

Lower Lockyer Valley Water Supply Scheme

Network Service Plan

1. Introduction

Review Context

The QCA has been directed by the Queensland Government to develop irrigation prices for the Lower Lockyer Valley Water Supply Scheme (the Scheme) for the four-year regulatory period 1 July 2013 to 30 June 2017.

The QCA is required to provide a draft report including draft irrigation prices by 30 November 2012 and a final report with recommended price paths by April 2013.

The current irrigation prices were set when the Scheme was owned by SunWater, and commenced from 1 July 2006. The Scheme was transferred to Seqwater in 2008-09, along with the SunWater pricing arrangements. This is the first review of irrigation prices since the Scheme has been in Seqwater ownership.

This document is the Network Service Plan (NSP) for the Scheme. It sets out information relevant to the QCA's review, including Seqwater's expenditure proposals over the regulatory period and specific pricing proposals for the Scheme.

It should be noted that this review is occurring alongside a separate review of Grid Service Charges, and that certain costs also form part of that review, although over a different timeframe.

About Seqwater

Seqwater owns different types of water supply assets and service types, namely:

- Storage assets - Seqwater owns 26 dams and 48 weirs which bulk water storage services to a range of water entitlement holders in South East Queensland, including irrigators, local governments, industrial users and the SEQ Water Grid Manager (WGM);
- Bulk distribution assets - Seqwater also provides distribution system services to irrigators from pipelines and channel systems;
- Water treatment assets - Seqwater provides drinking water to the WGM from 46 water treatment plants;
- A desalination plant - provides bulk drinking water to the WGM;
- An advanced recycled water scheme, which provides treated recycled water to the WGM;
- Groundwater - Seqwater provides drinking water to the WGM from 14 groundwater bore fields.

Seqwater owns, manages and operates physical assets with a book value of \$6.3 billion. Seqwater provides irrigation services to around 1,200 rural customers in seven water supply schemes.

Seqwater also owns unregulated assets such as its head office building at 240 Margaret Street, water entitlements held for trading in the Upper Mary Water Supply Scheme, and two hydro-electricity plants. No costs of these assets are attributed to regulated assets.

Seqwater's total regulated revenue allowance for 2011-12 was \$705M to \$709M, of which some \$3.3M relates to irrigation supplies. Of this \$3.3M, some \$1.9M is sourced directly from irrigation charges, with the balance sourced from a Community Service Obligation (CSO) payment.

Interpretation of terms used

For the purposes of this NSP, the following terms are defined as follows:

Water Access Entitlement (WAE) – means water allocations, interim water allocations or water licences.

Scheme background and context

The Lower Lockyer Water Supply Scheme is located west of Lowood in South East Queensland. Its main features are Atkinson Dam; Buaraba Creek Diversion Weir; and Brightview, Sippels, Potters and O'Reillys Weirs. The scheme was designed to supply surface water for irrigation, but it has been shown that some water is lost to recharging the underlying aquifer.

The Scheme is located in the Lockyer Valley, and was established following construction of Atkinson Dam in 1970. The Scheme is regulated under the authority of the Interim Resource Operations Licence (IROL) for the Lower Lockyer Valley Water Supply Scheme, issued in July 2008.

The scheme consists of bulk water supply and distribution assets.

Customers served

Lower Lockyer supplies water to:

- Irrigation users; and
- Seqwater.

Further details are set out in section 2 below.

Asset base

The asset base of the scheme consists of bulk water storage assets. These assets are listed in section 2 below and details of individual assets can be found in Appendix A.

Organisational resourcing arrangements

Seqwater is well advanced in transitioning its resourcing arrangements from those inherited in July 2008. Key achievements include:

- replacing service level agreements with previous asset owners (e.g. Councils) with internal staff appointments;
- negotiating a single enterprise bargaining agreement (refer below) to standardise work conditions; and
- developing and refining the structure of the organisation and recruiting the necessary resources.

Seqwater has also substantially completed its procurement arrangements for external resources, including consultants and contractors. Seqwater continues to outsource many maintenance activities for its assets, usually with local suppliers. In most cases suppliers were providing similar services to the previous asset owner, and Seqwater has retained these contractors to ensure continuity in asset performance and retention of asset knowledge.

Seqwater inherited 14 different enterprise agreements which required 47 separate payroll runs. Seqwater has since consolidated these into a single enterprise agreement, with a single payroll.

The enterprise agreement process also provided for more standardised work hours and overtime arrangements, and included the establishment of a 38 hour week.

The standardisation achieved through a single enterprise agreement has allowed more streamlined systems to be implemented, reducing the implementation costs for the payroll system and enabling a reduction in the number of staff required to administer the payroll from seven to two.

Seqwater's current enterprise agreement, which was certified on 2 November 2009, will expire on 30 June 2012. Seqwater is now meeting with all unions in regards to a replacement agreement.

Key systems and processes

Seqwater also inherited a diverse range of systems and business processes from previous asset owners. Since 2008-09, Seqwater has given priority to developing its systems so that they can support the business and enable more streamlined business processes.

Seqwater is in the second year of using its Corporate Information System (CIS) and has completed a post implementation review across all modules. As a result, Seqwater is committed to a series of continuous improvements for better business performance.

Seqwater is continuing with its program of end-to-end process reviews to identify improvements and generate cost savings in performing its business support and related activities.

Asset management

Asset management practice within Seqwater does not distinguish between irrigation and non-irrigation assets. Assets are managed as a portfolio and not on an industry sector basis.

Seqwater acquired the Lower Lockyer Valley Water Supply Scheme from SunWater Limited. While the physical assets were transferred, much of the asset history was not. The staff members who also transferred to Seqwater were mostly operations rather than maintenance staff. This meant that corporate asset management knowledge was not transferred along with the assets.

Seqwater's maintenance and renewals program is evolving and moving towards industry best practice. However, this process is resource-intensive and relies on a long history of quality, consistent asset information before reaching full maturity.

Seqwater's maintenance tasks and associated expenditure follows three broad categories:

- Scheduled maintenance – which relates to regular maintenance items that are planned in advance;
- Corrective maintenance – relating to maintenance that is made in reaction to events or new information/inspections during the year; and
- Strategic asset maintenance – which relates to asset replacements and renewals and involves a mix of operating and capital expenditure.

Seqwater uses the Asset Management module within CIS to plan and schedule asset maintenance work. Work orders are produced on the system for each parcel of work required to be performed to capture the costs of performing the work.

Renewals and refurbishments are determined through a strategic asset management process. This process and its outcomes are documented in Facility Asset Management Plans (FAMPs), which are being rolled out across all assets. Irrigation channel and pipeline assets are lagging somewhat in this process as the emphasis to date has been on Seqwater's water treatment plants, given they involve more complex and highly critical assets.

Procurement

Seqwater complies with the State Procurement Policy (SPP). Policies, procedures and processes consistent with, and supporting, the requirements of the SPP have been developed and are in operation. Where possible, procurement processes are system based using the Supply Chain Module in Seqwater's Corporate Information System (CIS).

Procurement activities are undertaken at all business sites.

Seqwater's Procurement Team monitors and analyses a range of performance indicators to identify opportunities to improve performance and minimise costs.

Seqwater is currently reviewing its "procure to pay" process to streamline the procurement of services and goods, management of delivery and payment for services.

Customer and Financial Management

Customer information management including invoicing and accounts receivable operations for the Scheme are carried out from Seqwater's Karalee office. Financial management including financial reporting and accounts payable processing is centralised in Seqwater's Finance group in the Margaret Street office. Accounts payable is carried out using the AP module in CIS.

Insurance

Seqwater's portfolio of assets is insured with differing premium and deductible arrangements in place for bulk water and channel distribution systems. This requires specialist management of the insurances held, including management of claims and renewals and providing information to insurers and brokers.

Insurance premiums are obtained for a portfolio of Seqwater assets.

Although insurance premiums have not been allocated directly to schemes previously, these costs will be properly allocated to each WSS in future.

2. Scheme details

Atkinson Dam is an off-stream storage, mostly supplied by diverting water from Buaraba Creek with the remainder by capturing runoff from Seven Mile Lagoon and from its own catchment. Water from Atkinson Dam is used to maintain water levels in the supply weirs as well as releasing water to the Brightview Channel system and Buaraba Creek.

Water from the Scheme is diverted from regulated streams. Many irrigators also have access to unregulated groundwater supplies.

The Scheme constitutes a single tariff group being “River”. The water year runs from 1st April to 31st March.

Infrastructure details

The table below sets out the bulk water assets that comprise the Scheme.

Table 2-1. Bulk water assets

Dams/Off-stream storages	Atkinson Dam
Weirs	Buaraba Creek Diversion Weir, Brightview Weir, Sippels Weir, Potters Weir, O'Reillys Weir
Other assets	Gauging stations, Buaraba Creek Pipeline; Buaraba Creek Supply Channel; Seven Mile Lagoon Diversion Channel; Atkinson Pump Station; Atkinson Low Level Pump Station; Brightview Weir Supply Channel

For details of the assets, see Appendix A

Customers and water entitlements serviced

Lower Lockyer supplies water to:

- Irrigation users, comprising 164 customers who hold 11,118ML of medium priority interim water allocation (IWA);
- 150ML currently unallocated;
- Seqwater holds 1,510ML of medium priority IWA.

The distribution of IWA is set out in the following chart.

Figure 2-1. Lower Lockyer Distribution of IWA

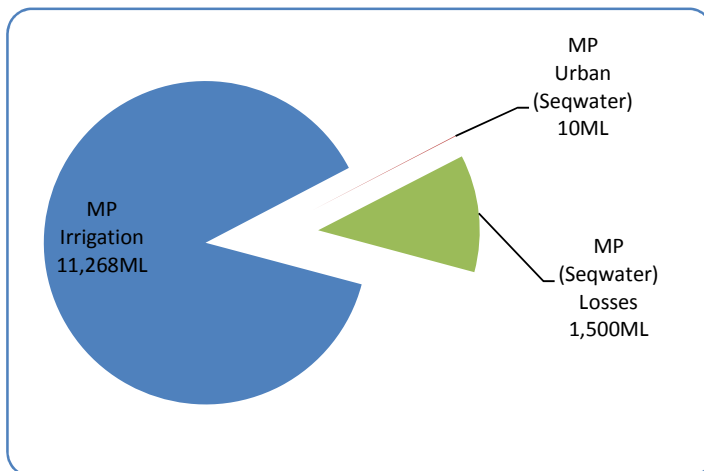


Table 2-2 sets out the ownership (as at 30 June 2011) of water entitlements in Lower Lockyer.

Table 2-2. Ownership of Entitlements

Customer Type	No. of customers	MP Vol (ML)	HP Vol (ML)	Notes
Irrigation	164	11,268	-	<ul style="list-style-type: none"> • 11,118ML allocated • 150ML unallocated
Seqwater	7	1,510	-	<ul style="list-style-type: none"> • 10ML urban water for amenities of which 5.4ML is used for 7 customers • 1,500ML for losses
Totals	171	12,778	-	

This information was sourced from the IROL for the Lower Lockyer, issued in July 2008, and Seqwater’s customer information data.

All WAE for the Scheme are medium priority. It should be noted that the IROL allocated 1,500ML to Seqwater as an allowance for losses in the distribution system, including pipelines, artificial channels, and watercourses, and includes Buaraba Creek pipeline, Brightview channel, BR1 Supply Channel (including Rocky Creek), and Buaraba Creek Supply Channel. It excludes losses in the regulated sections of Lockyer Creek, Buaraba Ck and Woolshed Creek. According to the IROL, this loss interim water allocation will not be permanently transferable. It is intended that it will be reviewed through a Water Resource Plan and Resource Operations Plan. An appropriate water allocation will then be established. At such time, transferability will be subject to any provision of the Resource Operations Plan.

Water availability and use

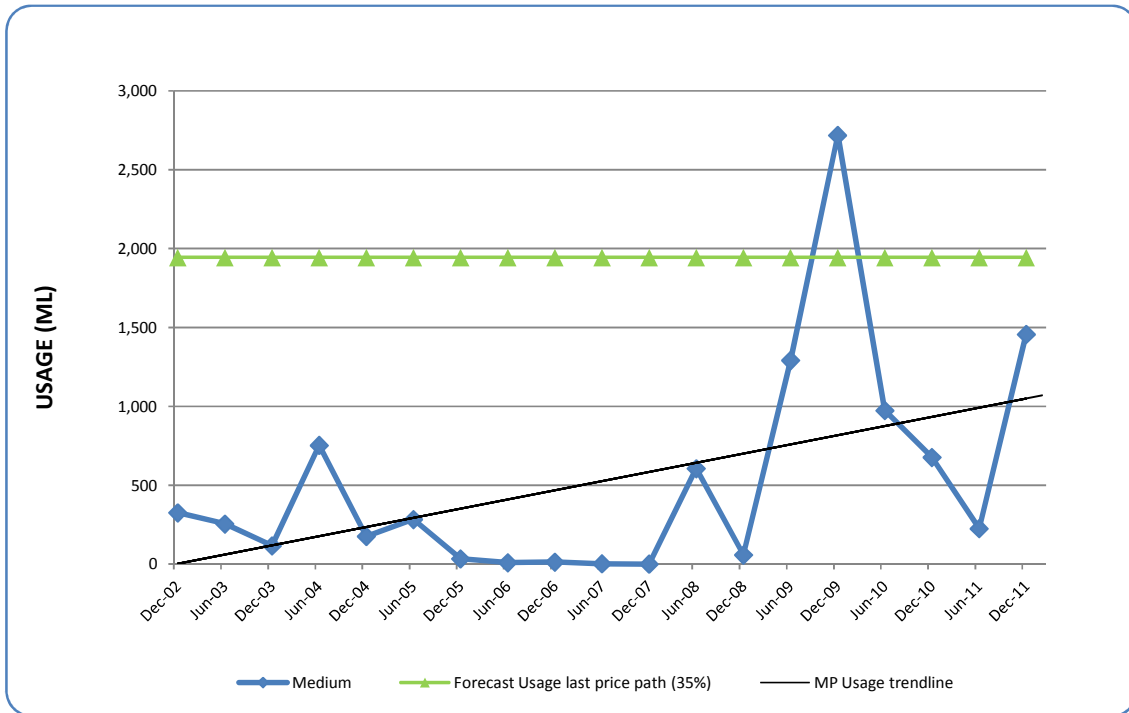
The announced allocation determines the percentage of nominal WAE volume that is available in a water year (1 July to 30 June). Under the IROL, announced allocation determinations are required for the Morton Vale Water Supply System (medium priority) and for the Crowley Vale Water Board (Risk A). The historical announced allocations are set out in the table below.

Table 2-3. Announced allocations (%)

	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
MP	0	10	0	0	0-16	13-63	27-100	100	100

The current irrigation price paths adopted a use forecast at 35% of IWA for Lower Lockyer. This compares to actual use to date, as illustrated below.

Figure 2-2. Lower Lockyer Usage 2002-2011



The above chart shows the impact of drought conditions during the years 2005-07. The spike in usage in 2009 resulted from irrigators replenishing on-farm storages following the availability of water.

Average annual usage comparison of Medium Priority water

The average annual usage comparison to MP forecast usage is set out in the table below:

Table 2-4. Forecast vs actual usage

Forecast annual usage for 2006-11 price path	3,944 ML/annum
Average actual annual usage for 2006-11 price path	1,459 ML/annum
Average actual annual usage for 9 years to December 2011	1,050 ML/annum

Temporary transfers

Temporary transfers or seasonal water assignments are useful for meeting additional short-term water needs. Under these transfers or assignments, some or all of the water that may be taken under a water entitlement in any water year can be assigned to another person or place.

In practice, a volume of water from the amount available under the entitlement may only be assigned after the announced allocation. The volume assigned is therefore not affected by any increase in the announced allocation during the water year, the benefits of which go to the holder of the entitlement and not the person to whom the water has been assigned.

The following table sets out the volumes of temporary transfers by year from 1 July 2008 to 31 March 2012.

Table 2-5. Temporary transfers

Year	2008-09	2009-10	2010-11	2011-31/3/12
Volume in ML	62.8	396.26	22.9	82

Customer service standards

The current service standards were established in consultation with customer representatives in 2001 and were carried across to Seqwater from SunWater Limited. Although it is not intended that service standards should undergo major change during the price path period, they are to be periodically reviewed on an as-needs basis such as in response to requests by customer representatives or by Seqwater. This NSP is based on the existing service standards continuing throughout the regulatory 4 year period.

The document “*Water Supply Arrangements and Service Targets*” for the Scheme is attached to this NSP in Appendix B. This document sets out the customer service standards for the Scheme.

2006 lower bound costs

The 2006 price review process conducted by SunWater with customer representatives established the lower bound cost for the scheme. These lower bound costs are:

- Operations and maintenance costs;
- Administration costs, including a share of overhead; and
- The cost of asset renewals, via a renewals annuity.

The five year average lower bound cost recovery target established for this Scheme was \$856,840. The following table sets out the yearly targets and the five year average efficient lower bound costs:

Table 2-6. 2006 Lower Bound Costs

2005/06 IRRIGATION PRICE REVIEW LOWER LOCKYER WATER SUPPLY SCHEME SCHEME IRRIGATION LOWER BOUND COSTS & REFERENCE IRRIGATION TARIFFS						
SCHEME IRRIGATION LOWER BOUND COSTS						
	Year 1	Year 2	Year 3	Year 4	Year 5	5 Year Average
Lower Bound Costs	2006/07	2007/08	2008/09	2009/10	2010/11	Average
Operations, maintenance & administration	819,194	799,683	1,029,680	795,590	781,820	845,193
Electricity	21,271	21,271	21,271	21,271	21,271	21,271
Asset refurbishment annuity	112,593	111,553	110,901	109,737	109,204	110,798
Total Lower Bound Costs	953,058	932,508	1,161,852	926,598	912,295	977,262
less Tier 1 Productivity Adjustment	(95,155)	(105,128)	(154,173)	(127,763)	(118,892)	(120,422)
Total Efficient Lower Bound Costs	856,903	827,380	1,007,679	798,836	793,404	856,840
Community Service Obligations (CSO) & Revenue Offsets						
CSO Offsets						
CSO - Resource operating plan development costs	89,177	59,055	42,039	13,716	13,693	43,536
CSO - Rural water subsidy	514,490	497,113	676,453	477,958	456,371	524,477
Total CSO Offsets	603,667	556,168	718,492	491,674	470,064	568,013
Scheme related revenue offsets (a)	6,832	6,832	6,832	6,832	6,832	6,832
Total CSO & Revenue Offsets	610,499	563,000	725,324	498,506	476,896	574,845
TOTAL SCHEME IRRIGATION NET LOWER BOUND COSTS	246,404	264,380	282,355	300,330	316,508	281,995
<i>Irrigation share of scheme total net lower bound costs (%)</i>	<i>99.8%</i>	<i>99.8%</i>	<i>99.8%</i>	<i>99.8%</i>	<i>99.8%</i>	

The lower bound cost tariff was established at \$107.49 per megalitre for the Scheme by the Tier 1 group in 2006 which translates to \$134.45 per megalitre represented in 2012-13 dollars.

Current pricing arrangements

The current prices were set with reference to the lower bound cost target above. For this Scheme the current prices were insufficient to recover lower bound cost targets. A CSO agreement was struck between SunWater and the Department of Environment and Resource Management. The CSO agreement was “grandfathered” to Seqwater. A new CSO agreement has been agreed for the financial years 2011-12 and 2012-13.

A price path was determined for the Scheme which increased prices by \$2.50 per year. Prices were also increased based on the Brisbane – All Groups Consumer Price Index (CPI) each year.

In the 2006-11 price path the Lower Lockyer Valley Tier 2 group chose to retain the price cap. The Tier 2 group opted not to take up a drought tariff option.

The Scheme has only one nominated tariff group for 2013-14 to 2016-17 being River.

A two part tariff applied:

- Part A, a fixed charged payable per ML of nominal water entitlement (regardless of use); and
- Part B, which was a consumption charge.

The table below shows the prices for the scheme since 2006-07 to 2011-12 in nominal terms.

Table 2-7. Historical Prices

2005/06 IRRIGATION PRICE REVIEW LOWER LOCKYER VALLEY WATER SUPPLY SCHEME SCHEME IRRIGATION LOWER BOUND COSTS & REFERENCE IRRIGATION TARIFFS							
FINAL IRRIGATION TARIFFS (based in 2005/06 dollars and subject to cumulative annual indexation on 1 July each year)							
	Last Yr 2005/06	Lower Bound Cost Tariff	Year 1 2006/07	Year 2 2007/08	Year 3 2008/09	Year 4 2009/10	Year 5 2010/11
RIVER *							
Part A	\$16.24	\$48.32	\$15.41	\$16.53	\$17.65	\$18.78	\$19.79
Part B	\$17.78	\$59.17	\$18.86	\$20.24	\$21.62	\$22.99	\$24.23
Total	\$34.02	\$107.49	\$34.27	\$36.77	\$39.27	\$41.77	\$44.02
<i>Irrigation customer nominal water allocations (ML)</i>		11,196	11,196	11,196	11,196	11,196	11,196
<i>Water usage forecast</i>		35%	35%	35%	35%	35%	35%
<i>Part A revenue share</i>		70%	70%	70%	70%	70%	70%
<i>Part B revenue share</i>		30%	30%	30%	30%	30%	30%

Renewals accounting and forecast ARR balance

A renewals annuity approach applies to the current price paths, and is to continue to apply in accordance with the Ministerial Referral Notice.

The renewals annuity approach requires an accounting system to monitor renewals income and expenditure, to monitor the status of the renewals account or Asset Renewals Reserve (ARR). This balance can be either positive or negative, and is incorporated into the calculation of the renewals annuity itself. Interest is applied to the balance, at the same rate used to determine the original renewals annuity.

In order to calculate lower bound costs from 2013-14, a projected closing ARR balance at 30 June, 2013 must be made. This balance is forecast to be a negative balance (i.e. deficit) of \$434,877.

In order to calculate the respective annuity balances, Seqwater has undertaken the following steps:

- Obtained relevant data for the water supply schemes from SunWater dating back to 2001 when the existing annuity balances were established;
- Established a closing balance at 30 June 2008 based on the renewals expenditure and income over the period the schemes were owned and managed by SunWater. Seqwater sought advice and guidance from SunWater to establish these balances;
- Established a closing balance at 30 June 2011 based on actual renewals expenditure and income since the schemes were transferred to Seqwater;

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- Forecast a closing balance at 30 June 2013 based on the budgeted renewals expenditure and irrigation income for the 2011-12 year and the estimated renewals income and expenditure for 2012-13; and
- The availability of data necessitated that the ARR balances be calculated on an irrigation only basis prior to being converted to whole of scheme balances for tariff calculation purposes. This approach was adopted to match the availability of data at the time of preparing the draft NSPs.

In calculating the closing ARR balance, Seqwater has:

- Obtained actual renewals expenditure from SunWater from 2000-01 to 2007-08 for the Scheme, and included actual expenditure following the transfer of the assets to Seqwater in the 2008-09 year for the period ending 2010-11. Renewals expenditure for 2011-12 and 2012-13 is a forecast only.
- Assigned the following percentages renewals expenditure, consistent with the cost allocation percentage used to develop irrigation's share of lower bound costs for the 2006-07 to 2010-11 Irrigation Price Path. The 2011-12 and 2012-13 years have been based on the percentages applicable for the 2010-11 year.

Table 2-8. Irrigation Share of Renewals Expenditure applicable to the ARR (%)

Tariff Group	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
River	99.7	99.8	99.8	99.8	99.8	99.8	99.8

- Obtained the actual irrigation revenue (including CSO) from SunWater for the period 2000-01 to 2007-08 inclusive, along with actual irrigation (including CSO) revenue from 2008-09 until 2010-11 from Seqwater’s accounting system. A budget forecast is used for 2011-12 and 2012-13.
- Assigned the following percentages of irrigation revenue (including CSO) to the ARR. This percentage reflects the percentage of the renewals annuity to the total lower bound cost recovery target set for the 2006-07 to 2010-11 Irrigation Price Path. The 2011-12 and 2012-13 years have been based on the percentages applicable for the 2010-11 year.

Table 2-9. Share of Irrigation Revenues applicable to the ARR (%)

Tariff Group	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
River	14.8	14.6	11.6	14.1	14.1	14.1	14.1

- Applied interest to closing balances for the period 2006-07 to 2013-14 at the equivalent rate used to calculate the 2007-2011 price path annuities (7.76% nominal). No interest has been applied to balances between 2000-01 and 2005-06 based on advice from SunWater that the 2001-2006 price path made offsetting adjustments on the account that no interest would apply to ARR balances in that price path.

The following table sets out irrigation renewals expenditure and revenue and the annual change applicable to the ARR for the financial years 2006-07 to 2012-13:

Table 2-10. Annual Change in Irrigation ARR Balances (\$)

Tariff Group	Item	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
River	Expenditure	141,285	89,849	106,325	175,168	321,585	96,975	23,466
	Revenue	(105,359)	(108,262)	(112,324)	(123,711)	(117,959)	(122,593)	(135,096)
	Change	35,926	(18,412)	(5,999)	51,457	203,626	(25,619)	(111,629)

3. Proposed lower bound costs and tariffs

Lower Bound costs

The following provides a summary of Seqwater's proposed lower bound costs for the scheme over the 1 July 2013 to 30 June 2017 forecast period. Lower bound costs include operating and renewals costs. None of the costs vary proportional to water demand. That is, the short run marginal cost in this scheme is \$0, and all costs are fixed.

In order to determine lower bound estimates for irrigation customers within the scheme, aggregate scheme costs are attributed to irrigation customers based on an assessment of storage that relates to irrigation entitlements.

Operating costs

Operating activities for this scheme include service provision, compliance, recreation, and other supporting activities:

- Service provision relates to:
 - scheduling and releasing bulk water from storages, surveillance of water levels and flows in the river, and quarterly meter reading; and
 - customer service and account management.
- Compliance requirements relates to:
 - Requirements set out in the Resource Operations Plan (ROP) and Resource Operations Licence;
 - Dam safety obligations under the Water Act 2000;
 - Environmental management obligations to comply with the ROP and Environmental Protection Act 1994; and
 - Land management, workplace health and safety obligations and other reporting obligations.
- Recreation relates to the operation and maintenance of recreation facilities in the Cedar Pocket scheme; and
- Other supporting activities cover a range of services including central procurement, human resources and legal services.

Operating cost forecasting approach

Seqwater has adopted an approach to forecasting whereby operating expenditure for schemes is derived for a representative base year (2012-13) and escalated forward over each year of the regulatory period on the basis of predetermined escalation factors.

The 2012-13 year was adopted as the base year as it provides the best and most current representation of the costs required to deliver Seqwater's service standards and obligations during the regulatory period. Aggregate operating costs for 2012-13 (including costs associated with both grid and irrigation services but excluding costs associated with unregulated activities) were derived as part of Seqwater's 2012-13 grid service charges submission to the QCA. Seqwater has developed its 2012-13 budget on the basis of a zero base build-up, taking into account costs which could be reasonably anticipated at the time of budget development. In addition, the 2012-13 operating expenditure forecasts provided in the grid service charges submission have been reviewed by the QCA for prudence and efficiency.

Further details on the forecasting methodology are provided in the Irrigation Pricing submission provided to the QCA.

The following escalators have been applied to 2012-13 operating costs to derive forecasts for the regulatory period:

- direct labour, materials and contractors' costs and repairs and maintenance were escalated at 4% per annum over the regulatory period; and
- 'other' direct costs and all non-direct costs were escalated at forecast CPI (2.5% per annum).

Details of the direct and non-direct operating expenditure forecasts for the Cedar Pocket scheme are provided below.

Direct operating and maintenance costs

Direct costs are those costs that have been budgeted at the individual asset level.

Operations

Operations relates to the day-to-day costs of delivering water and meeting compliance obligations. The primary activities relate to dam operations and group support (and catchment management).

Dam operations are the largest contributor to direct operating costs. Dam Operations aims to deliver best practice management of dams and water sources while being fully compliant and effective in operating, maintaining and monitoring its water source infrastructure.

Dam operations must meet the regulatory requirements under various Acts including those relating to Dam Safety, Flood Management, Resource Operating Plans, and providing sufficient water to meet standards of service.

Dam operations is relatively labour intensive and expenditure is driven by:

- providing efficient service to irrigation customers in terms of information and management and delivery of service;
- developing robust and acceptable systems to monitor water flows to manage water sources, floods and regulations;
- developing an effective and technically capable and resilient flood operations centre utilising systems of quality standards;
- improving data management to ensure compliance on a wide variety of water management areas;
- ensuring security and safety at our water sources is meeting regulatory and community standards; and
- developing system operating plans to ensure the efficiency and operation of dams, weirs, bores and other water sources.

Group support (and catchment management) has responsibility for the development and delivery of recreation and catchment maintenance services for all operational assets. The team ensures that asset management plans, processes, systems and practices are implemented in accordance with relevant regulatory requirements.

In particular, Seqwater has responsibility for the ongoing management and maintenance of recreation sites transferred from SunWater. While the use of Seqwater assets for recreational purposes is secondary to Seqwater's main function of water supply and treatment. However, recreation facilities must be managed in a sustainable and environmentally responsible manner to ensure that Seqwater's core responsibilities and accountabilities are not adversely impacted.

Direct operations costs are presented in terms of the type of cost: labour; contractors and materials; and "other".

- labour costs are derived on the basis of budgeted work in the scheme for 2012-13 and the related salary costs for routine activities. Consistent with the current Enterprise

Bargaining Agreement for Seqwater and the recommendation of the QCA in its draft SunWater report, Seqwater has escalated internal labour costs at 4% per annum for the regulatory period 2013-14 to 2016-17;

- contractor and materials costs for 2012-13 are based on the quantities required in the work instructions for the scheme. As per the QCA’s draft SunWater report, contractor and material costs have been escalated at 4% per annum for the regulatory period; and
- “other” direct operating costs incorporate a range of expenses including plant and fleet hire, water quality monitoring expenses and fixed energy costs. These costs have been escalated at forecast CPI for the regulatory period.

Forecast operations costs are provided below.

Table 3-1. Forecast direct operations costs (\$000)

Cost	2013-14	2014-15	2015-16	2016-17
Labour	225.5	234.5	243.9	253.6
Contractors and materials	36.9	38.4	40.0	41.6
Other	199.5	204.5	209.6	214.8
TOTAL	461.9	477.4	493.4	510.0

Repairs and maintenance

Repairs and maintenance is performed at the scheme in accordance with Seqwater’s maintenance system. This system identifies the maintenance requirements for each asset, and then sets out a schedule for maintenance over the year(s) for that asset. In addition, maintenance requirements are developed through Facilities Asset Management Plans and as a result of scheduled inspections.

There is also unplanned maintenance which is required in response to asset breakdown or failure, or where new information emerges about asset condition (e.g. via regular inspections). Expenditure on unplanned maintenance for 2012-13 is derived based on past experience.

Seqwater have set a target ratio of 71:29 for planned maintenance to unplanned maintenance in 2012-13. This ratio has been applied for the forecast period.

Repairs and maintenance for 2012-13 has been escalated at 4% per annum over the regulatory period.

The table below presents a summary of forecast repairs and maintenance costs.

Table 3-2. Forecast repairs and maintenance by expenditure type (\$000)

Type	2013-14	2014-15	2015-16	2016-17
Planned	147.7	153.6	159.7	166.1
Unplanned	60.3	62.7	65.2	67.8
TOTAL	208.0	216.3	224.9	233.9

Dam safety inspections

Routine dam safety inspections are carried out to identify and plan maintenance requirements and to provide information for management planning of water delivery assets. These costs are included in forecast operations expenditure.

In addition, more thorough periodic dam safety inspections are carried out on a 5 yearly basis. Costs associated with these inspections have been added to forecast direct operating expenditure in the year in which the expenditure is expected to be incurred. Forecast dam safety inspections expenditure is provided below.

Table 3-3. Forecast dam safety inspections (\$000)

Dam	2013-14	2014-15	2015-16	2016-17
Atkinson	25.6			
Total	25.6			

These inspections are based on the dam safety compliance requirements for the dams and the cost estimates are based on actual historic cost of inspection.

The table below presents consolidated forecast repairs and maintenance costs for the Lower Lockyer Valley scheme.

Table 3-4. Total repairs and maintenance forecast (\$000)

Type	2013-14	2014-15	2015-16	2016-17
Planned	147.7	153.6	159.7	166.1
Unplanned	60.3	62.7	65.2	67.8
Dam safety inspections	25.6	-	-	-
TOTAL	233.6	216.3	224.9	233.9

Rates

Seqwater incurs rates in relation to its land portfolio, including storages. Seqwater has forecast rates expenses for the Lower Lockyer Valley scheme based on 2011-12 actual rates, and has forecast these to increase annually by CPI for the regulatory period.

Table 3-5. Forecast rates cost (\$000)

Year	2013-14	2014-15	2015-16	2016-17
Cost	48.0	49.2	50.4	51.7

Metering

Consistent with the Referral Notice to the QCA, capital expenditure (renewals) costs for meter upgrades to meet national metering standards have been excluded. Similarly, operating costs associated with complying with the new standards have not been included in the cost estimates.

Non-direct costs

Non-direct costs are common costs which are not directly attributable to the operations and management of a specific scheme and include both indirect and overhead costs associated with the provision of corporate and other business services. In the absence of suitably disaggregated data at the project level, allocations of non-direct costs to renewals / capital expenditure were not examined. All non-direct costs were therefore allocated to operating expenditure only.

Non-direct costs for 2012-13 were derived at the aggregate level for all schemes and allocated to individual schemes based on the proportion of direct costs attributable to the individual scheme. These costs were then escalated forward to derive forecast non-direct costs for the regulatory period.

Non-direct costs are categorised by type of expenditure:

- Water delivery includes non-direct costs associated with dam operations, infrastructure maintenance, environmental management and recreation and catchment maintenance services;
- Asset delivery costs are associated with project planning and managing the delivery of projects;
- Corporate costs include business services, organisational development and the office of the CEO. These include costs associated with the provision of IT services, finance, procurement, legal and risk, governance and compliance activities; and

- Other costs primarily reflect costs associated with the North Quay facilities and flood control centres.

As discussed, the Lower Lockyer Valley scheme was allocated a portion of 2012-13 total business non-direct costs on the basis of direct costs attributable to the scheme. This estimate was escalated by CPI to derive forecasts for each year of the regulatory period.

Forecast non-direct operating costs are provided below.

Table 3-6. Forecast non-direct operating cost (\$000)

Type	2013-14	2014-15	2015-16	2016-17
Water Delivery	71.0	72.8	74.6	76.5
Asset Delivery	31.7	32.5	33.3	34.1
Corporate	253.8	260.1	266.6	273.3
Other	21.6	22.2	22.7	23.3
TOTAL	378.1	387.6	397.3	407.2

In addition to non-direct operating costs, Seqwater has allocated costs to the Lower Lockyer Valley scheme associated with the use of non-infrastructure assets, insurance and working capital.

Non-infrastructure assets

The Lower Lockyer Valley scheme utilises a range of non-infrastructure assets (buildings and plant and equipment). These assets are not included in the renewals expenditure forecasts. However, it is necessary for costs associated with the use of these assets to be attributed to the Scheme. Seqwater has used depreciation costs as a proxy for the cost associated with use of these assets. However, these depreciation costs are not captured for the WSS. Accordingly, aggregate non-infrastructure depreciation for 2012-13 has been allocated to facilities on the basis of direct costs and escalated forward over the forecast period.

The table below provides a breakdown of forecast non-infrastructure asset costs allocated to the Lower Lockyer Valley scheme over the forecast period.

Table 3-7. Forecast non-infrastructure operating cost (\$000)

Year	2013-14	2014-15	2015-16	2016-17
Cost	31.6	32.4	33.2	34.0

Insurance

Seqwater’s annual insurance premium cost for 2012-13 is forecast at \$6.96 million. The major components to the premium include industrial special risks, machinery breakdown, public liability, professional indemnity, contract works and directors and officers insurance.¹

Seqwater is in the process of placing insurances, and proposes to update this forecast once new premiums are set.

Seqwater has allocated its 2012-13 premium to the Lower Lockyer Valley scheme using the replacement value of scheme assets. This value has been escalated by CPI to determine a premium for each year of the forecast period. The table below shows the forecast premiums for the Lower Lockyer Valley scheme.

Table 3-8. Forecast insurance cost (\$000)

Year	2013-14	2014-15	2015-16	2016-17
Cost	74.3	76.1	78.0	80.0

Working capital

The QCA has already adopted a methodology for calculating Seqwater’s working capital in Grid Service Charges. Seqwater has calculated the working capital allowance using this methodology and the values submitted to the QCA for 2012-13², at \$5.538M.

Seqwater has allocated a portion of this working capital allowance to the Lower Lockyer Valley scheme on the basis of revenue attributable to the scheme. The 2012-13 working capital allowance has then been escalated by CPI to provide a forecast for each year of the regulatory period.

¹ Seqwater also notes the QCA canvassed concerns raised by irrigators about the insurance costs attributable to irrigation services, and accepted SunWater’s proposed scope of insurances as reasonable (including professional indemnity). Refer to QCA (2011), pp 106-107

² Seqwater (2012), p146

Table 3-9. Forecast working capital (\$000)

Year	2013-14	2014-15	2015-16	2016-17
Cost	10.7	11.0	11.3	11.6

Total operating costs for the forecast period are provided below.

Table 3-10. Total operating cost forecast (\$000)

Cost	2013-14	2014-15	2015-16	2016-17
Direct				
Operations	461.9	477.4	493.4	510.0
Repairs and maintenance	208.0	216.3	224.9	233.9
Dam safety	25.6	-	-	-
Rates	48.0	49.2	50.4	51.7
Non-direct	-	-	-	-
Operations	378.1	387.6	397.3	407.2
Non-infrastructure	31.6	32.4	33.2	34.0
Insurance	74.3	76.1	78.0	80.0
Working capital	10.7	11.0	11.3	11.6
Total	1,238.2	1,249.9	1,288.5	1,328.4

Revenue offsets

Seqwater receives revenue from other sources, including property leases, recreation fees and the provision of town water supplies. The estimated revenue from these sources for the Lower Lockyer Valley scheme for the regulatory period is provided below. These forecasts are based on expected revenue received in 2012-13 escalated by CPI for the regulatory period.

Table 3-11. Forecast revenue offset (\$000)

Year	2013-14	2014-15	2015-16	2016-17
Revenue	14.1	14.5	14.8	15.2

To ensure that Seqwater is not overcompensated for the provision of services, this revenue has been removed from the estimate of scheme costs for the regulatory period.

Renewals

The renewals outlays for the irrigation schemes consist of the same cost elements as their operating costs, namely direct labour, materials and contractors' services, other direct costs (such as rates and land taxes) and miscellaneous administrative costs and non-direct (indirect and overhead) costs.

Seqwater has adopted the same rates for escalation of renewals expenditure as for operating expenditure.

Accordingly, renewal expenditure has been escalated for direct labour, materials and contractors costs at 4% per annum for the years 2013-14 to 2016-17 and forecast inflation thereafter for the remainder of the planning period. All other direct costs and non-direct costs are escalated at forecast inflation for both the regulatory period and the remainder of the planning period.

Inflation is forecast to increase at 2.5% per annum over the forecast period and beyond.

Renewals forecast

Seqwater has proposed a rolling 20 year renewals annuity, consistent with the approach adopted for SunWater's irrigation pricing in the QCA's draft report.

Seqwater has defined renewals as non-maintenance expenditure that is required to maintain the service capacity of the assets.

Seqwater has based its renewals forecast on the more significant and predictable renewals expenditure items. Seqwater has not attempted to include minor renewals projects (less than \$10,000), or renewals on water treatment plants at recreation areas, or make any allowance or contingency for renewals expenditure arising from damage or changes in law. This approach has been adopted to focus the renewals forecasting effort on more material items of expenditure.

Seqwater identified renewals needs and the schedule of projects through a range of processes, including:

- the existing Facility Asset Management Plans (FAMPs);
- the existing asset maintenance program;
- reports from site safety inspections and dam safety management program; and
- advice from operators.

Seqwater then evaluated potential projects against criticality and other criteria, and conducted workshops with local staff as well as site inspections to validate and adjust the

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scope and timing of projects. In many cases, Seqwater has revised the timing of major renewals jobs to a later time where there was not sufficient evidence that the asset required renewal, or renewal of the asset could be deferred at an acceptable risk of failing to meet service standards or compliance obligations.

Forecast renewals expenditure for the regulatory period is provided below.

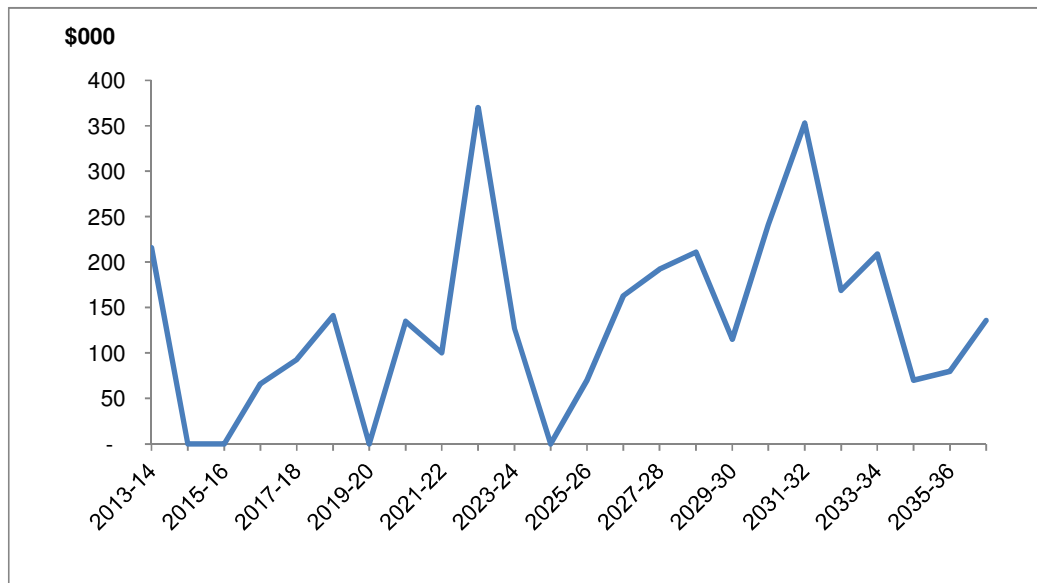
Table 3-12. Forecast renewals expenditure to 2016-17 (\$2012-13, \$000)

	2013-14	2014-15	2015-16	2016-17
Renewals expenditure	216.0	-	-	66.0

This excludes any dam safety or meter upgrade expenditure, in accordance with the Referral Notice.

The figure below shows the long term renewals profile over a 24 year period.

Figure 3-1: Lower Lockyer Valley renewals profile (\$2012-13)



The major projects that have a material 10% impact on the annuity are described below:

Table 3-13. Major renewals projects

Asset	Description of Work	Timing of Work	Project Value \$'000	Significance*
Potters Weir	Rehabilitation to repair scour bypass of weir	2013-14	60	HAV
Sippels Weir	Rehabilitation to repair scour bypass of weir	2013-14	72	HAV
Brightview Channel	Desilting	2019-17	66	HAV
Brightview Channel	Replacement of fencing (50% shared with adjacent landowners)	2013-14	47	HAV

* HAV – Higher than Average Value (for period from 2013/14 to 2016/17)
 IA – Project has an impact on the annuity of greater than 10%

Total Lower Bound Costs

The total lower bound costs for the Lower Lockyer Valley scheme are set out in the table below.

Table 3-14. Total Lower Bound costs (\$000)

Cost	2013-14	2014-15	2015-16	2016-17
Direct operations*	521.3	512.1	528.9	546.4
Repairs and maintenance	208.0	216.3	224.9	233.9
Non-direct opex**	494.7	507.1	519.8	532.8
Renewals annuity	185.9	193.1	195.7	198.7
TOTAL	1,409.9	1,428.5	1,469.3	1,511.8

* Incorporates revenue offset ** Incorporates operations, non-infrastructure costs, insurance and working capital.

Cost allocation to irrigation

The Lower Lockyer Valley consists of medium priority water access entitlements only. Consequently, all scheme costs are attributable to medium priority customers.

Table 3-15. Total lower bound costs allocated to irrigation sector (\$000)

Cost	2013-14	2014-15	2015-16	2016-17
Direct operations*	521.3	512.1	528.9	546.4
Repairs and maintenance	208.0	216.3	224.9	233.9
Non-direct opex**	494.7	507.1	519.8	532.8
Renewals annuity	185.9	193.1	195.7	198.7
TOTAL	1,409.9	1,428.5	1,469.3	1,511.8

* Incorporates revenue offset ** Incorporates operations, non-infrastructure costs, insurance and working capital

A comparison against the lower bound costs allocated to irrigation in the SunWater 2006 Irrigation Pricing Review is provided below. To facilitate comparison with Seqwater’s forecast costs, SunWater’s 2010-11 lower bound cost estimates have been indexed forward to \$2013-14 by actual and forecast inflation.

Table 3-16. Total Lower Bound Costs allocated to irrigation sector (\$000)

Lower bound cost	SunWater 2006 LBC (\$2013-14)	2013-14	2014-15	2015-16	2016-17
	1,011.8	1,409.9	1,428.5	1,469.3	1,511.8

While indicative, the lower bound cost benchmarks developed for the 2006 SunWater Irrigation Price Review are not directly comparable to the Seqwater forecasts. In particular, the published SunWater cost information:

- provides aggregate operations, maintenance and administration data, with no breakdown between direct and non-direct costs; and
- applies a productivity adjustment to proposed lower bound costs, but does not identify the adjustment attributable to operating expenditure.

Moreover, these lower bound costs were developed more than 6 years ago and amidst very different conditions. While comparisons between the 2006 benchmarks may be of interest where data is disaggregated, there is little value in attempting to explain departures from the 2006 data given Seqwater had no input to these forecasts and did not have (due to circumstances surrounding its formation) the financial systems to gather and report this data in any case.

Proposed tariffs

Tariff groups

The Referral Notice requires the QCA to adopt the tariff groups as proposed in Seqwater’s NSPs.

Seqwater proposes the current tariff groupings continue for the Scheme. That is, a single tariff group will continue to apply.

Tariff structure

As discussed, Seqwater considers that all costs associated with the provision of irrigation services are fixed. Accordingly, Seqwater proposes to apply a single fixed tariff to Lower Lockyer Valley irrigation customers.

Lower bound reference tariffs

Lower bound reference tariffs for Lower Lockyer Valley irrigation customers are provided below.

Table 3-17. Forecast Lower Lockyer Valley irrigation tariffs

	2013-14	2014-15	2015-16	2016-17
Lower bound cost (\$000)	1,409.9	1,428.5	1,469.3	1,511.8
WAE (ML)	11,278	11,278	11,278	11,278
Tariff (smoothed)	-	-	-	-
Fixed component (\$/ML)	124.28	127.39	130.57	133.84
Variable component (\$/ML)	-	-	-	-

Price path

The Referral Notice requires the QCA to consider a price path where potential price increases are above inflation.

Supporting documentation

- Irrigation Infrastructure Renewal Projections - 2013/14 to 2046/47 – Lower Lockyer Tariff Group

Appendix A – Asset details

S1.1 ATKINSON DAM - ATKINSON'S LAGOON OFFSTREAM STORAGE

ITEM	DESCRIPTION
1. Description of water infrastructure:	Atkinson Dam off stream storage.
2. Storage Capacities:	
a) Total storage capacity	30,400 ML.
b) Commandable storage capacity	29,010 ML.
c) Dead Storage capacity	1,390 ML. [The volume below the level of the outlet works (EL 57.34 m AHD) is 1,390 ML. A volume of 1,800 ML was adopted in hydrologic modelling.]
3. Physical Dimensions (Main Structure):	
a) Full supply level	65.72 m AHD.
4. Outlet Works/Spillway Arrangement/Diversion Works:	
a) Description of works	<ul style="list-style-type: none"> (i) Buaraba Creek Outlet. Outlet Works - From the inlet tower, outlet is by a 900 mm diameter conduit under the embankment to a guard valve on the downstream end near the offtake of the Atkinson Dam pump station. (ii) Brightview Channel Outlet. Outlet Works - Outlet is through a check structure into two 1200 mm diameter pipelines discharging into the Brightview Channel. (iii) Spillway - A 60.96 m wide open channel topping an ogee crest weir and discharging to Buaraba Creek.
b) Levels	<ul style="list-style-type: none"> (i) Buaraba Creek Outlet. Outlet Works - From the inlet tower, the conduit under the embankment is laid flat with an invert EL of 57.34 m AHD. (ii) Brightview Channel Outlet. Inlet Channel bed EL 64.04 m AHD. Culvert Invert EL 64.35 m AHD. Outlet Channel bed EL 64.50 m AHD. (iii) Spillway – Approach Channel bed EL 64.20 m AHD. Top Of Crest EL 65.72 m AHD. Discharge Channel bed EL 60.84 m AHD.
5. Inlet Works:	
a) Multi level offtakes	Single inlet 2159 mm wide x 5563 mm high.
b) Levels	Inlet invert EL 57.34 m AHD.
6. Pass flow requirements:	
a) Environmental provisions	No releases are made specifically for environmental purposes.
b) Volume of first flush currently required to be passed through structure	Not applicable to a structure of this type.
c) Riparian/stock and domestic flows	No releases are made specifically for stock and domestic purposes.

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ITEM	DESCRIPTION
d) Other compensation flows (eg. for underground water resources)	No releases are made specifically for compensation purposes.
e) Flow variations	⇒ Brightview Channel. - Maximum - 85.0 ML. Minimum - 20.0 ML (pumps on). Minimum - 2.0 ML (gravity - dam full). Average - 40.0 ML. ⇒ Buaraba Ck Gravity Diversion. Maximum - 10.0 ML. Minimum - 0.0 ML. Average - not applicable. ⇒ Buaraba Ck Pipeline. Maximum - 20.0 ML. Minimum - 0.0 ML. Average - 10.0 ML.
f) Maximum release rates, actual as agreed for resource protection	96 ML/d Brightview Channel. 40 ML/d Buaraba Ck Gravity Diversion. 20 ML/d Buaraba Ck Pipeline.
7. Operational constraints:	
a) Minimum operating level/capacity	Start to flow level:- (i) Buaraba Creek outlet - Invert EL 57.34 m AHD. (capacity 1,390 ML). (ii) Brightview Channel outlet - bed EL 64.04 m AHD. (capacity 21810 ML). (iii) Lowest level recorded in 1980/81 at capacity of 2500 ML.
b) Operation of fabridams	No fabridam exists.
c) Operation of gates	No gates installed.
d) Flood mitigation	Flood mitigation is by diverting flows from Buaraba Creek Diversion Weir to Atkinson Dam for storage to be used as required when creek flows are insufficient to meet demands.
8. Management of storage water levels and quality:	
a) Water quality management, eg: Algal Management, multi-level offtakes including release strategies	Surveillance of Blue Green Algal levels in accordance with the Blue Green Algae Manual.
b) Minimum operating level for protection of fauna	1390 ML. The volume corresponding to 2.5 metres depth of water is 840 ML. Although not agreed, this depth of water has been discussed as an absolute minimum volume for the protection of fauna.
c) Storage fringe margin management	Licences to occupy Flood Reserve Area are issued by the Licensee.
9. Operation of fish transfer system:	No fish transfer system exists.

**S1.2 BUARABA CREEK DIVERSION WEIR - BUARABA CREEK
AMTD 15.8 km**

ITEM	DESCRIPTION
1. Description of water infrastructure:	Sheet steel piling Weir.
2. Storage Capacities:	
a) Total storage capacity	74 ML.
b) Commandable storage capacity	64 ML.
c) Dead Storage capacity	10 ML. [The volume below the level of the outlet works (EL 64.87 m AHD) is 10 ML. A volume of 23 ML was adopted in hydrologic modelling]
3. Physical Dimensions (Main Structure):	
a) Full supply level	EL 67.23 m AHD.
4. Outlet Works/Spillway Arrangement/Diversion Works:	
a) Description of works	(i) Outlet works consists of a top entering reinforced concrete inlet box with removable concrete dropboards and a 450 mm diameter pipe, controlled on the downstream end by a 375 mm diameter gate valve. Outlet to Atkinson Dam is located 50 m upstream of the weir. (ii) The spillway is the crest of the weir.
b) Levels	(i) Creek offtake (with dropboards removed) invert of conduit pipe EL 64.87 m AHD. (ii) Spillway crest EL 67.23 m AHD.
5. Inlet Works:	
a) Multi level offtakes	The normal operating level is the crest which is at the same level as the conduit offtake EL 67.23 m AHD.
b) Levels	The normal draw off is the crest level of 67.23 m AHD, which is the same level as the top of the inlet box. With the dropboards removed the offtake can be reduced to the conduit invert of EL 64.87 m AHD.
6. Pass flow requirements:	
a) Environmental provisions	No releases are made specifically for environmental purposes.
b) Volume of first flush currently required to be passed through structure	Not determined at this time. Current operational procedure is to allow the weir to fill and overtop.
c) Riparian/stock and domestic flows	Outlet valve to be operated to meet the needs of entitlement holders downstream to Lockyer Creek.
d) Other compensation flows (eg. for underground water resources)	No releases are made specifically for compensation purposes.
e) Flow variations	No continuous flows, so minimum and average do not apply. Maximum flow: 5.0 ML/d.
f) Maximum release rates, actual as agreed for resource protection	20 ML/d.

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ITEM	DESCRIPTION
7. Operational constraints: <ul style="list-style-type: none"> a) Minimum operating level/capacity b) Operation of fabridams c) Operation of gates d) Flood mitigation 	<ul style="list-style-type: none"> i) Normal operating is at crest level or above, EL 67.23 m AHD (capacity 74 ML). ii) The creek outlet draw off level (with dropboards removed) is EL 64.87 m AHD (capacity 10 ML). No fabridam exists. No gates installed. Weir has no flood mitigating effect.
8. Management of storage water levels and quality: <ul style="list-style-type: none"> a) Water quality management, eg: Algal Management, multi-level offtakes including release strategies b) Minimum operating level for protection of fauna c) Storage fringe margin management 	There is currently no water quality management. Not determined at this time. The volume corresponding to 2.5 metres depth of water is 18 ML. Although not agreed, this depth of water has been discussed as an absolute minimum volume for the protection of fauna. There is no storage fringe margin management plan.
9. Operation of fish transfer system:	No fish transfer system exists.

S1.3 BRIGHTVIEW WEIR - LOCKYER CREEK - AMTD 36.4 km

ITEM	DESCRIPTION
1. Description of water infrastructure:	Storage Weir, mass concrete with “ogee” crest and fishway.
2. Storage Capacities:	
a) Total storage capacity	390 ML.
b) Commandable storage capacity	384 ML.
c) Dead Storage capacity	6 ML. [The volume below the level of the outlet works (EL 54.37 m AHD) is 6 ML. A volume of 300 ML was adopted in hydrologic modelling.]
3. Physical Dimensions (Main Structure):	
a) Full supply level	EL 60.13 m AHD.
4. Outlet Works/Spillway Arrangement/Division Works:	
a) Description of works	From the inlet box 28.5 m upstream of the embankment, the outlet is by way of a 600 mm dia conduit through the embankment located approximately midstream and controlled on the downstream end by a 600 mm dia gate valve.
b) Levels	(i) Crest level - EL 60.13 m AHD. (ii) Embankment level - EL 61.96 m AHD. (iii) Outlet invert - EL 54.37 m AHD.
5. Inlet Works:	
a) Multi level offtakes	Inlet works are by a reinforced concrete box 1524 mm x 1524 mm x 2743 mm with the entrance through trash racks on the wall facing left bank.
b) Levels	Minimum offtake is the invert of the conduit at EL 54.37 m AHD.
6. Pass flow requirements:	
a) Environmental provisions	No releases are made specifically for environmental purposes.
b) Volume of first flush currently required to be passed through structure	Not determined at this time. Current operational procedure is to allow the weir to fill and overtop.
c) Riparian/stock and domestic flows	No releases are made specifically for stock and domestic purposes.
d) Other compensation flows (eg. for underground water resources)	No releases are made specifically for compensation purposes.
e) Flow variations	Minimum 5 ML/d. Maximum 35 ML/d. Average 20 ML/d.
f) Maximum release rates, actual as agreed for resource protection	There have been no flow rates agreed to at this stage.

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ITEM	DESCRIPTION
<p>7. Operational constraints:</p> <p>a) Minimum operating level/capacity</p> <p>b) Operation of fabridams</p> <p>c) Operation of gates</p> <p>d) Flood mitigation</p>	<p>(i) Normal operating is at crest level or above, EL 60.13 m AHD (capacity 393 ML).</p> <p>(ii) The creek outlet draw off level is EL 54.37 m AHD (capacity 6 ML).</p> <p>No fabridam exists.</p> <p>No gates installed.</p> <p>Weir has no flood mitigating effect.</p>
<p>8. Management of storage water levels and quality:</p> <p>a) Water quality management, eg: Algal Management, multi-level offtakes including release strategies</p> <p>b) Minimum operating level for protection of fauna</p> <p>c) Storage fringe margin management</p>	<p>There is currently no water quality management.</p> <p>Not determined at this time. The volume corresponding to 2.5 metres depth of water is 29 ML. Although not agreed, this depth of water has been discussed as an absolute minimum volume for the protection of fauna.</p> <p>There is no storage fringe margin management plan.</p>
<p>9. Operation of fish transfer system:</p>	<p>Weir type with alternately notched overfalls. Principal species: Sea Mullet and Spangled Perch.</p>

S1.4 SIPPERS WEIR - LOCKYER CREEK - AMTD 23.8 km

ITEM	DESCRIPTION
1. Description of water infrastructure:	Storage Weir, reinforced concrete headwall.
2. Storage Capacities:	
a) Total storage capacity	25 ML.
b) Commandable storage capacity	Information will be available on completion of "As - Built " survey.
c) Dead Storage capacity	Information will be available on completion of "As - Built " survey.
3. Physical Dimensions (Main Structure):	
a) Full supply level	EL 44.15 m AHD.
4. Outlet Works/Spillway Arrangement/Diversion Works:	
a) Description of works	A 300 mm diameter butterfly valve fitted to the conduit. The spillway is the crest of the weir.
b) Levels	No levels are known at this stage and are to be surveyed in the future.
5. Inlet Works:	
a) Multi level offtakes	There are no inlet structures.
b) Levels	No levels are known at this stage and are to be surveyed in the future.
6. Pass flow requirements:	
a) Environmental provisions	No releases are made specifically for environmental purposes.
b) Volume of first flush currently required to be passed through structure	Not determined at this time. Current operational procedure is to allow the weir to fill and overtop.
c) Riparian/stock and domestic flows	No releases are made specifically for stock and domestic purposes.
d) Other compensation flows (eg. for underground water resources)	No releases are made specifically for compensation purposes.
e) Flow variations	Minimum 3 ML/d. Maximum 8 ML/d. Average 6 ML/d.
f) Maximum release rates, actual as agreed for resource protection	There have been no flow rates agreed to at this stage.

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ITEM	DESCRIPTION
7. Operational constraints: <ul style="list-style-type: none"> a) Minimum operating level/capacity b) Operation of fabridams c) Operation of gates d) Flood mitigation 	<ul style="list-style-type: none"> (i) Normal operating is at crest level or above, EL 49.00 m AHD (capacity 25 ML). (ii) The butterfly valve draw off level is unknown and subject to an upcoming survey. No fabridams exist. No gates installed. Weir has no flood mitigating effect.
8. Management of storage water levels and quality: <ul style="list-style-type: none"> a) Water quality management, eg: Algal Management, multi-level offtakes including release strategies b) Minimum operating level for protection of fauna c) Storage fringe margin management 	There is currently no water quality management. Not determined at this time. No provision made for this purpose. There is no storage fringe margin management plan.
9. Operation of fish transfer system:	No fish transfer system exists.

S1.5 POTTERS WEIR - LOCKYER CREEK - AMTD 17.0 km

ITEM	DESCRIPTION
1. Description of water infrastructure:	Storage Weir, reinforced concrete headwall.
2. Storage Capacities:	
a) Total storage capacity	30 ML.
b) Commandable storage capacity	No information available.
c) Dead Storage capacity	No information available.
3. Physical Dimensions (Main Structure):	
a) Full supply level	EL 39.06 m AHD.
4. Outlet Works/Spillway Arrangement/Division Works:	
a) Description of works	A 300 mm diameter butterfly valve fitted to the conduit. The spillway is the crest of the weir.
b) Levels	No levels are known at this stage and are to be surveyed in the future.
5. Inlet Works:	
a) Multi level offtakes	There are no inlet structures.
b) Levels	No levels are known at this stage and are to be surveyed in the future.
6. Pass flow requirements:	
a) Environmental provisions	No releases are made specifically for environmental purposes.
b) Volume of first flush currently required to be passed through structure	Not determined at this time. Current operational procedure is to allow the weir to fill and overtop.
c) Riparian/stock and domestic flows	No releases are made specifically for stock and domestic purposes.
d) Other compensation flows (eg. for underground water resources)	No releases are made specifically for compensation purposes.
e) Flow variations	Minimum 3 ML/d. Maximum 5 ML/d. Average 4 ML/d.
f) Maximum release rates, actual as agreed for resource protection	There have been no flow rates agreed to at this stage.

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ITEM	DESCRIPTION
7. Operational constraints: <ul style="list-style-type: none"> a) Minimum operating level/capacity b) Operation of fabridams c) Operation of gates d) Flood mitigation 	<ul style="list-style-type: none"> (i) Normal operating is at crest level or above, EL 39.06 m AHD (capacity 30 ML). (ii) The 300 mm dia butterflyvalve draw off level is unknown and awaits an "As Built Survey". No fabridam exists. No gates installed. Weir has no flood mitigating effect.
8. Management of storage water levels and quality: <ul style="list-style-type: none"> a) Water quality management, eg: Algal Management, multi-level offtakes including release strategies b) Minimum operating level for protection of fauna c) Storage fringe margin management 	No water quality management. Not determined at this time. No provision made for this purpose. There is no storage fringe margin management plan.
9. Operation of fish transfer system:	No fish transfer system exists.

S1.6 O'REILLYS WEIR - LOCKYER CREEK -

AMTD 1.4 km

ITEM	DESCRIPTION
1. Description of water infrastructure:	Irrigation storage and underground water recharge weir. Mass concrete with "ogee" crest and sheet piled embankment.
2. Storage Capacities:	
a) Total storage capacity	610 ML.
b) Commandable storage capacity	598 ML.
c) Dead Storage capacity	12 ML. [The volume below the level of the outlet works (EL 23.64 m AHD) is 12 ML. Currently, outlet works are non-operational. A volume of 400 ML was adopted in hydrologic modelling.]
3. Physical Dimensions (Main Structure):	
a) Full supply level	EL 31.24 m AHD.
4. Outlet Works/Spillway Arrangement/Diversion Works:	Outlet was blanked off after the gate valve rusted off and the outlet pipe became blocked.
a) Description of works	A single 225 mm diameter pipe regulated on the downstream end by a 225 mm diameter gate valve. The spillway is mass concrete with "ogee" crest.
b) Levels	Crest/spillway EL 31.24 m AHD.
5. Inlet Works:	Outlet blanked off.
6. Pass flow requirements:	
a) Environmental provisions	No releases are made specifically for environmental purposes.
b) Volume of first flush currently required to be passed through structure	Not determined at this time. Current operational procedure is to allow the weir to fill and overtop.
c) Riparian/stock and domestic flows	No releases are made specifically for stock and domestic purposes.
d) Other compensation flows (eg. for underground water resources)	No releases are made specifically for compensation purposes.
e) Flow variations	There are no releases made at this weir, as it is at the end of the regulated section. Operating policy is to capture any flows. Natural flows will overtop and continue flowing to the Brisbane River.
f) Maximum release rates, actual as agreed for resource protection	No releases made.

ITEM	DESCRIPTION
7. Operational constraints:	
a) Minimum operating level/capacity	(i) Normal operating is at crest level / spillway or above, EL 31.24 m AHD (capacity 610 ML). (ii) The creek outlet draw off level is EL 23.64 m AHD (capacity 12 ML).
b) Operation of fabridams	No fabridam exists.
c) Operation of gates	No gates installed.
d) Flood mitigation	Weir has no flood mitigating effect.
8. Management of storage water levels and quality:	
a) Water quality management, eg: Algal Management, multi-level offtakes including release strategies	There is currently no water quality management.
b) Minimum operating level for protection of fauna	Not determined at this time. The volume corresponding to 2.5 metres depth of water is 54 ML. Although not agreed, this depth of water has been discussed as an absolute minimum volume for the protection of fauna.
c) Storage fringe margin management	There is no storage fringe margin management plan.
9. Operation of fish transfer system:	Weir type fishway. Principal species: Sea Mullet and Australian Bass.

S1.7 ATKINSON DAM PUMP STATION AND OUTLET WORKS - OFFSTREAM STORAGE

ITEM	DESCRIPTION
1. Description of water infrastructure:	(i) Atkinson Dam Pump Station. (ii) Gravity Outlet.
a) Details and dimensions of diversion works, if applicable	The pump station has an overall size of 11.8 m x 9.1 m x 3.1 m. (i) Bed EL 56.58 m AHD (ii) Top of wall EL 59.78 m AHD (iii) Suction centerline EL 57.49 m AHD (iv) Discharge centerline EL 58.41 m AHD
b) Maximum diversion capacity	98.0 ML/d.
2. Purpose of water diversion works:	Water is released from the dam through Brightview Channel to regulate flow in Lockyer Creek from Brightview Weir to O'Reilly Weir with pipework by-passes on the pump station to supplement Buaraba Creek.
3. Flow measurement:	No meters have been installed.

S1.8 OUTLET WORKS FROM ATKINSON DAM TO BRIGHTVIEW CHANNEL AND BUARABA CREEK - OFFSTREAM STORAGE

ITEM	DESCRIPTION
1. Description of water infrastructure:	Gravity outlet to Brightview weir channel.
a) Details and dimensions of diversion works, if applicable	Two 1200 mm diameter conduits through the embankment at invert EL 64.35 m AHD.
b) Maximum diversion capacity	98.0 ML/d.
2. Purpose of water diversion works:	Water is released from the dam through Brightview Channel to regulate flow in Lockyer Creek from Brightview Weir to O'Reilly Weir, and to supplement Buaraba Creek via a diversion pipeline.
3. Flow measurement:	No meters have been installed.

S1.9 DIVERSION CHANNEL FROM BUARABA CREEK WEIR TO ATKINSON DAM - BUARABA CREEK - AMTD 15.85 km

ITEM	DESCRIPTION																		
1. Description of water infrastructure:	Outlet to Buaraba Creek diversion channel.																		
a) Details and dimensions of diversion works, if applicable	Outlet to channel is an excavated trapezoidal channel with a bed width of 12.2 metres and banks with a 1 in 2 grade and a depth of flow of approximately 3.05 metres.																		
b) Diversion Flows	<p>The rates of diversion into Atkinson Dam via the Buaraba Creek Diversion Channel from Buaraba Creek shall not exceed those specified in the following table:</p> <table border="1" style="margin-left: 40px;"> <thead> <tr> <th>Flow in Buaraba Creek (ML/day)</th> <th>Diversion Flow into Buaraba Creek Diversion Channel (ML/day)</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>860</td><td>860</td></tr> <tr><td>1730</td><td>1730</td></tr> <tr><td>2590</td><td>2203</td></tr> <tr><td>5180</td><td>2850</td></tr> <tr><td>8640</td><td>3630</td></tr> <tr><td>17280</td><td>5360</td></tr> <tr><td>25920</td><td>7085</td></tr> </tbody> </table>	Flow in Buaraba Creek (ML/day)	Diversion Flow into Buaraba Creek Diversion Channel (ML/day)	0	0	860	860	1730	1730	2590	2203	5180	2850	8640	3630	17280	5360	25920	7085
Flow in Buaraba Creek (ML/day)	Diversion Flow into Buaraba Creek Diversion Channel (ML/day)																		
0	0																		
860	860																		
1730	1730																		
2590	2203																		
5180	2850																		
8640	3630																		
17280	5360																		
25920	7085																		
2. Purpose of water diversion works:	The Buaraba diversion provides the major inflows to Atkinson Dam from the diversion weir.																		
3. Flow measurement:	"Vee" notch weir and recorder with an accuracy of +/- 5%																		

**S1.10 DIVERSION PIPELINE FROM ATKINSON DAM TO BUARABA CREEK -
BUARABA CREEK - AMTD 9.2 km**

ITEM	DESCRIPTION
1. Description of water infrastructure:	Pipeline outlet works to Buaraba Creek.
a) Details and dimensions of diversion works, if applicable	Offtake at 375 mm dia gate valves at Atkinson Dam pump station to supply the pipeline and discharge into Buaraba Creek. Replenishment of the creek can also be achieved by diverting from Brightview channel.
b) Maximum diversion capacity	12.3 ML/d.
2. Purpose of water diversion works:	To serve clients between Atkinson Dam and Buaraba Creek that are beyond the riparian zone and to provide supply to riparian users upstream of where Seven Mile Lagoon supplies Buaraba Creek.
3. Flow measurement:	Impeller type meter with an accuracy of +/- 5%.

Appendix B – Customer service standards



Water Supply Arrangements and Service Targets

LOWER LOCKYER VALLEY WATER SUPPLY SCHEME

Water Supply Arrangements

This is referred to as Seqwater Rules in the River/Groundwater contract

To manage the water delivery to our customers, arrangements for the taking of water in the Scheme have been discussed with the Customer council and are outlined below. These arrangements are aimed at achieving the efficient delivery of water to customers in the Scheme that best meets their needs.

River Supplies

Taking Water from the Scheme

In the Lower Lockyer Valley Water supply Scheme, customers must place water orders using the telephone ordering system at least 48 hours before taking water. This allows Seqwater to make timely releases from Atkinson Dam, and to minimise losses.

To place an order, phone 5426 4225

Note: Water orders for Sunday must be recorded by 12 noon on the Friday preceding the weekend

The water ordering system assists Seqwater to deliver water to customers in an efficient and timely way and enables customers to plan and manage their water use. Customers who take without ordering may reduce Seqwater's ability to supply customers who have ordered according to the above requirements.

Orders may not be available:

- During interruptions to supply (both scheduled and unscheduled)
- During periods of low demand for water, when water losses or operational circumstances make it impractical to supply (e.g. during times when there is minimal irrigation demand)

Customers requiring water during these times should contact the water officer to obtain information regarding water delivery.

Rain Shutdown

Customers must notify the water officer as soon as possible of any rain event that substantially lessens their water requirements. To conserve water, the water officer may shutdown the system when there is widespread general rain.



Water Supply Arrangements and Service Targets

Access to Storage

Storages are currently operated in the following nominal operating range:

Atkinson Dam – 8.5 metres below Full Supply Level

All minor storages – operated to dead storage

This range may change in the future if required, for example under Seqwater's Interim Resource Operations Licence (IROP) or Resource Operations Licence (ROL) and for other licence changes. Customers will be informed if such a change occurs. Customers should note that they are responsible for locating and maintaining pumps to take water.

Waterharvesting

Waterharvesting is announced and charged for by the Department of Environment and Resource Management (DERM). Some customers waterharvest through a pump metered by Seqwater. To account for the water taken as waterharvesting, customers must advise DERM of their start and stop meter readings. DERM then informs Seqwater of these readings so that Seqwater can record this use as waterharvesting. The phone number for DERM is 5462 3000.

If no meter reads are received by DERM then all water taken will be treated as Allocation Water.

Changes to the volume or location for taking water

Customers seeking to:

- Have multiple delivery points; or
- Transfer water to another customer

must first obtain Seqwater's approval. For their own benefit, customers should obtain Seqwater's approval before finalising any dealing with another party (e.g. a temporary transfer).

Seqwater may require operational and other issues to be resolved before granting its approval. These will be discussed with customers during the application and approval process.

Application forms are available from the Seqwater Business Centre in Karalee.

Changes to Customers' Pumping Arrangements

Customers must obtain approval from both Seqwater and The Department of Environment & Resource Management or any other approvals necessary, before proceeding with any changes to their pumps, including changing size/capacity of the pump. Customers are advised to contact Seqwater to clarify any requirements before lodging applications to the Department of Environment & Resource Management.



Water Supply Arrangements and Service Targets

Stopping or restricting supply

Seqwater may suspend or restrict supply in a number of circumstances, including:

- during maintenance of Seqwater's assets;
- if supply could cause Seqwater to break the law;
- during a peak demand period, when rosters or rations may apply;
- when the demand for water is so small it is impractical to supply it;
- infrastructure limitations which make delivery impractical;
- when there is a need to make special releases to maximise efficiency at times of limited supply;
- or
- during rain shutdown.

Customers who require water all year round should make arrangements for on-farm water storage to provide their requirements during interruptions.

General

Complaints and dispute Resolution

Seqwater's aim is to resolve problems and complaints quickly and effectively. Where a customer has a concern that is not able to be resolved, customers can choose to initiate a formal dispute resolution process by writing to the Business Manager.

If through discussions, resolution cannot be reached either party may request the commencement of negotiations in good faith on a dispute resolution procedure, other than litigation or arbitration. If agreement is reached to proceed to the next phase, independent mediation services of the disputes Resolution Centres of Queensland can be used.

Billing Arrangements

Invoices are sent quarterly with the exception of minimum charge invoices, which are sent annually and all invoices must be paid within 30 days. Payments are allocated to the customer's oldest debt first, unless an invoice is in dispute.



Water Supply Arrangements and Service Targets

Notices

Correspondence should be sent to the Karalee Business Centre as detailed below.

Seqwater

P O Box 2437

NORTH IPSWICH QLD 4305

Facsimile: 07 3884 5312

Email: irrigatorquestions@seqwater.com.au

Communication – Contact Arrangements

The Karalee Business Centre has staff available for enquiries and business transactions (billing, temporary transfers, etc.) between the hours of 8.30am and 4.30pm Monday to Friday Phone: 1800 077 005.

Water operations enquiries can be made between the hours of 7.30am and 4.30pm Monday to Friday at Atkinson Dam – Office: 07 5426 4225 or Mobile: 0409 490 381. The office may at times be unattended and during these hours a message service is available.

Emergency water supply problems can be directed to the duty officer on:

Mobile: 0409 490 381

Further information about Seqwater can be obtained from our website:

www.seqwater.com.au



Water Supply Arrangements and Service Targets

SERVICE TARGETS

As described under clause 3 of the standard contract:

- 3(d) Seqwater shall, at approximately annual intervals, during this Agreement publish a report comparing the performance of Seqwater with the Service Targets;
- 3(e) Seqwater shall publish Service Targets for the Regulated Area and revise these from time to time after considering changes in customer needs determined through customer consultation, and changes in industry practice and procedures.

We are committed to publishing service targets and to reporting to customers on our performance against the targets. Following discussion and consultation with the Customer Council, this document contains service targets that have been set for the lower Lockyer Valley Water Supply Scheme.

Planned Shutdowns

Planned shutdowns have been included as a target and Seqwater recognises that the following are important service issues for you:

- That you will be notified about a shutdown so that you can plan ahead;
- The timing of the shutdown should suit most customers;
- The duration of the shutdown should minimise the impact on customers, while enabling Seqwater to perform maintenance on the scheme.

Definition: A Planned Shutdown occurs when a customer's supply is interrupted or restricted due to the performance of work that is planned in advance.

Planned Shutdowns – Timing

Delivery Service Type	Scheme Target
River	The timing of all planned shutdowns will be set following consultation with the Customer Council (for a shutdown affecting a large part of the scheme) or customer groups or individuals (for shutdowns effecting small areas).

Planned Shutdowns – Duration

Delivery Service Type	Scheme Target
River	Seqwater will complete all planned shutdowns within the period notified to customers (unless later varied by agreement with the groups originally consulted with), unless something occurs that is beyond Seqwater's control, such as adverse weather conditions.



Water Supply Arrangements and Service Targets

Planned Shutdowns – Notice

Delivery Service Type	Scheme Target
River	<p>For shutdowns planned to exceed 2 weeks, at 8 weeks written notice by letter will be provided to each customer affected by the annual shutdown.</p> <p>For shutdowns planned to exceed 3 days, at least 2 weeks written notice by letter, fax, telephone, or verbal advice will be provided to each customer affected by the shutdown.</p> <p>For shutdowns planned to be less than 3 days, at least 5 days notice will be provided at least verbally to each customer affected.</p> <p>Each notice will state the start date, and anticipated shutdown duration.</p> <p>A courtesy reminder will be placed in the local newspaper one week before the planned shutdowns commence.</p>

Unplanned Shutdown

Unplanned shutdowns have been included as a target and Seqwater recognises that the information provided to you about an interruption and the period of time taken to resume supply are important to you.

Definition: An Unplanned Shutdown is an unforeseen or not planned mechanical or operational failure of Seqwater's water delivery infrastructure that stops or restricts the supply of water to a customer for more than 2 hours (including emergency repairs). It does not include events that are beyond Seqwater's control (eg. power failure or storm); and does not include interruptions to supply caused by errors in estimating water demand and releases, or people taking water without authorisation.



Water Supply Arrangements and Service Targets

Unplanned Shutdown – Duration

Delivery Type	Service	Service Target
River		<p>Unplanned Shutdowns will be fixed so that at least partial supply can be resumed to those customers requiring water within:</p> <ul style="list-style-type: none"> • 48 hours of Seqwater being notified of the event. <p>Some events may interrupt supply greater than the above standard and are excluded from these targets. Seqwater will publish these events from time to time.</p>

¹ This includes other events described as Events of Force Majeure in your contract.



Water Supply Arrangements and Service Targets

Unplanned Shutdown – Notice

Delivery Service Type	Scheme Target
River	Seqwater will notify all affected customers requiring water verbally or by telephone, radio announcement or fax of the likely duration of the interruption to supply within 24 hours of learning of the event, or by the end of the first business day following the event, whichever is the earlier.

Unplanned Shutdown – Meter Repairs

Delivery Service Type	Scheme Target
River	Faults causing restrictions to supply will be repaired within one working day of Seqwater being notified.

Total frequency of interruption to supply

Frequency of interruptions to supply

Delivery Service Type	Scheme Target
River	No customer will experience more than six planned or unplanned interruptions per water year (as defined above).

Complaints

Seqwater will provide an initial response to all complaints within five working days of receiving a complaint by the customer:

- in writing; or
- by telephone to the Business Centre

Seqwater will either resolve a customer's complaint, or provide a written response providing reasons why the complaint has not or cannot be resolved within 21 days of receiving the complaint.