Irrigation Prices for SunWater Schemes: 2011-16

Lower Burdekin Water Submission to the Queensland Competition Authority

April 2011

Lower Burdekin Water

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Executive Summary

LBW is a joint venture between the North Burdekin Water Board and the South Burdekin Water Board. We are a major bulk water customer in the Burdekin Haughton Water Supply Scheme (BHWSS). LBW has a medium security water allocation of 255,000 ML and we service 625 irrigators.

This submission outlines LBW's critical issues with respect to the review of irrigation prices (being undertaken by the Queensland Competition Authority) for the BHWSS. Importantly, it outlines some of the key impacts on LBW and our position relating to the BHWSS Network Service Plan (NSP) and the application of prudent economic regulatory principles to the services and costs outlined in the NSP. The critical regulatory issues from our perspective are discussed briefly below, and in more detail in Section 3 of this submission.

LBW'S FREE WATER ALLOCATION SHOULD BE RETAINED

LBW currently holds 185,000 ML of free water allocations from the Burdekin Falls Dam. These allocations are a reflection of the fact that the water boards both preceded the establishment of the Burdekin Falls Dam.

The current free allocation is a legacy from several deliberate, considered and consistent Government policy and regulatory decisions since the establishment of the BHWSS.

The loss of the free water allocation would increase LBW's costs by approximately $2.96 million per annum and the costs could not be avoided by LBW and would be passed onto our customers. Any loss of the free water allocation would trigger the need for LBW to raise our prices to irrigators by at least 44% from current budgeted prices for the next financial year.

Therefore the free water allocation should be maintained.

PRICES SHOULD REFLECT EFFICIENT LOWER BOUND COSTS FOR SERVICES RECEIVED

We have reviewed the NSP for the BHWSS and the approach proposed by SunWater to allocate costs. In general, LBW endorses the approach proposed by SunWater, although we are concerned that LBW has potentially been assigned excessive administrative overheads as many costs (e.g. billing) should be based on customer numbers – not entitlement volumes.

Based on information in the NSP, LBW have estimated approximate costs attributable to LBW's water entitlements (excluding the free allocation).

When efficient lower bound costs are allocated to LBW's water access entitlements, our analysis indicates that the efficient lower bound costs attributable to LBW are approximately $240,000 per annum when the entitlements are fully utilised. This compares to current SunWater charges for the same level of water use of $1.08 million. In effect, existing SunWater charges to LBW could be as much as 4.5 times efficient lower bound costs. The SunWater charges above efficient lower bound costs are equivalent to 12% of LBW's full cost profile.

Clearly, *current* tariffs represent historical bundled bulk water and distribution services. As LBW do not receive any distribution services, our tariff in the next regulatory period should reflect the actual bulk water services received.

SUNWATER'S PROPOSED TARIFF STRUCTURE REQUIRES CAREFUL CONSIDERATION

Our analysis of SunWater's preferred tariff structure for bulk water services in the BHWSS indicates a fixed component of approximately 98% of total costs. This is radically different from the existing tariff structure and contract arrangements.

If the $15.99/ML water price is maintained for LBW, SunWater's preferred tariff structure would result in prices that are neither reflective of efficient lower bound costs, nor consistent with efficient pricing signals, as volumetric charges would be negligible.

Furthermore, because LBW typically uses significantly less than our full entitlement, SunWater's proposed tariff structure could effectively double LBW's SunWater charges in a typical year.

Careful consideration of the tariff structure is required to avoid unintended financial impacts on SunWater and/or customers or ensure that inefficient water management and use outcomes do not occur.

COSTS OF FUTURE AUGMENTATIONS SHOULD NOT BE IMPOSED ON LBW

As a general principle, LBW agrees that SunWater should be entitled to a commercial return on augmentations of bulk assets. However, the issue in this context from LBW's perspective is whether costs attributable to any augmentations of the Burdekin Falls Dam during the next regulatory period should be borne by future rather than existing customers.

In particular, LBW's perspective is that it should not bear the costs of augmentation of the Burdekin Falls Dam given that demand by LBW or it customers would not trigger any augmentation of the dam. This is consistent with the demand forecasts established and endorsed by the State for the North Queensland Regional Water Supply Strategy.

1. Introduction

LBW is a joint venture between the North Burdekin Water Board and the South Burdekin Water Board (the Water Boards). LBW has prepared this submission (the submission) to the Queensland Competition Authority (QCA) in relation to the Review of Irrigation Prices to apply to SunWater Supply Schemes for 2011-2016.

The purpose of this Submission is to review the issues raised in the Ministers' Referral Notice, the Issues Papers commissioned by the QCA, and SunWater's submissions to determine the potential impacts on LBW and our customer base. We have approached this task with a view to ensuring that the QCA has sufficient information to inform its deliberations and ultimately establish irrigation prices that are efficient, reflect true costs and ensure the ongoing viability of both SunWater and its customers.

In developing the Submission, LBW has been assisted by Marsden Jacob Associates (MJA).

Context – the QCA review process

The QCA has been directed by the Premier and the Treasurer to recommend irrigation prices to apply to SunWater water supply schemes from 1 July 2011 through to 30 June 2016.

SunWater is the largest single service provider in the State providing retail bulk and retail supply services to agricultural, industrial and rural urban users. It owns and operates 26 dams throughout the State.

The current price path for irrigators serviced by SunWater supply schemes commenced on 1 July 2006 and will end on 30 June 2011.

The review of irrigation prices encompasses the 22 Schemes listed in the Ministers' referral notice, and includes the Burdekin-Haughton Water Supply Scheme (BHWSS). LBW is biggest customer of the BHWSS.

Following a review of the Referral Notice and documentation from previous reviews, the QCA has commissioned and released a series of *Issues Papers* in relation to the SunWater Irrigation Price Review. While the Issues Papers do not represent the QCA's position, they do provide a basis for comment by stakeholders and, in some cases, guidance for SunWater.

Approach to developing this submission

The approach in developing this submission has been to review the referral notice and key documents and undertake a desktop assessment of the Issues Papers and potential impacts on LBW.

Finally, we have developed a financial model of LBW that has enables us to assess the potential impacts of regulatory decisions on LBW's finances and ultimately the change in prices we need to charge our customers.

2. Background and context

Lower Burdekin Water

LBW is the biggest water user in the BHWSS, which is one of multiple schemes being reviewed as part of the QCA's Review of SunWater Irrigation Prices.

The LBW joint venture was implemented to improve the efficiency of Water Boards' general administration by avoiding duplication of some service functions; providing cost effective administrative services to both Water Boards; and jointly undertaking all compliance and financial reporting.

Area serviced

LBW service 625 irrigators (predominantly sugar producers) and have a medium security water allocation of 255,000 ML. The areas serviced by LBW are shown in Figure 1.

Figure 1: North and South Burdekin Water Board Areas

LBW responsibilities

Unlike many other irrigation service providers, LBW has broader responsibilities than just water supply service delivery. LBW is also responsible for natural resource management, in terms of replenishment of the groundwater aquifer that lies under the Water Boards' operational area. In effect, this responsibility was the original motivation for the creation of the Water Boards, as discussed in Box 1 below.

Box 1: Responsibilities and functions

The Water Boards were both established by Orders in Council (OIC) in 1965 and 1966, respectively, as independent groundwater replenishment authorities.

A natural freshwater aquifer lies under the operational area of the Water Boards and interfaces with seawater along the coastal boundary. A level of freshwater must be maintained in the aquifer to ensure the seawater interface does not encroach inland to a point that may threaten the fresh groundwater available for irrigation, domestic, stock and industrial purposes, and the quality of the aquifer generally.

The purpose of establishing the Water Boards was to deal with severe groundwater overdraught that had resulted in extensive seawater intrusion into the aquifer. By diverting water from the Burdekin River via a substantial network of infrastructure, the Water Boards have recharged or replenished the freshwater volume of the aquifer to maintain the important freshwater interface and have controlled or prevented seawater intrusion since their inception.

The Water Boards have improved the utility of their substantial water delivery infrastructure by allowing water rate payers to take the diverted surface water for irrigation, domestic, stock and industrial purposes.

Within the LBW area, each irrigator pays an area-based charge for water services provided as there is no metering for billing purposes within the system. The costs of installing meters and enabling volumetric pricing are very significant. We estimate that LBW's overall costs would increase by around 30% if meters were installed and volumetric pricing was introduced.[1]

LBW financial situation

LBW is operated on a commercial basis with an aim to provide effective and efficient services to customers. LBW is operated on a commercial cost recovery basis. Any annual surplus revenues are reinvested into activities that enhance service delivery, or are set aside to enable asset renewals.

Table 1 (below) provides a summary of the draft financial budget for the 2011-12 period. Key financial points to note are:

- Total annual business revenues are approximately $6.5 million p.a., of which, 94% comes from irrigators (72%) and contributions from sugar mills (21%). Revenues are highly reliant on the prospects of the sugar industry.
- LBW's pricing regime enables the recovery of efficient operating and maintenance costs across the businesses. Pricing does not achieve any return *on* the $36.5 million asset base,[2] but pricing does allow for a modest return *of* capital to finance asset refurbishment to ensure continued efficient service delivery.
- Our internal analysis of expenses shows that around 55% of total annual expenses are either entirely fixed (e.g. overheads) or primarily fixed (e.g. employment expenses).
- The cost of operating pump stations is the major variable cost of LBW's operations (averaging 26% of total costs over the year). However, the cost of operating pump stations varies significantly over the year ranging from 8% to 40% of total *monthly* operating costs driven by seasonal fluctuations in water availability and irrigator demand.

[1] This is based on a full cost recovery approach (lower bound only) to install meters on all 1,880 bores in LBW. It is assumed that capital costs per meter are $10,600 (installed); meter lives are 20 years; and annual meter reading costs are $240/meter.

[2] Asset values based on accounting values within annual financial reports.

- SunWater charges are expected to be approximately $500,000 per annum, accounting for around 7% of total operating costs. However, under *full use* of LBW's entitlements, these costs could potentially reach $1.1 million.[3]

Table 1: Lower Burdekin Water draft budget (2011-12)

Item	*$'000*	*% of total*
Revenue		
Irrigators	4,747	72
Mill contributions	1,406	21
Other revenue	427	6
Total	**6,580**	**100**
Expenses		
Employees	1,451	22
Overheads	699	11
Research & development	210	3
Vehicles	157	2
Equipment	549	8
Pump Stations	1,741	26
Water Charges (SunWater)	492	7
Supplies and services	76	1
Maintenance	476	7
Depreciation / asset renewals allowance	802	12
Total	**6,652**	**100**
Surplus / loss	**-72**	**0**

The budget above is based on relatively low demand for water from SunWater given the current outlook for demand by irrigators. **If LBW were to utilise their full allocation, SunWater charges would be approximately $1.08 million, resulting in an operating loss of around $670,000.** Under this circumstance, SunWater charges would account for around 15% of total LBW costs.

In effect, if SunWater charges to LBW are increased, there is no scope to absorb those additional costs within our existing financial structure and charging arrangements and SunWater price increases would need to be passed onto our customers, with no realistic options for irrigators to avoid the increase through water use efficiency because our tariffs are area based.

LBW position statement

- LBW is already a highly efficient entity operating on a cost recovery basis.

[3] Lower Burdekin Water 2009, 'Lower Burdekin Water Irrigation Modernisation Plan 2009', Australian Government Department of Environment, Water, Heritage and the Arts, Canberra

Current reforms

Like many irrigation service providers, LBW is constantly striving to improve operational efficiencies, customer service standards, and natural resource management outcomes. Building on the LBW joint venture initiative, we are now in the process of implementing two major reforms:

- implementing key findings from the Irrigation Modernisation Plan to further enhance operational efficiencies and natural resource management; and
- fundamental reform of governance arrangements to move from a statutory authority to a private company structure.

These reforms are outlined in more detail below.

Irrigation modernisation plan

The Water Boards have always promoted the efficient delivery of water. In 2008, the Water Boards' successfully applied to the Federal Government and obtained funds to develop an Irrigation Modernisation Plan to be used to guide an ongoing program of service delivery efficiency measures.

The Plan details operational processes and activities undertaken in the Water Boards' operational areas. It has analysed the efficiency of current delivery systems and asset management, and assessed alternate infrastructure and irrigation techniques that could have an impact on LBW's natural resource management responsibilities.

A key finding of the Irrigation Modernisation Plan was that there are only very limited commercially viable opportunities for enhancing irrigation service delivery for LBW. These opportunities are now being incorporated into the long-term strategies, planning and investment of LBW.

Fundamental reform in governance arrangements

As a natural progression from the creation of the LBW joint venture and in partial response to the recommendations in the Webbe–Weller review of statutory authorities (i.e. abolish all Category Two Water Boards), LBW is currently moving towards a new legal structure (i.e. a private incorporated irrigation entity).

Under these arrangements the two boards will be formally merged into a single commercial entity. Once this has been completed (subject to State Government timelines and approval processes), LBW will commence on a process of reviewing our service delivery and commercial arrangements (including pricing). Obviously any changes to SunWater's pricing arrangements will have a significant impact on the new LBW entity and its customers.

Irrigated production and prospects in the LBW area

It is vital that the QCA clearly understands the makeup of current production and future prospects for irrigation in the region when reviewing price paths. This is not just important for demand forecasting, but also for understanding the implications of changes in SunWater charges.

Water use and water use efficiency

The area serviced by LBW, the Lower Burdekin Delta, is heavily dominated by sugar production, with some limited areas of horticulture. Irrigated horticulture is dominated by fruit production, mainly fruit trees such as mangoes.

- Within North Queensland, an estimated 95,700 ha is under irrigation, of which sugar accounts for 78,000 ha, or 82% of the total irrigated area.
- Sugar is concentrated in the areas serviced by SunWater (BHWSS) and the areas serviced by LBW. Within the LBW area, an estimated 38,700 ha of land, or 40.4% of the total NQRWSS area of irrigation land, is utilized for sugar cane production. In the BHWSS, 39,500 ha or 41.3% of the total NQRWSS irrigated area, is devoted to sugar cane production.

In developing long-term rural water demand estimates for the North Queensland Water Supply Strategy MJA estimated that, within the NQ region, the LBW area accounts for 49% of current total crop requirements from all sources, or 390,000 ML[4]. The majority of this water use, as noted in Table 2, is accounted for by sugar cane (386,000 ML).

Table 2: Irrigated production and estimated water demand from all sources in North Queensland (ML/annum)

Crop	*Area under irrigation (ha)*	*% of total irrigated area in NQ*	*Estimated rural water demand (ML/a)*	*% of total estimated rural water demand*
Sugar - BHWSS	39,500	41.3%	335,000	42%
Sugar - LBW	38,700	40.4%	386,000	48%
Horticulture	15,400	16.1%	58,000	7%
Cotton	300	0.3%	2,000	0%
Broadacre	2,000	2.1%	16,000	2%
Total	95,700	100%	797,000	100%

Source: MJA 2009, NQRWSS: Rural Water Demand.

It is generally understood that water use by irrigators in the LBW is marginally higher than in the BHWSS. However, this is largely driven by variations in soil types and other agronomic factors. In addition, drainage from irrigation essentially ends up in the aquifer and is effectively recycled through future applications of water. From a water use efficiency perspective, because there is no metering and volumetric charges in the LBW area, there is little (if any) means for irrigators to avoid increases in SunWater charges through implementing water use efficiency measures.

LBW position statement

- Any increase in SunWater charges to LBW will need to be passed directly onto our customers, with little realistic opportunities for irrigators to avoid the costs through improving water use efficiency.

[4] These estimates relate to total crop requirements. They should be treated with caution as there is no metering in the LBW area.

Future prospects

Demand for irrigation water from the BHWSS is a derived demand, reliant on expansion of irrigated agriculture in the region currently/potentially serviced by SunWater. Growth will only eventuate if the region has a competitive advantage for production in key domestic and export markets. Previous demand estimates developed for the NQRWSS indicate growth in demand for irrigated products is likely to be constrained, specifically:[5]

- **Sugar.** Expansion of sugar production is not commercially viable at present as the region lacks sufficient competitive advantage in key world markets to underpin further investment. This disadvantage is further underpinned by expectation of a relatively high Australian dollar (on the back of the continued resources boom) and policy uncertainty relating to natural resource management (i.e. regulation to control rural diffuse pollution loads in the Great Barrier Reef).

  In addition, biofuels and other value adding products from sugar are not yet commercially viable in Australia.

- **Horticulture.** There is relatively low growth in domestic demand for horticulture products due to low rates of population growth and distances to key markets offsetting any agronomic advantages of the region. The major prospect for horticulture expansion that would rely on BHWSS services would be the Water for Bowen project. However, this project would not be viable without an industrial foundation customer and would not eventuate within the 2011 to 2016 regulatory period.

As well as noting the constraints on commodity demand for sugar and horticultural products for the fresh market discussed above, the NQRWSS noted the limited availability of undeveloped suitable land for sugar and horticultural products in the Lower Burdekin Delta.

Sugar is expected to remain the dominant commodity throughout the long term, while growth in horticulture will be modest and incremental.

Given these factors, the demand forecasts (total crop requirements) in the LBW are expected to fall by 1-4%, by 2017 as water use efficiency uptake more than offsets commodity demand. Expectations for the broader Burdekin region serviced by the BHWSS are similar. Table 3 provides a breakdown of the NQRWSS total water demand by commodity for the low, mid and high growth scenarios for the LBW area.

[5] Marsden Jacob Associates, 2009, North Queensland Regional Water Supply Strategy: Rural Water Demand.

Table 3: Rural water demand (all sources) in the LBW area by commodity (ML/annum)

	2007	*2017*
Low estimates		
Sugar	386,460	371,002
Horticulture	3,748	3,922
Total demand	390,208	374,923
Mid estimates		
Sugar	386,460	377,650
Horticulture	3,748	4,246
Total demand	390,208	381,896
High estimates		
Sugar	386,460	384,358
Horticulture	3,748	4,246
Total demand	390,208	388,603

Source: MJA 2009, NQRWSS: Rural Water Demand.

LBW position statement

- Demand forecasts underpinning the price determinations for the BHWSS should assume no growth from irrigated agriculture for the period 2011 to 2016.

3. The critical regulatory issues

The QCA has released a number of Issues Papers relating to key aspects of the QCA review of SunWater prices. We have reviewed the Issues Papers and the Referral Notice and assessed the issues and potential impacts on LBW and our customers. This Section summarises the findings of our assessment. The critical regulatory issues to LBW are:

- the free water allocation
- the establishment and allocation of efficient lower bound costs
- the nature of tariff structures
- allocation of costs and charges for future capital.

These issues are discussed in more detail below.

Free water allocations

Potentially the biggest impact on LBW and our 650 customers from the pricing review would be if the QCA recommended that the current 'free allocations' received by the Boards were to cease and river charges were imposed on those allocations.

'Free allocations' are water entitlements granted to customers which are delivered to customers free of charge or at a discounted rate. This arrangement reflects an historical agreement or a condition where customers had 'rights' or 'entitlements' to take water from a river prior to the construction of water storages.

Currently, SunWater delivers 185,000 ML to the Water Boards free of charge (174,000 ML for the SBWB and 11,000 ML for the NBWB). That is, there is no lower bound cost allocation in the current water prices for this 185,000 ML and it is excluded from tariffs paid by the Water Boards. Instead, SunWater recovers the associated costs through user charges levied on paying customers within the BHWSS.[6]

The issue is whether SunWater should commence charging the Water Boards for the lower bound costs associated with the free allocation. This section outlines:

- the historical context for the free allocations
- the regulatory precedence and first principal arguments for retaining the free allocations
- the financial impact on LBW if the free allocations were lost.

Historical context

The free allocation to the Boards was an agreement was in recognition of the capacity of the Boards to divert river flow prior to the Burdekin Falls Dam being built and the water required to achieve natural resource management objectives. The historical context for the free water allocations is outlined in Box 2.

Box 2: History of free water allocations

Prior to the construction of the Burdekin Falls Dam, the North Burdekin Water Board (NBWB) and the South Burdekin Water Board (SBWB) were granted an authority to divert

6 PWC, 2010, Pricing Principles and Tariff Structures for SunWater's Water Supply Schemes

water from the Burdekin River under an Order in Council (OIC), dated 13 May 1965 and 31 March 1966 respectively. The OICs allowed the NBWB to extract up to 61,000 acre feet per annum and SBWB to extract 40,200 acre feet per annum.

Following the construction of the Burdekin Falls Dam, an agreement was made between the then Water Resources Commission and the Boards in 1991 regarding charging arrangements for water supplied from Burdekin Falls Dam. These arrangements allowed the Boards to receive at least 185,000 ML per annum as a 'free' allowance. This agreement was ratified in the 1992 Amendment Orders to the original OICs. This agreement was in recognition of the capacity of the Boards to divert river flow prior to the Burdekin Dam being built and the water required to achieve the natural resource management objectives outlined in the OIC.

During the Water Act 2000, Water Resource Plan (WRP) and Resource Operation Plan (ROP) process the following decisions were made:

- Section 1089 of the Water Act 2000 means that the authority to take or interfere with water granted by the OICs is replaced when a water allocation is granted.
- In December 2004, SunWater's Interim Resource Operations Licence (IROL) for the BHWSS deemed that SunWater had an existing responsibility to supply a total volume of 240,000 ML per annum of medium priority water the NBWB and SBWB.
- Section 52 of the 2007 WRP for the Burdekin Basin stated that the Boards were to be granted a total Interim Water Allocation (IWA) of 210,000 ML per annum under an authority to take water under the OICs (as amended in 1992). In addition the Boards were to be granted an additional 40,000 ML per annum in IWAs under other supply obligations.
- The final ROP for the Burdekin Basin released in 2009 indicates that the Board's total supplemented Water Allocation was 250,000 ML per annum, which is shared between NBWB and SBWB on the following basis: NBWB – 151,000 ML per annum (medium priority) for the purpose of supplementation of water supply scheme; and SBWB – 99,000 ML per annum (medium priority) for the purpose of supplementation of water supply scheme.

Source: PwC, 2010, *Pricing Principles and Tariff Structures for SunWater's Supply Schemes*, Issues Paper prepared for the Queensland Competition Authority, September.

The key point to note from the above information is that the free allocation has been consistently recognised by successive policy and regulatory decisions.

LBW position statement

- The QCA should recognise the historical context for 185,000 ML of free allocations.

Regulatory precedence & first principles arguments

The government resolved, in the context of establishing the previous price path (QCA, 2005-06 Irrigation Price Paths for SunWater), that no costs would be assigned to free allocations, including the water supplied to the Water Boards in the BHWSS. This clearly reflected legacy obligations to provide this water free of charge. However, it was noted that this policy condition should be reviewed ahead of the next irrigation price review.

PwC has provided a review of free allocations in the Issues Paper on Tariff Structures.[7] The key point from that review is to note that who pays depends on whether the free allocation is a government decision or a legacy business agreement, as follows:

- **Result of previous Government decision.** Where the free allocation is a government decision, costs incurred by the service provider should be recovered through user charges levied on other paying customers (this is what currently occurs in the case of LBW & the BHWSS).

  If the free allocations are associated with significant operational and capital costs, and hence significant cross-subsidisation, a Community Service Obligation (CSO) payment could be appropriate. However, it is noted that free allocations are currently not considered to be eligible for CSOs - a government decision to change the status of OIC rulings and to allow a CSO would be required to alter this.

- **Result of a commercial decision.** Where the free allocation results from a legacy business decision, costs should not be cross-subsidised by other users and "SunWater should either absorb the under-recovery or begin charging these customers." PWC then conclude that because the free allocations were in recognition of a pre-existing right to access water, "SunWater may need to seek legal advice on this matter".

Box 2 (above) clearly demonstrates that the current free allocations of 185,000 ML are the legacy of several deliberate, considered and consistent Government policy and regulatory decisions since the establishment of the BHWSS. Consistent with the analysis undertaken by PwC, LBW should not be charged for the current free allocation of 185,000 ML.

LBW position statement

- The current free allocation is a legacy from several deliberate, considered and consistent Government policy and regulatory decisions since the establishment of the BHWSS. Therefore the free allocation should be retained.

Impact on LBW business and customer base of losing free allocation

Despite the fact there is sufficient historical evidence and regulatory precedent to determine the free allocation should be retained, it is instructive to determine the impact on LBW and our 650 customers if the free allocation was lost.

The application of current river charges ($15.99/ML (part A & B) would increase LBW's water allocation charges, as shown in Table 4 below. Key points to note are:

- The loss of the free water allocation would increase LBW's costs by approximately $2.96 million per annum and the costs could not be avoided.
- These costs would be incurred by LBW and ultimately our customers with no changes in services (volume or reliability).
- The cost increases would trigger the need for LBW to raise our prices to irrigators by at least 44% from current budgeted prices for the next financial year. Even in years where LBW would use their full entitlement, price rises attributable to the loss of free water allocations would need to be 41%.
- These costs would have to be absorbed by sugar irrigators who, as price takers, have no opportunities to pass those additional costs onto their customers.

7 PwC (2010) Pricing Principles and Tariff Structures for SunWater's Water Supply Schemes.

- Irrigators would have no options to avoid these costs through lowering water use, as LBW tariffs are principally area based.
- Such an increase in SunWater charges passed onto our customers would likely trigger a sharp increase in defaults. This has two major consequences:
  - Firstly, the financial viability of LBW would be at risk. As defaults increased, these costs would have to be borne by other our paying customers, which could further exacerbate default rates.
  - Where, due to cashflow shortages, LBW was forced to reduce water purchases from SunWater, but irrigators continued to utilise the groundwater resource, the risks of seawater intrusion would increase significantly. In effect, the loss of the free water allocation would significantly constrain the ability of LBW to perform its primary function under the Orders in Council which are still the principal resource management regulatory arrangement in place for groundwater resources in the LBW area.[8]

Table 4: Impacts of loss of free water allocation on LBW and subsequent prices rises for LBW customers ($'000)

	Base case forecast		*Loss of free water allocation*	
	Expected water use	Maximum water use	Expected water use	Maximum water use
Revenues ($'000)	6,580	6,580	6,580	6,580
Expenditure ($'000)	6,652	7,243	9,612	10,203
Operating surplus/loss ($'000)	-72	-664	-3,032	-3,624
Required increase in LBW prices (%)	N/A	N/A	44%	41%

Summary of free water allocation issue

LBW's perspective is that the free allocation it is not a chargeable allocation because it reflects the historical circumstances and conditions precedent to the development of the SunWater Scheme - the Water Boards had 'rights' or 'entitlements' to take this amount of water from the river prior to the construction of SunWater's water infrastructure storages (the Burdekin Falls Dam & Clare Weir).

The loss of the free water allocation would create significant financial risks to LBW and its customers.

Moreover, the entitlements are required to achieve the Boards' natural resource management objectives in relation to the groundwater aquifer. The loss of free water allocations would be entirely inconsistent with State objectives for the management of the aquifer.

LBW position statement

- There are multiple regulatory, financial and natural resource management reasons for maintaining the free water allocation.

[8] Groundwater resources are not included in the Burdekin Resource Operations Plan.

Establishment and allocation of lower bound costs

History and context

The Ministers' Referral Notice directs the QCA to determine irrigation prices such that SunWater can recover:

> *a) its efficient operational, maintenance and administrative costs;*
>
> *b) its expenditure on renewing and rehabilitating existing assets ...;*
>
> *c) a rate of return on assets valued at 1 July 2011 ... (the initial regulated asset based (RAB)) ...*

These costs have been referred to by the Council Of Australian Governments as the 'lower bound' minimum cost recovery requirement for water businesses. A key requirement of the Queensland Government's rural irrigation pricing policy is continued movement to lower bound cost recovery. SunWater lodges scheme-based Network Service Plan (NSPs) that detail specific operational and capital expenditure profiles used to determine prices.

SunWater's estimated costs and proposed allocation of lower bound costs

SunWater's Network Service Plan (NSP) for bulk water in the BHWSS[9] relates directly to the service provided by SunWater to LBW. In effect, LBW is a bulk water customer of SunWater and no costs associated with the BHWSS are attributable to LBW.[10] Table 5 below shows SunWater's stated lower bound costs for the BHWSS bulk water assets for the period 2012-2016.

Table 5: SunWater stated lower bound costs – BHWSS bulk water assets ($'000)

	2012	*2013*	*2014*	*2015*	*2016*
Operations	2,373	2,494	2,555	2,514	2,453
Electricity	75	75	75	75	75
Preventative maintenance	335	353	362	357	349
Corrective maintenance	226	221	226	224	220
Revenue offsets	-95	-95	-95	-95	-95
Total operating costs	2,914	3,048	3,123	3,075	3,002
Renewals annuity	824	464	253	262	283
Dam safety	N/A	N/A	N/A	N/A	N/A
Recreation	N/A	N/A	N/A	N/A	N/A
Total estimated	3,738	3,512	3,376	3,337	3,285

Source: SunWater, 2010, Burdekin Haughton Water Supply Scheme Network Service Plan.

Key points to note, over the five year period include:

- Total operating costs account for 87% of relevant lower bound costs, of which operations dominate (71% of total costs).
- The renewals annuity accounts for a total of 13% of total lower bound costs.

[9] SunWater, 2010, Burdekin Haughton Water Supply Scheme Network Service Plan.

[10] Note: This has been verbally confirmed with SunWater staff.

- The vast majority of costs will be principally fixed in nature and the only genuinely variable cost is likely to be electricity. In effect, fixed costs are likely to exceed 95% of total costs.
- Consistent with previous Ministerial Direction and other documentation, dam safety and recreation assets are excluded from the relevant lower bound costs for this price review.

The NSP states that:

> *SunWater proposes that operating costs (net of revenue offsets) should be allocated to medium priority water access entitlements (WAE) proportional to total WAE in the scheme. The medium priority WAE represent 89% of the total WAE in the scheme, accordingly SunWater will seek to recover 89% of the operating costs from the medium priority WAE...*
>
> *...SunWater has developed a methodology to apportion capital cost (including renewals) between WAE priority groups. This methodology is described in detail in SunWater's submission on capital cost allocation and is termed the Headworks Utilisation Factor (HUF). The HUFs calculated for the scheme are 79% for medium priority WAE and 21% for high priority WAE.*[11]

While there is insufficient detail in any documentation provided by SunWater to test the accuracy of the allocation of lower bound costs, the approaches outlined appear to be reasonable.

Costs attributable to LBW compared to existing charges

Using the available data from the SunWater NSP and assuming LBW's free water allocation is maintained, it is possible to broadly estimate the lower bound costs attributable to LBW. Furthermore, if SunWater prices are to reflect efficient lower bound costs, it is possible to then estimate total SunWater charges to LBW (assuming full utilisation of entitlements).

LBW have medium priority entitlements outside their free allocation totalling 70,000ML. This equates to 8.8% of the chargeable medium priority allocations in the BHWSS.[12] Estimated total lower bound costs for BHWSS medium priority allocations and estimated costs attributable to LBW are shown in Table 6 below.

When efficient lower bound costs are allocated to LBW's water access entitlements, the analysis indicates that the **efficient lower bound costs attributable to LBW are approximately $240,000 per annum when the entitlements are fully utilised. This compares to current charges for the same level of water use of $1.08 million. In effect, existing SunWater charges to LBW could be as much as 4.5 times lower bound costs.**

Further analysis indicates that the existing charges above efficient lower bound costs:

- Are equivalent to 12% of LBW's full cost profile when entitlements are fully utilised.
- Equate to a rate *of* return on BHWSS bulk water assets attributable to LBW of approximately 1.4%, significantly higher than lower bound or other irrigation schemes (to our knowledge).

[11] SunWater, 2010, Burdekin Haughton Water Supply Scheme Network Service Plan. P7

[12] Chargeable medium priority entitlements are 794,595 ML (979,594-165,000 ML).

LBW position statement

- LBW's analysis indicates that SunWater charges (even if maintained at current levels) could be as much as 4.5 times efficient lower bound costs.

Table 6: BHWSS estimated average total medium priority entitlement lower bound costs and costs attributable to LBW ($'000)

	All medium priority allocations	*LBW*
Operations	1,957	172
Electricity	59	5
Preventative maintenance	277	24
Corrective maintenance	176	16
Revenue offsets	-75	- 7
Total operating costs	2,396	211
Renewals annuity	330	29
Dam safety	-	-
Recreation	-	-
Total estimated	2,725	240

Source: LBW based on SunWater, 2010, Burdekin Haughton Water Supply Scheme Network Service Plan.

Allocation of administrative overheads

Another key issue from LBW's perspective is the basis for the allocation of lower bound costs between users in the NSP for the BHWSS. For example, if lower bound costs for administration are based on volumes of entitlements in the BHWSS, this would result in a large allocation of costs to LBW, given that it currently accounts for almost half of irrigation use in the BHWSS.

LBW's earlier submission to the QCA states:

> *It is unclear from the Ministers' Referral Notice or the list of issues papers how the QCA intends to address the allocation of lower bound costs (operations, maintenance, administration, asset renewals etc). For example, any allocation of administration costs in the BHWSS based on volumes of entitlements would not reflect actual costs. ... the approach to treating these costs should be clarified relatively early in the process to ensure all subsequent analysis will actually enable the estimation of efficient costs. It would be prudent to ensure the NSP for the BHWSS specifically isolates activities undertaken to service LBW.*

A key regulatory pricing principle is that prices should be cost reflective - i.e., reflect the costs of providing the service, as noted in the QCA's *Statement of Regulatory Pricing Principles for the Water Sector* (2000).

Previously, the allocation of lower bound costs for SunWater schemes has been made on the basis of converted nominal allocations (i.e. that take into account the nature of and priorities attached to water entitlements).[13] In other words, the allocations have been made on the basis of volumes of entitlements, with an adjustment for quality / reliability.

[13] See, for instance, "Tier 1 Working Paper No.18, Water Entitlement Pricing Conversion Factors", December 2005.

However, in the case of LBW, this practice would result in inefficiencies as it would not reflect actual costs, given that LBW accounts for only two customers (NBWB & SBWB) of the 369 customers in the BHWSS. If lower bound costs for administration are based on volumes of entitlements, this would result in a large allocation of costs to LBW, given that it currently accounts for almost half of irrigation use in the BHWSS.

Therefore, LBW's perspective is that NSPs for BHWSS should treat LBW separately from the other BHWSS customers.

LBW position statement

- The QCA needs to carefully examine the approach to allocating administrative overheads as approaches based on allocation volumes are highly unlikely to represent efficient costs where there are large customers such as LBW.

The structure of tariffs

The directions received by the QCA explicitly require the Authority to consider tariff structure when establishing tariffs. Tariffs are currently set with a mix of fixed and variable charges that together recover the revenue allowance. LBW currently has a number of contracts for the supply of water services from SunWater. While each of the contracts accrues a total tariff of $15.99/ML, the structure of the tariffs and the point at which invoices are sent (advance/arrears) differ between contracts.

Current structure

The structure of contracts is:

- For the NBWB, free allocation of 111,000 ML reflecting the existence of the Board prior to the BHWSS, and a billable allocation of 45,000 ML, consisting of progressive water charges for use above 111,000 ML, specifically:
  - 9,000 ML of take or pay water ($15.99/ML single part tariff in advance)
  - 6,000 ML of sales water ($15.99 single part tariff paid in arrears and only charged if use exceeds 80,000 ML)
  - 30,000 of purchased allocation ($2.32 Part A and $13.67 Part B, both paid in arrears effectively making it a single part tariff)
  - An ability to carry-over unused water between water years for a period up to six months. However, carry-over water must be used (and paid for) before the free water allocation for the next water year can be accessed.
- For the SBWB, free allocation of 74,000 ML reflecting the existence of the Board prior to the BHWSS, and a billable allocation of 25,000 ML, consisting of progressive water charges for use above 74,000 ML, specifically:
  - 6,000 ML of take or pay water ($15.99/ML single part tariff in advance)
  - 4,000 ML of sales water ($15.99 single part tariff paid in arrears and only charged if use exceeds 80,000 ML)
  - 15,000 of purchased allocation ($2.32 Part A and $13.67 Part B, both paid in arrears effectively making it a single part tariff)

– An ability to carry-over unused water between water years for a period up to six months. However, carry-over water must be used (and paid for) before the free water allocation for the next water year can be accessed.

Future tariff structures and impacts on LBW

Current industry practice is to move towards charges that more directly reflect the cost of service provision. As SunWater states:

> *"There is now a clear preference for tariffs to align with cost structures."*[14]

SunWater's submissions clearly indicate a preference for moving to cost reflective pricing to ensure revenue adequacy and eliminate demand related financial risks – essentially passing on that risk onto customers.

> *"SunWater submits that tariffs should be revised so that the fixed charge covers the fixed costs of supply, while the consumption charge recovers costs that vary with volume supplied (e.g. electricity cost for pumping"*[15]

Because the bulk water costs for the BHWSS are essentially fixed (approximately 98% fixed), SunWater's proposed tariff structure would have a profound negative impact on the charges imposed on LBW in a typical year. This is shown in Figure 2 (see next page), which illustrates LBW's water supply charges from SunWater under existing and proposed tariff structures, where:

- the current tariff structure has been modelled across LBW's water demand curve (the blue line).
- SunWater's proposed tariff structure has been modelled across LBW's water demand curve (the red line).

It should be noted that both Boards rarely utilise their fill entitlements, which creates opportunities for LBW to avoid paying some SunWater charges. In an average year, LBW's SunWater charges are typically around $0.5 million, less than 50% of the charges if entitlements were fully utilised.

In effect, SunWater's preferred tariff structure would create a situation where LBW's arrangements would almost equate to a single part take-or-pay tariff across LBW's full water demand profile. There are a number of problems with SunWater's proposed tariff structure including:

- While this would eliminate demand risk for SunWater, it would provide no price signals to implement water use efficiency for LBW or our customer base.
- As outlined in the section discussing the establishment and allocation of lower bound costs earlier in this chapter, it would essentially lock in charges for LBW that could be as much as 4.5 times efficient lower bound costs. In effect, prices paid by LBW would be neither cost reflective nor efficient.

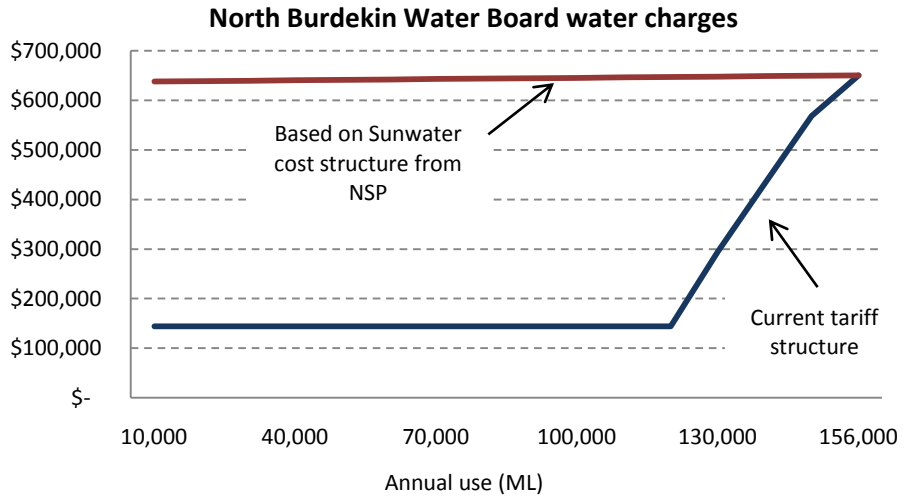
A key question for the QCA in setting new prices is whether the QCA should review the existing tariff applied to LBW or establish a new tariff altogether? SunWater has explicitly separated out the bulk water and distribution services in the BHWSS and brand new tariffs

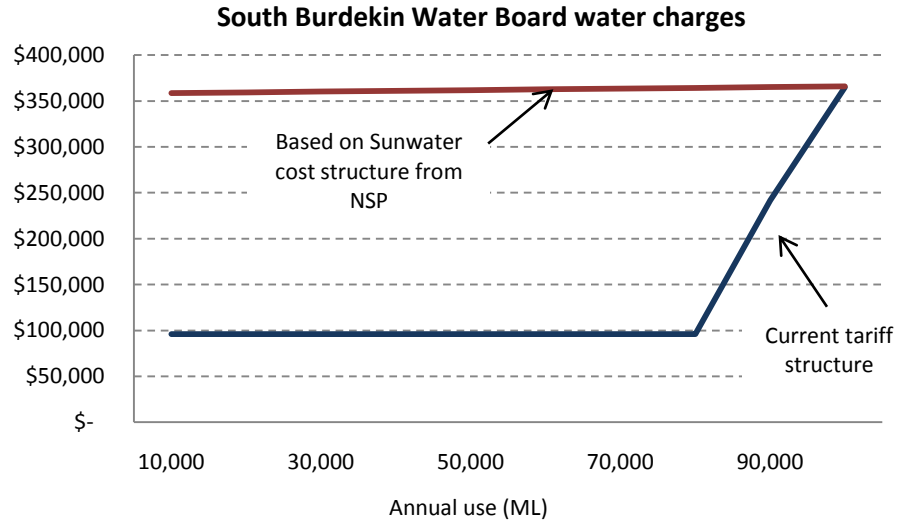
[14] SunWater, 2011, Review of irrigation process. Pricing principles and tariff structures.

[15] SunWater, 2011, Review of irrigation process. Pricing principles and tariff structures.

are required to reflect this unbundling of services. Clearly the *current* tariff of $15.99/ML paid by LBW incorporates a significant cross subsidy to other users in the BHWSS, potentially worth almost $800,000 (the difference between SunWater costs attributable to LBW and SunWater charges for full use of LBW's entitlement). Maintaining the current tariff level of $15.99/ML in order to be consistent with Section 1.1 a) iii) of the Amended Ministers' Referral Notice (maintain process at current real levels if they are already above lower bound) would not reflect the fact the services have been unbundled in the BHWSS (i.e. the current tariff is effectively invalid for future service provision) and would not reflect best practice pricing or regulatory economic principles.

Figure 2: LBW's water supply charges from SunWater under existing and proposed tariff structures





LBW position statements

- If the $15.99/ML water price is maintained for LBW, SunWater's preferred tariff structure would result in prices that are neither reflective of efficient lower bound costs, nor consistent with efficient pricing signals.

- LBW believes that maintaining the current tariff level of $15.99/ML in order to be consistent with Section 1.1 a) iii) of the Amended Ministers' Referral Notice (maintain process at current real levels if they are already above lower bound), would not reflect the fact the services have been unbundled in the BHWSS (i.e. the current tariff is effectively invalid for future service provision) and would not reflect best practice pricing or regulatory economic principles.

Allocation of costs and charges for future capital augmentations

Section 1.1 a) iv) of the Amended Ministers' Referral Notice states that SunWater prices are to reflect a commercial rate of return on prudent capital expenditure for augmentation commissioned after 30 September 2011.

A regulatory pricing principle endorsed by the QCA is that the regulatory asset base should "*account for forecast (reasonable) capital expenditure, with such adjustments generally effected in the period in which the new investment is brought into use.*"[16]

As a general principle, LBW agrees that SunWater should be entitled to a commercial return on augmentations of bulk assets. However, the issue in this context from LBW's perspective is whether costs attributable to any augmentations of the Burdekin Falls Dam during the next regulatory period should be borne by future rather than existing customers.

In particular, LBW's perspective is that it should not bear the costs of augmentation of the Burdekin Falls Dam given that demand by LBW or it customers, the irrigators of the Lower Burdekin Delta, would not trigger any augmentation of the dam. This is consistent with the demand forecasts established and endorsed by the State for the NQRWSS.

In its recent submission to the QCA entitled "Service Framework Background Paper", SunWater agrees with the principle that existing users should not bear the risk of spare capacity or demand uptake:

> *"Hence, where storage capacity is added, generating additional water entitlements to the proponent, existing users should not bear the costs of spare capacity, nor the risk of uptake. Rather, these are costs and risks that should be assigned to the proponent. Conversely, existing users should not derive a benefit from augmentation without paying for those benefits – in this case, this transaction should be negotiated commercially between the parties. ... SunWater has made investments in accordance with the above arrangements since corporatisation in 2000, and plans to do so into the future."*

LBW position statement

- LBW agrees with the position of SunWater and believes that it should not bear the costs of augmentation of the Burdekin Falls Dam given that demand by LBW or it customers would not trigger any augmentation of the Burdekin Falls Dam.

[16] QCA 2000, Statement of Regulatory Pricing Principles for the Water Sector, p.4