Grid Services Charges Submission

For the period July 2012 to June 2013

Submitted February 2012

LinkWater

The Queensland Bulk Water Transport Authority

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EXECUTIVE SUMMARY

This Regulatory Submission presents the Queensland Bulk Water Transport Authority's (trading as LinkWater) revenue requirements for Declared Water Services for the regulatory period from 1 July 2012 to 30 June 2013.

Over the current regulatory period, LinkWater has achieved significant success and faced significant challenges.

Most notable was LinkWater's operational performance during the January 2011 floods. Despite the interruption of treated water from Mount Crosby facilities, the two-way flow capability of the LinkWater network combined with adjustments to the level of production at other water treatment plants in the South East Queensland Water Grid allowed available drinking water to be moved around the Grid to meet system demand until full operations were restored.

The continuation of supplies was achieved through LinkWater's ability to remotely monitor storage levels, flows and test water quality in real time within its transport network and this remained fully operational during the floods.

LinkWater's role in the floods was recognised by the Queensland Floods Commission of Inquiry which noted that a key feature of the ability of the South East Queensland Water Grid to maintain bulk drinking water supplies during the floods was the continuous operation of LinkWater's Network Control Centre.

Notwithstanding the floods, LinkWater transported 212,000 megalitres of water through its bulk water transmission network during 2011 with 100 percent compliance with Australian Drinking Water Guidelines (2004) and maintained continuous availability of the bulk water transport network at all times during the entire year.

Despite major operational challenges, LinkWater also made significant progress against the commitments it made in its 2011-12 submission with respect to developing key operating processes in the critical area of asset management.

However, while LinkWater has achieved exceptional operational performance during 2011, it will face a number of challenges in developing and operating its bulk water transport network over the next 12 months. In particular:

- **Integrating the Northern Pipeline Interconnector Stage 2 into the business**. This will involve significant work including completion of the defects period, integrating asset data into LinkWater's Asset Information Management System and integrating the asset into the Asset Management Framework to ensure correct and effective maintenance
- **Responding to the requirements of the revised System Operating Plan**. LinkWater needs to develop an annual Water Supply Asset Plan to develop a program of work to meet 20 year demand projections
- **Review of the most appropriate method for the delivery of the annual maintenance program**. This is intended to create a number of valuable outcomes for LinkWater including more clearly defined services and accountabilities, increased transparency of costs, and control over its asset maintenance management

- **Funding operational expenses in an environment of net operating cash shortfalls**. These shortfalls are due to the imbalance between inflation adjusted revenues and costs generated in the nominal regulatory framework coupled with high gearing levels.

This submission demonstrates how LinkWater will address these challenges and provides comprehensive evidence of the revenue needs for the next regulatory period to maintain the ongoing efficient functioning of both LinkWater's bulk water transmission network and the South East Queensland Water Grid.

Planning Processes

LinkWater has a documented planning framework to ensure its investment in the construction and maintenance of its infrastructure is timely and efficient and takes explicit account of customer and stakeholder interests.

LinkWater's planning is driven by its:

- Strategic Direction set by the Board and Executive Management Team
- Asset Management Framework
- Business Planning Framework.

Each year, Strategic and Operational Plans are developed by the Board and the Executive Management Team and detail the nature and scope of the activities to be undertaken during the coming financial year. These Plans are underpinned by the key obligations of delivering water consistent with the standards set out in LinkWater's Drinking Water Quality Management Plan and ensuring security of supply.

The Asset Management Framework establishes a capital and maintenance program to enable LinkWater to meet its Strategic and Operational Plans, including service obligations. It does this by integrating asset related plans, processes and procedures to identify optimal asset management solutions.

The Business Planning Framework provides a documented and structured process to be followed by each business group to support the delivery of the capital and maintenance programs generated by the Asset Management Framework and to meet other objectives arising from the Strategic and Operational Plans.

These frameworks are the planning foundations of the business and ensure alignment with Government policy priorities, customer needs, regulatory requirements and prudent risk management.

Proposed Capital Expenditure

LinkWater's forecast capital expenditure has been prepared in accordance with the sound asset management principles within its Asset Management Framework to meet the requirements of the System Operating Plan and Water Market Rules. The proposed capital expenditure reflects a costed program of work a prudent operator would invest to meet the specified service requirements of the Distribution Retail Entities, the Water Grid Manager's proposed forecast demand volumes and LinkWater's Grid Contract obligations.

LinkWater's proposed Capital Works Program of $21.8 million for 2012-13 is summarised according to the cost drivers below:

Capital Expenditure by Cost Driver	2012-13 $
Maintaining Service	13,301,479
Compliance	0
Renewals	2,529,281
Business Efficiency	3,910,894
Growth	2,072,895
Total	**21,814,549**

Depreciation

LinkWater is required to apply a straight line method of depreciation to reflect the consumption of its assets over time.

LinkWater has forecast a regulatory depreciation allowance for revenue purposes of $30.9 million on its drought Regulatory Asset Base and an allowance of $18.3 million on its non-drought Regulatory Asset Base. Capital expenditure over the 2012-13 regulatory period accounts for a depreciation allowance of $2.5 million.

Proposed Fixed, Variable and Allowable Operating Costs

LinkWater has proposed a forecast operating expenditure allowance of $57.1 million for 2012-13. This operating forecast has been prepared following the process set out in its Business Planning Framework to efficiently support the Asset Management Framework outputs, deliver LinkWater's service obligations and to address the short-term challenges facing the business.

With respect to electricity costs, LinkWater will become a contestable electricity customer in 2012-13. LinkWater estimates that it will achieve costs savings of $1.1 million in 2012-13 from this initiative.

The breakdown of the proposed operating expenditure program is:

Operating Expenditure	2012-13 $
Fixed Operating Costs	42,983,452
Variable Operating Costs	2,852,922
Allowable Operating Costs	11,270,692
Total	**57,107,066**

Return on Capital

LinkWater has applied a pre-tax nominal Weighted Average Cost of Capital of 9.81 percent to its non-drought Regulatory Asset Base and capital expenditure. An actual cost of debt rate has been applied to determine the return on drought assets.

LinkWater has estimated an opening Regulatory Asset Base of $602 million for non-drought assets and $1,993 million for drought assets for the purposes of determining the return on assets component of its regulatory revenue.

Proposed Revenue

LinkWater has calculated a revenue amount to fund its forecast capital and operational programs in accordance with a Pre-tax Revenue Model as required by the Direction Notice issued by the Minister for Energy and Water Utilities.

LinkWater's proposed revenue requirement for 2012-13 is summarised below:

Building Block Components	Proposed 2012-13 $
Return on Drought Regulatory Asset Base	122,369,214
Return on Non-Drought Regulatory Asset Base	57,394,146
Depreciation	51,700,070
Less returns received via inflation of Assets	(62,922,855)
Fixed Operating Costs	42,983,452
Variable Operating Costs	2,852,922
Allowable Costs	11,270,692
Working Capital	2,191,304
Adjustments for 2010-11 Capital Works	(241,202)
Total Proposed Revenue	**227,597,742**

Proposed Tariffs

Notwithstanding that the distribution retail businesses are only exposed to the bulk water price path, LinkWater considers that it is responsible to reflect as far as practicable the short-term cost drivers of the business from both a location and usage perspective.

For this reason, LinkWater has proposed the following tariffs:

- A two-part tariff for each pump station based on the fixed and variable energy costs incurred for the use of each pumping station levied on a $/ML basis
- A charge for treated water at each water quality facility to reflect the $/ML cost of different water treatment requirements
- All remaining costs recovered via a fixed monthly tariff.

1 INTRODUCTION

1.1 Purpose of this submission

This Regulatory Submission presents the revenue requirements of the Queensland Bulk Water Transport Authority (trading as LinkWater) for the provision Declared Water Services for the regulatory period from 1 July 2012 to 30 June 2013.

This submission has been developed in accordance with the Direction Notice issued by the Minister for Energy and Water Utilities (the Minister) and the requirements of the South East Queensland Water Market Rules (the Market Rules).

1.2 Length of Regulatory Period

As specified by clause 8.4 of the Market Rules, this regulatory period is to apply for the period from 1 July 2012 until 1 July 2013.

1.3 Declared Water Services

As the sole bulk water transport service provider in the South East Queensland Water Grid (SEQ Water Grid), LinkWater's pipeline network is the backbone of the water grid system, connecting water supplies, drinking water treatment facilities and drinking water storages through a network of two-way flow bulk water pipelines which allow for the co-ordinated and efficient use of all major water supply sources in the SEQ region.

This submission sets out LinkWater's revenue requirements for providing regulated bulk water transport services within the SEQ Water Grid.

The Market Rules refer to regulated bulk water transport services as Declared Water Services.

Declared Water Services are those services declared by the Minister under Chapter 2A, Part 5A, Division 2 of the *Water Act 2000*. The Gazetted Declaration Notices (summarised in the Register of Water Services Declarations published by the Queensland Water Commission (QWC)) list LinkWater's Declared Water Services as:

- The storage and transport of water by LinkWater in water supply works owned by LinkWater
- The storage and transport of water by LinkWater 'in and associated with' water supply works operated by LinkWater (Southern Regional Water Pipeline, Eastern Pipeline Interconnector, Northern Pipeline Interconnector and Gold Coast City Pumps and Pipes).

1.4 Structure of this document

The remainder of this Regulatory Submission is structured as follows:

- Chapter 2 describes the operating environment in which LinkWater operates and the key challenges anticipated in the forthcoming regulatory period
- Chapter 3 details LinkWater's key operational, financial and stakeholder achievements over the last regulatory period
- Chapter 4 discusses LinkWater's current financial position and the issues this presents in a regulatory environment
- Chapter 5 sets out the operating obligations that LinkWater is required to address and therefore inform the capital and maintenance programs
- Chapter 6 details LinkWater's key planning processes including business, strategic, maintenance and capital
- Chapter 7 describes LinkWater fixed operating cost forecast
- Chapter 8 describes LinkWater's variable operating cost forecast
- Chapter 9 describes LinkWater's allowable cost forecast
- Chapter 10 describes LinkWater's capital expenditure forecast
- Chapter 11 calculates the regulated asset base for the forthcoming regulatory period
- Chapter 12 describes LinkWater's depreciation allowance
- Chapter 13 details LinkWater's working capital requirement
- Chapter 14 explains LinkWater's capital financing
- Chapter 15 presents the revenue needs for the forthcoming regulatory period
- Chapter 16 describes LinkWater's pricing methodology
- Chapter 17 discusses matters associated with regulatory mechanisms for the forthcoming regulatory period.

As required under the Queensland Competition Authority's (QCA) Information Requirements, LinkWater's data templates are provided at Attachment A.

Any reference material cited in the Regulatory Submission, or supporting documentation, is available to the QCA upon request.

2 OPERATING ENVIRONMENT AND KEY CHALLENGES

2.1 Overview of LinkWater

LinkWater is a Statutory Authority, wholly owned by the Queensland State Government and is governed by an independent board. It was established in November 2007, under the *South East Queensland Water (Restructuring) Act 2007* to own and operate bulk water transport assets in the SEQ Water Grid.

LinkWater is the only water authority in Australia whose sole function is bulk water transport, and one of only a few worldwide.

Being the most populous region of the State and Queensland's financial and industrial centre, SEQ requires a water transport delivery service that is able to meet the growing needs of the region while maintaining high levels of quality and reliability.

In meeting this responsibility, LinkWater delivered over 200,000ML of treated water during the 2011 calendar year including over 600ML per day during peak periods.

To ensure LinkWater's bulk water transport network continues to operate as the backbone of the SEQ Water Grid ensuring delivery of the Queensland Government's water security objectives, LinkWater must successfully address a number of key challenges over the next regulatory period.

2.2 LinkWater's Operations

The SEQ Water Grid operates as a wholesale market for potable bulk water. Under this structure, the exchange of potable bulk water is administered by the South East Queensland Water Grid Manager (SEQ WGM).

The SEQ WGM's primary responsibility is to balance the demand and supply of bulk water in the SEQ Water Grid by issuing monthly Grid Instruction Notices (Grid Instructions). Grid Instructions direct the bulk water businesses (currently Seqwater and LinkWater) to dispatch and transport sufficient water each month to meet the demand of the Distribution Retail Entities (DREs) at defined demand zones.

While the actual demand during any month is determined by a number of factors affecting customers' water use, this is sufficiently predictable to determine water sources and the flow patterns across the SEQ Water Grid.

LinkWater's obligations as the operator of the bulk water transport network are to ensure that its network is maintained to a standard that can satisfy the requirements of every Grid Instruction with water that is of a quality that meets the Australian Drinking Water Guidelines (ADWG).

While this requires LinkWater to maintain its assets to a particular standard, LinkWater also operates a Network Control Centre to allow for real-time monitoring and control of pipeline flows, reservoir levels and water quality at key locations.

Operating in unison with the Network Control Centre is an extensive water quality monitoring regime to ensure water quality at defined key interface points meets both ADWG and the individual specifications of each DRE.

Given LinkWater's bulk water transport network extends north from the Gold Coast to Noosa and east from Stradbroke Island to Ipswich, maintaining consistent reliability and water quality is a significant task.

In terms of the operating capacity and characteristics of LinkWater's bulk water transport network, the following represents LinkWater's key infrastructure:

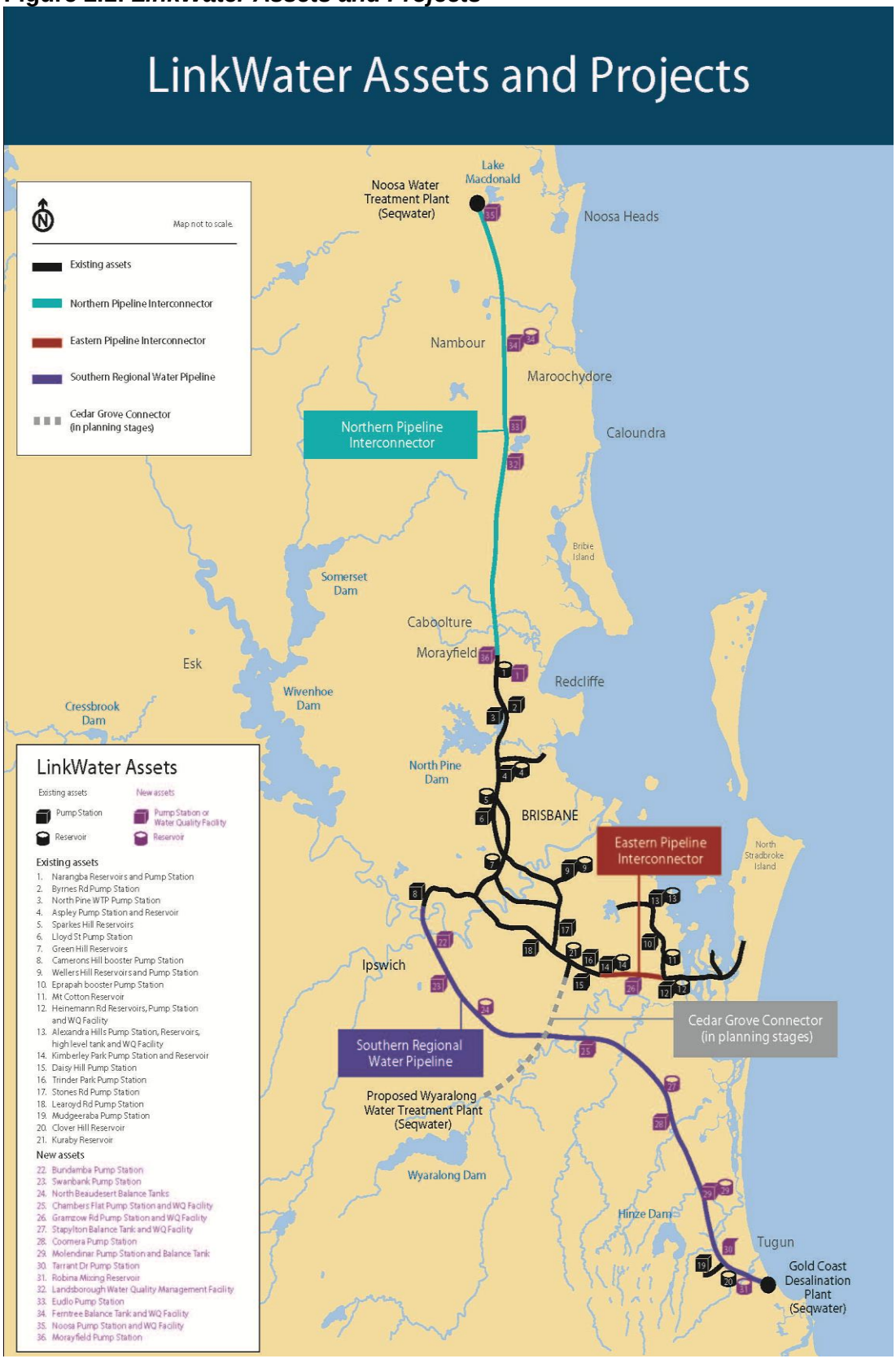
- 582 kilometres of large diameter bulk water transport pipelines operating at volumes of up to 600ML per day
- 29 reservoirs with a storage capacity of over 980ML
- 26 pump stations with an annual pumping capacity of 713,663ML
- 9 water quality treatment facilities capable of maintaining 325ML per day to a standard consistent with ADWG 2004
- 24/7 Network Control Centre facilitating the real time flow of water around the SEQ Water Grid.

LinkWater's assets by network location are detailed in Table 2.1. A schematic of LinkWater's transport network is provided in Figure 2.1.

Table 2.1: *Overview of LinkWater's Assets*

Asset Type	Pipeline Length km	Reservoirs	Pump Stations	Water Quality Facility
Inherited Assets	350	23	15	2
Southern Regional Water Pipeline	94	4	5	2
Eastern Pipeline Interconnector	8	0	1	1
Northern Pipeline Interconnector Stage 1	47	0	0	1
Northern Pipeline Interconnector Stage 2	48	1	4	2
Network Integration Pipeline	35	1	1	1
Total	**582**	**29**	**26**	**9**

Figure 2.1: *LinkWater Assets and Projects*



2.3 Key Future Challenges

LinkWater faces a number of significant challenges over this and future regulatory periods including:

- Integration of the Northern Pipeline Interconnector - Stage 2 (NPI - Stage 2)
- Reviewing the outsourcing of maintenance activities
- Market and regulatory developments
- Ongoing maturity of the business.

The following section details these key challenges.

2.3.1 Integration of the Northern Interconnector Pipeline – Stage 2

Stage 1 of the Northern Pipeline Interconnector (NPI - Stage 1) was operational in early 2009 and connects Landers Shute Water Treatment Plant to North Pine Water Treatment Plant.

Consistent with the Government's Water Security Program, a second stage (NPI - Stage 2) was approved for construction. The last pipe segment for the NPI - Stage 2 was laid on Thursday 17 November 2011. Integration of this pipeline will result in LinkWater assuming ownership of an additional 48 kilometres of two-way flow pipelines connecting the Noosa Water Treatment Plant with the NPI - Stage 1.

Following an extensive testing process, LinkWater expects NPI - Stage 2 to be commissioned and ownership transferred from LinkWater Projects to LinkWater in May 2012.

Following the acquisition of this asset, there will be additional work (and costs) to ensure the asset is a fully integrated and an operationally efficient part of the transport network.

Key tasks to ensure the successful integration of NPI - Stage 2 include:

- Completion of the defects period
- Integrating asset data into LinkWater's Asset Information Management Systems (AIMS) including Geographical Information Systems (GIS), Supervisory Control and Data Acquisition (SCADA) systems and Systems Application Processing software application (SAP)
- Integrating the asset into LinkWater's Asset Management Framework (AMF) to ensure correct and effective operations and maintenance
- Integrating the pipeline into LinkWater's operations. As part of this activity, water quality considerations require certain minimum flows to be achieved in all active pipelines.

The additional obligations and resources required as a direct result of the acquisition of NPI - Stage 2 are reflected in the operating costs (fixed and variable) detailed in this submission.

2.3.2 Reviewing the Provision of Maintenance Delivery

LinkWater has commenced a review of the most appropriate method for the delivery of its annual operating and maintenance program. The objective of this review is to identify an approach to asset maintenance under which LinkWater can procure maintenance activities at an efficient cost with incentives aligned to service and performance.

LinkWater expects that through a rigorous investigation of the options, a revised services contract will create a number of valuable outcomes including:

- Services and accountabilities more clearly defined
- Transparent costs
- Strong incentives for a service provider to deliver LinkWater's required services at the lowest sustainable cost and in a manner that enables LinkWater to respond to any changes to its service obligations
- Risk allocated to the party that can best manage it
- Greater synchronisation of maintenance activities with LinkWater's AMF.

LinkWater expects to finalise its investigation and options analysis by March 2012 and will approach the market for expressions of interest in late 2012.

LinkWater anticipates that its 2013-14 maintenance program will be developed under a new market tested contract.

2.3.3 Market and Regulatory Developments

During the past 12 months, there have been significant developments associated with key instruments governing LinkWater's operations and regulatory arrangements. A number of these instruments remain under review and have the potential to result in material changes to LinkWater activities and therefore costs.

Furthermore, a number of these reviews will not be completed prior to the finalisation of the QCA's assessment of 2012-13 Grid Service Charges. These reviews relate to:

- Water Market Rules
- System Operating Plan (SOP)
- Minister's Direction Notice – benchmarking review.

Water Market Rules Review

In accordance with the review obligations under the *Water Act 2000*, between June and November 2011, the Minister (through the QWC) undertook a review of the Market Rules. All Grid Participants and the SEQ WGM were involved in the review through questionnaires, QWC issues papers, meetings and stakeholder workshops.

Relevant matters were examined under six key categories:

- Legal efficacy – consistency with legislation and the extent to which powers conferred by the Market Rules can legally be exercised
- Rule design assumptions – instances where assumptions underpinning the Market Rules design are challenged
- Regulatory impact/burden – existence of duplicated or unnecessary obligations in the Market Rules, including transitional provisions which are no longer relevant
- Enforcement and compliance – clear and effective monitoring, compliance, enforcement and dispute resolution mechanisms
- Procedural efficacy – improvements to processes identified through experience
- Technical efficacy – the extent to which technical requirements specified in the Market Rules remain current and relevant.

On 4 January 2012, the Minister tabled a Report to the Queensland Legislative Assembly detailing outcomes and recommendations arising from the review.

The Report identified that the operation and effectiveness of the Market Rules could be enhanced by a rationalisation of some provisions and a redrafting of others.

The Minister requested that the QWC redraft the Market Rules with the aim of having amendments completed by 1 July 2012.

Due to the misalignment of timing between the Market Rules review process and the regulatory process, any changes to the Market Rules that create additional obligations that LinkWater must meet will not be included in this submission.

LinkWater considers that any additional activities as a result of the changes to the Market Rules should be eligible for a cost pass-through as discussed in Chapter 17 of this submission.

System Operating Plan Review

On 11 November 2011, the QWC issued a revised SOP.

The SOP sets out the operating principles for the SEQ Water Grid to ensure the Government's prescribed Levels of Service (LOS) are achieved.

The revised SOP requires the SEQ WGM to develop a consolidated 20 year forecast of annual water demand in the SEQ Water Grid by aggregating the demand forecast of each of the DREs and all other Grid Customers. This demand forecast must also specify an upper and lower demand forecast by each Demand Zone.

In addition to providing a demand forecast, the DREs may also specify additional requirements at particular supply points for inclusion in the consolidated water demand forecast. These requirements can include, but are not limited to, reliability, pressure or water quality.

In response to the SEQ WGM's consolidated demand forecast, LinkWater must develop a Water Supply Asset Plan (WSAP) that details a program of work, budgets, processes and procedures to ensure the demand forecast and additional specifications can be met.

However, given the timing of its release, the revised SOP contains only interim arrangements to apply in 2012-13.

Rather than the development of a 20 year demand forecast, the interim arrangements require the DREs to identify and describe any matters that may have a material impact on the need for new or upgraded bulk water supply works to be considered in 2012-13. This must be completed and provided to the SEQ WGM, QWC, Seqwater and LinkWater within 20 business days of the making of the SOP.

The SEQ WGM is required to develop an interim statement within 25 business days of receipt of the DREs' statements, identifying any matters that may have a material impact on the need for new or upgraded bulk water supply works to be considered in 2012-13.

LinkWater and Seqwater are required to develop interim statements that address any matters raised in the SEQ WGM's interim statement and provide this to the QWC, SEQ WGM and DREs.

Following the interim arrangements to apply in 2012-13, the long-term arrangements require the DREs to lodge their demand forecasts and additional specifications to the SEQ WGM by 28 February each calendar year commencing 2012.

The SEQ WGM is then required to issue a 20 year demand forecast inclusive of additional specifications to apply from 1 July, no later than 60 business days after receiving the DREs' forecasts.

No later than 80 days after the receipt of the SEQ WGM's demand forecasts, LinkWater must submit a WSAP to the QWC for endorsement.

The QWC is required to endorse the WSAP within 30 business days of LinkWater's submission.

LinkWater has a number of concerns regarding these arrangements.

Any endorsement from the QWC of LinkWater's WSAP is effectively an endorsement of the prudency of LinkWater's demand driven (growth) Capital Works Program as presented in that Plan. The program of work in the WSAP will also form a large part of the Capital Works Program and maintenance costs for future Regulatory Submissions.

The consequence of having two separate assessments is that there is the potential for inconsistency between the respective endorsed programs of work. This is particularly the case given that the SOP process will be undertaken annually while the long-term regulatory arrangements will cover multiple years.

Furthermore, in the event that the QWC issues an endorsement of a program of work (under either the interim or long-term arrangements) after the QCA has finalised its assessment of Grid Service Charges (GSCs), it is unclear how any

differences will be treated from a regulatory perspective or which endorsement carries precedence.

Minister's Direction Notice: Benchmarking

The Minister's Direction Notice requires the QCA to undertake an appropriate benchmark review of LinkWater's fixed and variable operating costs and to provide advice on potential efficiency improvements.

The primary objective of benchmarking is to identify whether services are delivered efficiently, and that the charges levied for the provision of these services are appropriate. A benchmarking assessment is therefore a comparison between a regulated business' costs and the costs of an efficient and well-managed comparator.

LinkWater considers the evidence from regulatory benchmarking exercises demonstrates a general preference for choosing comparator firms from the same industry or those undertaking similar tasks.

The challenge when benchmarking a business such as LinkWater is selecting appropriate comparator businesses. LinkWater is aware of only one other stand-alone bulk water transport network (the Abu Dhabi Transmission and Despatch Company). While other water businesses may incorporate a transport function, effectively isolating the costs attributable to this activity is complex and subject to error.

There are a number of specific issues LinkWater wishes to raise with respect to the proposed benchmarking of costs.

First, to ensure a consistent and accurate analysis, there needs to be consistency in the definition and application of costs. LinkWater considers there is no uniform practice across regulated businesses with respect to what is defined as a corporate overhead and what is defined as an operating and maintenance cost. In undertaking its assessment it is imperative that the QCA understand correctly the costs included in LinkWater's overhead component and equally what is and is not included in a comparator's costs.

The second issue relates to the availability of suitable benchmarking information. If detailed, reliable information on overall operating costs were publicly available for a reasonable sample of similar companies, it would be appropriate to assign significant weight to a top down comparison. Unfortunately, this is not the case. As discussed previously, there are limited comparator bulk transport businesses for LinkWater and information available for benchmarking purposes is incomplete or unavailable.

The third issue relates to the choice of either a top down or bottom up approach. The application of a bottom up approach requires intimate knowledge of the operations and management of LinkWater. What is relevant from a regulatory perspective is not what LinkWater actually spends, but what an efficient and well-run bulk water transport business would spend. This requires a sound knowledge and understanding of generic cost levels and structures in the industry rather than specific information on LinkWater's expenditure.

As indicated previously, effectively isolating bulk water transport activities in other businesses is problematic.

Finally, the Market Rules require the QCA to take into account the systems, information and organisational capacity of Grid Service Providers (GSP) in exercising its powers. While LinkWater embraces the discipline economic regulation places on a business, LinkWater is still a maturing business and requests the QCA to consider these issues carefully when undertaking its benchmarking analysis.

2.3.4 Business Maturity

Following its establishment, LinkWater entered into an alliance agreement for the provision of operational and physical maintenance of LinkWater's assets.

As LinkWater has matured and developed internal capability, it has progressively assumed ownership of operational activities from its former alliance partners.

A key priority for LinkWater was the development of an internal capability in the area of strategic asset management.

To assist in the development of this capability, LinkWater engaged independent expertise to review the framework inherited from the alliance partners, identify deficiencies and propose an appropriate response to bring the framework up to a standard consistent with good operating practice.

An integral part of the independent review was an examination of the asset information inherited from the Councils, how this had been migrated into LinkWater's SAP software application and how it was being used to provide life cycle information (e.g. replacement costs, maintenance costs, criticality, condition, maintenance history, etc) for individual assets.

While LinkWater has made significant progress in enhancing its asset management capability to a standard commensurate with good operating practise, there remains considerable work to acquire a robust understanding of the condition of all of its inherited assets and integrate condition assessments into its AIMS.

Integration of all asset condition information into the capital and maintenance planning cycles is a key activity as it underpins LinkWater's ability to meet required levels of reliability and the consistent delivery of water which meets the standard set out in the ADWG 2004.

In its 2011-12 submission, LinkWater indicated that it expects that by the end of the interim regulatory arrangements it would have developed its asset information, systems and processes to a standard consistent with good operating practice. While there remain a number of significant challenges to achieve this standard, LinkWater remains on track to deliver on this undertaking.

2.3.5 SEQ Water Grid Interoperability

One of the key objectives of the SEQ Water Grid is to increase the interoperability between participants. This requires greater collaboration between the SEQ Water Grid entities to improve the seamlessness of systems, information, business planning activities and policies between each business.

This objective has been highlighted in the Minister's Report to the Legislative Assembly.

Specifically, Recommendation 8.3 of the Report advocated a review of the registration requirements for interoperability of systems, and the ability of grid participants' data systems to communicate with each other.

Recommendation 8.3 concluded that the Review is to consider the need for a specific section on technical standards in the Market Rules.

While this will have a minor impact for this regulatory period, it will form a key focus for the relevant entities over the next two years.

3 BUSINESS IMPROVEMENTS AND KEY ACHIEVEMENTS

3.1 Overview

Despite significant challenges during the 2011 calendar year, LinkWater delivered exceptional operational performance.

LinkWater maintained bulk drinking water supplies during the January 2011 flood. The continuous operation of the Network Control Centre with its ability to remotely test water quality was invaluable to ensuring the uninterrupted delivery of safe drinking water.

Despite the extreme operating conditions experienced during the flood, throughout 2011 LinkWater achieved full compliance against ADWG 2004 and managed its network to ensure no unplanned outages were experienced in the SEQ Water Grid.

LinkWater has also made significant progress in enhancing its asset information systems in the key area of asset management.

In addition to these achievements, LinkWater also maintained a high standard of stakeholder satisfaction as reflected in the outcomes of its annual Stakeholder Satisfaction Survey.

3.2 January 2011 Floods

During the January 2011 floods, water treatment operations at Mount Crosby were interrupted due to flooding and raw water turbidity problems.

Under normal operating conditions, Mount Crosby treatment facilities provide the majority of treated drinking water to the Brisbane region.

Despite the interruption of treated water from the Mount Crosby facilities, the two-way flow capability of the LinkWater network combined with adjustments to the level of production at other water treatment plants in the SEQ Water Grid, allowed available drinking water to be moved around the grid to meet system demand until full operations were restored.

The continuation of supplies was achieved through LinkWater's ability to remotely monitor storage levels, flows and test water quality in real time within its transport network and this remained fully operational during the floods.

LinkWater's role in the floods was recognised by the Queensland Floods Commission of Inquiry (Commission of Inquiry) which noted that a key feature of the ability to maintain bulk drinking water supplies during the floods was the continuous operation of LinkWater's Network Control Centre.

The Commission of Inquiry noted that representatives of the SEQ WGM and Seqwater were accommodated at LinkWater's premises after evacuating their own premises due to flooding.

The Commission also recognised that LinkWater's role in acting as the hub of water grid operations for the duration of the flood management period is thought to have enhanced the coordination of the SEQ Water Grid flood response.

3.3 Operational Performance

Over the 2011 calendar year, LinkWater made significant achievements in its network performance and operations.

3.3.1 Network Performance

Network performance is concerned with the ability of the bulk water transport network to meet:

- Reliability performance obligations
- Water quality obligations.

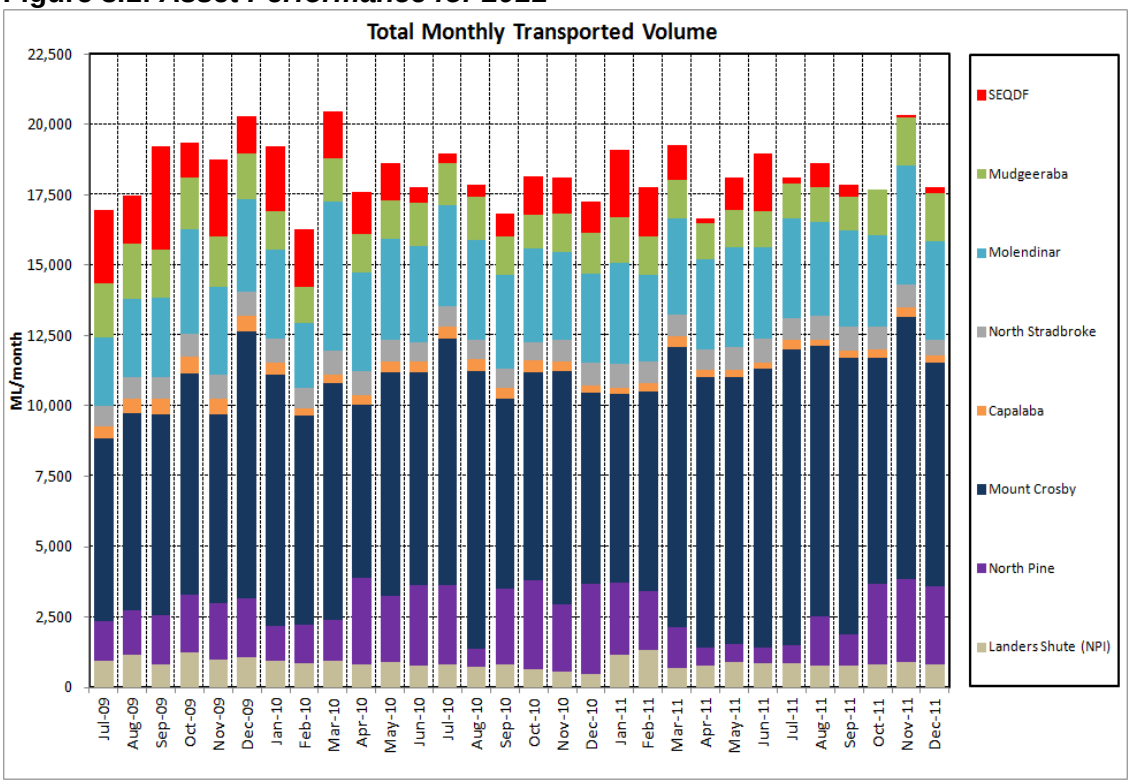
Reliability Performance

During 2011, LinkWater transported 212,000ML of water through its bulk water transport network and complied with all monthly Grid Instructions issued by the SEQ WGM.

Over this period, LinkWater did not experience any major main failure or unplanned disruption. This resulted in continuous availability of the bulk transport network for all times during the entire year.

The amount of water transported through LinkWater's network from various water sources is presented in Figure 3.1.

Figure 3.1: ***Asset Performance for 2011***



Water Quality Achievements

In addition to reliability of transport services, ensuring the continuous delivery of water at a quality defined by the ADWG 2004 is one of the most critical objectives of LinkWater's business.

To achieve this objective, LinkWater has developed a best practice drinking water quality management system underpinned by both a Drinking Water Quality Management Plan and Drinking Water Quality Management Improvement Plan (DWQMIP).

Ensuring LinkWater achieves best practise water quality outcomes has involved considerable effort by the business during a challenging 2011.

As discussed previously, throughout the flood response LinkWater was able to deliver drinking water to meet system demand until full operations were restored. This was achieved largely due to LinkWater's ability to remote test water quality within its transport network.

LinkWater was able to achieve this outcome as a direct result of the following accomplishments:

- Establishment of a water quality monitoring regime that resulted in 96,658 routine water quality tests from 155 individual testing sites within LinkWater's bulk water transport network
- Finalisation and approval of its Drinking Water Quality Management Plan (DWQMP)
- Development of a Drinking Water Quality Monitoring Plan
- Installation of on-line instrumentation on inherited assets to allow remote water quality monitoring and control
- Integration of new instrumentation into the SCADA system.

LinkWater's high standards of performance are further evidenced by the fact that it achieved 100 percent compliance with ADWG 2004 during 2011.

3.3.2 Operational Improvements

Asset Information

At the time the former Council water assets were transferred to LinkWater, only a limited amount of asset condition information was provided. As a result, LinkWater does not possess complete historical data regarding asset condition, asset failures or maintenance records.

A characteristic of bulk water transport systems is that asset failures are infrequent, but typically have significant consequences in terms of service disruption and damage.

The importance of gaining an understanding of historic failures is underpinned by the risks associated with the failure of a bulk water asset in terms of community safety and service disruption.

To reduce the likelihood of an asset failure, a major task for LinkWater is to develop an understanding of the condition of all assets inherited from Councils. This information will then inform an understanding of the overall reliability of the bulk water transport network. This knowledge then needs to be fully integrated into a single asset management framework plus the maintenance and planning cycles.

To progress this task, during 2011, LinkWater completed condition based assessments of most of its reservoirs, pumping stations, water quality facilities and buildings.

With respect to the pipeline assets, a detailed desktop study has been completed and this will be complemented with condition information that will be collected over 2012.

Following the condition assessments, a Reservoir Management Program documenting a justified and efficient 20 year program for inspection, maintenance and capital repair/renewal for all of its reservoir assets was developed.

Similar Management Programs have commenced for LinkWater's trunk mains and these will form the basis of future capital and maintenance works programs to be submitted to the QCA.

Collectively this information provides a very robust basis to identify the works necessary in the short to medium term and provides a longer term view of future works.

Asset Management Improvements

As raised in its 2011-12 submission, LinkWater engaged independent expertise to review its AMF.

This review identified a number of areas for improvement. To address these, LinkWater put in place a comprehensive work program to ensure its framework was consistent with good operating practise.

Delivery against the work program was regularly reported to LinkWater management over the development period. Key deliverables of the work program are discussed as follows.

Processes and Tools

Templates were enhanced for New Project Statements (NPS) and Project Justification Reports (PJR) for both operational and capital proposals. The use of templates ensures a consistent approach is utilised across the organisation. These templates are supported by Guidelines, the Risk Management Framework, prioritisation procedures and cost estimation guidelines.

All projects included in the 2012-13 Capital Works Program are supported by a PJR that incorporates identification of the issue to be addressed, risk analysis, identification of options and relative costs, selection of preferred solution and ancillary information to aid project delivery.

Asset Information

As discussed in section 2.3.4, it was identified that the asset management functionality within LinkWater's SAP system was not well configured, integrated with GIS or document management systems and had limited capability to contribute to long term asset management planning. A substantial review has been undertaken identifying a program to provide LinkWater with a 'best practice' system. This is now being implemented with a view to having core functionality in place by October 2012.

Levels of Service

Levels of service that define the parameters of the service that LinkWater provides are a fundamental requirement for any detailed design and operational planning. They are also useful as organisational Key Performance Indicators (KPIs). Detailed levels of service for LinkWater have not been defined. LinkWater has undertaken a study to define parameters that would provide appropriate outcomes. Wider acceptance of these is expected to occur through consultation processes arising out of the amended SOP during the 2012 calendar year.

Growth Planning

Providing capacity for growth is being addressed through LinkWater's Infrastructure Planning Strategy which encompasses a collaborative process with the other Grid Participants. The amended SOP provides a time-bound structure for this to occur in.

Maintenance Planning

Ongoing maintenance of equipment and facilities is just as important to the reliable operation of infrastructure as its initial construction and eventual renewal. LinkWater's has developed a Maintenance Management Plan (MMP) that outlines a gradual evolution from a regular scheduled maintenance approach to a more risk based approach.

The LinkWater Asset Management Plan

LinkWater has a Strategic Asset Management Plan (SAMP), as required by legislation. This has been updated to describe and link together the elements of LinkWater's strategic asset management framework.

3.4 Stakeholder Engagement

LinkWater works productively with its key government and community stakeholders to foster positive and mutually beneficial working relationships.

LinkWater undertakes an annual Stakeholder Satisfaction Survey to gauge key stakeholder and community views on LinkWater's performance in undertaking its core business activities.

The Survey is undertaken by an independent party to ensure impartiality of results with participants given the opportunity to comment anonymously on a variety of performance-based issues such as standards of communication.

The overall performance rating is measured on a scale of 1-6 (where 1 is completely unsatisfactory and 6 is excellent) and refers to the following question:

> *How effective do you believe LinkWater has been in the management of water infrastructure in South East Queensland?*

Satisfaction ratings by stakeholder group for 2010 and 2011 are presented in Table 3.1.

In addition to the stakeholders surveyed in 2010, a new benchmark group was added in 2011 made up of Allconnex, Unitywater, Seqwater and Queensland Urban Utilities (labelled Other Grid Participants).

Table 3.1: *LinkWater's Stakeholder Satisfaction Ratings*

Stakeholder	2010 Score out of a possible 6	2011 Score out of a possible 6
DERM	4.75	5.33
Treasury	5.00	5.00
SEQ Water Grid Manager	4.00	5.00
Queensland Water Commission	4.20	5.00
Mean Score	4.45	5.13
Other Grid Participants	-	4.71

In addition to the stakeholder survey, a separate annual survey is conducted to gauge satisfaction in relation to members of the community impacted by LinkWater's capital expenditure and maintenance activities.

This survey is undertaken throughout the year using survey cards distributed to residents affected by either capital or maintenance works. Residents are asked to report their satisfaction on the level of information provided, response times for queries, standard of work and overall interaction with LinkWater.

LinkWater combines the outcomes of both its stakeholder and community surveys to develop an overall satisfaction rating. The outcomes are presented in Table 3.2 and demonstrate a marked improvement between 2010 and 2011.

Table 3.2: *Overall Satisfaction Ratings*

Measure	2010 %	2011 %
Overall satisfaction rating (includes government stakeholders and community survey results)	78	83
Target	>80	>80

Following the results of the annual survey, action plans are developed to implement improvement opportunities that have been identified. In this way, LinkWater will continue to meet its targets and commitment to continuous improvement in stakeholder management.

4 LINKWATER'S FINANCIAL POSITION

4.1 Overview

The Direction Notice requires the QCA to have regard to allowing the GSPs to recover a sustainable revenue stream from the provision of Declared Water Services, recognising that the time horizon may extend beyond a single regulatory period.

LinkWater considers that a sustainable revenue stream should be sufficient to allow it to meet current and future expenditure as it falls due.

Under the current regulatory framework, LinkWater is forecasting net operating cash shortfalls over the interim and into the long-term regulatory arrangements and annual operating losses for a period in excess of 10 years.

LinkWater acknowledges that the QCA's ability to address many of LinkWater's financial sustainability issues are either constrained by the regulatory framework or best addressed by Government, as the owner of LinkWater.

Notwithstanding the above, LinkWater considers it important that the issue of financial sustainability continue to be acknowledged ahead of the development of the long-term regulatory framework.

As an economic regulator, the QCA is best placed to make an informed judgement on appropriate responses to the issue of financial viability of bulk water entities.

4.2 What is financial sustainability?

Ongoing financial sustainability refers to the capacity of a business to generate sufficient funds from its operations to meet all of its operating costs, maintain its infrastructure assets, service its debts at an acceptable level to support future operations and generate a return to its owners that is sufficient to cover the opportunity cost of the capital invested by them.

Historically the QCA has applied a building block approach to calculate these costs and, in theory, this approach gives the business the opportunity to remain financially viable in the long term.

However, as discussed in its 2011-12 Regulatory Submission, the building block method does not necessarily ensure that a business will be able to generate sufficient operating cash flows to finance its operating and capital costs in the short to medium term. This occurs primarily due to an imbalance between inflation adjusted revenues and costs in a nominal regulatory framework when there is a large level of investment and high gearing levels.

The result is a persistent cash flow gap.

In its 2011-12 submission, LinkWater highlighted that it had been operating at a loss since establishment and that operating losses were forecast to continue beyond the next ten years.

4.3 Consideration of financial sustainability

There is a growing acknowledgment from regulators that financial sustainability should be considered when making regulatory determinations that are likely to affect a business's short-term financial viability.

Specifically, as part of a wide-ranging review of its regulatory practises, the Water Services Regulation Authority of England and Wales (Ofwat) identified that it is in customers' interests that regulated businesses can finance their investment needs at reasonable cost. This means investors and the markets need to see that the businesses are financially healthy and maintain good-quality credit ratings. It is in investors' interests that customers receive efficient, value-for money services because they underpin the revenue stream that pays for investment.[1]

Under its current approach, where a regulated business does not meet Ofwat's financial viability assessment, Ofwat has applied a revenue uplift factor. This uplift has allowed regulated businesses to recover additional revenue over and above the normal regulatory allowance to bring their cash flow to a level where target levels for financial ratios determined by Ofwat were met (refer 1999 and 2004 price reviews).

Ofwat stated that if revenue uplifts are net present value (NPV) neutral, they have the effect of advancing revenues that would otherwise have been paid in the future (that is, they require current customers to pay this money). This approach may require the businesses to commit to reducing future revenues more than might otherwise be the case when the future cash flow position improves, such that the impact on customer bills is neutral overall.

Similarly, the Independent Pricing and Regulatory Tribunal of New South Wales (IPART) recently undertook a review to examine the appropriateness of its current approach to assessing financial viability. In particular, IPART considered whether it is appropriate to adjust revenue requirement estimates or pricing decisions to ensure a regulated business' financial viability and, if so, the options for making such adjustments.

IPART recently adopted a finance viability test involving the following steps:[2]

- Deciding on the gearing ratio to be used in computing the financial ratios, which may be different to that used in calculating the WACC
- Computing the financial ratios using IPART's decision on the gearing ratio and the business' forecast cash flows (based on its preliminary pricing decisions)
- Computing the business's likely credit rating in each year of the determination period using these financial ratios
- Identifying any potential financeability issues by comparing the likely credit ratings to IPART's benchmark credit rating.

1 Water Services Regulation Authority of England and Wales, *Financeability and financing the asset base – a discussion paper*, 2011.
2 Independent Pricing and Regulatory Tribunal of New South Wales, *Financeability tests and their role in price regulation*, January 2011.

Where regulated businesses have demonstrated a lack of financial viability IPART has, in some cases, adjusted the shape of the price path or chosen a WACC above the midpoint from within the feasible WACC range.

In concluding its review, IPART stated that there were various regulatory adjustments that could be deemed appropriate. Specifically, IPART noted that it may consider including an explicit allowance for addressing immediate financial viability concerns as this has the advantage of being transparent and can be returned to customers in future determinations, making it revenue neutral in NPV terms.

4.4 Conclusion

LinkWater considers that it is fundamental for a regulatory framework to provide the mechanisms to ensure that a regulated business has the financial capacity to carry out it functions and to secure an appropriate return on its capital.

While LinkWater acknowledges the QCA's position that this issue is best addressed by Government, as the owner of LinkWater, the Direction Notice nevertheless requires that the QCA allow the GSPs to recover a "sustainable" revenue stream over time.

In light of the positions taken by other regulators, and with the introduction of long-term regulation expected in the near term, LinkWater considers that the QCA is not constrained from expressing a position on what it considers by the term 'financially sustainable' in a regulatory context. In particular, what is an appropriate time horizon to recover a sustainable revenue stream and how should these matters be addressed under a regulatory framework.

5 OPERATING OBLIGATIONS

5.1 Overview

LinkWater's broad operating obligations are to:

- Maintain its infrastructure to ensure compliance with the SOP, Market Rules, Grid Contract Document and Operating Protocols
- Make available water which meets water quality specifications set out in its DWQMP
- Fulfil its governance and compliance obligations as required under the State Water Authorities Governance Framework.

LinkWater has established its forecast capital, operating and maintenance program of work in order to ensure it is capable of meeting these obligations.

5.2 Background

A fundamental component of economic regulation is for a regulated business to estimate the capital, operating and maintenance expenditure that it requires for the regulatory period which is necessary to maintain assets appropriately and provide the range of services sought by customers.

LinkWater's operating obligations are contained in the following instruments:

- Water Act 2000
- Water Supply (Safety and Reliability) Act 2008
- The Market Rules: SEQ Water Market
- South East Queensland Water Grid: Grid Contract Document
- South East Queensland System Operating Plan.

Collectively, LinkWater's operating obligations under these instruments are to:

- Develop an annual WSAP consistent with the requirements of the SOP
- Ensure that LinkWater's infrastructure is:
    - Operated and maintained in accordance with good operating practice
    - At all times able to comply with Grid Instructions, Operating Protocols and Operating Instructions.
- Meter and estimate water volumes at bulk supply points in accordance with the Market Rules
- Fulfil its governance and compliance obligations as required under the State Water Authorities Governance Framework
- Make available water which meets water quality specifications set out in its DWQMP, any applicable Grid Contract Document and Operating Protocols.
- These obligations are discussed in detail below.

5.3 Water Supply Asset Plan

The SOP sets out the operating principles for the SEQ Water Grid to ensure the Government's prescribed LOS are achieved.

The revised SOP requires the SEQ WGM to develop a consolidated 20 year forecast of annual water demand in the SEQ Water Grid by aggregating the demand forecast of each of the DREs and all other Grid Customers. This demand forecast must also specify an upper and lower demand forecast by each Demand Zone.

In addition to providing a demand forecast, the DREs may also specify additional requirements at particular supply points for inclusion in the consolidated water demand forecast. These requirements can include, but are not limited to, reliability, pressure or water quality.

In response to the SEQ WGM's consolidated demand forecast, LinkWater must develop a WSAP that details a program of work, budgets, processes and procedures to ensure the demand forecast and additional specifications can be met.

The timelines and process for the development of the WSAP is set out in Schedule 5 of the SOP.

5.4 Maintaining Infrastructure with Good Operating Practice

Under section 70 of the *Water Supply (Safety and Reliability) Act 2008*, LinkWater is required to have an approved SAMP for ensuring continuity of supply from LinkWater's infrastructure.

The *Water Supply (Safety and Reliability) Act 2008* requires that standards for service in the SAMP are to reflect good operating practice.

The Market Rules defines good operating practice as:

- Appropriate storage management practices are implemented so that the grid participants meet their obligations under the Market Rules, relevant Grid Contract Documents and relevant Operating Protocols
- Sufficient, adequately experienced and trained operating personnel are available to operate the infrastructure properly and efficiently taking into account any manufacturer guidelines and specifications for components of the infrastructure
- Reasonable preventative, routine and non-routine maintenance and repairs are performed (taking into account any manufacturer guidelines and specifications) by knowledgeable, trained and experienced personnel using suitable equipment, tools and procedures
- Appropriate monitoring and testing is done to ensure equipment is functioning as designed
- Plant and equipment is operating in a manner that:
    i. Is safe to workers, employees, contractors, the public and Grid Participants
    ii. Does not unnecessarily damage the environment

iii. Does not cause damage to plant and equipment over and above normal wear and tear

iv. Does not damage or interfere with the operation of other plant and equipment.

- There is a periodic identification and assessment of risks associated with the maintenance operation of the infrastructure
- Strategies are implemented to manage identified risks associated with the maintenance and operation of the infrastructure
- There is appropriate detailed documentation of constructed infrastructure and other assets comprising the infrastructure to allow proper future repairs and maintenance
- There is appropriate documentation of operation and maintenance requirements for the assets comprising the infrastructure.

5.5 Grid Instructions

The SOP requires that by 30 November and 31 May each year, the SEQ WGM must submit to the QWC a proposed Operating Strategy for the next 12 month period. The Operating Strategy must demonstrate how water security will be maintained over a five year timeframe.

The Operating Strategy must include:

- Details of how the SEQ WGM intends to supply water to meet the forecast demands of each of its customers, including intended sources of supply, bulk water transfer arrangements and cost effective and efficient operation
- Details of assumptions adopted to support the proposed Operating Strategy
- Any additional information supporting the proposed Operating Strategy.

The Operating Strategy contains detailed production and transfer forecasts for the 2012–13 financial year.

The Operating Strategy is operationalised through Grid Instructions.

LinkWater is required to ensure that its network is at all times able to comply with production and transfer forecasts as reflected in Grid Instructions.

These production and transfer forecasts contained in the Operating Strategy also form the demands to be used in the calculation of forecast electricity usage and cost at each pump station and for chemical dosing.

5.6 Operating Protocols

The purpose of Operating Protocols is to set out the allocation of responsibility for all matters necessary to ensure that Grid Participants are able to perform their obligations under the Market Rules.

Section 3.16 of the Market Rules requires each Grid Participant to use its best endeavours to agree to the terms of an Operating Protocol with each other Grid Participant with whom the Grid Participant's operations interact.

Operating Protocols must be consistent with the Operating Protocols Guideline published by the Rules Administrator.

Key requirements of the Operating Protocols are:

- The parties are required to supply each other with daily flow volumes, bulk flow meter data and flow meter verification certificates
- The parties are required to notify each other of inaccurate metering installations within certain time periods
- Operating instructions may be issued for supply and demand forecasting for specific infrastructure
- Operating notifications may be used for more minor events involving unplanned maintenance, sudden changes in demand, demand and capacity to supply
- The parties are required to notify each other of communication trigger values regarding water quality
- The parties must maintain a rolling 12 month schedule for planned maintenance activities that impact other parties
- SCADA information listed in the Operating Protocol is to be shared by the parties
- Each party is responsible for the security of its infrastructure, ensuring appropriate WHS and environmental response procedures for sites under their control, and allowing controlled access to their sites by all the other parties.

Operating Protocols for each DRE and Seqwater have been signed by all parties and submitted to the SEQ WGM.

5.7 Meter and Estimate Water Volumes

The Market Rules detail LinkWater's obligations with respect to metering.

Specifically, if a Grid Contract Document requires an invoice based on metered data, the metered data must be obtained in accordance with the requirements of Chapter 6.

Where a metering installation is registered in the metering database administered by the SEQ WGM, a Metering Transition Plan must be developed.

A Metering Transition Plan is required to identify bulk supply points that are un-metered and to propose a timeline and estimated cost for the installation of meters which are consistent with the Metering Standard (as set out in Schedule 1 of the Market Rules) for these sites.

LinkWater submitted its Metering Transition Plan on 31 March 2009.

At the time of writing, the QWC had not issued a final Metering Transition Plan.

In the absence of an approved Metering Transition Plan, LinkWater must:

- For each bulk supply point for which a metering or transitional metering installation is registered in the metering database, record volumes and flows
- Where neither a metering nor a transitional metering installation is registered estimate the volume and flows through the bulk supply point using the Alternative Methodology published by the QWC.

5.8 Governance and Compliance Obligations

The State Water Authorities Governance Framework has been adopted by the Queensland Government. This Framework is mandated under LinkWater's Operational Plan.

The components of the State Water Authorities Governance Framework are:

- Legislative requirements
- Compulsory policies
- Best practice guidelines.

Within this Framework, LinkWater's Governance and compliance obligations can be broadly summarised as:

- Obligations under Water Legislation
- Obligations under Financial Legislation
- Land Acquisition, Tenure, Planning and Environment
- Workplace Health and Safety
- Industrial Relations and Employment
- Other Acts, Regulations and Policies.

A full list of LinkWater's specific requirements under these Government Policies and Guidelines is provided at Attachment C.

5.9 Water Quality

LinkWater's obligations with respect to water quality are set out in the *Water Supply (Safety and Reliability) Act 2008*, the Market Rules and its Grid Contract Document with the SEQ WGM.

Section 92 of the *Water Supply (Safety and Reliability) Act 2008* requires a Drinking Water Service Provider must not carry out a drinking water service unless there is an approved DWQMP for the drinking water service.

In addition, Chapter 3 of the Market Rules requires that LinkWater must make available water which meets the water quality specifications set out in its DWQMP, any applicable Grid Contract Document and operating protocols.

LinkWater's Grid Contract Document requires that LinkWater must, in respect to potable water, use its best endeavours to maintain the quality of that potable water from the point of supply to the point of delivery.

In doing so, LinkWater is required to:

- Dose the water with chlorine and ammonia to chlorinate or chloraminate the potable water
- Maintain correct pH
- Undertake actions consistent with good operating practice to maintain the quality of the water
- Test and monitor the quality of the water and report the results of such testing to the SEQ WGM
- Notify the SEQ WGM and any other affected parties as soon as practicable of any deterioration.

In the event of a water quality failure, LinkWater is required to:

- Isolate and contain any effected potable water
- Prevent effected potable water from deteriorating the quality of any other potable water.

6 PLANNING

6.1 Overview

This chapter provides an overview of LinkWater's key planning frameworks processes, and governance arrangements.

These arrangements are designed to ensure LinkWater's operations including its investment in the construction and maintenance of infrastructure are timely and efficient and aligned to the strategic objectives agreed by the Board.

LinkWater's Planning is driven by three key processes:

- Establishment of the Strategic Direction set by the Board and Executive Management Team
- AMF
- Business Planning Framework.

6.2 LinkWater's Corporate Governance

LinkWater's Board is at the centre of corporate governance. The role of the Board is to provide strategic guidance, effective oversight of management and facilitate Board and management accountability.

The Board is supported in its function by three Committees:

- Audit and Risk Management Committee (ARMC)
- Remuneration and People Committee (RPC)
- Works and Environment Committee (WEC).

6.2.1 Audit and Risk Management Committee

The primary role of the ARMC is to provide reasonable assurance to the Board that LinkWater's core business goals and objectives are being achieved in an efficient manner, within an appropriate framework of internal control and risk management.

6.2.2 Remuneration and People Committee

The primary role of the RPC is to review and recommend to the Board any proposed policies or procedures in respect to executive or employee remuneration or employment conditions.

6.2.3 Works and Environment Committee

The WEC is responsible for the review of LinkWater's construction, operations and maintenance, environmental and sustainability risk.

The WEC has the responsibility to ensure LinkWater's Capital Works Program is developed and implemented in a manner consistent with the Operational and Strategic Plans.

6.3 Operational and Strategic Plans

Under the *South East Queensland Water (Restructuring) Act 2007,* LinkWater is required to prepare and submit to the Minister before 31 March each year a Strategic Plan and an Operational Plan for the next financial year.

The Strategic and Operational Plans are developed by the Board and Executive Management Team and detail the nature and scope of the activities to be undertaken during the coming financial year and are underpinned by the key obligations of delivering water consistent with the standards set out in its DWQMP and ensuring security of supply.

The Strategic Plan summarises LinkWater's vision, values, goals, business drivers and key corporate expectations.

The Operational Plan effectively operationalises the Strategic Plan. It sets out the process for achieving the objectives set out in the Strategic Plan. In particular, the Operational Plan sets out financial and operational targets including the program of work for the coming year.

The program of work detailed in the Operational Plan is implemented through the AMF and the Business Planning Framework.

6.4 Asset Management Framework

The AMF establishes a capital and maintenance program to enable LinkWater to meet its Strategic and Operational Plans, including service obligations. It does this by integrating asset related plans, processes and procedures to identify optimal asset management solutions.

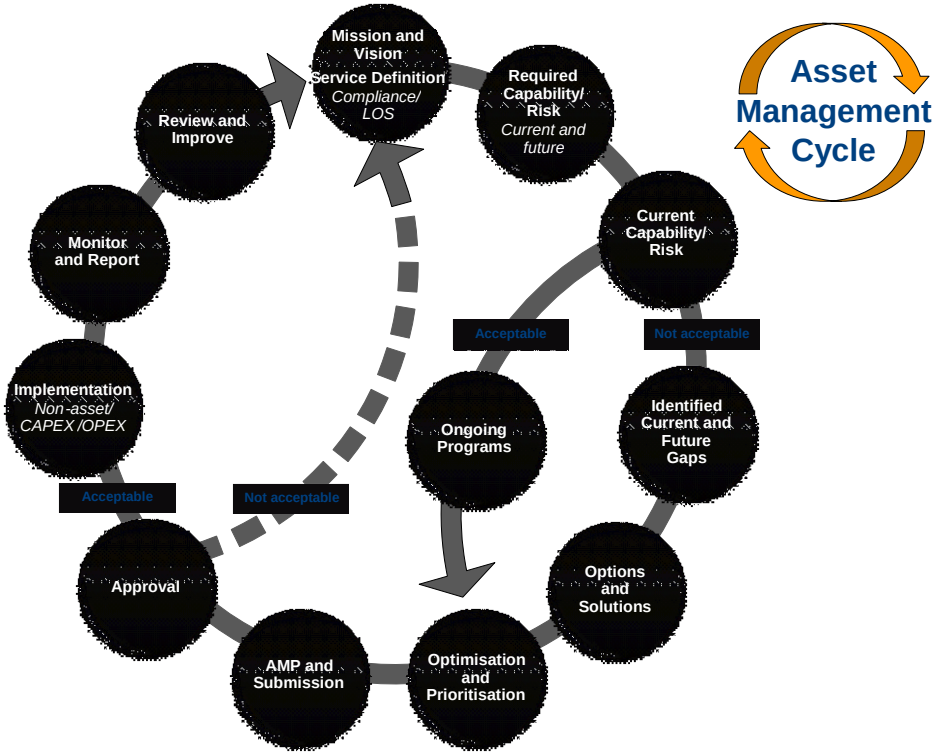
Asset management solutions will vary throughout the life of an asset from its acquisition to its disposal. These solutions will include capital expenditure to acquire, renew or replace assets, and maintenance expenditure to service assets to maintain their required reliability. Planning for capital and maintenance expenditure are key processes driven by the AMF.

LinkWater's asset management philosophy is to build a structured program to establish a link between service delivery, asset reliability and asset criticality.

This approach combines information systems, personnel and financial resources to make structured decisions on asset maintenance and replacement of both existing and newly constructed assets. This approach to asset management ensures that bulk water transport assets will be maintained in a condition that optimises economic service life while reliably achieving its service obligations.

LinkWater has adopted an approach to asset management that is continuous through the life cycle of an asset (the asset management cycle). This strategy is illustrated in Figure 6.1.

Figure 6.1: *LinkWater's Asset Management Cycle*



6.4.1 Capital Planning

Within the asset management planning cycle, LinkWater's approach to capital planning follows:

- Identification of the level of performance required from the network to achieve LinkWater's service obligations within an acceptable level of risk
- Determination of the current and projected capacity of the network to achieve those service obligations
- The development of projects and programs that will sustain current performance, and enhance it where required
- Monitoring and reporting of outcomes
- Ongoing improvement.

LinkWater has documented a process in its Asset Management Plan (AMP) detailing how this approach is undertaken each year. This process involves the following steps:

- **Mission and Vision** – development of the LinkWater strategic direction established at the Board and executive level. This process establishes the high level operational outcomes sought for the business and reflects LinkWater's legislated service obligations.
- **Required Capability** – is determined by LinkWater's service obligations (i.e. network reliability and water quality).

- **Current Capability** – LinkWater conducts periodic asset condition, performance capability and reliability assessments to establish asset guidelines regarding the capability of respective assets.
- **Identification of Gaps** – each asset and facility is assessed to determine its capability to achieve LinkWater's service obligations and strategic objectives taking into account LinkWater's risk management framework. Based on this assessment, candidate projects are identified and documented using NPS. Following this identification phase each NPS is assessed and prioritised.
- **Options and Solutions** – high priority candidate projects identified through the NPS are investigated further and a PJR prepared. The PJRs detail the project scope, the relevant asset class and facility, the need for the project, the potential risks and an estimate of costs.
- **Ongoing Programs** – continuing programs and multi-year projects are reviewed to determine whether they remain appropriate for inclusion in the forecast program for the current and future years.
- **Optimisation and Prioritisation** – following the development of the PJRs and ongoing programs, each project is prioritised according to the LinkWater corporate risk framework.
- **Approval** – the prioritised program of work is presented to the WEC for endorsement and to the LinkWater Board for final approval.

In addition to this process, the asset management cycle provides for an annual review to ensure a process of continual review and improvement. This occurs after the finalising of the program of work and is facilitated by the Strategic Asset Manager.

The process for determining growth capital expenditure is prescribed under the SOP.

The SOP requires LinkWater to develop a WSAP that details a program of work, budgets, processes and procedures to ensure the SEQ WGM's 20 year demand forecast and DREs' additional specifications can be met.

6.4.2 Maintenance Planning

LinkWater determines the maintenance of its assets according to the asset management planning cycle. The maintenance aspect of asset management is set out in its MMP.

The MMP is a major input into the AMF and supports the asset management cycle.

LinkWater's asset maintenance philosophy is focussed on achieving its legislated service obligations of maintaining reliability and delivering quality water by adopting the following approaches:

- Prevention is better than cure (strong preventive effort)
- Planning on the basis of optimising whole of life costs
- Asset availability to meet regulatory requirements and standard operating practices

- Regular condition assessment of the assets
- Allowance for normal wear and tear factored into the asset planning
- Recognition of the materials used at different installations, as the networks and technology develops
- Rigorous quality control during the construction phase of new assets to ensure optimum condition at handover for operations and maintenance
- Asset performance benchmarking against relevant industry standards
- Implemented strategies to reinforce the principles of Reliability Centred Maintenance (RCM) practices.

LinkWater classifies its maintenance activities as routine and risk based.

Routine Maintenance

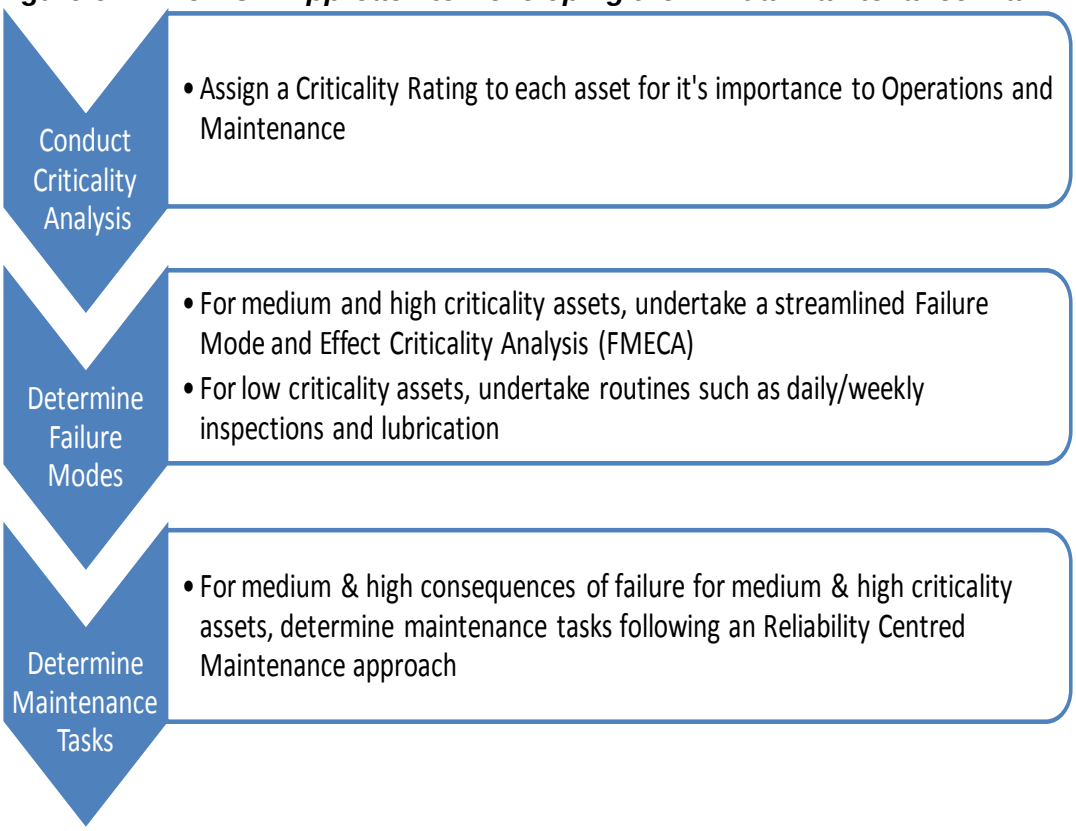
Routine maintenance is designed according to either manufacturer's recommendations or on an evidence based maintenance cycle. All maintenance activities are carried out according to pre-defined chronological, usage, condition or performance criteria. LinkWater's routine maintenance covers:

- Preventative maintenance
- Condition monitoring
- Failure analysis
- General inspection
- Lubrication and minor servicing
- Restorative maintenance
- Capability and calibration.

Risk-based Maintenance

In addition to routine maintenance, LinkWater also undertakes risk-based maintenance according to a RCM process. This process is detailed in Figure 6.2.

Figure 6.2: ***The RCM Approach to Developing the Annual Maintenance Plan***



Conduct Criticality Analysis

LinkWater has undertaken a criticality analysis on all of its assets and has recorded the results in its SAP Asset Management System.

The criticality ratings have been determined applying LinkWater's Functional Location Criticality Policy and are based on the consequence of the failure.

Unlike condition rating assessments, the current criticality ratings will remain the same unless system design or demand changes occur. These criticality ratings can be combined with the condition ratings to determine overall asset risk ratings.

Determine Failure Modes

Where an asset exhibits a medium to high criticality rating, LinkWater conducts a Failure Mode and Effect Criticality Analysis (FMECA) to determine why an asset may underperform.

The FMECA analysis contains three steps:

- Identify the loss (real or potential) of performance of the asset as a whole (e.g. a loss of pumping efficiency in a centrifugal pump) by working through each maintainable component of the asset and isolating the contribution of each asset component to the overall performance loss (e.g. worn impellor tip)
- Identify how the asset is being operated as a consequence of the loss (real or potential) of performance (e.g. pump has a longer pumping time to transport

the required volume of water) and how this in turn affects the downstream operations of other assets

- Calculate the risk, likelihood and consequence of the loss (real or potential) of performance and rank the criticality of this outcome.

Determine Maintenance Task

The last step in the risk-based maintenance process is the identification of the mitigation response.

Through the FMECA a number of mitigation options are identified.

By applying a RCM approach, LinkWater is able to optimise the frequency of any maintenance. This approach achieves the lowest cost maintenance profile by balancing the cost and frequency of undertaking maintenance against the cost of asset failure.

6.5 Business Planning Framework

The Business Planning Framework provides a documented and structured process to be followed by each business group.

This process requires each business group to prepare an annual strategy document identifying all planned activities necessary to support the delivery of the capital and maintenance programs of work generated by the AMF and to meet other objectives arising from the Strategic Plan.

The business group strategies identify the need for the proposed activity and the associated cost. Additionally, all of the proposed activities in the business group strategies are assessed against the corporate risk framework to ensure risks are adequately identified, analysed and managed.

Following the completion of all business group strategy documents, the EMT undertakes a review to ensure that each strategy is aligned with the AMF and/or the Strategic Plan.

Where a proposed activity cannot demonstrate this relationship, it is removed from that business group's strategy document.

Once EMT has determined the acceptable activities proposed by the different business groups, it undertakes a moderation and prioritisation process according to need, risk and any direction established by the Board.

Following the prioritisation phase, the remaining activities form the annual corporate and operations program of work. This program of work informs the content of the Operational Plan, annual budget and the Regulatory Submission.

To ensure consistency in content, each of these documents is submitted simultaneously to the Board for approval.

7 FIXED OPERATING COSTS

7.1 Overview

LinkWater's proposed fixed operating costs for 2012-13 are $43.0 million derived from $14.4 million in corporate costs, $10.9 million for network operations, $3.0 million for water quality management, $13.9 million for asset maintenance and $0.8 million for fixed electricity costs.

The fixed operating costs detailed in this Chapter represent LinkWater's corporate, maintenance and operations activities. Collectively these activities enable the delivery of the asset and maintenance programs to maintain the water transport infrastructure and provide bulk water transportation services to the SEQ Water Grid.

The development of the programs and associated budgets for the corporate and operational activities have been developed following the approach to planning described in Chapter 6 of this submission.

LinkWater considers the proposed fixed operating costs represent prudent expenditure on activities necessary to ensure the discharge of its performance obligations as detailed in Chapter 5 of this submission.

7.2 Regulatory Requirements

Clause 3.7 of the Market Rules requires a GSP to operate and maintain its infrastructure in accordance with good operating practice.

Clause 8.12 of the Market Rules allows a GSP to recover:

- Prudent and efficient costs of and incidental to the operation and maintenance of assets required to provide Declared Water Services apportioned on an appropriate basis between the provision of Declared Water Services and other services
- Efficient corporate and related expenses.

In addition to the requirements of the Market Rules, the Direction Notice requires the QCA to:

- Allow the entities to recover a sustainable revenue stream from the provision of Declared Water Services determined on the basis of efficient and prudent expenditure forecasts, recognising that the time horizon may extend beyond a single regulatory period
- Provide appropriate incentives for entities to invest, innovate and pursue efficiency improvements consistent with their roles and responsibilities.

7.3 Fixed Operating Costs

Consistent with LinkWater's 2011-12 Regulatory Submission fixed operating costs have been categorised as:

- Corporate Support – the activities to provide corporate governance and business support functions. This includes ownership and administrative activities such as corporate governance, risk management, human resources, legal and finance, as well as external compliance.
- Network Operations – the activities necessary to support the AMF and the operation of LinkWater's transport network. Network Operations are responsible for the delivery of mandated service obligations such as compliance with Grid Instructions as well as ensuring there is effective long term asset utilisation and asset management
- Water Quality – activities to ensure the continuous delivery of water quality through the administration and implementation of LinkWater's drinking water quality management plan and compliance with the DWQMP
- Asset Maintenance – costs directly associated with activities to maintain the assets consistent with good operating practice. Asset maintenance services are delivered through an externally sourced Services Contractor.
- Constant Electricity Costs – electricity charges that do not vary according to the amount of electricity used.

LinkWater's proposed fixed operating costs for 2012-13 are $43.0 million. These costs have been derived through a bottom-up approach consistent with the planning framework described in Chapter 6 of this submission.

The 2012-13 costs represent a real decrease of 3.1 percent compared to 2011-12.[3]

As part of its 2011-12 Regulatory Proposal, LinkWater engaged KPMG to assess the efficiency of LinkWater's corporate costs. KPMG concluded that for a business of LinkWater's size and operating characteristics, its corporate costs were reasonable.

In addition, the QCA engaged SKM to undertake an assessment of the efficiency of LinkWater's fixed operating costs. SKM concluded that LinkWater's costs were efficient. The QCA subsequently accepted SKM's findings and recommended the inclusion of all of LinkWater's fixed operating costs for recovery through GSC.

On the basis that LinkWater's 2011-12 fixed operating costs were considered efficient, there has been no reduction in the scope of service obligations from 2011-12 to 2012-13, and that 2012-13 costs are lower in real terms, LinkWater considers this is sufficient evidence to demonstrate that LinkWater's 2012-12 fixed operating costs are also efficient.

Further disaggregation of LinkWater's fixed operating costs can be provided upon request.

[3] Applying ABS6401.0 December 2011 Consumer Price Index rate of 3.1 percent.

7.4 Corporate Costs

Corporate activities ensure appropriate corporate governance, business administration and compliance reporting arrangements are in place. The corporate activities also support Network Operations to develop and deliver the capital and maintenance programs that ensure the provision of water transport services consistent with LinkWater's service obligations.

LinkWater's corporate support activities have two major cost sub-elements:

- Business support
- Property leasing.

Business support costs are derived from the following business groups:

- Chief Executive Officer and Directors' costs
- Legal and Governance Services – responsible for legal support, compliance management, audit, and company secretarial functions
- Business Services – responsible for treasury, tax, budgeting, general financial accounting, general management accounting, payroll, performance reporting and financial services such as general accounts payable and receivable and economic regulation functions
- Corporate Services – responsible for government relations, risk management, community and stakeholder management, annual reporting, employee communications, risk management, health safety and environment, human resources, IT and knowledge management and other miscellaneous activities.

Property leasing costs are associated with LinkWater's corporate offices at 200 Creek Street, Brisbane.

Corporate support costs proposed for inclusion in the 2012-13 GSCs are $14.4 million. This figure compares with $13.1 million recommended by the QCA for inclusion in 2011-12 GSCs.

A breakdown of these costs is provided in Table 7.1.

Table 7.1: *LinkWater's Proposed Corporate Costs*

Corporate Costs	2011-12 $	2012-13 $
CEO and Board	1,090,613	1,105,099
Legal and Governance	1,384,210	1,730,895
Business Services	3,738,411	3,635,259
Human Resources	1,015,614	908,242
Corporate Services	1,902,617	2,434,981
IT and Knowledge Management	2,535,934	3,083,837
Property Leasing	1,400,147	1,509,348
Total	**13,067,546**	**14,407,661**

LinkWater's total corporate costs are forecast to increase by $1.3 million relative to 2011-12.

This increase can be explained by annual wage growth and increased activities associated with the finalisation of NPI Stage – 2.

The transfer of NPI Stage – 2 will involve an increase in community and stakeholder engagement, work place health and safety inspections on the new pipeline, post-completion transfer provisions and document registration. These costs are incurred by the Corporate Services business function.

In terms of IT and Knowledge Management, activities are required to integrate asset data into LinkWater's asset information management systems including SAP and the AMF to ensure correct and effective operations and maintenance as well as providing connectivity services to provide for the information transfer between the physical location of the asset and the Network Control Centre and LinkWater's back-up data centre

Following the integration of NPI Stage – 2, it is expected that Corporate Services costs will reduce in 2013-14.

In terms of the impact on Legal and Governance, the transfer of NPI – Stage 2 will require the continuation of Directors and Officers liability insurance as required by law.

Another contributing factor to the increase in Legal and Governance costs was the transfer of the internal audit function from Business Services to Legal and Governance for 2012-13. The cost of the internal audit function is $0.3 million.

With respect to leasing costs, this increase is due to a combination of rent escalation and a minor increase in office space.

The Commission of Inquiry identified LinkWater's premises at Creek Street as significant due to its topographical high-point and it is serviced by both Brisbane's highest elevation CBD substation and has a backup generator within the building, minimising the risk of disruption to network control activities.

Following independent expert advice, LinkWater has increased the functionality of the Network Control Centre and Incident Room to ensure that LinkWater is able to effectively operate as the co-ordination point of the SEQ Water Grid in the event of future significant events.

7.5 Network Operations

LinkWater's Network Operations undertake activities necessary for the operation of LinkWater's network as well as co-ordination with the other participants of the SEQ Water Grid.

These activities include short and long term planning, system modelling, remote operation of the network via the Network Control Centre, water quality management, asset management, GIS, SCADA and other network information systems, and asset insurance. These activities are discussed in further detail below.

Network Operations costs proposed for inclusion in the 2012-13 GSCs are $10.9 million. This figure compares with $9.6 million (including Project Services but excluding Water Quality. These costs are discussed separately at section 7.6) recommended by the QCA for inclusion in 2011-12 GSCs.

The increase in Network Operations costs represents a 13.1 percent increase in real terms.

The increase in costs is largely attributable to the finalisation of NPI Stage – 2.

A disaggregation of costs for LinkWater's proposed network operation activities for 2012-13 relative to 2011-12 is provided in Table 7.2.

Table 7.2: *LinkWater's Proposed Network Operations Costs*

Network Operations Activities	2011-12 $	2012-13 $
Management and Administration	424,425	768,000
Project Services	1,112,489	773,921
Asset Insurance	1,453,245	1,784,377
Infrastructure Planning	1,079,172	462,689
System Modelling/Network Information	733,607	1,004,937
Geographic Information Systems	413,266	850,905
Land & Corridor Management	630,656	776,851
Strategic Asset Management	1,115,263	1,315,199
SCADA	454,267	534,870
Network Asset Operations	1,139,464	1,426,295
Service Delivery	1,054,038	1,166,630
Total	**9,609,892**	**10,864,674**

7.5.1 Project Services

In its 2011-12 Regulatory Submission, LinkWater reported Project Services as a corporate activity. Project Services is responsible for the delivery of LinkWater's Capital Works Program through LinkWater's Project Management Office (PMO). This role includes procurement, project management and project cost control.

Given the role of Project Services is directly related to the purchasing or constructing an asset and getting it ready for use, LinkWater considers this activity an operational rather than a corporate support activity. For this reason, LinkWater has included Project Services in its Network Operations activities.

To allow the QCA to track the movement in Project Services costs over time, LinkWater has reported 2011-12 and 2012-13 costs on a consistent basis as it has with all Network Operations costs.

7.5.2 Management and Administration

Management and administration functions are related to general management (including General Manager costs) and administration support to the Network Operations business function.

The increase in costs relative to 2011-12 is explained by the employment of two additional staff associated with workplace health and safety.

Until recently, LinkWater's workplace health and safety obligations were set out in the *Workplace Health and Safety Act 1995*.

However, from January 2012, LinkWater's obligations are provided for in the *Workplace Health and Safety Act 2011*.

To assist in identifying the changes in obligations and gaps in LinkWater's existing compliance capability, LinkWater engaged Clayton Utz.

Following this advice, it was determined that LinkWater had previously under-resourced this function and to be able to discharge its legal obligation going forward would require two additional resources.

7.5.3 Asset Insurance

LinkWater is required under the Grid Contract Document to insure its network assets.

To meet this obligation, LinkWater engaged an insurance broker, Aon Risk Services Australia, for the placement of its insurance program.

LinkWater has acquired a wide range of asset insurance coverage of its activities including business interruption insurance in the event of operational failure of key infrastructure assets, as well as public liability cover.

In its 2011-12 submission, LinkWater proposed insurance costs of $1.5 million based on an estimated premium from Aon Risk.

However, the final premium notice was received after the closing date for the submission of information for the QCA's 2011-12 assessment.

The final premium was $1.8 million.

The QCA subsequently recommended the recovery of $1.5 million for insurance costs in 2011-12 GSC.

As a result, LinkWater was not able to recover the full costs of its insurance.

On the basis that the Market Rules that applied at the time allowed for the recovery of all reasonable costs, LinkWater requests the QCA to consider the difference between allowed and actual for retrospective recovery.

LinkWater's forecast premium for 2012-13 is $1.8 million, which is consistent with the revised 2011-12 premium.

7.5.4 Infrastructure Planning

The SOP establishes a planning process for SEQ Water Grid participants to achieve the long-term water security objectives as defined by the Government's LOS.

This process is underpinned by long-term demand forecasts and additional asset performance specifications for defined points in the SEQ Water Grid.

To ensure that LinkWater has sufficient capacity and functionality in its bulk water transportation network to meet the long-term water security planning provisions of the SOP, it is necessary that it has appropriate medium to long term planning capability.

This capability will be delivered through the development of an Infrastructure Master Plan (IMP).

The IMP will define the extent, timing and estimated cost of future bulk water supply infrastructure required to supply water to the SEQ Water Grid and will be integrated into the infrastructure planning of all relevant SEQ Water Grid participants as well as LinkWater's AMF and DWQMP.

The revised SOP provides LinkWater with the policy framework with which to progress its IMP. Key tasks to be undertaken in 2012-13 to advance this work are to:

- Establish a Network Alliance with other SEQ Water Asset Owners
- Form Technical Working Groups within the Network Alliance
- Define and agree operational philosophies to accommodate growth and network operability within the Network Alliance
- Agree and undertake technical investigations with the Network Alliance, for example agreeing a modelling approach for the hydraulic performance of the bulk water supply network
- Determine the expected future network augmentations as a result of the SOP planning process

- Develop a Preliminary Concept IMP.

7.5.5 System Modelling

The LinkWater hydraulic and water quality model is the primary analysis and optimisation tool for network operations. The model allows LinkWater to continually analyse its network performance which is a pivotal contribution to achieving the optimal approach to asset management.

The hydraulic and water quality modelling program has the following objectives:

- Identify inefficiencies and develop strategies to improve operational effectiveness through network operations
- Identify potential water quality issues and develop strategies to improve water quality through predictive modelling
- Develop effective and efficient decision support tools that interact with existing business system.

To achieve these objectives, during 2012-13, LinkWater will focus on:

- The Enhanced Hydraulic and Water Quality Modelling Research Project to be undertaken collaboratively with researchers from QUT Mathematical Sciences and the Urban Water Security Research Alliance to determine if the commercial version of EPANET utilised for hydraulic modelling by LinkWater can be mathematically extended to model water quality attributes
- Phase 3 of the multi-criteria optimisation modelling project entailing full system scoping for optimisation across LinkWater's entire network. This work links directly to the development of the IMP in terms of determining the long-term optimal management of the network
- Continual development, improvement, calibration and verification of the hydraulic model to reflect changes in data, operating philosophy formulation, Operating Instructions, energy and drinking water quality management and infrastructure planning.

7.5.6 Geographic Information System

The LinkWater Geographic Information System (GIS) integrates asset and spatial data that enables the tracking of physical assets as well as data analysis to inform operational decision making.

This is achieved through the capture and storage of asset data including asset identification, location and condition.

GIS are widely used by the utilities sector to manage assets. A recent survey of use of GIS by Australian Water Authorities found 100 percent of the 23 survey respondents had implemented GIS. [4]

[4] Spatial Vision 2009. Use of GIS by Australian Water Authorities: Results of an Industry-Wide Survey.

The GIS capability assists LinkWater in its daily operations by providing asset location data, identifying the impacts of proposed maintenance activities, planning and scheduling capital and maintenance activities and analysing environmental issues. The GIS location data is also used to respond to customer queries including the provision of dial before you dig information.

GIS asset location data is critical for corridor management and the protection of network infrastructure. For example, the precise location of network assets is required when planning operational works. This data is also used to inform developers and landowners where they can undertake construction (or other activities) on or near LinkWater assets.

An effective and reliable GIS requires continual investment in technology upgrades and ensuring it is underpinned by relevant information.

To ensure a stable GIS platform, a number of technology upgrades are required during 2012-13. These upgrades follow standard development and deployment methodologies.

Following integration of NPI – Stage 2, the GIS functionality installed on the asset in construction contains largely raw asset related information. For the GIS to operate at a standard commensurate and consistent with its treatment of other LinkWater assets, additional functionality will need to be implemented.

This functionality includes extensions to information on soil classification, third party assets and the environment in which the asset exists.

In addition to technology upgrades and connectivity to NPI – Stage 2, LinkWater is currently creating a complete set of long section drawings of the trunk main network. This GIS asset location data is utilised by the LinkWater Network Control Centre to manage the transport of water within the network during times of asset failure or water quality issues. For example, technical drawings in GIS are used to identify the most suitable scour locations for draining selected sections of trunk mains to ensure a dry jobsite for maintenance activities.

During 2012-13, these long section drawings will be integrated into the GIS.

7.5.7 Land and Corridor Management

As discussed in its 2011-12 submission, LinkWater's infrastructure network is located on approximately 2,050 separate land parcels as well as numerous road reserves and watercourses.

The objective of land and corridor management is securing suitable tenure over land parcels that have no defined or secure tenure in place and securing tenure for future pipeline corridors.

Control over land tenure is critical to provide a safe contiguous corridor to minimise risk or threat from third party activities and reduce potential risks to secure water supply and public safety.

Formalised tenure also provides enhanced access for efficient operational activities and fro system scouring.

A Tenure Gaps Land Acquisition Project commenced with a Pilot program in 2011-12. This project established the operating procedures and resource requirements to resolve LinkWater's tenure gaps and commenced negotiation of easement agreements with landowners.

This project was endorsed as part of the QCA's 2011-12 investigation.

During 2011-12, LinkWater acquired tenure control over 37 easements.

During 2012-13, it is forecast that a further 100 tenure gaps will be secured.

The costs included in the activity of land and corridor management relate to:

- Identification of tenure gaps
- Presentations to property owners
- Surveys of pipelines
- Valuations of easements for compensation purposes
- Negotiation with landowners
- Finalisation of transactions and tenure registration.

The actual land acquisition costs are included as capital expenditure.

In addition to securing tenure gaps, as part of the construction of NPI - Stage 2, LinkWater entered into a number of co-use agreements with the Co-ordinator General, Powerlink and Energex where NPI - Stage 2 was co-located within an established power easement. The co-use agreements related to the construction activities of the pipeline.

Following the finalisation of NPI - Stage 2, these co-use agreements need to be amended to reflect the fact that the pipeline in now in operational mode. These agreements will be re-negotiated throughout 2012-13.

7.5.8 Strategic Asset Management

The objective of the strategic asset management function is to ensure LinkWater's network is capable of meeting its service obligations while optimising the whole of life costs of its assets. LinkWater has adopted a life cycle management approach to asset management that encompasses planning, creation, operation, maintenance, refurbishment and replacement for long-lived assets.

Key activities within the asset management function are:

- Asset management
- Leakage management
- Metering management
- Energy management.

Asset Management

The objective of the asset management function is to assemble all the necessary information to allow:

- The required levels of service to be identified
- The current and projected capacity of the network to achieve those levels of service to be determined
- The development of projects and programs that will sustain current performance and enhance it where required
- Monitoring and reporting outcomes
- Ongoing improvement.

Through the assembly and interrogation of this data, the asset management function delivers:

- The Capital Works Program
- The MMP
- The AMP
- Documentation supporting the Capital Works Program
- Legislatively required asset reporting documentation.

Leakage Management

While leakage from water supply systems is inevitable, minimising leakages results in reduced operational costs and is also a useful indicator of overall system condition and integrity.

Under the *Water Supply (Safety and Reliability) Act 2008*, LinkWater is required to develop a System Leakage Management Plan (SLMP) by May 2012.

Within this plan, LinkWater must accurately measure water leakage from its network and demonstrate active management of leakage. Key to achieving this requirement is the implementation of a program of pressure management and leakage detection.

Metering

LinkWater's obligations with respect to metering are detailed in Chapter 6 of the Market Rules.

A key deliverable in fulfilling LinkWater's prescribed metering obligations is the establishment of hydraulic monitoring points within the network.

The metering program will establish a policy and program which identifies the appropriate level of metering to satisfy compliance requirements and to comprehensively determine the hydraulic status of LinkWater's network at any given time.

Energy Management

The energy management function is focussed on optimising LinkWater's energy usage therefore ensuring least cost delivery of service.

The objectives of this function are:

- Minimising the cost associated with operating LinkWater's pump stations
- Minimising carbon emissions generated from LinkWater's operations by maximising asset efficiency
- Demonstrated capability to manage grid wide energy optimisation.

To achieve this objective, LinkWater will undertake an equipment optimisation exercise. This will involve the monitoring of seven pump stations to provide operating data. A detailed options analysis will be undertaken using this data to evaluate the energy efficiency benefits of upgrade options such as variable speed drives and/or pump replacement.

In addition, LinkWater will investigate potential efficiency gains from changes in network operations. For example, LinkWater will examine the use of North Pine instead of the SRWP reservoir storage. This analysis will assist in identifying grid wide energy optimisation.

7.5.9 SCADA

SCADA costs included in the maintenance program are related to the maintenance of the existing SCADA network. This is separate to the maintenance costs discussed as part of Network Unity (NU) SCADA. Once NU SCADA is fully installed, the maintenance activity will supercede these existing maintenance activities.

In addition to maintenance activities, the Minister's Report on the review of the operation and effectiveness of the Market Rules states that when the initial Market Rules were drafted, significant additional infrastructure was still under construction.

Now that the SEQ Water Grid is stable, the Report noted that to operate effectively, both new entrants and existing participants in the market need to have systems, infrastructure and technology that communicates and connects with each other.

Failure to have aligned and compatible technology could result in operational inefficiencies and potential data communication failures at critical points in time.

To address these issues, the Minister requested that grid participants develop a technical working group to consider and review the ability of grid participants' data systems, particularly SCADA, to communicate with each other and to consider the need for specific technical standards to be included in the Market Rules.

The SCADA Protocols Project covers the costs of LinkWater's participation in the Working Group.

7.5.10 Network Asset Operations

The objective of Network Asset Operations is to manage the day to day physical operation of the water transport network to ensure LinkWater meets its water quality and volume requirements.

Network Operations is responsible for:

- Operating the Network Control Centre
- Creating and reviewing maintenance plans
- Conducting security assessments of LinkWater's assets
- Preparing and maintaining service manuals for reservoir, pumping stations and water quality facilities
- Assessing asset criticality audits.

To manage its network, LinkWater operates a manned 365 day 24-hour continuous real-time Network Control Centre.

The Network Control Centre has the capacity to monitor the entire network and remotely control certain functions of both inherited and new assets. Water quality can be monitored as well as the ability to remotely control pump station operations and the opening and closing of valves at key locations across the network. This provides, in key network locations, for an immediate response to changes in demand or to respond to water quality issues.

The importance of the Network Control Centre was highlighted by the Commission of Inquiry, which noted that a key feature of the ability to maintain bulk drinking water supplies during the floods was the continuous operation of LinkWater's Network Control Centre.

7.5.11 Service Delivery

As discussed in its 2011-12 Regulatory Submission, in March 2010, LinkWater, Transfield Services Australia Pty Ltd (Transfield) and Trility (formerly United Utilities Australia Pty Ltd (UUA)) agreed to an Operation and Maintenance Deed (the Deed) detailing the provision of operational and asset maintenance up to 30 June 2013.

This arrangement provides for ongoing maintenance and certain operational services to be undertaken by Transfield and Trility (the Services Contractor).

The services delivery function is responsible for the programming of maintenance activities to be issued to the Services Contractor and for monitoring and managing the delivery of the maintenance work program and the relationship.

7.6 Water Quality

LinkWater is obligated to ensure the protection of public health by delivering safe drinking water. For this reason, water quality is a fundamental driver of LinkWater's activities.

As required under the *Water Supply (Safety and Reliability) Act 2008*, LinkWater has developed a DWQMP applying the Framework for the Management of Drinking Water Quality (the Framework) contained within the ADWG, 2004.

Application of the Framework has been endorsed by both the Natural Resource Management Ministerial Council and the National Health and Medical Research Council as a model for best practice.

For this reason, LinkWater considers the activities required to meet the requirements of the Framework as reflected in its approved DWQMP are prudent for a water entity to undertake.

7.6.1 ADWG Framework

The ADWG Framework contains 12 elements considered good practice for system management of drinking water supplies. These elements are interrelated and each supports the effectiveness of the others. This inter-relationship is outlined in Figure 7.1 and a full list of elements and their respective components is detailed in Figure 7.2.

Figure 7.1: *ADWG Framework Inter Relationships*

Source ADWG 2004, p. 2-2

Figure 7.2: *ADWG Framework - Good Practice Elements*

Element 1: Commitment to drinking water quality management Drinking water quality policy Regulatory and formal requirements Engaging stakeholders
Element 2: Assessment of the drinking water supply system Water supply system analysis Assessment of water quality data Hazard identification and risk assessment
Element 3: Preventative measures for drinking water quality management Preventative measures and multiple barriers Critical control points
Element 4: Operational procedures and process control Operational procedures Operational monitoring Corrective action Equipment capability and maintenance Materials and chemical
Element 5: Verification of drinking water quality Drinking water quality monitoring Consumer satisfaction Short-term evaluation results Corrective action
Element 6: Management of incidents and emergencies Communications Incident and emergency response protocols
Element 7: Employee awareness and training Employee awareness and involvement Employee training
Element 8: Community involvement and awareness Community consultation Communication
Element 9: Research and development Investigative studies and research monitoring Validation of processes Design of equipment
Element 10: Documentation and reporting Management of documentation and record Reporting
Element 11: Evaluation and audit Long-term evaluation of results Audit of drinking water quality management
Element 12: Review and continual improvement Review by senior executive Drinking water quality management improvement plan

Source ADWG 2004, p. 2-3

Fundamental to addressing these principles is the adoption of a systematic preventative management approach to water quality that seeks to prevent rather than respond to hazards.

To ensure LinkWater's DWQMP captures the necessary requirements of the preventive management approach, LinkWater has incorporated the principles contained in Hazard Analysis Critical Control Points (HACCP), International Organisation for Standardisation (ISO 9001) Quality Management Systems and Australian Standards (AS/NZS 43602) Risk Management.

As a result, the DWQMP essentially establishes key quality indicators which are required to be achieved to ensure the delivery of fit for purpose water.

These indicators also reflect the key challenge of meeting the different water quality requirements of the DREs. As a result, LinkWater operates two different disinfection systems across its network, chlorine and monochlorine, which have considerable operational implications.

To ensure compliance with its DWQMP, LinkWater has identified the following key activities for 2012-13:

- Routine water sampling and testing with results to be reported on a quarterly and yearly basis to the Office of the Water Supply Regulator
- Review of the DWQMP to fulfil the requirement for continual improvement
- Maintenance and implementation of the risk monitoring and administrative requirements of the DWQMP.

To discharge its water sampling and field testing obligations, LinkWater engaged the Australian Laboratory Group Pty Ltd (ALS) through a competitive tender process. Under this agreement, LinkWater has forecast $1.7 million for water quality testing activities for 2012-13.

LinkWater's agreement with ALS which details the specific services and detailed costs is available to the QCA upon request.

Total water quality costs proposed for inclusion in the 2012-13 GSCs are $3.0 million. This figure compares with $3.0 million recommended by the QCA for inclusion in 2011-12 GSCs.

A disaggregation of costs for LinkWater's proposed water quality activities for 2012-13 relative to 2011-12 is provided in Table 7.3.

Table 7.3: *LinkWater's Proposed Water Quality Costs*

Cost Category	2011-12 $	2012-13 $
Operational and Compliance	1,467,838	1,338,111
Laboratory Testing	1,500,000	1,660,008
Total	**2,967,838**	**2,998,119**

7.7 Asset Maintenance

As discussed in Chapter 6, LinkWater's asset maintenance philosophy is focussed on achieving its legislated service obligations of maintaining reliability and delivering quality water.

LinkWater achieves this objective by developing its maintenance program to ensure:

- Reasonable preventative, routine and non-routine maintenance and repairs are performed (taking into account any manufacturer guidelines and specifications) by knowledgeable, trained and experienced personnel using suitable equipment, tools and procedures
- Appropriate monitoring and testing is done to ensure equipment is functioning as designed
- There is a periodic identification and assessment of risks associated with the maintenance operation of the infrastructure
- Strategies are implemented to manage identified risks associated with the maintenance and operation of the infrastructure
- There is appropriate detailed documentation of constructed infrastructure to allow proper future repairs and maintenance
- There is appropriate documentation of operation and maintenance requirements for the assets comprising the infrastructure.

The maintenance program is generated from LinkWater's AMF. The approach and strategies used to determine the maintenance of the assets, how they are implemented, managed and reported is set out in the MMP.

The MMP sets out specific routine tasks for all asset types, the type of maintenance activity and the interval of how often the task will be performed.

These activities are then performed by the Services Contractor at the rates specified in the Operations Deed.

7.7.1 Fixed Fee Services

The fixed fee component of the Deed covers preventative, routine and monitoring maintenance and testing.

The cost of these maintenance activities by asset type is provided in Table 7.4.

Table 7.4: *LinkWater's Fixed Fee Maintenance per Asset Category*

Asset Category	2011-12 $	2012-13 $
Reservoirs	1,889,582	2,515,143
Balance Tanks	85,172	201,937
Pump Stations	2,935,962	2,428,001
Water Quality Facilities	3,474,652	2,415,440
Trunk Mains	344,351	379,355
Buildings	0	0
Land	0	0
SCADA	0	0
Other (condition based)	1,826,993	2,159,089
Total	**10,556,714**	**10,098,965**

7.7.2 Variable Fee Services

In addition to the routine inspections and maintenance captured within the fixed fee, the Deed provides for additional services under a variable fee arrangement.

The variable fee captures requests for unplanned maintenance not captured within the agreed routine maintenance activities.

Total proposed variable fee maintenance has been forecast according to the type of forecast unplanned maintenance activity and is detailed in Table 7.5.

Table 7.5: *LinkWater's Unplanned Maintenance per Asset Category*

Asset Category	2011-12 $	2012-13 $
Mechanical	1,581,712	427,012
Electrical	1,793,636	231,239
Structural	0	0
Operational	947,938	1,166,785
Total	**4,323,286**	**1,825,036**

The proposed costs for 2012-13 represent a significant reduction to those costs proposed in 2011-12. The driver for this decrease is associated with the reactive works program.

Reactive works are anticipated repairs over and above the agreed routine maintenance activities.

Throughout 2011-12, it became apparent that the reactive works being undertaken by the Services Contractor were more capital than maintenance in nature.

For this reason, while LinkWater expects to undertake a similar level of reactive works in 2012-13, it will capitalise an increased amount of these costs going forward. This explains the reduction in unplanned maintenance costs relative to 2011-12 and explains an increase in reactive capital works as highlighted in Chapter 10.

7.7.3 Service Level Agreements and Other

LinkWater maintains Service Level Agreements (SLAs) with a number of parties to ensure continuity of service.

LinkWater has SLAs in place with the DREs where LinkWater has committed to address specified network asset failures within a specified timeframe.

LinkWater has entered into an agreement with its Services Contractor to ensure that LinkWater can fulfil its SLA obligations. The arrangements regarding the provision of this service are contained in the Deed.

LinkWater also has SLAs in place with third party providers of SCADA support services to ensure that in the event of LinkWater's SCADA system failing, these parties will provide, respond and restore the system within agreed timeframes.

The cost to LinkWater of the three SLAs is $1.2 million.

In addition to SLA costs, LinkWater also incurs a number of minor operational maintenance expenses associated with the purchase of tools and materials. These costs are forecast at $0.8 million for 2012-13.

Total maintenance related costs are detailed in Table 7.6.

Table 7.6: *LinkWater's Proposed Maintenance Costs*

Fixed Cost Component	2011-12 $	2012-13 $
Fixed Fee Service	10,556,714	10,098,965
Variable Fee Service	4,323,286	1,825,036
SLAs	1,200,000	1,193,929
Tools and Materials	896,218	817,650
Total	**16,976,218**	**13,935,579**

7.8 Fixed Electricity Costs

LinkWater has recently become a contestable electricity customer. The reason and benefits are detailed in that Chapter.

LinkWater has identified electricity costs that will not vary with the total electricity consumed to operate pumping station to ensure the transportation of water to meet demand.

In its 2011-12 Final Report, the QCA concluded that electricity charges that do not vary according to the amount of electricity used are more appropriately incorporated into Fixed Operating Costs.

LinkWater's fixed electricity costs for 2012-13 are associated with:

- Fixed connection costs
- Constant load costs.

7.8.1 Fixed Connection Costs

Fixed connection costs reflect the charge for assets to connect LinkWater to the electricity distribution network, the management of these assets and standing metering charges.

Network connection charges are incurred regardless of any changes to LinkWater's electricity demand needed to meet delivery specifications issued by the SEQ WGM.[5]

7.8.2 Constant Electricity Usage

Constant energy loads are associated with activities that have a predetermined constant usage that does not change irrespective of changes in demand to meet service delivery specifications. These activities are:

- Security lighting
- Air-conditioning
- Variable Speed Drive (VSD).

Security Lighting

LinkWater maintains security lighting at its pump stations, water quality facilities and reservoirs. This lighting operates at fixed times every night to deter vandalism.

The electricity usage for security lighting is not variable as the actual usage and time of usage is fixed.

Air-conditioning

Efficient network operation requires the ability to remotely control and operate equipment on the infrastructure network including key pumps and valves. This functionality relies on sensitive electronic devices (e.g. programmable logic controllers) to control and operate equipment. These electronic devices must be maintained within specific temperature and humidity ranges.

Constant air-conditioning of switch-rooms is used to provide the required operating conditions for these electronic devices.

The air-conditioning load is a fixed load that does not vary.

[5] ENERGEX, ENERGEX Pricing Proposal for the period 1 July 2011 – 30 June 2012, p. 26.

Variable Speed Drives

VSDs vary the frequency and input of electricity to a pump motor thereby controlling the motor speed.

This allows a better matching of pump output to system demand and reduced power consumption and wear to pump motors.

The VSD control unit operates at a constant energy consumption throughout the year. In the event of an increase in demand, the controlled increased operation of a pump results in variable electricity usage which is charged at LinkWater's market electricity tariff.

LinkWater's fixed electricity costs inclusive of the cost of carbon for 2012-13 are $0.8 million and are detailed in Table 7.7. The allocation of these costs to each pump station is detailed in Table 8.5, Chapter 8.

Table 7.7: *Breakdown of Fixed Electricity Costs 2012-13*

Fixed Electricity Cost Components	Base Cost $	Carbon Cost $	Total Cost $
Fixed connection costs	503,848		503,848
Constant load costs			
Security and lighting	21,859	5,498	27,357
Air-conditioning of switch rooms	65,579	16,493	82,072
Variable Speed Drives	131,157	32,985	164,142
Total	**722,443**	**54,976**	**777,419**

While the 2012-13 fixed electricity costs represent a significant increase compared to 2011-12, under its market tested tariff structure, LinkWater pays a higher fixed charge and a lower variable. In net terms, LinkWater forecasts that it will achieve savings of $1.1 million in 2012-13. This is discussed further in Chapter 8.

7.9 Summary of Fixed Operating Costs

LinkWater's proposed Fixed Operating Costs are summarised in Table 7.8.

Table 7.8: *LinkWater's Proposed Fixed Operating Costs*

Fixed Cost Component	2011-12 $	2012-13 $
Corporate Costs	13,067,546	14,407,661
Network Operations	9,609,892	10,864,674
Water Quality	2,967,838	2,998,119
Fixed Asset Maintenance	10,556,714	10,098,965
Variable Asset Maintenance	4,323,286	1,825,036
SLAs	1,200,000	1,193,929
Tools and Materials	896,218	817,650
Fixed Electricity Costs	386,100	777,419
Total	**43,007,594**	**42,983,452**

8 VARIABLE OPERATING COSTS

8.1 Overview

LinkWater's proposed variable operating costs for 2012-13 are $2.8 million comprised of $2.3 million for energy costs associated with water pumping facilities to meet forecast demand and $0.5 million associated with chemical dosing to ensure the quality of water delivered meets safe drinking standards.

8.2 Regulatory Requirements

Clause 8.13 of the Market Rules permits a GSP to recover efficient variable operating costs relating to the Relevant Assets apportioned on an appropriate basis between the provision of Declared Water Services and other services.

In addition, the Direction Notice requires that production forecasts for the regulatory period are to be consistent with the Grid Instructions forecast in the Operating Strategy and any relevant information provided to the GSPs in accordance with the SOP.

The Authority's 2011-12 Final Report concluded that fixed electricity connection charges that do not vary according to the amount of electricity used are more appropriately incorporated into Fixed Operating Costs.

8.3 Previously Approved Variable Operating Costs

LinkWater's variable operating costs are largely driven by which assets are defined in Grid Instructions to transport water to meet demand. Specifically, when the SEQ Water Grid is operating in drought mode, there is a greater reliance on LinkWater's interconnecting pipes which require greater pumping capacity to transport water from one region to another.

When the SEQ Water Grid is operating in non-drought mode, the reliance is on regional water supply which does not require the same degree of pumping.

Prior to 2010, the SEQ Water Grid operated in drought mode. For this reason, LinkWater's historic variable operating costs have been high relative to the costs proposed for 2012-13.

This is highlighted in Table 8.1.

Table 8.1: *LinkWater's Historic Approved Variable Operating Costs*

Cost Category	2009-10 $	2010-11 $	2011-12 $	2012-13 $
Energy	5,975,243*	4,000,000*	2,193,874	2,320,059
Dosing	1,132,676	370,000	326,992	532,863
Other	n/a	143,978	0	
Total	**7,107,919**	**4,513,978**	**2,520,866**	**2,852,922**

*includes fixed connection charges

8.4 Transition to Market Contestability

At the time of the 2011-12 Regulatory Submission, LinkWater was a non-market participant subject to Tariff 22 as per the *Retail Electricity Prices for Non-Market Customers* set out in the *Government Gazette 2010-11.*

To determine whether there was a benefit in becoming a contestable electricity customer, LinkWater engaged specialist electricity industry consultants to assist in the development of an Energy Management Strategy (EMS).

The objectives of the EMS were to determine the potential benefits of becoming a contestable electricity customer and in the event there were benefits, to establish an appropriate strategy to engage the market.

The EMS concluded that there were benefits in LinkWater becoming a contestable energy customer. As a result, LinkWater released a public tender for the supply of electricity based on forecast usage from the then current Operating Strategy (version 3, February 2011).

There were a total of six responses received from electricity retailers with a range of charging structures.

The electricity retailers responded with relatively high fixed charges compared to Tariff 22 on the basis that LinkWater's demand profile is relatively stable and largely non-controllable due to the requirements of the Operating Strategy.

Following a detailed assessment of each proposal, LinkWater engaged Energy Australia/TRUEnergy (EA) as its electricity supplier for the period from 1 November 2011 to 30 June 2013.

The competitive market tender procurement approach adopted by LinkWater ensures that the costs incurred for electricity are efficient.

8.5 Impact of the CEFP

On 10 July 2011, the Federal Government announced its intention to implement a price on carbon pollution via a Clean Energy Future Plan (CEFP).

The CEFP will impact LinkWater's operating costs through:

- Increased electricity prices
- Increased prices for carbon intensive goods and services in LinkWater's supply chain, due to suppliers passing on their carbon price liability.

The Federal Government has advised that the carbon price will start at a fixed price of $23 a tonne in 2012-13, rising by 2.5 percent in real terms each year for the next three years respectively (called the fixed price period). LinkWater understands that from 1 July 2015, the fixed price will move to a flexible market price under a cap-and-trade emissions trading scheme.

As a consequence, the CEFP will have a significant impact on LinkWater's energy costs associated with water pumping and chemical dosing.

The CEFP was not in place when LinkWater agreed its contract with EA. However, this contract allows for the full pass-through to LinkWater of cost impacts on EA associated with the introduction of a price on carbon.

To quantify the impact of the CEFP on its forecast energy costs, LinkWater has applied a carbon intensity factor of 0.9kg/kWh and the Federal Government's mandated $23 cost per tonne.[6]

The carbon intensity factor refers to the tonnes of carbon dioxide emitted per kilowatt hour (kWh) of electricity produced in a specific geographic or regional location. By way of clarification, the carbon intensity factor indicates that for every Kilowatt hour used by LinkWater, it contributes 0.9 kilograms of carbon dioxide.

LinkWater has estimated the carbon produced at each pumping station using the carbon intensity factor and has multiplied this by $23 to determine a total variable cost impact of the carbon tax of $0.4 million for 2012-13.

8.6 Forecast Volumes for 2012-13

For the purposes of this submission, LinkWater has applied the 2012-13 financial year demand forecasts contained in the *SEQ Water Grid Operating Strategy Version 5 – November 2011* (Operating Strategy).

The Market Rules requires Grid Customers (e.g. power stations) and Grid Participants (DREs) to submit to the SEQ WGM their demand requirements for the forthcoming year.

The SEQ WGM presents these forecasts in terms of the dispatch locations and the volumes of water to be released from water sources, the designated assets to be used by LinkWater for transportation purposes, the monthly and daily volumes to be transported by these designated assets, and the locations and volumes for delivery to the DREs' demand zones.

Table 8.2 provides the forecast potable water volumes to be transferred by LinkWater from Seqwater's WTP facilities.

[6] Carbon intensity factor derived from the Department of Climate Change and Energy Efficiency, *National Greenhouse and Energy Reporting tool (OSCAR), Queensland Region.*

Table 8.2: *Forecast Treatment Plant Volumes to Transfer (Dispatch)*

Water Treatment Plant	Owner	Forecast ML per annum
Landers Shute	Seqwater	10,946
Molendinar	Seqwater	49,813
Mudgeeraba	Seqwater	18,317
SEQ Desalination	Seqwater	8,110
Mt Crosby	Seqwater	95,983
North Pine	Seqwater	33,536
Capalaba	Seqwater	3,943
Nth Stradbroke Island	Seqwater	9,490
Caboolture	Seqwater	613
Woodford	Seqwater	319
Total		**231,070**

In terms of water delivery, the Operating Strategy defines the specific quantity in MLs to be delivered to specific demand zones. Table 8.3 sets out the delivery volumes for each of the demand zones on the LinkWater network.

Table 8.3: *Forecast Delivery Volumes by Demand Zone*

Grid Customer	Demand Zone	Annual Demand ML
Unity Water	Caboolture	7,191
	Pine Rivers	6,387
	Redcliffe	4,768
	Caboolture WTP Zone	1,460
	Woodford	801
	Sub Total	**20,607**
Queensland Urban Utilities	Brisbane	105,490
	Ipswich	15,652
	Sub Total	**121,142**
Logan CC	Logan	14,767
	Logan Bridge	0
	Teviot Road	1,460
	Sub Total	**16,227**
Redlands CC	North Stradbroke	8,145
	Capalaba	3,829
	Sub Total	**11,974**
Gold Coast CC	Southport West	0
	Northern Mixed Zone	41,010
	Southern Mixed Zone	9,391
	Mudgeeraba	10,719
	Sub Total	**61,120**
Total		**231,070**

The SEQ WGM also prescribes certain volumes that must be transported through LinkWater's regional interconnector pipelines. These are detailed in Table 8.4.

Table 8.4: *Forecast Transport Volumes for Regional Interconnector Pipelines*

Water Treatment Plant	Forecast ML per annum
NPI - South	10,946
NPI - North	1,825
SRWP - North	15,119
EPI - West	1,460
Total	**29,350**

Outside of the requirement to transport specified volumes through its regional interconnector pipelines, LinkWater seeks to meet demand as far as practicable by transporting water via gravity feed.

This approach minimises electricity costs resulting from the use of pumps. However, demand cannot always be addressed via gravity feed due to the hydraulics of the network and demand characteristics in terms of volume, flow and pressure. In these instances, it is necessary for LinkWater to use pumping capability to ensure delivered water meets delivery specifications as per Grid Instructions.

In transporting water to certain locations it may be necessary to engage multiple pumping stations on a single pipeline. For this reason there is not a direct relationship between the volume of water released from water supply sources and the volume of water pumped.

Furthermore, the volume of water chemically treated will not be equal to the water released from supply sources and water transported through pumping stations. The chemically treated volume is determined by the requirement for different standards of water quality (i.e. chlorinated versus chloraminated) by the DREs at the different demand zones and the distance of the demand zone location from a water dosing facility.

8.7 Energy Costs

As discussed, LinkWater engaged EA as its electricity provider on the basis that its proposal demonstrated the lowest estimated costs for 2012-13 compared with the other retailers and LinkWater's existing franchise tariffs.

Based on the dispatch and delivery volumes detailed in the Operating Strategy, LinkWater has calculated the average water volumes it expects to pump during peak and off-peak electricity tariff periods on a pump station basis.

Pumping requirements are concentrated at LinkWater's inherited assets reflecting the Operating Strategy's focus on demand being supplied from localised sources rather than through the interconnector pipelines.

Based on this Strategy, LinkWater is forecasting a 25.5 percent increase in pumping volumes to 148,607 ML for 2012-13.

The calculation of variable electricity costs is provided in Table 8.5.

Table 8.5: *Forecast Volumes and Costs for 2012-13 per Pump Station*

Pumping Station Facility	Forecast Annual ML	Annual Constant Charge $	Annual Variable Charge $	Annual Carbon Cost $	Total Variable Cost $	Total Constant + Variable Cost $
SRWP – Nth Fl						
Chamber's Flat	15,119	62,849	262,957	47,351	310,308	373,157
Coomera	15,995	41,480	189,419	27,176	216,595	258,075
Molendinar	16,342	152,180	193,844	60,882	254,726	406,905
SRWP – Sth Fl						
Bundamba	0	18,100	0	0	0	18,100
Swanbank	0	41,660	2,161	0	2,161	43,821
NIP						
Tarrant Drive	14,115	23,203	81,468	9,640	91,108	114,311
EPI – West Fl						
Gramzow Road	1,460	18,454	71,365	6,127	77,491	95,946
NPI - Stage 1						
Caloundra St*	0					0
NIP - Stage 2						
Narangba	0	2,764	1,916	0	1,916	4,680
Eudlo	0	2,764	1,916	0	1,916	4,680
Noosa	0	1,748	0	0	0	1,748
Non-drought						
North Pine	37,291	213,516	404,892	138,166	543,057	756,574
Aspley	13,762	80,993	51,359	7,606	58,965	139,958
Lloyd Street	8,157	15,252	59,883	11,688	71,571	86,823
Stones Road	9,026	15,199	176,154	40,649	216,803	232,002
Learoyd Road	9,026	7,285	274,474	40,649	315,122	322,407
Wellers Hill	0	3,791	0	0	0	3,791
Trinder Park	1,559	13,133	59,022	7,180	66,202	79,335
Daisy Hill	312	13,090	7,639	1,118	8,757	21,847
Kimberley Park	312	14,518	13,061	479	13,540	28,057
Alexander Hills	599	26,847	5,524	490	6,014	32,862
Heinemann Road	5,532	4,785	52,479	11,324	63,803	68,588
Eprapah Creek	0	1,117	0	0	0	1,117
Byrnes Road	0	2,695	0	0	0	2,695
Total	**148,607**	**777,419**	**1,909,535**	**410,524**	**2,320,059**	**3,097,478**

*Caloundra Street is a water quality treatment facility releasing gravity fed water

Despite this increase in volumes, the estimated costs savings for 2012-13 of transitioning to a contestable tariff structure with EA are $1.1 million. This has been calculated by determining what the costs under Tariff 22 would have been for the identical pump operations. These forecast savings are detailed in Table 8.6.

Table 8.6: *Forecast Cost Savings from Becoming a Contestable Customer*

Pumping Station Facility	Forecast Annual ML	Total Costs under Franchise Tariff - $	Total Energy Charge under EA Proposal - $	Difference (savings are positive) - $
SRWP – Nth Fl				
Chamber's Flat	15,119	578,756	373,157	205,599
Coomera	15,995	320,989	258,075	62,914
Molendinar	16,342	672,108	406,905	265,203
SRWP – Sth Fl				0
Bundamba	0	23,329	18,100	5,229
Swanbank	0	47,478	43,821	3,657
NIP				0
Tarrant Drive	14,115	129,625	114,311	15,314
EPI – West Fl				0
Gramzow Road	1,460	83,906	95,946	-12,039
NPI - Stage 1				0
Caloundra Street	0		0	0
NIP - Stage 2				0
Narangba	0	1,226	4,680	-3,454
Eudlo	0	1,226	4,680	-3,454
Noosa	0	1,226	1,748	-522
Non-drought	0			0
North Pine	37,291	738,921	756,574	-17,652
Aspley	13,762	201,152	139,958	61,194
Lloyd Street	8,157	141,088	86,823	54,265
Stones Road	9,026	453,634	232,002	221,631
Learoyd Road	9,026	453,634	322,407	131,226
Wellers Hill	0	4,009	3,791	219
Trinder Park	1,559	81,529	79,335	2,194
Daisy Hill	312	13,832	21,847	-8,014
Kimberley Park	312	33,230	28,057	5,172
Alexander Hills	599	65,128	32,862	32,267
Heinemann Road	5,532	130,207	68,588	61,620
Eprapah Creek	0	407	1,117	-709
Byrnes Road	0	2,454	2,695	-241
Total	**148,607**	**4,179,095**	**3,097,478**	**1,081,617**

The QCA's 2011-12 Final Report stated that to encourage GSPs to invest, innovate and pursue efficiency improvements, the QCA would permit GSPs to retain 50 percent of any efficiency gains achieved as a result of specific initiatives put in place by the GSP.

LinkWater considers that the work undertaken in its EMS to identify potential benefits from electricity contestability and to establish a tariff structure that maximised cost savings given its load profile, represents a clear demonstration of an initiative driven efficiency.

LinkWater considers that the cost difference between the franchise tariff and the contestable tariff represent savings eligible for the QCA's efficiency incentive gain of 50 percent.

8.8 Chemical Dosing Costs

Under its Grid Contract, LinkWater is required to deliver different water quality configurations (i.e. chlorinated versus chloraminated) to the different demand zones.

Water dosing volumes are also impacted by the distance of the demand zone location from the water dosing facility given that the chlorine/chloraminate levels decline over time and distance transported. As a result, water may require re-dosing to top up chlorine/chloraminate levels during transit to the final demand delivery zone.

In developing its forecast costs, LinkWater has determined the type and level of dosing required at each water supply source to satisfy the different water quality standards at each DRE demand zone.

For 2012-13, LinkWater entered into a new contract for the provision of chemicals. Under previous arrangements, LinkWater did not have a contract with a guaranteed delivery time provision. This was identified as a significant risk as it exposed LinkWater to a potential water quality incident by not having the necessary type or quantity of chemical available to guarantee continuity of chemical dosing.

As a result, LinkWater sought a revised contract with a provision guaranteeing delivery times. This contract was procured through a competitive tender process consistent with LinkWater's procurement practices

As a result of the provision of guaranteed delivery, the costs for certain chemicals have increased significantly. These price increases are detailed in Table 8.7.

Table 8.7 *Chemical Cost Increases 2011-12 to 2012-13*

Chemical	2011-12 Unit Price ($/L)	2012-13 Unit Price ($/L)
Sodium Hypochlorite	0.18	0.30
Aqueous Ammonia	1.08	0.71
Sodium Hydroxide	0.25	0.70
Sulphuric Acid	0.38	0.50

Based on forecast demand and chemical costs, LinkWater's forecast chemical dosing costs for 2012-13 are $0.5 million, as detailed in Table 8.8.

Table 8.8: *Forecast Water Dosing Costs*

Water Quality Facility	Annual Forecast ML	2011-12 Average Chemical Costs $/ML	2012-13 Average Chemical Costs $/ML	2012-13 Costs $
Chambers Flat	15,119	13.50	16.98	256,670
Gramzow Rd	1,460	9.96	19.92	29,085
Alexandra Hills	3,941	3.73	4.80	18,915
Stapylton	0	0	0	0
Heinemann Rd	9,490	0.94	1.08	10,253
Caloundra St	10,946	9.62	18.39	201,269
NPI – Stage 2	1,825	N/A	9.13	16,671
Total	**42,781**			**532,863**

8.9 Total Proposed Variable Operating Costs

Based on the forecast dispatch and delivery volumes in the *SEQ Water Grid Operating Strategy Version 5*, LinkWater's proposed variable operating costs are summarised in Table 8.9.

Table 8.9: *LinkWater's Proposed Variable Operating Costs*

Variable Cost	2011-12 $	2012-13 $
Electricity	2,579,974	2,320,059
Dosing	386,100	532,863
Total	**2,906,970**	**2,852,922**

9 ALLOWABLE OPERATING COSTS

9.1 Overview

Allowable operating costs are intended to capture legitimate business costs not reflected in fixed and variable operating costs.

LinkWater's allowable operating costs for 2012-13 are associated with regulatory levies of $11.3 million.

9.2 Regulatory Requirements

Clause 8.14 of the Market Rules allows for the recovery of costs not recoverable as capital costs, fixed operating costs or variable operating costs including any levy payable under section 360F of the *Water Act 2000*.

The Direction Notice requires that the QCA is to recognise that Allowable Costs, with the exception of the QWC Levy, are once-off costs which cannot be reasonably foreseen, rather than costs that will be incurred on a recurring basis.

9.3 Levies

On 16 June 2010, the QWC advised LinkWater of the Government's decision to fund the QWC by a levy on the GSPs.

The *Water Amendment Regulation (No.3) 2010*, establishes the basis for how the QWC is to issue its levy.

The QWC levy for 2011-12 amounted to $10.3 million. In the absence of advice from the QWC regarding the levy to apply for 2012-13, LinkWater has escalated the 2011-12 levy by 2.5 percent, as the index rate used for WACC and escalation purposes.

On 13 October 2010, the QCA advised LinkWater that pursuant to the provisions of the *Queensland Competition Authority Regulation 2007*, it would be imposing a self-funding levy to be indexed annually by 5.8 percent.[7]

The QCA levy for 2011-12 amounted to $0.6 million. Applying the prescribed index rate provides for a levy of $0.7 million to apply in 2012-13.

9.4 Total Proposed Allowable Operating Costs

LinkWater has included the allowable costs as detailed in Table 9.1 for recovery through GSCs in 2012-13.

[7] Letter from John Hall, Chief Executive, Queensland Competition Authority to Peter McManamon, Chief Executive Office, LinkWater, dated 13 October 2010.

Table 9.1: *LinkWater's Proposed Allowable Costs*

Regulatory Agency	$
Queensland Water Commission	10,587,225
Queensland Competition Authority	683,468
Total	**11,270,692**

10 CAPITAL EXPENDITURE

10.1 Overview

LinkWater's proposed Capital Works Program for the 2012-13 regulatory period is $21.8 million. This represents a decrease of 10.7 percent relative to LinkWater's approved 2011-12 expenditure of $24.4 million.

The main drivers of the 2012-13 Capital Works Program are Maintaining Service (61.0%) and Business Efficiency (17.9 %).

Key expenditure by asset type includes trunk mains (35.8%), reservoirs (14.2%), land (13.7%) and SCADA (12.8%) with the balance made up of pump stations, water quality and other non-infrastructure expenditure.

LinkWater outsources the majority of its Capital Works Program through a competitive tender process consistent with the Queensland State Procurement Policy guidelines, to ensure the program of works is delivered at an economically efficient cost.

10.2 Regulatory Requirements

The Direction Notice requires the QCA to:

- Assess the prudency and efficiency of capital expenditure estimates submitted by the GSPs
- Recognise any expenditure on capital projects approved by the Price Regulator prior to 1 July 2011 as prudent
- Accept major capital investment for grid capacity augmentation will be determined by the Government as part of the Regional Water Security Program and will be rolled into the GSPs' RAB at the project cost.

Section 8.11 of the Market Rules requires the QCA must take into account:

- GSP obligations to comply with applicable governance requirements
- Any capital expenditure required to be undertaken to comply with legislative requirements
- Capital costs for assets constructed under Part 8 of the Water Regulation including:
    i. Commissioning costs
    ii. Capitalised corporate costs
    iii. Capitalised interest incurred from commencement of construction to certification of constructed assets.

10.3 Capital Works Development and Procurement

As discussed in section 6.4, LinkWater follows a documented capital planning process where each proposed project must pass a number of assessment gates before being approved for inclusion into the annual Capital Works Program.

All works approved for inclusion in the Capital Works Program are managed through LinkWater's PMO.

The PMO delivers the Capital Works Program in accordance with LinkWater's procurement policy.

LinkWater's procurement policy includes a commitment to achieving value for money outcomes and recognises the need to assess procurement activities based on the consideration of both cost factors (e.g. whole-of-life costs, transaction costs) and non-cost factors (e.g. fit for purpose, risk, quality, sustainability).

Procurement procedures incorporate competitive procurement processes, consistent with the Queensland State Procurement Policy guidelines, to ensure LinkWater's program of works is delivered at an economically efficient cost.

As a result of this process, LinkWater obtains a market tested price for the delivery of its Capital Works Program.

10.4 Project Management of the Capital Works Program

LinkWater has historically maintained a combination of in-house and contracted project management resources to manage the delivery of its Capital Works Program through peaks and troughs in the work load.

The market for project management personnel with experience in infrastructure delivery is highly competitive as a result of the current increased mining and gas exploration activities in Queensland. This has lead to difficulty in securing and retaining suitably qualified project management resources in-house.

As a result, in 2011-12 LinkWater took the strategic decision to outsource the project management of a proportion of its Capital Works Program. LinkWater's revised approach relies on the engagement of a service provider to undertake design (including approvals), procurement and project management of delivery for a series of bundled projects of sufficient value to attract a market response.

The benefits of this outsourcing approach include:

- Enhancing delivery capacity – by providing the flexibility to increase the scale of the Capital Works Program that can be delivered year-to-year without a significant impact to internal resourcing levels
- Increasing efficiency – it is expected that securing a market rate for the project management of selected works will result in lower costs than if delivered by contracted or in house resources
- Overcoming the difficulty in securing and retaining suitably qualified project management personnel to manage projects given current market conditions.

In its 2011-12 submission, LinkWater highlighted this initiative as driving efficiency gains to deliver a reduction in labour costs in the project management of minor capital works of 1.2 percent in 2012-13. LinkWater has incorporated these gains in its 2012-13 capital works forecast.

10.5 Expenditure Drivers

LinkWater's broad operating obligations, as detailed in Chapter 5 of this submission, are to:

- Maintain its infrastructure in accordance with good operating practice
- Ensure that its infrastructure is at all times able to comply with Grid Instructions and operating instructions
- Make available water which meets water quality specifications set out in its Drinking Water Quality Management Plan, any applicable Grid Contract Document and Operating Protocols.

LinkWater's Capital Works Program is directed towards ensuring its assets are able to meet these obligations at least cost.

In developing the Capital Works Program, the QCA has requested that LinkWater categorise its forecast expenditure against five investment drivers:

- Compliance – capital expenditure associated with the replacement or enhancement of an asset to prevent non-compliance with legislative requirements such as the *Water Act 2000*, Water Market Rule, Grid Services Contract, Water Quality Guidelines and OH&S
- 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
- Business Efficiency – capital expenditure designed to improve operational efficiency and reduce ongoing costs
- Growth – capital expenditure designed to provide an increase in the capability of an asset in response to increased demand, growth or variations required by a customer
- Service - capital expenditure associated with upgrading service outcomes to improve asset efficiency, reliability or increase the anticipated life of an asset to prevent service non-compliance or capacity shortfall.

On 27 January 2012, the QCA advised LinkWater of the Information Requirements for 2012-13 GSC.

In a change to from 2011-12, the QCA requires the inclusion of Service as a fifth expenditure driver. The QCA advised that it considered it important to keep the distinction between Compliance and Service and recognised that most service upgrades are as a result of compliance requirements. Notwithstanding, the QCA considered that it was important to recognise negotiated service upgrades between LinkWater and customers.

In addition to expenditure on water infrastructure assets, LinkWater also undertakes capital expenditure on non water infrastructure such as office equipment, fleet and IT equipment.

10.6 Material Changes to the 2011-12 Program

LinkWater's approved Capital Works Program for the 2011-12 regulatory period was $24.4 million.

The QCA has advised LinkWater that it intends to assess:

- The prudency and efficiency of material capital expenditure not submitted to the QCA as part of its 2011-12 investigation
- Material differences between expected and actual capital expenditure during the 2011-12 investigation.

LinkWater has two material capital projects not included in its 2011-12 submission:

- Supply and installation of reservoir mixers
- Bundamba flood protection wall.

In terms of material differences between the forecast and actual programs, LinkWater has experience material difference to the following programs:

- Kuraby reservoir refurbishment
- NPI – Stage 2
- Network Unity SCADA consolidation.

10.6.1 Reservoir Mixers

The time that treated water spends in reservoirs generates the most significant deterioration in water quality. Apart from the opportunity for external contamination there is the natural decline in disinfectant effectiveness and the potential for nitrification to occur in chloraminated water. The latter two effects can be minimised if water is well mixed within the reservoir and this helps to ensure that water supplied from the reservoir complies with the ADWG.

LinkWater's regular water testing regime identified the presence of nitrification, or conditions conducive to its creation, in a number of reservoirs that store chloraminated water. This problem is particularly prevalent during warm weather. As nitrification compromises the residual disinfection of the water and its compliance with ADWG the decision made to urgently progress the installation of 20 mixers into these reservoirs.

Whilst the mixers will not all be installed during 2011-12 there were financial advantages in purchasing them in bulk from the United States manufacturer. The balance will be installed in 2012-13.

10.6.2 Bundamba Flood Wall

Following the January 2011 Floods, the Bundamba Pump Station was inundated resulting in significant damage to the switchboard pivotal to the operation of the pumps.

The repair and restoration of the Bundamba pump station has been costed at $2.8 million. However, these repairs are covered under LinkWater's insurance coverage with the exception of an excess of $0.2 million.

LinkWater has not included the excess in its 2012-13 costs and requests QCA direction on the regulatory treatment of this excess.

On the basis that Bundamba pump station is a relatively new asset, is already in the RAB, and the costs are covered by insurance, LinkWater has not included these costs in its Capital Works Program as these capital renewals will have minimal impact on the RAB.

In addition to the restoration works, to maintain the resilience of the SEQ Water Grid it was considered necessary for the Bundamba Pump Station to be fully operational during a flood event.

To ensure its functionality during flood events, a flood protection wall was identified as the preferred solution.

The cost of works undertaken in the construction of this flood proofing was $1.2 million during 2011-12.

10.6.3 Kuraby Reservoir

When Kuraby Reservoir was drained and cleaned it became evident that the concrete roof had extensive cracking at joints and within the pre-cast roof slabs.

While this was not an immediate structural concern it provided entry paths for contaminants and the decision was made to apply a water-proof membrane over the entire roof before bringing the reservoir back into service. Undertaking this work at a later time may have required the reservoir to be drained again and there would have been a clear and ongoing risk of contamination until this work was done. This cost was incurred in the 2011-12 year.

10.6.4 NPI – Stage 2

As part of the QCA's 2011-12 Final Report, NPI – Stage 2 was included in the RAB at a value of $522 million and a commissioning date of April 2012 for the purposes of GSCs.

Based on the latest information available, LinkWater expects a delay in the commissioning of NPI – Stage 2 to the end of May 2012. In addition, revised costs are $535 million.

10.7 Capital Expenditure 2012-13

LinkWater's forecast program for 2012-13 is detailed in Table 10.1.

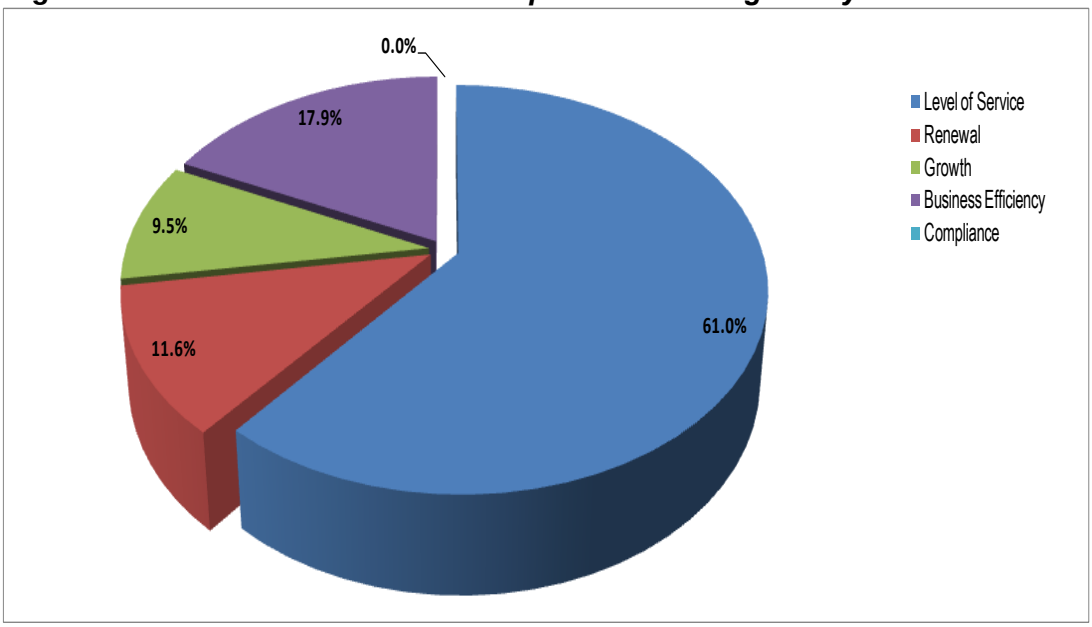
As discussed in LinkWater's 2011-12 submission, the capital expenditure program is driven largely by maintaining service and renewals expenditure with projects focussed heavily toward the older inherited assets.

Given that LinkWater is continuing to consolidate its understanding of the condition of these assets it is expected that this trend will continue in the foreseeable future. This is highlighted in the ratios of expenditure by investment driver in Figure 10.1.

Table 10.1: ***Forecast 2012-13 Capital Works Program***

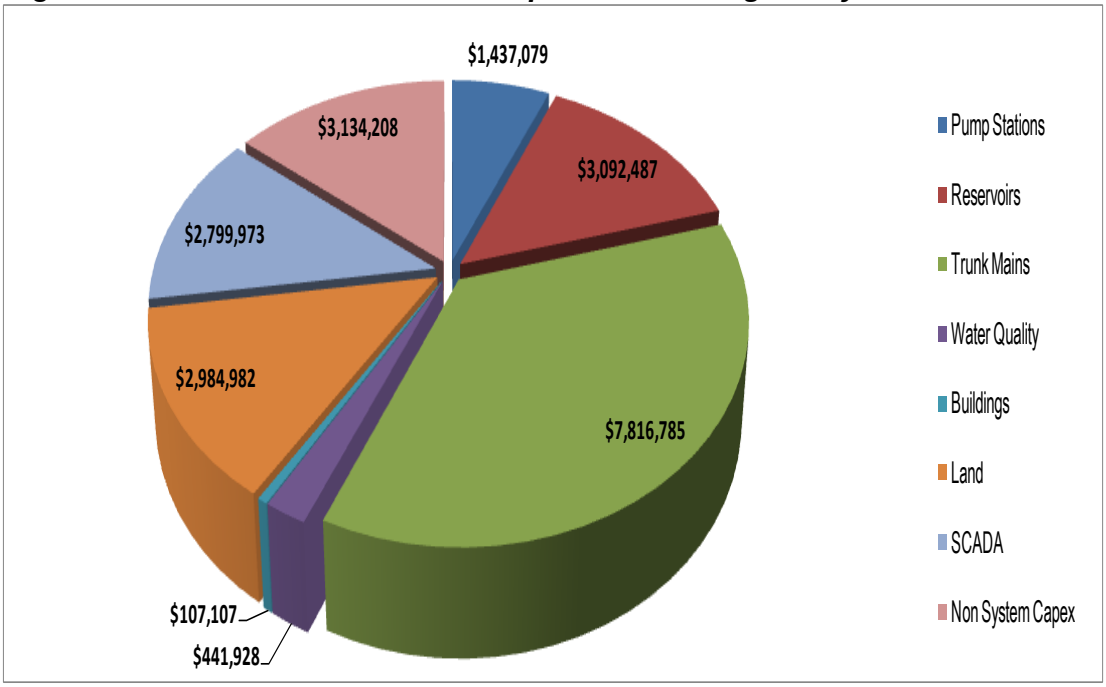
Asset Type	2012-13 $'
Pump Stations	1,437,079
Reservoirs	3,092,487
Trunk Mains	7,816,785
Water Quality	441,928
Land	2,984,982
SCADA	2,799,973
Buildings	107,107
Non-System Capital Works	3,134,208
Total	**21,814,549**

Figure 10.1: ***LinkWater's Forecast Capital Works Program by Driver***



Consistent with previous programs, the fundamental driver of the 2012-13 Capital Works Program is the renewal and refurbishment of equipment, coatings, etc associated with the inherited pipeline assets. The scale of the trunk mains program compared to other asset classes is demonstrated in Figure 10.2.

Figure 10.2: *LinkWater's Forecast Capital Works Program by Asset Class*



LinkWater has completed PJRs for each project within its 2012-13 capital expenditure program. A list of each project by value is provided at Attachment D. Copies of each PJR are available to the QCA upon request. Further discussion on capital works by driver is provided below.

10.8 Maintaining Service

LinkWater's capital works associated with maintaining service is made up of 26 projects totalling $13.3 million. This program represents 61.0 percent of LinkWater's total Capital Works Program. A sample of significant cost projects are summarised below. These projects account for 63.9 percent of the maintaining service program and 39.0 percent of the total Capital Works Program.

Reservoir Refurbishments Program ($2.4 million)

A fundamental requirement of LinkWater's DWQMP is to prevent water quality hazards being introduced into the water supply.

The majority of LinkWater's reservoirs were inherited from former Council water businesses and are of concrete construction, including the floors and walls, with either a concrete or tin roof.

LinkWater is progressively undertaking condition assessments of its assets to inform future capital and maintenance expenditure plans. The Reservoir Management Program includes an inspection program of all inherited reservoirs to identify evidence of:

- Construction joints no longer water tight
- Roof joints and gutters allowing water and contaminant ingress

- Vents, hatches and other access points allowing entry of vermin, debris and other contaminants
- Stairs, ladders, roofs and railings corrosion due to the moist environment and chlorine fumes
- Concrete reinforcement corrosion due to constant immersion
- Concrete corrosion due to the water chemistry.

The 2011-12 inspection program identified a number of defects at the Green Hill, Sparkes Hill and Wellers Hill reservoirs that require urgent attention to remove potential entry points for contaminants.

Consistent with the objectives of the DWQMP, the identified entry points are to be eliminated to avoid water quality issues arising from contaminants entering the water supply. If untreated, these defects have the potential to negatively impact the expected service life of the reservoirs.

Examples of the identified defects are provided in Figures 10.3 and 10.4.

Figure 10.3: *Wall Expansion Joint Leaks*

Figure 10.4: ***Wall Expansion Joint Leaks***

To rectify the identified defects at each reservoir it is proposed to drain, clean and perform an internal inspection before undertaking the following remediation works:

- Resealing roof and wall expansion joints
- Repairing concrete in the headstocks
- Applying protective coatings to the headstocks
- Undertaking internal concrete repairs and applying protective coatings.

The remediation works will restore the reservoirs to a fully functional condition.

While external inspections have identified numerous defects, the full extent of the complete internal works required cannot be determined until the reservoirs are drained, cleaned and further inspected.

The proposed works for these reservoirs includes an allowance for defects that are expected to be encountered based on similar refurbishments undertaken at the Kimberley Park, Aspley and Kuraby reservoirs. When these reservoirs were drained, internal inspections identified that the reservoirs suffered from deterioration of concrete columns, internal walls and of the waterproof roof coating. Figure 10.5 shows a drained reservoir.

Figure 10.5: ***Reservoir Drained for Internal Refurbishment Works***

Based on identified defects and the expected additional works required (given the experience at similar reservoirs) the costs of the reservoir refurbishment program at Green Hill Reservoir is $1.1 million and Sparkes Hill Reservoir is $1.3 million.

Following completion of these works:

- Potential entry points for contaminants will be eliminated
- Structural integrity will be restored allowing the reservoirs to achieve their full potential life and functionality.

Land Tenure Gaps and Acquisition ($3.0 million)

As discussed in section 7.5.5 of this submission, LinkWater's infrastructure network is located on approximately 2,050 separate land parcels as well as numerous road reserves and watercourses.

Control over land tenure is critical to provide a safe contiguous corridor to minimise risk or threat from third party activities and reduce potential risks to secure water supply and public safety.

A Land Tenure Gaps and Acquisition Project commenced in 2011-12 to resolve LinkWater's tenure gaps through the acquisition of suitable tenure over existing easements and future network corridors.

This project is a continuation of this project. The pilot project has progressed suitable tenure over 37 easements during 2011-12 against an original target of 20.

The project will run for a three year period with targeted acquisition of easements prioritised according to network criticality. The cost of the 2012-13 program is based on the acquisition of an additional 100 easements on freehold properties.

Trunk Mains – Valve Inspection and Remediation Program ($2.1 million)

The LinkWater network contains almost 4,000 valves of differing types that help manage operation of the network. Non-functioning valves impair the efficient operation of the network and increase the likelihood of disruption to other Grid Participants.

Valve types and their functions include:

- Isolation valves to separate one part of the network from another
- Shut-off valves to allow portions of the network to be shut-off for maintenance works and repairs
- Flow control valves to restrict the amount of flow, direction of flow and/or pressures in the mains
- Air valves to provide for the release of air from the mains and the rapid inflow of air in the event of a main being drained
- Scour valves to allow mains to be emptied at low points.

Individual valves are often only infrequently used. Without a regular inspection program valves may not be used, or even sighted, for several years.

Non-operational valves negatively impact on network operations. For example, a non-functioning shut-off valve results in a larger portion of the network being isolated if repairs are required. Maintenance activities, and network isolations impact the reliability of supply to the DREs and their customers.

The various valves on the inherited assets are older than those on the drought assets and were also subject to differing maintenance regimes under the former Council water businesses. Inspections have revealed a significant backlog of maintenance and renewal required to bring many of these valves up to required operational standards.

The valve and main inspection and remediation program involves an inspection of all valves across the network to confirm their operability. Non-functioning valves will be repaired or replaced.

A pilot project commenced in 2011-12 indicates that this will take significant tiem and resources as many of the valves are in confined spaces and the works required are extensive.

Upon completion of this project LinkWater will have remediated all non-functioning valves and produced a prioritised list of future inspections for inclusion in the 2013-14 maintenance plan. The remediation of valves across the networks will improve network operations and minimise water service disruptions to Grid Participants.

Trunk Mains – Minor reactive capital works ($1.0 million)

For any infrastructure business it is inevitable that asset failures will occur which are unexpected and which require rapid response to resolve if service disruption is to be avoided.

LinkWater's unplanned maintenance activities are typically undertaken by its Services Contractor.

As discussed in section 7.7.2, throughout 2011-12, it became apparent that the reactive works being undertaken by the Services Contractor were more capital than maintenance in nature.

With LinkWater having obtained a greater understanding of the condition and operation of its assets, it expects that a significant portion of reactive works will continue to be capital in nature.

As a result, LinkWater has forecast lower ongoing reactive maintenance for 2012-13 which will be offset by an increase in reactive capital expenditure.

10.9 Renewals

LinkWater's capital renewals are made up of 7 projects totalling $2.6 million. This program represents 11.6 percent of LinkWater's total Capital Works Program. The largest single renewal project is the Above-ground Pipe Recoating Program and accounts for 23.1 percent of the renewals program and 2.7 percent of the total Capital Works Program.

Above-ground Pipe Recoating Program ($0.6 million)

The above ground pipe recoating program is the continuation of a program commenced in 2010-11. The recoating program seeks to ensure the above ground steel pipes are effectively protected from the elements and achieve their intended effective lives.

There are 25km of above ground pipelines on LinkWater's trunk main network including creek crossings, road/rail crossings and sections to accommodate topographical features. Each section of above ground pipe is considered a critical node on the bulk supply network and is exposed to the elements and the risk of interference by the public.

The failure of a section of above ground pipe would present a significant hazard to the public as well as risking property damage to surrounding areas and disruption to the water supply services of the DREs.

Condition assessments have been completed for sections of above ground pipelines on the Mt Crosby to Green Hill trunk mains and Gold Coast trunk mains to ascertain the state of the protective coating. The condition assessments identified sections of above ground pipeline where the protective coatings are damaged or in poor condition and require rehabilitation in order to maintain the integrity of the protective coating system.

Rehabilitation of damaged or poor condition protective coating extends the service life of the above ground pipeline assets and reduces the risk of disruption of bulk water supply to DREs.

During 2011-12, LinkWater expects to re-coat 1.5 kilometres of above ground pipes. To demonstrate the significance of this activity, Figures 10.6 to 10.8 shows pipe re-coating before during and after recoating.

A total of 600 linear metres of pipe is proposed to be recoated in 2012-13 at a cost of $0.6 million based on the labour and materials rates used in the 2011-12 program.

Figure 10.6: ***Condition of Pipeline before Re-Coating***

Figure 10.7: ***Re-Coating Works in Progress***

Figure 10.8: ***Pipeline after Re-Coating Works***

10.10 Business Efficiency

For 2012-13, LinkWater has proposed 17 business efficiency projects totalling $3.9 million. This represents 17.9 percent of the total Capital Works Program.

The largest projects are the NU SCADA Consolidation and the development of the asset information management system which is a non-infrastructure project. Together these represent 87.2 percent of business efficiency projects.

Network Unity SCADA Consolidation ($2.8 million)

In its 2011-12 Regulatory Submission, LinkWater proposed a NU SCADA system to deliver a single uniform and "open" data model implemented across the grid.

NU SCADA will address the existing inadequate security, efficiency control and functionality characteristics of the existing multiple systems.

The system will also reduce LinkWater's reliance on proprietary SCADA systems, allow for the development of standard security protocols and provide a greatly improved ability to interface with other business systems

As part of the QCA's 2011-12 investigations, the NU SCADA project was considered prudent and the proposed costs [redacted] for 2010-11 and [redacted] over the project life considered efficient.

Following endorsement from the QCA, LinkWater issued a request for tender.

The tender was based on the following six inter-related packages of work:

- Package 1: detailed design, supply implementation and commissioning of a new SCADA
- Package 2: detailed design, supply, implementation and commission of replacement programmable logical controller (PLC) / remote terminal units (RTU)
- Package 3: detailed design, supply, implementation and commissioning of an integrated high speed radio communications backbone
- Package 4: detailed design, supply, implementation and commissioning of the SCADA Networking and Data Communications Systems
- Package 5: detailed design, supply and implementation of a maintenance program to support, report and schedule the maintenance activities associated with the SCADA system
- Package 6: supply of all maintenance services.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Asset Information Management System ($0.6 million)

As part of its 2011-12 submission, LinkWater identified three major issues associated with how the asset information inherited from the Councils had been programmed into LinkWater's financial and resource planning software (SAP).

First, asset information from the former Council water businesses was received in a variety of structures. For example, the financial asset information from Redlands Council categorised assets according to asset type (pump, motor, switchboard, etc) whereas Brisbane Council categorised assets by service discipline (i.e. mechanical, electrical and civil). Furthermore, the granularity of information received from Councils was inconsistent with asset data reported by location in some instances and by asset level in others.

LinkWater's finance asset module in SAP was initially populated with this inconsistent inherited information.

Second, in undertaking the asset maintenance function, the former maintenance Alliance developed its own asset hierarchy in SAP. This asset hierarchy and information was used for plant maintenance purposes to inform and track maintenance activities.

The Alliance developed this asset hierarchy independently of the asset information contained in the finance module largely due to the difficulties in finding any meaningful alignment.

As a result, the asset hierarchy and information contained in the finance module and the plant maintenance module of SAP are inconsistent.

Consequently, this limits LinkWater's ability to view life cycle information (e.g. replacement costs, maintenance costs, criticality, condition, maintenance history, etc) for individual assets without considerable manual effort.

Third, the asset information contained in the finance or plant maintenance modules of SAP is not linked to other corporate information sources, such as the GIS and SCADA.

This deficiency leads to unnecessary duplication of records and limits LinkWater's ability to maximise the capability of its systems. For example, by linking systems, LinkWater could more readily implement utilisation based maintenance and better understand spatial information (e.g. soil types from the GIS) and the impact this has on asset condition and failures.

As part of its 2011-12 submission, LinkWater proposed the following solution to the issues identified above:

- Develop a consistent asset hierarchy for all assets within SAP
- Extract the existing inherited data from SAP and migrate this data into the appropriate asset hierarchy within both the financial and plant maintenance components within SAP
- Align the financial and plant maintenance modules in SAP so that all information is linked to a clearly identifiable asset
- Establish linkages with other corporate asset information systems such as GIS, document management (TRIM) and SCADA systems.

The cost included in the 2011-12 Capital Works Program to undertake the required system upgrades and integration was $0.6 million including upgrades to the Finance, Assets Accounting, Materials Management, Plant Maintenance and Project Systems modules consistent with the proposed scope above.

It is now apparent that the budget included in the 2011-12 submission were insufficient to deliver the proposed scope.

To fully understand and verify the quantum of costs to complete this task, LinkWater engaged KPMG to advise on an optimal solution considering costs and benefits.

KPMG identified a four-phased solution. The first three phases are considered necessary to ensure LinkWater possesses the asset information in a structure that can be analysed to optimise asset management strategies and programs. These phases are largely consistent with the scope proposed by LinkWater in its 2011-12 submission.

The incremental costs to complete these three phases in 2012-13 is estimated at $0.6 million.

KPMG also identified a fourth phase designed to deliver a Decision Support Tool which will generate predictive outcome-based maintenance solutions and provide an industry best practise approach to asset maintenance.

The estimated costs for the fourth phase were approximately $5.0 million. LinkWater did not consider that the benefits and risk mitigation provided by the Decision Support Tool outweighed the costs and for this reason has elected not to progress this phase at this time.

10.11 Growth

LinkWater has proposed one significant growth driven project for 2012-13 accounting for 9.5 percent of the Capital Works Program.

LinkWater has also raised the possibility of a second major works which is subject to the finalisation of an assessment process being administered by the QWC.

These are discussed below.

Trunk Mains - Image Flat new Bulk Supply Point ($2.1 million)

The Image Flat water treatment plant (WTP) supplies water to the Image Flat reticulation system in the Unitywater water supply zone. It provides supply to Yandina, Eumundi, Nambour Bli Bli, Mudjimba, Marcoola, Coolum and Peregian Springs.

The Image Flat WTP has a daily production capacity of 25 ML/day. The forecast Mean Day Maximum Month (MDMM) for the Image Flat reticulation system is forecast to exceed the capacity of the WTP by 2016.

At present there is no contingency for plant failure or water quality issues.

On the basis of the lack of security of supply and need to develop a solution to meet forecast demand, in December 2011, Unitywater lodged a request for the designation of a new bulk supply point at Nambour with the SEQ WGM.

Following extensive investigation, LinkWater identified a 500mm flow controlled off-take as the optimal solution. This off-take would allow the Image Flat WTP to be taken offline for extended periods and still result in a MDMM of 30 ML/day to be supplied.

The SEQ WGM approved the request for a 500mm connection to NPI - Stage 2.

On the basis that Unitywater has requested a solution to address this demand issue, LinkWater has proposed a solution that has been accepted by Unitywater and approved by the SEQ WGM, LinkWater considers the installation of a 500mm off-take at Nambour addresses the regulatory requirements of prudency.

Scenic Rim Pipeline

The SEQ Water Strategy proposes that options to improve security of supply of all rural towns with reticulated water supplies should include either the provision of direct connections to the SEQ Water Grid via new or augmented pipelines or that

existing supply facilities be improved to a service level consistent with the SEQ Water Grid.

The standard of service provided by WTPs at Beaudesert and Canungra is of lower standard than that being produced elsewhere for the SEQ Water Grid.

Canungra and Beaudesert WTPs are now operating at near to their full capacities and need significant augmentation in the next few years to meet any additional demand.

To address these issues, the QWC engaged Worley Parsons to identify future supply options to stand alone communities in the Scenic Rim, including Beaudesert and Canungra.

Worley Parsons identified a connection to the SEQ Water Grid at the SRWP and then a pipeline from the Woodhill Reservoir to Beaudesert and then on to Canungra as the most cost effective and reliable means of meeting the LOS objectives for Beaudesert and Canungra.

Following the Worley Parsons report, the QWC established a collaborative planning project with all affected parties (LinkWater, Allconnex Water, Queensland Urban Utilities, Seqwater and the SEQ WGM) to achieve a collaborative agreement on the best whole of Water Grid option for supplying water to Beaudesert and Canungra.

The planning project is expected to make its final decision in March 2012.

If a trunk main extension is considered the most viable option, LinkWater will seek the inclusion of $5.4 million in its 2012-13 Capital Works Program to fund the planning phase of this project.

10.12 Non-Infrastructure Capital Works Program

LinkWater has proposed non-infrastructure Capital Works Program of $3.1 million for 2012-13.

The majority of the non-infrastructure capital works is associated with enhancing its IT infrastructure for knowledge management and asset information systems and is consistent with objectives identified in the Strategic Planning process.

Non-infrastructure projects for 2012-13 are detailed in Table10.2.

Table 10.2: *LinkWater proposed Non-Infrastructure Capital Works for 2012-13*

Non-Infrastructure Capital Expenditure	$
Data Centre Renewal	820,200
Replacement of IT Assets	694,015
Enhancement of Systems to support GIS SAP	378,554
Minor Works (11 projects)	465,965
Fleet	143,606
AIMS	631,868
Total	**3,134,208**

10.13 Summary of Forecast 2012-13 Capital Works Program

LinkWater's proposed Capital Works Program for 2012-13 is summarised in Table 10.3.

Table 10.3: *LinkWater proposed Capital Works Program for 2012-13*

Capital Expenditure	$
System Capital Works Program	18,680,341
Non-System Capital Works Program	3,134,208
Total	**21,814,549**

11 REGULATORY ASSET BASE

11.1 Overview

The closing regulatory asset base (RAB) for the current regulatory period ending 30 June 2012, becomes the opening RAB for the next regulatory period and is used to calculate the annual building block revenue requirements.

On 17 February 2012, the Minister advised LinkWater of its opening RABs as at 1 July 2011.

Following these values forward, LinkWater has proposed an opening RAB as at 1 July 2012 of $1,993 million for drought assets and opening RAB for non-drought assets of $602 million.

11.2 Regulatory Requirements

The Market Rules define a RAB as the infrastructure determined and notified by the State.

The RAB is separated into two classes of assets. Those constructed under the *Water Amendment Regulation (No.6) 2006* and classified as drought assets and those assets inherited from the former council owned water businesses and classified as non-drought assets.

The Direction Notice states that the opening RAB values and asset lives as advised by the QWC as at 1 July 2011 are not to be reviewed by the QCA or subject to optimisation.

11.2.1 Opening RAB

The QCA's Final Report for 2011-12 GSCs included the QWC's opening RAB of $1,455.4 million for drought assets and $586.0 million for non-drought asset as at 1 July 2011.

These respective opening RABs were developed based on a forecast Capital Works Program for 2010-11 of $25.9 million.

LinkWater's actual Capital Works Program for 2010-11 was $22.4 million.

Because there is a difference between the forecast and actual Capital Works Program, the opening RAB as at 1 July 2011 will need to be re-calculated to account for not only the difference in actual costs but also depreciation and asset appreciation.

On 17 February 2012, the Minister advised LinkWater that the adjustment of the 2011 RAB had been undertaken by the QWC and provided revised RABs to the QCA.

These RAB values are detailed in Table 11.1.

Table 11.1: *LinkWater's RAB Roll Forward*

Asset	RAB as at 1 July 2011 $
SRWP	866,266,502
EPI	40,257,277
NIP	219,476,737
NPI - Stage 1	329,392,843
Total Drought	1,455,393,360
Non-Drought	582,327,711
Total	**2,037,721,070**

Having established the opening RAB as at 1 July 2011, it is necessary to roll these values forward to the start of this regulatory period.

This roll forward for non-drought assets is detailed in Table 11.2 and for drought assets in Table 11.3.

Table 11.2: *LinkWater's Non-Drought RAB Roll Forward*

Roll Forward Item	2011-12 $	2012-13 $
Opening RAB	582,327,711	601,930,356
plus capital expenditure	24,369,168	21,814,548
minus depreciation	19,629,330	21,849,455
plus asset appreciation	14,862,807	15,320,941
Closing RAB	**601,930,356**	**617,216,390**

Table 11.3: *LinkWater's Drought RAB Roll Forward*

Roll Forward Item	2011-12 $	2012-13 $
Opening SRWP RAB	866,266,502	874,873,785
plus capital expenditure	0	0
minus depreciation	13,049,380	13,375,614
plus asset appreciation	21,656,663	21,871,845
Closing SRWP RAB	874,873,785	883,370,015
Opening EPI RAB	40,257,277	40,575,673
plus capital expenditure	0	0
minus depreciation	688,036	705,237
plus asset appreciation	1,006,432	1,014,392
Closing EPI RAB	40,575,673	40,884,827
Opening NIP RAB	219,476,737	221,308,234
plus capital expenditure	0	0
minus depreciation	3,655,422	3,746,807
plus asset appreciation	5,486,918	5,532,706
Closing NIP RAB	221,308,234	223,094,132
Opening NPI - Stage 1 RAB	329,392,843	332,443,421
plus capital expenditure	0	0
minus depreciation	5,184,243	5,313,849
plus asset appreciation	8,234,821	8,311,086
Closing NPI - Stage 1 RAB	332,443,421	335,440,658
Opening NPI - Stage 2 RAB	522,232,026	523,382,569
plus capital expenditure	0	0
minus depreciation	2,065,521	8,674,625
plus asset appreciation	3,216,064	13,084,564
Closing NPI - Stage 2 RAB	523,382,569	527,792,508
Closing Drought RAB	**1,992,583,682**	**2,010,582,142**

For the purposes of this submission, LinkWater has applied an opening RAB as at 1 July 2012 of $602 million and a closing RAB of $617 million.

For drought assets, LinkWater has applied an opening RAB as at 1 July 2012 of $1,993 million and a closing RAB of $2,011 million.

12 DEPRECIATION

12.1 Overview

The annual regulatory depreciation allowance is an amortised value of the RAB, derived using a depreciation schedule that reflects the nature of the assets over their economic life.

This Chapter sets out the annual allowances for regulatory depreciation and the weighted average remaining asset lives used to calculate depreciation for both the drought and non-drought RABs.

This regulatory depreciation is used to model the nominal asset values over the regulatory period and provides the depreciation allowance in LinkWater's annual revenue requirement.

12.2 Regulatory Requirements

Section 8.11 of the Market Rules specifies that assets transferred to LinkWater under the *South East Queensland Water (Restructuring) Act 2007*, have a remaining asset life implied from the valuation of the assets transferred.

For the purposes of calculating depreciation, the Direction Notice requires depreciation to be based on the written down value of the assets and is calculated using a straight line regulatory depreciation based on each asset's estimated useful life as provided by the QWC.

12.3 Method

LinkWater has applied a straight line method of depreciation to its drought and non-drought RABs and calculated depreciation by applying the remaining asset lives provided by the QWC and the QCA's revenue timing adjustment detailed in its 2011-12 Final Report.

The increase in the depreciation charge in 2012-13 relative to 2011-12 is explained by NPI – Stage 2 incurring a full year of depreciation. During 2011-12, it was forecast that NPI – Stage 2 would be commissioned in April 2012 and therefore only incur three months of depreciation for 2011-12 GSCs.

The regulatory depreciation values for drought assets and for non-drought assets for 2012-13 are provided in Table 12.1.

Table 12.1: *LinkWater's Proposed Regulatory Depreciation for 2012-13*

Assets	Depreciation $
SRWP	12,959,895
EPI	683,286
NIP	3,630,697
NPI - Stage 1	5,150,147
NPI - Stage 2	8,428,457
Sub-total	30,852,481
Non-Drought	18,300,907
Capital Works Depreciation	2,546,682
Total	**51,700,070**

13 WORKING CAPITAL

13.1 Overview

Working capital represents the capital required to manage the lag between payments to suppliers and the receipts from customers over the short term operating cycle of a business.

Working capital is therefore incidental to the operation of assets to provide regulated services as LinkWater has a daily requirement for liquidity to operate its business.

13.2 Working Capital Allowance

The Price Regulator has approved an allowance for working capital in each of its previous GSC decisions.

As part of its 2011-12 investigation, the QCA endorsed a total working capital requirement of $23.0 million based on 45 debtor days and 30 creditor days.

LinkWater considers that three major components should drive the value of working capital for regulatory purposes:

- Inventories which reflect the stores required to be held by a water business in order to operate their network including a holding of critical spares which are necessary to correct critical failures
- Accounts receivable associated with collection of regulated revenue
- Accounts payable related to the amounts paid for operating and capital inputs.

The QCA has in previous electricity and water decisions accepted that inventories are an essential requirement for the ongoing function of infrastructure businesses.[8]

Consistent with the approach adopted in the QCA's 2011-12 Final Report, LinkWater has proposed a working capital allowance determined as accounts receivable less accounts payable applying 45 debtor days and 30 creditor days to apply in 2012-13.

Based on these collection and receipt periods, LinkWater's proposed working capital is provided at Table 13.1.

[8] For example see QCA decision with respect to electricity distribution determinations for Energex and Ergon Energy for 2001 and 2005 and with respect to water see Gladstone Area Water Board 2002 and 2010 decisions on Pricing Principles.

Table 13.1: *LinkWater's 2012-13 Working Capital Requirements*

Working Capital Component	2012-13 $
Avg Monthly Accounts Receivable	28,059,995
Avg Monthly Accounts Payable	7,148,712
Difference	20,911,283
Plus	
Critical Spares	1,636,624
Inventories	853,182
Total Working Capital Requirement	23,401,089
Return on Working Capital	**2,191,304**

14 WEIGHTED AVERAGE COST OF CAPITAL

14.1 Overview

Consistent with the Minister's Direction Notice, LinkWater proposes the application of a pre-tax nominal Weighted Average Cost of Capital (WACC) of 9.81 percent to apply to its non-drought assets and actual debt rates provided by the Queensland Treasury Corporation (QTC) to apply to its drought assets for use in the building block method to determine maximum allowable regulatory revenues for recovery through 2012-13 GSC.

14.2 Regulatory Requirements

Clause 91(5) of the *Water Amendment Regulation (No.6) 2006* provides that 'each service provider may recover its costs and any rate of return in the way, and to the extent, that is consistent with its pricing policies and, subject to section 25Q of the Act, the jurisdiction of the Queensland Competition Authority.'

In the Direction Notice, the QCA is required to apply LinkWater's actual cost of debt on drought assets in determining a pre-tax nominal WACC.

In addition, the Direction Notice requires the QCA to accept:

- Drought assets are to achieve a regulatory rate of return equal to the actual cost of debt on each asset inclusive of administration fees and capital market charges but exclusive of a Competitive Neutrality Fee (CNF)
- Non-drought capital expenditure and post commission capital expenditure on both drought and non-drought assets to achieve a return equal to WACC
- The WACC be set to reflect the actual cost of debt incurred by each GSP

  The cost of debt for non-drought assets is the book interest rate forecast by the QTC for each asset including an administration fee, capital market charges and a CNF.

14.3 LinkWater's Proposed Weighted Average Cost of Debt

LinkWater's forecast drought asset debt levels and respective QTC book rates as at 1 July 2013 are provided in Table 14.1. Consistent with the Direction Notice, the cost of debt for drought assets excludes a CNF but includes the administration fee and the Capital Market Charge (CMC).

Table 14.1: *LinkWater's Proposed Debt Estimates*

Asset	Book Rate %	Admin Fee and CMC %	CNF Fee %	Cost of Debt %
SRWP	6.43	0.07	0.0	6.50
NIP	6.41	0.07	0.0	6.48
EPI	6.44	0.07	0.0	6.51
NIP Stage 1	6.37	0.07	0.0	6.44
NPI - Stage 2	5.84	0.07	0.0	5.91

14.4 LinkWater's Proposed Pre-tax WACC

The Direction Notice requires the QCA to apply a pre-tax nominal WACC incorporating LinkWater's actual cost of debt.

The Direction Notice also prescribes the following parameter values:

- Debt/equity gearing of 50:50
- A market risk premium of 6.0 percent
- Equity beta of 0.68
- Gamma of 0.5
- Tax rate of 30 percent.

LinkWater's proposed values for the remaining parameters are discussed below.

14.5 Risk free rate

The Direction Notice provides that the risk free rate is to be as provided by QTC.

On 18 January 2012, the QTC provided LinkWater with a risk free rate of 5.94 percent based on the ten year Commonwealth Government bond rate.

14.6 Cost of Debt

The Direction Notice requires the cost of debt component of the WACC for non-drought assets to be equal to the GSP's actual cost of debt including administration and capital market charges and the CNF as advised by QTC.

The actual cost of debt for inclusion into the WACC is 7.84 percent determined by:

- Debt rate of 6.61 percent *plus*
- Administration and capital markets charge of 0.07 percent *plus*
- Competitive neutrality fee of 1.16 percent.

In addition, the Market Rules provide that the GSPs should be fully immunised from interest rate risk based on the actual cost of debt.

The QCA confirmed in its 2011-12 Report that 'immunisation against interest rate exposures' is intended to require that the actual cost of debt be applied on an ex post basis for each asset/debt tranche and compared to the total provision as forecast for the GSCs, with adjustments made to account for any differences.

14.7 Inflation

In its 2011-12 Final Report the QCA adopted an inflation forecast of 2.50 percent.

LinkWater considers that 2.5 percent remains the appropriate value where a long-term, forward looking estimate of inflation is required on the basis that the Reserve Bank of Australia's target band for inflation is between 2 and 3 percent, and it has

demonstrated a clear and consistent intention to maintain inflation within this band via monetary policy.

14.8 WACC parameters

LinkWater's proposed pre-tax nominal WACC is detailed in Table 14.2

Table 14.2: *LinkWater's Proposed WACC Estimates*

Parameter	Value
Risk free rate	5.94%
Actual Cost of Debt	7.84%
Capital Structure	50%
Inflation	2.50%
Market risk premium	6.00%
Equity beta	0.68
Gamma	0.5
Corporate tax	30%
Cost of equity	10.02%
Pre-tax nominal WACC	**9.81%**

15 ANNUAL REVENUE REQUIREMENTS

15.1 Overview

The annual revenue requirement is the sum of the individual building block components, discussed in the preceding Chapters.

15.2 Regulatory Requirements

Clause 8.8 of the Market Rules provides for GSCs to include:

- Capital charges
- Fixed operating charges
- Variable operating charges
- Allowable costs.

15.3 Annual Revenue Requirements

The annual revenue requirement brings together the individual building block components in order to estimate the GSCs to apply for 2012-13.

The notional building block revenue requirement for 2012-13 is shown in Table 15.1 and is calculated as the sum of the return on non-drought assets, actual cost of debt on drought assets, return of capital, operating and maintenance expenditure and working capital.

LinkWater's revenue has remained relatively stable between 2011-12 and 2012-13 reflecting a relatively unchanged cost base.

The reason for the increase in revenue is solely attributable to LinkWater achieving a full year's earnings for NPI – Stage 2. For 2011-12 LinkWater achieved earnings for only 3 months.

LinkWater has included a negative revenue adjustment of $0.2 million to reflect the impact of the difference between approved and actual capital expenditure during 2010-11 on return on, depreciation and asset appreciation.

Table 15.1: ***Building Block Revenue Requirements for 2012-13***

Revenue Component	Approved 2011-12 $M	Proposed 2012-13 $M
Return on Drought RAB	100,599,218	122,369,214
Return on Non-Drought RAB	56,475,071	57,394,146
Depreciation	42,564,186	51,700,070
Less returns received via inflation	(52,624,338)	(62,922,855)
Fixed Operating Costs	43,007,592	42,983,452
Variable Operating Costs	2,520,866	2,852,922
Allowable Costs	10,975,000	11,270,692
Working Capital	2,181,002	2,191,304
Adjustment for 2010-11 Capital Works	-	(241,202)
Total	**205,698,598**	**227,597,742**

16 PRICING

16.1 Overview

Notwithstanding that the DREs are only exposed to the bulk water price path, LinkWater considers that it is responsible to reflect as far as practicable the short-term cost drivers of the business from both a location and usage perspective.

For this reason, LinkWater has proposed the following tariffs:

- A two-part tariff for each pump station based on the fixed and variable energy costs incurred for the use of each pumping station levied on a $/ML basis
- A charge for treated water at each water quality facility to reflect the $/ML cost of different water treatment requirements
- All remaining costs recovered via a fixed monthly tariff.

16.2 Regulatory Requirements

The Market Rules provides that the SEQ WGM must pay GSCs in accordance with the terms of its Grid Contract Document and apportioned on an appropriate basis between Declared Water Services and other services.

LinkWater's Grid Contract Document provides that LinkWater must issue an invoice to the SEQ WGM each calendar month specifying the GSC for that month and the volume of water delivered.

16.3 Pricing Structure

The market arrangements facing LinkWater are unconventional in that:

- All GSPs are required to contract directly with the SEQ WGM for the sale of their services and not the customers who take physical supply of the water
- There is limited metering functionality at the interface between LinkWater and the DREs
- DREs currently contract directly with the SEQ WGM for the supply of bulk water services, not the actual provider.

As a result, the conventional pricing objectives of signalling the economic costs of supply are limited as the DREs are only exposed to the bulk water price path.

However, LinkWater considers that it is responsible to reflect as far as practicable the short-term cost drivers of the business from both a locational and usage perspective.

The principal short-term cost driver is water pumping costs. These costs reflect the intra and inter day impacts of demand through the use of electricity required to operate the pump stations to meet short-term demand.

LinkWater has established a two-part tariff for each pump station based on the fixed and variable energy costs incurred for the use of each pumping station.

The fixed charge reflects the fixed network connection costs for each site whereas the variable charge is related specifically to the amount and timing of usage.

LinkWater's proposed fixed and variable charges for each pumping station are presented in Table 16.1.

Table 16.1: *Proposed Energy Tariffs per Pumping Station*

Pumping Station	Fixed Tariff $/per month	Variable Tariff $/ML
SRWP		
Bundamba	1,508.33	n/a
Chambers Flat	5,237.38	20.52
Coomera	3,456.68	13.54
Molendinar	1,2681.65	15.59
Swanbank	3,471.66	n/a
EPI		
Gramzow Road	1,537.84	53.08
NPI – Stage 1		
Caloundra Street	n/a	n/a
NPI – Stage 2		
Narangba	230.30	n/a
Eudlo	230.30	n/a
Noosa	145.67	n/a
NIP		
Tarrant Drive	1,933.57	6.45
Non-Drought		
Alexandra Hills	2,237.28	10.05
Aspley	6,749.41	4.28
Byrnes Road	224.58	n/a
Daisy Hill	1,090.80	28.06
Eprapah Creek	93.06	n/a
Heinemann Road	398.72	11.53
Kimberley Park	1,209.80	43.39
Learoyd Road	607.06	34.91
Lloyd Street	1,270.99	8.77
North Pine	17,793.01	14.56
Stones Road	1,266.56	24.02
Trinder Park	1,094.40	42.47
Wellers Hill	315.91	n/a

In addition, LinkWater has developed two other tariffs. The first is a $/ML charge for treated water at each of its water quality facilities to reflect the cost of chemically treated water. Ideally, the DREs should be exposed to these tariffs as a means of signalling the costs of the different dosing regimes requested. These costs are presented in Table 16.2.

Table 16.2: *Proposed Tariff per Water Quality Facility*

Water Quality Facility	Tariff per $/ML Treated
Chambers Flat	16.98
Gramzow Rd	19.92
Alexandra Hills	4.80
Stapylton	0.00
Heinemann Rd	1.08
Caloundra St	18.39
Ferntree Balance	9.13

All remaining costs are recovered via a fixed monthly tariff. This tariff is provided in Table 16.3.

Table 16.3: *Proposed Fixed Monthly Tariff*

Customer	Annual Revenue $	Less Fixed Energy Costs $	Less Variable Energy& Chemicals $	Fixed Monthly Revenue for Recovery $
SEQ WGM	227,597,742	777,419	2,852,922	18,663,950

16.4 Unders and Overs

Under its proposed charging method, LinkWater may recover more or less than its forecast costs in the event that actual water volumes pumped and dosed differ from forecasts.

Under the QCA's Final Report there will be an end of year review to reconcile actual performance against forecast. While LinkWater is protected under the QCA arrangements against volume or source risk, LinkWater is still exposed to cost risks where the QCA considers LinkWater has not operated its network optimally in response to Grid Instructions.

17 MECHANISMS

17.1 Overview

The QCA detailed a number of Review Thresholds for application to Grid Service Providers in its 2011-12 Final Report.

The 12 months since this decision has allowed LinkWater time to fully understand the practical application of these thresholds.

LinkWater has now fully considered the proposed thresholds and provides a number of suggestions on how these could be improved for the current regulatory arrangements.

17.2 Review Threshold

As part of its 2011-12 Final Report, the QCA set out a number of events that were eligible for a within period review of costs and revenue. These events were:

- Change in Law or change in Government Policy
- Change in demand or supply source
- Change in Cost of Debt
- Change in RAB
- Change in actual Capital Works Program from that initially estimated.

In qualifying for a pass-through event, the QCA also intended to apply a materiality threshold.

Specifically, to qualify for a within period pass-through, the event would need to result in an increase in costs equivalent to five percent of the annual GSC. The QCA determined this materiality threshold based on the impact to a GSP's cash flow.

The intent of the general pass-through mechanism is to allow for events that have a material impact on revenue and that within-period regulatory adjustments should only occur where the benefits of adjustment outweigh the costs.

Specifying the criteria for initiating within period adjustments as the QCA has done is therefore important to minimise regulatory risk and to avoid establishing a cost-plus regulatory arrangement.

However, there is a balance between setting a materiality threshold that is so low as to protect the GSPs from every unforeseen event that may occur during the regulatory period and setting it so high as to make it redundant.

While LinkWater agrees in principle with the QCA's approach, it considers that the five percent threshold is set too high. For example, at this level, an event would need to result in an increase in LinkWater's fixed operating costs of over 20 percent or cause a capital expenditure impact larger than its entire capital expenditure program.

At these levels, it is unlikely the threshold would ever be triggered.

LinkWater considers that recent decisions by both the Australian Energy Regulator and QCA provide a more practicable threshold. Specifically, LinkWater noted that the QCA adopted a threshold of one percent of revenue in its 2010 Gladstone Area Water Board (GAWB) decision while the AER also adopted one percent in its Queensland electricity distribution determination.[9]

LinkWater considers that a one percent materiality threshold would be sufficiently high as to not capture minor events but be set such that GSPs would be protected against genuine unforseen events with a material impact on their financial position.

17.3 Capital Expenditure Overspend

The QCA's Final Report for 2011-12 GSC stated that a GSP should receive capital charges with respect of all prudent capital expenditure from the date on which it is included in the RAB.

There are potential timing differences between when LinkWater incurs expenditure and when the QCA assesses expenditure.

For this reason, LinkWater seeks clarification regarding the specific timing of when eligible capital expenditure overspend will be rolled into the RAB. Specifically, is it in the year the expenditure is incurred or is it in the year the QCA makes its assessment?

[9] QCA, *Final Report Gladstone Area Water Board: Investigation of Pricing Practices*. June 2010, p. 180
AER, *Queensland Distribution Determination 2010-11 to 2014-15 Final Decision*, May 2010, p. 312

18 GLOSSARY

Unless the context otherwise requires, the following expressions have the following meanings when used in this submission:

ADWG	Australian Drinking Water Guidelines
AIMS	Asset Information Management System
AMF	Asset Management Framework
AMP	Asset Management Plan
ARMC	Audit and Risk Management Committee
CAPM	Capital Asset Pricing Model
CEFP	Clean Energy Future Plan
CMC	Capital Market Charge
CNF	Competitive Neutrality Fee
CPI	Consumer Price Index
DRE	Distribution Retail Entity
DWQMP	Drinking Water Quality Management Plan
EMS	Energy Management Strategy
EPI	Eastern Pipeline Interconnector
FMECA	Failure Mode and Effect Criticality Analysis
GAWB	Gladstone Area Water Board
GIS	Geographical Information Systems
GSC	Grid Service Charge
GSP	Grid Service Provider
IMS	Infrastructure Master Plan
IPART	Independent Pricing and Regulatory Tribunal of New South Wales
KPI	Key Performance Indicator
kWh	Kilowatt hour

LOS	Level of Service
LWP	LinkWater Projects
MAR	Maximum Allowable Revenue
Market Rules	South East Queensland Water Market Rules
Minister	Minister for Energy and Water Utilities
ML	Megalitre
MMP	Maintenance Management Plan
NCC	Network Control Centre
NIP	Network Integration Pipeline
NPI – Stage 1	Northern Pipeline Interconnector Stage 1
NPI – Stage 2	Northern Pipeline Interconnector Stage 2
NPS	New Project Statement
NPV	Net Present Value
NU	Network Unity
Ofwat	Water Services Regulation Authority of England and Wales
PJR	Project Justification Report
PMO	Project Management Office
PLC	Programmable Logical Controller
QCA	Queensland Competition Authority
QTC	Queensland Treasury Corporation
QWC	Queensland Water Commission
RBA	Reserve Bank of Australia
RCM	Reliability Centred Maintenance
RPC	Remuneration and People Committee
RTU	Remote Terminal Unit
SAMP	Strategic Asset Management Plan
SAP	Systems Application Processing software application

SCADA	Supervisory control and data acquisition
SEQ	South East Queensland
SEQ WGM	South East Queensland Water Grid Manager
SLMP	System Leakage Management Plan
SOP	System Operating Plan
SRWP	Southern Regional Water Pipeline
VSD	Variable Speed Drive
WACC	Weighted Average Cost of Capital
WEC	Works and Environment Committee
WSAP	Water Supply Asset Plan

19 REFERENCES

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Workplace Health and Safety Act 1995.

Workplace Health and Safety Act 2011.

Attachment A: Data Templates

QCA Interim Grid Service Charges Assessment
Sheet 1.0: Consolidated Summary

Summary	QCA Endorsed 2011/12	Estimated Actual 2011/12	Forecast 2012-13
System Capex	543,625,517	558,330,766	18,680,341
Non-System Capex	2,930,794	2,582,947	3,134,208
Total Capex			21,814,549
Fixed Operating Costs			
Operational Management	15,060,048	14,443,780	16,651,791
Overheads	13,067,546	13,167,049	14,407,661
O&M	14,879,998	13,795,174	11,924,000
Variable Operating Costs			
Water Dosing	326,979	290,146	532,862
Water Transport	1,643,652	1,422,383	2,320,059
Allowable Costs			
Levies	8,209,000	9,067,261	11,270,692
Opex	53,187,224	52,185,792	57,107,066
Working Capital	2,181,002	2,126,603	2,185,697
Total Opex	55,368,226	54,312,395	59,292,763

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QCA Interim Grid Service Charges Assessment
Sheet: System Capital Expenditure

QCA Endorsed 2011/12

Capital Expenditure	Growth	$	Service $	Compliance	$	Replacement	$	Improvement $	TOTAL	Asset Life
Drought										
NPI Stage 2	522,232,026		0	0		0		0	522,232,026	63.25
Non-Drought										
Reservoir	0		2,684,650	0		271,867		56,105	3,012,622	55
Balance Tank	0		0	0		0		0	0	55
Pump Station	0		653,543	0		812,543		70,131	1,536,217	45
Water Quality Facility	0		322,335	0		0		14,026	336,362	50
Trunk Mains	0		4,998,855	0		5,511,104		98,184	10,608,143	75
Buildings	0		0	0		448,841		8,416	457,257	50
Land	0		1,999,028	0		0		5,611	2,004,638	0
SCADA	44,884		198,178	0		0		3,240,074	3,438,252	7
Prior Period Adjustments	0		0	0		0		0	0	TBA
Sub-Total	***44,884***		***10,856,588***	***0***		***7,044,356***		***3,492,547***	***21,393,491***	
TOTAL	**522,276,910**		**10,856,588**	**0**		**7,044,356**		**3,492,547**	**543,625,517**	

Estimated Actuals 2011/12

Capital Expenditure	Growth	$	Service $	Compliance	$	Replacement	$	Improvement $	TOTAL	Asset Life
Drought										
NPI Stage 2	535,374,714		0	0		0		0	535,374,714	63.25
Non-Drought										
Reservoir	0		3,552,634	0		1,952,861		0	5,505,495	55
Balance Tank	0		0	0		0		0	0	55
Pump Station	0		1,736,510	0		1,355,517		0	3,092,027	45
Water Quality Facility	0		1,135,061	0		1,038,498		0	2,173,559	50
Trunk Mains	0		4,050,153	0		3,628,231		108,264	7,786,648	75
Buildings	0		156,161	0		732,156		0	888,317	50
Land	0		1,046,612	0		0		0	1,046,612	0
SCADA	38,109		1,808,846	0		616,439		0	2,463,394	7
Prior Period Adjustments	0		0	0		0		0	0	TBA
Sub-Total	***38,109***		***13,485,977***	***0***		***9,323,702***		***108,264***	***22,956,052***	
TOTAL	**535,412,823**		**13,485,977**	**0**		**9,323,702**		**108,264**	**558,330,766**	

Forecast 2012/13

Capital Expenditure	Growth	$	Service $	Compliance	$	Replacement	$	Improvement $	TOTAL	Asset Life
Drought										
	0		0	0		0		0	0	
Non-Drought										
Reservoir	0		3,054,312	0		0		35,213	3,089,525	55
Balance Tank	0		2,961	0		0		0	2,961	55
Pump Station	0		264,100	0		796,196		376,783	1,437,079	45
Water Quality Facility	0		422,561	0		0		19,367	441,928	50
Trunk Mains	2,072,895		3,981,460	0		1,733,085		29,344	7,816,785	75
Buildings	0		101,238	0		0		5,869	107,107	50
Land	0		2,979,113	0		0		5,869	2,984,982	0
SCADA	0		0	0		0		2,799,973	2,799,973	7
Prior Period Adjustments										TBA
Sub-Total	***2,072,895***		***10,805,746***	***0***		***2,529,281***		***3,272,419***	***18,680,341***	
TOTAL	**2,072,895**		**10,805,746**	**0**		**2,529,281**		**3,272,419**	**18,680,341**	

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QCA Interim Grid Service Charges Assessment
Sheet: Non-System Capital Expenditure

QCA Endorsed 2011/12							
Capital Expenditure	**Growth $**	**Service $**	**Compliance $**	**Replacement $**	**Improvement $**	**TOTAL**	**Asset Life**
Corporate Plant & Equipment	0	0	0	0		0	5
Fleet	0	0	0	21,741		21,741	3
IT	0	2,404,107	0	490,920	14,026	2,909,054	3
Prior Period Adjustments	0	0	0			0	TBA
TOTAL	**0**	**2,404,107**	**0**	**512,661**	**14,026**	**2,930,794**	

Estimated Actuals 2011/12							
Capital Expenditure	**Growth $**	**Service $**	**Compliance $**	**Replacement $**	**Improvement $**	**TOTAL**	**Asset Life**
Corporate Plant & Equipment						0	5
Fleet		13,033		87,337		100,370	3
IT		2,363,110		119,467		2,482,577	3
Prior Period Adjustments						0	TBA
TOTAL		**2,376,143**		**206,804**		**2,582,947**	

Forecast 2012/13							
Capital Expenditure	**Growth $**	**Service $**	**Compliance $**	**Replacement $**	**Improvement $**	**TOTAL**	**Asset Life**
Corporate Plant & Equipment	0	65,140	0	0	0	65,140	5
Fleet	0	143,606	0	0	0	143,606	3
IT	0	2,287,726	0	0	637,736	2,925,462	3
Prior Period Adjustments						0	TBA
TOTAL	**0**	**2,496,472**	**0**	**0**	**637,736**	**3,134,208**	

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QCA Interim Grid Service Charges Assessment
Sheet: Operational Management

Operational Activities	QCA Endorsed 2011/12	Estimated Actuals 2011/12	Forecast 2012/13
Operations			
Insurance	1,453,245	1,501,604	1,784,377
Infrastructure Planning	1,079,172	230,392	462,689
Network Asset Operations	1,139,464	1,325,896	1,426,295
Management and Admin	424,425	413,419	768,000
GIS	413,266	628,708	850,905
Land & Corridor Management	630,656	695,344	776,851
System Modelling & Network Information	733,607	1,074,736	1,004,937
Strategic Asset Management	1,115,263	961,297	1,315,199
Service Delivery	1,054,038	1,010,215	1,166,630
SCADA	454,267	438,696	534,870
Project Services	1,112,489	653,910	773,921
TOTAL Operations	9,609,892	8,934,217	10,864,674
Water Quality			
Water Quality & Compliance	1,467,838	1,425,054	1,338,111
Water Laboratory Testing	1,500,000	1,480,031	1,660,008
TOTAL Water Quality	**2,967,838**	**2,905,085**	**2,998,119**
Other			
Fixed Electricity Connection Costs	386,100	607,149	777,419
Service Level Agreements	1,200,000	536,544	1,193,929
Tools and Materials	896,218	1,460,785	817,650
TOTAL Other	**2,482,318**	**2,604,478**	**2,788,998**
TOTAL	**15,060,048**	**14,443,780**	**16,651,791**

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QCA Interim Grid Service Charges Assessment
Sheet: Operations and Maintenance

Operations & Maintenance per Asset Category	QCA Endorsed 2011/12	Estimated Actual 2011/12	Forecast 2012/13
Planned Reservoir			
Mechanical	139,206	38,355	23,385
Electrical	66,855	225,226	305,054
Structural	88,835	0	0
Operational	1,594,686	1,913,736	2,186,705
Planned Balance Tank			0
Mechanical	29,307	588	0
Electrical	10,074	17,682	14,030
Structural	5,495	0	0
Operational	40,296	118,491	187,907
Planned Pump Station			0
Mechanical	1,402,866	973,735	1,671,677
Electrical	289,402	295,075	484,468
Structural	659,396	0	0
Operational	584,298	391,676	271,856
Planned Water Quality			0
Mechanical	261,698	136,621	158,000
Electrical	29,535	113,032	100,376
Structural	32,054	0	0
Operational	3,151,365	2,337,519	2,157,063
Planned Trunk Mains			0
Mechanical	0	86,237	4,668
Electrical	84,256	101,134	102,091
Structural	43,502	0	0
Operational	216,593	914,021	272,597
Planned Land			0
Planned Building			0
Planned SCADA			0
Mechanical	0	0	0
Electrical	0	0	0
Structural	0	0	0
Operational	0	0	0
Condition Based			0
Mechanical	558,453	1,706,229	505,172
Electrical	739,768	1,201,919	273,566
Structural	0	0	0
Operational	528,772	1,475,028	1,380,350
Unplanned			0
Mechanical	1,581,712	322,089	427,012
Electrical	1,793,636	922,429	231,239
Structural	0	0	0
Operational	947,938	504,353	1,166,785
Other Controllable			0
Mechanical	0		0
Electrical	0		0
Structural	0		0
Operational	0		0
TOTAL	14,879,998	13,795,174	11,924,000

LinkWater

QCA Interim Grid Service Charges Assessment
Sheet: Chemical Dosing

QCA Endorsed 2011/12			
Water Quality Facility	**Water Transported ML/day**	**Average Chemical Costs $/ML**	**Cost $**
Chambers Flat	13,716	13.50	185,166
Gramzow Road	1,460	9.96	14,542
Alexandra Hills	4,948	3.73	18,456
Stapylton	0	0.00	0
Heinemann Road	8,038	0.94	7,556
Landsborough (Caloundra St)	10,526	9.62	101,260
TOTAL	38,688		326,979

Estimated Actual 2011/12			
Water Quality Facility	**Water Transported ML/day**	**Average Chemical Costs $/ML**	**Cost $**
Chambers Flat	11,950	13.50	161,325
Gramzow Road	2,050	9.96	20,418
Alexandra Hills	2,800	3.73	10,444
Stapylton	775	0.00	0
Heinemann Road	7,500	0.94	7,050
Landsborough (Caloundra St)	9,450	9.62	90,909
TOTAL	34,525		290,146

Forecast 2012/13			
Water Quality Facility	**Water Transported ML/day**	**Average Chemical Costs $/ML**	**Cost $**
Chambers Flat	15,119	16.98	256,670
Gramzow Road	1,460	19.92	29,085
Alexandra Hills	3,941	4.80	18,915
Stapylton	0	0.00	0
Heinemann Road	9,490	1.08	10,253
Landsborough (Caloundra St)	10,946	18.39	201,268
NPI Stage 2	1,825	9.13	16,671
TOTAL	42,781		532,862

LinkWater

QCA Interim Grid Service Charges Assessment
Sheet: Water Transport Costs

QCA Endorsed 2011/12

Pumping Station	Forecast avg ML/Month Pumped	% Pumped @ Peak Tariff	Forecast avg ML/Month @ Peak Tariff	Peak Tariff Cost (c/kWh)	Peak Operation kWh per annum	Peak Energy Cost per annum	Peak kWh/ML	% Pumped @ Off Peak Tariff	Forecast avg ML/Month @ Off-peak Tariff	Off Peak Tariff Cost (c/kWh)	Off Peak Operation kWh per annum	Off-peak Energy Cost per annum	Off Peak kWh/ML	Total Cost $
SRWP														
Bundamba	0	100%	0	27.97	7.75	2,167	-	0%	0	9.85	0.00	0	-	**2,167**
Chambers Flat	13,716	30%	4115	27.97	738.72	206,627	179.53	70%	9601	9.85	1,704.09	167,900	177.49	**374,527**
Coomera	0	30%	0	27.97	2.11	591	-	70%	0	9.85	4.93	485	-	**1,076**
Molendinar	13,716	30%	4115	27.97	1,087.80	304,266	264.36	70%	9601	9.85	2,538.19	250,082	264.36	**554,349**
Swanbank	0	100%	0	27.97	5.38	1,506	-	0%	0	9.85	0.00	0	-	**1,506**
EPI			0						0	9.85				
Gramzow Road	1,464	60%	878	27.97	224.64	62,833	255.73	40%	586	9.85	149.76	14,755	256.43	**77,588**
NPI			0						0					
Caloundra Street	10,524	50%	5262	27.97	91.37	25,557	17.36	50%	5262	9.85	91.37	9,003	17.36	**34,560**
NIP			0						0					
Tarrant Drive	456	80%	365	27.97	14.17	3,965	38.86	20%	91	9.85	3.54	349	38.46	**4,314**
Non-Drought			0						0					
Alexandra Hills	672	60%	403	27.97	45.11	12,618	111.88	40%	269	9.85	30.07	2,963	111.32	**15,581**
Aspley	11,688	40%	4675	27.97	345.55	96,654	73.91	60%	7013		445.66	43,910	65.86	**140,564**
Byrnes Road	0	100%	0	27.97	4.51	1,261	-	0%	0	9.85	0.00	0	-	**1,261**
Camerons Hill	0	100%	0	27.97	1.68	470	-	0%	0	9.85	0.00	0	-	**470**
Daisy Hill	2,244	70%	1571	27.97	277.58	77,640	176.71	30%	673	9.85	118.96	11,721	172.59	**89,361**
Eprapah Creek	0	100%	0		0.00	0	-	0%	0	9.85	0.00	0	-	
Heinemann Road	1,800	60%	1080	27.97	219.04	61,268	202.85	40%	720	9.85	146.03	14,388	202.85	**75,656**
Kimberley Park	2,244	70%	1571	27.97	127.92	35,780	81.43	30%	673	9.85	54.82	5,401	79.54	**41,181**
Learoyd Road	0	100%	0	27.97	3.05	852	-	0%	0	9.85	0.00	0	-	**852**
Lloyd Street	5,784	60%	3470	27.97	195.81	54,769	56.42	40%	2314	9.85	130.54	12,862	56.44	**67,631**
Mudgeeraba Booster	0	100%	0	27.97	4.82	1,348	-	0%	0	9.85	0.00	0	-	**1,348**
North Pine	31,488	50%	15744	7.89	2,544.41	252,742	236.82	50%	15744	3.53	2,544.41	89,696	161.59	**342,437**
Stones Road	19,200	60%	11520	27.97	471.30	131,827	40.91	40%	7680	9.85	314.20	30,958	40.93	**162,785**
Trinder Park	3,408	70%	2386	27.97	125.92	35,222	52.79	30%	1022	9.85	53.97	5,317	52.74	**40,539**
Wellers Hill	0	100%	0	27.97	1.38	386	-	0%	0	9.85	0.00	0	-	
TOTAL	**118,404**		**57,155**						**61,249**					**2,029,752**

Estimated Actual 2011/12 - July to October 2011

Pumping Station	Forecast avg ML/Annum Pumped	% Pumped @ Peak Tariff	Forecast avg ML/Annum @ Peak Tariff	Peak Tariff Cost (c/kWh)	Peak Operation MWh per annum	Peak Energy Cost per annum	Peak kWh/ML	% Pumped @ Off Peak Tariff	Forecast avg ML/Annum @ Off-peak Tariff	Off Peak Tariff Cost (c/kWh)	Off Peak Operation MWh per annum	Off-peak Energy Cost per annum	Off Peak kWh/ML	Total Cost $
SRWP														
Bundamba	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**722**
Chambers Flat	2,856	30%	857	27.97	153.80	43,019	179.53	70%	1999	9.85	354.80	3,495	177.49	**46,514**
Coomera	enance Volume	30%	0	27.97	0.00	0	-	70%	0	9.85	0.00	0	-	**359**
Molendinar	3,068	30%	921	27.97	243.35	68,065	264.36	70%	2148	9.85	567.82	5,593	264.36	**73,658**
Swanbank	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**502**
EPI														
Gramzow Road	393	60%	236	27.97	60.33	16,873	255.73	40%	157	9.85	40.33	397	256.43	**17,270**
NPI														
Caloundra Street	2,497	50%	1249	27.97	21.68	6,064	17.36	50%	1249	9.85	21.68	214	17.36	**6,278**
NIP														
Tarrant Drive	0	80%	0	27.97	0.00	0	38.86	20%	0	9.85	0.00	0	38.46	**0**
Non-Drought														
Alexandra Hills	312	60%	187	27.97	20.94	5,858	111.88	40%	125	9.85	13.89	137	111.32	**5,995**
Aspley	2,211	40%	885	27.97	65.38	18,286	73.91	60%	1327		87.38	0	65.86	**18,286**
Byrnes Road	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**420**
Camerons Hill	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**157**
Daisy Hill	281	70%	197	27.97	34.80	9,734	176.71	30%	84	9.85	14.57	143	172.59	**9,877**
Eprapah Creek	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**0**
Heinemann Road	455	60%	273	27.97	55.35	15,482	202.85	40%	182	9.85	36.90	363	202.85	**15,845**
Kimberley Park	966	70%	676	27.97	55.04	15,395	81.43	30%	290	9.85	23.04	227	79.54	**15,622**
Learoyd Road	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**681**
Lloyd Street	1,416	60%	850	27.97	47.95	13,411	56.42	40%	567	9.85	31.98	315	56.44	**13,726**
Mudgeeraba Booster	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**449**
North Pine	4,817	50%	2409	7.89	570.39	45,003	236.82	50%	2409	3.53	389.20	1,374	161.59	**46,377**
Stones Road	1,784	60%	1070	27.97	43.80	12,249	40.91	40%	714	9.85	29.21	288	40.93	**12,537**
Trinder Park	5,333	70%	3733	27.97	197.06	55,116	52.79	30%	1600	9.85	84.38	831	52.74	**55,948**
Wellers Hill	enance Volume	100%	0	27.97	0.00	0	-	0%	0	9.85	0.00	0	-	**129**
Fixed Connection Charges														
TOTAL	**26,390**		**13,541**		**1,570**	**324,558**			**12,849**		**1,695**	**13,377**		**341,354**

Estimated Actual 2011/12 - November 2011 to June 2012

Pumping Station	Forecast avg ML/Annum Pumped	% Pumped @ Peak Tariff	Forecast avg ML/Annum @ Peak Tariff	Peak Tariff Cost (c/kWh)	Peak Operation MWh per annum	Peak Energy Cost per annum	Peak kWh/ML	% Pumped @ Off Peak Tariff	Forecast avg ML/Annum @ Off-peak Tariff	Off Peak Tariff Cost (c/kWh)	Off Peak Operation MWh per annum	Off-peak Energy Cost per annum	Off Peak kWh/ML	Peak Demand Charge ($/kW/mth)	Peak Demand Cost per Annum	Total Cost $
SRWP																
Bundamba	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	0.00	0.00	**0**
Chambers Flat	7,201	40%	2880	7.97	440.69	35,126	61.20	60%	4320	4.09	661.04	27,022	153.00	10.99	72,107.52	**134,256**
Coomera	7,782	40%	3113	7.97	258.35	20,592	33.20	60%	4669	4.09	387.52	15,841	83.00	10.99	63,313.92	**99,748**
Molendinar	8,012	40%	3205	6.89	583.24	40,190	72.80	60%	4807	2.86	874.86	24,985	182.00	6.02	33,930.24	**99,105**
Swanbank	350	0%	0	0.00	0.00	0	-	0%	0	0.00	0.00	0	-	10.99	1,231.10	**1,231**
EPI																
Gramzow Road Pump Station	745	50%	373	8.09	76.36	6,176	102.50	50%	373	4.20	76.36	3,211	205.00	12.38	29,707.20	**39,094**
NIP																
Tarrant Drive	7,651	45%	3443	8.09	82.60	6,680	10.80	55%	4208	4.20	100.96	4,245	23.99	12.38	29,707.20	**40,633**
Non-Drought																
Alexandra Hills	400	50%	200	8.64	8.00	691	20.00	50%	200	4.75	8.00	380	40.00	13.65	2,183.68	**3,255**
Aspley	9,429	50%	4715	15.02	127.29	19,114	13.50	50%	4715	9.94	127.29	12,653	27.00	0.00	0.00	**31,766**
Byrnes Road	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	0.00	0.00	**0**
Daisy Hill	436	40%	175	8.09	30.55	2,471	70.00	60%	262	4.20	45.82	1,927	175.00	12.38	2,475.60	**6,873**
Eprapah Creek	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	0.00	0.00	**0**
Heinemann Road	3,690	50%	1845	8.64	184.50	15,935	50.00	50%	1845	4.75	184.50	8,771	100.00	13.65	7,642.88	**32,349**
Kimberley Park	436	40%	175	8.64	13.09	1,131	30.00	60%	262	4.75	19.64	934	75.00	13.65	6,551.04	**8,615**
Learoyd Road	6,030	50%	3015	15.02	663.34	99,606	-	50%	3015	9.94	663.34	65,935	220.00	0.00	0.00	**165,541**
Lloyd Street	5,853	45%	2634	8.09	184.37	14,912	31.50	55%	3219	4.20	225.34	9,475	70.00	12.38	13,863.36	**38,250**
North Pine	24,816	50%	12408	7.02	2,245.85	157,670	90.50	50%	12408	3.41	2,245.85	76,628	181.00	0.00	0.00	**234,298**
Stones Road	6,030	50%	3015	8.09	663.34	53,649	110.00	50%	3015	4.20	663.34	27,892	220.00	12.38	27,726.72	**109,269**
Trinder Park	1,153	50%	577	8.09	129.77	10,495	112.50	50%	577	4.20	129.77	5,456	225.00	12.38	20,795.04	**36,747**
Wellers Hill	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-			**0**
Fixed Connection Charges																
TOTAL	**90,015**		**41,771**		**5,691**	**484,437**			**47,894**		**6,414**	**285,356**			**311,236**	**1,081,029**

Notes
1. Camerons Hill & Mudgeeraba Pump Station remain on tarrif under revised electricity contract and are incorporated into the fixed connection charges. Neither pump station is to be used in the foreseeable future

Forecast 2012/13

Pumping Station	Forecast avg ML/Annum Pumped	% Pumped @ Peak Tariff	Forecast avg ML/Annum @ Peak Tariff	Peak Tariff Cost (c/kWh)	Peak Operation MWh per annum	Peak Energy Cost per annum	Peak kWh/ML	% Pumped @ Off Peak Tariff	Forecast avg ML/Annum @ Off-peak Tariff	Off Peak Tariff Cost (c/kWh)	Off Peak Operation MWh per annum	Off-peak Energy Cost per annum	Off Peak kWh/ML	Peak Demand Charge ($/kW/mth)	Peak Demand Cost per Annum	Total Cost $
SRWP																
Bundamba	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	0.00	0.00	**0**
Chambers Flat	15,119	40%	6048	10.27	925.28	95,039	61.20	60%	9071	6.39	1,387.92	88,667	153.00	12.87	126,602.14	**310,308**
Coomera	15,995	40%	6398	10.27	531.03	54,544	33.20	60%	9597	6.39	796.55	50,887	83.00	12.87	111,162.85	**216,595**
Molendinar	16,342	40%	6537	9.00	1,189.68	107,037	72.80	60%	9805	4.94	1,784.52	88,094	182.00	7.04	59,594.11	**254,726**
Swanbank	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	12.87	2,161.50	**2,161**
EPI																
Gramzow Road Pump Station	1,460	50%	730	10.41	149.65	15,576	102.50	50%	730	6.53	149.65	9,765	205.00	14.49	52,150.70	**77,491**
NIP																
Tarrant Drive	14,115	45%	6352	10.41	211.92	22,057	15.01	55%	7763	6.53	259.01	16,901	33.36	14.49	52,150.70	**91,108**
NPI Stage 2																
Narangba	0	50%	0	9.00	0.00	0	0.00	50%	0	5.12	0.00	0	0.00	15.97	1,916.51	**1,917**
Eudlo	0	50%	0	9.00	0.00	0	0.00	50%	0	5.12	0.00	0	0.00	15.97	1,916.51	**1,917**
Noosa	0	50%	0	16.94	0.00	0	0.00	50%	0	13.05	0.00	0	0.00	0.00	0.00	**0**
Non-Drought																
Alexandra Hills	599	50%	299	11.05	11.97	1,323	20.00	50%	299	7.17	11.97	858	40.00	15.97	3,833.02	**6,014**
Aspley	13,762	50%	6881	18.51	185.79	34,385	13.50	50%	6881	13.23	185.79	24,580	27.00	0.00	0.00	**58,965**
Byrnes Road	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	0.00	0.00	**0**
Daisy Hill	312	40%	125	10.41	21.84	2,273	70.00	60%	187	6.53	32.76	2,138	172.59	14.49	4,345.89	**8,757**
Eprapah Creek	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	0.00	0.00	**0**
Heinemann Road	5,532	50%	2766	11.05	276.60	30,564	50.00	50%	2766	7.17	276.60	19,824	202.85	15.97	13,415.59	**63,803**
Kimberley Park	312	40%	125	11.05	9.36	1,034	30.00	60%	187	7.17	14.04	1,006	79.54	15.97	11,499.07	**13,540**
Learoyd Road	9,026	50%	4513	18.51	992.89	183,761	-	50%	4513	13.23	992.89	131,361	79.54	0.00	0.00	**315,122**
Lloyd Street	8,157	45%	3671	10.41	256.94	26,743	31.50	55%	4486	6.53	314.04	20,492	56.44	14.49	24,336.99	**71,571**
North Pine	37,291	50%	18646	10.12	3,374.84	341,553	90.50	50%	18646	5.97	3,374.84	201,505	161.59	0.00	0.00	**543,057**
Stones Road	9,026	50%	4513	10.41	992.89	103,341	110.00	50%	4513	6.53	992.89	64,788	40.93	14.49	48,673.98	**216,803**
Trinder Park	1,559	50%	779	10.41	175.37	18,253	112.50	50%	779	6.53	175.37	11,444	52.74	14.49	36,505.49	**66,202**
Wellers Hill	0	0%	0	-	0.00	-	-	0%	0	0.00	0.00	-	-	0.00	0.00	**0**
Fixed Connection Charges																
TOTAL	**148,607**		**68,382**		**9,306**	**1,037,484**			**80,225**		**10,749**	**732,310**			**550,265**	**2,320,059**

QCA Interim Grid Service Charges Assessment
Sheet: Levies

Levy	QCA Endorsed 2011/12	Estimated Actual 2011/12	Forecast 2011/12
QWC Levy	7,551,000	8,421,041	10,587,224
QCA Levy	658,000	646,220	683,468
TOTAL	**8,209,000**	**9,067,261**	**11,270,692**

LinkWater

QCA Interim Grid Service Charges Assessment
Sheet: Working Capital

Working Capital	QCA Endorsed 2011/12	Estimated Actual 2011/12	Forecast 2012/13
Accounts Recievable	**25,292,987**	**24,750,460**	**28,000,126**
Accounts Payable	**4,631,431**	**4,631,413**	**7,148,712**
Working Capital Requirement	**20,661,556**	**20,119,047**	**20,851,414**
Critical Spares			
Valves	529,847	529,847	543,093
Pipes	198,436	198,436	203,397
Bearings	94,475	94,475	96,837
Gaskets	11,950	11,950	12,249
Electrical	142,558	142,558	146,122
M&E	134,349	134,349	137,708
Other	51,257	51,257	52,538
SubTotal	***1,162,872***	***1,162,872***	***1,191,944***
Small consumables	196,577	196,577	201,491
M&E Spares	1,051,199	1,051,199	1,077,479
Health & Safety Items	18,429	18,429	18,890
TOTAL	**23,090,633**	**22,548,124**	**23,341,218**
Return on Working Capital	**2,181,002**	**2,126,603**	**2,185,697**

QCA Interim Grid Service Charges Assessment
Sheet: Overheads

Entity Overheads	QCA Endorsed 2011/12	Estimated Actual 2011/12	Forecast 2012/13
HR	**1,015,614**	**957,746**	908,242
Business Services	**3,738,411**	**3,324,035**	3,635,259
Legal	**1,384,210**	**1,729,801**	1,730,895
Corporate Services	**1,902,617**	**1,923,012**	2,434,981
IT & Knowledge Mgt	**2,535,934**	**3,036,751**	3,083,837
Office of the CEO	**1,090,613**	**992,214**	1,105,099
Property Leasing	**1,400,147**	**1,203,490**	1,509,348
Other			
TOTAL	**13,067,546**	**13,167,049**	**14,407,661**

Third Party Transactions 2012-13

Third Party	Service	Value	Terms of Engagement	Cost Category
Transfield Services (Australia) Pty Ltd and United Utilities Australia Pty Ltd Joint Venture	Asset maintenance	$11,444,000	Transition from Alliance Contract which was subject to Competitive Tender	Fixed Operating Costs
Queensland Water Commission	Levy	$10,587,225	Legislated Levy	Allowable Operating Costs
Tru-Energy	Electricity	$3,097,478	Government Gazette Franchise Tariff	Fixed and Variable Operating Costs
Australian Laboratory Group Pty Ltd	Routine water sampling and testing	$1,660,008	Competitive Tender	Fixed Operating Costs
Aon Risk Services Australia Limited	Asset insurance and business interruption	$1,784,377	Competitive Tender	Fixed Operating Costs
Knight Frank Australia Pty Ltd	Property leasing for head office premises	$1,509,348	Competitive Tender	Fixed Operating Costs

Related Party Transactions 2011-12

Third Party	Service	Value	Basis of Value	Terms of Engagement	Cost Category
No third party transactions	n/a	n/a	n/a	n/a	n/a

Attachment B: LinkWater's Compliance Guide

The full Regulatory Submission lodged with the Queensland Competition Authority included the following report at attachment B:

Queensland Bulk Water Transport Authority (trading as LinkWater) 2011

Compliance Guide Volume 1– Legislative Obligations
(Compliance Guide 1 Version 4E)

Attachment C: LinkWater's 2012-13 Capex Program by Project

Title	Project Category	Asset Class	CAPEX PJR TRIM Reference	2012-13 Cost Estimate (all inclusive)
North Pine Pump Station - Surge Compressor and Switchboard Replacement	Renewal	Pump Stations	496357	$515,562
Pump Stations - Switchboard Replacement Program	Renewal	Pump Stations	496359	$280,634
Pump Stations - Energy Management through Pump Sub-metering	Business Efficiency	Pump Stations	512948	$240,207
Mudgeerabah Pump Station - Decommission for Storage Building Conversion	Business Efficiency	Pump Stations	512946	$106,284
Pump Stations - Safety Guard Installation	Level of Service	Pump Stations	511387	$88,033
Molendinar Balance Tank - FCV Fibre Optic Cable/ Switch Replacement	Level of Service	Pump Stations	511386	$79,894
Swanbank Pump Station - Mechanical Seal Replacement (x2)	Level of Service	Pump Stations	511389	$59,636
Stones Road and Lloyd Street Pump Stations - Building and Drainage Upgrade	Level of Service	Pump Stations	511385	$36,387
Future CAPEX Program Development - Pump Stations	Business Efficiency	Pump Stations	532231	$30,441
Sparkes Hill Reservoir - Reservoir 2 Refurbishment	Level of Service	Reservoirs	497337	$1,304,973
Green Hill Reservoir - Reservoirs 1 and 2 Refurbishment	Level of Service	Reservoirs	497336	$1,092,687

Title	Project Category	Asset Class	CAPEX PJR TRIM Reference	2012-13 Cost Estimate (all inclusive)
Kimberley Park and Kuraby Reservoirs - Pipe Modifications for Water Quality Improvement	Level of Service	Reservoirs	511590	$261,520
Reservoirs - Mixer Installation Program	Level of Service	Reservoirs	497615	$133,832
Green Hill Reservoir - Scour Drainage Modifications	Level of Service	Reservoirs	522520	$99,213
Green Hill Reservoir - Generator Connection to Actuated Valves Upgrade	Level of Service	Reservoirs	511394	$48,930
Kimberley Park Reservoir - Embankment Erosion Remediation	Level of Service	Reservoirs	487002	$48,104
Future CAPEX Program Development - Reservoirs	Business Efficiency	Reservoirs	532231	$29,722
Stapylton and Molendinar Reservoir - Vermin Seal Renewal	Level of Service	Reservoirs	514616	$27,421
Mt Cotton And Heinemann Road Reservoirs - Sample Hatch Improvements	Level of Service	Reservoirs	487001	$17,856
Reservoirs - Roof and Hatch Remediation Program	Level of Service	Reservoirs	487006	$16,031
Heinemann and Stapylton Reservoirs - Leaking Wall and Floor Joint Investigation/ Repair	Level of Service	Reservoirs	487009	$6,118
Sparkes Hill Reservoir- Reservoir 2 Footpath Repair	Business Efficiency	Reservoirs	514617	$6,080
Trunk Mains - Valve and Main Inspection and	Level of Service	Trunk Mains	498882	$2,106,934

Title	Project Category	Asset Class	CAPEX PJR TRIM Reference	2012-13 Cost Estimate (all inclusive)
Remediation Program				
Trunk Mains - Image Flat New Bulk Supply Point	Growth	Trunk Mains	496166	$2,072,895
Trunk Mains - Minor Reactive Capital Works	Level of Service	Trunk Mains	499367	$997,713
Trunk Mains - Ongoing Above Ground Pipe Recoating Program	Renewal	Trunk Mains	497356	$586,890
Trunk Mains - Pipeline Condition Evaluation Program	Renewal	Trunk Mains	497360	$367,980
Trunk Mains - Renewals Planning and Design Program	Renewal	Trunk Mains	497364	$367,393
Trunk Mains - High Voltage LFI/EPR Evaluation and Mitigation Program	Level of Service	Trunk Mains	497358	$269,382
Trunk Mains - Flowmeter Replacements and Upgrades	Renewal	Trunk Mains	514690	$234,756
Trunk Mains - Ladders and Pits Access Safety Improvements	Level of Service	Trunk Mains	514777	$203,064
Trunk Mains - Barrel Union Joint Program	Renewal	Trunk Mains	497355	$176,067
Trunk Mains - Cathodic Protection Upgrade Program	Level of Service	Trunk Mains	497359	$176,067
Trunk Mains - Valve Actuation Program	Level of Service	Trunk Mains	514778	$176,067
Trunk Mains - Minor Works Planning and Design Program	Level of Service	Trunk Mains	514781	$52,233
Future CAPEX Program Development - Trunk	Business Efficiency	Trunk Mains	532231	$29,344

Title	Project Category	Asset Class	CAPEX PJR TRIM Reference	2012-13 Cost Estimate (all inclusive)
Mains				
Water Quality - Sample Lance Installation	Level of Service	Water Quality	510970	$352,134
Water Quality Facilities - Bunded Chemical Area Upgrades	Level of Service	Water Quality	511589	$70,427
Water Quality - Minor Works	Business Efficiency	Water Quality	511397	$13,498
Future CAPEX Program Development - Water Quality	Business Efficiency	Water Quality	532231	$5,869
Multiple Sites - All buildings RCD Renewal	Level of Service	Buildings	511591	$101,238
Future CAPEX Program Development - Buildings	Business Efficiency	Buildings	532231	$5,869
Tenure Gaps Land Acquisition	Level of Service	Land	498143	$2,979,113
Future CAPEX Program Development - Land	Business Efficiency	Land	532231	$5,869
NU SCADA Project	Business Efficiency	SCADA	495747	$2,794,104
Future CAPEX Program Development - SCADA	Business Efficiency	SCADA	532231	$5,869
Green Lighting	Level of Service	Corporate Plant and Equipment	533948	$65,140
Linkwater Motor Vehicle Fleet	Level of Service	Fleet	499767	$143,606
Asset Information Management System	Business Efficiency	IT	496285	$631,868
Future CAPEX Program Development - Non System	Business Efficiency	IT	532231	$5,869

Title	Project Category	Asset Class	CAPEX PJR TRIM Reference	2012-13 Cost Estimate (all inclusive)
Knowledge Management Development GIS SAP	Level of Service	IT	532466	$378,554
Knowledge Management Intranet Tools	Level of Service	IT	532466	$12,618
TRIM Customisation	Level of Service	IT	532466	$50,474
Website Enhancements	Level of Service	IT	532466	$25,237
Penetration Testing	Level of Service	IT	532502	$37,855
Security Devices	Level of Service	IT	532502	$85,805
Security Review Implementation	Level of Service	IT	532502	$31,546
Data Centre Renewal	Level of Service	IT	532480	$820,200
Hardware Refresh	Level of Service	IT	532477	$694,015
DMZ FTP & Internet	Level of Service	IT	532495	$50,474
Enterprise Search	Level of Service	IT	532495	$37,855
Telecommunication Appliances	Level of Service	IT	532495	$63,092
Total				**$21,814,549**