposed and active capital investments above GM approval level. It covers all capital investments (including non-infrastructure if above GM approval level). IRG scope is defined by the financial and contractual delegation levels as set out in delegations of authority manual.

For projects requiring Board approval (>\$2M) a fit for purpose review is required by a small Independent Peer Review (IPR) team of not less than four members with experience directly relevant to the investment proposal, but not conflicted by advocating the investment. The scope and composition of the IPR team is approved by the IRG via succinct Terms of Reference (ToR).

The IRG process is separate and subservient to the Investment and Procurement Committee (IPC) which is a forum for Board (above CEO) review and recommendation. Capital investments requiring CEO and/or Board approval (which are submitted to the IPC) must first be endorsed by the IRG.

Operations of the IRG are contained in the IRG Charter (currently in draft pending final approval).



Investment and Procurement Committee (IPC)

The IPC is a committee of the Board and is directly responsible to the Board. It is a forum for review of investment and procurement decisions above CEO limit. The primary function of the IPC is to ensure that Seqwater meets its strategic, corporate, and technical aspects of asset delivery and operational performance objectives while understanding and managing the associated business risks and, as appropriate, ensuring management risk systems are in place. The scope and responsibilities of the IPC is detailed in the IPC Charter.

The infrastructure and non-infrastructure capital investment programs (and operational works associated with those programs) are submitted to the (IPC) for their endorsement for Board approval.

The Seqwater Board delegates authority to the IPC to consider and approve any contract up to a value of \$10M provided the contract is consistent with a Board approved business case and forms part of Board-approved projects that have been scheduled or forms part of a Board-approved capital and operating programs.

The IRG reviews and endorses all proposed capital investments above GM approval level prior to submission to the CEO and/or IPC and Board.

Board

The Board provides the ultimate level of governance oversight for Seqwater. In accordance with the Delegations and Authorisations Manual the Board approves all capital expenditure above the CEO limit (\$2M) following review and endorsement by the IRG and IPC.

Prior to the commencement of each financial year the Corporate Finance Group coordinates development across the business of a first principals (zero based) budget which is collated Board approval. Approved budgets are recorded and managed (within the CIS) against cost centres. Each delegate in the Delegations and Authorisations Manual is therefore accountable against each budgeted cost centre.

Financial delegation for the utilisation of the Board approved budget, through procurement of operating or capital items is as defined in the Delegations and Authorisations Manual. The CEO presents to the Board an updated financial report at each monthly Board meeting.

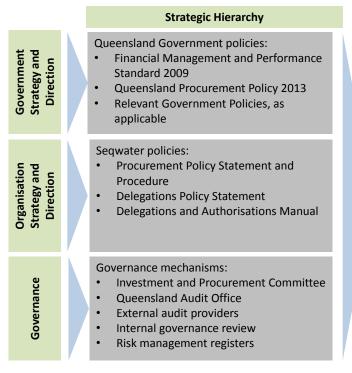
In June 2014 the Seqwater Board extended IPC governance scope to include one-off or non-recurrent operational expenditure. Management has been requested to provide direction on the approach for an approvals and gateway process on one-off or non-recurrent operational projects above \$100,000. This will be implemented in Q1 FY15.



5.4 PROCUREMENT

5.4.1 PROCUREMENT STRATEGY AND GOVERNANCE

Seqwater's procurement strategy is founded in Queensland Government policy. Figure 14 below outlines the hierarchy of instruments which frame the strategy at Government and organisational levels, and the initiatives (systems, policies and practices) Seqwater has and is implementing to meet procurement best practice.



In Practice Implementation

- Panel arrangements
- Value for money framework
- Decision Procurement Matrix
- Procurement Risk Workbook
- Contract Management Plan
- Significant Procurement Plans
- Category Plans
- System capability improvement
- Training and education
- Strategic and Operational Procurement Plans

Figure 14: Procurement strategy and governance

All tenders are conducted in accordance with Financial Management and Performance Standard 2009, Queensland Procurement Policy 2013 and the Seqwater Procurement Policy.

5.4.2 PROCUREMENT INITIATIVES

Seqwater has a FY14 addressable procurement spend of approximately \$175M, with the organisation progressing transformational changes to its procurement systems, policies and practices as described in the table below:

Initiative	Status	Benefits/comments
Governance and Accountability		
Restructure procurement with a		Centralise strategic procurement
Strategic Procurement unit to	Implemented	function with category management
undertake and manage strategic and		teams implemented to manage spend



Initiative	Status	Benefits/comments
tactical procurement		
Review and implement a centralised procurement structure	Review completed, under ELT consideration	Remove duplication and isolated procurement (better utilisation of existing resources), aggregation of spend and improved transparency
Revised Procurement Policy and Principles to improve value for money in accordance with the Queensland Procurement Policy	Implementation pending ELT approval	Policy revised to include risk management and to increase accountability and responsibility by personnel
Value for money framework: report on procurement outcomes being delivered	Implemented	Track procurement savings and benefits being delivered
Decision Procurement Matrix: addresses risk in the procurement process and spend management controls	Implemented	Consideration of risk into the decision making process. Provides direction and controls surrounding the purchasing of any goods/services.
Procurement Risk Workbook: assist and support the review of procurement risks	Implemented	Provides direction and support to personnel in how to identify and assess procurement risk
Contract Management Plan: to manage and monitor contract performance	Implemented	Provides direction for management of a contract/arrangement including KPIs and targets to deliver optimal value
Significant Procurement Plans: program or project delivery to ensure appropriate sourcing and contract requirements achieved	Implemented	Planning template to guide procurement officers to ensure appropriate planning and sourcing strategies are used, reviewed, endorsed and approved
Spend Management	1	
Implement category plans for all major spend areas to ensure sourcing strategies deliver improved and innovative outcomes	Implemented (except large contestable electricity sites)	Category and sourcing plans completed which outline the sourcing strategy for best value delivery and targeted savings
Revision of standing contracts/ arrangements to increase business efficiency, reduce red tape, increase productivity and savings and rationalise vendor base	Underway and ongoing across all areas of spend	Progressively revised as contracts/ arrangements expire. Revised arrangements include hydrated lime, chemical waste disposal, cleaning, gases, grounds maintenance, planning and design, professional services



Initiative	Status	Benefits/comments
Systems and People		
Increase system capability to provide visibility of contract performance, licensing, workplace health and safety to lift ability to manage procurement activities	Commenced, completion October 2014	Project underway which will assist in delivering improved contract and performance management.
Training and education to personnel to remove duplication, waste and cost from the process, includes procurement related areas (AS contracts and contract clauses)	Ongoing	Completed for the procurement policy and decision matrix. AS training delivered for project managers in Construction Delivery. Minor Works training delivered for personnel managing minor works. Contract management training to be completed September 2014.

Table 16: Procurement system initiatives



PART C. BULK WATER COSTS

CHAPTER 6 COST DEVELOPMENT

6.1 SCOPE OF BULK WATER COSTS

The Referral Notice sets out the types of costs that comprise bulk water costs. Seqwater has included the types of costs outlined in this referral, as they relate to bulk water services. This includes recreation management costs.

Seqwater has also excluded costs associated with its unregulated assets and services.

Previous QCA reviews have established that the Margaret Street building is an unregulated asset and any owner costs and revenues are not included in the data being provided. If the building were to be sold there would be no justification for offsetting revenues against the MAR.

In line with the Referral Notice Irrigation costs that were determined as part of the recent review have been excluded. The approach is explained in Chapter 8 in more detail.

Seqwater has also excluded the costs and revenues from the Somerset and Wivenhoe hydro-electric plants.

Seqwater has included costs associated with flood mitigation, consistent with the approach adopted by past GSC reviews by the QCA. Seqwater also notes the QCA's review of irrigation prices found that irrigators should not pay for these services, but residents of SEQ should. The QCA also indicated that costs could be recovered via water charges to these users. Specifically, the QCA found³:

- a. flood mitigation costs should be shared among all beneficiaries in the community. This is most appropriately achieved preferably through a property based charge to all members of the community (e.g. through rates) or through water charges applied on all consumers in an affected area. If included in water charges, irrigators who have larger volume allocations may be allocated a disproportionate share of flood mitigation costs compared to individual urban customers in a bulk supply system
- the benefits to irrigators are marginal during normal times and most flood events (except in the most extreme flooding scenario where the dam would otherwise fail – in such circumstances a benefit may be established
- c. an appropriate allocation of costs can be achieved through retail water charges. While there are some irrigators in the Central Brisbane River WSS that are

³ Queensland Competition Authority (2013). Final Report. Seqwater Irrigation Price Review 2013-2017. Volume 2. Central Brisbane Water Supply Scheme (pp49-50).



connected to reticulated domestic water supply systems and already make a contribution for flood mitigation through these charges, some irrigators are not connected.

Hence Seqwater's position is that flood mitigation investments are of direct benefit to SEQ consumers and that the most appropriate mechanism for recovery flood mitigation costs is through the bulk water price path.

6.2 LONG-TERM COST FORECASTING

To the maximum extent possible Seqwater has attempted to verify and substantiate costs over the period to FY28. This is obviously a difficult exercise (given the maturity profile of Seqwater) that requires elements of sound professional judgement.

There is significant asymmetry in this process in that whilst Seqwater is certain that there will be unexpected costs in the future it cannot substantiate them at this stage and they are not included. This generally means that Seqwater bears downside risk with no commensurate upside risk.

Given its current capital structure Seqwater has almost no spare fiscal capacity without ongoing Government support to deal with substantial cost or revenue risk. Other sections of this submission address the issue of mid-price path reviews and triggers.

6.3 GENERAL CONSIDERATIONS

Seqwater has generally adopted prevailing accounting standards in its definitions of capital and operating costs. Salaries are included in projects only where there is a direct linkage and can be justified under the Accounting Standards.

With the exception of the work undertaken for the irrigation review Seqwater does not undertake cost allocation to reallocate corporate salaries or other corporate costs.

6.4 FORECAST CAPITAL COSTS

The following description of how Seqwater develops capital expenditure forecasts has been partitioned into the main asset types, being:

- infrastructure assets, including catchments, dams, weirs and conventional water treatment plants
- manufactured water assets, being the largest of the non-infrastructure assets
- other the non-infrastructure assets being, ICT and property, fleet and facilities.



This section explains how maintenance, renewal and new and improvement works have been estimated for each of those asset types. Information about individual projects within each of those asset types is contained in Chapter 7.

Seqwater defines:

- maintenance all tasks necessary for retaining an asset as close as possible to its original condition without increasing service potential of the asset. In Seqwater, this includes planned and unplanned maintenance activities
- renewal all actions necessary for maintaining the service potential of an asset through rehabilitation and refurbishment or replacement in order to prevent the assets from failing existing service levels. Refurbishment activities extend the service life of an asset
- new and improvement all investment with the purpose of increasing the performance, quality or capacity of an asset.

For all asset types, cost estimates are based on the best information currently available. Unless otherwise specified, estimates for individual projects reflect costs specified as part of the most recent key approval gateway. Those estimates will be refined as projects progress through those gateways, from planning to business cases to procurement and delivery.

Business cases will be completed for all renewals, minor works and improvements. Works will only be undertaken when required, based on the actual condition of the asset and the consequences of failure. The priority of those works is reviewed on an ongoing basis, taking into account emergent issues and changes to operations and the Operating Strategy.

6.4.1 INFRASTRUCTURE ASSETS

Renewals and minor works

Seqwater's Asset Management Policy establishes a need to manage both natural and built assets using a whole of life cycle approach that balances performance, costs and risks. The policy specifies prudency and efficiency and long term benefits as key considerations, as well as safety, environment and cultural heritage.

Within that context, the ACS Team within the APDD Group is responsible for determining the prudent amount of renewals and minor improvements, including refurbishments and replacements. Those works are delivered by the Program Delivery team in the APDD group or the Asset Maintenance team within OTW, depending upon the type, cost and complexity of planned works.



The following methodology was adopted in order to produce a consistent and robust basis for projecting renewal and maintenance costs of existing and new assets created over the forecasting period to FY28. Some major renewals projects, such as the refurbishment of filters at the Mt Crosby and North Pine WTPs, have been removed from the renewals program and considered as specific projects, as described later in this chapter.

As described in Chapter 5, planning for the management and maintenance of infrastructure assets occurs through AMPs, ACPs and Tactical Maintenance Plans. Asset management and maintenance includes asset maintenance, monitoring and renewal. Planning for maintenance delivery occurs through the design and selection of maintenance delivery models, such as the current networks operations and maintenance contract.

Maintenance planned for specific assets reflects the services required from those assets, as specified in the Interim Operating Strategy and other strategic planning documents.

The renewals and minor works program outlined in Chapter 7 is based on AMPs for:

- all WTPs except Noosa and Banksia Beach, which will be prepared in FY15
- all network assets, except pipeline ancillaries such as valves and flow meters
- all dams.

These AMPs generally have a timeframe of 10 years, with the exception the AMPs for network assets. Refined AMPs are currently being prepared across many of these assets. Those refined AMPS will have a timeframe of 15 years, to align with likely future regulatory periods.

The AMPs are informed by detailed capability assessments (refer Figure 15). Those assessments are intended to highlight gaps between service requirements, as specified in the Interim Operating Strategy, and the capability of assets in their existing condition. The assessments may highlight the need to:

- increase maintenance due to increasing asset criticality
- increase capability through minor or major upgrades.



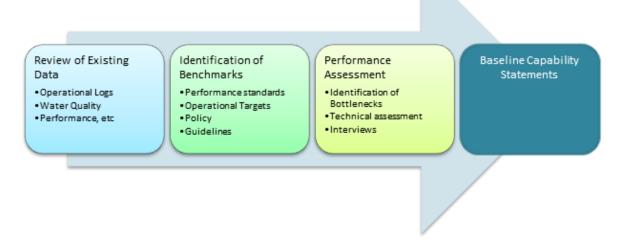


Figure 15: Process for the development of Asset Capability Statements

Where AMPs have not yet been completed, future asset renewal cost profiles have been built up from programmed (0 to 5 years) or probable asset renewal dates and adjusted to accommodate emergent or planned capital works. Those profiles have been based on financial asset revaluations undertaken by engineering consultants (Cardno) covering all built assets over the period from 2008 to 2013. The process to develop those profiles is described below.

Cardno was engaged to undertake a review of that methodology and to benchmark forecast levels of investment against similar entities. Cardno found that the program represented value for money, with annual expenditure of about 0.2% of the asset valuation compared to the benchmark of between 0.5% and 1.5% by similar organisations.

In summary, the forecast renewals and minor works program is considered to be prudent and efficient because:

- AMPs have been prepared for most major assets until at least FY22
- the programs are reviewed annually as part of the budget process and adjusted as appropriate
- benchmarking demonstrates that forecast levels of investment are significantly below those of similar entities.

The governance processes described in Section 5.3 ensure that actual expenditure is prudent and efficient. The minor works and renewals program is fixed each year as part of the budget process and reviewed constantly during the year as other priorities emerge. The prioritised program is managed by the ASC team, informed by consultation with operational areas and technical experts. For each of those projects, a business case is



prepared and approved by the GM APDD. Those individual projects may then be bundled with similar projects to ensure efficient delivery. However, approval must be sought from the ASC team for significant variations and a project close out report must be completed that highlights opportunities for improvement.

For network assets, renewals and minor works forecasts were developed by Thiess Operations under direction from Seqwater and in line with contractual terms, and reviewed internally by Seqwater staff with pipeline operations and maintenance expertise. The Thiess Operations and Supply System Maintenance contract expires on 30 June 2015, with an option to extend until 30 June 2016. For the purposes of this submission the Thiess contract is assumed to be renewed at the same terms continuously out to FY28.

Asset inventory

Seqwater's built (infrastructure) assets are recorded in the Financial Asset Register, Corporate Information System (CIS - Maintenance Register) and Geographic Information System (GIS). These asset inventories provide the basis for asset renewal planning and integrating with capital works programming to address regulatory requirements, supply contracts and service obligations.

These built assets are recorded and condition assessed at the maintainable asset level in the CIS Maintenance Module and valued at the asset type level within process units in the Financial Asset Register. A complete list of current and planned built assets was recorded at the maintainable asset type level for renewal planning purposes.

Asset useful lives

The useful lives of each asset type are recorded in the various asset registers are determined by industry standards of construction, Seqwater's engineering opinion and the most recent asset valuations reports. These are adjusted for critical and larger assets based on previous asset renewals and ongoing maintenance history. Some asset classes have an effectively indefinite useful asset life (e.g. dams, weirs, earthworks) and, by default, are assigned a nominal useful life, commonly in excess of 100 years, which is reinstated after condition-based asset revaluations or other asset condition assessments.

Remaining useful life

The useful lives for each asset class and its categories were agreed between the valuation consultants and Seqwater. The asset data and the methodology used by Cardno for the asset revaluations are recorded in the various Asset Condition and Valuation Reports. For accessible assets, remaining asset life is based on periodic condition assessments and maintenance records in accordance with the industry standard asset decay curves in accepted international standards or asset management guidelines such as the International Infrastructure Management Manual (refer Table 17



below). For inaccessible assets, such as buried or hidden assets, remaining asset life was based on the assets' age and default asset life, adjusted for individual assets' reliability and performance history.

Condition Rating Scores			
Score	Condition Rating	% Remaining Life	
1.0	Excellent	95%	
2.0	Very Good	75%	
3.0	Fair	50%	
4.0	Poor	25%	
5.0	Unserviceable	5%	

Table 17: Condition scoring

The asset criticality and condition assessment process is presented below in Figure 16.

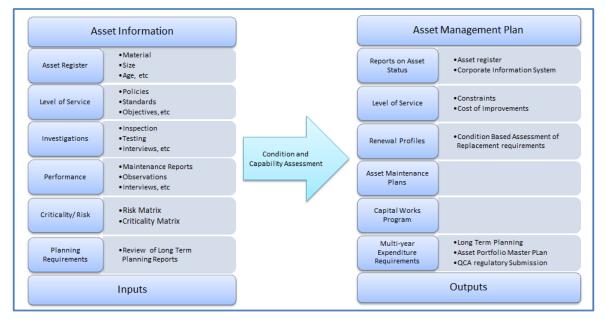


Figure 16: Asset criticality and condition assessment process

Renewal dates

Probable renewal dates are determined from assessed remaining asset lives and asset renewal projects are programmed to align with any capital works programs proposed for particular locations. Actual renewal dates are based on condition assessments to confirm the predicted useful lives, and criticality or consequence of failure is taken into account in prioritising renewals.

Asset renewal costs are derived from the most recent financial asset revaluations, which are based on new capital project costs and then adjusted to account of the additional costs planning, disposing the old asset and installing the renewed asset within an



operating system or environment ('brownfield' costs). These additional costs (cost factors) are determined from Seqwater's and its consultants accumulated knowledge of undertaking renewal works.

Renewal costs

Asset renewal costs are derived from a variety of sources, such as Seqwater experience, consultant's estimates, suppliers' quotations and financial asset revaluations.

The costs are developed in alignment with the Seqwater Cost Estimation Guidelines and the estimates account for:

- 'greenfield' or 'brown field' factors
- engineering design
- urgency of repair
- market factors
- project management
- technical investigation

New and improvement works

New and improvement works are delivered in accordance with the Asset Management Framework and governance processes described in Chapter 5. As is explained in that Chapter, a robust and transparent process exists for confirming business needs, developing and assessing options, developing business cases, estimating time and cost, and managing priorities across the program as a whole. Key elements of that process are:

- Strategic assessment of need and options, as part of the Operating Strategy and long-term planning reports
- Detailed assessment of need, options and costs, as an input to the business case
- Management of priorities across the system as a whole, through the draft 15 year Asset Portfolio Master Plan and annual budget process
- Detailed consideration of how to most effectively engage the market, as part of the Project Management Plan
- Review and evaluation, including as part of project completion workbooks.

Governance arrangements have been established to oversee that process and to approve major projects, in accordance with delegation levels, including review by the Investment and Procurement Committee and Investment Review Group.

This section summarises how costs have been developed based on these phases or gateways.

Seqwater has developed a cost estimating guideline for project development which covers the following subjects:



- Seqwater gates at which estimates are prepared
- minimum requirements for estimate accuracy and circumstances in which first principles estimating for better accuracy is required
- the level of detail required at different stages of project development
- structure and presentation of estimates
- allowance for contingency and the circumstances in which probabilistic cost estimation is required
- guidance and advice on issues that shall be considered when preparing cost estimates.

The sections below summarise how the guidelines have been applied to the various asset types. As noted above, the cost accuracy of individual projects within the draft 15 year Asset Portfolio Master Plan reflects the level of development of planning for that project and the stage of delivery. The costs included in the draft Plan reflect the most recent key decision point, and will change over time.

Natural assets

The cost estimates for the Natural Asset projects included in the draft 15 year Asset Portfolio Master Plan has been derived from two main sources:

1. Integrated Options Analysis for a Resilient and Efficient Bulk Water Supply, Options Analysis for Upper Brisbane, Lockyer and Mid-Brisbane Catchments, 16 July 2013.

This report is the basis for several improvements contained in the draft Plan. It identified specific projects and programs of works. In this case the costs have been built up from a first principles basis using unit cost rates for specific infrastructure items. For example, units rates for stock exclusion fencing and riparian vegetation.

The methodology used in this report is scheduled to be applied to the rest of Seqwater's major catchments over the next 2 to 3 years. As the projects and program are identified, they will be reviewed and integrated into the Asset Portfolio Master Plan if they are prudent and efficient.

2. Natural AMPs

These reports form the basis for the majority of projects identified in the Natural Asset program. The costs of these projects have been estimated from historical cost rates for similar projects. Where appropriate, new cost rate estimates have been generated to update for current situations.

Storage assets (dams and weirs)

The methodology for development of the capital investment program for Storage Assets (Dams and Weirs) is documented in the Seqwater Referable Dam Portfolio Risk



Assessment Reports (PRA). The resulting costs and works program is summarised in the Dams and Weirs Asset Portfolio Capital Works Program.

Seqwater's Cost Estimating manual has been applied to the cost estimates for these projects. In accordance with the cost estimating guidelines, as costs are likely to be above \$5M, further design work has been carried out for the projects underway in the short term to allow cost estimates to be build up from first principles. For construction tender documentation, cost estimates are aiming to be +/-20% level.

Treatment assets

As explained in Chapter 5, the draft Asset Portfolio Master Plan for Treatment Assets is built off a suite of investigations and documents prepared as part of routine planning processes employed within Seqwater. These include:

- strategic plans
- sub regional planning studies
- operating plans and philosophies
- operating management strategies
- long term planning reports
- options analyses and design reports
- business cases.

Based on the strategic and operational plans, and using a suite of other inputs such as plant data, service requirements and asset capability, a long term planning report is prepared for each water treatment plant. The purpose of the Long Term Planning Reports (LTPR) is to:

- provide a single source of reference regarding the current status of the plant, including future demand expectations, its capabilities, deficiencies and opportunities for improvement
- provide an understanding of the supply risks from the assets
- provide a documented and agreed future improvement and investment plan for the assets
- act as a vehicle for a corporate-wide communication of the future direction for the asset
- lead to investment efficiency through an in-depth knowledge of the full portfolio of WTP assets, allowing the most critical needs to be prioritised
- input and improve the accuracy of projected capital expenditure forecasts in Seqwater's 30 year investment program.

The planning reports are consistent with Seqwater's commercial charter and clearly demonstrate the prudency of need, scope, and efficiency of delivery for any recommended works. Long term planning reports are generally prepared on a five to ten



year cycle dependent on the criticality of the infrastructure. However, this timing may be brought forward as required. Seqwater generally prepares the reports for smaller and less critical assets using in-house resources but tends to outsource preparation of more significant reviews to specialist independent consultants. The LTPRs inform and integrate with the strategic and operating plans.

Based on the recommendations of the reports, projects have been entered into the 15 year draft Asset Portfolio Master Plan at the best estimated cost, year and project scope. The accuracy of the costing is based on our cost estimating guidelines, considering the likely timing of the investment. As the time for project implementation approaches, the following process is generally followed:

- there is a review of the project needs, considering matters such as demand forecasts, water quality requirements and changes in operating plans. This may result in the project proceeding or in a push-back, re-scoping or removal from the program
- preparation of a project-specific Options and Concept Report to identify the most appropriate project solution. This further develops the LTPR findings and provides greater scope clarity and an improved cost estimate
- a preliminary design report is prepared for the preferred option to further refine scope and cost estimates
- a business case is prepared that describes the options analysed, the preferred option, the proposed implementation plan, the preliminary cost estimate and seeks formal approval to proceed to project delivery.

During each stage of project planning, new and improved information is developed which is used to update the cost estimates held within the Asset Investment Program. This is in accordance with Seqwater's Cost Estimating Manual which defines the level of costing detail required at each stage of the process above.

Transport assets

The draft 15 year Asset Portfolio Master Plan for transport assets is aligned with the same suite of strategic and operating plans as described for the treatment assets. However, due to the connected nature of the SEQ Bulk Water supply system, the use of long term planning reports has been replaced by sub-regional or issue-specific investigations and reports for transport assets. The recommendations of the reports are treated in the same manner as those from the long term planning reports. The development process described above is also generally applied to the detailed planning, approval and then subsequent delivery of transport asset improvement projects.

Costs have been developed according to the cost estimating guidelines.

Other infrastructure assets - Monitoring and Control Systems (MCS)



The previous LinkWater and Seqwater (pre-merger) each had approved business cases for MCS works for investment over the next seven years. These were prepared in accordance with the respective entities cost estimating guidelines at the time.

6.4.2 NON-INFRASTRUCTURE ASSETS- GOLD COAST DESALINATION PLANT

Asset management related to the GCDP is undertaken by the Alliance, generally using the systems and processes of Veolia. The management plans, systems and processes align with the Operating Strategy and the higher level policies and principles that Seqwater apply to asset management.

The key system used by Veolia for asset management is the Contract Asset Renewal System (CARMS). CARMS contains the asset inventory, which is periodically reviewed and updated, including updates to the asset useful life, remaining asset life, asset criticality and estimated cost of replacement. The system also contains the asset condition monitoring history and frequency and cost of past interventions. It is used by Veolia for the management of similar assets around the world.

Seqwater engaged the engineering consultancy firm SKM to conduct a review of the Veolia proposed capital and operating expenditure for FY15 (refer Appendix C). The SKM review assessed the proposed expenditure against prudency and efficiency definitions previously documented by the QCA. Renewal and refurbishment works are approved during the annual services budget approvals process, or as a change to those services, when supported by a detailed proposal from Veolia. This process allows Seqwater to engage internally and consider the proposed works in light of the broader Seqwater renewals and refurbishment program priorities.

Renewals and minor works

The long term asset renewal and refurbishment plan for GCDP is developed by the Alliance and uses a whole of life cycle risk-based approach to prioritise and accurately forecast asset interventions. This is primarily supported by the information produced from CARMS.

The GCDP renewals and minor works capital program was developed with the objective of retaining the asset in Hot Standby mode. CARMS takes this into account through the renewal profile parameters, asset criticality information and ongoing condition assessments. As such, future expenditure is lower than if the plant were fully operational. Costs will increase when it is required to operate more to meet projected demand.

Renewal and refurbishment works are approved prior to delivery, through the Alliance process which includes Seqwater representation at Alliance management and leadership bodies. This process allows Seqwater to engage internally and consider the proposed



works in light of the broader Seqwater renewals and refurbishment program priorities. The briefing paper or business case relating to the works identifies the issue or need, presents the options investigation and evaluation, and summarises the estimated costs.

Asset condition rating and criticality are used to determine the asset risk profile. The asset assessment is conducted using the condition and criticality ratings. Renewal and refurbishment timeframes are determined through asset condition and risk assessment. This risk-based approach represents leading practice in determining the method of assessment, and the frequency of monitoring activities. Asset condition and risk assessment is routinely revised.

The renewal cost in CARMS is currently based on the original construction cost. The refurbishment cost of each specific asset is calculated using original construction costs, vendor manuals, condition and expected asset life.

As a guide, the GCDP electronics and instrumentation components are generally assigned a nominal useful life of 15 years, mechanical and electrical components 25 years, civil components 50 years and the marine assets 100 years. The Reverse Osmosis membranes have a warrantied useful life of 4.5 years, however it should be noted that through monitoring asset condition and performance, and recognising the current asset operating strategy (Hot Standby), the membrane replacement program has already been deferred beyond this timeframe with ongoing monitoring to determine the maximum period for replacement under the current operating conditions.

New and improvement works

The GCDP new and improvement works capital program was developed with the objective of retaining the asset in Hot Standby mode. As such, future expenditure is forecast to be minimal compared to that if the plant were fully operational and is driven by safety improvements, legislative need or operational efficiency gains.

New and improvement works are approved prior to delivery, through the Alliance process which includes Seqwater representation at Alliance management and leadership bodies. This process allows Seqwater to engage internally and consider the proposed works in light of the broader Seqwater investment program priorities.

6.4.3 NON-INFRASTRUCTURE ASSETS- WESTERN CORRIDOR RECYCLED WATER SCHEME

Previous Government policy required the WCRWS to be able to be restarted in the event that system connected storages reach a combined 40%. As a consequence of the likelihood of combined storages reaching these levels the WCRW scheme was placed in Care and Maintenance mode as the lowest cost state of preservation. The SOP has now been superseded and the 40% trigger no longer applies. However, Seqwater is required



under the Ware Security Program to model options to meet the newly established LoS objectives and how and when the WCRW scheme may be used to respond to drought. The WCRW remains a viable option as the assets are constructed and any other climate resilient supply would involve significant capital. While this work is being undertaken the WCRWS will remain in care and maintenance (in line with current Government and Board direction) until usage it is clear when, and if, the scheme needs to be recommissioned.

This is the lowest cost option for the scheme to retain this drought protection capability. The government is currently examining other options to use at least some of the scheme assets however until a definite call is made on other usages Seqwater will retain the asset in lowest cost mode (Care and Maintenance). The care and maintenance regime for the WCRWS commenced in FY14. Only those costs to support ongoing care and maintenance have been included in this submission (ie, any potential restart costs are excluded).

The WCRWS is managed, operated and maintained by Veolia under an Operations and Maintenance Agreement with Seqwater. This agreement currently extends until October 2028, and automatically extends (within limits) under the scenario where the assets are shutdown for a period. For the purposes of this submission, the services performed under this arrangement are assumed to continue until 2028.

Asset Management services related to the WCRWS are undertaken by Veolia, utilising the systems and processes of Veolia. The management plans, systems and processes align with the higher level policies and principles the Seqwater apply to asset management. The key supporting system is CARMS, which is described in Section 6.4.2.

The FY14 budget originally assumed a base level of production and maintenance of all scheme assets in an operational condition. In July 2013 a decision to implement a planned shutdown of the scheme was made and a project initiated to undertake the necessary works and establish an ongoing care and maintenance program for the remaining assets. Routine production of purified recycled water ceased in December 2013. The FY15 budget includes ongoing operational activities and one off shutdown activities.

As the nature of the shutdown arrangements are unprecedented in the water industry – with three advanced water treatment plants and over 200km of pipeline placed in a long term dormant state – the understanding of technical requirements and cost implications are being developed from first principles. Details of these assumptions can be found under chapter 8 of this report.

As for the GCDP, Seqwater engaged the engineering consultancy firm SKM to conduct a review of the Veolia proposed capital and operating expenditure for FY15 (refer Appendix D). The SKM review assessed the proposed expenditure against prudency and efficiency



definitions previously documented by the QCA, with the recommendations accepted and adopted by Seqwater.

Renewals and minor works

Like the GCDP, the long term asset renewal and refurbishment plan for WCRWS is developed by Veolia and reviewed by Seqwater. Veolia utilises a whole of life cycle approach to prioritise and accurately forecast asset interventions.

The renewal cost in CARMS is currently based on the original construction cost. The refurbishment cost is calculated using a percentage applied to the original construction cost of that asset, this percentage varies and is specific to the asset.

Renewal and refurbishment works are approved during the annual services budget approvals process, or as a change to those services, based upon a proposal from Veolia.

The WCRWS renewals and minor works capital program has been amended through the CARMS system, taking into account the revised asset information, renewal profile parameters, asset criticality, and ongoing condition assessments. As such, future expenditure is significantly reduced compared to if the scheme were fully operational. This will continue to be refined throughout the period covered by this submission and as an understanding of the long term shutdown state increases. These estimates will not be available prior to the finalisation of the final QCA report, however it is not anticipated that final costs will exceed current estimates.

New and improvement works

The WCRWS new and improvement works capital program reflects operation in a longterm shutdown state, with minimal expenditure forecast in future years.

The WCRWS will return to operational service if drought trigger levels are activated, which has a 1% probability of occurring within the next 10 years, and less than 10% probability within 20 years. As such, capital investment in the restart of the scheme is not reflected within this submission.

6.4.4 NON-INFRASTRUCTURE ASSETS- INFORMATION AND COMMUNICATIONS TECHNOLOGY

Renewals and minor works

Future asset renewal cost profiles are built up from programmed (0 to 5 years) or probable asset renewal dates and adjusted to account for the transition to an Infrastructure as a Service (IaaS) based model (refer Chapter 7). Under such a service delivery model Seqwater would no longer procure the asset under a traditional capital



investment paradigm, but instead would purchase the 'asset capabilities' as a service under as an operating cost.

Asset renewal costs are derived from the most recent purchase made for a similar asset and adjusted to account for the additional costs of decommissioning the asset being replaced. Additional costs could include migration of software to the new asset, disposal, configuration, testing and implementation costs, etc.

Seqwater's ICT assets are recorded in the Financial Asset Register, Corporate Information System (CIS - Maintenance Register) and IT Service Management (ITSM). These asset inventories provide the information base for asset renewal planning and address warranty expiry, supply contracts and service obligations. The asset purchase price is captured and the asset is depreciated based on the useful life of the asset as defined by Queensland Government Accounting Standards. A complete list of current assets along with a transition to an IaaS delivery model is being used for renewal planning purposes.

The useful life (UL) of each asset type is recorded in the various asset registers and is determined by industry standards for ICT and current Queensland Government ICT guidelines. Adjustments are made to the UL for any augmentation/addition to individual assets.

Remaining asset life is based on the warranty expiry date which is generally when the item is fully depreciated. The cost of additional warranty for most ICT assets can be costly given the price of these assets generally trends lower.

New and improvement works

As explained in Chapter 7, no new and improvement works in this category are proposed over the FY16-28 period.

6.4.5 NON-INFRASTRUCTURE ASSETS- PROPERTY, FLEET AND FACILITIES

Activity in the Facilities portfolio is focussed on standardising office accommodation in line with Seqwater and State Government accommodation standards. The unit undertakes some minor capital works projects related to the refurbishment or construction of office accommodation. In addition the unit is involved in the consolidation of business wide contractual arrangements in the areas of cleaning, security and uniforms to deliver cost and efficiency gains.

Renewals and minor works



Future minor works and asset maintenance programs are extrapolated from current budget forecasts which for 2014-15 was a zero based budget. Cost estimation uses market benchmarks for forecasting and historical budget information.

All three portfolios have been acquired through asset transfers arising out of the Water Restructuring Act. As a result across all portfolios there has been a focus on aligning these assets with Seqwater's corporate standards and identifying opportunities to optimise the use of these assets.

Property, Fleet and Facilities assets are recorded in the Financial Asset Register, Corporate Information System (CIS – Operating Register) and X-info Connect (Property Database). The data held in these systems provides the basis for planning and forecasting.

New and improvement works

Property Fleet and Facilities have a proposal to build a new administration facility at Molendinar as part of the overall master-plan for the Molendinar WTP site. The administration building will be the first element constructed and will be completed to house the staff temporally housed at Southern Regional office (Hinze Dam). It is anticipated the planning stage for this project would commence in FY18 with completion in FY19.

The administration building will be designed to accommodate the organisations staff located in the southern region and will replace the existing Southern Regional Office which is currently housed in demountable style buildings located at Hinze Dam. The design and specification of the building will be based on Seqwater and State Government accommodation standards. The project will adopt costings from industry guides such as Rawlinsons or Cordells, with the fit out costs based on the State Government benchmark of $1,174m^2$.

6.5 FORECAST OPERATING COSTS

6.5.1 BASE YEAR BUDGET

The FY15 budget represents the best understanding of steady-state bulk water supply costs in SEQ, as it builds upon FY14 which was the first full financial year during which Seqwater operated as a single consolidated entity. Additionally the FY15 cost forecast was developed with the principal of no unusual or one-off events except those specifically mentioned and addressed in this submission, thus providing a consistent platform from which to develop future cost forecasts.

For comparison, pre-merger FY13 operating costs of the three entities totalled \$360M, which is forecast to reduce to \$263M (27% reduction) in FY14. Seqwater long-term



operating cost projections utilise the zero-base FY15 budget forecast which is then adjusted for post FY15 impacts. With a slight increase in demand the FY15 operating cost forecast of \$271M is \$8M more than the FY14 forecast (note this excludes inflation which in real terms results in operating costs being essentially unchanged). In real terms operating costs are essentially unchanged. Seqwater believes that this FY15 value is an accurate reflection of steady-state operating costs and a robust base from which to develop a long term forecast.

6.5.2 BASE YEAR COST COMPONENTS AND ASSUMPTIONS

Zero based budgeting was applied for all FY15 expenditure and revenues. Zero based budgeting is a method of budgeting in which all budgets must be justified from first principles. The process requires starting from a "zero base" and analysing the needs, risks and costs/revenues regardless of whether the budget is higher or lower than the previous year's budget or even existed previously.

The advantages to zero based cost budgeting includes:

- efficient allocation of resources, as it is based on needs and benefits (identified in the Strategic and Operational Planning process) rather than history
- identification of cost effective ways to improve operations
- detection of inflated budgets
- identification of opportunities for outsourcing
- ensuring costs are linked to achievement of goals and organisational strategies.

The disadvantage of this approach is the time required in justification of line items. However, given this budget process was the second year of a combined bulk water business with, in many cases new or reassigned staff involved in budget preparation it was considered the time is well justified.

Resourcing

Seqwater is forecasting a total of 666 positions in FY15, a 0.7% increase over FY14 (refer Table 18 below). 94% of these are employees or fixed term contractors (referred to as FTEs, with the remainder being defined as temporary positions (which include graduates and trainees). This slight increase is largely due to the addition of six temporary (trainee) positions in the Recreation and Catchment Services Team (OCRW Group). This has been in part offset by a decrease in the Service, People and Technology Group, driven by a reduction in recruitment resourcing. Please refer to the operating cost discussion in Chapter 8 for detail of resourcing changes.

As context prior to the merger of the bulk water entities in January 2013 there were 686 FTEs in Seqwater, LinkWater and the Water Grid Manager. There has been a 9.3% reduction FTEs to 622 in FY15.



Seqwater Q3 FY14 and FY15 forecast	Q3 FY14 FTE	FY14 to 15		Q3 FY14 Temp	FY14 to 15	FY15 Temp	Q3 FY14 Total	FY14 to 15	FY15 Total
Resourcing	Positions	change	Positions	Positions	change	Positions	Positions	change	Positions
Operations - Treated Water	192.5	1.0	193.5	12.0	-	12.0	204.5	1.0	205.5
GM Office	2.0	-	2.0	-	-	-	2.0	-	2.0
Business Systems and Support	7.0	-	7.0	-	-	-	7.0	-	7.0
Supply Treated Water - North	41.0		41.0	2.0	-	2.0	43.0		43.0
Supply Treated Water - South	31.0	-	31.0	3.0	-	3.0	34.0	-	34.0
Supply Treated Water - Central	39.0	-	39.0	2.0	-	2.0	41.0	-	41.0
Operational and Contractural Performance	18.5	-	18.5	2.0	-	2.0	20.5	-	20.5
Asset Maintenance	54.0	1.0	55.0	3.0	-	3.0	57.0	1.0	58.0
Asset Portfolio Development & Delivery	121.2	-	121.2	13.7	(1.8)	11.9	134.9	(1.8)	133.1
GM Office	2.0	-	2.0	-	-	-	2.0	-	2.0
Water Quality and Enviroment	43.0	-	43.0	2.0	0.5	2.5	45.0	0.5	45.5
Asset Capability and Sustainability	20.2	(0.5)	19.7	-	2.4	2.4	20.2	1.9	22.1
Asset Planning	13.0	0.5	13.5	2.0	-	2.0	15.0	0.5	15.5
Engineering and Technical Support	21.0	-	21.0	6.0	(2.0)	4.0	27.0	(2.0)	25.0
Program Delivery	22.0	-	22.0	3.7	(2.7)	1.0	25.7	(2.7)	23.0
Service, People and Technology	82.2	2.8	85.0	9.0	(4.9)	4.1	91.2	(2.1)	89.1
GM Office	2.0	-	2.0	-	-	-	2.0	-	2.0
Strategy and Brand	11.0	2.8	13.8	1.0	-	1.0	12.0	2.8	14.8
WH&S	11.0	1.0	12.0	2.0	(0.4)	1.6	13.0	0.6	13.6
People and Culture	15.2	(2.0)	13.2	4.0	(2.5)	1.5	19.2	(4.5)	14.7
ICT	43.0	1.0	44.0	2.0	(2.0)	-	45.0	(1.0)	44.0
Corporate Finance	56.0	-	56.0	-	-	-	56.0	-	56.0
Chief Financial Office	3.0	-	3.0	-	-	-	3.0	-	3.0
Finance	25.0	-	25.0	-	-	-	25.0	-	25.0
Procurement	9.0	-	9.0	-	-	-	9.0	-	9.0
Property and Facilities	19.0	-	19.0	-	-	-	19.0	-	19.0
General Counsel	18.0	-	18.0	1.0	-	1.0	19.0	-	19.0
General Counsel	2.0	-	2.0	-	-	-	2.0	-	2.0
Legal	9.0	-	9.0	-	-	-	9.0	-	9.0
Governance	7.0	-	7.0	1.0	-	1.0	8.0	-	8.0
Operations - Catchment and Raw Water	99.3	1.2	100.5	5.0	7.3	12.3	104.3	8.5	112.8
GM Office (including Project Office)	4.4	0.2	4.6	-	-	-	4.4	0.2	4.6
Source Operations and Management	47.9	1.0	48.9	4.0	-	4.0	51.9	1.0	52.9
Recreation & Catchment Services	47.0	-	47.0	1.0	7.3	8.3	48.0	7.3	55.3
Water Supply, Strategy and Policy	41.0	(1.0)	40.0	2.0	-	2.0	43.0	(1.0)	42.0
GM Office	2.0	-	2.0	-	-	-	2.0	-	2.0
Regulatory and Investment Governance	6.0	(1.0)	5.0	-	-	-	6.0	(1.0)	5.0
Water Supply Planning	15.0	(0.1)	14.9	1.0	-	1.0	16.0	(0.1)	15.9
Water Policy, Strategy, Reseach and Innovation	18.0	0.1	18.1	1.0	-	1.0	19.0	0.1	19.1
Office of the CEO	7.0	1.0	8.0	1.0	(1.0)	-	8.0	-	8.0
Office of the CEO	2.0	-	2.0	-	-	-	2.0	-	2.0
External Relations	5.0	1.0	6.0	1.0	(1.0)	-	6.0	-	6.0
Total	617.2	5.0	622.2	43.7	(0.4)	43.3	660.9	4.6	665.5

Table 18: Seqwater total positions

Certified agreement

Seqwater negotiated an Enterprise Bargaining Agreement, EBA (Seqwater Certified Agreement 2013-2016) throughout 2013. This Agreement was certified by the Queensland Industrial Relations Commission in September 2013. The Agreement has been negotiated with a focus on fiscal constraint and productivity trade-offs. The Agreement contains a contingent wage increase every six months, which is payable if employees achieve cost savings equivalent to the cost of the increase. The outcome being that the contingent wage increase is cost neutral. The maximum annual increase for employees is 2.5% per annum. The Agreement expires in 2016 with negotiations likely to commence in 2015. These EBA rates have been included in the operating cost forecasts. Separate escalation factors (refer later in Chapter 6) have been applied thereafter.

Redundancies

All merger-driven redundancy costs occurred in FY13. Post-merger restructure costs in part occurred in FY13, with a very minor amount carrying-over into the first half of FY14.



These are identified in the operating cost narratives for each Group or Team, where relevant. Minor redundancy costs arising from the relocation to Ipswich have occurred in the second half of FY14, and again are identified in the operating cost narratives for each Group or Team, where relevant.

Electricity

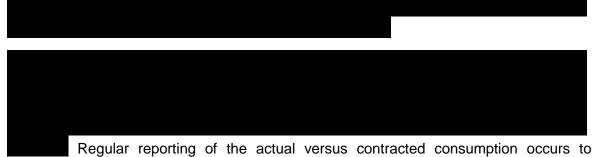
In November 2013 Seqwater entered into a two-year electricity supply contract for its large contestable sites (sites which consume more than 100 megawatt hours per annum) with ERM Business Energy effective from 1 January 2014 to 31 December 2015. This is based on carbon exclusive supply for peak, and off-peak periods for the majority of the sites and peak, shoulder and off-peak for Mt Crosby Water Treatment Plant (MTC) and Gold Coast Desalination Plant (GCDP). Carbon costs are to be on a pass-through basis.

The contract was awarded after a competitive bidding process split into two stages, in accordance with the Queensland Government Procurement Policy 2013. The initial stage was an assessment of the terms and conditions offered by prospective tenderers.

Prices were accepted in a two day period on the understanding that the retailers would lock in prices and loads in the prevailing market. Based on the prices submitted Seqwater elected to award a two-year contract with specific pricing for each of the two years. Prices for a potential third year were not attractive so Seqwater elected not to lock in the extra year. This two year electricity supply contract with ERM for the large contestable sites included a generation agreement for Landers Shute WTP, a voluntary load curtailment agreement at Mt Crosby WTP and self-management of Seqwater's renewable energy liability for the Large Generation Certificates (LGCs). Various environmental schemes under the Commonwealth Government's Renewable Energy (Electricity) Act 2000, such as the Federal Government's Renewable Energy Target scheme, comprising the Large-scale Renewable Energy Target (LRET) and the Small-scale Renewable Energy Scheme (SRES), place financial obligations on electricity retailers. These costs are typically passed on to Sequater under its electricity supply agreement with a margin. Under this contract arrangement Sequater has agreed to manage this liability by transferring its LGCs for the contract term. These LGCs where acquired as part of the construction arrangement of GCDP.

Seqwater sought pricing for electricity supply of per annum for all sites with alternate pricing offered for GCDP and MTC in the form of a 3 rate tariff (Peak, Off-Peak and Shoulder).





manage this risk.

Three price schedules are in place with ERM relating to MTC, GCDP and most of the other WTP or pump stations.

The sites below the contestable limit are priced at a contract discount to the notified Retail Electricity Prices for Non-market customers as published by the Queensland Competition Authority.

Electricity consumption assumptions for FY15 reflect recent historic kWh/ML data which is applied to projected production levels at each WTP under the Annual Operations Plan.

c/kWh	Peak	Shoulder	Off Peak	Consumption (MwH pa)
Mt Crosby				
CY14				
CY15				
CY14				
CY15				
CY14				
CY15				

For the ERM sites the schedules are as follows:

Table 19: CY14 and CY15 electricity prices

Close out of 'Drought Asset' infrastructure build

Apart from minor expenditure on the GCDP all costs relating to establishment of these assets will be completed by FY15.

Commercial close out of the GCDP is estimated at \$2.3M in FY15. While the project has achieved "Works Completion", it remains in "Carryover Works Phase".

Commercial close out of Gibson Island AWTP was completed in FY14 with total payments of \$5.3M.



Head office relocation to Ipswich

Seqwater's Brisbane CBD office has been relocated to a new purpose-built for Government ICON office tower in Ipswich since April 2014. The decision to move the headquarters was made after Seqwater finalised a review of its CBD accommodation and was in support a whole-of-government strategy for the building at 117 Brisbane Street, Ipswich. The move enabled Seqwater's office-based CBD employees to be accommodated at one location and strengthened the business's regional presence. Relocation to Ipswich results in a \$1.1M pa increase in head office rent expense.

6.5.3 FUTURE YEAR COST BUILD-UP

About 46% of Seqwater's operating costs directly relate to the treatment and supply of bulk water services. Those costs were forecast to FY28 at the asset level, based on the forecast demands described in Section 4.1 and the Interim Operating Strategy described in Section 4.2. The Interim Operating Strategy provides a long term operational forecast to anchor the costings, ensuring credible long term forecasts consistent with Water Supply Modelling outcomes across the entire asset portfolio, including:

- Source: Water Supply drawn down from dams (MLs) and MWAs (MLs)
- Treatment: Water treated (MLs)
- Transport: Total Flows (MLs)

To derive variable operating cost forecasts to FY28 for Treatment Assets, the unit rates associated with the FY15 budget were applied to the production forecasts associated with the Operating Strategy (at the asset level), with application of cost (price) escalators as described in Chapter 6. Transportation variable operating cost forecasts were derived by aggregating variable costs at the asset level and scaling by a factor for demand (the year on year increase in the demand time series forecast). This is reflective of the linear nature of these costs. Cost escalators are then applied.

Consistent with the FY15 budget, the operational cost forecast assumes average weather conditions, without allowance for extreme events. Actual costs may be higher or lower depending upon actual demand and actual weather conditions.

Fixed operational costs taken into consideration include:

- costs to meet standards of service as required under regulation and commercial contract
- costs to retain capacity to enable an effective response to incidents or events that impact operations, such as storms, high rainfall, floods and raw water quality problems
- the need to capture appropriate operational data to support safe operations and regulatory reporting



• time taken for training staff to operate water treatment plants in a safe and efficient manner.

Costs not directly related to operations were forecast by:

- Extrapolation of FY15 operational baseline costs using unit rates and application of approved cost escalators.
- Adjustment of those forecast costs for known changes, including current efficiency initiatives
- Escalation of the adjusted forecasts, using the rates specified in Section 6.6
- Aggregation at Group level
- Application of targeted efficiency savings at the Group level, at rates specified in Section 8.11.

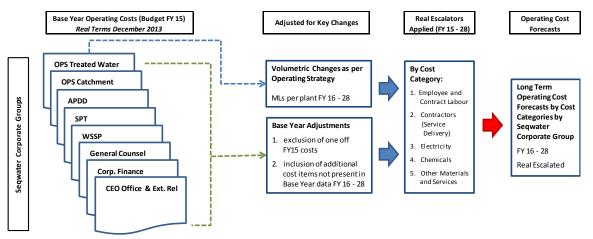


Figure 17: Operating cost forecast methodology

Alternative methodologies were used for some costs, as described below.

Infrastructure assets – scheduled maintenance

Maintenance is defined in Seqwater's accounting policy as the cost to 'maintain assets in their original state' and 'necessary to allow the continued use of existing assets'.

Scheduled maintenance is developed and programed by the Asset Capability and Sustainability (ASC) team within the APDD group. As described in Section 5.2, the Asset Maintenance team within the OTW group is responsible for the delivery of that scheduled maintenance as efficiently as possible.

Beyond FY15, scheduled maintenance costs have been forecast based on the Scheduled Maintenance Program. That program schedules periodic maintenance and inspections of all built and natural assets based on the full Asset Lifecycle requirements and in order to ensure all Regulatory and Statutory Maintenance Obligations are met. That maintenance schedule is considered to reflect a prudent and efficient level of investment due to:



- use of original manufacturer principles for new assets
- routine review and refinement of those schedules over time taking account operation and criticality
- further refinement through incorporation of more predictive maintenance approaches.

Specifically, the Schedule is a mixture of Time Based and Condition Based maintenance and is developed from a collaboration of information that is sourced primarily from the Original Equipment Manufacturer (OEM). As the assets age, the schedules are adjusted to reflect internal standards and to take into account the Asset Condition, Criticality and Operational Context as specified in Asset Management Plans (AMPs).

The Program is continuously reviewed and refined to reflect the condition of the asset, informed by condition assessments that are recorded within CIS following maintenance and renewals activities. It is also refined based on input from the Operations, Maintenance and Catchment Services teams, Australian Standards and Asset Performance History.

The schedule is contained within the CIS system. For example, the CIS Scheduled Maintenance Template Task (SMTT) incorporates estimated costs and Job Plans which include the procedure steps, service requirements, any specialist skills and tooling required.

The scheduled maintenance program estimates and actual costs that are captured in CIS are used to form the basis of the Asset Maintenance Budget year on year.

The Asset Maintenance Budget for the next 15 years has been estimated using the Forecast Gantt chart. These estimates have been generated from CIS using historical data from past work order history, reviewed and updated into CIS against each SMTT and projected for future years. Adjustments have been made for:

- planned asset renewals or disposals (reduced maintenance costs)
- planned new asset projects (additional maintenance costs).

Adjustments have also been made in anticipation of efficiency savings that are expected to be achieved following the implementation of the Monitoring Control System (MCS) project in the coming years. That system will allow for further optimisation of the Scheduled Maintenance Program to include an expanded Hours/Condition Based Strategy.

Specifically, from that time maintenance schedules will be generated based on meters (up to four meters can be defined for each asset) or a combination of both time and meters. Meter readings will then be imported from SCADA/telemetry systems for plant environments to trigger the work orders required at each defined event. This data will



allow for the extension of maintenance and subsequent cost savings where assets that are underutilised would normally be serviced on a time based strategy.

The estimated savings below has been developed through understanding the makeup of the scheduled maintenance program and applying an Hours/Condition Based Strategy to the applicable assets (Pumps, Generators and Compressors) at an estimated costs savings of 25% per year.

Currently, asset monitoring and frequency of scheduled maintenance are prioritised towards assets of higher criticality. However, processes are also being implemented to adopt and formalise Reliability Centred Maintenance (RCM) approaches more broadly. For example, RCM approaches are currently being applied to network assets as part of the operational maintenance contract with Thiess.

The scheduled maintenance forecasts could be affected by changes to the Interim Operating Strategy, such as by assets being taken offline or the decommissioning of further WTP sites.

Infrastructure assets – planned and reactive

The Asset Maintenance team undertakes all maintenance services for Seqwater treatment, dam and natural assets.

For FY15 planned and reactive budget maintenance budgets, CPI increases (3%, which all MMW panel contractors can claim under panel contract arrangements) have been absorbed as a budget saving. This combined with job scheduling efficiency gains and reallocation of reactive maintenance funds will offset the 7% scheduled maintenance budget increase.

For the purposes of this report the planned and reactive asset maintenance budget has been extracted from the asset budget and examined as a whole. Assumptions specific to forecasting planned and reactive maintenance costs to 2028 include:

- Seqwater continues with current sourcing arrangements for maintenance with 95% of all work outsourced through competitive tendering of tasks between pre-qualified service (panel) providers
- the proportion of scheduled works will continue to improve with the target of 45% being scheduled work being reached in FY17
- the aging asset base and the increased technological complexity of new assets means that maintenance costs will continue to increase over and above efficiency savings from improvements to productivity and advances in efficient scheduling.

Actual practices are likely to differ from these assumptions, in order to achieve the targeted efficiency savings described in Section 8.11.



Non-infrastructure assets - maintenance

Seqwater has engaged SKM to conduct a review of the Alliance contractor proposed GCDP and WCRWS project operating and capital budget proposal for period 2016-2018. The SKM review assessed the proposed expenditure against prudency and efficiency definitions previously documented by the QCA. SKM's report is contained in Appendix C.

6.6 ESCALATION FORECASTS

Seqwater engaged PricewaterhouseCoopers (PwC) to analyse historical price movements and other relevant information (including Government and industry forecasts) and recommend escalation forecasts for the broad operating cost categories listed in the Referral Notice (employee expenses, contractor labour, electricity and other materials and services). PwC also provided historical cost escalators for the purpose of updating project capital cost estimates from previous years into real FY14 terms, and a forecast for future capital cost escalation. PwC's report "Cost escalation forecasts - Final report, May 2014" is contained in Appendix E.

Consistent with the base period for costing and the drivers of escalation, escalation factors that take forward operating expenditure escalate from average costs over a financial year to average costs over the next financial year – in the sense that inflating operating costs to the mid-point of a financial year is intended to be representative of the entire financial year.

PwC recommended that capital cost forecasts be adjusted by the Australian Construction Industry Forum's Engineering Construction Price Index (ACIF). The ACIF has been used for escalating Seqwater's capital expenditure over the forward regulatory period, and rebasing capital expenditure estimates that were developed in prior years. The indices applied were developed by PWC on both a financial year and calendar year basis.

The operating and capital cost forecasts in this submission use actual contract escalators where relevant (such as electricity prices and EBA labour rates) and only default to the long-term PwC escalation forecasts where actual contractual rates are not applicable.

Operating cost escalators applied in this submission are summarised below. Note for FY14 and FY15 these include actual contract terms, and although not specifically listed in the Referral Notice, chemicals have been forecast independently owing to the tradeable commodity nature of this input.



Category	Type*	FY14	FY15	FY16	FY17	FY18	FY19-28
Employee	Nom	2.50%	2.50%	2.50%	3.50%	3.50%	3.50%
expense	Real	(0.49)%	(0.49)%	-	0.98%	0.98%	0.98%
Contractor	Nom	3.46%	3.46%	3.38%	3.38%	3.38%	3.38%
expense	Real	0.45%	0.45%	0.86%	0.86%	0.86%	0.86%
	Nom	17.46%	5.71%	6.03%	6.03%	6.03%	6.03%
Electricity	Real	14.04%	2.63%	3.44%	3.44%	3.44%	3.44%
	Nom	3.00%	3.00%	2.50%	3.50%	3.50%	3.50%
Chemicals	Real	-	-	-	-	-	-
Other mats.	Nom	3.00%	3.00%	2.50%	3.50%	3.50%	3.50%
& services	Real	-	-	-	-	-	-

* Real refers to FY14 (January 2014) terms

Table 20: Operating cost escalators

Capital cost escalators applied in this submission are summarised below.

	Financi	ial Year	Calendar Year		
Year (FY or CY)	Nom	Real*	Nom	Real*	
07	11.31%	9.02%	10.96%	7.84%	
08	11.51%	6.76%	7.05%	3.23%	
09	1.34%	-0.08%	1.93%	-0.13%	
10	2.94%	-0.17%	3.64%	0.86%	
11	5.51%	1.89%	5.48%	2.41%	
12	4.17%	2.92%	4.20%	1.95%	
13	3.42%	1.00%	3.93%	1.15%	
14	4.34%	1.30%	4.54%	1.74%	
15	5.24%	2.17%	5.02%	2.21%	
16	4.80%	2.25%	4.78%	2.22%	
17	4.75%	2.20%	4.71%	2.16%	
18	4.67%	2.12%	4.66%	2.11%	
19	4.65%	2.10%	4.68%	2.12%	
20	4.70%	2.15%	4.81%	2.26%	
21	4.92%	2.36%	4.96%	2.40%	
22	5.01%	2.45%	4.94%	2.38%	
23	4.88%	2.32%	2.50%	-	
24-28	2.50%	-	2.50%	-	

* Real refers to FY14 (January 2014) terms

Table 21: Capital cost escalators



CHAPTER 7 FORECAST CAPITAL EXPENDITURE

Capital expenditure within Seqwater is classified, planned, managed and delivered in two categories:

- infrastructure capital- this category is all expenditure for which the APPD Group is accountable. This spend accounts for >95% of total annualised forecast Seqwater capital expenditure out to FY28, and includes all of the major capital investments in fixed plant and equipment, dams and catchments plus organisation-wide systems. Note this category specifically excludes capital expenditure on the MWAs which is overseen by the OTW Group through the contractual arrangements with Veolia
- non-infrastructure capital- this category covers all remaining capital expenditure managed by Groups other than APDD. This expenditure is either in specialised areas (ie, ICT or planning systems development) or is of a very low magnitude such that it does not justify the engagement of APDDs planning and project delivery expertise. This category includes MWA capital investment.

The capital program mix is evolving with substantially less non-infrastructure spend post FY15 owing to the conclusion of projects which have for legacy reasons been managed by Groups other than APDD. Those projects include MWA contract close-outs, WCRWS mothballing, ICT transition to service delivery model and land sale completions, such as the compensation payment being negotiated by the Coordinator General for properties affected for the Northern Pipeline Interconnector.

Seqwater's strategy is to consolidate capital expenditure planning and delivery into one responsibility Group (APDD) which contains the organisation's functional experts and expertise.

All values (including tables and figures) in Chapter 7 are presented on a cash expenditure basis (ie, as incurred), are in real FY14 terms, and have not been escalated with the rates listed at the end of Chapter 6 (unless specifically mentioned). This is to ensure consistency of the figures with the source documents and estimates. Escalation is applied to the capital program prior to incorporating into pricing calculations, and is presented at the consolidated total Seqwater capital cost forecasts at the end of this chapter.

7.1 INFRASTRUCTURE CAPITAL PROGRAM SUMMARY

This program is the first complete review and integration of long term infrastructure capital forecasting for the South East Queensland bulk water supply system since the merger on 1 January 2013. The program considers the assets of the previous LinkWater and Seqwater and the planning undertaken by Seqwater, LinkWater, the Queensland Water Commission (QWC) and the SEQ Water Grid Manager (WGM). It also reflects the



efficiency gains from the merger of those previous entities by allowing a whole of system approach.

As explained in Chapter 5, the program is based on the draft 15 year Asset Portfolio Master Plan. That program seeks to ensure that assets are capable of achieving the requirements specified in the 15 year interim Operating Strategy. It seeks to do so as efficiently as possible, taking into account current knowledge about the condition and capability of Seqwater assets. References to key requirements in the Operating Strategy are included throughout this chapter.

Total proposed capital expenditure from FY15 to FY28 is \$1,736M. The proposed infrastructure capital program is summarised in Table 22.

\$M real*	FY14 A+F	FY15	FY16-18	FY18-28	Total (FY15-28)
Capital	\$95M	\$78M	\$371M	\$1,286M	\$1,736M
Average pa	\$95M	\$78M	\$124M	\$129M	\$124M

Note: * all values are in real 2014 terms. FY14 forecast as at end May 2014.

Table 22: Summary of infrastructure capital program

Table 23 below summarises the inclusions and exclusions in the infrastructure capital program.

Inclusions	Exclusions
 capital expenditure for the asset groups of: Natural assets, including management of Seqwater owned land and initiatives to reduce water quality risks by improving the condition of our catchments, including programs to support investment by other land holders Water storages (dams and weirs) Water Treatment Plants Water transport Recreational assets sewage treatment plants monitoring and control systems (MCS) including instrumentation, laboratory, hydrometric and seismic equipment 	 operational costs, including for decommissioning capital and operating expenditure for manufactured water assets, being: Gold Coast Desalination Facility Western Corridor Recycled Water Scheme the seven irrigation Water Supply Schemes (WSS) regulated by the Queensland Competition Authority (consistent with the QCA Report "Seqwater Irrigation Price review 2013-2107", April 2013) renewals works of Bill Gunn, Clarendon, Atkinson and Cedar Pocket Dams that are part of the irrigation schemes above unregulated assets, such as the Somerset Hydro scheme

Table 23: Inclusions and exclusions in the infrastructure capital program



Overall, the key characteristics of the program are:

- that no expenditure is required on new bulk water supply sources, as the existing system has sufficient yield to meet projected demand
- that increased treatment capacity is required towards the end of the regulation price path to meet increased peak water demands as specified in the Operating Strategy
- 56% of the total program expenditure is driven by compliance, with about 35% of the total program expenditure being related to Dam Safety compliance
- the Mt Crosby WTPs will be increasingly relied upon to supply the bulk of compliant water (quantity and quality) to the bulk water supply system, particularly under adverse operating conditions. Expenditure is required to ensure a reliable supply and meet growth towards the end of the regulatory period.

The infrastructure program does not include any projects or investment for the Gold Coast Desalination Facility, Western Corridor Recycled Water Scheme, properties or information and communications technology. Those investments are discussed in the non-infrastructure section later in Chapter 7.

7.2 PROGRAM DEVELOPMENT

This section summarises the key inputs and methodology used to develop the capital program. It also references where further details are available elsewhere in this submission.

A summary analysis of the required investment program is then provided.

7.2.1 INVESTMENT DRIVERS

Overall, the expenditure is based on the following investment drivers, which are aligned with QCA definitions:

- growth capital expenditure designed to provide an increase in the capacity or capability of an asset or construction of new assets in response to increased demand, growth or variations required by a customer. Capital expenditure to provide increased security of supply should be included in growth
- renewals capital expenditure associated with the replacement and/or enhancement of an asset that currently meets service performance standards and legislative requirements but faces an unacceptable risk of future non-compliance. The renewal will maintain existing levels of service over the life cycle of the asset
- improvements capital expenditure associated with upgrading service outcomes to improve asset efficiency, reliability or increase the anticipated life of an asset to prevent service non-compliance or capacity shortfall. It must achieve an increase in



the reliability of the quality of supply that is explicitly endorsed or desired by customers, external agencies or shareholders

 compliance – capital expenditure associated with the replacement and or enhancement of an asset to prevent a non-compliance with contractual or legislative requirements such as (but not limited to) the Water Act 2000, South East Queensland Water (Restructuring) Act 2007, Water Supply (Safety and Reliability) Act 2008 and occupational health and safety requirements.

There are several key pieces of legislation and strategies and frameworks which drive future investments. Two key drivers which drive a significant portion of the capital program are summarised below Subsequent sections in this chapter provide more details on these and other drivers which are specific to particular asset groups.

Operating Strategy – growth and compliance driver

The Bulk Water Supply System Interim Operating Strategy 2014-2029 (the Operating Strategy) specifies the supply that is required from key facilities in normal conditions and during emergencies. It is based on a comparison of current transport and treatment asset capacity to supply the current and future average and mean day maximum month (MDMM) customer demands. The Operating Strategy forms the basis for meeting water supply compliance obligations. More details are contained in Chapter 4.

The capital investments program is the most efficient and effective means of ensuring that assets are capable of meeting those specifications, based on the best available information. It is based on the draft 15 year Asset Portfolio Master Plan, as described in Chapter 5.

The Operating Strategy will be reviewed and refined twice annually, with a comprehensive review to be undertaken following completion of the forthcoming Water Security Program. The capital program will be adapted to respond to changed specifications, as well as for more detailed information about asset capacity and potential improvements.

Dam safety – compliance driver

Seqwater must operate the dams safely under the *Water Supply (Safety and Reliability) Act 2008* which is regulated by the Department of Energy and Water Supply (DEWS). The Act details the provisions for referable dams and the process for determining whether a dam is referable or not. It requires owners of particular dams to assess the impacts of dam failure on the safety of people living downstream of the dam, by way of a dam failure impact assessment, to determine whether the dam is a referable dam. The Act also provides for regular ongoing assessment of the potential threat to people from unexpected flooding caused by a failure of one of these dams. Under the provisions of the Act, once it is determined that a dam is referable, DEWS issue dam safety conditions to the owner detailing compliance activities for the dam.



The outcomes are significant investments required to meet these legislative obligations. More details are provided below.

7.3 PROGRAM DEVELOPMENT METHODOLOGY

Overall, the infrastructure capital program has been developed according to Seqwater's planning process. Further details are provided in Chapter 6.

As noted in Chapter 6, this is the first time a complete integrated capital program has been prepared since the January 2013 merger. This has been done in the three phases shown on Figure 18 below.

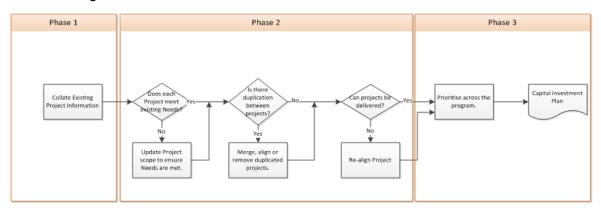


Figure 18: Infrastructure capital program development methodology

This is the first time a complete integrated capital program has been prepared since the merger in 1 January 2013. This has been done in the following phases.

<u>Phase 1:</u> consolidation of currently planned projects. This included reviewing key documents including:

- FY14 projects under contract that will carry over to FY15 (See Chapter 6 for more details of this process)
- approved business cases
- water treatment plant (WTP) long term planning reports
- the Referable Dams Portfolio Risk Assessment undertaken in 2013
- the Asset Capability and Sustainability renewals program, including Asset Class Plans and Asset Management Plans
- network planning documents, as prepared by the then LinkWater.

<u>Phase 2:</u> re-alignment and adjustment of projects according to:

- currency of need, taking into account:
 - alignment with the Operating Strategy
 - o alignment compliance requirements, such as water quality regulations



- o operational risks
- project duplication, including:
 - eliminating any project duplications
 - o aligning renewals with planned upgrade projects
- project deliverability, including:
 - having sufficiently detailed documentation available
 - co-ordination with any seasonal or planned shutdowns

Phase 3: program prioritisation

The third phase involved prioritisation of the proposed program. Issues considered include:

- alignment to strategic priorities, particularly in terms of natural asset priorities
- sustainable level of ongoing asset investment
- deliverability risks.

7.4 COST ESTIMATION METHODOLOGY

7.4.1 CAPITAL COST ESTIMATION

The capital estimation process has used the methodology as detailed in Section 6.

Renewals

The process for determining the renewals expenditure forecast aligns with the Asset management framework as described in Chapter 5.

The renewals program mainly comprises of planned works, triggered by the asset renewal dates based on condition assessments as described in Chapter 6. As explained in Chapter 6, it excludes the renewal of assets that had not yet been assessed at the time that this submission was prepared.

Until FY22, the program also includes an allowance of an average of \$1 million per year for emergent works due to unanticipated failure of critical assets. This contingency amount was benchmarked against historical expenditure on emergent works. For example, emergent works expenditure in FY14 exceeded \$5M due to repairs to the Mt Crosby Weir following issues identified during a routine inspection and detailed design for repairs to a treated water reservoir at the Molendinar, following failure of post tensioned reinforcing. It is expected that, from FY22, renewals planning will have reached a level of maturity to minimise the impacts of emergent works on the capital program.

The renewals works program is continuously reviewed and refined for efficiency and to mitigate risks. As currently occurs, specific projects may be brought forward or delayed while assessing the risks and impact on the total renewals budget.



Treatment of FY14 and FY15 capital programs

Chapters 6 and 9 describe how the FY14 and FY15 capital programs have been presented and integrated with FY16 and future years.

Note all pre-2014 values have been rebased into real 2014 terms using the historical capital cost escalation rates listed in Chapter 6.

7.5 KEY ASSUMPTIONS

The investment program reflects current standards and specifications. A key assumption is that they do not change during the regulatory period. These standards and specifications include:

- water quality standards refer chapter 3
- dam safety requirements refer water storage section in this chapter
- levels of service objectives refer chapter 3
- water security requirements refer chapter 3
- changes to demand forecasts and water consumption rates used in the development of the operating strategy refer chapter 4.

Any changes to these specifications or standards, which are not at Seqwater's discretion, will result in a change to the capital program. Possible triggers for amendment include:

- adoption of proposed health based risk targets, which may require additional investment in disinfection infrastructure. A project will be undertaken in FY15 and FY16 to monitor pathogens contained in raw water. That monitoring data will provide the basis for determining the extent to which adoption of the proposed health based risk targets would result in capital upgrades being required over and above those allowed for in the program to meet existing water quality requirements.
- changes to other water quality standards. For example, additional investment may be required if more stringent standards are introduced for disinfection by-products, such as to reflect the response by Queensland Health to the recent incident at Kooralbyn.
- changes in dam safety standards, which may require changes to the scope or timing of proposed works
- specification of customer reliability standards (continuity of supply). Additional investment may be required if the standards specified by Seqwater are more stringent than is currently anticipated.
- changes in water consumption rates due to demand management measures or population growth, either in specific towns or across the region as a whole. These types of changes may bring forward or defer the need for planned works.



The program reflects the best available information about the need for projects and the scope of those projects. It will change as further information becomes available about those projects, or as those projects progress through key decision gateways. For example:

- Cooloolabin Dam was identified as the highest risk dam from the Seqwater Referable Dams Portfolio Risk Assessment (PRA) completed in 2013 (refer Section 7.8). Based on the PRA findings, the dam safety risk presented by Cooloolabin Dam was considered unacceptable and action was needed to be taken. To further investigate the risks, two studies have been undertaken. Those studies have found that a significant risk reduction can be achieved by a permanent reservoir restriction. Should that reduction be found to be acceptable from a water security perspective, it means that an upgrade can be avoided or deferred
- detailed hydraulic analysis of the Mt Crosby WTPs may impact upon which of the two sites is preferred for the installation of the additional 100 ML/day of treatment capacity.

7.6 PROGRAM SUMMARY ANALYSIS OVERVIEW

This section provides a summary analysis of the capital program by yearly program spend, investment drivers and by asset group. A summary at the end discusses some key points about the program.

As mentioned previously, this is the first time that a long term investment program has been prepared for the bulk water assets in SEQ. The expected capital expenditure profile is presented in Figure 19 by both annual and cumulative spends. Figure 20 details the investment breakdown by asset groups for the total review period. Table 23 above details the inclusions and exclusions to the program.



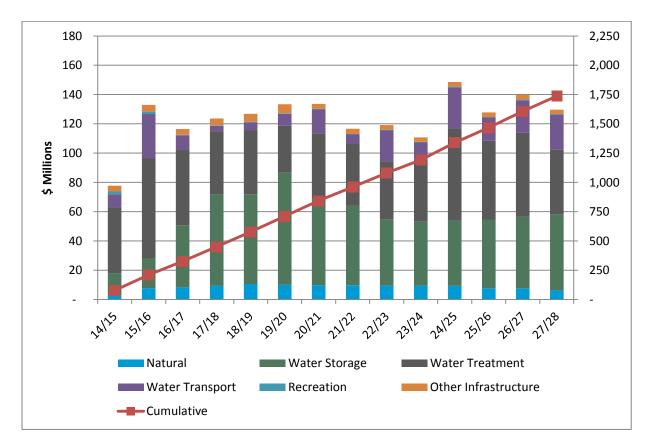


Figure 19: 15 year infrastructure capital program by asset group over time

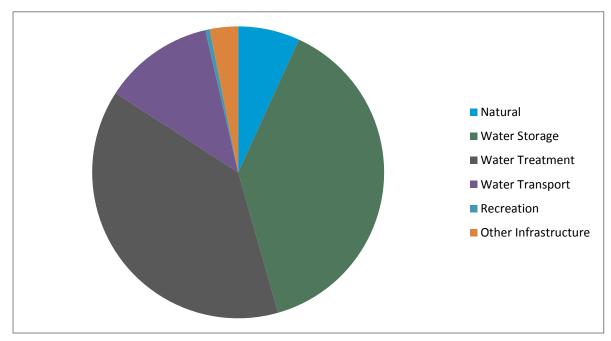


Figure 20: 15 year infrastructure capital program by asset group FY15-28 Some observations of the total program:



• the investments in Storage (Dams and Weirs) and Treatment Assets are both around 40% each (38.7% and 38.6% respectively), making up about 77% of the total investment program.

Natural assets:

• there is an increase in investment in catchments (natural assets) compared to historical expenditure. This is due to a greater understanding of the implications of catchment activities on water quality and the need to manage catchments as part of the overall water supply system.

Storage assets:

- the Storage Asset investments are driven by the Dam Safety Program. Note that there are still further investments required in this program beyond this price path review period
- the large dam safety compliance program ramps up towards the end of the three year price review period and extends into the middle of the regulatory period. The key projects are the North Pine Dam upgrade and the Somerset Dam upgrade, both of which are scheduled for delivery towards the end of the program. During the ongoing planning process, these projects have been reviewed in relation to the priorities and risk, enabling the projects to be deferred for several years. The prioritisation and phasing of these two large investments has enabled the overall yearly investment to be relatively stable.

Treatment assets:

- investment in Treatment assets is driven by a combination of current compliance needs and later in the price path, capacity upgrades to meet increased demand, as explained further down (note this is not raw water supply augmentations, which are not required in the price review period)
- there is a relatively large investment in Treatment Assets within the three year review period. Some of this investment is multi-year projects currently in progress, as well as reliability improvements at the Mt Crosby WTPs. The Mt Crosby projects are driven by the recent flood events as compliance investments for ensuring a reliable supply of compliant water (quality and quantity) in accordance with the Operating Strategy
- the renewals budget is adjusted to accommodate capital improvements and upgrades. Renewals expenditure is relatively low prior to 2023 due to major capital investments within that period, such as the refurbishment and improvement of the Mt Crosby, North Pine and Molendinar WTP filters and of monitoring and control systems at key sites. After 2023, an increase in renewals expenditure has been



forecasted for assets at some of the most critical and largest treatment plants due to age and condition.

Transport assets:

20

- the transport system will generally be operating under its capacity over the regulatory period largely due to the success of previous demand management measures which have lowered overall demand. Apart from a larger investment early in the regulatory period, the overall investment represents renewals in the existing system and some localized growth investments towards the end of the regulatory period
- in order to maintain reliability of the assets, there is an increase in renewals expenditure of older transport assets. A ramp up of renewals expenditure in the latter period of the period is forecast due to the refurbishment and replacement of mainly pipeline and pump station assets at their end of life. There are a number of old reservoirs in the network, for which the majority of renewals expenditure occurs within the first half of the forecast period.

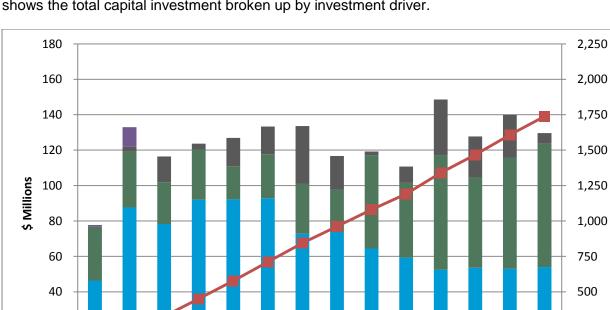


Figure 21 below shows the yearly spend profile by the investment drivers. Figure 22 shows the total capital investment broken up by investment driver.

Figure 21: Price path period infrastructure capital profile by QCA investment driver

19120

20122

21/22

Compliance Renewals Growth Improvement (Service) ——Cumulative

27/28

26/27

28/29

21128

25126

26121

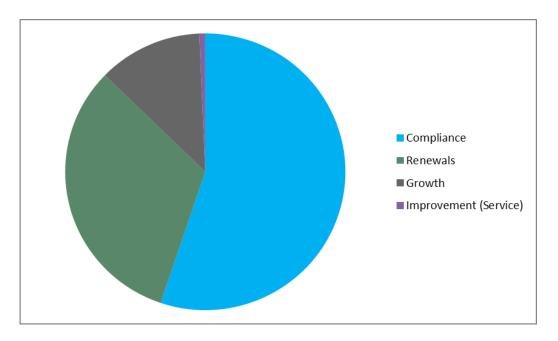
23/24

24125

22123

250







Some observations on the drivers for expenditure are:

- compliance investment accounts for 56% of the total capital program across the review period. The Dam Safety Program accounts for more than half of the compliance driven projects
- investments in the first three years of the review period are largely driven by compliance and renewals. This reflects investment prioritisation that makes the best use of the existing asset base
- renewals investment increases in the later part of the price path periods as some key components of infrastructure reach the end of their useful life and need replacing
- growth investments are mainly in the treatment group of assets. This is in response to the Operating Strategy, which has identified gaps between the capacity of some existing assets and the amount of water required to be supplied from those assets during peak demand periods. The capacity gaps include some standalone plants and the larger grid connected plants of North Pine and Mt Crosby.

A number of efficiencies have been achieved, compared to the plans prepared by the previous entities. Those efficiencies have been achieved through the integration of the Operating Strategy and the removal of duplication. Examples include:

• Capalaba WTP upgrade: The scope of the proposed upgrade has been reduced, taking into account alternative supply options to the area. An existing filter will now be refurbished, delivering up to 19 ML/day. The previous plan was to build a new



WTP with a capacity of more than 40 ML/day. This change has resulted in a saving of nearly 50%, reducing the estimated capital cost from \$12.7M to \$6.3M

- Canungra WTP upgrade: The delivery of the new WTP has been deferred, taking into account the most recent demand trends. The WTP has been deferred for at least three years, at an estimated cost of \$4.1M. Seqwater consulted Queensland Urban Utilities and Scenic Rim Regional Council regarding the timing of the new plant
- Petrie Water Supply Zone: Seqwater is working with Unitywater to agree upon the most efficient means of ensuring supply to the Petrie water supply zone. The preferred solution is likely to involve bringing forward a new bulk water supply connection into the system, allowing the Petrie WTP to be decommissioned and avoiding the need for about \$20M of renewals and ongoing operating costs. This represents a saving of around \$20M over the life of the project
- Beaudesert Water Supply Zone: Seqwater is working with Logan City Council to identify of the best whole of system option for this supply zone. Options are to upgrade the WTP or construct a connection to the bulk water supply system. As a first stage, Seqwater has sold the unused South Maclean WTP site to Logan City Council. Council will use the pumps at that site as part of its distribution network
- disinfection control: Seqwater is working more closely with distribution entities to provide compliant disinfection times before customers receive water. For example planning work is underway which could save \$300,000 at the Amity Point WTP by including the retailer reticulation storages as part of the disinfection system instead of constructing additional storage within Seqwater facilities
- WTP decommissioning: Seqwater has identified 16 WTPs that are currently surplus to our needs. Decommissioning these assets will deliver significant savings. For example, shutting down the Caboolture and Woodford WTPs will save over \$10M and \$5M respectively. Several of these options have been identified from collaborative work with distribution retailers. That planning has shown that operational changes and planned network investments will ensure a future reliable water supply without these sources of bulk water.

Table 24 below lists the 20 highest cost projects in the regulatory price path period by the year in which they are scheduled to be commissioned. Details of some of these projects are contained in subsequent parts of this report. Note renewals programs are excluded from this table.

Asset Name	Project	Driver	Capital (\$M real)	Commission Year	Current gateway stage
New Petrie Supply Connection	TPE: Petrie New Water Supply Connection	Improvement (Service)	12	2016	Initiation/Project Brief



Asset Name	Project	Driver		Commission	Current
			(\$M real)	Year	gateway stage
Pipeline	PSH:		40	0017	Annual Capital
Sparkes to	Wardell/Pickering	Compliance	16	2017	Investment
Green Hill	Main Upgrade				Program
Lake MacDonald	New dam	Compliance	64	2018	Annual Capital Investment
Dam		Compliance	04	2010	Program
Mount	Filtration				Annual Capital
Crosby East	Improvements	Compliance	37	2018	Investment
Bank WTP	(resilience)				Program
Sideling	Filter buttress and				Asset Portfolio
Creek Dam	spillway wall raise	Compliance	47	2019	Master Plan
Leslie	Stage 1 - Filter				
Harrison	buttress/crest	Compliance	58	2020	Asset Portfolio
Dam	reconstruction				Master Plan
Somerset	Abutment concrete	Compliance	46	2020	Asset Portfolio
Dam	aprons	Compliance	40	2020	Master Plan
	Saddle Dam 1 filter				
North Pine	buttress, dam	Compliance	103	2022	Asset Portfolio
Dam	parapet wall and				Master Plan
	bridge raise				
Lowood	Capacity Upgrade	Growth	19	2022	Asset Portfolio
WTP	(to 32 ML/day)				Master Plan
Mount	Eastbank WTP				Accet Dortfolio
Crosby East	Sedimentation	Compliance	15	2022	Asset Portfolio Master Plan
Bank WTP	Upgrade (resilience)				Waster Flan
	Saddle dam filter				
	buttresses and				
Wivenhoe	Acceptable Flood	Compliance	53	2024	Asset Portfolio
Dam	Capacity (AFC)				Master Plan
	upgrade				
Mount	Filter Resilience				
Crosby West	Upgrade (250	Compliance	13	2024	Asset Portfolio Master Plan
Bank WTP	ML/day)				IVIASIEI FIAII
North Pine	Filtration Capacity	Growth	36	2025	Asset Portfolio
WTP	Upgrade			2020	Master Plan
Maroon Dam	Stage 2 Upgrade	Compliance	35	2025	Asset Portfolio



Asset Name	Project	Driver	Capital (\$M real)	Commission Year	Current gateway stage
					Master Plan
Leslie Harrison Dam	Stage 3 - AFC Upgrade - Raise dam, Outlet works mods, spillway	Compliance	29	2025	Asset Portfolio Master Plan
Mount Crosby West Bank WTP	Capacity Upgrade (to 350 ML/day)	Growth	77	2027	Asset Portfolio Master Plan
Somerset Dam	Dam Stabilisation Design	Compliance	72	2027	Asset Portfolio Master Plan
North Pine Dam	Spillway upgrade	Compliance	36	2032	Asset Portfolio Master Plan
Catchment Central Brisbane	Bank stabilisation (Asset Planning Improvement Program)	Compliance	16	Ongoing	Asset Portfolio Master Plan
Catchment Central Brisbane	Stock exclusion (Asset Planning Improvement Program)	Compliance	16	Ongoing	Asset Portfolio Master Plan

Table 24: Top 20 capital projects by cost out to FY28

The subsequent sections of this chapter provide more details on some of the projects by asset group.

Table 25 below shows the project value according to value thresholds, which aligns with Seqwater's internal delegations approval process (refer Chapter 5). A key point is the low number of high value projects that account for large proportion of the total investment program. Note renewals programs are excluded from Table 25.

Infrastructure spend (\$M real)	>\$40M	\$40M-\$2M	\$2M-\$0.75M	<\$0.75M
Number of projects	9	75	46	110
Total value	\$545M (31%)	\$575M (33%)	\$58M (3%)	\$30M (2%)
Approval authority	Minister	Board	CEO	GM

Table 25: Breakdown of infrastructure capital projects by value FY16-28



7.7 NATURAL ASSETS

Natural assets consist of biological assets and land and water areas that aid in achieving business objectives. This section describes the actions that are required to maintain and improve those assets, including management of Seqwater owned land and initiatives to reduce water quality risks by improving the condition of SEQ catchments, including programs to support investment by other land holders. The actions range from weed control and fire management to gully and channel rehabilitation and land management extension schemes.

The Operating Strategy does not contain requirements in relation to natural assets. Rather, those assets are considered as part of the process to achieve the water supply objectives.

7.7.1 SUPPORTING DOCUMENTATION

The projects included in the draft 15 year Asset Portfolio Master Plan have been developed from over one hundred planning documents including:

Planning Documents

- Catchment Land Management Strategy
- Natural Asset Management Plans
- Catchment Risk Assessments
- Sanitary Surveys
- Catchment Water Quality Management Framework
- Integrated Options Analysis for the Mid-Brisbane, Lockyer and Upper Brisbane.
- Mid-Brisbane Stabilisation Strategy.

Asset Class Plans

- Fire Management Plans
- Pest Management Plan
- Vegetation Offsets Management Plan
- Riparian Management Plan.

Statutory Documents

- Nature Refuge Conservation Agreements
- Conditions of approval for the construction of Wyaralong Dam.

Several of the key documents have recently been completed, providing a more robust basis for investment planning. As outlined below, those documents have recommended that current capital investment programs be more focused, and that the quantum of investment should increase.



7.7.2 INVESTMENT DRIVERS

Natural assets fulfil several functions, including:

- collecting rainwater that runs off land (catchment) for subsequent treatment
- providing recreational areas for use by the community
- productive rural and agricultural based activities.

Of the 1,660,000 hectares of catchments that collect water, Seqwater only owns 673,500 hectares or 4.4%. Of this, approximately 19,000 hectares is covered by water behind dams.

Managing these assets is a balance between:

- legislative obligations for supply of drinking water
- legislative obligations for managing Seqwater owned land
- customer demands for access to these areas for recreational activities
- Influencing third party activities in the catchments.

The primary driver of the proposed natural assets program is to ensure that compliance obligations are satisfied and documented risks to source water quality are mitigated.

The Statement of Obligations 2013 identifies that Seqwater's primary focus is to deliver safe, secure, resilient and reliable water supplies at least cost and requires Seqwater to, amongst other matters:

- manage identified risks in accordance with appropriate risk management standards and guidelines
- meet or exceed its obligations under the Water (Safety and Reliability) Act
- develop and implement plans, systems and processes to manage its natural and built assets in ways which:
 - o allow Seqwater to supply its services sustainably
 - maintain a level of service
 - minimize whole of SEQ system cost
- plan and manage water in a total water cycle framework including its water supply catchments
- apply sustainability principles in developing and implementing programs for assessing, monitoring and continuously improving performance including maintaining and restoring natural assets that impact on Seqwater's operations, where feasible
- participate in and support the development and implementation of any regional catchment management strategy or catchment sub-strategy or regional river health strategy



- play an integral part of the Healthy Waterways Partnership to monitor and gauge the health of SEQ's waterways
- improve the quality of raw water supplies, where feasible.

The Water Supply (Safety and Reliability) Act 2008 requires Seqwater to have and comply with a Drinking Water Quality Management Plan (DWQMP). Seqwater's DWQMP 2010 adopts the Australian Drinking Water Quality Guideline's recommendation to implement a multi-barrier approach to protect water quality and a robust risk management system that mitigates risk to raw water quality from catchment sources. Specifically, the guidelines state that 'the drinking water system must have, and continuously maintain, robust multiple barriers appropriate to the level of potential contamination facing the raw water supply' (NHMRC, NRMMC 2011).

Other relevant legislation requires Seqwater to:

- effectively manage fire on its land (Fire and Rescue Services Act 1990);
- manage declared pests on its land (Land Protection (Pest and Stock Route Management) Act 2002)
- manage contaminated soils which are generated on their property as a result of their activities (Environmental Protection Act 1994 s424)
- protect the Land's Significant Cultural and Natural Resources in accordance with the terms and conditions of the Nature Refuge Conservation Agreements including preventing or minimising soil erosion, minimising unnatural contamination, sedimentation or degradation of waterways, developing and implementing appropriate fire management strategies and protecting native animal habitats. (Nature Conservation Act 1992)
- offset damage caused to ecosystems by new developments like the upgrade of the Hinze Dam wall (Vegetation Management Act 1999)
- implement the environmental development conditions as stipulated by the State Director General as a result of constructing Wyaralong Dam.

Seqwater has developed a *Catchment Land Management Strategy* as part of an integrated approach to asset management. The aim of the Strategy is to establish a framework and future direction for the management of Seqwater's catchment land assets and Seqwater's interests in relevant land in catchment owned and managed by third parties. The effective management of these catchment areas will lead to reduced risk of exposure to water quality hazards. Specifically in relation to the natural assets investment program a key driver is that the projects should be prioritised to mitigate risks to water quality that have already been identified and incorporated into Asset Management Plans for catchments supplying critical water treatment plants.

In addition to the Catchment Land Management Strategy, Seqwater has prepared Our Catchment Greenprint, which is a plan of how we move forward with our many



stakeholders to provide healthy source water for liveable, productive and sustainable catchments.

To this end, in March 2014 Seqwater signed a High Level Agreement with the Council of Mayors and other stakeholders including Queensland Urban Utilities and Unitywater to develop an effective long term model that ensures our catchments are able to provide our water supply. Consolidated plans of action will be developed for each catchment over FY15.

Seqwater's approach to investment in natural assets is expected to evolve as strategic planning to determine a balance of investment between source water protection and treatment processes matures.

Seqwater is committed to working in partnership with our catchment communities to ensure a more consistent approach to managing the land around our drinking water and irrigation storages.

7.7.3 PROJECT BREAKDOWN AND INVESTMENT OVERVIEW

Total forecast capital expenditure on natural assets is \$119M over 15 years, across 85 projects and programs. There are 11 projects and programs with forecast expenditure greater than \$2M. Based on the investment drivers above, Figure 23 below shows the proposed investment profile over the 15 year regulatory period.

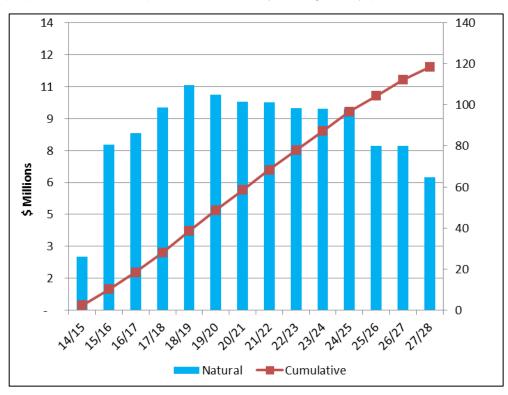


Figure 23: Natural asset 15 year capital investment profile



Overall, there are nine categories of investment targeted at improving raw water quality at WTPs and at managing Seqwater owned land in accordance with regulatory obligations:

- aquatic weed control
- best management practice
- contaminated land control
- feral animal control
- fire management
- gully and channel rehabilitation
- native vegetation management
- stock management and revegetation
- terrestrial weed control.

The primary purpose of those investments is compliance and pathogen risk reductions. The scale of investment proposed in those categories is considered to be sufficient to achieve a material impact on the investments required at some of those WTPs. For example, it includes a project to construct fencing to exclude cattle from the area immediately surrounding the raw water intake to the Rathdowney WTP to reduce immediate pathogen risks.

Reduced raw water turbidity at intakes to WTPs may be a secondary benefit of several of the categories of investment. For example, the weed management program includes funding to continue to work with Councils and other landholders to remove infestations of terrestrial weeds. Without those works, the existing native vegetation would die, exposing significant areas of land to increased erosion and increasing raw water turbidity in normal and flood conditions. Similarly, bank stabilisation and rehabilitation works will continue to be undertaken where there is a significant risk that erosion will impact upon the stability of a weir or other asset, as well as safety.

However, reduced raw water turbidity is not the primary driver of any of the categories of investment. This decision reflects the outcomes of the Integrated Options Assessment, which shows that broad scale investments in catchment stabilisation will deliver broader benefits than water supply and require investment by a broader range of stakeholders.

The investment program shows a significant increase of annual investment from previous years. This is the result of several planning studies being completed, such as the Integrated Options Analysis, which has substantially increased our knowledge of the impact natural assets have on water quality, in particular pathogen risks. It also includes a change of funds previously allocated as operational expenditure reassigned and capital in future years.

The steady investment profile increase reflects our plans to prioritise investments on Seqwater owned land first, as a demonstration of the prudency of these investments.



Subsequent investment supports partnership programs for investment in land not controlled by Seqwater.

The phased increase in investment projects are timed for a benefits realization study to be undertaken in FY17, prior to the next economic regulatory process. The review will be undertaken for each of the nine investment categories listed in above. It will inform changes to the program beyond the current three year regulatory period.

The phased increase also provides time for Seqwater to establish delivery processes and systems to support the efficient delivery of a program of this type and scale. Those delivery processes will be a combination of temporary or reallocated internal resources. Some projects will involve consultation with third party stakeholders, such as the Maroochy Landcare, to define the exact scope however they will deliver new or improved assets on the ground, so they are considered as capital expenditure. Table 26 below shows the top 10 projects and programs by value.

Asset Name	Project	Driver	Capital (\$M real)	Schedule
Catchment Central Brisbane	Bank stabilisation (Asset Planning Improvement Program)	Compliance	16	Starts FY16, accelerating FY18, finishes FY27
Catchment Central Brisbane	Stock exclusion (Asset Planning Improvement Program)	Compliance	16	Starts FY16, accelerating FY19, finishes FY28
Catchment Central Brisbane	Riparian restoration (Asset Planning Improvement Program)	Compliance	10	Starts FY16, finishes FY25
Multiple Sites	Gully and channel rehabilitation (establishment)	Compliance	5	Starts FY16, declining FY19, finishes FY28
Catchment Lockyer	Gully and channel rehabilitation at Lockyer Creek	Compliance	4	Starts FY15, finishes FY28
Catchment Nerang River	Native vegetation management (Hinze Vegetation Offsets and Nature Refuge)	Compliance	4	Starts FY16, finishes FY28
Catchment Baroon Pocket	Best management practice agriculture (Lake Baroon Catchment Care Group)	Compliance	3	Starts FY17, finishes FY28



Asset Name	Project	Driver	Capital (\$M real)	Schedule
Multiple Sites	Stock management and revegetation (establishment)	Compliance	3	Starts FY16, finishes FY28
Catchment Stanley River	Gully and channel rehabilitation at Somerset off Seqwater land	Compliance	2	Starts FY15, finishes FY28
Catchment Maroochy River	Best management practice agriculture (South Maroochy Farm)	Compliance	2	Starts FY15, finishes FY28

Table 26: Summary of top 10 natural asset projects and programs by value

Key programs and projects in the natural asset group include:

- Central Brisbane Catchment Bank stabilisation program, which is targeted at turbidity risk reduction with a secondary pathogen risk reduction. This program will be phased over 10 years in high risk catchments exacerbated during recent flood events
- Central Brisbane Catchment Stock Exclusion program, targeted at pathogen risk reduction with a secondary turbidity risk reduction. This project will be phased over 10 years, prioritised on Seqwater owned land for the first 3 years and thereafter on land owned by other parties
- Central Brisbane Riparian Restoration program targeted at pathogen risk reduction and with secondary turbidity risk reduction benefits. This is a 20 year rolling program, again prioritised on Seqwater owned land as part of a demonstration of the benefits, then as partnership activities on land owned by other parties.

These investments are directly supported by the Integrated Options Assessment carried out in the Lockyer, Brisbane and Mid Brisbane rivers, which are being extended to support the investments in our other catchments. Investment by third parties, such as through the Council of Mayors South-east Queensland (COMSEQ) initiative, may deliver additional water supply benefits over and above these programs and, in the medium- to long-term, could potentially reduce the level of investment required by Seqwater in either natural or built assets.

Seqwater has benchmarked its source water protection expenditure against other comparable bulk water providers (refer report "Benchmarking of Source Water Protection Expenditure, July 2014"). While in isolation benchmarking cannot inform the correct level of source water protection expenditure, it is a useful tool for comparing Seqwater's expenditure to other bulk water providers.



The results of the benchmarking analysis show that Seqwater's level of expenditure on source water protection activities, including activities driven primarily by pathogen risk, is well below that of comparable benchmarks. If the benchmark \$/km² expenditure on source water protection activities were to be applied to Seqwater's catchment area, Seqwater's level of investment in these activities would total \$12M pa, almost two and a half times the level of expenditure to be allocated to these activities in FY15. Seqwater's forward natural asset investment program transitions to a benchmarked level of expenditure by FY18.

It is important to note that Seqwater has a higher natural asset management risk profile than comparable benchmarks owing to historically limited consideration of catchment management issues in development and land use, and hence the currently poor state of its catchment areas.

7.8 WATER STORAGES (DAMS AND WEIRS)

Water storage assets fulfil multiple functions, including:

- the storage of sufficient raw water volumes for treatment to meet demand for drinking water
- flood mitigation
- hydro power generation
- recreational activities (this is discussed further in Section 6.2).

The Operating Strategy, which, compares average future demands for drinking against the current water allocation available, shows that that there is sufficient bulk water storage to meet demand until at least 2028. In addition, no investments are planned to increase the supply of raw water for irrigation for irrigation and environmental purposes, to increase flood mitigation or, beyond the current Somerset Dam project, for additional hydro power generation.

The draft 15 year Asset Portfolio Master Plan reflects this strategic direction. As outlined below, it contains a range of investments that are required to ensure the compliance with regulatory obligations.

7.8.1 SUPPORTING DOCUMENTATION

The projects currently included in the draft 15 year Asset Portfolio Master Plan have been sourced from:

- approved business cases and executed contracts
- tender documentation



- the Seqwater Dams Portfolio Risk Assessment Dam Safety Risk Management Strategy the PRA, URS November 2013)
- the business cases for FY14 and FY15 priority works
- current Asset Management Plans
- emergent works identified by the Asset Capability and Sustainability team
- Dams and Weirs Capital Works Program (URS 2014)
- fixed asset register and valuation reports (condition based).

The report titled *Dams and Weirs Capital Works Program* (refer Appendix F) was prepared specifically to support the regulatory submission. It presents a refined capital program, taking into account the changes made to the operating level of key dams since the PRA was prepared and other information that has become available. Those changes have enabled several of the major upgrades to be deferred. The report also extended the capital program contained in the Portfolio Risk Assessment (PRA) beyond 10 years.

7.8.2 INVESTMENT DRIVERS

Seqwater must operate the dams safely under the *Water Supply (Safety and Reliability) Act 2008* which is regulated by DEWS. The Act details the provisions for referable dams and the process for determining whether a dam is referable or not. It requires owners of particular dams to assess the impacts of dam failure on the safety of people living downstream of the dam, by way of a dam failure impact assessment, to determine whether the dam is a referable dam. The Act also provides for regular ongoing assessment of the potential threat to people from unexpected flooding caused by a failure of one of these dams. Under the provisions of the Act, once it is determined that a dam is referable, DEWS issue dam safety conditions to the owner detailing compliance activities for the dam. Therefore for Seqwater, compliance for dam safety is driven by the dam safety conditions issued for each of the referable dams.

DEWS have issued dam safety conditions for 26 referable dams that are owned and operated by Seqwater. The conditions require Seqwater to ensure that each dam is kept safe, maintained and operated in accordance with the following guidelines issued in Queensland under the *Water Supply (Safety and Reliability) Act 2008*:

- Queensland Dam Safety Management Guidelines (current issue is February 2002)
- Guidelines for Failure Impact Assessment of Water Dams (current issue is April 2002)
- Guidelines on Acceptable Flood Capacity for Dams (current issue is February 2007).

In addition, where not specifically modified by the Queensland Guidelines, Seqwater is required to comply with the various ANCOLD Guidelines including Acceptable Flood Capacity, Design for Earthquake, Dam Safety Management and Risk Assessment. No projects are driven exclusively by the ANCOLD guidelines.



In response, Seqwater has established a dam safety management program to manage the surveillance, monitoring, training and safe operation of the dams. Multiple dam safety issues have been identified under this program, including inadequate flood capacity and earthquake stability and other design deficiencies. In response to these issues being identified, Seqwater completed the Referable Dams PRA in November 2013 for the 26 referable dams and for the Mt Crosby Weir. The purpose of the PRA was to enable the risk associated with each issue to be evaluated and ranked across all of the dams.

The PRA concluded that there are a number of dams in the portfolio that exceed both the ANCOLD defined limit of tolerability for societal risk and the ANCOLD defined limit for individual risk. Based on this assessment the dams are therefore considered to pose risks that are considered to be Intolerable according to the DEWS and ANCOLD Guidelines. The PRA also developed a list of prioritised actions for future risk reduction works. The risks reduction actions were developed considering the following Targets to progressively reduce risk across the portfolio of dams:

- Target 1 reduce risks below Limit of Tolerability and individual risk limit
- Target 2 reduce the probability of failure below 1 in 10,000 AEP for individual failure modes
- Target 3 reduce economic risk to tolerable business limit
- Target 4 achieve 65% Acceptable Flood Capacity (AFC) to meet regulatory requirements
- Target 5 reduce risks to As Low as Reasonably Practical (ALARP).

It must be noted that the risk reduction program developed is the based on the risk profile developed from the existing data for the dams. It is to be subject to review and refinement as further investigations and design work is completed for each dam.

A Timing of Actions Table was developed for the Seqwater Dams PRA to provide a basis for assigning a level of urgency and recommended delivery timeframe in years. The table was developed in conjunction with Seqwater based on discussions with the expert technical panel and DEWS Dam Safety staff at the Strategy Workshop, and the experience of URS on similar PRAs for other large dam owners in Australia. The level of urgency and timing of actions reflects:

- the existing dam safety risk of the structure
- whether the key failure modes will deteriorate significantly over time
- the estimated time required to complete action, varying from "as soon as practical" to more than 10 years
- the time required to implement the action (e.g. large upgrades may require lengthy investigations, design, and approval processes prior to construction).



The PRA recommended a series of investigations that should be undertaken to address key areas of uncertainty. That program of investigations has commenced, and is scheduled to be completed over 30 months from January 2014 at a cost of \$6.1M (as approved by the Board in November 2014). The forward investment program will be reviewed prior to the next economic regulatory review, based on the outcomes of those investigations. The results include design work which will be used as part of future infrastructure upgrades.

The process going forward to review the risk and upgrade program is shown in Figure 24 below.

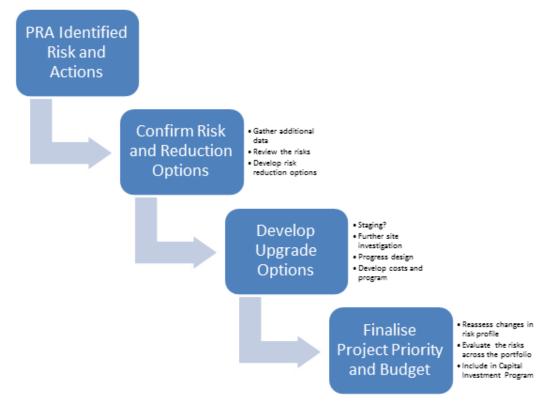


Figure 24: Process to review and refine the dam improvement program

A key issue for Seqwater and other dam owners is the timing to achieve the required risk reduction. In response to this issue, Seqwater is seeking to establish a national dam owner's reference group through WSAA as well as participate in the current review of the ANCOLD Guidelines on Risk Assessment.

7.8.3 PROJECT BREAKDOWN AND INVESTMENT OVERVIEW

Total forecast capital expenditure on water storage assets is \$671M over the regulatory period, across approximately 27 projects and the water storage renewals program. There are 23 projects with forecast expenditure greater than \$2M.



Based on the investment drivers, Figure 25 below shows the proposed investment profile over the regulatory period.

As noted above, the expenditure profile has been updated from the FY15 budget submission. This is a result of a series of recommended risk reduction actions developed as part of the PRA considering the following:

- the level of uncertainty on the assessment of the dam under the PRA. Investigations are well progressed for some dams, such as Maroon and Moogerah with other dams having much less data available at this time, such as Sidling Creek and Nindooinbah
- the distance from the ANCOLD Limit of Tolerability. The further from the limit of tolerability the more urgent the risk reduction required
- the individual risk for the dam compared to the ANCOLD limit of Tolerability for Individual risk
- the probability of failure, with higher probabilities of failure requiring more urgent risk reduction works.

Following the PRA, Seqwater has commenced a program of investigations to confirm the assessment, made operational changes to reduce risk at key storages and increased surveillance. To refine the capital investment program Seqwater has engaged with URS to refine the phasing of the upgrade program taking into account the risk reduction achieved to date and additional data coming out of the dam safety reviews currently underway. The changes in phasing have been made considering the above criteria. The outcomes of the URS review with regards to project phasing are detailed in the infrastructure program.

Renewals make up a small portion of the investment. There is no expenditure for growth, as the bulk water supply system yield exceeds the demand with this regulatory period.



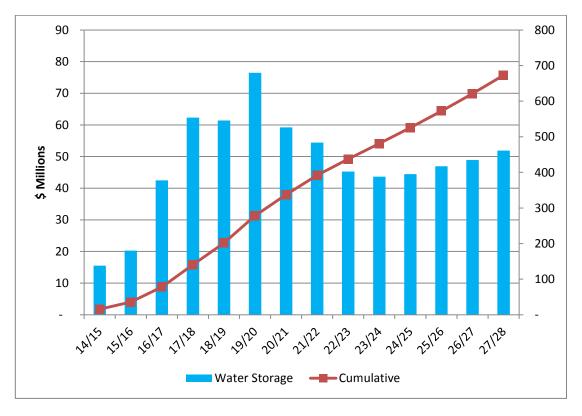


Figure 25: Water storages 15 year capital investment profile

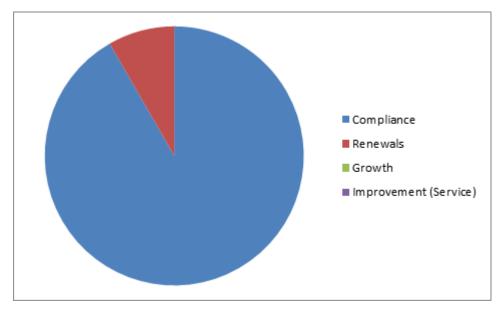


Figure 26: Water storages 15 year infrastructure capital program by QCA driver

Overall, the majority of water storage expenditure is driven by regulatory compliance, as described in the PRA. This water storage compliance expenditure represents 35% of the total \$1,700M infrastructure capital program out to FY28.



Asset Name	Project	Driver	Capital (\$M real)	Commission Year
Lake MacDonald Dam	Lake Macdonald Dam - Project Delivery - new dam	Compliance	64	2018
Sideling Creek Dam	Filter buttress & spillway wall raise	Compliance	47	2019
Leslie Harrison Dam	Stage 1 - Filter buttress/crest reconstruction	Compliance	58	2020
Somerset Dam	Somerset Dam - Abutment concrete aprons	Compliance	46	2020
North Pine Dam	Saddle Dam 1 filter buttress, dam parapet wall and bridge raise	Compliance	103	2022
Wivenhoe Dam	Saddle dam filter buttresses & AFC upgrade	Compliance	53	2024
Maroon Dam	Stage 2 Upgrade	Compliance	35	2025
Leslie Harrison Dam	Stage 3 - AFC Upgrade - Raise dam 2m, Outlet works & spillway	Compliance	29	2025
Somerset Dam	Dam Stabilisation	Compliance	72	2027
North Pine Dam	Spillway upgrade	Compliance	36	2032

Table 27: Summary of top 10 water storage projects by value

Two projects, as an example, are described in more detail below.

- Lake MacDonald has been identified as requiring an upgrade to address a suite of deficiencies in meeting current design standards, including inadequate flood capacity, the potential for the foundation to liquefy during an earthquake, corrosion of the spillway anchor bars, and piping risks. The lake supplies water to the Noosa WTP and forms a key component of the water supply system for the Seqwater northern region. To date extensive investigations have been carried out to develop remedial options, resulting in a preferred option being to replace the existing dam. This option provides the greatest benefit to Seqwater in terms of preserving the water supply security, minimising operation risks and securing the future of the Noosa WTP
- Somerset Dam has been reassessed following the Portfolio Risk Assessment during the regulated safety review for the dam and as part of the Wivenhoe and Somerset Dams Optimisation Study carried out for DEWS by Seqwater. These studies have highlighted a greater urgency to upgrade the dam to ensure that the dam has acceptable flood capacity as well as maximize flood mitigation for the downstream community. Options studies will be undertaken over the next 12 months to allow a



more accurate assessment of the required upgrade works for the dam and provide the Queensland Government options to deliver increased flood mitigation.

Note the program does not include any allowance for any new dams potentially announced by the Government.

7.9 WATER TREATMENT

7.9.1 SUPPORTING DOCUMENTATION

The projects included in the program have been developed from several documents including:

- planning documents:
 - the operating strategy
 - long term planning reports
 - asset management plans
 - reports prepared following the Australia Day 2013 severe weather event.
- project approval documents:
 - o documentation for projects currently being delivered
 - approved business cases and supporting documents.
- fixed asset register and valuation reports (condition based)

7.9.2 INVESTMENT DRIVERS

The purpose of water treatment plants is to source raw water and treat it to sufficient quality and quantity, to meet customer demands.

For the plants connected within the Bulk Water Supply System, the Operating Strategy shows that there is sufficient treatment capacity to meet average demand within the regulatory period. However, additional treatment capacity is required to meet MDMM demands towards the middle and end of the regulatory period. Figure 27 shows this and identifies the locations where capacity increases are required.



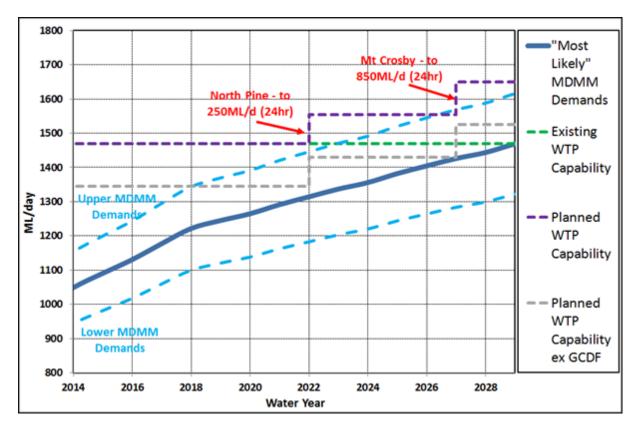


Figure 27: Existing water treatment capacity and forecast MDMM requirements

Figure 28 shows more details of the capacity required from the WTPs that form part of the connected bulk water supply system. It highlights that:

- the smaller plants are generally operating near, or approaching, the maximum take allowable under existing water allocations
- the extra demand will be supplied from the Mt Crosby East Bank and Mt Crosby West Bank WTPs. Those WTPs will therefore be increasingly relied upon, even assuming that the other plants can be relied upon to produce sufficient compliant water under various operating conditions
- it shows the capacity increases at North Pine by 2022 and increasing supply from the Mt Crosby WTPs.

A similar analysis of the standalone plants has shown that capacity increases will be required at Beaudesert, Canungra, Kalbar and Lowood WTPs within the regulatory period.



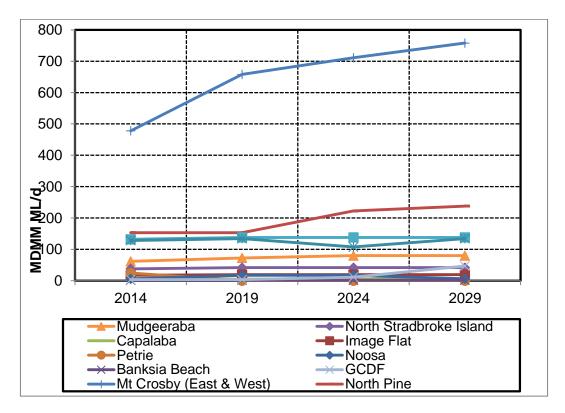


Figure 29: Increased reliance on Mt Crosby WTP

The draft 15 year Asset Portfolio Master Plan reflects those strategic requirements. Of critical importance is the requirement for plants to be able to perform under two key operating conditions, being:

- variable raw water quality, ranging from good to poor. Poor water quality conditions reduce a plant's capacity to produce compliant water (quality and quality)
- variable customer quantity demands, which change daily and seasonally, measured as average and MDMM.

Table 28 below shows the possible operating conditions under these two variables as four scenarios.

Operating conditions	Average demand	Peak demand (MDMM)
Normal conditions	 Most common operating condition 	2. Normal operating condition
Abnormal conditions (such as poor raw water quality)	3. Can occasionally occur	 4. Extreme operating condition - does not occur often

Table 28: Water treatment operating scenarios

The risk of non-compliance with quality and quantity requirements increases from scenarios 1 to 2. It also increases from 1 to 3. The highest risk is scenario 4. The risk of



non-compliance has been determined by water treatment plant, capacity assessments (also used as part of the Operating Strategy).

Based on the demand profile from the Operating Strategy and long term planning reports, each asset's future investment profile is developed by considering, amongst other issues:

- recent capacity assessments of the WTPs
- existing performance, including operation in the four scenarios in Table 28
- potential changes in future water quality requirements
- planned renewals programs as identified in the Asset Management Plans.

7.9.3 PROJECT BREAKDOWN AND INVESTMENT OVERVIEW

Total forecast capital expenditure on treatment assets is estimated at \$670M over 15 years, across 74 projects and the renewals program for water treatment. There are 32 projects with forecast expenditure greater than \$2M. Figure 30 below shows the proposed investment profile over the 15 year regulatory period. Figure 31 shows the draft program by QCA driver.

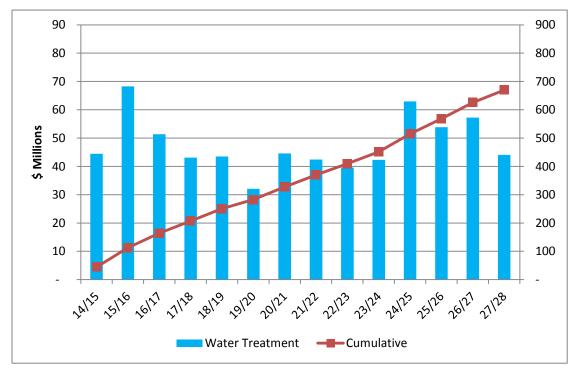
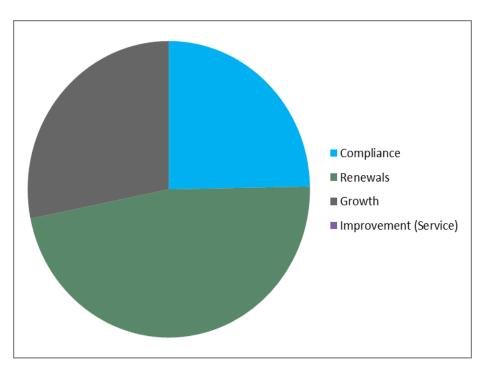
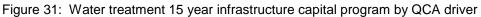


Figure 30: Water treatment 15 year capital investment profile







The 2011 and 2013 flood events highlighted the risks of not being able to supply sufficient compliant water under poor raw-water quality conditions. This has driven investments at our critical water treatment plants under scenarios 3 and 4 from Table 28. Based on this, the next 5 years will see the completion of a large number of small to medium value compliance and renewal driven projects. The scope of this work includes:

- upgrades of equipment, particularly sludge handling and chemical dosing capacity, to increase the reliability of compliance under scenarios 3 and 4
- some upgrades of electrical and control systems.

Water treatment plant investment in the 5 to 13 year timeframe will be characterised by fewer larger value projects, driven by a combination of growth and compliance. The costs of these projects are large, due to the large size of the plants they are required at, and due to the scope of projects required. The best use existing civil infrastructure will be made by retrofitting with newer technology rather than total replacement, especially at the North Pine, East Bank and West Bank WTPs.

There are a significant number of relatively small renewal projects in the first part of the price path period. Renewals investment increases in the second part of the price path period (post FY22). These are mostly at the key bulk water supply Plants of Mt Crosby, North Pine, Landers Shute, Mudgeeraba and Molendinar and two large pipelines from Mt Crosby to Green Hill and between the Sparkes Hill and Green Hill Reservoirs. The majority of the increased expenditure is due to renewals of associated mechanical and electrical assets that have been predicted to reach the end of their remaining asset lives



(after asset condition assessments). This aligns with the Operating Strategy which requires these assets to be able to reliably produce and deliver compliant water.

There will be approximately \$56M of growth-driven investment required at stand-alone plants (not connected to the Bulk Water Supply System) within the next within the regulatory period

These projects will reduce our risk of non-compliance at all our water treatment plants under all four operating scenarios in Table 28. The top 10 water treatment projects and programs by value are listed in Table 29.

Asset Name	Project	Driver	Capital (\$M real)	Commission year/ schedule
Mount Crosby East Bank WTP	Filtration Improvements (resilience)	Compliance	37	2018
Lowood WTP	Capacity Upgrade (32 MLD)	Growth	19	2022
Mount Crosby East Bank WTP	Sedimentation Upgrade (resilience)	Compliance	15	2022
North Pine WTP	Filtration Capacity Upgrade	Growth	36	2025
Mount Crosby West Bank WTP	Capacity Upgrade (350 ML/d)	Growth	77	2027
North Pine WTP	North Pine WTP- Renewals	Renewals	44	Starts FY15, accelerating FY22
Mount Crosby West Bank WTP	Mount Crosby West Bank WTP-Renewals	Renewals	41	Starts FY15, accelerating FY23
Mudgeeraba WTP	Mudgeeraba WTP- renewals	Renewals	15	Starts FY15, accelerating FY23
Landers Shute WTP	Landers Shute WTP- Renewals	Renewals	22	Starts FY15, accelerating FY23
Mount Crosby East Bank WTP	Mount Crosby East Bank WTP-Renewals	Renewals	19	Starts FY15, accelerating FY23

Table 29: Top 10 water treatment projects and programs by value

The three largest projects in the water treatment investment program are:

 Mt Crosby East Bank WTP filtration improvements: This project, occurring early in the price path period, is required to improve the compliance reliability. The Operating Strategy shows that the Mt Crosby WTPs will be required to increase output as the other connected plants reach their capacity limits (see Figure 29). Process assessments show that filtration is the limit on the capacity of the Mt



Crosby East Bank WTP, particularly under adverse operating conditions. This project makes best use of the existing civil infrastructure by upgrading the filtration technology and replacing worn out filter media rather than installing new infrastructure. This will decrease the risk of producing non-compliant water (quality and quantity) during peak demand periods. A subsequent sedimentation upgrade adopts the same approach, of identifying the next compliance constraint and of retrofitting newer technology into existing civil infrastructure to address that constraint (in that case, installation of lamella plates in the sedimentation basins)

- North Pine WTP filter capacity upgrade from 160 to 250 ML/d: This project occurs in the middle of the price path period. Process capacity assessments of the North Pine WTP identified the filtration and sedimentation processes will be operating at high risk of non-compliant water (quality and quantity) during peak demands identified in the Operating Strategy. This project therefore constructs new filtration capacity to meet the peak demands required under the Operating Strategy. The first of the five filters was refurbished in FY14
- Mt Crosby West Bank WTP capacity upgrade to 350 ML/d. The Operating Strategy shows that additional treatment capacity is required to meet peak demands towards the end of the price path period. By that time all plants, except the Mt Crosby WTPs, will be producing at their maximum allowable allocation under their water entitlements. It is therefore more efficient to locate any additional capacity at the Mt Crosby WTPs, rather than bringing forward the next major source of supply. Of the two sites, West Bank has been chosen as the infrastructure is more modern and has some provision already existing for plant expansion, including some raw pipeline infrastructure and vacant adjacent land. The most efficient capacity increase and timing would be determined following more detailed investigation.
- A number of major works will renew existing assets. As listed in Table 29, those projects include:
 - North Pine WTP Filter, pump station, clarifier and chemical dosing refurbishments
 - Mt Crosby Westbank WTP Chemical Dosing, clarifiers, filtration and solids handling infrastructure renewals
 - Landers Shute WTP civil site works, clarifiers, electrical, instrumentation and chemical dosing renewals
 - Mount Crosby Eastbank –infrastructure at the inlet, solids handling, chemical dosing, roads and drainage, electrical systems renewals
- The renewals program has been adjusted to exclude these planned works. As a result, other renewals expenditure is relatively low prior to FY23.
 - From FY13, renewals expenditure is forecast to ramp up due to the anticipated increase in the renewals of mechanical and electrical assets at some of the largest and most critical facilities as a result of age and condition. Those



forecast costs were "smoothed" over a number of years to allow for deliverability and prioritization.

7.10 WATER TRANSPORT

7.10.1 SUPPORTING DOCUMENTATION

The projects included in the draft 15 year Asset Portfolio Master Plan have been developed from a range of documents, including several which review the condition of major assets, including pump stations, reservoirs and trunk mains. Those documents are:

- Inspection Report and Management Plan, Network Buildings (Cardno, February 2012)
- Inspection Report and Management Plan, Pump Stations (Cardno, April 2012)
- Inspection Report and Management Plan, Reservoirs (Cardno, May 2012)
- Pipeline Management Program, Condition Management Scope Planning Report (GHD, March 2012).

7.10.2 INVESTMENT DRIVERS

The purpose of the transport assets is to deliver potable water from the treatment plants to the SEQ service providers.

Consistent with Water Treatment, the regulatory period infrastructure capital program lists the projects required to meet the capability requirements specified in the Operating Strategy.

The investment profile in transport assets is driven by:

- sufficient capacity due to lower than historical demands
- a high portion of relatively new assets requiring limited significant investment
- some renewals projects having recently been completed.

Historically, bulk water demands were significantly higher than the current demands. From January 2001 to January 2005, approximately 914 ML/day was distributed. By comparison, from July 2007 to July 2009 only around 534 ML/day was distributed. This is a reduction of close to 60% which can be largely attributed to:

- installation of domestic water meters
- installation of water efficient devises
- customer water use behaviour.

Of the 603km of transport mains, 243km is relatively new. This relatively high proportion of "new" assets means that investment in maintaining this group of assets will increase in future years, but investment is currently smaller proportionate to other asset types.



7.10.3 PROJECT BREAKDOWN AND INVESTMENT OVERVIEW

Total forecast capital expenditure on transport assets is \$213M over 15 years, across 8 projects and the water transport renewals program. There are 5 projects with forecast expenditure greater than \$2M.

The proposed 15 year expenditure profile for this asset group is presented in Figure 32 and in Figure 33. The highest value projects are summarised in Table 30.

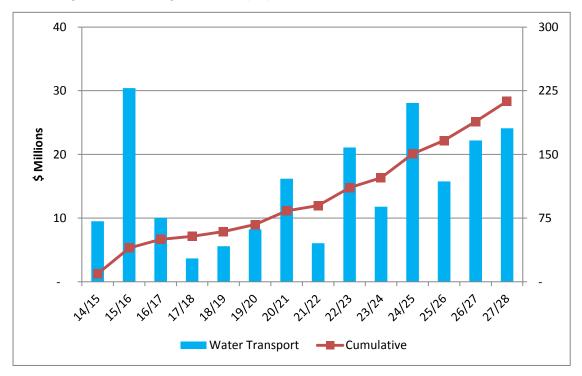


Figure 32: Water Transport 15 year capital infrastructure profile

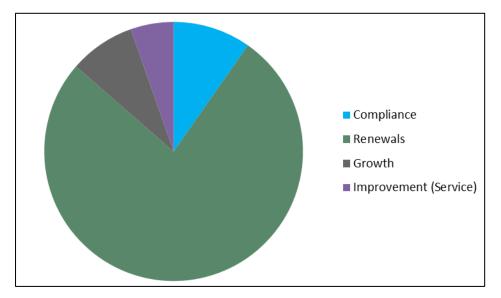


Figure 33: Water transport 15 year infrastructure capital program by QCA driver



Overall, the existing network system will be operating under its nominal capacity for at least the next 13 years. This is due to the success of demand management measures over recent years, which have reduced overall water consumptions. This reflects the high portion of renewal investment in this asset group. The grow investments allow for new connections to supply population growth areas south and north of the Brisbane area.

Asset	Project	Project Driver		Commission Year/schedule
Petrie	Petrie New Water	Improvement	12	2016
	Supply Connection	(service)		2010
Sparkes Hill to	Wardell/Pickering Main	Compliance	16	2017
Green Hill Pipeline	Upgrade	Compliance	10	2017
NPI- Narangba to	Narangba Reservoir	One with	7	0004
North Pine WTP	Mains Tunnel	Growth	7	2021
Mount Crosby to		Duranta	40	Starts FY16,
Green Hill Pipeline	Various Renewals	Renewals	43	acceleration FY23
Sparkes Hill to		Description	07	Starts FY16,
Green Hill Pipeline	Various Renewals	Renewals	27	acceleration FY20
Bundamba Pump		Renewals	0	Starts FY18,
Station	Various Renewals	Renewals	9	acceleration FY23
Stones Road	Various Renewals	Renewals	5	Starts FY16,
Pump Station	vanous kenewais	Renewals	Э	acceleration FY23
Wellers Hill		Description	_	Starts FY15, spend
Reservoir 1	Various Renewals	Renewals	5	mostly in 1 st 3 years
Multiple Oites		Demonste	4	Starts FY15, spend
Multiple Sites	Various Renewals	Renewals	4	mostly in the 1 st year
Chambers Flat		Denewala	4	Starts FY18, spend
Dosing Station	Various Renewals	Renewals	4	intermittent

Table 30: Top 10 water transport projects and programs by value

Two key projects proposed in the period are:

- Petrie new water supply connection: A pipe connection between the Northern Pipeline Interconnect and Unitywater's Boundary Road reservoir, which will allow the Petrie WTP to be decommissioned as part of an overall more efficient long term supply option for the Petrie Water Supply Zone. This project is being jointly developed with Unitywater. Funding arrangements will be determined based on a business case that is being jointly prepared for the two Boards
- Wardell/Pickering main upgrade: A significant upgrade is required of a section of pipeline from Wardell Street to Pickering Street, which links the Green Hill to



Sparkes Hill Reservoirs. Asset age and recent failure history have highlighted the criticality of this section which supplies over 50,000 people. A business case to proceed to detailed design will be considered in late 2014.

Additional supply sources will be required for Beaudesert and Dayboro within the regulatory price path period. Those sources are currently included in the capital program as new WTPs, due to long term planning reports having found that the net present value (NPV) of WTPs may be slightly more favourable than the NPV of constructing pipeline connections to the bulk water supply network. The costs and benefits of these options are being examined in detail as part of the next phase of planning, which may result in pipelines being the preferred option (and an associated increase in the value of the water transport investment profile).

The WTP option for Beaudesert also defers a significantly larger upfront capital cost for the pipeline option. Note that the operating strategy is Chapter 4 assumes the pipeline option for Beaudesert. This was done to ensure there were no other infrastructure implications with this option elsewhere in the bulk water supply system.

The major renewals projects in the earlier period (before FY22) are mainly to do with the reservoirs. The Weller's Hill Reservoir 1 refurbishment project has the single largest cost of all the reservoirs. More major renewals projects involving the other asset types in network occur after FY22. The majority of the costs in this period can be attributed to the pipeline and pump station renewals. Overall renewals expenditure for transport assets is relatively low compared to similar organisations due to the interconnectors having been recently constructed and the key reservoirs recently refurbished.

7.11 OTHER INFRASTRUCTURE- MONITORING AND CONTROL SYSTEMS (MCS)

7.11.1 SUPPORTING DOCUMENTATION

The previous LinkWater and Seqwater (pre-merger) each had approved business cases for MCS works, for a total investment of \$68M over fifteen years. Those strategies continue to provide the basis for MCS program planning and development.

7.11.2 INVESTMENT DRIVERS

Monitoring and Control System (MCS) refers to the collective instrumentation, process control, SCADA, telemetry, data storage, analysis and reporting systems, and interconnecting networks that are used to monitor, control and report on plant and system operation and performance.



Seqwater currently owns a portfolio of legacy MCS assets which provide operational monitoring, control and reporting services. This current state MCS lacks standardisation and integration, and provides only a fragmented real-time awareness of water production processes both at a plant level and at a whole-of-system level.

In addition the current MCS capability enables only partial capture of asset process history, such as time-based water treatment plant quality statistics. This factor limits Seqwater's ability to optimise asset performance and manage critical incidents in real-time. The current MCS capability has been identified as presenting high levels of risk to service delivery and the ability to comply with service obligations.

A program and delivery model was established in January 2014 to build upon and coordinate the business as usual programs of standards management, renewals work, and capital investment. This is utilising the best available information from the previous entities to formulate a coordinated and refined program of investment. Some further refinement may be achieved when the final MCS strategy is delivered in mid-2014.

7.11.3 PROJECT BREAKDOWN AND INVESTMENT OVERVIEW

For the purposes of the regulatory submission, the proposed investment in MCS is \$68M over six years. This expenditure includes savings of approximately \$6M (FY13 terms) achieved by removing duplication and other high level changes to delivery approach. In addition there are reductions resulting from delays to renewing assets within the project delivery period. This estimate reflects the best information currently available. However, as noted above, some further refinement may be achieved when the final MCS strategy is delivered.

There are three key projects required to standardise, connect and enable the business to implement its full MCS strategy over the next six years. These are listed in Table 31 below, with a total value of \$12M. Implementation of these central elements will provide a flexible foundation to support current and future operating models, integrate operation with partners in the Water Grid, and enable future refreshes of Seqwater's SCADA and Process Control technologies in an efficient manner and with reduced changeover risks.

Project	Driver	Capital (\$M real)	Commission year
Central MCS Communications	Compliance	6.6	Ongoing
Central Bulk Supply MCS	Compliance	4.4	Ongoing
Central MCS Historian	Compliance	1.3	Ongoing
Total		12.3	

Table 31: Summary of central MCS projects



In additional to these overarching projects, there are a suite of renewals-driven works required for implementation over the life of the program. For completeness, these projects are summarised as a group in Table 32 below. In addition to these specific MCS renewals, there are also projects that include portions of MCS works, associated with the particular assets groups of, storage, treatment and transport. As such, their associated costs have been accounted for in the material presented in earlier sections.

Project	Driver	Capital (\$M real)	Commission year
Renewal - Molendinar WTP MCS	Renewal	2.4	Ongoing
Renewal - Mt Crosby East Bank WTP MCS	Renewal	5.0	Ongoing
Renewal - Mt Crosby East Bank RWPS MCS	Renewal	2.9	Ongoing
Renewal - Mt Crosby West Bank WTP MCS	Renewal	4.0	Ongoing
Renewal - North Pine WTP MCS	Renewal	2.8	Ongoing
Renewal - Landers Shute WTP MCS	Renewal	2.8	Ongoing
Renewal - Mudgeeraba WTP MCS	Renewal	3.3	Ongoing
Renewal - North Stradbroke Island WTP MCS	Renewal	2.9	Ongoing
Renewal - Transport 2nd Tier Site Works Combined - MCS	Renewal	1.9	Ongoing
Renewal - Treatment 2nd Tier Site Works Combined - MCS	Renewal	21.3	Ongoing
Renewal - Storage 2nd Tier Site Works Combined - MCS	Renewal	4.7	Ongoing
Total		54.1	

Table 32: Summary of renewals driven MCS projects

Overall, in the forecast expenditure period, Seqwater intends to transform its MCS capability via a combination of:

- implementation of 'top end' central MCS infrastructure (SCADA Telecommunications, SCADA, Historian)
- extensive renewal investment to replace aged, non-standard equipment at treatment, transport and storage asset sites.

Over the first 6 years of the forecast period Seqwater will implement a contemporary, standardised and integrated MCS solution that will provide a flexible foundation to support current and future operating models, integrated operation with partners in the water supply system, and enable future refreshes of Seqwater's SCADA and Process Control technologies in an effective and efficient manner with reduced changeover risks.



Successful delivery of this project will mitigate risk associated with regulatory compliance, operation and supply obligations, while improving water security and certainty of service delivery in routine and abnormal operating environments.

In addition to the significant risk reduction benefits for the operation of critical infrastructure there will be increasing operational efficiencies over time as the capability to (remotely) monitor and record asset performance improves.

Some additional, routine instrumentation and control works are also captured in the capital program for:

- on-storage and in-catchment water quality instrumentation
- laboratory instrumentation
- hydrometric and seismic equipment.

7.12 OTHER INFRASTRUCTURE- RECREATION

7.12.1 SUPPORTING DOCUMENTATION

A key Government objective is to ensure that SEQ's dams and catchments optimise recreational opportunities, including potential commercial activity to enhance the community's use of recreation sites and the delivery of economic benefits. The Referral Notice also includes recreational cost as a legitimate bulk water cost, Section (A) 1ci.

Seqwater is undertaking a Recreation Review to ensure compliance with this Government objective, and is exploring the recreational opportunities in and around our lakes in order to deliver a suite of management plans. The review covers 23 Seqwater lakes grouped into 10 different areas.

The 18 month long Recreation Review Project commenced in June 2013 and has seen a high level of proactive engagement and involvement from Government, community and special interest group stakeholders, demonstrating the community's high level of interest and the importance of our recreation assets to the region. With this brings an expectation regarding the delivery of changes as a result of this review.

7.12.2 INVESTMENT DRIVERS

The Statement of Obligations outlines the overarching obligations of Seqwater. Obligations that form the impetus for the Recreation Review Project include:

• to engage with and inform the community in which it operates, on matters that impact that community and ensure Seqwater remains and is seen to be a good corporate citizen



- develop a culture of customer service for proactive, transparent and accountable engagement with its customers, stakeholders, and the community it serves
- to review opportunities for recreation including strategies to recover costs from users and/or beneficiaries where appropriate.

7.12.3 PROJECT BREAKDOWN AND INVESTMENT OVERVIEW

The recreation review is being undertaken as part of broader Government initiative. Outcomes of the review are not currently known and hence any potential additional costs (operating and capital) are not included in submission.

A preliminary estimate of the required funding (to satisfy most stakeholder demands) for all lakes has highlighted that additional capital funding in the order of \$3M will be required over the next 2 to 3 years. In addition, there will be increases in ongoing recurrent operational expenditure for the associated maintenance and enforcement, which is likely to be around \$0.8M to \$1.0M per annum.

Four models are being considered:

- 1. 100% Seqwater funded
- 2. user pays council funded
- 3. user pays recreator funded
- 4. shared funding responsibility.

The Seqwater Board supports option four, as this option would seek to share the funding impost across Seqwater, the State Government and Local Government.

7.13 OTHER INFRASTRUCTURE- SEWAGE TREATMENT PLANTS

7.13.1 SUPPORTING DOCUMENTATION

Seqwater owns and operates over 100 sewage treatment facilities. These assets range from conventional wastewater treatment plants to single composting toilets and septic tanks. They are located at recreational sites, such as Somerset Dam (Kirkleagh) and at WTPs, such as North Pine. The projects currently included in the program have been included due to compliance issues with the Department of Environment and Heritage Protection (DEHP).

The project estimates have been sourced from:

• the report titled Kirkleigh STP- Status and forward review (Worley Parsons, June 2012)



- the report titled Lumley STP- Status and forward review (Worley Parsons, June 2012)
- the report titled Seqwater Sewage systems Audit (Worley Parsons, July 2013).

7.13.2 INVESTMENT DRIVERS

Seqwater has recently carried our reviews on the condition, capacity and environmental compliance status of these assets. The review identified and reported on over 100 Seqwater owned assets, ranging from sewage treatment plants (STPs) to small systems such as septic tanks and composting toilets.

The review has identified known compliance issues, as raised by the Department of Environment and Heritage Protection for two STPs.

7.13.3 PROJECT BREAKDOWN AND INVESTMENT OVERVIEW

Based on the limited reviews to date, a total forecast capital expenditure on STPs is \$1.5M over the regulatory period, involving one key project at the Kirkleigh STP. A renewals program of \$0.8M expenditure combined with operational changes at some assets is expected to meet near term compliance requirements.

A further more detailed analysis of the recently completed reviews may result in additional investment in renewals and capital investment in this asset class towards the end of this price path period.

7.14 NON-INFRASTRUCTURE CAPITAL PROGRAM

7.14.1 GOLD COAST DESALINATION PLANT

The commercial close out of the GCDP construction phase carries an estimated expenditure of **Construct** in FY15 for rectification of defects, and release of payments due under the Design Construct and Operate Alliance. The project has achieved "Works Completion", but is still in "Carryover Works Phase". Carryover Works Phase was created to enable closure of the majority of the construction components without releasing the Alliance Contractor from their obligation to rectify specified defects.

The Alliance Contractor is eligible for payment for costs such as managing or administering the project and any costs not covered through warranty and/or defect rectification clauses with subcontractors. Also, an amount was withheld by Seqwater relating to estimated gainshare based on the final forecast cost to complete (

The Design Construct and Operate Alliance will continue beyond Carryover Works Completion via the GCDA Services Phase.



Supporting documentation

Refer to the Independent Review of Cost Forecasts – Gold Coast Desalination Project – Jacobs SKM (Appendix C).

Investment drivers

The GCDP capital program was developed with the objective of retaining the asset in Hot Standby mode. As such, future expenditure is forecast to be minimal compared to that if the plant were fully operational. The expenditure that is required is driven by safety improvements, legislative need or operational efficiency gains.

New and improvement works are approved through the Alliance process prior to delivery. That process includes Seqwater representation at Alliance management and leadership bodies. This representation allows Seqwater to consider the proposed works in light of the broader Seqwater supply needs and investment program priorities.

Project breakdown and investment overview

Total forecast new and improvement capital expenditure for the GCDP is \$0.28M in FY14 and \$0.37M in FY15, and includes savings recommended by Jacobs SKM. There are currently no planned new or improvement works to the GCDP facility beyond FY17. These works are summarised in the Jacobs SKM Gold Coast Desalination Project report (Appendix C).

The renewals forecast for FY15 is \$0.2M, most of which is for cathodic protection systems which are not subject to any increased life through the hot standby operating regime. All other items are of a very minor nature. The renewals expenditure forecast to FY28 (excluding membranes replacement) is \$22.7M.

FY14 terms	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Renewals	170,286	73,732	-	265,072	401,882	7,417,841	207,000
FY14 terms	FY22	FY23	FY24	FY25	FY26	FY27	FY28
Renewals	530,732	106,886	198,196	10,955,281	462,672	223,386	1,749,322

Table 33: GCDP FY16-28 capital cost forecast

The renewals forecast beyond F17 remains predominantly based upon asset life expectations established when the asset was constructed. As such there are two years that stand out with significant expenditure. These are:

• FY20 (\$7.4M): Comprised of \$2.3M for security fencing and \$4.4M for lighting replacement, based on achieving the specified 10 year useful asset life



• FY25 (\$11M): Mostly comprised of \$4.7M for whole of plant work on the Programmable Logic Controllers and \$2M of electrical work on the first and second pass reverse osmosis transmitters, based on achieving their specified 15 year useful asset life.

It is anticipated this work will be refined and spread over more than one financial year closer to required replacement date following detailed asset inspection and assessment programs.

The \$5.8M membrane renewal program to FY28 has been treated separately in Table 34. The membrane renewals have already been pushed back by two years beyond the 4.5 year design life and ongoing monitoring of membrane effectiveness will determine the renewal schedule, rather than expected asset life cycle if the plant was being operated as designed. Membrane replacement costs are based on current (2014) USA market prices.

Financial Year	Membrane Replacements Cost (March 2014)	Membrane Age (since plant start)
2013-14	-	5.5
2014-15	-	6.5
2015-16	167,520	7.5
2016-17	167,520	8.5
2017-18	167,520	9.5
2018-19	167,520	10.5
2019-20	856,260	11.5
2020-21	1,023,780	12.5
2021-22	167,520	13.5
2022-23	856,260	14.5
2023-24	167,520	15.5
2024-25	856,260	16.5
2025-26	167,520	17.5
2026-27	-	18.5
2027-28	1,023,780	19.5
Total	5,788,980	-

 Table 34: GCDP membrane replacement schedule

7.14.2 WESTERN CORRIDOR RECYCLED WATER SCHEME

The commercial close out of Gibson Island AWTP was completed in FY14 with total payments of \$5.3M, including insurance recoveries, settlement, legal and Qleave. This close out also included the finalisation of defects rectification and release of payments under commercially agreed settlements.



There are no works associated with the construction phase of these projects beyond FY15. The future capital cost of start-up has not been included in the forecasts for this submission. This will require funding if, and when, the assets are restarted.

Supporting documentation

Refer to the Independent Review of Cost Forecasts – Western Corridor Recycled Water Scheme – Jacobs SKM (Appendix D).

Investment drivers

The WCRWS capital program was developed with the objective of placing the scheme in a long term care and maintenance state.

The WCRWS will return to operational service if drought trigger levels are activated, which has a 1% probability of occurring within the next 10 years, and less than 10% probability within 20 years. As such, capital investment in the restart of the scheme is not reflected within this submission.

Seqwater engaged Jacobs SKM to conduct a review of the Contractor proposed capital expenditure for FY15. The Jacobs SKM review assessed the proposed expenditure against QCA based prudency and efficiency metrics.

Project breakdown and investment overview

In mid FY14 shutdown costs were estimated by Veolia to be approximately \$14.2M (including fee) for FY15 (note this excludes \$0.8M of Seqwater costs). Scope included modifications of the network pipelines to allow for them to be filled up with water (for reasons of corrosion control) while the AWTPs are non-operational and shutdown of the three AWTPs.

In the second half of FY14 risk based de-scoping of the WCRWS shutdown works was investigated to remove or delay the requirement for some activities, resulting in a reduced schedule of activities and the removal of some construction and interconnection works. Veolia submitted a revised program, resourcing and budget estimate to undertake the decommissioning in line with the reduced scope requested by Seqwater, which has resulted in a reduction of shutdown decommissioning costs. The impact of de-scoping elements of the network decommissioning is to reduce the project duration by 3 months and the estimated cost from \$15M to \$8.4M (comprising \$7.6M Veolia and \$0.8M Seqwater costs). This \$6.6M cost reduction is largely driven by lower costs for the Luggage Point AWTP (reduced from \$3.7M to \$1.6M) and network cost reductions (from \$6.8M to \$2.6M). A breakdown of the decommissioning budget can be found in the Jacobs SKM report, Appendix D.



Sequater continues to optimise the scope and interrogate the contractors proposed methodology to undertake these works as promptly and efficiently as possible whilst retaining the integrity of the assets for the long term.

As previously raised in this submission, the shutdown of the WCRWS is still in the detailed planning phase and the final capital (and ongoing operational) costs should be read as estimates only. It is not anticipated that the overall estimate will be exceeded, however there is likely to be considerable changes to individual projects within the program as the planning phase advances and shutdown continues.

There is no new and improvement works program beyond the scope of the shutdown.

Total forecast renewals for the WCRWS assets beyond the scope of the shutdown is \$5.7M to FY28 (\$440,000 pa average). The majority of this is \$3.4M in FY24 for Programmable Logic Controllers (PLCs) and other electrical replacement works across all WCRWS assets. Should the PLCs and electrical equipment not be required for site security and regulated system monitoring after shutdown then the program will be reduced. Critical assessment of the renewal need will also be undertaken at the time taking in to account asset condition and function. No other year exceeds \$0.35M in forecast expenditure which is consistent with the asset being in a long term care and maintenance state.

7.14.3 MOBILE TECHNOLOGY PROJECT

A budget of \$0.5M for FY15 has been estimated for the Field Worker Mobile Computing Project (to be managed by the OTW Group). The aim of this project is to provide Seqwater field workers with tools and applications to facilitate efficiency and productivity gains, along with the benefit of improved collection and reporting of time-sensitive information. The legacy paper based systems that the mobile technology project seeks to replace are no longer viable due to the large volume of job orders being generated across the merged business.

It is expected that this budget line item will provide an ICT framework to facilitate delivery of applications, documents, business process, workflow and corporate information to mobile clients. Preliminary ongoing operating costs are estimated to be \$0.2M per annum. The delivery of this layer to support these mobile computing requirements is expected to provide significant compounding benefits above those realised by a device-only solution. The ongoing productivity gains and operating savings will be better understood following the development of the business case currently being prepared.

7.14.4 INFORMATION AND COMMUNICATIONS TECHNOLOGY

General considerations



Planned investments in information and communication technology are described in Section 8.4.5. As stated in that section, significant investments in this function are required in order to achieve the efficiency targets stated in Chapter 8.

There are number of external factors driving the delivery of this enhanced capability, including the Queensland Government ICT Strategy 2013-2017. This has a direct impact on how services are procured, with a bias towards operating rather than capital costs and a gradual transition to a services model only. The capital investment program described below reflects that transition.

There are a number of capital projects that are a legacy of the Seqwater merger and are required in order to consolidate systems or decommission systems that are no longer required.

The capital cost forecast methodology for ICT is based on the following inputs:

- establish ICT strategic initiatives: These initiatives are based on the business engagement through the business systems steering committee (BSSC), business requirements, Queensland government ICT direction, current ICT environment and initiatives to comply with relevant audit requirements IS standards
- ICT strategic Roadmap: The roadmap is based on business cases, options analysis and organisation risk profile and is prioritised through the BSSC
- other capital expenditure (for example standard asset renewal and service maintenance capital): All capital discussed in this submission must go through this Project Governance Process prior to any expenditure being committed.

Investment drivers

<u>Service</u>

There is no capital expenditure forecast in the FY16-28 period associated with improving service levels and reliability to meet customer preferences.

Compliance

There is \$0.4M of capital expenditure forecast in the FY16-28 period associated with meeting legislative obligations. This is primarily investment in a records management system in order to meet the IS40 records management legislation, and is forecast to be completed by the end of FY18.

Renewals

There is \$8.6M of capital expenditure in the FY16-28 period investment forecast that is associated with replacing assets and generally maintaining service levels. The renewal of assets in order to maintain service levels is based on the asset life, and while capital



related to these items will trend towards zero as Seqwater transitions to a services based model (with resultant limited/no capital expenditure), capital costs need to be incurred until this transition is complete.

<u>Growth</u>

There is no capital expenditure in the FY16-28 period investment forecast to support growth in the ICT environment.

Major investments

Seqwater has not identified any significant future requirements for ICT assets that are likely to result in significant capital investment expenditure within the 13 year forecast period. The ICT delivery strategy is specifically designed to minimise or eliminate capital expenditure.

7.14.5 PROPERTY, FLEET AND FACILITIES

Investment drivers

Seqwater's Property, Fleet and Facilities team is responsible for:

- management of Seqwater's property interests including, infrastructure easements (over 1,000 kilometres), leases, licenses, other land agreements and water supply contracts for Seqwater's irrigation customers. The management of this portfolio is focussed on the existing historical lease and licence portfolio, disposal at market of surplus housing, completion of outstanding easement acquisitions associated with the Northern Pipeline interconnector and Western Corridor Recycling projects. There is currently no identified requirement for any form of ongoing land acquisition. The focus into the future will be on the identification and potential disposal of any surplus land holdings
- ownership and management of mobile plant and fleet assets across all sites. This includes vehicles, trucks > 4.5 tonnes, watercraft, tractors/mowers (ride on) and heavy mobile plant (forklifts, backhoes, etc.). Currently, the fleet portfolio comprises 230 vehicles with no planned growth. The Fleet is actively managed with a focus on increasing efficiency and ensuring the correct numbers to meet business needs. Commercial Fleet vehicles are turned over every 120,000 km or 5 years and cars are replaced over every 70,000 km or 3 years. Value for money is proven by utilising the State Government tender arrangements which is then further validated by obtaining at least 5 quotes at the point of purchase
- ownership and management of office accommodation located in Brisbane's CBD and regional locations. These sites include leased office accommodation at 117 Brisbane Street Ipswich, 200 Creek Street Brisbane and 320 Adelaide Street Brisbane. Regional locations include Southern Regional Office Hinze Dam, North



Pine A block, Wivenhoe Information Centre, Hinze Dam Information Centre and other small sites. Office accommodation also includes office areas located within WTP's.

The key drivers for Property, Fleet and Facilities are:

- the rationalisation and standardisation of legacy assets in line with approved corporate standards
- delivery of fit for purpose Property, Fleet and Facilities assets.

The Property, Fleet and Facilities Team manage Seqwater's residential housing portfolio, which is being progressively rationalised (Seqwater sells houses but does not replace sold houses with new). As much as possible, the Team plans ahead for property disposals and this is built into the budget forecasts.

Major investments

No investments over \$2M are forecast for the FY16-28 period.

7.14.6 WATER SUPPLY STRATEGY AND POLICY

WSSP Group activities and areas of responsibility do not necessitate management of significant capital expenditure. The Group forecast from FY16-28 totals only \$665,000 (in real terms), or \$44,000 pa.

FY14 and FY15: WSSP Group FY14 capital expenditure was \$290,000, of which \$150,000 relates to investment in the Waterhub. The Waterhub system is a web based modular tool that supplies key information and services for Seqwater, including the Demand Forecasting Module, Contract Management Module that supports the process for generating monthly bulk customer bills, module for recording the bulk meter volumetric readings, module for uploading retail account level data for analysis. This system provides Water Security Program with key input information used for Water Security Assessments, such as demand forecast profiles and the ability to assess program measures. Minor compliance-driven investment (\$120,000 in FY14) was made in civil works at the Cedar Grove Weir owing to an issue requiring rectification to ensure effectiveness of the fishway.

FY15 capital expenditure (\$150,000) is again dominated by the Waterhub system (\$50,000) and fishway works at the Cedar Grove Weir (\$70,000).

FY16-28: Investment in this period is dominated by \$510,000 for further capital work to develop a GIS assessment/presentation layer for the Waterhub. Over time the Water Information team identifies improvements that if undertaken enhance the ability to complete modelling assessments and provide an information service for Sequater.

No major investments (over \$2M) are forecast for the FY16-28 period.



7.15 IRRIGATION CAPITAL COST ALLOCATION

The Referral Notice requires that costs associated with Seqwater's declared irrigation services are to be excluded. Costs from 1 July, 2013 are to be as recommended by the QCA's report "Final Report – Seqwater Irrigation Price Review – 2013-17 – July 2012.

These irrigation services are provided from a number of assets that do not provide bulk water services. These are:

- Lower Lockyer Valley Water Supply Scheme
- Central Lockyer Valley Water Supply Scheme
- Morton Vale Distribution System
- Cedar Pocket Water Supply Scheme
- Pie Creek Distribution System.

The following scheme assets do provide bulk water services, as well as irrigation:

- Central Brisbane Water Supply Scheme
- Warrill Valley Water Supply Scheme
- Mary Valley Water Supply Scheme
- Logan River Water Supply Scheme.

Capital costs for future projects on schemes which do not provide bulk water services have been excluded as these can be clearly identified. However all capital costs allocated to the irrigation sector should be deducted from bulk water costs, to satisfy the terms of the Referral Notice. Sequater notes that the cost base included a renewals annuity, which was set over a 20-year planning period. This annuity in the above schemes was then allocated to the irrigation sector based on a Headworks Utilisation Factor (HUFs) for each.

A first principles approach to cost allocation for bulk water costs would be to exclude the renewals annuity component to irrigation costs from the cost offset, and instead apply the HUF percentages to the actual capital expenditure in each scheme, to determine the portion of cost attributable to the irrigation sector. This portion would be excluded from the capital cost added to the RAB.

However, Seqwater has not adopted this approach given:

- the intention of the Referral Notice suggests the cost base identified in the irrigation review should be adopted, rather than a fresh calculation of cost allocation
- the Referral Notice does, in part, refer to the need to focus on material issues that will affect bulk water price
- the amounts involved in the renewals annuity and potential cost allocation are very small, in the context of overall bulk water costs.



Accordingly, Seqwater has included the renewals annuity allocated to the shared irrigation schemes as representative of the capital costs to be excluded. Seqwater has included a capital cost offset for these schemes.

The QCA's recommended costs for irrigators extend to FY17. Seqwater has simply indexed the FY17 costs, at assumed inflation of 2.5%, to FY28. Table 75 below shows the capital costs excluded out to FY28. Note these costs are taken directly from the Final Report – Seqwater Irrigation Price Review 2013-17.

Scheme (\$ nominal)	Irrigation only	FY14	FY15	FY16	FY17-28
Central Brisbane	No	7,404	7,329	7,931	11,007
Logan River	No	39,391	39,835	39,850	39,877
Mary Valley	No	120,660	120,037	120,445	120,471
Warrill Valley	No	66,179	66,961	67,401	67,652
Total	NA	233,634	234,162	235,627	239,007

Table 35: FY14 irrigation capital costs excluded (nominal)

7.16 CAPITAL COST EFFICIENCIES

The capital program described in this chapter reflects the estimated cost of proposed projects. The level of accuracy of those costs varies, depending upon the status of each of those projects in the delivery process.

The actual costs of individual projects will be refined as options are refined, designs prepared and delivery undertaken. Some projects are expected to be delivered for less than the current estimates and others for more.

Across the program as a whole, a saving of 5% is targeted for each of the three years from FY15 to FY17. That saving will be achieved through review and balancing of the capital portfolio, seeking program efficiencies and securing capital efficiencies through project delivery. For example, for the FY15 program, savings are being achieved through packaging of similar projects or projects at a single site. Beyond FY17, the quantum and costs of the program will be refined as part of future iterations of the Asset Portfolio Master Plan and future regulatory submissions.

7.17 CONSOLIDATED LONG-TERM CAPITAL COST FORECAST

The charts below display consolidated total Seqwater capital expenditure forecasts over the period FY15-28. Note these include the forecast capital cost escalation rates presented at the end of Chapter 6, and the capital cost efficiencies discussed above.



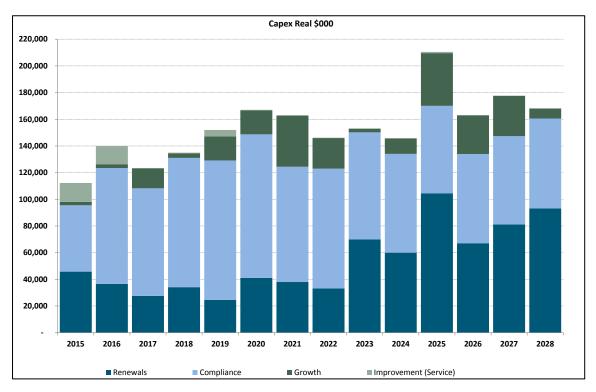


Figure 34: Consolidated capital program by QCA driver

As explained earlier in this chapter the capital program is dominated by the Dam Safety Program, which is reflected in the water storage investment profile in Figure 35 and is the principal driver of the increase in average annual capital expenditure over FY15 levels to ~\$150M pa. Water treatment expenditure is forecast to remain at relatively constant levels, again driven by sufficient capacity in water treatment capacity (excepting the medium-scale North Pine and Mt Crosby upgrades). The new nature of the pipeline network results in relatively low expenditure on this asset type, noting there are some improvement-driven water transport investments required for the Petrie new supply zone connection in FY16 and two large pipelines to reliably produce and deliver compliant water post FY24.

There is only minimal expenditure on the MWAs, with \$7M in FY20 and \$11M in FY22 for the GCDP based on assets achieving their specified useful asset lives (specifically electrical reliability, site security, lighting and membrane replacements). The decreasing non-infrastructure spend reflects the transition to the new, more adaptive ICT strategy.



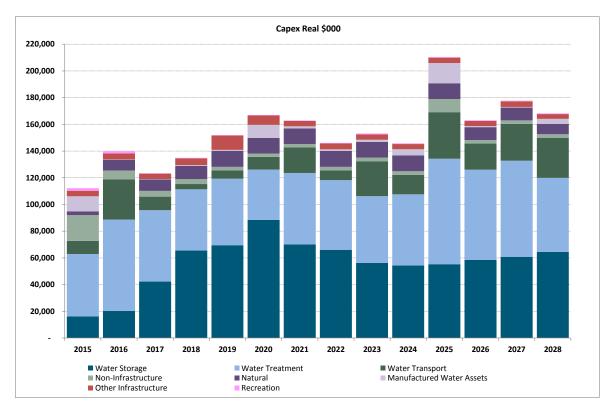


Figure 35: Consolidated capital program by asset type



CHAPTER 8 OPERATING COSTS

All values in Chapter 8 are presented in real 2014 terms and use the methodology and where stated the escalation rates listed at the end of the Chapter 6. As described in that chapter, relevant increases to key inputs have been incorporated, such as the impact of EBA increases on employee expenses.

8.1 OPERATIONS- CATCHMENTS AND RAW WATER (OCRW)

The table below presents costs for the OCRW Group which is comprised of the General Managers Office and two Teams:

- Water Source Operations and Management (WSOM)
- Recreation and Catchment Services (RCS).

	FY14	IA+F	FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
Employee costs	11,418,860	-	11,567,367	-
Contractor costs	279,059	-	365,000	-
Electricity	545,511	-	597,655	-
Other materials and services	10,487,532	-	11,098,663	-
Total	22,730,962	-	23,628,685	-

Table 36: OCRW FY14 and FY15 operating costs by cost element

	FY14	4A+F	FY	15B
Contribution by Team	Total	Corporate overheads	Total	Corporate overheads
GM Office	1,254,957	-	1,197,245	-
WSOM	10,936,306	-	10,918,843	-
RCS	10,539,698	-	11,512,596	-
Total	22,730,962	-	23,628,685	-

Table 37: OCRW FY14 and FY15 operating costs by Team

Details on the functions of the Operation, Catchments & Raw Water Group are available in Chapter 5. As all OCRW operating costs are directly related to specific assets or groups of assets none are classified as corporate costs.

OCRW costs are predominantly labour, given the operations function is largely insourced; conversely, contractor costs are very low. Electricity costs are incurred in relation to dam



operations. Materials and services costs are a significant part of operating costs, and mostly relate to routine operational maintenance.

8.1.1 GENERAL MANAGER OFFICE

The FY15 forecast of \$1.2M is 5% less than that in FY14 and was built from a zero base. FY14 employee expenses for the GM Office are \$45,000 higher than that forecast for FY15 as a result of a one-off termination payment. This has been excluded from the FY16-28 forecast. The only FTE change for FY15 for the team is the increase of administration support from a 0.4 FTE to 0.6 FTE.

A provision for contract labour for administrative support of \$18,000 has been included in FY15 budget to assist with the deliverables for the overall program of works for the Group. The bulk of the FY15 contract labour budget of \$118,000 is for coverage of administrative and support services for the pending class action associated with the January 2011 Flood Event, and to ensure minimal impact on business as usual activities throughout this process. This has been excluded from the FY16-28 forecast.

Materials and services costs for FY15 (\$367,000, 7% lower than in FY14) were developed from the Group program of works, with the majority of this expenditure associated with the Catchment Greenprint initiative.

Other initiatives (\$0.2M) in the program of works for the GM office in FY15 are a provision for work to be undertaken to review and implement an optimised sustainable operating model for the delivery of operations and maintenance in OCRW. This work will consider a range of options to support efficient and effective service delivery over the next five years for OCRW, with the project aiming to explore options that may realise efficiencies through implementation of changes to the current structure, workforce capability and deployment, and delivery of maintenance services. Funding for the engagement of a technical writer to develop and or review/rewrite operational procedures in line with the WH&S Management System, Environmental Management System and alignment with strategic objectives is also included. This has been excluded from the FY16-28 forecast.

Catchment Greenprint

As part of the Natural Asset Planning for Seqwater, OCRW are championing the "Our Catchment Greenprint" (Greenprint) project. The project is taking a proactive approach to managing Seqwater's catchments, and will provide a clear direction for the organisation in managing Seqwater's water supply catchments.

Seqwater's strategic and operational plans recognise and embrace the value of regional catchments. Our treatment philosophy recognises that treatment happens across our catchments as a multi-barrier process.



SEQ catchments are distinctive amongst those of most capital cities in Australia in that the majority of land is owned by other entities and subject to development. This is in contrast to Sydney, Melbourne, and Perth where almost all drinking water catchments are protected.

A cross-organisation team has been assembled to develop the Greenprint. While initially the focus is aligning internal priorities, there is an overarching imperative to collaborate closely with partners, existing and future, if transformational change is to be achieved. The current 30 year water supply plan provides limited insight into the role of water supply catchments in meeting future water supply needs. Seqwater's open catchments create both risks and opportunities. The risks include opening the way for developments that undermine water quality and security, threatening the reliability, cost and energy requirements for supply and treatment. The opportunity is to sustainably develop catchments to maximize their capacity for water quality and security while also deriving other economic, environmental and social benefits for communities and businesses.

It will be important to take an active role in advocating for change and to ensure a more coordinated Government response to catchment management in South East Queensland.

An allocation of \$150,000 has been made in the FY15 budget for the high level coordination and conceptual elements of the project. Budgets for catchment planning and management that are part of this initiative but delivered by other Groups and Teams are included in their respective forecasts. This has been excluded from the FY16-28 forecast.

FY16 to FY28

The GM Office budget is not anticipated to increase or fluctuate materially from the FY15 budget over the FY16-28 period beyond the reductions specifically mentioned above, which total \$0.5M. Throughout this period project initiatives may be required and will be justified through the appropriate approvals and justification processes.

8.1.2 RECREATION AND CATCHMENT SERVICES (RCS)

The operating model for RCS is based on a core number of permanent FTEs supplemented with contractor services engaged through the prequalified supplier arrangements, established to ensure procurement imperatives are met including value for money. The Referral Notice states recreation costs are to be included in the scope of costs in this submission.

FY14 and FY15

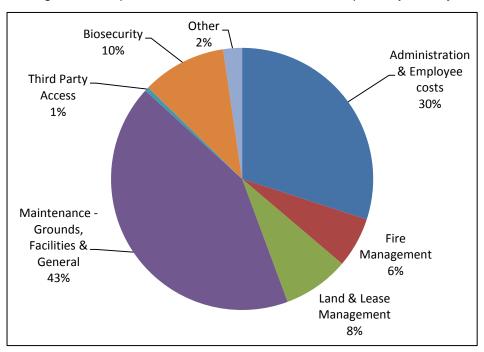
At \$11.5M the forecast total FY15 budget is approximately 9% higher (\$970,000) than in FY14. The \$274,000 increase in employee expenses is due to the impact of wage growth, along with the addition of six trainees and two temporary positions to cover compliance



roles for the Group. The primary responsibilities for the temporary compliance roles will be to monitor and manage illegal access and encroachment on Seqwater land, coordinate ranger patrol activities required to promote safe recreational use of our lakes and to conserve water quality, and secure support from other agencies, such as police, to assist in the management of safe recreation, illegal access and other compliance issues such as encroachment.

FY15 contractor labour forecast has increased by \$176,000 to \$208,000. This is primarily required to fund a resource to deliver on the recreation plans which are outcomes of the Queensland Government recreation review project. The outsourcing of Catchment and Recreation maintenance activities is considered prudent as it allows the Group to remain flexible and responsive to seasonal and climatic impacts on the work priorities. Examples of the utilisation of services of the contractor resources may include management of weed and vegetation growth, fire management and pest and feral animal mitigation.

The other materials and services forecast as increased by \$500,000 to \$6.4M in FY15. The bulk of this increase results from ongoing maintenance of the Natural Asset Management Plan (NAMP) projects (delivery of which is managed by the APDD Group), with the responsibility for ongoing maintenance of these assets residing with OCRW. Examples of the ongoing maintenance costs associated with the NAMPs includes maintenance of trees, resilience and shoreline plantings, leased land maintenance, weed control and erosion.



The figure below provides breakdown of RCS FY14 spend by activity.

Figure 36: R&CS FY14 operating costs by activity



Maintenance (grounds, facilities and general) is approximately 43% of the teams annual spend, with land and lease management at 8%, and biosecurity (management of weeds and pest) and fire largely making-up the majority of other materials and services expenditure.

As a Government water resource entity and as a landholder, Seqwater has a number of statutory obligations under the Water Supply (Safety and Reliability) Act 2008, specifically relevant to Recreation & Catchment Services are requirements of the Drinking Water Quality Management Plan (DQWMP) which is designed on a multiple barrier approach to protect water quality including hazards to raw water quality originating in the catchments. In addition to this, Seqwater also had obligations specifically to effectively manage fire on its land under the Fire and Rescue Services Act 1990, and manage declared pests on its land under the, Land Protection (Pest and Stock Route Management) Act 2002. Note R&CS maintenance costs apply to Seqwater owned land only.

RCS plans and schedules maintenance activities on an annual basis via a work order system to better control and manage cost and performance, the three categories of maintenance included scheduled, planned and reactive.

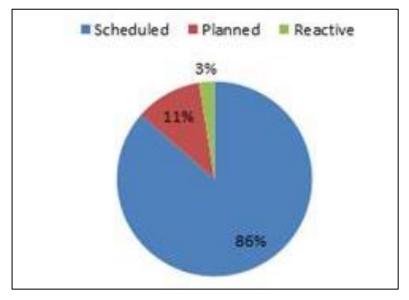


Figure 37: RCS CY13 maintenance orders by type

Figure 37 provides a snap shot of the maintenance schedule over a 12 month period (January to December 2013). As evident in the graph, a large proportion (86%) of the work carried out by the Group is scheduled, which leads into the identification and scheduling of planned work. The aim of land and asset maintenance is to maintain activity at a stable, predictable level, and is focussed on Seqwater's statutory requirements and land owner obligations. Maintenance activities of our recreation and catchments may on occasion also be driven by external Government direction and requirements.



FY16 to FY28

The FY15 budget forecast is based on normal climatic conditions. For the purpose of this submission, the assumption has been made that RCS's asset base and deliverables will remain constant, and aligned with the FY15 budget. Significant climatic impacts and events have not been specifically included, resulting in low variability to forecast operating costs.

As noted above, the ongoing maintenance of NAMP projects was included in R&CS budget for FY15. For FY16-28 responsibility or funding that type of ongoing maintenance will reside within the APDD Group. This results in other materials and services for RCS being reduced by \$930,000.

The two temporary compliance roles will cease in December 2014. An assessment of the longer term requirement of these positions will occur following the completion of the Recreation Review project, scheduled for December 2014. No provision for the ongoing costs of these positions has been included in this forecast. Due to the temporary engagements being forecast to end in December 2015, employee expenses are forecast to reduce by \$94,000 in the FY16 forecast and \$188,000 in FY17 to FY28 compared to FY15.

Other costs are forecast to remain at FY15 levels in real terms out to FY28. Note that despite recreation visitation steadily increasing to Seqwater recreation sites over the past five years, this has not had significant impacts on previous recreation maintenance expenditure levels.

Whilst significant climatic impacts and events have been excluded, the implications of atypical dry/drought conditions as well as atypical wet or flood seasons should be noted. A particularly wet season can result in a spike in operational expenditure through increased vegetation, requiring more frequent maintenance and mowing of the sites, potential pest infestations or potential water quality issues which result in higher operational costs. On the contrary, a drought may result in more land maintenance from water levels dropping, increased maintenance through running assets at lower water levels, fire risks and potential water quality issues.

Following the delivery of the outcomes of the Queensland Government's Recreation Review, for the purpose of this submission, an assumption has been made that the costs associated with the R&CS maintenance and business as usual activities associated with these assets will remain constant over the FY16-28 period. Note that as the recreation review is not due for completion until December 2014 any extra costs arising from recommendations for this activity have not been included in this submission (preliminary indications of additional recurrent operational expenditure for maintenance and enforcement is in the order of \$0.8M - \$1M pa).



8.1.3 WATER SOURCE OPERATIONS AND MANAGEMENT (WSOM)

The overall Water Source Operations and Management expenditure level of \$10.9M is essentially unchanged from FY14 to FY15 (0.2% reduction). There was no requirement for mobilisation of the Flood Operations Centre during FY14.

FY14 and FY15

The FY15 (and FY16-28) forecasts assume "average" summer wet seasons (consistent with average inflows scenario throughout this submission), and as such a small provision for employees costs associated with flood operations is factored into the forecasts. Additional costs may be incurred should a year be particularly dry or involve a major flood event, however have not been included in this submission.

The overall Water Source Operations and Management expenditure level of \$10.9M is essentially unchanged from FY14 to FY15 (0.2% reduction). There was no requirement for mobilisation of the Flood Operations Centre during FY14.

Resourcing

FY15 employee expenses of \$6M are slightly (\$80,000) less than FY14, mainly due to lower than forecast overtime (there was no requirement for the Flood Operations Centre to mobilise in the FY14 wet season) which resulted in a \$268,000 reduction in overtime expenses (and other allowances) for FY15. WSO&M had one FTE position that remained vacant for FY14, and has been converted to a permanent Hydrographer position in FY15. This FTE conversion resulted in a reduction in overall employee expenses, as the Hydrographer position was included in FY14 budget as a fixed term, additional FTE position which covered extended leave over the year.

There is a reduction in contract labour for FY15 by \$109,000 to \$39,000 as a result of the conversion of one contractor to a FTE position. The FTE for this position was transferred from the Finance team, and employee expenses for this FTE are contained within the FY15 Finance forecast, which will be transferred to WSO&M in the Q1 FY15 review. A new Flood Engineer position has also been approved and included in FY15 budget.

The Flood Engineer position aligns with the resourcing strategy for the Flood Operations Centre, which was implemented in order to ensure adequate resources to maintain the level of service required for the Flood Operations which is a highly specialised field. Flood Operations Engineers are required to meet criteria as outlined under section 377 of the Water Supply (Safety and Reliability) Act 2008, and as such only a small pool of suitable engineers are available in Queensland to fulfil the role.

The feasibility of having appropriately skilled internal resources available meet the staffing requirements of the Flood Operations Centre has been assessed as being economically



unviable in the short term. As such the role of the Senior Flood Operations Engineer is supplemented by external resources, with the view in the longer term to fulfil the highly specialised roles through succession planning.

Electricity

The discussion below consolidates electricity costs for the whole OCRW Group. The WSO&M Team is responsible for 88% of OCRW electricity expenditure.

OCRW has four large operational sites (North Pine Destratifier, Lake Kurwongbah Destratifier, Wappa Dam Pump Station and Wivenhoe Dam Operations) which are covered by the electricity supply contract applicable from 1 January 2014. The remaining recreational sites are priced at a contract discount to the Electricity Tariff 20 or 22 as defined in the Queensland Government Gazette, Retail Electricity Prices for Non-Market customers FY14. An increase of 24% was applied for FY15 based on the QCA's Draft Decision: Business electricity prices from 1 July 2014, being the estimated 13.8% increase in the QCA draft decision and an additional 10% increase due to the discount in the current contract arrangement not being able to be sustained.

The overall \$0.1M increase in electricity costs to \$0.6M in FY15 reflects price-driven impacts are in line with these contractual agreements and tariff rates.

Other materials and services

There is a slight increase in materials and services expenditure for FY15 (increase of \$125,000 or 3% to \$4.3M) for the WSOM Team. The materials and services category comprises funds for routine operational maintenance, minor goods and services, plant and fleet expenses, various maintenance agreements and licensing requirements. This also incorporates speciality consultancy services that are unable to be adequately resourced internally, including additional Flood Operations support, undertaking dam surveillance and safety inspections as required under the numerous dam safety regulations, plus undertaking specialised studies where no internal resource capacity exists.

FY16 to FY28

For the purpose of this submission, costs are forecast to remain at FY15 levels (excluding the impact of volume changes to variable costs) in real terms out to FY28. The assumption has been made that OCRW's asset base and deliverables will remain constant, and that significant climatic impacts and events have not been specifically included, resulting in low variability to forecast operating costs.

It should be noted that the potential requirement for Seqwater to accept additional responsibilities in the form of communications associated with the Emergency Action



Plans (EAP's), and the changes in communication protocols for ungated dams has not been quantified and has not been included in future operating cost forecasts.

No budget allowance has been included for further studies or construction of dams as a result of the work being undertaken in FY14 in relation to the Wivenhoe, Somerset Dam Optimisation Study (WSDOS) or the North Pine Dam Optimisation Study (NPDOS). A small budget component has been included in FY14 to cover the initial Government directed studies, but no further provisions have been included as scope of work not yet identified.

Summary

The consolidated OCRW operating cost forecast over the FY14-28 period is displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.

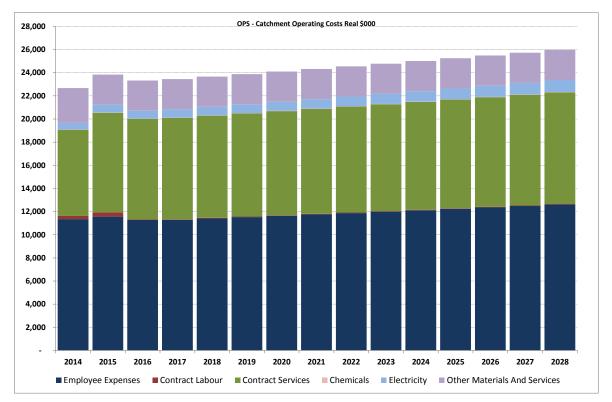


Figure 38: Consolidated OCRW operating cost forecast FY14-28

8.2 OPERATIONS- TREATED WATER (OTW)

The table below presents costs for the OTW Group which is comprised of the General Managers Office and six Teams:

- Operations Treated Water- North
- Operations Treated Water- Central



- Operations Treated Water- South
- Operational and Contractual Performance (GCDP and WCRWS)
- Asset Maintenance
- Business Systems and Support.

	FY14	A+F	FY15B		
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads	
Employee costs	22,339,918	-	23,154,458	-	
Contractor costs	1,336,203	-	342,492	-	
Electricity	21,297,378	-	23,262,665	-	
Other materials and services	77,668,765	-	77,722,948	-	
Total	122,642,264	-	124,482,563	-	

Table 38: OTW FY14 and FY15 operating costs by cost element

Contribution	FY14	A+F	FY15B		
Contribution by Team	Total	Corporate overheads	Total	Corporate overheads	
GM Office	434,319	-	465,181	-	
Treated water north, central and south	47,887,040	-	53,764,071	-	
Operational and Contractual performance	49,056,632	-	44,991,732	-	
Asset Maintenance	24,232,562	-	24,267,925	-	
Business systems and support	1,031,711	-	993,653	-	
Total	122,642,264	-	124,482,562	-	

Table 39: OTW FY14 and FY15 operating costs by Team

The OTW Group's total FY15 operating cost forecast increases by \$1.8M compared to FY14. Broadly the increase is attributable to increases in the price of chemicals (\$4M), electricity (\$2M) and labour (\$1M), offset by a forecast reduction in operating costs on the WCRWS as the scheme is shutdown. Maintenance costs are effectively neutral due to efficiencies in work allocation and administration.

OTW's resourcing strategy is a mixed delivery model with a total of 205 positions to operate and maintain assets, of which 193 are FTEs with 12 temporary positions.



The discussion below has been consolidated into the main assets types being conventional water treatment (including transport), the manufactured water assets and support functions. As all OTW operating costs directly relate to specific assets or groups of assets, none are classified as corporate costs.

8.2.1 GENERAL MANAGER'S OFFICE

The General Manager's Office consists of a GM and business support officer. An additional \$31,500 has been included in FY15 for one-off administration expenses associated with the relocation to Ipswich. Employee expenses are effectively neutral from FY14 to FY15. This same level of expenditure has been forecast to continue over the FY16-28 period (in real terms).

8.2.2 CONVENTIONAL WATER TREATMENT

This section includes costs for the Treatment North, Central (including the bulk treated water transport function) and South Teams.

FY14 and FY15

	FY14	A+F	FY15B		
Cost element	Total	Corporate overheads	Total	Corporate overheads	
Employee costs	12,322,791	-	12,735,499	-	
Contractor costs	603,615	-	267,492	-	
Electricity	15,145,430	-	17,575,175		
Other materials and services	19,815,204	-	23,185,905	-	
Total	47,887,040	-	53,764,071	-	

A consolidated breakdown of costs for these Teams is presented below.

Table 40: Conventional water treatment FY14 and FY15 operating costs by cost element

Resourcing

Labour costs increase in accordance with 2.5% EBA increases in FY15. In-sourcing has been determined as the most efficient manner of operating WTPs at this time. These roles are assessed as high risk to the business with very specific and complex skill sets required. The efficiency of in-sourcing WTP operations can be illustrated by the Noosa WTP, for which operations were, until June 2013, entirely out-sourced to Veolia under a contract. As a result of Seqwater taking over operations the Noosa WTP has achieved an operational saving of approximately \$600,000 in FY14. These savings have been



achieved while also increasing average production at Noosa from 6.10ML/d in FY13 to 17.08 ML/d (FY14 year to date).

The staffing profile for each of the three regions currently consists of a small management and administration team of three staff. Each region has an operational improvements and efficiency team consisting of two engineers. Operational staff makes up the remainder of positions. Total staff numbers for the regional teams are:

- North: 41 FTEs
- Central: 39 FTEs including three graduates
- South: 30 FTEs.

All regions are staffed seven days per week, 365 days per year. Mt Crosby and the supply system control centre are staffed 24 hours per day, seven days per week and all other WTPs have remote monitoring during 'out of hours' operation. Staff and contractors are moved between sites within each sub-region and between regions as required.

Existing operational staff numbers were capped on transition to the new structure. This has subsequently been reviewed and found to be optimal at this time to ensure rostering and on-call staffing requirements are met and to ensure there is adequate operational coverage to meet operational requirements and to manage incidents and emergencies.

Contractors

A small contingency is budgeted for contract labour to enable short term backfill of WTP Operators. Budgeted expenditure for process improvement allows the retention of external contractors or consultants with specific WTP process improvement skills not held within Seqwater. When engaged, these personnel are engaged to deliver a particular piece of work within a defined timeframe. The projected decrease from \$603,000 to \$267,000 is mainly due to the Noosa WTP operations being brought in-house and the optimisation of staff numbers within the new structure.

Energy

Energy consumption is adjusted for each asset in accordance with projected production levels under the Annual Operations Plan. The 16% increase in energy costs is reflective of the commencement of the new two year electricity supply contract from 1 January 2014. The three tiered pricing structure has already changed the optimisation balance for Mt Crosby in respect to times of operating, peak production, chemical dosing, reservoir level management and pumping regimes.

Other materials and services- chemicals

The leading variable components for water treatment are chemicals and sludge disposal.



Chemical Contracts are competitively tendered on a two year cycle. The tendering process complies with Seqwater's Financial Management and Performance Standard 2009, Queensland Procurement Policy 2013 and the Seqwater Procurement Policy. There are currently several main suppliers, reflecting best value delivery to various geographical areas or for specific chemicals.

Chemical consumption assumptions for FY15 reflect historic levels and adjusted for projected production levels at each WTP under the Annual Operations Plan, with revisions based upon current bulk commodity pricing.

Chemical use is dependent on raw water characteristics which are impacted by weather. As a general rule, periods of high rainfall are associated with poorer raw water characteristics. As example, during the 12 months of FY14 rainfall was approximately 50% of that in the three preceding FYs, with resultant appreciable reductions in chemical utilisation.

The chemical cost increase from \$15.6M to \$16.8M in FY15 (7.7%), is due to production increases under the AOP and bulk chemical cost increase trends.

Other materials and services- sludge disposal

The sludge collection, transportation and disposal contracts are competitively tendered. The sludge disposal cost for FY15 is effectively neutral at \$3.2M.

To ensure best value for transport and sludge disposal, in February 2014 Seqwater initiated a tender for a centralised 2+1+1 year contract for collection, transportation and disposal of alum sludge residuals from 19 WTPs. Innovation is included as part of the evaluation criteria, in order to encourage alternative options to the current disposal methods. However, the regulation and market for alum sludge does not present as many opportunities as biosolids produced by wastewater treatment.

FY16 and FY28

Resourcing

Under the Seqwater structure implemented on July 2013, operational labour requirements were assessed and resourced accordingly. Those resource requirements will be reviewed as a key activity within the Operational Efficiency strategic focus area (refer Section 8.11).

Resource efficiency may also be achieved by closing additional WTPs and operating others at reduced hours or greater automation.



The WTPs currently scheduled for decommissioning (excluding the two old Kilcoy plants) will have no impact on operations staffing as these plants are not manned. Kilcoy staff will continue to operate the new plant.

A plan to develop skills not available in the labour market has been developed, which includes:

- a targeted graduate and program (in operation since 2009)
- multi-plant operators competency assessment so as to so deepen our capability, sub-regions ensure that several operators can effectively operate plants other than their "normal" place of work
- multi-skilling of operators across the regions to allow resource sharing during storm events, incidents and to cover annual leave and long service leave
- coordinator exchange program to create opportunities for managers to gain experience in other roles across the business to deepen OTW's capability.

Energy

Electricity forecasts to FY28 are a significant matter for the business. Electricity consumption assumptions reflect historic levels plus production growth under the Operating Strategy, with revised energy prices for the current (FY14 and FY15) energy contract. For the purpose of projecting costs, the positive and negative impacts of efficiency gains from investment in new equipment and rationalisation of WTPs is offset by increased production from ageing assets and running assets closer to capacity.

Energy prices have already and will continue to change the optimisation balance for many facilities and impact aspects of production including chemical dosing, reservoir level management, pumping regimes and operating times. It is assumed that these will have negligible impact upon energy consumption although may contribute towards mitigating energy cost rises. OTW will continue to focus on costs we have influence over that can be managed operationally to achieve savings with little investment.

Other materials and services- Chemicals

Seqwater has recently commenced a longer term analysis and planning process for the management of chemical suppliers. This work is in its very early stages any material improvements to chemical contractor management will be demonstrated in the 2018 review.

As stated in Section 6.5, chemical consumption assumptions reflect historic levels plus production growth and system optimisation under the Operating Strategy. PwC have recommended that CPI be used for the purposes of forecasting price movements in chemicals over the regulatory period.



Other materials and services- sludge disposal

The current process of on-site disposal of sludge at Mt Crosby and North Pine has a finite life as space is consumed. As the current sludge beds reach capacity off-site transportation and disposal may be required to replace on-site management that has been in place for over 100 years. These two sites account for approximately 48% of all sludge produced for the whole of the business.



8.2.3 OPERATIONAL AND CONTRACTUAL PERFORMANCE

The OCP team of 18.5 FTEs provide a centralised management and support function for the delivery and monitoring of outsourced service, including management of the Veolia and Thiess contracts. The 11% increase in employee expenses is made up of the 2.5% EBA wage increases, vacancies that have been carried in FY14 (as reflected in the contract labour variance) and costs incurred due to the Ipswich move. Increased electricity costs are in accordance with the changed electricity procurement arrangements for the GCDP and the new electricity contract (for the Veolia operated sites). This same level of expenditure has been forecast to continue over the FY16-28 period.

Note: The other materials and services category in the table below include the contract costs for the GCDP and WCRWS, both of which are presented and discussed in greater detail later in this section.

	FY14A	+F	FY15B		
Cost element	Total	Corporate overheads	Total	Corporate overheads	
Employee costs	2,311,157	-	2,492,424	-	
Contractor costs	596,085	-	-	-	
Electricity	6,151,948	-	5,687,490	-	
Other materials and services	39,997,442	-	36,811,818	-	
Total	49,056,632	-	44,991,732	-	

Table 41: Operational and contractual performance Team FY14 and FY15 operating costs by cost element



8.2.4 GOLD COAST DESALINATION PLANT

Seqwater operates the GCDP through an open book Alliance with Veolia on a cost plus pass through basis. This contract is a legacy of the original construction contract arrangements, as described in Section 5.2.

FY14 and FY15

GCDP costs for FY14 and FY15 are presented out below. These costs incorporate savings recommendations made in the Independent Review of Cost Forecasts- Gold Coast Desalination Project by Jacobs SKM (refer Appendix C). Note none of the costs are classified as corporate costs.

Cost element	FY14 A+F	FY15B
Energy ¹	3,256,419	3,213,857
Materials and services ²	7,556,704	7,852,590
Repair & Maintenance - Preventative	3,938,920	4,235,300
Repair & Maintenance - Breakdown	326,195	350,500
Total	15,078,238	15,652,297

Note: 1 includes Veolia fee,

Table 42: GCDP FY14 and FY15 operating costs by cost element

The \$0.3M materials and services increase (4%) is predominantly due to labour cost increase associated with expiry of the Veolia EBA, statutory superannuation increases and vacancies not filled in FY14. Maintenance costs have also increased by \$0.3M (8%) as the assets age and is in line with observed increases in maintenance activities in the latter part of FY14.

<u>Energy</u>

Seqwater centrally manages electricity for all sites.

The minor energy cost decrease (1%) reflects the reduced consumption from the Hot Standby Optimisation trials conducted in FY14, which has been predominantly offset by the new two year electricity supply which commenced on 1 January 2014. The three tiered pricing structure changed the optimisation balance for the GCDP, however the production volumes, which were reduced from 50ML to 36 ML per week through the optimisation project, remain unchanged.



Other materials and services- chemicals

Assumptions for chemical consumption reflect historic levels and are adjusted for projected production levels under the AOP with revisions based upon current bulk commodity pricing.

Other materials and services- sludge disposal

Sludge disposal costs reflect historic levels and are adjusted for projected production levels under the Annual Operations Plan. In prior years sludge disposal costs included leasing of specially designed sludge bins. Under renewed contract arrangements for sludge disposal, the Alliance has purchased the sludge bins resulting in operational savings which is reflected in FY15 costs.

FY16 to FY28

Resourcing

Seqwater drives an ongoing program of efficiency improvements as part of the GCDP Alliance. There is believed to be limited scope for structural reduction in labour levels as the plant is relatively new and has been constructed with a high degree of automation and control, and is currently being maintained in a mode of operation for which it was not originally designed.

Maintenance and renewals

Seqwater plans to review the maintenance schedule for the plant to ensure that the maintenance regime is fit for purpose. It is not known at this stage whether this will lead to a material change in maintenance costs and therefore no assumptions have been included in the cost projections.

Energy

Operating energy consumption will be influenced by a range of factors including:

- energy price escalation
- energy baseload demand arising from asset changes and renewals
- energy efficiency improvements arising through asset renewals
- energy inefficiency arising from aging assets running assets closer to capacity.

For the purposes of projecting costs, the positive and negative impacts of efficiency have been assumed to be cost neutral. Energy price will change the optimisation balance for many facilities and impact aspects of production including chemical dosing, reservoir level management, pumping regimes and times of operation. It is assumed that these will have negligible impact upon energy consumption although may contribute towards mitigating energy cost rises.



Other materials and services- chemicals

Chemical consumption assumptions reflect historic levels plus growth under the Operating Strategy, with revisions based upon current bulk commodity pricing.

Other materials and services- sludge disposal

Sludge disposal costs reflect historic levels plus projected growth under the Operating Strategy. Costs will increase with industry disposal to landfill cost increases.

Summary

Forecast GCDP operating costs are presented below.

\$'000 real	Fee	FY16	FY17	FY18	FY19	FY20	FY21	FY22
Total Variable Costs		656	656	656	656	656	656	656
Repair & Maintenance- Preventative		4,049	4,568	4,609	6,227	5,225	3,590	6,350
Repair & Maintenance- Breakdown		435	435	435	435	435	435	435
Other Veolia costs		7,152	7,231	7,253	7,464	7,361	7,164	7,495
Electricity		2,641	2,641	2,641	2,641	2,641	2,641	2,641
Total Fixed & Variable (including fee)		14,933	15,531	15,594	17,423	16,322	14,486	17,577
Volume (ML)		1,244	1,241	1,241	1,241	1,244	1,241	1,241

\$'000 real	Fee	FY23	FY24	FY25	FY26	FY27	FY28
Total Variable Costs		656	656	656	656	656	656
Repair & Maintenance- Preventative		3,542	12,137	8,012	3,444	3,712	6,396
Repair & Maintenance- Breakdown		435	435	435	435	435	435
Other Veolia costs		7,159	8,190	7,695	7,147	7,179	7,501
Electricity		2,641	2,641	2,641	2,641	2,641	2,641
Total Fixed & Variable (including fee)		14,433	24,063	19,439	14,323	14,623	17,629
Volume (ML)		1,241	1,244	1,241	1,241	1,241	1,244

Table 43: GCDP operating expenses FY16-28

8.2.5 WESTERN CORRIDOR RECYCLED WATER SCHEME

FY14 and FY15

WCRWS costs for FY14 and FY15 are presented out below. Note none are classified as corporate costs. The capital costs associated with the shutdown works project is not included above and are detailed Section 7.14.2.



Cost element	FY14 A+F	FY15B
Energy ¹	2,895,529	2,473,633
Materials and services ²	10,218,746	8,477,160
Repair & Maintenance - Preventative	2,327,403	1,765,000
Repair & Maintenance - Breakdown	450,035	217,000
Total	15,891,713	12,932,793

Note: 1 includes Veolia fee, 2 includes Veolia's fee on materials, services and energy

Table 44: WCRWS FY14 and FY15 operating costs by cost element

The figures in Table 44 incorporate the best available information at the time of writing. Estimates of post shutdown operating costs incorporate recommendations made in the Independent Review of Cost Forecasts – Western Corridor Recycled Water Scheme – Jacobs SKM (refer Appendix D). Sequater centrally manages electricity procurement for all sites.

The technical details of the 'dormant state' for the assets are of considerable significance in determining future costs. During FY14 and into FY15 further work is being undertaken to determine and document the detailed shutdown project scope and the likely care and maintenance requirements of the assets following completion of the shutdown. These will enable a suitable maintenance program to meet technical and restart expectations. Seqwater does not currently have sufficiently well-developed technical specifications for the shutdown works or care and maintenance program from the contractor to robustly propose forward cost forecasts. These can be expected to be fully developed, tested and implemented during the period FY15 to FY17.

Therefore at this point cost projections have been based on the following assumptions

- 1. objective to complete physical works by 30 June 2015, with carryover items to be agreed with Seqwater as issues and obstacles arise during the project
- 2. schedules for Bundamba and Gibson Island (GI) well developed due to completion of planning and investigations
- 3. schedule for Luggage Point (LP) based on Bundamba and GI schedules and therefore reasonably accurate although will require further refinement after completion of planning and investigations
- 4. schedule for Networks is preliminary and not detailed due to the level of information currently available. The schedule will be refined upon completion of the static mode investigations and concept design works
- 5. schedule for Networks based on engineering consultancy firm GHD's Networks Decommissioning Scope document



- chemically treated PRW and PW used for flushing/filling the GWO RW pipeline. PRW used upon completion of PRW interconnection to enable early commencement of flushing/filling and then revert to PW sourced from Oxley WWTP when connection ready (to allow shutdown of LP and eastern pipeline)
- 7. PRW is used for PRW pipeline flushing/filling
 - a. due to the level of complexity and lack of information, risk of over runs exists with the Networks schedule and therefore there is a need to incorporate a series of contingencies to ensure that the overall completion date is met
 - swabbing camera inspections to be organised to check whether swabbing required for pipelines, assumed unlikely for PRW pipelines, time allocated to complete but if greater time required, consider deferring swabbing to achieve overall project completion date (or accept resultant over run)
 - c. chemical dosing if there are delays to completion of various investigations, planning works and/or implementation, consider deferring in order to achieve overall project completion date (or accept resultant over run)
 - d. PW connection to RW pipeline required to complete RW pipeline flushing/filling, any delays beyond scheduled completion will impact on timely completion of RW network hibernation, consider deferring full chemical dosing of RW pipelines to achieve overall project completion date (or accept resultant over run).
- PW connection to PRW pipeline required to complete ROC pipeline flushing/filling and contingency if delays encountered with PRW pipeline hibernations (to enable LP to be completed in time)
- 9. dates for completion of Condition Assessment and Restart Plans not yet included, assumed that timing before 30 June 2015 not critical
- 10. reinstatement of the Esk-Kilcoy section of the western pipeline excluded (to be included when scope of works is ascertained)
- 11. installation of additional penstock at the inlet to the Bundamba RWPS is required in order to clean out the Bundamba RWPS tank, excluded from schedule at this stage (raised as a project for FY15, yet to be approved)
- 12. immediate commencement of LP decommissioning (23 to 70 ML/d capacity MFs and ROs)
- 13. full availability of required external contractors (for chemical removals, tank cleaning, swabbing, camera inspections)
- 14. risk mitigation measures for Western pipeline discharges excluded (scope yet to be determined)
- 15. greater risk of rework expected from using new/external tradespeople to augment the existing workforce to the required levels
- 16. resource profiles include operator/tradespeople requirements only, based on working 38 hours/week



- 17. external service provider labour (chemical removal and tank cleaning contractors) excluded from resource profiles
- 18. allowance for new staff inductions/training not included in resource profiles
- 19. allowance for wet days not included
- 20. allowance for unproductive time (such as leave and training) not included in resource profiles.

FY16 to FY28

The technical details of the 'dormant state' for the assets are of considerable significance in determining future costs. Sequater does not currently have sufficiently well-developed technical specifications for the ongoing care and maintenance program from the contractor to robustly propose forward cost forecasts. The initial contractor estimates are included, however it should be noted that the amendments to the maintenance schedule are rudimentary at this stage and are not aligned to the implemented shutdown scope. These can be expected to be fully developed, tested and implemented during the period FY15 to FY17. Forecast WCRWS operating costs are presented below.

\$'000 real	FY16	FY17	FY18	FY19	FY20	FY21	FY22
Repair & Maintenance- Preventative	1,814	1,814	1,771	2,772	1,809	1,860	1,762
Repair & Maintenance- Breakdown	217	217	217	217	217	217	217
Other Veolia costs	8,161	8,163	8,177	8,327	8,221	8,228	8,215
Electricity	2,474	2,474	2,474	2,474	2,474	2,474	2,474
Total Costs	12,666	12,668	12,639	13,790	12,721	12,779	12,668

\$'000 real	FY23	FY24	FY25	FY26	FY27	FY28
Repair & Maintenance- Preventative	1,879	1,738	1,786	1,709	1,770	1,711
Repair & Maintenance- Breakdown	217	217	217	217	217	217
Other Veolia costs	8,231	8,212	8,218	8,208	8,216	8,208
Electricity	2,474	2,474	2,474	2,474	2,474	2,474
Total Costs	12,801	12,641	12,695	12,608	12,677	12,610

Note: No variable costs incurred in care and maintenance mode.

Table 45: WCRWS operating expenses FY16-28

8.2.6 ASSET MAINTENANCE

Asset Maintenance undertakes all maintenance services (civil, mechanical, electrical, instrumentation, SCADA maintenance and repair) for Seqwater's conventional treatment assets.



FY14 and FY15

The following covers costs related to conventional water treatment, natural asset and administrative maintenance costs for FY14 and FY15.

	FY14	A+F	FY15B		
Cost element	Total	Corporate overheads	Total	Corporate overheads	
Employee costs	6,567,679	-	6,707,401	-	
Contractor costs	136,503	-	75,000	-	
Electricity		-		-	
Other materials and Services	17,528,380	-	17,485,524	-	
Total	24,232,562	-	24,267,925	-	

Table 46: Asset maintenance FY14 and FY15 operating costs by cost element

The maintenance budget is effectively neutral from FY14 to FY15. The maintenance budget for FY14 is split into Scheduled (42.5%), Planned (31.5%) and Reactive (26%).

CPI increases (3%, which all MMW panel contractors can claim under panel contract arrangements) have been absorbed as a budget saving to come from efficiency gains from pre-approved works and optimisation of the schedule by the operational planners. It is anticipated this will offset the 7% schedule budget increase to cover an increase in scheduled maintenance at the new Kilcoy WTP, Noosa WTP and Mary River pumping station (the latter two which have been transferred from Veolia).

Seqwater continues with current sourcing arrangements for maintenance with 95% of all work outsourced.

Scheduled: \$6.4M increasing to \$6.9M

The predicted 7% increase in scheduled work has been offset by the pre-approved work project and optimisation of scheduled work by operational planners and a reduction in reactive work. The asset maintenance portfolio has been increased by three new plant areas during FY14, with the new Kilcoy WTP, the Noosa WTP and Mary River Pump Station being added, the latter two of which were transferred to Seqwater from Veolia in the past year. There have been numerous projects delivered across all sites around instrumentation, improved water quality monitoring and plant process control which has also resulted in an asset and schedule increase.

This has been offset by decommissioning of some sites such as Caboolture, Woodford and South McLean WTP's sites. The Tactical Maintenance team is also in the process of developing reliability centred maintenance based Tactical Maintenance Plans that will



also push a review and optimisation of the current scheduled maintenance program for each asset class.

Planned: \$5.3M reducing to \$5.1M

The APDD process for planned works will be undertaken for non-urgent works. The CPI contractor increase has been absorbed as a saving to be added uniformly across budget figures as the estimated savings to the program.

Historic modified and trended costs are used to estimate reactive and planned maintenance costs. The main benefit of splitting the "reactive" maintenance work into "reactive" (break down/urgent) and planned (non-urgent) is to allow work that does fall into the latter category to be undertaken at a time that allows jobs to be grouped or undertaken at a more suitable time and realise savings over the costs of undertaking an urgent job.

Reactive: \$4.1M down to \$3.5M

The reactive budget has been reduced from 26% of the overall asset maintenance budget to 23%. Savings are in two areas, with \$141,000 transferred to the scheduled budget to cover the increase to 26% and a saving of 3% in the reactive budget achieved through the scheduled and planned strategies and reflects no increase for CPI in FY14.

As a result of improved planning and maintenance, there is evidence of improved resilience and reliability which will reflect in a reduction in reactive maintenance. The delivery of the renewals and refurbishment capital programs also will positively impact the overall asset condition, resulting in lower reactive maintenance across the business.

Service administration

Following implementation of the new structure the Service Administration budget has reduced from \$608,353 to \$538,850, a decrease of \$69,503 (11%).

Resourcing

Under Seqwater's current structure, implemented July 2013, operational labour requirements have been assessed and resourced accordingly. The FY14 Seqwater staff allocation is currently below 55 plus three Graduates. Current and FY15 forecast is based upon a wage growth is 2.5% for EBA staff.

Contractors

Current and FY15 forecast are based on the competitively tendered budget for the defined scheduled maintenance program (modified as required for asset enhancement, renewal and aging) plus historic modified and trended costs for reactive/planned maintenance.



Seqwater employs contractors as both contingent and peak load workforce, and through quoted and tendered minor works. Contracted work currently accounts for 95% of work undertaken by Asset Maintenance. A 3% increase for contract services has been absorbed.

Bulk treated water supply system maintenance

The maintenance and field operational activities of all bulk treated water transport system assets are currently delivered through various contract arrangements with service providers.

The majority of the services are delivered by Thiess Services under the major Operations and Maintenance Services Agreement. This contract was competitively tendered in 2013 and expires in 2015 with an option to extend. A number of other smaller contracts exist which ensure routine operational and maintenance requirements are met, as well as coverage for pipeline break events. For the purposes of this pricing submission it is assumed that the operations and maintenance services will continue to be delivered under similar arrangements.



The FY15 forecast expenditure for field operations and maintenance activities includes some activities deferred from FY14. This is principally due to two factors, being the productivity impacts of mobilising Thiess Services as a new contractor with new systems; and Seqwater taking the opportunity to review and update the detailed scope of some field maintenance and inspection programs.

Thiess Services delivers the field activities through a field workforce comprising Operator-Maintainers with field mobile technology devices. This allows real time scheduling of both operational and maintenance tasks to the workforce for maximum efficiency whilst responsive to operational needs. The operational component of the services is estimated to be only 5-10% of total contract costs.

The tendering process, including re-scoping, authoring, awarding and transitioning a new contract is budgeted to \$595,000. It is anticipated that a major re-tender process would occur once before FY23.

FY16 to FY28

Assumptions regarding the forecasting of costs are set out below:



- the aging asset base and the increased technological complexity of new assets means that maintenance costs will continue to increase over and above efficiency savings from improvements to productivity and advances in efficient scheduling that result from an increased in scheduled and planned maintenance over reactive works
- with the ongoing development of the asset database by Asset Maintenance and APDD the proportion of scheduled works will continue to improve. A target of 45% scheduled work is expected to be reached in FY17
- the Tactical Asset Maintenance Team estimates that 95% of the Operational Asset Portfolio is covered by Scheduled Maintenance. It is estimating that a further 5% of maintenance schedules are required to capture the remaining assets (allowing for minor adjustments the scheduled maintenance budget)
- the Tactical Maintenance team is developing Reliability Centred Maintenance based Tactical Maintenance Plans that will also drive a review and optimisation of the current scheduled maintenance program for each asset class. The benefits of this review will be known in the FY18 review.

Seqwater is currently undertaking planning in order to comprehensively implement Reliability Centred Maintenance. Timelines for program implementation are being developed through this planning process.

8.2.7 BUSINESS SYSTEMS AND SUPPORT

BSS has seven FTE's undertaking three functions: incident and security management for the whole of Seqwater's operations and systems implementation and business process improvements, and performance reporting for identification of efficiencies and compliance with corporate and regulatory requirements.

BSS Team costs are forecast to reduce by \$38,000 to \$994,000 in FY15 with a \$51,000 increase in employee expenses (mostly due to EBA and contract wage growth rates) more than offset by a \$89,000 reduction in other materials and services costs arising from more favourable terms obtained for the emergency exercise contract, and an upgrade to the incident and emergency management software. The same level of expenditure as FY15 (in real terms) is been forecast to continue over the FY16-28 period.

Summary

The consolidated OTW operating cost forecast over the FY14-28 period is displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.



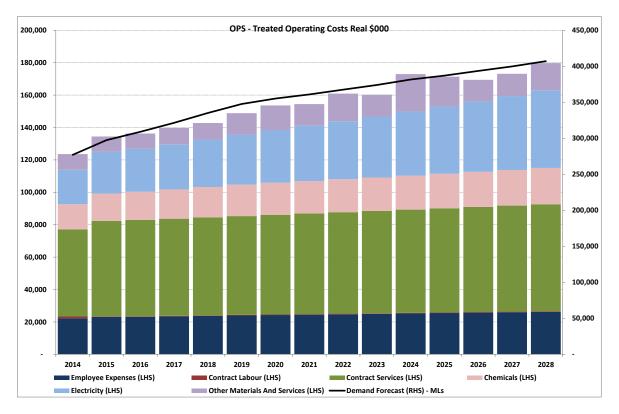


Figure 39: Consolidated OTW operating cost forecast FY14-28

8.3 ASSET PORTFOLIO DEVELOPMENT AND DELIVERY (APDD)

The APDD Group is comprised of the General Managers Office and five Teams:

- Asset Capability and Sustainability
- Asset Planning
- Program Delivery
- Engineering and Technical Support
- Water Quality and Environment.

APDD is responsible for asset management and operational support to Seqwater's water quality activities.

In relation to asset management, APDD is responsible for ensuring assets are capable of achieving the specifications set by the WSSP group in the Operating Strategy and the future Water Security Program. It does so through a range of activities, including:

- monitoring the capability of assets, including against water quality and reliability requirements
- planning maintenance and renewals to maintain the capability of existing assets



- planning upgrades to improve the capability of assets, where service requirements exceed the current capacity
- managing the development of the annual and long-term capital improvement programs, and the approvals processes for individual projects
- delivering approved capital projects, safely and efficiently.

Operational support services include:

- development and oversight of water quality and environmental management programs, including DWQMPs
- laboratory services and engagement of independent water quality monitoring specialists
- management of emergent asset issues
- provision of expert engineering advice.

The APDD resourcing strategy seeks to ensure that the asset management and operational support services are delivered as prudently and efficiently as possible.

Over the period FY15 to FY18, APDD priorities are:

- establishing consistent and reliable asset information, and management processes
- ensuring that risks are understood and management decisions well informed
- further consolidating and refining asset management planning
- ensuring that operational, planning and program delivery activities reflect business requirements and are undertaken as efficiently as possible.

These priorities will be met by continuing to:

- improve our information on and understanding of asset capability and performance, highlighting the needs for improvements and the most prudent and efficient means of achieving those improvements
- standardise and refine asset maintenance and improvement planning, ensuring that required performance can be achieved in the most efficient way possible
- improve engineering management, including better integration of issues such as, safety in design
- improve the manner with which the capital improvement program is delivered.

The operating expenditure outlined in this section reflects those priorities. It has been determined taking into account:

 completion of key asset information projects, such as the identification and consolidation of 'as constructed' plans which are typically held in a non-digitized paper form



- Increased planning effort required to ensure that the larger capital improvement program is prudent and efficient
- ongoing operational support, taking into account forecast increases to the volume of water supplied
- efficiencies that will be achieved as systems are completed and processes further refined
- efficiencies that will be achieved through continuing improvements in how projects are resourced, including procurement of supplies and services and ongoing review of the most appropriate combination of temporary, contract and consultant resources.

Key points in the APDD operating cost forecast

The effect of this strategy is that annual operating cost decreases over the period FY16 to FY28, from \$19.7M to \$15.4M per annum, a reduction of 21.4% (\$4.2M) from FY14. It is anticipated that this reduction will be sustained, by increasing the effectiveness of the APDD team through improved and maturing work processes and maturing the Seqwater asset knowledge base. This reduction is significant, given the capital program increases over this same period from \$76M to \$129M per annum (70% increase).

The reduction will primarily be achieved through reduced materials and services. APDD is responsible for a range of previously activities undertaken by a combination of teams in Seqwater, LinkWater and the SEQ Water Grid Manager. The group structure and establishment was established in mid-2013 following an internal review. The establishment forecast is consistent with the restructure. In the main, it is anticipated to remain at similar levels for the period to FY28.

As the APDD workload varies, the resourcing strategy is to engage temporary staff, contractors and consultants to supplement the FTE structure where it is prudent and efficient to do so.

The forecast for the period FY16 to FY28 is in 2014 values, with no escalation applied. APDD operating expenditure includes:

- employees
- contractors
- materials and services which include:
 - o consultants,
 - o operating expenditure on decommissioning and minor works (renewals), and
 - water quality operational support.



The cost element Electricity is not included, as APDD is not a direct consumer of electricity for operations, and office usage is included in the Seqwater corporate overhead.

The APDD budgets and forecasts are "zero based", that is based on zero based labour cost plus historic modified and trended costs for other components. In preparing the budgets and forecast, each APDD Manager considers:

- the nature of each activity and function, and the alignment with external compliance requirements and specifications set by the WSSP group, such as in the Operating Strategy
- the volume of work required and the relevant drivers (need) of that workload
- the efficient and effective resourcing for that workload
- Materials and consumables required and procured at the lowest overall cost.

FY14 and FY15

	FY14	A+F	FY15B		
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads	
Employees	16,287,478	-	14,463,801	-	
Contractors	560,841	-	1,196,461	-	
Electricity	-	-	-	-	
Other materials & services	24,097,809	-	20,964,173	_	
Total	40,946,128	_	36,624,434	-	

Table 47: APDD FY14 and FY15 operating costs by cost element

Note as virtually all APDD operating costs directly related to specific assets or groups of assets none are classified as corporate costs.

The FY15 budget of \$37 M is 18.6% (\$4.3M) less than the FY14 full year forecast, due to the following key differences:

- labour reduced by \$1.8M, primarily due to a change in the capitalisation of planning work associated with the delivery of capital projects
- contractors increased by \$0.6M, reflecting that this is a more efficient means of delivering key projects than consultants
- materials and services reduced by \$3.1M, due to a range of factors including a reduced water quality monitoring and increased work being undertaken internally rather than by consultants.



These savings are over and above efficiencies achieved in FY14 through the restructure, and labour costs avoided due to a significant number of positions being vacant following that restructure while external recruitment was undertaken.

FY16 to FY28

The graph below shows the forecast period FY15 to FY28, for the three components of APDD operating expenditure:

- minor works and decommissioning, which represents operating expenditure directly attributable to programs for the planned decommissioning of assets, maintenance of natural assets and minor renewal works
- water quality support, which represents the operating expenditure directly attributable to operational support of water quality objectives rather than attributable to the asset planning function. For example, this includes external laboratory testing services of approximately \$4.6M per annum. The amount of testing undertaken was reviewed in 2013 and changes made from early 2014. For comparison, the combined cost of the monitoring programs undertaken by the previous entities in FY13 was \$6.7M
- OPEX net, representing the remaining employee, contractor and material & services costs excluding the items above.

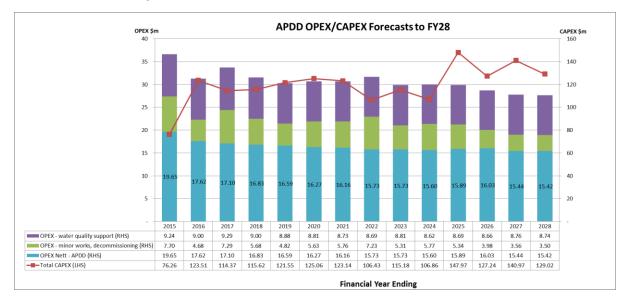


Figure 40: Consolidated APDD operating and capital cost forecast FY15-28

The key elements in the forecast period FY16 to FY28 are:

 FY15 budget resource establishment is forecast to remain relatively static, with variable workload being resourced with contractors or consultants. Although the capital program increases from \$80M in FY15 to approximately \$120M to \$140M per year over the period FY16 to FY28, APDD is forecasting that annual OPEX will



reduce by approximately \$4M (10%) against the FY15 budget, and will remain at that reduced amount. This forecast is achieved largely as a result of a resourcing strategy which replaces consulting resources (Material and Service costs) with employees or fixed term contractors wherever it is prudent and efficient to do so

- a significant deliverable in the FY15 budget is the completion of the remaining of Asset Management Plans, which will then release resources for "business as usual" activities
- OPEX Renewals focused on maintenance associated with extending the life of assets, supported by the progressive introduction of more sophisticated asset management processes and systems
- OPEX Natural focus on catchment works to improve raw water quality, including on non Seqwater land
- water quality operational support reduction in annual forecast costs against FY15 through improved work methods, and reduced use of external resources.

The details of the operating cost forecast for each of the teams is provided in the following sections.

8.3.1 GENERAL MANAGER OFFICE

FY14 and FY15

The General Manager FY14 Q3 forecast, and FY15 budget are shown in the table below.

Cost element	FY14 A+F	FY15B
Employee costs	505,509	417,936
Contractor costs	-	-
Energy	-	-
Other materials and services	252,111	806,950
Total	757,620	1,224,886

Table 48: APDD GM office FY14 and FY15 operating costs by cost element

The GM Office is staffed by the General Manager and a Group Support Officer. The \$88,000 reduction in employee expenses from FY14 to FY15 is due to a non FTE resource in FY14, not budgeted for in FY15.

The FY15 Materials and Services budget includes a consultancy allowance of \$800,000 to support the FY15 Monitoring and Control Systems (MCS) program. This program will establish the direction for MCS expenditure, which will be delivered by responsible teams from FY16.



FY16 to FY28

The General Manager Office forecast for FY16-28 includes employee costs for the General Manager and Group Support Officer, and is consistent with the FY15 budget as the resourcing is not anticipated to increase or fluctuate materially from the FY15 budget.

There are no Material and Services costs forecast beyond FY15, however, if there are specific project initiatives required, additional budget will be requested.

Cost element	Average FY16-28	FY28 only
Employee costs	417,936	417,936
Contractor costs	-	-
Electricity	-	-
Other materials and services	-	-
Total	417,936	417,936

Table 49: APDD GM office FY16-28 operating costs by cost element

8.3.2 WATER QUALITY AND ENVIRONMENT

The Water Quality and Environment (WQE) team manages and implements the overall water quality and environment management for Seqwater, and ensures those elements are aligned with the expectations of key stakeholders. This team is responsible for:

- catchment water quality monitoring and assessments, including operational support
- water quality data management, water management planning and implementation of water management plans, ranging from audits to emergency management and improvement planning
- environmental management, including development and implementation of plans and processes and provision of operational and project delivery support, including obtaining approvals, ensuring compliance and paying fees and licences
- laboratory services, including management of the external water quality monitoring contract.

The WQE FY14 Q3 forecast and FY15 budget are set out below.

Cost element	FY14 A+F	FY15B
Employee costs	5,675,731	5,423,067
Contractor costs	214,893	238,190
Energy	-	-
Other materials and services	7,962,512	7,556,442
Total	13,853,136	13,217,699

Table 50: APDD water quality and environment FY14 and FY15 operating costs by cost element



The WQE FY15 budget is decreased by 4.6% (\$635,000) compared to FY14.

The WQE team has successfully reduced costs each year through both efficiency measures and reducing reliance on external contractors. Further reductions are forecast in future years assuming no changes to environmental or water quality legislation which may trigger additional monitoring requirements.

The FY15 budget maintains employee numbers at the current establishment level, resulting in minor savings of 4.5% (\$253,000) compared to the FY14 Q3 Forecast. Consistent with the APDD resourcing strategy, the majority of the outputs from the WQE team are planned, developed and delivered in-house. However there are a number of specialist services which require expert external consultancy support as they cannot be delivered in-house due to the unique skill set requirements.

External resource requirements are reducing as the internal systems become more mature. The FY15 budget has a reduction in consultancy of 5.1% (\$406,000) from \$8M to \$7.6M from two main areas:

1. External laboratory Contract

The current laboratory services contract has a remaining two years to expiry in May 2016, and the remaining contract terms are anticipated to meet Seqwater's monitoring costs for regulatory and risk requirements under the current water quality and environment management systems.

The forecast for future years to FY28 has assumed that the laboratory rates will be similar though with CPI increases over future years. Actual costs may be higher than assumed.

2. Consultants

Beyond the laboratory contract, significant items budgeted for FY 15 includes:

- the ecological monitoring programs (\$485,000)
- contaminated land assessments (\$140,000)
- external auditing (\$167,000)
- Sanitary Surveys (goal to be realised internally by 2018) (\$100,000)
- predictive WQ Model development (\$100,000).

FY16 to FY28

WQE forecasts FY16-28 and FY28 are set out below.



Cost element	Average FY16-28	FY28 only
Employee costs	5,423,067	5,423,067
Contractor costs	-	-
Energy	-	-
Other materials and services	6,494,284	6,319,284
Total	11,917,351	11,742,351

Table 51: APDD water quality and environment FY16-28 operating costs by cost element

The forecast per year cost reduction in FY28 from FY15 is 11.2% (\$1.5M). This forecast reduction is based on the assumption that there is no significant change to regulatory requirements from the drinking water or environmental regulators. The reduction will be realised once management systems are developed and implemented. For example, the first consolidated version of the Environment Management Plan is currently being produced.

Employee costs are forecast to remain consistent with the FY15 budget.

Contractor costs are forecast to reduce by \$238,000 per annum, associated with the delivery of the Environment Management Plan and other projects.

The forecast for Materials and Services is based on a similar approach to FY15, with some minor year-to-year variations for the laboratory services contract and other professional services, such as audits. The forecast assumes no significant cost increases to the laboratory services contract when the contract is tendered in May 2016.

8.3.3 ASSET CAPABILITY AND SUSTAINABILITY

The Asset Capability and Sustainability team is responsible for:

- development and implementation of Asset Management Plans, including Asset Class Plans
- tactical maintenance planning for natural and built assets, including preparation of maintenance schedules
- development of the annual minor works and renewals program, including development of scopes of works and business cases
- emergent works program coordination, including provision of expert engineering advice
- water transport assets condition inspections
- management of Seqwater Grazing Leases.

FY14 and FY15

Asset Capability and Sustainability costs for FY14 and FY15 are set out below.



Cost element	FY14 A+F	FY15B
Employee costs	2,900,518	2,622,372
Contractor costs	-	214,000
Energy	-	-
Other materials and services	2,018,262	1,556,138
Total	4,918,780	4,392,510

Table 52: APDD asset capability and sustainability FY14 and FY15 operating costs by cost element

The FY15 budget is approximately 11% lower (\$526,000) than FY14. The FY15 employee budget overall has been adjusted to reflect a portion of the work that has been classified as capital, with this component of employee costs being aligned with the Renewals projects in capital. Within the forecast above, costs have decreased by 9.6% (\$278,000) from Q3 FY14, while FY15 contractor costs have increased by \$214,000. This allows for the engagement of resources to address Tactical Asset Maintenance Planning for the Networks Operational and Maintenance program of works, and to interface with the contracted services delivering the Network Maintenance Program.

The engagement of contractors in FY15 is considered appropriate to develop Seqwater's Engineering Capability and Asset Knowledge Base, and it is anticipated that the contractor resources will transition to employee from FY16 so as to maintain the knowledge within Seqwater.

The increase in contractor services is wholly offset by a reduction of 26% (\$526,000) in consultancy services. Consultancy is budgeted to provide specialist technical / engineering advice that is not currently available internally and to address workload above the FTE establishment capacity. Consistent with the APDD resourcing strategy, the requirement for consultancy services reduces as the asset knowledge base and the internal engineering capability increases.

FY16 to FY28

Cost element	Average FY16-28	FY28 only
Employee costs	2,836,372	2,836,372
Contractor costs	-	-
Energy	-	-
Other materials and services	477,292	381,138
Total	3,313,664	3,217,510

Asset Capability and Sustainability forecast for FY16-28 and FY28 are set out below.

Table 53: APDD asset capability and sustainability FY16-28 operating costs by cost element



Over the period to FY28 the forecast assumes that;

- there will be greater development of in-house capability and acquisition of knowledge resulting in less reliance on consultancy services due to the planned transition of nominated contractor resources to FTE from FY16
- the Seqwater asset base remains stable and not significantly increased, for example as a result of future water sector reform.

The combined level of Employee and Contractor expenditure is forecast to remain constant from FY16 at \$2.8M per annum, the same basis as the FY15 budget, and with contractors transitioning to employees.

Significant reductions in consultancy expenditure are forecast as in-house capability (including resourcing in the Engineering & Technical Support team) and knowledge of the asset base improves. The forecast reduction to consultancy expenditure of \$230,000 per year for each of the next five years, and in aggregate, these reductions equate to \$1.16M (74%) per year from FY20 forward, compared to the FY15 consultancy budget.

8.3.4 ASSET PLANNING

Asset Planning leads the preparation of the 30 year Asset Portfolio Investment Plan and the annual investment program for asset renewal, improvements, compliance and augmentation of natural and built assets. The team undertakes needs and option analysis, concept and preliminary design to develop business cases to demonstrate prudency and efficiency of individual capital improvement projects.

Current and FY15 budgets are based upon a zero based labour cost budget plus historic modified and trended costs for other components like consultants.

The Asset Planning workload, split between internal and outsourced work, is dependent on the nature and extent of *improvement* capital works required. The resourcing strategy for undertaking this work is to maintain the current internal base capability (established at the June 2013 restructure) and to supplement this with external resources to manage workloads to support capital improvement works and take up peaks in planning work.

Over the short to medium term (to FY21), a higher workload will be required as Seqwater develops a more robust 30 year investment profile for the improvement works. For Asset Planning this includes development of concept and preliminary designs and business cases to support more efficient capital planning and delivery, particularly in the area of Dam Safety and Water Treatment reliability and resilience.

Over the longer term, workloads will be directed to ongoing update of future capital investment program and planning studies (concept and preliminary design) to support delivery of the capital works program.



FY14 and FY15

Asset Planning costs for FY14 and FY15 are set out below.

Cost element	FY14 A+F	FY15B
Employee costs	1,834,838	2,144,061
Contractor costs	-	-
Energy	-	-
Other materials and services	4,952,215	2,680,213
Total	6,787,053	4,824,274

Table 54: APDD asset planning FY14 and FY15 operating costs by cost element

Resourcing

As part of the June 2013 restructure process, Asset Planning functions were reviewed to determine the area best placed to provide the services. The restructure led to changes in the structure and three vacant full time positions and a graduate role which needed to be recruited.

The original FY14 budget based on the restructure was \$2.2M which as per the above table was reduced in the FY14 Q3 review to \$1.84M to reflect actual lower than forecast spending on labour due to delays in recruiting these new roles. There was a consequential additional spending on contractors and consultants due to the delay in recruitment which has been smoothed by phasing planning consultancy work.

The labour cost increase shown above of \$309,000 in FY15 reflects the full FTE count from June 2013 restructure process (that is, recruitment of new roles completed) plus 0.5 FTE for the shared administrative officer with Asset Capability and Sustainability team. In FY14, this 0.5 FTE administrative officer role was budgeted under the Asset Capability and Sustainability team budget.

In summary, the FY15 labour budget effectively uses the same FTE count as FY14 and reflects the resourcing strategy of the June 2013 restructure process with in-house labour supported by external resources to manage workload requirement and provide specialist skills/services.

Contractors

There is nil allowance specifically for contractors in FY15. However, both in FY15 and future years, the consultancy budget could be transferred to engage contractors where it is shown to be more efficient due to work continuity, cost or skills development and retention.



Other materials and services

The major component that makes up Material and Services is consultancy budget. The size of the consultancy budget is largely driven by quantum of the forward capital program and the number and skills of the internal workforce. Based on the FTE workforce established by the June 2013 restructure and the forward capital program, the Asset Planning team will continue to utilise significant external consultant resources to support internal resources to ensure timely and efficient planning for delivery of the identified/required capital improvement programs.

Consultancy services of \$2.7M of operating cost and \$1.9M of capital cost (\$4.6M total) are required in FY15 for future asset investment planning and asset improvement project planning activities. In FY14, all consultancy costs for Asset Planning were budgeted as OPEX however in FY15 these costs have been allocated across both operating and capital budgets because some costs are capitalised as they relate specifically to delivery of an asset.

FY15 material and Services budget has effectively decreased from FY14 \$4.9M to \$4.6M (7.6% decrease) in FY15. This is driven by further planning work being undertaken inhouse and some expected cost saving by implementing of a new contract arrange for Planning and Design Services.

FY16 to FY28

Cost element	Average FY16-28	FY28 only
Employee costs	2,144,061	2,144,061
Contractor costs	-	-
Energy	-	-
Other materials and services	2,046,851	1,486,281
Total	4,190,912	3,630,342

Asset planning average costs for FY16-28 and FY28 are set out below.

Table 55: APDD asset planning FY16-28 operating costs by cost element

Assumptions

The ongoing capital improvement program remains of the same order of magnitude or higher compared to the FY15 program. Given the structure and manning of this group was reviewed and optimised in the June 2013 restructure the base internal labour costs required for forward years has been forecast to remain constant.

Changes in planning work load linked to the forward capital improvement program will be resourced through external consultancies or contractors.



Resourcing and contractors

No change has been forecast in labour costs as existing base manning levels are required with consultants or contractors used to resource work beyond the base internal labour.

Other materials and services

For the period out to FY28, a long term planning requirement of \$650,000 has been forecast for consultants to support further development and review long term planning assessment studies and investigations, which is consistent with FY15. To forecast the requirements for project assessment, planning and design, for the period out to FY28, the remaining \$3.9M (\$2M operating and \$1.9M capital cost) FY15 budget for project planning consultant work has been adjusted to the three years average capital improvement forecasts. Further, FY16 and FY17 forecasts have been adjustment to include an anticipated 2.5% efficiency gain arising from improved procurement arrangements for consultants. For FY18 to FY20, a further 5% efficiency gain has been factored in on the same basis. Additional cost reductions have then been included in the forecast to reflect reduced workload associated with Dam safety assessment and Dams safety improvement planning. The current level of investigation consultancy work of \$1.35M is projected to be required until FY17 and then decrease to \$0.9M for FY18 and FY19 and \$0.5M for the remaining years. Applying these forward forecasts savings represent \$12M saving over 15 years compared to FY15 budget.

8.3.5 ENGINEERING AND TECHNICAL SUPPORT

The Engineering and Technical Support Team (ETS) comprises four units:

- engineering analysis and advice provides engineering analysis, technical advice, problem solving and troubleshooting services primarily within the Asset Portfolio Development and Delivery Group
- engineering standards and specifications develops technical standards and specifications for efficient and effective engineering works and provides engineering analysis, technical advice, problem solving and troubleshooting services related to civil and third party works
- the asset management systems unit maintains the asset database and provides expert advice, assistance, system functionality and custom reports primarily for maintenance, asset planners but also to other Sequater groups
- the spatial systems unit provides a centralised spatial information service, through a web mapping solution and develops and support spatial tools, such as dial-beforeyou-dig, which improve business efficiency and reduce business risk.



FY14 and FY15

The ETS FY14 Q3 forecast and FY15 budget for operating cost are set out below.

Cost element	FY14 A+F	FY15B
Employee costs	2,736,364	2,180,756
Contractor costs	72,511	704,271
Energy	-	-
Other materials and services	362,165	668,260
Total	3,171,040	3,553,287

Table 56: APDD engineering and technical support FY14 and FY15 operating costs by cost element

The ETS FY15 budget will increase by 12% (\$382,000) compared to FY14 Q3 forecast. Significant reductions in employee costs of 20.3% (\$555,500) are offset by increases in contractor and consultancy resources.

The majority of the Engineering and Technical Support team's services are planned, developed and delivered in-house, and the resource establishment for FY15 is consistent with the 2013 restructure.

Contractor costs for FY15 increase by \$631,000 to support medium term requirements, including initiatives associated with improving the quality and governance of asset information, and providing additional in-house engineering advice to other functional areas.

The table below lists all contract roles within the team over the next 2 to 3 years.

Position	Number	Term
Graduate Civil Engineer	1	3-year contract (refilled every 3 years)
Graduate Mechanical Engineer	1	3-year contract (refilled every 3 years)
Spatial Systems Technical Officer	1	2-year concluding July 2015
Asset Information Technical	1	2-year concluding July 2015
Officer		
Data and Governance Officer	1	2-year concluding July 2015
Plan Management Project Officer	2	2-year concluding July 2016
Asset Data Project Officer	2	2-year concluding July 2016
TOTAL	9	

 Table 57: APDD engineering and technical support contractor resources FY15-17

The relatively poor, state of legacy asset information in both extent and accuracy, will drive much of the work by both the Asset Management Systems and Spatial Systems



units, including the digital information stored in Seqwater corporate systems, asconstructed plans, and GIS information.

Other materials and services

The materials and services budget relates to consulting services which are forecast to increase by \$306,000 for specialist services including:

- drafting services to ensure plans are updated, as Seqwater does not have the internal capacity (\$50,000)
- engineering consulting services to provide highly specialised advice (e.g. for cathodic protection, geotechnical analysis, slope stability studies and the structural impact of third party works on Seqwater assets (\$105,000)
- specialist technical support for GIS and Works and Assets module of the Asset Management system (\$162,000).

FY16 to FY28

The Engineering and Technical Support forecast for FY16-28 and FY28 are presented in the table below.

Cost element	Average FY16-28	FY28 only
Employee costs	2,118,175	2,106,796
Contractor costs	175,091	152,014
Energy	-	-
Other materials and services	1,197,439	1,220,516
Total	3,490,705	3,479,326

Table 58: APDD engineering and technical support FY16-28 operating costs by cost element

The forecast to FY28 at approximately \$3.5M per annum is consistent with the FY15 budget of \$3.5M.

Employee costs are projected to fall by 3.4% (\$74,000) by FY18, and then assumed to be constant out to FY28.

Contractor costs are assumed to fall by 78% (\$552,000) from \$704,000 to \$152,000 as the near term projects (particularly asset information related projects discussed above) are completed, while this reduction in contractors is offset by an equivalent increase in consultant costs. These consultants' costs are primarily required to support the delivery of the capital program, including engineering reviews at key milestones and oversight of safety in design and other processes. They also include provision for management of standards and systems, such as procurement arrangements for monitoring controls equipment.



The overall net effect is that the forecast to FY28 is consistent with the FY15 budget.

8.3.6 PROGRAM DELIVERY

Program Delivery is responsible for delivering the annual Investment Program by managing each project through the following stages:

- planning
- implementation
- support
- conclusion.

The types of projects delivered by this team includes:

- major capital and operational projects
- built asset refurbishment
- renewals
- natural assets.

The team ensures that the Investment Program provides "fit for purpose" assets. The methodology in delivering the program contributes towards the strategic outcome areas of:

- water and catchment services
- sustainable financial capacity.

FY14 and FY15

Program Delivery forecast for FY14 Q3 forecast, and FY15 budget are set out below.

Cost element	FY14 A+F	FY15B
Employee costs	2,634,518	1,636,266
Contractor costs	273,437	40,000
Energy	-	-
Other materials and services	8,550,544	7,696,170
Total	11,458,499	9,372,436

Table 59: APDD program delivery FY14 and FY15 operating costs by cost element

These costs reflect part of the cost of delivering the improvement program, with other costs capitalised as part of the costs of the projects delivered. The labour costs included in the table above are for the manager and program controls function, as well as an allowance for time spent by other staff on activities that cannot be directly attributed to delivery of a project.



The total costs of delivery reflect the size and composition of the capital program, driven largely by the number of projects and the fact that most of those projects are being delivered on operational assets with associated safety and scoping issues and limitations on timeframes for delivery.

The key assumption in developing the FY15 budget is that there will be nil change to internal resource numbers, with the major risks to the budget is that the capital programs are per the forecast and will not vary significantly.

Resourcing

The overall resourcing strategy for Program Delivery, including the capitalised component, relies on internal resources forming the core team to deliver the program.

In FY14, as part of the merger, nine contract positions (average TFR \$185,000) were removed or converted to FTE positions.

The average total financial remuneration of team members has also reduced, by \$21,000 per annum:

- FY14 average TFR \$143,000
- FY15 average TFR \$122,000.

In FY14, the average number of contingent project management resources was reduced from 28 to 24, representing a saving of approximately \$1M per annum. In addition, the average contract rate of the remaining project managers was reduced by approximately \$20/hour, resulting in further saving of about \$0.6M per annum.

Employees

The resources required to deliver the FY15 capital program are summarised in the following table. These resources reflect the composition of that program, with a large number of relatively small projects at a range of sites across the region. This type of program is challenging to deliver, but efficiencies are being achieved through improved procurement approaches, such as the bundling of like works or works at a single site.

Position	Number
Manager	1
Project Controls and Support	6
Principal Project Managers	3
Senior Project Managers	5
Project Managers	3
Construction Managers	3
Total	21



Table 60: APDD program delivery FY15 resourcing

Contractors

In addition to the core team, project managers are engaged on a contract basis, some of which are full time, to enable delivery of the full program. There is an allowance of \$40,000 in FY15 for contract resources to provide flexibility. This represents a reduction of \$230,000 against FY14.

Requirements for contractors for FY15 are:

- 20 contingent project management resources
- one records management.

This represents a reduction of:

- two to five Safety Compliance Officers, following the consolidation of those functions in the Service, People and Technology group
- four project management resources.

The contract resources will be procured through a variety of arrangements, reflecting the type of projects involved and the most efficient means of engaging the market. Temporary employees are increasingly being engaged for fixed terms, rather than contractors or consultants.

Other materials and services

Expenditure of \$7.7M is planned for FY15 to augment internal resources delivering the capital and operating programs for natural assets, asset renewals, and decommissioning of surplus water treatment plants. This represents a reduction of \$854,000 from FY14 and is driven by the greater use of in-house labour, as per the APDD resourcing strategy.

Included in Materials & Services are the following programs

Sub-Program	FY15
Natural Assets	582,000
Renewals	4,524,000
Decommissioning	1,037,000
Sub Total	6,143,000

Table 61: APDD program delivery FY15 materials and services expenditure

The main components of the Natural Assets FY15 budget are:

- aquatic weed control, \$50,000
- feral animal control, \$65,000



• terrestrial weed control, \$446,000.

In total, 16 water treatment plants have been scheduled for disposal. Disposal cost estimations have shown that for the large facilities it is more efficient to make the assets safe and maintain rather than fully decommission. For FY15 the majority of the expenditure is on making the WTP and raw water systems safe at the Caboolture (\$388,000) and Woodford (\$308,000).

Approximately \$4.5M has been allocated in the FY15 budget for operational expenditure for one-off projects, repairs and planned corrective maintenance. The projects are generally complex in nature and deviates from regular maintenance activities carried out at the facilities. They have been identified by condition assessments, field inspections and consultation with the maintenance and operational stakeholders.

Almost half of the cost for the planned works for FY15 is civil in nature. The combined works planned for the Water Storage and Water Treatment facilities makes up 94% of the total operational budget, each asset group being allocated almost equal amounts. The Transport projects involve mainly pipeline and reservoir refurbishments.

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FY16 to FY28

Program Delivery average costs for FY16-28 and FY28 are set out below.

Cost element	Average FY16-28	FY28 only
Employee costs	1,636,266	1,636,266
Contractor costs	40,000	40,000
Energy	-	-
Other materials and services	5,272,680	3,499,253
Total	6,948,946	5,175,519

Table 62: APDD program delivery FY16-28 operating costs by cost element



The assumptions underlying the forecast include:

- the delivery model (flexible contract/consultancy) will not change over time
- the asset base is not significantly increased (ie, from future water sector reform)
- the number of FTEs for FY15 has reduced through a review of resource requirements to deliver the primary business functions of the team, and is not anticipated to change
- savings in other materials and services will be achieved by packaging works into larger contracts and use of in-house labour.

<u>Resourcing</u>

Including capitalised expenditure, there are no changes proposed to the labour resourcing for the period FY16 to FY 28.

The FTE establishment in FY15 was reduced following a review of resource requirements to deliver the primary business functions of the team, and holding labour constant for the period to FY28 represents a significant efficiency improvement, given the forecast increase in the capital expenditure program forecast to FY28 (from about \$76M to approximately \$129M per annum).

An industry benchmark for project management costs (FTE's and contingent resources) required to deliver a program of \$90m is 10.5% of budget, while based on the proposed resourcing plan the Program Delivery Project Management costs are 9% of budget. On this basis, it is considered that the program is being delivered efficiently and within industry benchmark/comparison figures.

Contractors

A reduction in contract resources of approximately \$230,000 per annum is forecast to be achieved through the resourcing strategy, which proposes use of less expensive in-house labour pool to deliver the combined operating and capital programs.

Other materials and services

The Materials & Services budget is largely the following operating programs, as well as an allowance to augment project management and delivery resources.

Sub-Program	Average FY16-28 Expenditure
Natural Assets	2,485,419
Renewals	1,632,141
Decommissioning Projects	1,144,702
Total	5,262,262

Table 63: APDD program delivery FY16-28 materials and services expenditure



There is a reduction of approximately \$2M in the Material and Services budget for the period to FY28 compared to FY15.

Natural assets

The average expenditure on Natural Assets increases from \$562,000 to \$2.3M per annum over the period to FY28. This is the result of significant additional expenditure on the terrestrial weed control and feral animal control programs.

Seqwater undertook a benchmarking study of catchment investment compared to other water authorities around Australia for the FY15 budget. The study found that Seqwater has traditionally under invested when comparing money spent on source water protection per km² of catchment, against other authorities, and in a local environment which carries a high level of unmitigated risk.

The results of the study suggest that increased investment in catchment management and in particular investment on non Seqwater catchment land is necessary. The likely investment to effectively mitigate the risk to water supply is in the order of 3-6 times historical spending levels.

Decommissioning

Seqwater's Water Treatment Disposal Strategy has identified 16 water treatment plants for disposal. Of the sites identified, thirteen are surplus to requirements now and three (Petrie, Kilcoy and Kilcoy Somerset WTPs) are expected to be surplus to requirements in the near future. Two more plants, Dayboro and the Beaudesert, may also be surplus in the future, pending the outcome of current planning works.

The forecast is approximately \$1M per annum to decommissioning these assets over the period to FY28.

<u>Renewals</u>

The activities identified under the renewals budget include maintenance activities such as;

- investigations
- operating maintenance
- repair/ refurbishment
- replacement.

The majority of the budget is based on activities which extend the assets useful life as a result of refurbishments and replacement.

The operating budget includes mainly one-off activities which do not typically extend the asset's life, but restore the asset to the required levels of service, for example flood repairs. These activities do not duplicate the scheduled maintenance activities.



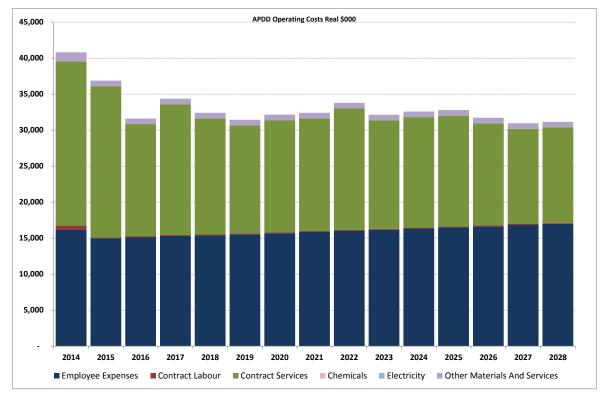
The operating cost forecast for renewals over the period from FY16 to FY28 is \$29M. The forecast for Transport assets is \$19.2M, which is 74% of the total operating cost forecast, while the Transport operating cost forecast averages approximately \$1.27M per annum over the period.

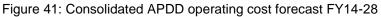
The Transport operating cost is biased toward pipeline maintenance, with over 97% of the Transport forecast allocated to purely maintenance activities associated with Cathodic-Protection.

A total of \$6.8M is forecast for the Treatment and Storage Assets combined for the years FY15 to FY18. This expenditure accounts for 99% of the forecast for these asset groups with little or no forecast currently planned for the mid to longer term.

Summary

The consolidated APDD operating cost forecast over the FY14-28 period is displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.





8.4 SERVICE, PEOPLE AND TECHNOLOGY (SPT)

The table below presents costs for the SPT Group which is comprised of the General Managers Office and four Teams:



- People and Culture
- Brand and Community
- Workplace Health and Safety (WHS)
- Information and Communications Technology (ICT).

	FY14A+F		FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
Employee costs	10,739,243	10,456,214	10,334,918	10,334,918
Contractor costs	1,265,560	1,265,560	612,050	612,050
Electricity	-	-	-	-
Other materials and services	16,126,033	16,126,033	18,945,007	18,945,007
Total	28,130,835	27,847,807	29,891,975	29,891,975

Table 64: SPT FY14 and FY15 operating costs by cost element

Contribution by	FY14A+F		FY15B	
Contribution by Team	Total	Corporate overheads	Total	Corporate overheads
GM Office	409,897	409,897	404,293	404,293
People and Culture	5,038,456	5,038,456	4,151,908	4,151,908
Brand and Community	2,109,067	2,109,067	3,773,500	3,773,500
Workplace Health and Safety	3,736,123	3,453,094	3,095,432	3,095,432
ICT	16,837,322	16,837,322	18,466,842	18,466,842
Total	28,130,835	27,847,807	29,891,975	29,891,975

Table 65: SPT FY14 and FY15 operating costs by Team

The significant materials and services costs in the SPT Group mostly relate to ICT service provision, which represents 62% (\$18.5M in FY15) of total costs. Labour is the next largest component, and relates to the largely in-sourced functions for People and Culture, Workplace Health and Safety and Brand Strategy and Community. Costs for each Team are discussed below.

8.4.1 GENERAL MANAGER'S OFFICE

Total FY14 costs of \$0.4M are forecast to remain essentially unchanged (\$5,000 reduction) into FY15. These costs are dominated by employee expenses with \$20,000 forecast for costs directly incurred by the General Manager. This same level of expenditure has been forecast to continue over the FY16-28 period.



8.4.2 BRAND AND COMMUNITY

Seqwater, in response to our Statement of Obligations and with support of water retailers and council-owned businesses, has a mandate to deliver transparent and accountable engagement with its customers, stakeholders and communities. The role of the Brand and Community team is to deliver on this guiding principle via two of the organisation's six strategic pillars, namely, building a 'knowledgeable and engaged community' and a 'trusted and respected brand'.

As southeast Queensland's sole bulk water authority Seqwater must demonstrate leadership in key initiatives like 30-year water security planning, management of recreation assets and water usage/demand management. To achieve this, Seqwater committed to consulting its customers and the community about investigations into potential demand management measures and potential sources of supply in its Water Security Program.

Both commitments to our Statement of Obligations and the southeast Queensland Water Supply Strategy meet Queensland and commonwealth guidelines for stakeholder engagement that stipulate departments must work towards a social licence to operate by ensuring communities are informed and consulted.

Taking a 'leadership' role in educating communities about water supply requires a trusted and respected voice that holds authority in times of drought and flood. This voice must be able to communicate effectively with the community and its stakeholders in relation to water restrictions, operational responses or the issuing of safety warnings. This involves the development and review of a range of communication protocols; participating in training and mock exercises; and staffing 24-hour on-call rosters for various crisis communication functions (see Flood Operation Centre's Dam Release Communication Procedure; Bulk Authority Emergency Response Plan (ERP) and Noetic Joint Debrief Findings from 2013 Australia Day Floods..

FY14 and FY15

Total Brand and Community team operating costs have risen from \$2.1M in FY14 to \$3.8M in FY15. Key drivers of this variance are discussed below.

Resourcing

Employee costs have risen by \$367,000, from \$1.3M in FY14 to \$1.7M in FY15 due primarily to the need to bring in specialist skills to continue to deliver on the brand and community pillars in the strategic plan, namely brand research and development and community engagement skills. In FY14 these skills were purchased from the market via a consultants and contractors but will be brought in-house for FY15 to be more cost-effective. Three FTE roles have been added to develop this capability. Note the employee



expense cost growth also includes organisation-wide wage growth (2.5% for EBA staff and 3% for Common Law contract staff).

Similarly, the community team is broadening its target audience from school students to the wider community in FY15 and will need to supplement the existing in-house community education skills with specialist skills in engaging the broader community through internationally recognised principles for public participation.

Other materials and services

Other materials and services expenses have increased by \$1.3M from \$0.8M in FY14 to \$2.1M in FY15 due to the following changes and initiatives:

Memberships

Approximately \$552,000 of organisational and professional memberships have been consolidated in the Brand and Community team to reduce the risk of inefficiency and duplication and to identify and realise opportunities to leverage additional value. While these memberships are not actually connected with the Brand and Community functions, the team contains the skills and experience needed to negotiate added value for the organisation or the teams and projects within the organisation. An example of this includes the recent Ozwater conference in Brisbane, where the Brand and Community team used our AWA membership to negotiate a reduction in the Water Service Supply Partnership's trade displays costs from \$66,000 to \$45,000.

Public information campaigns

In line with the strategic pillars relating to brand and community awareness, a suite of public information campaigns are being in planned for FY15. In FY14, Seqwater delivered geographically localised 'micro-campaigns' totalling \$95,000 relating to:

- public dam and weir safety
- our dam release early warning network (EWN)
- the recreation network.

In FY15 public information campaign investment was increased by \$0.5M (from \$95,000 in FY14) in the budget process as the need to conduct public information campaigns (particularly public dam safety) across our entire network rather than on localised basis. The primary driver for this was two drowning fatalities on and around Seqwater assets in 2013 and the organisation's strong desire to increase our contribution to public safety.

In May 2014 the Seqwater Board increased the FY15 campaign expenditure to \$1M (in total) with the additional \$0.5M being to add television to the public safety campaign mix. The consistent internal and external advice was that television would be needed in order to ensure the safety campaign was effective and would not get lost in a crowded



marketplace. The Brand and Community Team will seek to further leverage this campaign investment by linking it to the Government-wide 'Get Ready' summer preparedness campaign and to seek leveraged value (i.e. extra advertisement slots) from television stations given the community service aspect of the campaign.

Community and customer perceptions research

Research expenditure has increased by \$40,000 to \$100,000 in FY15 to gain a better understanding of the current awareness and perceptions in the community and to track the progress of our operational, summer preparedness and public safety campaigns. The research drives investment decision making in the brand and community campaigns and also ensures we can more effectively and efficiently target our messages and tactics and demonstrate the return on public information campaign investment.

Strategy and reporting

Operating expenditure for strategy and reporting increased by \$137,000 to \$306,000 in FY15. These costs relate to implementing a Management Operating System (MOS) to improve the organisation's strategy execution capability and performance management metrics. The Management Operating System will improve performance and increase efficiency by integrating a number of existing functions across the business, including budget alignment, process improvements, workforce alignment, strategy communication, strategic initiatives, best practice benchmarking.

FY16 to FY28

The Brand and Community operating costs areas not anticipated to increase or fluctuate materially from the FY15 budget over to the FY16-28 period outside of the area of costs associated with public information campaigns.

Specifically, the campaign investment in future years will reduce, however, it will need to be sustained at FY15 levels until at least FY20 as all internal and external advice indicates that social marketing campaigns take many years to achieve lasting, widespread, cultural and behavioural change, especially in the area of public safety. Post FY20 this \$1M campaign cost is forecast to reduce to \$250,000 pa (in real FY14 terms) to maintain awareness of public safety and other campaign messages across southeast Queensland. Expenditure for other campaigns/initiatives which are likely to be required but are as yet unknown have not been included in this submission.

The employee numbers within the Brand and Community programs will be reviewed as a key activity within the Operational Efficiency strategic focus area (refer Section 8.11).



8.4.3 PEOPLE AND CULTURE

People & Culture provide human resources, organisational development and learning services to the businesses. Consistent with Seqwater's strategic plan, People & Culture are focussed on delivering 'capable and innovative people'.

FY14 and FY15

The FY15 budget is a \$0.9M reduction on the previous year (overall reduction of 18% to \$4.2M in FY15). The most significant savings in the FY15 budget are a result of a reduction in two FTE positions and lower learning related expenses.

There has been a \$0.5M reduction in employee related costs in FY15. This has been driven by a decrease in administration requirements as a result of technology improvements, process efficiencies and a reduction in organisational development related interventions. The decrease has also been possible due to nil significant projects (for example mergers, restructures or relocations) being forecasted in FY15.

The other materials and services cost has reduced by 19% in FY15. This is driven by a reduction in budgeted learning related expenses. This is a temporary reduction and is expected to return to FY14 budget levels in FY16.

FY16 to FY28

People & Culture operating expenditure is not anticipated to increase or fluctuate materially from the FY15 budget over to the FY16-28 period. Throughout this period stand-alone or non-business-as-usual project initiatives may be required and if/or where required, and will be justified through the appropriate approvals and justification processes. None of these are included in the forward cost estimate in this submission.

8.4.4 WORKPLACE HEALTH AND SAFETY (WHS)

WHS are required by the WHS Act (2011), AS/NZS 4801, and Workplace Health and Safety Queensland regulations to provide a safe work environment in accordance with these Acts, legislation and standards. The WHS Team plan and hence budget links to the Seqwater Strategic Plan through the Capable and Innovative People outcome area and aligns to the Work Health and Safety Policy Statement. Note WHS operating costs have been classified as a corporate cost, as consistent with Seqwater's whole of business standardised definitions these costs do not specifically relate to an asset (actual location) or group of assets (direct costs).

FY14 and FY15

The FY15 budget of \$3.1M is a back-to-baseline budget, and is \$0.6M lower than in FY14. The costs required to operate an effective WHS Management System along with a



positive WHS culture consists of; Standard administration costs, WHS compliance component, Health and Wellbeing component with a sub-section relating to Fit for Work initiatives and a WHS Cultural Program and Framework component.

There has been a \$0.1M reduction in employee costs in FY15. This has been driven by an increase of \$75,000 owing to a 0.6 FTE increase and the impact of wage growth (2.5% in the EBA and 3% for Common Law staff). This was more than offset by one-off termination payouts of \$140,000 included in FY14 not being included in FY15.

The other materials and services cost has reduced by \$0.6M in FY15. The main driver for this reduction is the \$0.5M in the FY14 budget for the WHS Cultural Program and Framework which was to be delivered by an external consultancy is now being delivered internally. Other drivers include a reduction in Fit for Work services costs by utilising a different drug and alcohol testing vendor.

FY16 to FY28

The WHS budget is not anticipated to increase or fluctuate materially from the FY15 budget over to the FY16-28 period other than market-driven changes to operating and service costs (dominant impact being through labour expenses). Throughout this period stand-alone or non-business-as-usual project initiatives may be required and if/or where required, and will be justified through the appropriate approvals and justification processes. None of these are included in the forward cost estimate in this submission.

8.4.5 INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT)

Information and technology is one of four strategic priority areas for Seqwater, and a key enabler of the savings targets specified later in this chapter.

Existing information technology systems are distributed across multiple sites and domains as a result of both the merger of multiple bulk water entities and the assimilation of ICT assets from 14 Councils. This has resulted in a highly complex environment that still requires investment to support whilst consolidating into the new corporate domain. Significant improvements have been made over the 18 months since the bulk water entity merger, including:

- staff: ICT headcount has been reduced from 44.5 to 43 (this includes business process improvement headcount, six of which were not in the pre-merger figures)
- systems: A single Corporate domain has been established negating the need to license and support five pre-merger domains
- associated infrastructure pre-merger has been sustainably reduced by approximately \$180,000 pa.



Despite that progress, existing systems remain. For example, Seqwater continues to operate three domains and multiple GIS, finance and records management systems which hold legacy data still required to operate.

To achieve progress, a whole of organisation improvement strategy is being developed. That strategy will identify agreed priorities for improvement and ensure that those needs are addressed prudently and efficiently. It will involve a focus on key projects, and the effective application of internal and external resources in order to ensure that the projects are delivered effectively, that new business processes are implemented and embedded and that benefits are realised. Projects will be prioritised based on expected outcomes, measured as operating efficiencies and risk reductions, and dependencies, including key building blocks to achieve further operating efficiencies.

Many of those improvements will be funded and delivered by the ICT team. The benefits of those investments will be realised by planning and operational teams, through reduced operating costs and better informed decisions. For example, the ICT and Water Quality and Environment teams are currently delivering a new Drinking Water Quality Database. The new database will deliver benefits by:

- integrity: The new database will, for the first time be a single system for catchment to network water quality data. Current practices of manual entry of transfer from one data source to another will cease and transcription errors will be removed and integrity of data significantly improved
- information: The new database will have strict data management protocols which will ensure that information is delivered in a consistent way using a consistent approach. The access to complete historic data and the enhanced usability of the new database will see more direct use by key stakeholders of water quality and environmental data. In particular our environmental reporting will be significantly enhanced from manually generated reports to systematically generated reports
- staff time: Current practices of manual transcription into intermediate data formats before final report generation will be removed and replaced by automatically generated reports. Multiple report style generation by different teams will cease and be replaced systematic reporting templates and report generation. Manual checking of data from our external laboratory will be replaced by strict data import protocols which will ensure data formats are correct before entry to the database. As a consequence of significantly more automation there will be efficiencies in staff time on the deployment of the new database.

The forecast presented below reflects the forecast cost of delivering those system improvements, while achieving and maintaining compliance with Queensland Government requirements. The budget incorporates funding for projects to deliver savings for the organisation as a whole, as well as initiatives within the ICT team to ensure that it delivers



base services more efficiently and in accordance with the Queensland Government ICT Strategy and Queensland Government Enterprise Architecture Framework.

The ICT team has a broad scope of activities covering Corporate ICT and Control ICT. ICT manages approximately 800 user accounts and ICT assets spread over greater than 50 sites. It also encompasses Records Management and Process Improvement, which is responsible for business process engineering to drive better efficiency across the business.

In line with the Queensland Government ICT Strategy 2013-17, the ICT function within Seqwater is transitioning from a provider of largely technical services to the brokering of these services from industry and creating an information management capability.

As a result of aligning with Queensland Government Strategic Planning and the addition of these non-traditional functions, capital costs within the ICT function will trend towards zero while there will be an offsetting increase in operating costs as the infrastructure assets will be provided to Seqwater as a service. This transition will be made progressively, with each major change to be assessed through the investment governance processes described in Section 5.3.

FY14 and FY15

Key Activities

Key initiatives include:

- SCADA datacentre DC3 and DC4 decommissioning: This involves the removal of SCADA hardware and software from Data Centres inherited during the merger of the bulk water entities. It is anticipated that there will be a \$0.5M reduction in the FY14 forecast of \$0.7M of operating costs associated with these Data Centres, starting in FY15 and being fully realised in the following financial year. These savings will be realised within the ICT team forecasts
- records management and eDRMS implementation: In FY15 the ICT team will consolidate the three EDRM's Systems and multiple file repositories. As a Statutory Authority Seqwater has a requirement to comply with IS40. This activity will ensure that continued compliance is maintained and that Records Management capability is available throughout Seqwater. The funds allocated to this process have been reduced by \$0.2M to \$0.8M in FY15
- business intelligence (BI): Seqwater stores and uses information across a range of databases and other sources, and will continue to do so for several years. To make better informed operational and capital investment decisions, a capacity to interrogate information generated by the business in the course of operation. \$0.6M has been allocated to initiatives in FY15 to bolster Seqwater's BI position and



capability. It is expected that these initiatives will ensure business knowledge is not lost or diluted as Seqwater ICT transitions from traditional ICT services

- CIS: There are a number of core modules that will deliver key benefits to the business that are currently not fully utilised owing to a lack of skills in the ICT team. In FY15 the ICT team will focus on building this capability. An example of this is the logistics improvement program that will support the following business outcomes:
 - supports implementation of Improvement Program
 - o increased maturity of logistics management and operations
 - o facilitates transfer of bills of material to logistics, improving timeliness
 - provides real time visibility of inventory to asset maintenance and other customers with CIS access
 - optimised logistics system with effective and efficient planning
 - optimised inventory and equipment acquisition with effective and efficient sourcing and supplier management
 - optimised range and volume of inventory and equipment with effective and efficient whole of life management of inventory and equipment
 - optimised inventory and equipment delivery and returns with effective and efficient distribution, returns and disposal activities.

This ICT Improvement Project does not achieve direct qualitative outcomes. It is the primary enabler of the Logistics Improvement Program and delivers indirect value.

In undertaking these projects, Seqwater will be undertaking activities to determine the market's ability to provide traditional ICT services, and where feasible these will be transitioned. To facilitate this project a \$0.4M initiative has been identified for FY15 which will then assist the implementation of the Queensland Government ICT Strategy 2013-17. The future impact on capital (reduction) and operating (increases) forecasts is reflected in the ICT forecasts.

In addition, the ICT team will work with operational groups to develop a roadmap and detailed implementation plans to further consolidate or decommission legacy systems.

Resourcing

Employee expenses are forecast to reduce by \$0.4M to \$5M in FY15 (reflecting the structural shift in team composition), despite a restructure in 2014 resulting in an increase of 1 FTE due to the inclusion of Process Improvement and ICT Procurement in the ICT Structure.

Contractor labour has also reduced, declining \$0.6M to \$0.5M in FY15 as a result of the transition of Contract labour to FTE expenses.

There is also a structural shift in team composition through increasing the number of resources focused on business process and reducing traditional ICT skillsets.



The general approach to procurement of external resources will be to engage consultants for discrete packages of work to supplement internal resourcing or where internal skills are not present and to ensure project deadlines are met.

Other materials and services

Costs in this category largely relate to three areas:

- specific technical activities to support the delivery of information management and application support services to the business
- project costs
- engagement of professional consultant resources.

A number of initiatives will be implemented to reduce materials and services costs, including:

- \$0.25M from the renegotiation of Telstra Contractual arrangements
- a reduction in the SCADA Data Centres by \$0.5M during FY15 to be realised in FY16
- reduction of \$0.2M in license costs in FY15.

Within other materials and services there has been an increase of \$2.6M to \$12.9M in FY15. This increase is largely driven by new initiatives to align with the Queensland Government ICT Strategy 2013-17.

The remainder of this increase arises from \$0.75M for the continued running of SCADA Data Centres, \$0.5M for software compliance to account for a true-up of Microsoft and other key vendor licensing and rebalancing of telecommunications and hardware support costs of \$0.3M. These are offset by an expected \$0.2M reduction in consultants/contractor spend and a \$0.2M reduction in incidental costs such as printing, offsite storage and memberships.

FY16 to FY28

A preliminary program of work has been identified to support the achievement of the savings targets for FY 16 to FY 18. Those projects include:

- inventory management, which will enable savings to be achieved in OTW through reduced employee and capital costs
- implementation of a mobile platform, to support employees savings in the two operational groups through improved data capture for planning and improved efficiency for field work with expected capital savings through improved access to information about the condition and utilisation of assets
- works and assets module in CIS, which will support savings through a range of means including optimised maintenance schedule. For example, as described in



Section 6.5, it has been forecast that \$0.25M per annum will be saved by the OTW due to improved scheduled of pump maintenance.

In addition, there will be a range of initiatives delivered to gradually consolidate systems inherited from previous entities. Those initiatives will be undertaken progressively, taking into account their individual costs and benefits. Key projects forecast to be undertaken during FY 16 to FY 18 include:

- centralised control system network and administration, which will reduce employee and compliance costs related to the management of ICT function within the Control System Environment
- decommissioning of legacy systems from previous mergers will reduce software compliance costs and consolidate information repositories
- digitised reporting will focus on reducing employee costs associated with manual reporting and identify key information required by the business
- digitising of paper records will reduce the cost of storage.

This program of work will be refined and prioritised over FY15, based on detailed assessment of the benefits and costs of each project.

The ICT team will also have a major role in the delivery of the MCS strategy described in Section 7.11.

These initiatives are reflected in the forecast ICT team budget. That budget is forecast to vary from \$20.6M in FY15 to \$19.3M from FY20, with a significant change in the proportion of operating and capital costs. Those changes reflect:

- costs to deliver existing services are forecast to decline from \$20.6M in FY14 to \$18.6M in FY18 due to rationalisation of existing ICT services and systems
- improvement projects are estimated to cost \$3.4M in FY15 reducing to \$3.2M by FY18. Those costs are for the delivery of the initiatives outlined above
- additional operating costs will be incurred as the projects are delivered. Those costs will reflect the transition to ICT as a service. By FY17 capital investment will be almost completely replaced by operating expenditure as assets and ICT capability is procured as a service (subject to business cases).

As the organisation moves towards increasing digital records and delivering access to a mobile workforce there will be an increase in the amount of storage required, along with an increase in the number of devices that will need to be managed. This will have an impact on operating costs required to support the business and maintain compliance with the relevant Acts from a records management and security compliance perspective.

The budget is forecast to remain constant at around \$19.3M from FY20. This reflects the stabilising of the budget as owned assets cycle out of useful life (UL) Once the



Queensland Government ICT Strategy 2013-17 is enacted in FY17 (aligned with the transition to zero ICT capital expenditure).

Resourcing

The staff profile within ICT will change as the Team transitions to a service broker and a focus on delivering key business services, and information management compliance which do not currently exist in the ICT team. While the specific initiatives will vary over the years, the business will requires ongoing resources to address the strategic and whole of business initiatives which are key to ensuring the consistent application of standards and business processes.

No changes to staffing levels are expected over the FY16-28 forecast period to those in FY15. The Group's resourcing model, like the rest of Seqwater's functional Groups, is to retain a core of professional expert staff with specific, detailed industry and organisational knowledge with short-term augmentation by external resources based on workload or gaps in technical expertise.

Summary

The consolidated SPT operating cost forecast over the FY14-28 period is displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.

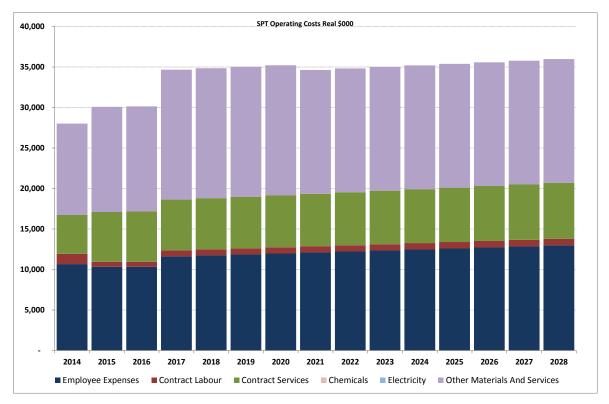


Figure 42: Consolidated SPT operating cost forecast FY14-28



8.5 WATER SUPPLY STRATEGY AND PLANNING

The table below presents costs for the WSSP Group which is comprised of the General Managers Office and three Teams:

- Water Supply Planning (WSP)
- Water Policy, Strategy, Research and Innovation (PSRI)
- Regulatory and Investment Governance (RIG).

	FY14A+F		FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
Employee costs	6,160,535	415,134	5,795,460	-
Contractor costs	316,383	-	178,160	-
Electricity	-	-	-	-
Other materials and services	5,037,745	125,740	5,278,626	1,271,600
Total	11,514,663	540,874	11,252,246	1,271,600

Table 66: WSSP FY14 and FY15 operating costs by cost element

	FY14A+F		FY15B	
Contribution by Team	Total	Corporate overheads	Total	Corporate overheads
GM Office	603,296	-	492,562	-
WSP	3,089,894	-	3,061,617	-
PSRI	6,710,438	-	5,587,764	-
RIG	1,111,035	540,874	2,110,303	1,271,600
Total	11,514,663	540,874	11,252,246	1,271,600

Table 67: WSSP FY14 and FY15 operating costs by Team

WSSP costs are predominantly comprised of employee expenses owing to this being a non-operational functional Group and being resourced with internal labour. The materials and services costs mostly relate to spend on specific innovation and research, planning and economic initiatives applicable to the whole or multiple sections of the organisation. Given WSSP operating costs comprise only 4% of the Seqwater total the narrative for these expenses have been consolidated in the discussion below.

8.5.1 WATER SUPPLY STRATEGY AND PLANNING

FY14 and FY15



In summary, total costs (including General Manager's Office) for FY15 are slightly lower than FY14 primarily due to a reduction in labour expenses. The increase in corporate overheads in FY15 has arisen from the costs of this bulk water price review process which under Seqwater's cost classification standards are classed as corporate overheads.

Resourcing

As a non-operational business function performing an owners role costs for the WSSP Group are relatively stable and dominated by employee labour (~55% in each of FY14 and FY15). Much of this is for professional staff who require expert knowledge, hence the low (and overall declining) use of contract labour. Note the use of external resources will continue to be assessed against the cost effectiveness of employee labour on a case by case basis.

This has meant a \$500,000 reduction in costs (in nominal terms) for FY15 based on a conversion of contractors to salaried staff. Contract labour costs increase in the Water Supply Planning team by \$170,000 for expert project management resources as the DEWS-directed and key Seqwater initiative, the Water Security Program, heads towards delivery by the end of FY15 (refer below). General Manager's office employee expenses at \$492,000 are unchanged from FY14 to FY15, and this same level of expenditure has been forecast to continue over the FY16-28 period.

The general approach to procurement of external resources will be to engage consultants for discrete packages of work to input to the Water Security Program, primarily where internal expertise or resources are not available. This will occur on a cyclic or 'as needed' basis depending on Government direction regarding the frequency of WSP updates.

Activities

Water Security Program

The Water Security Program, which is a requirement under *Water Act (2000)*, requires extensive scenario analysis, stakeholder consultation, planning criteria and service specifications, bulk water supply options analysis, 30-year system operations plan, demand management plans, drought response plans and peer review. The intention is to resource as much of the technical and planning assessments in house as possible utilising the wide range of skills and resources available to Seqwater on this element of our core business. The key outcome being sought is to ensure that the skills and knowledge associated with the Program are developed and maintained within Seqwater. In addition this will ensure engagement with Seqwater's Bulk Water Customers can be undertaken in a meaningful way as input can be provided directly to Seqwater staff developing the Program.



The \$170,000 in contract labour costs for the FY15 are to deliver the Water Security Program, the conclusion of which is expected to be the end of FY15. Beyond this time contractor requirements for this activity will be reviewed in context of using internal resources. Note the Water Security Program scheduled for delivery at the end of FY15 is the first time this initiative will be delivered (as per amendments to the Water Act).

Asset Management and Optimisation Strategy

This initiative has a budget of \$1.3M in FY15. The initiative aims to develop and implement a strategic asset management plan (SAMP) to increase asset efficiency and develop advice and information on asset optimisation for the operational sections of the business on process optimisation for cost minimisation an quantifying the relevant cost benefits of capital investment in emerging technologies or which part of the value chain to target investment for maximum benefit. This initiative supports the SoO obligations 4.7.5 (implement its asset plans, systems and procedures having regard for the relevant Australian standards) and Seqwater Strategic Plan initiative of optimising asset performance. While budget for this work may fluctuate to respond to the most relevant emerging risks and opportunities to asset performance optimisation, it is anticipated that this order of investment would continue to ensure continual improvement.

Catchment and Sustainability Initiatives

These initiatives have a budget of \$1.3M in FY15. The initiative aims to deliver and implement key strategies to ensure long term sustainability of water supply and quality including the Catchment and Land Management Strategy, Greenprint Initiative (refer Chapter 8, Operations- Catchments and Raw Water), Coal and Coal Seam Gas developments in water catchments and Climate Change Adaptation. This activity includes research to identify and quantify risk and effective response as well as delivering strategies and guidance for implementation by the business. This activity supports the SoO guiding principles 3.5.3 (Develop programs to continuously improve performance in maintain and restoring natural assets) and obligations 4.2.2 – (plan and manage water in a total water cycle framework including its water supply catchments) and 4.2.4 - (participate and support regional catchment management initiatives). It also supports the Seqwater Strategic Plan initiatives Catchment Services and Optimising Asset Performance, and development of the Water Security Program.

Risk, Technology and Innovation and Partnerships

The investigation of risk, technology and innovations is targeted to current business system efficiency improvement opportunities and risk management, with prioritisation and governance of the individual initiatives by the Sequater Group and Team customers.

These initiatives have a budget of \$0.6M in FY15 which includes allowance for overheads on technology, research and innovation projects and memberships of organisations that



collectively fund industry relevant work. The research resourcing strategy aims to fund organisations to enable access to knowledge and specialist expert resources without the unnecessary excess cost of retaining these resources within the organisation. The budget estimate is based around Seqwater's current knowledge creation partnerships with the University of Queensland, Griffith University and its membership of international research bodies through the Water Services Association of Australian (WSAA). This sourcing strategy may change over time to ensure it delivers on the information needs organisation in the most cost effective way. It is anticipated that the budget for resourcing the most cost effective knowledge partnerships will continue to be in this order of magnitude. This budget covers costs such as administrative overheads and fees which would be agreed at a favourable rate through forming such partnership arrangements to avoid such overheads levied on each individual research initiatives. This knowledge partnering and research delivery approach is forecast to continue out to FY28.

The risk, technology and innovations investigation function is forecast to continue out to FY28, however periodic assessments focussing on value for money, and leveraging work done by other organisations will be performed to ensure cost control. Initiatives will also continue to be regularly reviewed for internal Seqwater customer need, governance and ongoing acceptance.

The Team also manages intellectual property management frameworks and systems, and maintains the intellectual property register. This supports the SoO guiding principle 3.6 (The authority must have a bias for innovation to exploit technology and ideas to meet quality outcomes at lower cost) and Seqwater Strategic Plan initiatives on capable and innovative people.

Additionally the Water Policy, Strategy, Research and Innovation Team pro-actively engages and respond to SEQ local government Planning Schemes, State Planning Policies and Regional Plans to ensure protection of water quality. This initiative supports SoO obligation 4.2.4 (The authority must participate and support the development and implementation of planning scheme, framework or strategic statement where it impacts its activities) and Seqwater Strategic Plan initiatives on input to SEQ and local government planning schemes.

The risk, technology and innovations investigations program itself undergoes annual Executive review and is subject to a research valuation process and prioritisation to maximise the value from the investment to the organisation our partners and the community. Further collaboration opportunities will be pursued in the next financial year to specifically target more collaboration projects with the SEQ retail companies and Councils and to obtain greater value for money.



The program is almost entirely outsourced and this forms the bulk of the budget requirement with policy and strategy development and implementation mostly being conducted in-house.

The Water Services Association of Australia conducted surveys in 2010 and 2013 on the annual expenditure on research as a percentage of revenue of member organisations. Eleven utilities responded in 2013. The average R&D expenditure as a percentage of total revenue was 0.26% with a median value of 0.27%. 15 Utilities responded in 2010. The average R&D expenditure as a percentage of total revenue was 0.53% with a median value of 0.44%.

Seqwater's planned spend for FY14 is 0.3% of revenue (based on actual FY13 revenue). It must be noted that of the respondents only 3 utilities were non-retail providers such as Seqwater, and these had average research budgets of >0.5% of revenue in 2010. This is largely a reflection on the smaller revenue base in bulk utilities as compared to retail or vertically integrated utilities, however the magnitude of knowledge gaps on risk and opportunity is generally larger in the bulk water supply or bulk wastewater treatment ends of the delivery chain.

Note the \$0.6M reduction in the material and services component of the risk, technology and innovations investigations program expense within the WSSP Group has arisen from an overall rationalisation of research and overheads in addition to the Healthy Waterways (a Government funded entity) core funding now being budgeted in the Brand & Community Team. The Smartwater Research Centre funding (\$50,000 in FY14) has been discontinued in FY15 as the Griffith University research partnership covers this collaboration. In FY14 Seqwater proactively engaged with the University to discontinue funding for this initiative and align it with existing partnership activities.

Note research projects successfully delivered in FY14 have now moved to operational implementation, namely the Storage Scorecard assessment, Vertical Profiler monitoring and Passive Sampling for water quality assessment, which is in the process of being handed over to Water Quality and Environment.

Regulatory Costs, SEQ Bulk Water Price Path

The Regulatory and Investment Governance Team FY15 budget includes \$1.9M for preparation of this submission, being an estimate of \$1.25M for QCA fees (based on QCA advice) and the remainder for specialist consultants to assist with submission preparation and review. This resourcing model permits Seqwater to promptly respond to Government direction and have the right people so as to ensure capacity and capability to meet the Government's timeframes without carrying additional resources given the timing of future bulk water price reviews remains uncertain. Note this regulation expense has been classified as a corporate cost as consistent with Seqwater's whole of business



standardised definitions these costs do not specifically relate to an asset (actual location) or group of assets (direct costs). Also while these submission costs are forecast to be incurred in FY15, approximately half will be paid in FY14 (Seqwater was not advised of a FY16 to FY18 bulk water price review until midway through FY14). The total amount is however unchanged, irrespective of whether incurred in FY14 or FY15.

The WSSP Group also provides ongoing specialist water engineering, policy and regulatory advice and is regularly called on to address Government and other external requests for information or proposals. These requests are generally ad-hoc with a short response turnaround time and are difficult to effectively schedule and resource for however small allowances have been made to accommodate such expenses. The majority of these are managed with internal resources (other programs temporarily deferred or delayed) with external resources only engaged in special instances.

FY16 to FY28

As mentioned above staffing levels and activities for the WSSP Group are relatively stable given the nature of its owner's role within the organisation. While the specific initiatives will vary over the years the business requires resources to address the strategic and whole of business initiatives which are key to ensuring the consistent application of standards and business processes.

The WSSP Group also contains two important functions which naturally reside in an owner's role, being water supply planning (this function being no longer performed by DEWS) and economic regulation. Both are critical to business success. Note in line with Government policy progressively more elements of bulk water strategy and analysis are being transitioned to Seqwater. It remains uncertain exactly how this will manifest into the future.

The only change to staffing levels expected over the forecast period is an extra FTE in the Water Supply Planning Team to fill a technical skills gap and alleviate the need to potentially rely on expensive external resources. The Group's resourcing model, like the rest of Seqwater's functional Groups, is to retain a core of professional expert staff with specific, detailed industry and organisational knowledge with short-term augmentation by external resources based on workload peaks or gaps in technical expertise.

Key recurrent activities into the future include price regulation (this submission has assumed the same costs as per the FY15 forecast, namely \$1.25M of QCA fees and \$0.5M of internal Seqwater costs, every 3 years) and the Water Security Program. This submission forecasts WSP costs to remain at FY15 levels (in real terms) out to FY28 as the WSP is a rolling project with 5 yearly updates and includes costs to cover both development and implementation of recommendations.



To enable continuous improvement in asset performance it is essential to maintain an innovative program to take advantage of new technological developments and apply these in an operational and asset renewal context with the aim to optimise operating and capital costs, but also to meet emerging challenges to asset performance. Emerging challenges for which innovative asset technologies may need to be developed include increasing regulation, changes in source water quality, and changes in environmental conditions such as rainfall intensity and frequency which impact storage design and operation, as well as catchment condition and ultimately source water quality.

Catchment sustainability is a critical area of potential future investment for the organisation and research (ie, climate change adaptation, natural asset monitoring and performance) will be ongoing at a similar level (~\$1.3M pa in real terms). Quantifying the cost and benefits and developing decision making tools to inform capital investment in natural assets is a key area of ongoing development, refinement and collaboration with knowledge partners, local government and utilities.

In dovetailing innovation in asset performance, a continuous research and innovation program around understanding and influencing the environmental conditions that cause pressure on asset performance is required. The catchment and sustainability program will continue to evolve to provide Seqwater with the understanding and ability to respond to changes in its environment with either a direct management response such as natural asset rehabilitation, or a management response in its asset optimisation program. Both programs will evolve over time to address the most relevant risks and opportunities as predicted by regular environmental scanning.

Once the asset management strategy has been concluded at the end of FY15 there will be ongoing costs at a similar level (~\$1.3M pa in real terms) out to the end of FY17 to drive implementation of the recommendations and to continue with asset optimisation research. Beyond this time costs will continue to be incurred at the same \$1.3M pa (in real terms) level but will be focussed on the asset optimisation component where research will focus on continuous improvement of asset performance.

Summary

The consolidated WSSP operating cost forecast over the FY14-28 period is displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.



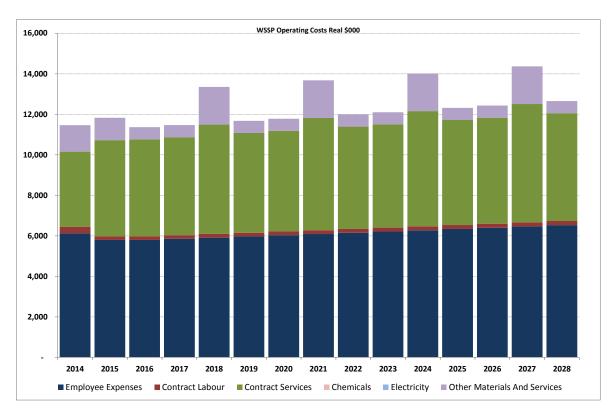


Figure 43: Consolidated WSSP operating cost forecast FY14-28

8.6 GENERAL COUNSEL, GOVERNANCE AND RISK (GRC)

The table below presents costs for the General Counsel Group which is comprised of the General Managers Office and two Teams at the time that the submission was prepared:

- Legal
- Governance, Risk and Compliance.

As of June 2014 the Governance, Risk and Compliance Team will be reporting through the Service, People and Technology Group under a restructure to consolidate businesswide strategic services in one Group. Opportunities to achieve to consolidate and adjust resources within the team will be considered as an activity within the Operational Efficiency strategic focus area (refer Section 8.11).

	FY14A+F		FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
Employee costs	2,620,617	2,620,617	2,708,685	2,708,685
Contractor costs	692,500	692,500	218,000	218,000
Electricity	-	-	-	-
Other materials and	13,059,603	13,059,603	12,775,046	12,775,046



	FY14	4A+F	FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
services				
Total	16,372,720	16,372,720	15,701,731	15,701,731

Table 68: GRC FY14 and FY15 operating costs by cost element

	FY14A+F		FY15B	
Contribution by Team	Total	Corporate overheads	Total	Corporate overheads
GM Office	615,693	615,693	1,092,052	1,092,052
Legal	13,036,204	13,036,204	11,167,239	11,167,239
Governance, Risk and Compliance	2,720,824	2,720,824	2,442,439	2,442,439
Total	16,372,720	16,372,720	14,701,731	14,701,731

Table 69: GRC FY14 and FY15 operating costs by Team

The significant materials and services costs in this Group mostly relate to insurance which is managed by the Legal Team (\$7.6M in FY15) and external expert legal advice. Labour is the next largest component, and related to the largely in-sourced functions of the Group. Costs for each Team are discussed below.

8.6.1 GENERAL COUNSEL

Total FY14 costs of \$0.6M in FY14 are forecast to increase by \$0.5M to \$1.1M in FY15 owing to an allowance for legal costs associated with the 2011 Floods Class Action. Employee costs are essentially unchanged (a slight \$23,000 reduction). This same level of expenditure (excluding the 2011 Floods Class Action costs) has been forecast to continue over the FY16-28 period.

8.6.2 LEGAL

FY14 and FY15

Total Legal Team costs have reduced by \$1.9M to \$11.2M in FY15. This reduction is largely due to lower insurance premiums following successful FY14 insurance renewals. Actual premiums achieved reduced by approximately \$1.3M (insurance premiums constitute approximately \$6.9M or 53% of total forecast FY14 Legal Team costs). Note as the insurance year runs from September the FY14 forecast does not reflect the impact of this reduction as these were not achieved until well into FY14. This reduction was achieved by:



- reducing the coverage relating to the pipelines (underground pipelines covered for earthquake only)
- entering into a 3 year agreement for property cover (Industrial Special Risks- ISR Policy)
- a refinement to the terms of other policies (including lowering the limits of pollution legal liability cover and increasing the excess for machinery breakdown cover).

The aim when negotiating FY15 premiums is to continue to put pressure on insurers to reduce premiums further and also provide additional enhancements to the program, however Seqwater is a price taker for insurance with adjustments to coverage levels (and associated risk acceptance) the only internal driver for cost management. The FY15 forecast of \$7.6M includes a 10% allowance over the FY14 actual cost to accommodate downside price risks including but not limited to:

- impact of the 2011 Floods Class Action on Seqwater premiums
- asset replacement valuations (including dams and major treatment plants) increasing
- yet to be determined Board risk appetite

The total other materials and services expenditure in FY15 is forecast at \$9.6M, with the non-insurance costs being \$2M for outsourcing of legal services and contractors. Seqwater's legal services resourcing strategy is to retain an appropriate and efficient level of in-house expertise and to then engage expert external counsel as required (dependent upon the complexity and/or risk associated with the matter).

Legal Team resourcing costs (employees and contractors) have risen by \$153,000 across FY14 and FY15 (total \$1.5M in FY15), with the dollar value of this increase equal in both employee and contractor categories. This increase is primarily driven by the organisational-wide EBA and common law contract wage increases, in addition to an increase in contractor expense to cover the 2011 Floods Class Action.

FY16 to FY28

Legal expenses are assumed to be stable from FY15 through to the FY16 to FY28 forecast period (excluding 2011 Floods Class Action costs which are forecast at approximately \$575,000 in total in FY15 which are removed from the FY16-28 forecast). Due to the nature of the work conducted by the Legal Services Team the only risk to stability is the potential fluctuation in legal spend. Legal work within Seqwater comprises both of planned (ie, capital and operating programs, insurance program renewal) and responsive components. The volume of responsive work varies depending on unexpected events (ie, flood events, class actions). No costs have been included for significant responsive work.



The Legal Team also manages all of Seqwater's insurance needs, and while terms, coverage and duration are managed so as to minimise costs and deliver value, insurance costs are primarily driven by macro market factors and as such Seqwater is a price taker for this service.

Post FY15 the 10% allowance factor has been retained to account for any upwards market fluctuations, potentially differing coverage levels and to manage Seqwater's underwriting risk. Insurance costs are thus forecast at \$7.6M (in real FY14 terms) out to FY28.

8.6.3 GOVERNANCE AND RISK

FY14 and FY15

There has been a \$0.3M reduction in total Team costs to \$2.4M in FY15, primarily driven by a \$550,000 reduction in contractor costs (to zero in FY15) as historical contractor roles are to be replaced through one FTE position in FY15. Throughout this period, and continuing through FY16-28, the general approach to engaging contractors for specific project initiatives will be justified through the appropriate approvals and justification processes at that time and has not been included in the FY16-28 period in this submission.

This reduction has been in part offset by a \$240,000 increase in other materials and services costs (to \$1.47M) which has been driven by two specific project initiatives, one in the risk area and the other in the compliance area. The major costs within other materials and services in FY15 include \$0.1M for the Risk Framework project (consistent risk framework across the business) and \$0.24M for the Compliance Register project (consistent register across the business, checking, tracking and review). The remainder of the other materials and services costs are comprised of dominantly of consultancy costs to support planned internal audits (\$0.5M), unplanned (Board directed) audits (\$0.1M), risk management systems maintenance (\$0.1M) and Right to Information request management (\$0.1M).

There has also been a \$33,000 increase in employee expenses to \$1.0M, in line with organisational-wide EBA and common law contract wage increases.

FY16 to FY28

The Governance, Risk and Compliance staffing and activities is not anticipated to increase or fluctuate from FY15 over the FY16-28 period. The general approach to engaging contractors for specific project initiatives during the FY16 to FY28 period will be justified through the appropriate approvals and justification processes as required. None of these expenses have been included in the FY16 to FY28 forecast costs.



In the other materials and services category expenses are forecast to reduce by \$0.4M post FY15 due to the completion of the major framework projects. Once these major projects are complete they will require review, not creation of new frameworks.

Summary

The consolidated GRC operating cost forecast over the FY14-28 period is displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.

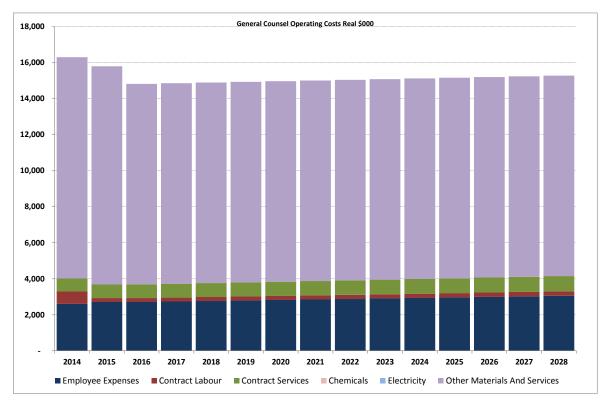


Figure 44: Consolidated GRC operating cost forecast FY14-28

8.7 OFFICE OF THE CHIEF EXECUTIVE AND EXTERNAL RELATIONS

The table below presents costs for the CEO Group which contains the Chief Executive's Office and one Team, External Relations.

	FY14A+F		FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
Employee costs	1,958,686	1,684,229	1,924,157	1,920,657
Contractor costs	-	-	-	-
Electricity	-	-	-	-



	FY14A+F		FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
Other materials and services	392,835	392,835	578,359	578,359
Total	2,351,521	2,077,064	2,502,516	2,499,016

Table 70: CEO and EA FY14 and FY15 operating costs by cost element

Contribution by Team	FY14A+F		FY15B	
	Total	Corporate overheads	Total	Corporate overheads
CEO Office	1,229,422	1,229,422	1,042,994	1,042,994
External Relations	1,122,099	847,642	1,459,522	1,456,022
Total	2,351,521	2,077,064	2,502,516	2,499,016

Table 71: CEO and EA FY14 and FY15 operating costs by Team

Costs for the External Affairs Team and CEO Office are discussed together below.

8.7.1 EXTERNAL RELATIONS AND OFFICE OF THE CHIEF EXECUTIVE

External Relations role (\$1.5M in FY15) is to facilitate the management of key external relationships including shareholding Ministers, Government departments/agencies, water retailers and council-owned water businesses, key industry partners, catchment councils and key local industry/community groups, local MPs and media. External Relations is also responsible for providing communication support to infrastructure projects and managing key partnerships.

The Office of the CEO oversees the strategic direction and day to day management of the business, providing leadership and direction for the Executive Team and reporting to the Board.

Note External Relations and Office of the CEO operating costs have been classified as a corporate cost, as consistent with Seqwater's whole of business standardised definitions these costs do not specifically relate to an asset (actual location) or group of assets (direct costs).

FY14 and FY15

The Office of the CEO operating costs comprise dominantly employee costs only, and at \$1.04M in FY15 is \$177,000 lower than in in FY14. This reduction is due to Water Services Association of Australia (WSAA) membership fees having been transferred to Brand and Community from FY15 under a broader strategy to consolidate management of such costs in one Team.



The External Relations FY15 forecast of \$1.46M (\$1.12M in FY14) was developed on the basis that all activities and initiatives listed above, with the exception of the potential expenses arising from the class action associated with the January 2011 flood event, will be resourced internally.

The FY15 operating cost forecast includes a net increase of \$335,000 from FY14. This increase is largely due to a \$200,000 allocation for class action communication support and a further \$50,000 allocated to the establishment of pilot local catchment groups to assist Seqwater undertake its required catchment management works.

These forecasts reflect plans at the time that the submission was prepared. Since that time, the consolidation and reduction of communications resources across Seqwater has been identified as a key contributor towards achievement of the targets in Section 8.11 to reduce employee costs.

FY16 to FY28

The External Relations and Office of CEO operating costs areas not anticipated to increase from the FY15 budget over to the FY16-28 period beyond shareholder-driven changes to operating and service costs arising from specific initiatives or directives. One-off costs of \$250,000 incurred in FY15 will be excluded from the FY16-28 forecast.

Throughout this period stand-alone or non-business-as-usual project initiatives may be required and if/or where required, and will be justified through the appropriate approvals and justification processes. None of these are included in the forward cost estimate in this submission.

Summary

The consolidated CEO's Office and EA operating cost forecasts over the FY14-28 period are displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.



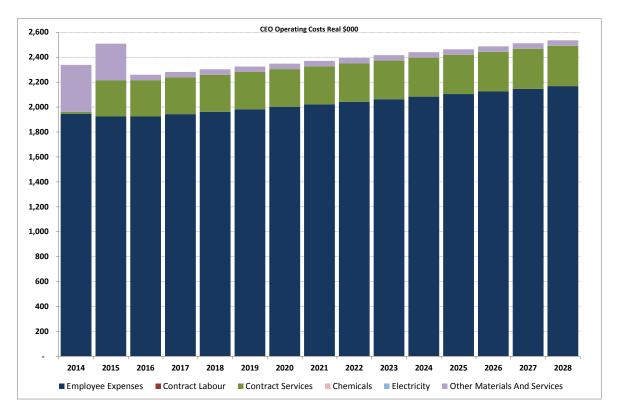


Figure 45: Consolidated CEO's Office and EA operating cost forecast FY14-28

8.8 CORPORATE FINANCE

The table below presents costs for the Corporate Finance Group which is comprised of the Chief Financial Officer's Office and three Teams:

- Finance
- Procurement
- Property, Fleet and Facilities.

	FY14A+F		FY15B	
Cost element- Group	Total	Corporate overheads	Total	Corporate overheads
Employee costs	7,007,942	5,807,060	7,371,920	6,497,966
Contractor costs	508,720	488,720	200,000	200,000
Electricity	206,666	-	70,380	-
Other materials and services	12,747,501	7,859,399	12,716,247	7,207,694
Total	20,470,829	14,155,179	20,358,547	13,905,660

Table 72: Corporate Finance FY14 and FY15 operating costs by cost element



	FY14A+F		FY15B	
Contribution by Team	Total	Corporate overheads	Total	Corporate overheads
CFO Office	1,076,637	1,076,637	1,608,222	1,608,222
Finance	8,760,307	8,760,307	7,795,760	7,795,760
Procurement	1,715,705	1,715,705	1,244,664	1,244,664
Property, Fleet and Facilities	8,918,181	2,602,530	9,709,901	3,257,013
Total	20,470,829	14,155,179	20,358,547	13,905,660

Table 73: Corporate Finance FY14 and FY15 operating costs by Team

The significant materials and services costs in Finance mostly relate to rents and leases managed by the Property, Fleet and Facilities Team. As a non-operational functional Group labour is the next largest component, and related to the largely in-sourced functions of the Group. Costs for each Team are discussed below.

8.8.1 CHIEF FINANCIAL OFFICER'S OFFICE

Total FY14 costs of \$1.1M in FY14 are forecast to increase by \$0.5M to \$1.6M in FY15 owing to a \$319,000 increase being an allowance for the Ipswich Relocation parking and transportation expenses for the Corporate Finance Group, including an allowance to cover any shortfalls caused by market rate increases or increased demand in parking across Seqwater.

The remainder of the increase (\$219,000) is due to the \$350,000 of fleet costs (pool cars/ vehicles) which have now been consolidated in the CFO's Office and will be charged out to the various business areas during FY16. This increase was offset by a small decrease in consultants and contractors performing corporate consultancies (ie, economic, financial and procurement) which are consolidated in the CFO's Office and where appropriate will be transferred out to the various business areas during FY16.

8.8.2 FINANCE

The Team is responsible for overseeing all of Seqwater's financial functions, obligations and transactions. The key functions of the Team are: Management accounting – budget preparation, regulatory reporting, monthly management reporting and system management and improvement in reporting to support budget accuracy for all management. Financial reporting – tax, external audit, statutory accounts, policy advice, external reporting and depreciation. Transactions – treasury management, water billing, payables and payroll. Note Finance Team operating costs have been classified as a corporate cost, as consistent with Seqwater's whole of business standardised definitions



these costs do not specifically relate to an asset (actual location) or group of assets (direct costs).

FY14 and FY15

The Finance Team annual operating cost is forecast to reduce from \$8.8M in FY14 to \$7.9M in FY15. This reduction is dominantly driven by a \$1.1M reduction owing to the Moreton Bay Outcome Charge no longer having a variable component (refer Other Operating Cost Section below). This has been slightly offset by a \$0.1M increase in employee labour expense arising from the (2.5% for EBA and 3% for common law employees). There has been no change in headcount from FY14 to FY15.

FY15 forecast operating costs are dominated by the reduced Moreton Bay Outcome Charge (\$4.2M) and employee labour (\$3.0M). The remainder of costs relate to audit fees (\$0.35M- Queensland Audit Office) and consultants (\$0.23M- dominantly asset valuations and tax advice). Audit and consultant fees are the same as that incurred in FY14.

FY16 to FY28

The Finance Team forecasts the lower FY15 costs to be sustained over the forecast period to FY28. Employee numbers are forecast to be consistent from year to year due to maintenance of the existing finance structure, with other costs as per FY15. The nature of Finance team activities being largely predictable (scheduled reporting timetables, standardised deliverables) enables reliable future forecasts. Note these costs are all essentially fixed and to a degree independent to future growth in the organisation.

8.8.3 PROCUREMENT

The Procurement team is responsible for strategic and tactical procurement activities to ensure procurement spend achieves best value for money outcomes for the business. The key functions of this team includes: procurement governance frameworks and processes, category and commodity sourcing for all areas of spend, significant procurement planning and contracts/arrangements and increasing procurement capability in systems and people.

Key reporting includes: management of procurement systems, processes, risks and benefits and subsequent performance of same. The procurement team's operating costs are classified as a corporate cost and overhead cost to the business, therefore the return of investment to the business is monitored and managed through the value for money framework on the savings and benefits being generated by the team.

FY14 and FY15

The Procurement Team annual operating cost is forecast to reduce by \$0.5M from \$1.7M in FY14 to \$1.2M in FY15. This is driven by a \$0.25M reduction in each of contract and



consultant labour due to personnel levels stabilising with only dominantly employee labour utilised. Procurement personal have been embedded within the various Seqwater Groups (ie, two FTEs in APDD to assist with capital procurement) to better and fully utilise these resources and reduce the need for additional contract labour by the corporate Procurement Team. Procurement-related costs for short-term or project type activities are forecast by the relevant Group which is managing the initiative to more accurately reflect cost accountability.

FY16 to FY28

No growth in FTEs is forecast post FY15, however this will align to business direction if new initiatives arise which justify such commitment of additional resources. Procurement Team operating costs in the FY16-28 period are forecast to remain at FY15 levels (in real terms).

8.8.4 PROPERTY, FLEET AND FACILITIES

The Property, Fleet and Facilities Team are responsible for management and administration of Seqwater's property portfolio, mobile plant and fleet assets and office accommodation. The team manages these assets to ensure they support the operational needs and strategic direction of the organisation.

FY14 and FY15

The FY15 budget was developed from a zero base and is forecasting an increase of \$0.8M (to \$9.7M in FY15) from FY14. This increase is dominantly driven by a \$1.1M increase in head office rent expense (Icon building Ipswich) which has been slightly offset by a \$0.2M reduction in employee and contract labour and electricity expenses.

Employee expenses: The forecast decrease of \$84,000 in FY15 is due in part to the transfer of two FTEs (Asset Protection Liaison Officer and Corridor Coordinator and their associated responsibilities) to the Engineering and Technical Support Team within the APDD Group. Future employee numbers are forecast to be static with no foreseeable growth in FTEs for the team to deliver its services.

Contract labour: The \$67,000 decrease in FY15 is due to reduction in contracted labour as a result of these duties being filled by FTEs.

Electricity: The \$136,000 decrease in FY15 is due to the likely disposal of 240 Margaret Street Brisbane. Future electricity costs of \$70,000 relate to lease office spaces at 200 Creek Street and 340 Adelaide Street which are managed by the Property, Fleet and Facilities Team.

Other materials and services: The increase of 1.1M in FY15 is due to higher head office rent expense (4,700m² at the ICON Building in Ipswich, commenced April 2014). The



applicable head and sub-lease rate of \$455/m² (exclusive of GST, plus associated outgoings) was agreed with Department of Housing and Public Works and was benchmarked with equivalent commercial market rates. Total FY15 head office rent expense is forecast to be \$2.5M.

With 70,000 hectares of land the annual rates bill levied by various local authorities exceeds \$2M and is subject to potential annual increases determined by local authorities dependent upon their individual budget priorities. In developing the FY16-28 forecast this cost has been assumed to remain at the same level as that in FY15.

Fleet operating expenses for insurances, fuel, registration and maintenance (\$1.7M in FY14) are based on the current mobile plant and fleet that service the organisation are also included in other materials and services. It is anticipated that this expense will remain static over time as a result of potential savings by implementing an in-vehicle management system which will offset any increases in other fleet expenses over time.

The remainder of the other materials and services cost reflects Facilities costs such as cleaning, corporate uniforms, stationery, repairs and maintenance of office accommodation buildings.

Approximately one third of Property, Fleet and Facilities Team operating costs (\$3.3M in FY15) are classified as corporate costs. Note in Seqwater corporate costs are defined as those which do not specifically relate to an asset (actual location) or group of assets (direct costs). Within the Property, Fleet and Facilities Team these costs relate to head office rent expense, annual rates bill for 70,000 hectares of land and mobile plant and fleet expenses (insurances, fuel, registration and maintenance).

FY16 to FY28

No foreseeable change from that expected in FY15 is forecast for Property, Fleet and Facilities Team operating costs over the FY16-28 period. The organisation will have consolidated its head office in Ipswich and with only modest demand growth and no new significant assets costs should stabilise, assuming there are no additional significant organisational changes. The dominant majority of these costs are also fixed in nature (rents, rates, electricity) and as such support reasonably robust longer-term forecasts.

Summary

The consolidated Corporate Finance operating cost forecast over the FY14-28 period is displayed below. Note these include the escalation rates listed in Chapter 6 but exclude operating cost efficiencies discussed in Section 8.11.



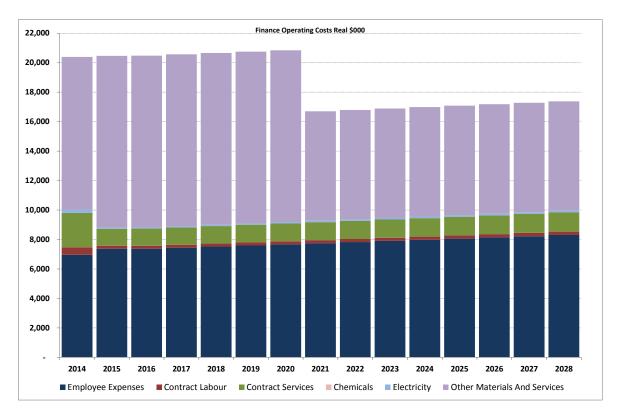


Figure 46: Consolidated Corporate Finance operating cost forecast FY14-28

8.9 OTHER OPERATING COSTS

Seqwater is required to compensate Unitywater under a legacy arrangement (ex-Moreton Bay Regional Council) regarding supply of recycled water from the Murrumba Downs AWTP. This is known as the Moreton Bay Outcome Contribution (MBOC) which is comprised of capital plus fixed and variable operating charges. Unitywater's recycled water customer, Amcor has ceased operations and in March 2014 the Minister for Energy and Water Supply advised a new bulk water supply agreement between Seqwater and Unitywater.

From 1 January 2014 Seqwater no longer has any requirement to pay fixed and variable operating charges but must continue to contribute capital charges as determined annually by the Minister for Energy and Water Supply. In December 2013 the Minister advised the FY14 capital charge is \$4.2M. This is captured in the Finance Team cost forecasts.

The current bulk water supply agreement states the MBOC capital charge obligation extends to 30 June 2020, unless the Murrumba Downs AWTP is shutdown or decommissioned, or is no longer in care and maintenance and able to be made operational within 18 months. This submission has assumed that the \$4.2M pa (in real FY14 terms) MBOC will be incurred to the end of FY20.



8.10 REVENUE OFFSETS AND IRRIGATION COSTS

The Referral Notice states that the QCA must accept " bulk water costs are to be offset by: revenue from (a) sale of water to power stations and (b) Toowoomba Regional Council, as advised by Seqwater. Seqwater's advice is set out below.

8.10.1 POWER STATIONS

Seqwater has bulk water supply agreements with Stanwell Corporation Limited (a Queensland government owned energy company) for bulk and raw water supply to the Swanbank, Tarong North and Tarong power stations. These agreements include fixed charges (in March 2007 terms) of (Swanbank), (Tarong North) and (Tarong) and are indexed to CPI. Variable charges (in March 2007 terms) are (Swanbank), (Tarong North) and (Tarong North) and (Tarong) and are also indexed to CPI. FY14 fixed charge revenue for the provision of bulk and raw water services to Swanbank, Tarong and Tarong North power stations was plus of variable charge revenue (with only Swanbank power station consuming water in FY14).

These bulk water supply agreements are statutory contracts determined by the Minister and extend until 30 June 2018. The bulk water supply agreements may be extended past FY18 at Stanwell's discretion. To extend the agreements Stanwell is required to approach Seqwater between July and December 2017 and agree terms for a five year extension to 2023. A similar process is required in 2022 if Stanwell wishes to extend the contracts to 2028. Stanwell may choose to extend none, some or all of these contracts. Seqwater has relative certainty regarding this income until FY18 but not thereafter, and hence these revenues have not been included beyond FY18.

Seqwater forecasts power station demand to be ML per year out to FY18. Seqwater is forecasting power station fixed revenue to remain at FY15 levels (FY18. Note there is risk that variable charge revenue will be lower than forecast as power station demand is expected to decline as a consequence of the decision by Stanwell Corporation Limited to place the Swanbank E power station into cold storage.

Table 74 below sets out the offsets to be applied for power stations by the QCA, in accordance with the Referral Notice.

Element (real FY14 terms)	FY14	FY15	FY16	FY17	FY18	FY19-28



Element (real FY14 terms)	FY14	FY15	FY16	FY17	FY18	FY19-28

Table 74: Power station forecast demand, prices and revenue

8.10.2 TOOWOOMBA REGIONAL COUNCIL

Toowoomba Regional Council (TRC) is contractually bound to pay \$4.8M in FY15 for raw water access from Wivenhoe Dam. The current contract commenced on 1 January 2013 and runs to 28 January 2020. TRC may request an extension for another ten years to 28 January 2030. The contract has an annual maximum agreement volume of 10,000 ML. Fixed charges are set at \$4.28M (2009 dollars) for the period FY14 to FY20. Variable charges are set at \$300/ML (2009 dollars). These charges are indexed by the Brisbane "All-Groups" CPI for the quarter ending 31 March each year. Seqwater has relative certainty regarding this income until 2020 but renewal after 2020 is not guaranteed. Given TRC has alternative raw water supply sources (Cressbrook Dam), this submission is based on normal inflow conditions (ie, no droughts) and contract renewal is at TRC's election, Seqwater has not forecast TRC fixed revenue continuing beyond FY20.

In the period to FY20, TRC have confirmed that they use the pipeline as an emergency and drought insurance, and hence under normal inflow conditions Seqwater is not expecting any demand from TRC, and hence no variable revenue component.

Seqwater is forecasting TRC fixed revenue to remain at FY14 levels (\$4.8M real) out to FY20.

8.10.3 OTHER BULK SUPPLY AGREEMENTS

The Referral Notice states that any other revenues from Seqwater's bulk water supply agreements, other than those associated with the prices, are to be offset from bulk water costs. No other revenues beyond those discussed above are derived from bulk water supply agreements.

8.10.4 OTHER REVENUES

Seqwater has also offset residential (house and land), recreation and lease income of \$1.0M forecast for FY15. This revenue is primarily generated from lease and rent of Seqwater-owned assets. For houses tenants are Seqwater employees (rarely houses are put on the open rental market) and all residential portfolio rents are charged at market



rates. Other leases and sundry revenue derives mainly from grazing/other uses on flood margin land.

8.10.5 IRRIGATION COST ALLOCATION

The Referral Notice requires that costs associated with Seqwater's declared irrigation services are to be excluded. Costs from 1 July, 2013 are to be as recommended by the QCA's report "Final Report – Seqwater Irrigation Price Review – 2013-17 – July 2012. Refer the Irrigation Cost Allocation section in Chapter 7 for further discussion of irrigation cost treatments.

Irrigation operating costs are included in the discussion of Group and Team costs earlier in this Chapter, however all costs allocated to the irrigation sector should be deducted from bulk water costs to satisfy the terms of the Referral Notice.

Seqwater has not attempted to differentiate and exclude operating costs for the irrigatoronly schemes, as this would be a significant and time-intensive task as it would need to isolate direct costs from each team, and also re-calculate non-direct costs (based on its forecast of non-direct costs) and then allocate those non-directs to those schemes to FY28. Seqwater also notes that:

- the Referral Notice does, in part, refer to the need to focus on material issues that will affect bulk water price
- the amounts involved for operating costs in these irrigator-only schemes are very minor, compared to the overall operating costs of bulk water services. The impacts of any error in approach will therefore be immaterial (a 10% error in FY15 irrigation scheme operating costs amounts to \$0.4M, or 0.1% of total Seqwater forecast operating costs).

Consequently, Seqwater has not attempted to exclude operating costs in these irrigator only schemes (or non-direct costs allocated) from its expenditure forecasts. Instead, the costs are included, offset by the QCA's forecast of operating costs in these schemes. The differences, if any, will be negligible in the context of the overall costs for bulk water.

As discussed in Chapter 7, Seqwater has assumed the renewals annuity allocated to the irrigation sector as representative of the capital costs to be excluded. This has been deducted from scheme revenues calculated using approved prices (reflecting recovery of efficient costs) to determine irrigation scheme operating costs. Seqwater has included revenue offsets to account for irrigation these costs.

The QCA's recommended costs for irrigators extend to FY17. Seqwater has simply indexed the FY17 costs, at assumed inflation of 2.5%, to FY28.

Table 75 below shows the operating costs excluded out to FY28.



Scheme (\$ nominal)	Irrigation only	FY14	FY15	FY16	FY17-28
Cedar Pocket	Yes	132,480	135,029	137,602	164,837
Central Lockyer	Yes	743,897	783,958	775,846	816,813
Morton Vale	Yes	74,364	75,773	77,191	78,619
Lower Lockyer	Yes	1,181,699	1,178,837	1,200,125	1,221,570
Pie Creek	Yes	248,012	253,089	258,222	263,408
Central Brisbane	No	161,531	165,829	169,556	170,917
Logan River	No	437,680	449,163	461,373	473,877
Mary Valley	No	448,283	463,130	477,301	492,219
Warrill Valley	No	516,890	530,685	545,186	560,250
Total	NA	3,944,837	4,035,493	4,102,402	4,242,510

Table 75: FY14 irrigation operating costs excluded (nominal)

8.11 OPERATING COST EFFICIENCIES

Consolidated Seqwater operating expenses for FY15 were forecast at \$271M, as discussed comprehensively earlier in this chapter.

The FY15 forecast budget (as per Board approval in March 2014) was compiled to affect both prudent and efficient outcomes, given current regulatory requirements, the maturity of existing business processes and systems together with the estimated financial outcomes of the FY14 year at that time.

Seqwater has continued to deliver material and sustainable financial reductions throughout FY14. The original FY14 Seqwater operating cost budget was \$280M, with a \$9M budget saving forecast to be delivered in FY15. Compared to the FY13 budgeted operating expenditure of the previous bulk water entities of \$360M this represents an \$89M (or 25%) reduction over two years (FY13 to FY15), delivered by a broad range of initiatives implemented over 18 months of stable operations since the merger of these entities into Seqwater.

A further assessment in July by management on the proposed FY15 forecast budget (\$271M) has been completed based on the financial outcomes/results of the FY14 year. This body of work has enabled a further reduction of \$6.2M in the supplies and services budget/s bringing the operational forecast operating expenses budget for FY15 to \$265M.

The SEQ bulk water supply industry has demonstrated performance in sustainable operating cost reductions. Pre-merger FY12 actual operating costs of the various water grid entities (like for like basis with the current Seqwater entity) totalled \$300M. The merger in January 2013 positioned the business for future delivery of savings with FY13



actual operating costs reducing slightly to \$291M (down 3%). Post consolidation of the business after the merger savings accelerated, with operating costs reducing by a further 9% to \$265M in the Q3 FY14 forecast (12% reduction in total from FY12).

Key initiatives driving the reduction in operating costs since the formation of the new business include but are not limited to:

- a reduction of seventeen Directors (former entities) to five Seqwater directors
- a 10% reduction of 65.8 (\$3.5M) FTEs and 7 executive roles, achieved through immediate restructuring during the merger. 18 pre-merger executive roles reduced to 8 with savings of \$2.5M
- phased implementation of projects and deliverables bases on current priority and business need
- reduced duplication through co-ordination of planning effort
- consolidation of strategic planning functions
- improved linkages between system requirements and asset planning resulting in (amongst other matters) deferral of major capital improvements
- moving the operations of the Western Corridor Manufactured Water Plants into " Care and Maintenance" mode
- reduction in the total number water treatment plants being operated
- a 35% reduction in water quality monitoring costs, compared to the previous entities. The reduction has been achieved by removing duplication and through a thorough review of water quality risks, resulting in monitoring being discontinued at some locations and reduced at others
- implementation of a new Operations and Maintenance contract for the supply system management resulting in cost reduction of approximately \$3M pa
- insourcing of operations of Noosa WTP at reduced costs and allowing sub regional production optimisation providing for operational savings in excess of \$0.6M
- R&D expenses have been reduced from \$4M in the original FY14 budget to \$2.1M for the full FY14 year
- changes to the operating regime for the Gold Coast Desalination Plant to an optimised Hot Standby mode
- Structured, strategic and tactical procurement of goods and services.

Beyond FY15 operating expenditure has been forecast based on the FY15 budget of \$271M. That business as usual budget includes known future savings initiatives such as 2.5% efficiency dividend on operating costs for FY16 and planned reductions in the value of consultants such as those engaged by the APDD Group over the coming three years.

Seqwater is committed to achieving ongoing material and sustainable reductions in the cost of operating the business, as part of an overall goal of minimising the cost to serve our customers. As part of that commitment, it will seek to ensure that core operational



activities are market tested and/or market competitive (competition by comparison where appropriate). In doing so, it will seek to maintain critical intellectual property in key activities, including water supply planning, system operations, water quality management and flood operations.

To deliver on our commitment for a reducing cost to serve, Seqwater has set a range of efficiency targets to be achieved in FY15 (as above) and for each of the following three years. Those latter targets are summarised in Table 76 and are reflected in a downwards adjustment to forecast FY15 operating costs of \$265M. Overall, they are expected to result in savings compared to current forecasts of \$14.4M in FY16, increasing to \$30.8M in FY19 and beyond.

Operating efficiencies (real FY14)	FY15B	FY16	FY17	FY18	Ongoing
Total	\$6.2M	\$14.4M	\$21.5M	\$29.1M	\$30.8M

Table 76: Operating efficiency targets

The principal platform of Seqwater's strategy is a focus on operational efficiency. This will involve looking at each part of the bulk water supply chain and identifying and securing opportunities to be more efficient. It should be acknowledged that many of the "low hanging fruit" savings opportunities have already been harnessed as outlined in the Executive Summary and hence the next layer of savings will require considerable business focus, risk analysis and investment in enabling technology. It is acknowledged that there will be some upside and downside risks and necessary adjustments to targets at the line level but with the overall total being the ultimate goal.

It is important to note that these are self-applied efficiency targets that we are backing our organisation and people to deliver. These are necessary to provide affordable water to the people of South East Queensland. The business does not yet have detailed plans at a budget level of specifically how these savings will be realised, however our strong mantra will be reducing the cost to supply bulk water. This could mean we bring some services back in-house if there is a sufficient benefit to customers. An example of this was Noosa WTP which has been historically outsourced.

Our organisational efforts will be targeted at four strategic focus areas, led by the Board and Executive Leadership Team. Those focus areas are summarised in Table 76.

Focus area	Purpose
Being operationally efficient	Our primary focus is to be an operationally efficient water utility that provides good value and a 'fit-for-purpose' service to customers. This means 'fit-for-purpose' infrastructure as well as product water. It means being efficient in meeting customer needs in everything we do.



Focus area	Purpose
Customer connected water authority	Seqwater is responsible for developing the long-term water security plan for South East Queensland. Our customers depend on us to develop future water supply solutions that provide resilience against drought and flood, minimise water costs, and support the continued growth of a liveable and productive region. We recognise the need to excel in the long-term planning of our water supply. We also play an important role in influencing the continued growth and prosperity of our region. Establishing and maintaining a 'social licence' that ensures we are a trusted source of information and advice to our customers and stakeholders is vital to shaping the future.
Information enabled	We need a smart, adaptable plan for managing data and information to achieve our strategic goals. We must zero in on the data that is relevant to our business needs and the technology we require to support our business and performance. Smart decision making to optimise assets and business performance and utilising technology to drive efficiencies in operations is critical for being a smart business.
Strong business leadership	Strong leadership across the business and a 'one team' approach are required to successfully implement our strategy. Affordability is a key issue for our customers. To meet their expectations, now and into the future, it's essential we are operationally efficient. Our key performance indicator in delivering on the strategy is lowering the total cost to serve. This will require the right workplace culture, an engaged organisation and effective governance around strategy execution.

Table 77: Strategic focus areas to achieve operational efficiency targets

Capital cost efficiencies are discussed in Section 7.16.

8.12 CONSOLIDATED LONG-TERM OPERATING COST FORECAST

All values and charts presented in this section are in real FY14 terms, include the escalation rates listed in Chapter 6 (unless otherwise stated) and capture the operating cost efficiencies discussed above.

There are two key components of growth in absolute operating costs:

- cost growth arising from higher volumes via increasing variable cost contribution
- cost growth arising from higher input prices (while seeking to minimise price growth Seqwater is a price taker for all input commodities).

Several charts are presented below, both on a Group basis and segmented according to the main cost type categories.



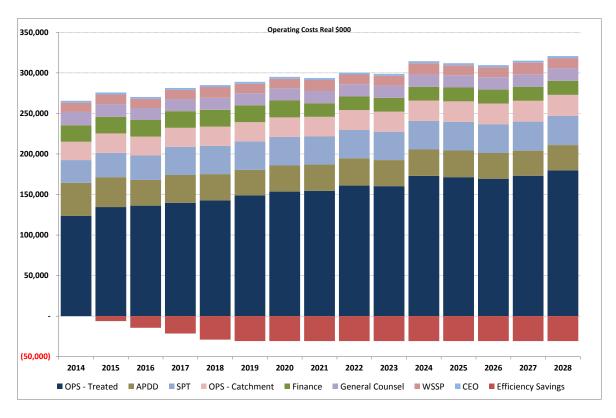
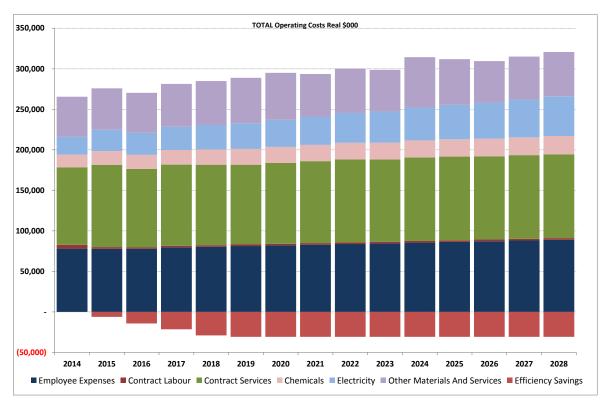


Figure 47: Consolidated operating costs by Group (including escalation)

The increase in total costs arising from higher volumes is the main driver of absolute cost growth out to FY28, primarily driven by electricity costs in the OTW Group. Growth in the OTW spend is dominated by increasing electricity prices, which comprise ~20% (\$24.4M) of total OTW Group forecast FY15 operating costs.

Although absolute costs in real terms (including price escalation) are forecast to increase out to FY28, on a unit cost (\$/ML real) basis operating efficiencies drive a reduction to ~\$750/ML towards the end of this decade (refer Figure 48). This is in a large part driven by Seqwater's ability to fully utilise the capacity of existing assets out to FY28 (based on the most likely demand forecast).





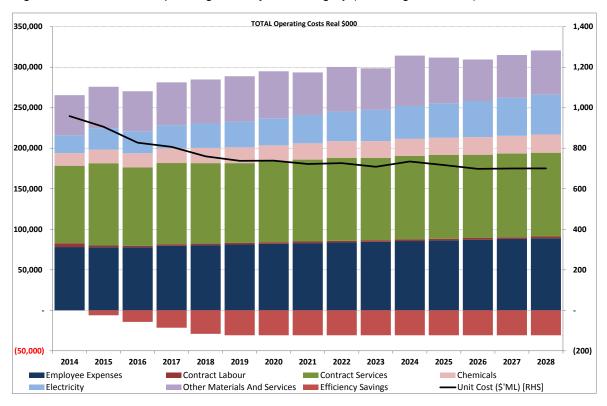


Figure 48: Consolidated operating costs by cost category (including escalation)

Figure 49: Consolidated unit operating costs by category



PART D. BULK WATER PRICE PATH INPUTS

CHAPTER 9 REGULATED ASSET BASE, DEPRECIATION AND RATE OF RETURN

The Referral Notice states that the QCA must accept the RAB at 30 June 2013, as advised by the Minister for Energy and Water Supply. As at the date of this submission, the Minister was yet to advise this RAB value. In order to generate price outcomes in this submission, Seqwater has adopted its own interim RAB value based on is best available information. Seqwater acknowledges that the value as advised by the Minister will be applied for setting final prices.

The Referral Notice requires that the QCA roll forward the RAB from 30 June 2013 to 1 July 2015 after assessing Seqwater's capital expenditure for FY14 and FY15. Seqwater will submit projects that are, or it expects will be, capitalised in FY14 and FY15. Seqwater uses capitalisation as a proxy for commissioning to ensure that there is consistency with the outputs of its financial system. This can sometimes lead to a lag between when the item actually commences service and when it is entered into Seqwater's books. However Seqwater has a limited amount of upgrade expenditure for new assets as opposed to renewals-type projects on existing assets. Therefore Seqwater regards this as a reasonable approach.

The Referral Notice requests the QCA to assess the prudency and efficiency of projects scheduled for completion prior to 1 July 2028 by using a sample of not more than 10 capital projects. This sample may include projects scheduled for commissioning in the two years prior to 1 July 2015. This may impact on the opening RAB recommendation for the FY16-18 price path.

9.1 GENERAL CONSIDERATIONS

A number of regulatory issues arise specifically in relation to the treatment of actual and proposed capital expenditure.

9.1.1 CASH EXPENDITURE AND COMMISSIONING TIMING

As discussed above, an important consideration in the development of the RAB is the QCAs preference to incorporate capital spend only once projects have commissioned (ie, the investment is delivering a return for customers). The capital (and operating) cost forecasts in this submission are presented on a cash basis (this is how businesses operate and best manage spend), and as such care needs to be taken in reconciling cash-based capital expenditure and what has been rolled-into the RAB.



For capital projects which are completed in FY14 a preliminary listing will be provided to the QCA. Audited actual FY14 capitalised expenditure to be rolled into the RAB will be made available post submission. Sequater expects that there will be few if any changes during the audit process leading to preparation of the financial statements. In this submission for FY14 capitalised expenditure it has been assumed that expenditure will be commissioned (capitalised) at 1 January except for a number of major, identifiable projects. The mid-year date is assumed to be a reasonable approximation (as in reality projects will commission across the full year).

For longer-dated investments over the forecast period, many of which are not even at preliminary design stage, it has also been assumed that these will commission mid-year (ie, 1 January) in the year in which they are complete. The same assumption applies to FY15 commissioned expenditure.

Capital spend on projects has been assumed to occur mid-year (ie 1 January) for projects that commence and are completed within the financial year. For multi-year projects interest during construction is applied using the WACC to reflect the opportunity cost of funding projects prior to their commissioning and transfer into the RAB. In this case the WACC adopted is the rate of return as per the Referral Notice.

9.1.2 APPRECIATION

Appreciation or Indexation reflects the increase in the value of the RAB due to inflation. The value of the appreciation is removed from the MAR as the RAB increases. QCA has previously applied the mid-point of the RBA target range for inflation being 2.5% for the forecast years. Seqwater agrees that a continuation of these arrangements is appropriate for forecast periods but that actual CPI should be used to true-up the RAB at reset times. A benchmark appreciation rather than the actual CPI for forecasts is a reasonable approach.

Expected inflation of 2.5% was applied to the RAB for the FY14 and FY15 rollover.

9.1.3 DEPRECIATION

Seqwater has applied lives to its capital spend based on the asset lives of the components of the expenditure. The asset lives for the RAB as at 30 June, 2011, are consistent with the advice from the then Minister for Energy and Water Supply (as the Price Regulator) to QCA in February 2012. The Ministerial Direction for the 2012-13 review specified that the QCA was to accept the opening RAB values and asset lives provided by the Price Regulator. These values were listed in the QCA's final Grid Service Charge 2012-13 report and in the QCA models provided to Seqwater in May 2014.

Asset lives for capitalised expenditure after 1 July 2011 is based on a schedule developed by Cardno for use with Seqwater's asset register. The RAB as at 1 July 2013 is that



which has been developed following discussions between Seqwater and QCA and about which there is preliminary general agreement. Whilst this RAB will be set formally by The Minister for Energy and Water Supply, Seqwater has used the RAB it has discussed with QCA for the purposes of this submission. Ultimately, of course, this may be subject to change by the Minister.

9.1.4 RAB ROLL-FORWARD

In line with the Referral Notice the opening RAB has been rolled forward by Seqwater by adding capitalised capital expenditure during the period with an annual appreciation as above. Depreciation is then subtracted and the result is rolled forward as the opening balance for the following year.

9.1.5 IRRIGATION SCHEME CAPITAL EXPENDITURE

As set out in Chapter 7, capital expenditure in the four irrigation-only schemes (Bill Gunn, Clarendon, Atkinson and Cedar Pocket) has been removed from this submission. For the shared schemes the QCA renewals annuity allocated to the irrigation sector capital has been netted-off from the total capital forecast as a proxy for the irrigation sector.

9.1.6 DECOMMISSIONED ASSETS

Seqwater has recently decommissioned a number of assets and written them off in accounting terms. These assets were transferred to Seqwater as part of the original asset base (ie, Seqwater paid fair value), and as such Seqwater should not be disadvantaged financially. Seqwater has not removed decommissioned asset values from the RAB as the alternative (compensated for the future depreciation as a one-off adjustment) would create an artificial cost increase.

9.1.7 INTEREST DURING CONSTRUCTION (IDC)

Seqwater has included an allowance for IDC for capital projects that span more than one financial year. This provides a return reflecting the opportunity cost of funds employed whilst assets or projects are under construction. For capitalised expenditure in FY14 and FY15, the actual rate of return (namely QTC's advice of the actual cost of debt 5.9%) in these years is adopted. For FY16 to FY18, the rate used is the long-term cost of debt as stipulated in this chapter.

9.1.8 CAPITALISATION OF CORPORATE EXPENSES

In delivering capital projects the APDD Group has functional areas (projects controls, management, scheduling, planning) which work across multiple projects. Seqwater's practice is to capitalise all direct construction costs as well as any other costs that are "directly attributable" to bringing the asset to a location and condition ready for use (for



example a directly attributable cost is the employee costs for project contract management).

9.2 OPENING REGULATED ASSET BASE 1 JULY 2013

As indicated above, Seqwater has calculated an interim RAB at 1 July, 2013 in lieu of the Minister's advice to the QCA. This interim value is \$8,285M.

9.3 CAPITAL EXPENDITURE FY14 AND FY15

9.3.1 INSURANCE CLAIMS

In the normal course of business Seqwater makes insurance claims for costs arising from insurable events. When successful, these claims are offset against the relevant capital expenditure item. These claims have been incorporated into the capitalised amounts. Only one claim settlement was received for investments capitalised in FY14, being \$13.5M in relating to construction of the Gibson Island ATWP.

9.3.2 FY14 CAPITAL EXPENDITURE

The following is based on forecast year end capital expenditure to 30 June, 2014. Seqwater will update this expenditure and the capitalised amounts when its financial accounts are finalised in August 2014. Hence the amounts below are interim.

Total forecast FY14 Seqwater capital investment is \$124M, of which \$95M relates to the infrastructure program (managed and delivered by APDD). Note in Table 78 below minor projects are those which on an individual project basis have expenditure below the approval levels of the OTW and APDD General Managers (\$0.75M).

Group	Number of projects	FY14 budget	FY14 A + F	Difference
APDD- major projects	48	44,453,675	64,435,710	19,982,035
APDD- minor projects	300	44,704,400	30,941,032	(13,763,368)
OTW- major projects	3	16,203,714	12,476,678	(3,727,036)
OTW- minor projects	8	1,401,401	3,267,512	1,866,111
Facilities (Finance)	4	12,138,500	9,407,000	(2,731,500)
SPT	10	4,178,000	2,552,122	(1,625,878)
WSSP	4	230,000	320,000	90,000
OCRW	10	643,500	643,500	-
Total	387	123,953,190	124,043,544	90,364

Table 78: FY14 capital investment program expenditure summary



The FY14 Seqwater capital budget was \$124M, with the full year forecast at April 2014 expected to be very close to this figure despite several unforseen critical expenditure items arising during FY14. Seqwater was able to find savings in across the portfolio to balance overall spend while still delivering on the major capital investments. The key drivers of budget verses actual expenditure in FY14 are:

- \$12M higher than forecast cost for practical completion of the North Pipeline Interconnector 2 (NPI2) owing to final commercial settlement being achieved by the Northern Network Alliance during the year. The final settlement included resolution of a number of adjustments that had not been specifically allowed for within the original budget. The commercial settlement is within the overall project approval from Government, subject to the outcomes of land compensation claims that are being managed and negotiated by the Coordinator General
- \$13.8M lower minor works and renewals expenditure, primarily owing to reprioritisation of the program. Reprioritisation enabled a number of emergent works to be delivered within the capital improvement program, including those capital projects listed below.
- \$6.2M lower than forecast for commercial close-out of the GCDP
- \$2.4M lower facilities management expenditure head office move to Icon Ipswich resulting in only minor office refurbishments. Budget originally planned for major office refurbishment at Margaret Street
- \$2.4M lower expenditure on the North Pine Filter Upgrade owing to deferral of the part of the works into FY15, providing time to complete the refurbishment of the first filter and assess its performance prior to refurbishing the remaining four filters. It also provided time to confirm that the refurbishment was the most prudent option, and to engage a new contractor to deliver the remaining filters to the proven design, ensuring value for money
- \$2.3M to complete rectification work to the Green Hill Reservoir. The extent of works required was unable to be determined until the reservoir had been drained and cleaned. The budget reflected the cost of works to take the reservoir offline, with the rectification works undertaken as a variation to the contract at rates within it
- \$1.9M to repair the toe of the Mt Crosby Weir following the 2013 high rainfall event. In early 2014, routine inspections identified damage to the toe of the weir. The initial program allowance reflected the estimated costs of rectifying that known damage. Further damage was identified as the project progressed, in section of the weir that were not able to be inspected whilst weir was overflowing. The increased budget reflects the cost of those rectifying those additional works
- \$1.2M higher cost owing to latent issues in replacing the East Bank high level reservoir roof. Options to replace the roof were limited by the reservoir being heritage listed, without internal structural reinforcement and with only a small area of



land available for works. The cost is the tender price, with the project having been delivered within that price and to the project timeframe.

Including non-infrastructure capital spend, capital projects which have or are forecast to commission in FY14 and have been rolled into the RAB in FY14 amount to \$98.9M (including IDC of \$6.3M). These are summarised below:

FY14 Capitalisations (including IDC)	Capitalised (\$M nominal)
Dams and weirs	16.4
Water treatment plants	33.4
Pipelines	30.1
Manufactured water assets	(9.7)
Land and easements	3.7
Other (property, ICT, fleet)	25.0
Total capitalised FY14	98.9

Table 79: FY14 capitalised expenditure

The negative value for MWAs relates to the net impact following receipt of the insurance claim for the Gibson Island AWTP.

9.3.3 FY15 CAPITAL EXPENDITURE

The forecast FY15 capital investment program is discussed extensively in Chapter 7, with the infrastructure component discussed in detail in the Asset Portfolio Development and Delivery 2014 -15 Infrastructure Investment Program summary document.

Including non-infrastructure capital spend, capital projects which are forecast to commission in FY15 amount to \$109.3M (including IDC of \$2.2M). These are summarised below:

FY15 Capitalisations (including IDC)	Capitalised (\$M nominal)
Dams and weirs	9.2
Water treatment plants	44.0
Pipelines	0.3
Manufactured water assets	9.8
Land and easements	11.2
Other (property, ICT, fleet)	34.8
Total capitalised FY15	109.3

Table 80: FY15 capitalised expenditure



9.3.4 INCORPORATION INTO THE REGULATED ASSET BASE

For the period 1 July 2013 to 30 June 2015, Seqwater will submit its expected actual capital (capitalised) expenditure as at year-end FY14 and its forecast (capitalised) expenditure for FY15. Seqwater will provide its actual capital expenditure (capitalised) following formalisation via the completion of its financial statements. This will include capitalised expenditure for FY14 based on the audited financial statements.

For these and subsequent years any expenditure prior to 1 July 2011 for non-drought assets or projects will be deducted from the capitalised amounts. This is on the basis that spend prior to 1 July 2011 is already in the RAB. By FY14 this impact is relatively minor and will continue to drop to virtually zero in subsequent years as projects are completed.

As discussed above capital expenditure is developed on the basis of capitalisation in the financial records of Seqwater. That is that projects are not included in the RAB until they are completed, commissioned and capitalised.

9.4 DEPRECIATION FY14 AND FY15

For investment capitalised in FY14 and FY15 asset lives for depreciation purposes are be based on specific lives where easily identifiable and where the investment is of material value. There are a number of groupings of FY14 spend especially in the renewals area where common lives are used across, for instance, a number of WTPs.

Asset lives for future investments are based on Seqwater's Non-Current Asset Accounting Policy and asset lives schedules based on industry standards sourced from Cardno. Refer Section 6.4 for more detail as to how asset lives have been determined.

In general the asset lives are as per the accounting asset lives used by Seqwater and are derived from a list developed by Cardno some years ago which has been updated via recent valuation processes and which was used for previous QCA submissions.

9.5 OPENING REGULATED ASSET BASE 1 JULY 2015

The opening RAB from 1 July 2015 is determined by taking the 1 July 2013 RAB advised by the Minister and rolling-forward forward by Seqwater's (expected) actual FY14 and forecast FY15 capitalised expenditure. FY14 and FY15 depreciation and appreciation adjustments result in a forecast RAB at 1 July 2015 of \$8,484M. These transactions are summarised in the table below.



RAB Transitions	RAB (\$M nominal)
Opening balance 1 July 2013	8,285
Add FY14 capitalisation	99
Less FY14 depreciation	(210)
Add FY14 appreciation	209
FY14 closing RAB	8,382
Add FY15 capitalisation	109
Less FY15 depreciation	(218)
Add FY15 appreciation	211
Opening RAB balance 1 July 2015	8,484

Table 81: Development of RAB opening balance 1 July 2015

9.6 RATE OF RETURN

The Referral Notice specifies bulk water costs as including a rate of return on the RAB. The Notice requires that this rate of return reflects a return on debt only, based on the long term cost of debt as advised by the Queensland Treasury Corporation (QTC). The QCA is to accept QTC's advised rate for this review.

Bulk water costs also include interest on price path debt. Seqwater understands that interest is to be applied also at the long term cost of debt – that is, the same rate applied for the return on assets.

Seqwater has also interpreted this requirement to apply to interest on future price path debt, with adjustments made over the preceding regulatory period to account for the actual cost of debt when determining price path debt at each price review (refer Chapter 11).

This chapter sets the rate of return and interest rate assumption to be applied over the forecast period FY16 to FY28. It also sets out how the requirements of the Referral Notice are translated to a regulatory building blocks model.

9.6.1 QUEENSLAND TREASURY CORPORATION ADVICE

QTC has estimated the long-term cost of debt at 6.25%, and noted that the average book rate would be within a range of 5.25% and 7.25%. The recommended rate of 6.25% is the mid-point between these estimates. QTC also advised that these estimates are based on the average book rate over the next 15 years and in any given year the actual book rate may be outside this range.



This rate is slightly lower than the rate estimated at the prior 2013 review, which was 6.5%. Seqwater has therefore adopted 6.25% as the rate of return and interest rate on price path debt, for the FY16 to FY28 forecast period.

9.6.2 APPLICATION TO REGULATORY BUILDING BLOCKS PRICING

The rate of return is one component of the regulatory building blocks model, which is used to determine the maximum revenue allowance from regulated assets. In short, the building blocks are:

- a return on the asset base (which in this case, will be based on the QTC long-term cost of debt)
- a return of the asset base (depreciation)
- operating costs
- the costs of tax.

The rate of return is usually expressed as a Weighted Average Cost of Capital (WACC), which is the weighted cost of debt and equity based on the assumed capital structure. The assumptions used for WACC are usually applied consistently throughout the rest of the building blocks. For example, tax costs are usually calculated taking account of the tax shield from interest, with interest calculated at the cost of debt assumed in the WACC, for the assumed capital structure.

Seqwater understands that prices calculated to date have been based on a pre-tax framework. While legitimate, this differs from the QCA's standard post- tax approach. That is, the QCA normally adopts a post-tax nominal 'vanilla' approach, which calculates tax costs as a separate line item in the cash flows. As the tax deductibility of interest is addressed in the cash flows, not the WACC, the cost of debt in the WACC is the pre-tax cost of debt.

In the absence of being directed to do otherwise, Seqwater assumes that the QCA will apply a post-tax nominal vanilla approach for this review.

The requirement for Seqwater to only earn a rate of return equal to the cost of debt effectively means it is assumed that Seqwater's capital structure (for pricing purposes) is assumed to be 100% debt. That is, there is no return on equity and hence no equity component to the WACC. There is also no gamma assumption, which is the assumed value that equity investors derive from franking credits.

In summary, in accordance with the requirements of the Referral Notice, which limits the return on assets to the return on debt, Seqwater has calculated the return on assets by applying QTC's estimate of its long-term cost of debt to the RAB. This rate is 6.25%. This is also the rate used to calculate the interest on the price path debt.



It has also been assumed that the QCA's preferred modelling framework will be the posttax nominal vanilla approach, which models the tax deductibility of interest in the cashflows, rather than the rate of return.



CHAPTER 10 BULK WATER COST SUMMARY

This chapter provides a summary of bulk water operating and capital costs from FY16 to FY28, and discusses Seqwater's proposals for the incorporation of working capital and tax. These costs form the total of the bulk water costs to be recovered from the price path.

10.1 SUMMARY OF CAPITAL COSTS

Capital costs comprise a return on, and of, Seqwater's RAB.

10.1.1 RAB ROLL FORWARD

The Referral Notice provides for the Minister for Energy and Water Supply to prescribe the opening RAB as at 30 June, 2013. Chapter 9 set out the opening RAB at 1 July, 2016, based on the advised 30 June, 2013 RAB, and incorporating capital expenditure (commissioned) in FY14 and FY15.

Seqwater has rolled forward the RAB from 1 July, 2015 to 30 June, 2028 by:

- incorporating capital expenditure during the period, based on the forecast commissioning date. For within year or ongoing projects Seqwater has assumed a mid-year inclusion in the RAB. For multi-year projects Seqwater has included an allowance for IDC, at the long-term cost of debt (6.25%).
- deducting depreciation each year, based on the lives for the assets comprising the opening RAB at 1 July, 2015, and lives for capital expenditure from FY16 to FY28. In accordance with the Referral Notice, straight line depreciation is adopted
- indexing the RAB at assumed inflation of 2.5%, being the mid-point of the target range for inflation for the Reserve Bank of Australia (RBA).

Figure 50 below shows the RAB value for each year, applying the above roll-forward.



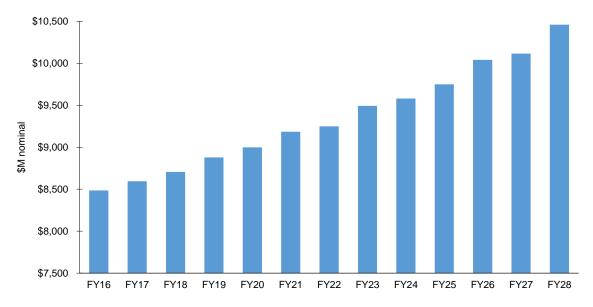


Figure 50: RAB evolution

10.1.2 RETURN ON CAPITAL

In line with the Referral Notice Seqwater has included a return the RAB, at a rate of return reflecting the long-term cost of debt. This rate for FY16 to FY28 is 6.25%, as set out above.

10.1.3 RETURN OF CAPITAL (DEPRECIATION)

Depreciation is calculated consistent with the depreciation applied for the RAB roll forward, set out above.

Consistent with the nominal pricing approach, the inflationary gain on the RAB is deducted from the bulk water costs.

Depreciation is based on remaining asset lives for existing assets as per previous QCA investigations. New capital expenditure has been allocated lives based on the components of expenditure such as civil, mechanical, electrical or instrumentation for infrastructure assets. For non-infrastructure assets the relevant lives are related to the particular asset (ie, Fleet, PCs).

10.2 OPERATING EXPENDITURE

Chapter 8 sets out forecast operating expenditure from FY16 to FY28. Refer Section 8.12 for the consolidated summary of Sequater forecast operating costs.



10.3 WORKING CAPITAL ALLOWANCE

Compensation for the costs of managing working capital, which arises from the mismatch between the timing of receipts and payments, is consistent with efficient benchmark practice. Seqwater has estimated its return on working capital consistent with the methodology and assumptions that has previously been applied by the QCA.

Seqwater has estimated its return on working capital allowance based on the following approach:

Return on working capital = WACC * (accounts receivable + inventory - payables)

The QCA has previously approved this approach – including the recognition of inventories - for the Gladstone Area Water Board⁴, Seqwater and LinkWater⁵ and SunWater⁶.

Determining the working capital requirement requires assumptions regarding the length of the working capital cycle. The assumptions that have been applied by Seqwater are as follows:

- days receivable (the average number of days before revenue is received from debtors): 45 days
- days in inventory (the average number of days inventory is held): 3 days
- days payable (the average number of days before creditors are paid): 30 days.

The assumptions for days receivable and days payable are consistent with the benchmark assumptions previously determined by the QCA as part of its review of the grid service charges for Seqwater and LinkWater for 2012-13.⁷ This in turn was based on a review of the grid service providers' recent invoicing history.

The working capital requirement is then calculated as:

accounts receivable balance = days receivable/365 * revenue

plus: inventories balance = days in inventory/365 * operating expenditure (materials)

minus: accounts payable balance = days payable/365 * operating expenditure (materials).

Revenue and operating expenditure (materials) are based on the proposed forecasts for each year. It is noted that in approving SunWater's allowance in 2012, the QCA

⁴ Queensland Competition Authority (2010). Final Report, Gladstone Area Water Board, Investigation of Pricing Practices, June.

⁵ Queensland Competition Authority (2012a). Final Report, SEQ Grid Service Charges 2012-13, July.

⁶ Queensland Competition Authority (2012b). Final Report, SunWater Irrigation Price Review: 2013-17, Volume 1, May.

⁷ Queensland Competition Authority (2012a).



recommended that SunWater explore the feasibility of basing future working capital requirements on efficient forecasts of revenue and cash flows from irrigation schemes, rather than relying on historical, whole of business data.

The WACC applied is Seqwater's proposed WACC (which as directed, equates to its long term cost of debt) of 6.25% from FY16, and 5.9% for FY14 and FY15. The resulting return on working capital allowance is approximately 0.6% of Seqwater's annual revenue. It is noted that the QCA's approved allowance for SunWater equated to 0.9% of its total revenue⁸. Seqwater has calculated the working capital allowance using this methodology based on a preliminary projected revenue stream from the price path. This will need to be updated following QCA's investigation of prices.

Working capital allowance (\$M nominal)	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21
Allowance	3.8	4.6	5.2	5.7	6.3	6.7	7.0	7.3
Working capital allowance (\$M nominal)	FY22	FY23	FY24	FY25	FY26	FY27	FY28	
Allowance	7.7	8.0	8.3	8.7	9.1	9.6	9.9	

Table 82: Working capital allowance

10.4 TAX COSTS

As discussed in Chapter 9, Seqwater has adopted a nominal, post-tax modelling approach. This is different to past price path modelling, which adopted a pre-tax approach. As set out in Chapter 9, under an assumption of 100% debt funding, the pre-tax rate of return is equivalent to the post-tax rate of return. This effectively means there are no tax costs to be recovered as EBIT is offset by the tax shield of interest.

Notwithstanding the past approach, Seqwater has adopted a post-tax approach consistent with the QCA's standard practice.

In doing so, the tax costs – which form a conventional part of the standard building blocks approach to pricing – are included in the cash flows rather than the rate of return.

In doing so, a decision is required as to the assumed taxable revenues associated with the price path. Two options exist:

 option 1 - the 'theoretical' tax that arises from the building blocks model, assuming that bulk water costs are notionally the revenues attributable to Seqwater in any given year for the tax calculation

⁸ Queensland Competition Authority (2012b).



option 2 - the tax arising from the forecast revenues from the price path, from FY16 to FY28. This is more closely aligned with Seqwater's actual tax profile under the price path. These revenues are different to the bulk water costs, as the revenue does not recover bulk water costs in the early years, and then increases to recover past price path debt. Under the price path, Seqwater's will incur tax losses in the early years of the price path, which will be eroded in the later years.

Furthermore, Seqwater recognises that it has accumulated significant tax losses through the price path as its taxable costs (including interest) have been greater than revenues. Seqwater's projected accumulated tax losses at 30 June 2015 are \$852M.

On balance, Seqwater has adopted Option 2 given the price path revenues, rather than the notional revenue allowance (bulk water costs) drive Seqwater's tax costs. On this basis, the accumulated tax losses (as per Seqwater's balance sheet) should be incorporated into the tax cost profile. Although prices have not been determined, preliminary analysis indicates that these losses will offset tax payable to FY28, meaning that there are no tax costs included in the building blocks. This will be confirmed once the QCA has investigated prices.

10.5 REVENUE OFFSETS

Revenue offsets are set out in Chapter 8 (refer Section 8.10).

10.6 BULK WATER COSTS

Bulk water costs, net of revenue offsets, begin at \$776M in FY16 and increase to \$1,103M in FY28 in nominal terms. Figure 51 below shows these costs over time.

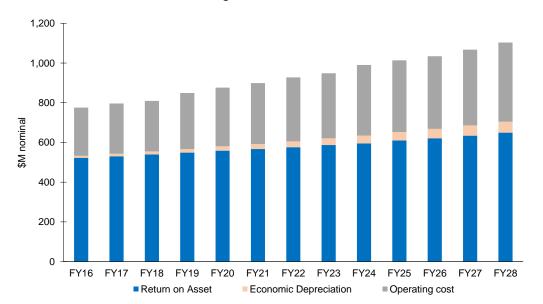


Figure 51: Bulk water cost summary



PART E: BULK WATER PRICE PATH

CHAPTER 11 PRICE PATH DEFICIT ACCOUNTING

The Referral Notice requires the QCA to establish the opening price path debt as at 1 July 2015. Price path debt is defined in the Referral Notice as the accumulated losses arising from the bulk water price path. These losses arise because the bulk water price has been below bulk water costs since the start of the price path in FY08, creating a shortfall. This shortfall is recovered in later years of the price path. Prices are to be set to enable repayment of price path debt by FY28.

There are two requirements for the QCA:

- determine price path debt as at 1 July 2015, subject to specific requirements in the Referral Notice
- recommend an appropriate approach for future expenditure reviews, including rules and procedures for determining the price path debt.

This chapter presents Seqwater's proposed approach for determining the above parameters to arrive at price path debt at 1 July 2015, and for future pricing reviews. Since prices from this investigation are set for a three year period to FY18, Seqwater has assumed that the next price review will be for the FY19 period onwards (the next bulk water price review).

The Referral Notice also requires the QCA to recommend mid-price path review triggers and other mechanisms to manage cost and volume risks outside the control of Seqwater in order to provide Seqwater with cost recovery certainty. This chapter also proposes arrangements for these price review triggers and adjustments to achieve this outcome.

11.1 PRICE PATH DEBT AT 1 JULY 2015

The calculation of price path debt requires an opening balance, and bulk water costs, revenues and interest over the preceding regulatory period FY14 to FY15. Seqwater has estimated the price path debt at 1 July, 2015 based on actual (unaudited) data for FY14 and estimates for FY15. The final values for FY15 will not be known until after the QCA completes its review.

11.1.1 PRICE PATH DEBT AS A TRUE-UP MECHANISM

The price path debt position should reflect the cost recovery position at a given point in time. Hence each price review, including this review and the next bulk water price review, presents the opportunity to revise the price path debt to reflect the actual cost recovery position. In other words, the price path debt review provides a mechanism to conduct a



true-up between actual and forecast revenues and costs. In short, this true up can be done as part of Seqwater's submission to this and subsequent price reviews.

Using the price path debt calculation as a true-up mechanism is discussed in terms of the FY15 balance below.

11.1.2 OPENING BALANCE

Seqwater has calculated an interim opening balance for price path debt at 1 July 2013 in lieu of the Minister's advice to the QCA being available. This interim value is \$1,826M.

11.1.3 BULK WATER COSTS

Bulk water costs comprise capital and operating costs, as well as costs from bulk water supply agreements. Capital costs comprise a return on, and of, the RAB throughout the preceding regulatory period FY14 to FY15. It requires values for the opening RAB at the start of that period, and capital expenditure and rates of return over the two years.

Opening RAB and capital expenditure

The opening RAB at 1 July 2013 and asset roll forward to incorporate additional capital expenditure for the FY14 and FY15 period are set out in earlier chapters. The opening RAB is to be advised by the Minister for Energy and Water Supply. Seqwater has rolled forward the RAB based on its estimated commissioned capital expenditure for FY14 and expected expenditure for FY15. Projects are rolled into the RAB in the year they are capitalised. Seqwater expects the QCA will review this capital expenditure in accordance with the terms set out in the Referral Notice. The forecast values below are those used to generate the current Government approved transitional bulk water prices.

Element	F١	(14	FY15		
Clement	Forecast	Actual	Forecast	Expected	
Capital expenditure to be rolled into the RAB	\$122.4M	\$98.9M	\$89.7M	\$109.3M	

Table 83: Capital expenditure (commissioned, including IDC)

Details about the RAB roll-forward and depreciation are set out in Chapter 9.

Actual capital expenditure for FY15 will not be known until after the QCA's review is complete and future price paths set. Seqwater submits that any future price review allows for the RAB at 1 July, 2015 to incorporate actual (efficient) capital expenditure over that period, with a corresponding true-up against the expected expenditure and RAB adopted for this review. Seqwater understands this is consistent with the approach adopted by the Minister for Energy and Water Supply in calculating the opening RAB at 1 July, 2013.



The adjustments arising from the 'true up' for FY15 would be incorporated into the price path debt position at 30 June 2015 and Seqwater would put forward final information as part of the next bulk water price review.

Rate of return

Bulk water costs include a rate of return on assets, which is based on a return on debt only.

The Referral Notice requires that the rate of return to be used for prices is the long term cost of debt as advised by QTC. The Referral Notice does not specifically state whether the price path debt is to be re-based using the actual or forecast rate of return, when calculating bulk water costs over the preceding regulatory period.

Seqwater does not consider it appropriate to be exposed to the risks of differences between its actual and forecast cost of debt, which is largely driven by changes in market interest rates and is beyond Seqwater's control. Further, Seqwater is not compensated for this risk in the rate of return. Consistent with ensuring that Seqwater is compensated for its actual efficient costs, it has re-based the price path debt based on its actual cost of debt, which is a rate that is advised by QTC.

This rate, which is referred to as a 'book rate', reflects historical actual borrowing costs and is updated annually to reflect changes in the cost of debt as existing borrowings are refinanced and new borrowings are undertaken. This rate has been used for the purpose of calculating the return on assets, as well as the interest on price path balances.

Seqwater has therefore applied its current book rate for FY14 and expected book rate for FY15, based on QTC's forecast. These rates are set out below, and compared to the original rates assumed at the previous price path review.

Rate of return (% nominal, post-tax)	Forecast (QTC Long Term)	Actual FY14	Expected FY15
Current price path			
This submission	6.25%	5.9%	5.9%

Table 84: Rate of return applied over the regulatory period

Actual rates for FY15 will not be known until after June, 2015, by which time this regulatory review will have finished. Accordingly, there will need to be a subsequent trueup adjustment for any differences between the actual and expected book rate for FY15, at the next bulk water price review. The adjustments would be incorporated into the price path debt position at 30 June, 2015.



In effect, the use of Seqwater's actual book rate (which reflects historical borrowing costs), combined with an annual adjustment to reflect the cost of refinancing and new borrowings undertaken at prevailing market rates, is seen as consistent with the 'trailing average' methodology used to estimate the return on debt. This method is being implemented by the Australian Energy Regulator and is currently being considered by the QCA⁹. The annual update would need to be implemented as either an annual adjustment to prices or an end of period 'true up'.

The table below summarises the capital bulk water costs arising from the approach above.

Element	FY14	FY15
Return on assets (including working capital)	\$496M	\$502M
Depreciation	\$210M	\$218M
Less inflationary gain	\$209M	\$211M
Total Capital Costs	\$498M	\$509M

Table 85: Capital costs (nominal)

Operating costs

Seqwater has adopted its Q3 FY14 operating costs forecast for FY14 and the FY15 budget, excluding:

- costs allocated to irrigation prices (refer Chapter 8 for explanation of methodology used)
- operating cost associated with unregulated assets, such as hydroelectric schemes (refer Chapter 8 for explanation of methodology used).

Seqwater expects the QCA will review this operating expenditure in accordance with the terms set out in the Referral Notice. That is, actual operating expenditure will be included, subject to the QCA's assessment.

Summary – capital and operating costs

Seqwater's capital and operating costs for FY14 and FY15 are set out below. Actual FY14 and budgeted FY15 revenues from other bulk water supply agreements have also been deducted (refer Chapter 8). A 'capital cost mid-year' adjustment is also incorporated to

⁹ Although Seqwater notes that this has been applied in the context of an 'efficient benchmark' approach, consistent with incentive regulation.



recognise that bulk water revenue is collected throughout the year. The table below provides a summary¹⁰.

Element	FY14	FY15
Operating costs	\$269M	\$280M
Capital costs	\$498M	\$509M
Sub-total	\$767M	\$789M
Revenue offsets, irrigation costs and capital costs mid-year adjustment	\$(41)M	\$(42)M
Total to be added to price path debt	\$726M	\$747M

Note: the capital cost midyear adjustment is a half year discounting at WACC of the cost of capital. This adjustment is done to recognise that revenue is collected throughout the year and as such an amount of free cash is available to Seqwater to reinvest.

Table 86: Summary of capital and operating costs (nominal)

11.1.4 INTEREST ON PRICE PATH BALANCES

As noted above, the interest on price path balances has been based on Seqwater's actual cost of debt as advised by QTC. The relevant rates are as follows.

Rate of return (% nominal, post-tax)	FY14	Expected FY15	Forecast FY16-28 (QTC Long Term)
Interest on price path debt	5.9%	5.9%	6.25%

Table 87: Interest rates applied on price path debt

Seqwater acknowledges that for this review, the actual and expected rates for FY14 and FY15 are less than the QTC long-term forecasts adopted for the 2013 price path review. Accordingly, in this instance, price path debt will be less than if the original forecast rates were applied. Depending on interest rate movements, the opposite may occur in future reviews. Where rates are higher, Seqwater would expect that its actual cost of debt would still apply, consistent with the approach above to use actual (in this case, lower) cost of debt.

Finally, as part of the true up process outlined above, the expected FY15 rate should be updated to reflect the actual book rate for FY15, at the next price review. The adjustments arising from the 'true up' for FY15 would be incorporated into the price path debt position at 30 June, 2015.

¹⁰ No tax costs arise in these years due to accumulated tax losses.



11.1.5 PRICE PATH REVENUES

Bulk water costs and interest are recovered by revenues from the sale of bulk water to SEQ service providers. The price path structure means that in the early years, revenues will not recover costs. That under-recovery is made up in the later years of the price path, until the price path debt is extinguished (FY28).

The current price paths were based on forecast demand and revenues from each DR over FY14 and FY15, through to FY28. In order for Seqwater to recover bulk water costs (and not over or under recover), it is important that the price path debt is set to reflect the actual revenues received over the prior period. Accordingly, Seqwater has calculated the price path debt for these years based on actual FY2014 revenue, and its current (updated) expected revenue for FY15. Given actual revenue for FY15 will not be known when bulk water price are set, Seqwater submits that the price path debt at 1 July, 2015 adopted for the next bulk water price review is based on the actual revenue for the FY15 year, as part of the broader 'true up' process outlined. These amounts are set out below.

Element	FY14 (Q3 A+F)	FY15 (updated forecast)
Price path revenue	\$668M	\$786M

Table 88: Actual price path revenue (nominal)

In doing so, Seqwater submits that it should not bear volume risk for the bulk water sales. The rationale is set out below in more detail.

11.1.6 VOLUME RISK

Volume risk refers to the sale of water being higher or lower than expected. In the context of this chapter, volume risk is short-term, and relates to the risk that the actual water sales (and revenues) during the pricing period are different to that forecast when setting the price path. The QCA has previously considered volume risk in terms of demand risk (changes in user demand) and supply risk (reductions to supply restricting demand). This influences the opening price path debt balance.

Seqwater submits that the debt balances should be based on the actual revenues from bulk water sales.

Risk is normally allocated to the party best able to manage or control that risk. Seqwater has no control over the demand for bulk water from SEQ service providers or their customers. Retail water users should bear this risk as they control their demand. This is consistent with the risk allocation approach proposed by the QCA for SEQ service providers (see below).



Demand is also volatile and difficult to forecast with certainty. Demand is affected by a range of factors including population growth (and the composition of that growth), changes in household water consumption and yearly climatic factors. Moreover, there remains significant uncertainty as to the extent and timing of 'bounce-back' in demand following the recent drought and water restrictions. Hence there is significant risk of forecasting error, even in the short term.

Seqwater has some control over supply risk. As set out in Chapters 3 and 4, supply risk is managed in accordance with a prescribed LOS. The LOS is expressed in terms of the acceptable severity, duration and length of restrictions that could apply from time to time [and the probability of those occurring]. Seqwater should not bear the risk of reductions to sales that accord with the restrictions contemplated under the LOS, given these restrictions represents the legislative standard for water supply in SEQ. It might be argued that Seqwater should bear the risk associated with reductions to demand if it fails to meet these standards (e.g. restrictions need to be more severe or more frequent that prescribed). However, this should only apply to the extent that Seqwater was reasonably able to manage the supply shortage. However, this could only be assessed on an ex-post basis, if and when such events occurred.

Volume risk also has significant financial implications given the price path is a volumetric charge. Increases (decreases) in demand will bring significant corresponding increases (decreases) in revenue.

The Referral Notice clearly requires prices to be set to enable Seqwater to recover efficient costs over the 20 years to 30 June 2028. Seqwater will not recover these costs if it bears short-term volume risk, given expected demand will only ever precisely match actual demand by coincidence. Accordingly, only actual revenue can be used to determine the price path debt position and recovery of efficient costs. Adopting forecast revenue for price path debt balances will result in Seqwater either under or over-recovering efficient costs, and will misrepresent the price path debt position.

The relevant regulatory precedent is set out below.

Long-term regulatory framework for SEQ retail water and wastewater prices

The QCA examined how volume risk might be allocated in the context of determining whether a price or revenue cap should apply.¹¹

For short-term volume risk, the QCA noted that service providers can only partially manage this risk, and found that those risks not able to be managed by the service

¹¹ Queensland Competition Authority (2014). Long Term Regulatory Framework for SEQ Water Entities (p33).



provider should be allocated to customers. The QCA recommended forms of regulation that enable the service provider to adjust prices to account for demand fluctuations during the regulatory period.

The QCA went on to consider whether 'unders and overs' adjustments should apply to account for differences between actual revenues and the revenue allowance to recover efficient costs (or MAR). The QCA recommended that under and overs accounts could apply to SEQ service providers in certain circumstances:¹²

Where under-recovery occurs in the future and it is not the result of an express decision to accept lower than prudent and efficient costs, it would seem that prior under-recoveries could be offset against future over-recovery. It is therefore proposed that under-recoveries incurred in 2013-14 and 2014-15 as part of a price path can be carried forward and capitalised in the MAR.

As set out above, the customers of SEQ service providers are also the end users of bulk water from Seqwater. Seqwater is like SEQ service providers in so far as it has no control over customer demand for water. Hence the same rationale for assigning volume risk to SEQ service providers, also applies to Seqwater.

Gladstone Area Water Board

The Gladstone Area Water Board (GAWB) has been regulated by the QCA under a price cap since 2000. In the 2005-2010 period, water sales were significantly less than the forecasts used by the QCA for setting tariffs, meaning GAWB under-recovered MAR by some \$5.3M.

GAWB sought a revenue cap for the 2011-2015 period, and a mechanism to enable it to recover MAR if sales were different from forecast. This would transfer volume risk from GAWB to customers.

The QCA did not allow this change, on the basis that GAWB could manage volume risk through contractual arrangements with its customers (e.g. through penalties for under or over using the forecast contracted requirements). The QCA also concluded that GAWB should manage supply risks (drought) and bear the risk of the rate of customer take up for spare capacity.

The QCA also considered inter-period cash flow adjustments required as a result of price smoothing over a 20-year planning period. In making these adjustments, the QCA stated

¹² Ibid. (p35)



that there was to be no adjustment to reflect changes in revenue resulting from a difference between actual and expected revenues.¹³

The circumstances for Seqwater and bulk water prices are fundamentally different to the contractual and supply regime that applies for GAWB. For example:

- Seqwater has no ability to 'contract out' of volume risk. SEQ service providers are not held to their forecast requirements, and instead only pay for each ML actually taken. Moreover, these contractual arrangements are outside of Seqwater's control as the terms of supply are set by the Minister
- like GAWB, Seqwater manages supply risk. However, as set out above, the service regime for bulk water in SEQ contemplates (and indeed provides for) restrictions to occur, in accordance with the LOS framework. The supply system is meant to involve restrictions from time to time. Seqwater should not bear this risk, to the extent that supply is restricted consistent with the LOS requirements
- the bulk supply assets in SEQ incorporate spare capacity. This spare capacity is mostly attributable to the infrastructure constructed during the millennium drought. Some of this capacity supports the LOS objectives in so far as it provides a ready source of back-up or contingency in time of drought. This capacity was not constructed on the basis of demand growth. Moreover, the Referral Notice requires that the QCA does not optimise the asset base, as it might normally do for spare capacity if unconstrained. This implies that Seqwater is not meant to bear the cost of this spare capacity or the risk of its take up.

Irrigation pricing

The QCA's review of irrigation rices for Seqwater and SunWater considered the allocation of volume risk. The QCA concluded that customers should bear short term volume risk.¹⁴ This assessment was based on, in part, factors that are not relevant to bulk water prices.¹⁵

The QCA also calculated the opening balances for the Asset Restoration Reserve (ARR). This ARR is notional balance of renewals income and expenditure (see box below).

¹³ Queensland Competition Authority. Gladstone Area Water Board. Final Report. Investigation of Pricing Practices: 2010-15. Final Report. (p182)

¹⁴ Queensland Competition Authority (2012). Final Report. SunWater Irrigation Price Review: 2012-2017. Volume 1 (p27).

¹⁵ For example, water users held water access entitlements and were responsible for managing the supply-demand balance individually.



Renewals accounting - irrigation pricing

Under renewals accounting, an annual balance is maintained based on:

- an opening balance from the previous year (can be positive or negative);
- interest applied to that opening balance;
- renewals expenditure for the year is deducted from the renewals account; and
- renewals income is added for the year; and
- the closing balance is calculated as the net outcome from the above.

The QCA recently applied this approach to irrigation pricing for Seqwater and SunWater.

Determining the opening balance

For irrigation pricing, the QCA reviewed the actual costs 'booked' to renewals by Seqwater and SunWater over the previous pricing period. The QCA compared the actual expenditure to the original forecast used to calculate the annuity, and then reviewed a sample of renewals projects to determine the efficiency and prudency of the actual costs. In both cases, the QCA reduced the costs 'booked' to the renewals annuity account to a level it deemed prudent and efficient. The effect was to increase the balance, which in turn reduced the renewals annuity.

The QCA also calculated the actual revenue to be attributed to the renewals account, based on the actual revenue received. Notably, actual revenue was generally well below the forecasts used for the earlier price setting.

There are some parallels between the ARR and the price path debt, in terms of accounting for cost recovery at a given point in time. Both require an annual assessment of income and expenditure, with interest applied to the balance. Both are used as in input to future prices.

The QCA reviewed prior renewals expenditure, and only allowed efficient renewals expenditure into the ARR balance calculation. The QCA accepted that <u>actual</u> revenues, rather than the forecast revenues, should be applied. This was uncontroversial in this review, but supports the notion that balances should be set to enable the actual recovery of efficient costs. Cost recovery could be higher or lower than expected at the previous regulatory review, depending on whether revenue over the preceding period was above or below forecast.

11.1.7 PRICE PATH DEBT AT 1 JULY 2015- SUMMARY

Seqwater has calculated the price path debt in accordance with the proposed approach set out above.

As indicated, the FY15 year is based on expected costs, revenues and interest rates. Seqwater submits that these expected values should be updated for the QCA's draft and final report, to reflect the best available information at the time. Moreover, Seqwater submits that any future price path reviews (e.g. from FY19) should provide for the price path debt to be reset at 1 July 2015 based on actual values for the FY15 year, as part of a 'true up' for that year.



Element	FY14	FY15
Opening balance (1 July)	\$1,826M	\$1,994M
Bulk water costs	\$726M	\$747M
Revenue	\$668M	\$786M
Interest	\$110M	\$116M
Closing balance (30 June)	\$1,994M	\$2,071M

Table 89: Price path debt

Seqwater has adopted the price path debt opening balance at 1 July 2015 of \$2,071M, subject to updates to forecasts for the FY15 year.

11.2 FUTURE REVIEWS

The QCA is to recommend rules and procedures for determining price path debt and cost recovery position for future reviews. Seqwater submits that price path debt should operate as a true up mechanism to ensure that efficient costs are recovered to FY28. Accordingly, the price path debt review should occur at the next bulk water price review, and thereafter as prices are re-set, until FY28. That is, there is no need for a separate mechanism if price path debt is re-calibrated each time bulk water prices are re-set. The price path debt position at the start of future pricing periods can simply be determined as part of the broader pricing review, as is the case for this current review.

The following sections set out the proposed arrangements in detail.

11.2.1 BULK WATER COSTS

Capital expenditure

Seqwater submits that the approach set out in the Referral Notice for FY14-15 for capital expenditure, should continue into the future. That is, price path capital costs should be set based on the revised RAB for each year of subsequent pricing periods, based on efficient, actual and expected capital cost over the preceding period. So, for the next bulk water price review, the RAB, and the capital costs attributable to price path debt, would be trued up to reflect actual efficient capital costs over the FY15 to FY18 period.¹⁶ Seqwater would put forward its actual capital costs over that period, as part of the information provided for the broader FY19 bulk water price review.

This will ensure alignment between actual (efficient) costs and prices, and will avoid any windfall gains or losses to Seqwater from differences between forecast and actual capital

¹⁶ This would involve an estimate of FY18 capital, similar to what is proposed for the FY15 year for this price path review.



cost over the period. This approach is also consistent with the requirements of the Referral Notice to provide Sequater with cost recovery certainty.

The alternative approach would create perverse incentives to Seqwater, as it would benefit from underspending the capital cost forecast over the pricing period. Prices would also be based on a fictional expenditure, to the extent actual capital cost differed from the forecast. Accordingly, the price path would not meet the objective set out in the Referral Notice of enabling Seqwater to recover efficient costs.

Rate of return

As long as Seqwater's rate of return is to be based on QTC's long-term cost of debt, Seqwater submits that its proposed approach for the FY14-15 period continues for future reviews. That is the rate of return, which forms part of bulk water costs over the period, is re-set based on Seqwater's actual or expected cost of debt, as advised by QTC; and the ex post adjustment for differences between actual and forecast costs is imperative to ensure that Seqwater is not exposed to risks that are beyond its control (being changes in market interest rates). It is also not compensated for these risks.

This would mean that the rate of return component to bulk water costs for the FY16 to FY18 period would be based on Seqwater's actual cost of debt over this period.¹⁷ This rate could either be advised by QTC (as is the case now), or be presented by Seqwater with supporting documentation. In either case, the rates would be included in Seqwater's proposals for the next bulk water price review.

Operating costs

The Referral Notice requires the QCA to review Seqwater's actual operating expenditure for the FY14-15 period.

For FY16 onwards, Seqwater accepts that it is reasonable for it to bear operating cost risk within a pricing period (subject to mid-term triggers and pass through events, as set out below). This would suggest that the price path debt position in the next bulk water price review would be based on the benchmark efficient operating costs set for FY15 to FY18, rather than actual costs. That is, there is no true up to actual operating costs, except for review events (discussed below). This approach is consistent with standard regulatory practice and provides Seqwater with the incentives to increase productivity and efficiency of operations within a regulatory period.

¹⁷ Noting that FY18 would be an estimate, and that subsequent price reviews should be based on the actual rate for that year, as is contemplated for FY15 above.



11.2.2 INTEREST ON PRICE PATH DEBT

Consistent with its approach to the rate of return, Seqwater submits that its proposed approach for the FY14-15 period continues for future reviews. That is, interest on price path debt would be based on actual and expected rates, as advised by QTC. This would mean that interest on debt for the FY16 to FY18 period would be based on Seqwater's actual cost of debt over this period.¹⁸ This rate could either be advised by QTC (as is the case now), or be presented by Seqwater with supporting documentation. In either case, the rates would be included in Seqwater's proposals for the next bulk water price review.

11.2.3 REVENUE

As set out above, Seqwater submits it should not bear volume risk throughout the period of the price path, and that price path debt for future reviews should be based on actual revenues received in the preceding regulatory period, including revenues from power stations and Toowoomba Regional Council.

11.3 PROPOSAL FOR MID-PERIOD TRIGGERS

The Referral Notice requires the QCA to recommend mid-price path review triggers and other mechanisms to manage cost and volumes outside the control of Seqwater in order to provide Seqwater with cost recovery certainty.

Seqwater has interpreted this to mean a review for costs occurring inside a regulatory period, specifically the forthcoming FY16-18 regulatory period. However, for completeness Seqwater has also considered the timing for reviews for the next bulk water price review and beyond, but understands the future regulatory framework is a matter to be considered separately by Government.

Seqwater's above proposal for price path debt at each price review goes partly towards the cost recovery security objective set out in the Referral Notice. These arrangements are effectively a true up for actual (efficient) capital expenditure, price path revenue and cost of debt. However, this proposal does not deal with:

- unforeseen cost events outside of Seqwater's control, or new cost imposts particularly those that would increase operating costs
- short-term cash flow issues for Seqwater for costs or events within the pricing period.

¹⁸ Noting that FY18 would be an estimate, and that subsequent price reviews should be based on the actual rate for that year, as is contemplated for FY15 above.



Seqwater's proposals for mid-price path triggers and other mechanisms to manage cost and volume risk outside its control are set out below. In summary, Seqwater proposes the following suite of measures:

- price path debt re-calculation at the end of the FY16-18 regulatory period (and subsequent periods), based on actual cost of debt, actual revenue and prudent and efficient capital expenditure (as per above)
- price path debt should incorporate the costs from review events that may arise during the FY16-18 regulatory period or future periods. Review events are to be defined similar to the QCA's recommendations for Grid Service Charges (GSCs)
- Seqwater may apply for a mid-period review, if the event meets the following threshold triggers:
 - for cost events (including revenue offsets): 5% of the average MAR over the three-year period
 - for revenue events: reduction in actual and expected demand vs forecast demand over the three year period by more than 5% pa.

This section first examines the QCA precedent for review triggers, as set out in the FY13 review of Grid Service Charges (GSCs), and sets out in detail Seqwater's proposals for review triggers for the FY16-18 period and beyond.

11.3.1 QCA REVIEW FOR 2012-13 GRID SERVICE CHARGES

The QCA previously recommended review thresholds for the (then) Grid Service Charges (GSCs) levied by the pre-merger entities, Seqwater, LinkWater and Watersecure (Grid Service Providers or GSPs).

The QCA acknowledged that the free cash flows for GSPs were quite constrained as:¹⁹

- the return on drought assets is limited to the actual cost of debt
- drought assets account for 65% of the RAB across SEQ
- the GSPs carry a high level of debt as determined by Government (about 90%).

The cash flow issues have increased since the merger and subsequent changes to policy for price path costs. In particular price path costs are based on a cost of debt return for all assets, not just 'drought assets', and Seqwater's gearing is currently above 95%. The prior regime occurred amidst a one-year regulatory period, leaving a very short window for events to occur and for each entity to bear the cash flow implications. The QCA recommended the following review thresholds:

¹⁹ Queensland Competition Authority (July 2012). Final Report. SEQ Grid Service Charges 2012-13. (p249)



Review Event	Review threshold for end-of-period review	Review threshold for within-period review
Change in law or Government policy	Zero	5% of total GSCs
Emergency event	Zero	5% of total GSCs
Feedwater quality events	Zero	5% of total GSCs
Change in demand or source	Zero	5% of total GSCs
Change in cost of debt	Zero	5% of total GSCs
Under or over spend of capital expenditure	Zero	5% of total GSCs

Source: Queensland Competition Authority (July 2012). Final Report. SEQ Grid Service Charges 2012-13. (Table 7.2, p250).

Table 90: QCA F13 review thresholds

The total of GSCs (which are now relevant to the merged Seqwater) in FY13 were \$923.7M, which implied a cost threshold for within-period reviews of around \$46M.

The following sections set out Seqwater's proposed review events, cost pass through arrangements and mid-period review triggers.

11.3.2 REVIEW EVENTS

The table above lists the type of events that could trigger a review. Seqwater submits these events and their definitions generally continue, as they remain outside the control of Seqwater. A summary is set out below, along with any specific changes or additions.

Changes in law or government policy

Sequater submits these events, as defined for the FY13 GSCs, remain.

Additionally, Seqwater's revenues from other bulk water sales (e.g. power stations) need to be considered. These revenues are applied as an offset to bulk water costs under the terms of the Referral Notice. The prices for these other bulk water sales are set by Government. Accordingly changes to these prices arising from a Government decision should be included into the scope of this review event.

Requirements to participate in in broader Government initiatives, such as the construction of eight new dams or raising Wivenhoe dam as part of the State Government's draft Flood Plan should also be considered as a review event.

Emergency events

In the FY13 GSC review, emergency events were defined to include costs arising from events such as floods, which can trigger the activation of emergency response plans, staff overtime and rectification costs. For clarity, Seqwater has interpreted rectification costs as



inclusive of the cost of repairs to flood damage, less any insurance proceeds. There is no provision for these costs in the operating or capital cost forecasts in this submission.

Seqwater submits the prudent and efficient costs arising from the response to the emergency event are treated as review events (provided Seqwater is not at fault for the emergency event). This is consistent with the QCA's recommendation for the FY13 GSCs.

Feedwater quality events

Feedwater quality events negatively affect the quality of water taken for treatment at a WTP, increasing the cost of treatment. Sequater's operating cost forecasts do not provide any such contingency or allowance for these events.

In its FY13 review of GCSs, the Authority concluded that, to the extent the cost impact is outside Seqwater's control and that Seqwater's response is prudent and efficient, Seqwater should fully recover the costs. Seqwater submits that this position continues.

Changes in forecast demand or water source

There are two types of events to consider for this review – cost and revenue.

Cost impacts

Seqwater's operating cost forecasts are based on an assumed utilisation profile from its various WTPs. While Seqwater's Operating Strategy is based on the optimal plant utilisation profile, and Seqwater periodically reviews its WTP deployment strategy against cost and other criteria, the profile of demand can change within a year or years, changing the total cost. For example, the actual location of demand may require higher-cost sources to be deployed than assumed in Seqwater's forecast.

Seqwater's operating cost forecasts are also based on a static asset mix (excepting closure of some minor standalone WTPs), and as such any Government-initiated balance sheet transactions (ie, sale or in effect sale of assets) would also likely result in a substantial change to costs and trigger a review event.

Secondly, demand could be higher or lower than forecast. This will not only have an impact on revenue, but also variable costs. Higher demand will trigger higher operating aggregate costs, and lower demand lower aggregate costs.

For the FY13 GSC review, the QCA's findings about this review event were based, in part, on the institutional arrangements at the time, when the Water Grid Manager was responsible for WTP deployment decisions. Seqwater acknowledges that it now has this responsibility, and should also have incentives to optimise the deployment of WTPs as the actual demand.



Accordingly, Seqwater submits that changes in demand that affect variable cost should be classified as a review event, similar to the approach adopted for FY13 GSCs.

Revenue impacts

The FY13 GSC review operated under a different institutional arrangement where the GSPs were largely insulated from demand risk, through GSC tariff and related mechanisms.

The new institutional arrangements mean that Seqwater's revenues will vary based on the demand from SEQ service providers, and other bulk water users²⁰ (e.g. power stations, Toowoomba Regional Council).

Seqwater's proposal for adjusting price path debt to reflect actual revenue, including bulk water sales to other users, deals with this event in terms of the end of period adjustment. Mid-period triggers for demand variation are discussed below.

For clarity, Seqwater is not seeking any adjustment in relation to irrigation costs and revenues over the forthcoming regulatory period to FY18.

Changes in cost of debt, over- or under-spend of capital expenditure

These events were contemplated in the FY13 review of GSCs, with the QCA recommending:

- any change in the cost of debt be fully reflected in the GSCs
- an ex-post review of actual capital expenditure to ensure GSPs only recover prudent and efficient capital expenditure.

This is consistent with Seqwater's proposals for price path debt reviews above.

For clarity, the change to the cost of debt applies to both the rate of return and the interest on price path debt.

11.3.3 PASS THROUGH – PRICE PATH DEBT ADJUSTMENT

Sequater submits that the actual costs arising from the above review events be passed through and added to price path debt at the next price review (e.g. FY19). Sequater accepts this would be subject to an ex-post review of prudency and efficiency.

Consistent with the QCA's recommendations for the FY13 GSC review, Seqwater submits that there should be no threshold or minimum for these events. The case today is as strong (if not stronger) for a zero threshold as existed in FY13.

²⁰

Subject to tariff arrangements etc.



Seqwater acknowledges that it would need to provide information supporting its claims. Seqwater proposes that this occurs as part of the broader bulk water price path reviews. For example, Seqwater would incorporate the cost of any review events into its proposed price path debt at 30 June, 2018, at the next bulk water price review. Seqwater would provide supporting information, including the type of event, the nature of the costs and the amounts incurred over. Only additional costs not already including in the FY16-18 operating cost allowance would be claimed for pass through.

The costs from review events would, by default, be dealt with on a pass through basis unless Seqwater lodged an application for a mid-price path review (below).

11.3.4 MID-PRICE PATH REVIEWS (FY16-18)

Seqwater submits that similar mid-period review triggers are adopted as for the FY13 GSCs. Specifically:

- for cost events (including cost of debt, capital expenditure, revenue offsets, balance sheet transactions- ie, sale or in effect sale of assets, and interest on price path debt): 5% of the average MAR (which is equivalent to 5% of GCS under the previous arrangements) over the three-year period. As set out above, the case for the 5% cost threshold remains today as it did for the FY13 review
- for revenue events: reduction in actual and expected demand vs forecast demand over the three year period by more than 5% pa.

However, any mid-period review could only occur in accordance with the prevailing legislative and administrative arrangements at the time. Accordingly, Seqwater submits that applications for a mid-period review be made directly to the Price Regulator (under the Market Rules), with supporting information and evidence that the above triggers have been breached, and the proposed changes to the price path. Applications would be at Seqwater's discretion. The Price Regulator would then decide how to deal with that application.

Seqwater acknowledges that price adjustments from these events may be diluted through the price path calculation methodology, as cost impacts are recovered over the period to FY28. Also, the time taken to prepare submit and receive a decision upon an application may render this mechanism impractical when dealing with relatively short regulatory periods (e.g. the forthcoming FY16 to FY18 period). Accordingly, Seqwater has not proposed detailed process for lodging mid-period reviews, to provide some flexibility and scope for bi-lateral discussion with the Price Regulator at the time taking into account the prevailing circumstances.

In closing, Seqwater's financial constraints are such that it still seeks a mid-period review mechanism to provide some opportunity to help mitigate the cash flow impacts from the



review events set out above. Moreover, these triggers will become more important if price path reviews move to longer regulatory periods (e.g. 4 or 5-yearly) after FY18. Seqwater submits that the processes for triggering mid-period reviews should be revisited for FY19 onwards once the longer term regulatory arrangements are set, to accord with the powers and functions of various agencies under those future arrangements.

For clarity, if a review event occurs that has an impact less than that mentioned above, or if it occurs but Seqwater decides to not lodge a mid-period review application, then the costs from the review event would still be incorporated as a bulk water cost during the period as part of the true up for price path debt, at the next bulk water price review, in accordance with the pass through arrangements above.

11.3.5 PRICE PATH REVIEWS BEYOND FY18

Seqwater acknowledges that a policy for regulation of the price path beyond FY18 is yet to be determined by Government. Seqwater has not yet formulated a position as to the regulatory arrangements that should exist after this time, but will continue to work with Government and put forward its position at the appropriate time.

Notwithstanding this ongoing work on the regulatory arrangements, there is a need to periodically review the price path to align with new information about demands and costs, and to ensure the cost recovery objectives of the price path are met while minimising price shocks to consumers.

Seqwater also notes that the price path policy parameters have required (with some exceptions) the common price to remain constant in real terms from FY18. Seqwater does not believe the policy intent is for there to be no price review after FY18, as costs and revenues will change from current forecasts over the remaining 10 years of the price path to FY28. Rather, Seqwater has interpreted that the intent, post FY18, is to re-set the common price periodically to ensure recovery of bulk water costs over the remaining period to FY28.

The frequency of these re-sets will depend on the certainty of the cost environment and demand. Infrequent reviews are more likely to result in undesirable price shocks, however these reviews can involve significant cost. Sequater also notes the maximum pricing period for most regulated businesses is five years, and can be as short as two to three years.

Seqwater submits that:

• the price path is reviewed in FY18, to establish a reviewed common price from FY19 based on cost and demand information at the time (along with the re-calculation of price path debt, as set out above). Seqwater notes that the precise



regulatory arrangements for such a review are not yet determined, and will liaise with Government on this issue

• a five year period from FY19 to FY23 should be the maximum period, and that the precise period should be determined closer to FY2018 when there is more information about cost certainty and demand to make this decision.