

Inquiry into Tariffs of Bunbury and Busselton Water Boards

8 February 2008

Economic Regulation Authority

 WESTERN AUSTRALIA

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Foreword

The Western Australian Government has requested the Economic Regulation Authority (**Authority**) to conduct an annual inquiry into the Bunbury and Busselton Water Boards' tariffs as input into the Government's 2008 Budget deliberations. The Terms of Reference provide that:

While a major review of tariffs is envisaged, perhaps once every three years, the annual reviews under these Terms of Reference would be more limited and may focus on particular issues of relevance at the time.

In addition, the Terms of Reference state that the Authority must give consideration to, but not to be limited to, the following matters:

- the current structure and level of water prices;
- the legitimate business interests of the Boards;
- considerations of demand management and long term resource sustainability; and
- the impact of the inquiry's recommendations on customers, on borrowing and capital, and on payments to Government.

Accordingly, this is not a major review, which would involve reviewing the Water Boards' costs, but is limited to providing advice on the level of tariffs for 2008/09 and the specific matters raised in the Terms of Reference.

The Authority's role in this inquiry is provided for in the *Economic Regulation Authority Act 2003* and is also consistent with the Government's commitment to implement the National Water Initiative, which requires an independent regulator to either set or review water prices.

The Authority is pleased to undertake this role in Western Australia and has provided a set of recommendations in this report that reflects the Authority's assessment of the appropriate tariffs for the Water Boards for 2008/09.

LYNDON ROWE
CHAIRMAN

Recommendations

Recommendations

- 1) Pricing structures need to be reassessed as part of a major review of the Water Boards' costs and tariffs.
- 2) For the purpose of setting tariffs for 2008/09:
 - usage charges that are currently more than \$1.20 per kL should be held at their current levels, while usage charges that are less than \$1.20 per kL should be increased with inflation;
 - non-residential fixed charges should be set in accordance with the Water Boards' current transition path to meter-based charges; and
 - the residential fixed charge should be set at a level sufficient to enable the Water Boards to recover their costs (after deducting revenue gained from other charges, developer contributions and other revenue).

1 Introduction

On 30 January 2008 the Treasurer of Western Australia gave written notice to the Economic Regulation Authority (**Authority**) to undertake an inquiry into the Bunbury and Busselton Water Board's tariffs.

1.1 Terms of Reference

This inquiry has been referred to the Authority under Section 32 of the *Economic Regulation Act 2003 (Act)*, which provides for the Treasurer to refer to the Authority inquiries on matters related to regulated industries (i.e. water, gas, electricity and rail industries).

In accordance with the Terms of Reference, the Authority will make recommendations on the most appropriate level of tariffs for the Water Boards' customers. More specifically:

The inquiry is to make recommendations on the appropriate tariff levels and structures for both Water Boards based on:

- the previous work of the Authority in its 2005 "Inquiry into Urban Water Tariffs"; and
- subsequent information provided by the Water Boards.

The Authority must give consideration to, but will not be limited to, the following matters:

- the current structure and level of water prices;
- the legitimate business interests of the Boards;
- considerations of demand management and long term resource sustainability;
- the impact of the inquiry's recommendations on customers, on borrowing and capital, and on payments to Government.

In developing its recommendations the Authority is to have regard to the Government's social, economic and environmental policy objectives and to the pricing principles of the 1994 Council of Australian Governments water reform agreement and the National Water Initiative.

This annual inquiry is not intended to be a comprehensive reassessment of the Water Boards' costs, and is limited to analysis of the matters specifically referred to in the Terms of Reference. A comprehensive assessment of the Water Boards' costs is more appropriately reconsidered as part of the next major review of the Water Boards' tariffs, which the Terms of Reference indicate is expected to occur once every three years.

The full Terms of Reference is provided in Appendix 2.

In undertaking the inquiry, the Authority recognises section 26 of the Act, which requires the Authority to have regard to:

- the need to promote regulatory outcomes that are in the public interest;
- the need to encourage investment in relevant markets;
- the long-term interests of consumers in relation to the price, quality and reliability of goods and services provided in relevant markets;
- the legitimate business interests of investors and service providers in relevant markets;

- the need to promote competitive and fair market conduct;
- the need to prevent abuse of monopoly or market power; and
- the need to promote transparent decision making processes that involve public consultation.

1.2 Background to the Inquiry

The role of the Authority in providing advice to the Western Australian Government on water pricing is provided for in the *Act* and is consistent with the Intergovernmental Agreement on a National Water Initiative, which was signed by the Premier of Western Australia on 6 April 2006.

The Authority conducted an inquiry into urban water and wastewater pricing in 2005. In that inquiry, and in subsequent advice in relation to the Water Corporation's tariffs, the Authority considered that prices for water services should be structured so that usage charges are set at levels to reflect the long-run marginal cost (**LRMC**) of developing new water resources to meet water demand¹. LRMC is a concept that is applied in other jurisdictions in Australia and is currently being phased-in for Perth residents.²

As part of the 2005 inquiry, the Authority estimated that the LRMC for each of the Water Boards was likely to be in the range of \$0.52 - \$0.66 per kL, depending upon assumptions of future costs. The Authority recognised that a change from the existing charging structure to a flat charge (based on long-run marginal cost) would be a substantial change given that usage charges for high levels of water usage were up to \$2.23 per kL for AQWEST and \$2.47 per kL for Busselton Water customers. The Authority therefore recommended that usage charges for residential customers be established at \$0.56 per kL for water use of 1 to 500 kL per year and \$1.20 per kL for water use in excess of 500 kL per year; with usage charges for non-residential customers at \$0.56 per kL (all in real dollar values of 2005/06). Further details on this inquiry are provided in Appendix 2.

Rather than implement the recommendations of the previous inquiry, the Government retained the existing structure of the Water Boards tariffs and tariffs have increased in the last two years in line with inflation.

1.3 Review Process

Given the anticipated short time-frame for this inquiry, the Authority commenced its investigations prior to receiving the final terms of reference from the Treasurer. The Authority met with the Water Boards to discuss the issues that were identified in the draft terms of reference and requested, and subsequently obtained, financial information from the Water Boards, including their cost and growth projections.

The Authority held a workshop with the Water Boards on 6 December 2007 to discuss the Authority's approach to undertaking its water pricing analysis, which included a discussion about the assumptions underlying the financial models developed by the Authority.

¹ LRMC pricing in the sense that regulators have adopted is an incremental cost associated with the introduction of additional sources of supply. LRMC often results in a range of estimates which are used to guide decisions regarding volumetric charges applied to each tier.

² The Government has endorsed an approach to tariff setting for the Water Corporation such that the Corporation is able to recover fully the costs it incurs in service provision² and is phasing-in LRMC pricing to metropolitan residential customers by 2013/14.

Wider consultation with interested parties was not undertaken as this was not a major review, but limited to specific matters raised in Terms of Reference.

The Authority was required to submit its Final Report to the Treasurer by 8 February 2008.

In accordance with the Act, the Treasurer will have 28 days, from the date of receipt of this report, to table the report in Parliament.

In accordance with section 45 of the Act, the Authority has acted through the Chairman and members in conducting this inquiry.

1.4 Issues Common to AQWEST and Busselton Water

The Terms of Reference indicate that the Authority must give consideration to the following issues, which are common to Bunbury Water (trading as AQWEST) and Busselton Water.

1.4.1 *Demand Management and Long Term Resource Sustainability*

To date, water businesses in Western Australia and elsewhere throughout Australia have relied on water restrictions for short-term demand management. The Government has recently applied demand restrictions to the residents of Bunbury and Busselton (as well as other towns in the South West of the State). As of 1 October 2007, customers of the Water Boards have been restricted to using sprinklers on two days per week, although bore usage has not been restricted.

While it is outside the scope of this inquiry to determine if there is a net public benefit associated with imposing restrictions on Bunbury and Busselton water users, the key potential benefits are:

- greater security of supply for Bunbury and Busselton customers if water saved as a result of restrictions can be used in the future; and
- a reduction in the costs of the Water Boards associated with managing the risk of salt water intrusion into their coastal bores.

On the issue of whether restrictions provide greater long term water security, given Bunbury and Busselton are coastal locations and given the hydrology of the underlying aquifers, water that is not captured in any one year (via bores) will discharge into the nearby ocean. As such, there is limited capacity to save water for future use and capture the associated commercial value.

Advice from hydrologist Neil Milligan (commissioned by AQWEST) indicates demand restrictions reduce the likelihood that the Water Boards coastal bores will suffer from salinity intrusion. This risk of salinity intrusion has led AQWEST to re-establish coastal bores further inland. Busselton Water has advised that they are also considering relocating some of their bores away from the coast.

The disadvantage of restrictions as a means of demand management is that all water consumers are compelled to reduce demand to the same extent, even though some consumers may value water much more highly than others. The alternative approach of raising prices to reduce water demand would allow consumers that value water highly to continue use, while demand reductions are made by consumers that value water less.

The Authority has previously estimated the costs imposed on Perth residential water users by the two-day per week sprinkler restrictions. The welfare loss associated with this reduced water availability was estimated to be \$130 per household.³ Other studies estimate that the cost of water restrictions range from between approximately \$150 per household per year and approximately \$870 per household per year depending on the research methodology and level of restrictions.⁴

For the purpose of calculating tariffs for this inquiry, the Authority has assumed that demand restrictions to the Water Boards will continue. In undertaking the calculations, the Authority assumed the volume reductions would be limited to residential customers only, and of those, only those customers who use more than 150 kL per year. The estimated reduction in usage per customer adopted in the Authority's modelling is the same as that used when modelling the reduction experienced in Perth following the imposition of restrictions in 2001.

1.4.2 Pricing structures

AQWEST has advised the Authority that it wishes to retain its current tariff structure as a demand management tool.

As indicated in Section 1.2, the Authority in its previous advice to the State Government, considered that the higher tier of tariffs, which are as high as \$2.47 per kL for Bunbury customers and \$2.65 per kL for Busselton customers are not justified because they significantly exceed long run marginal cost (LRMC) - previously estimated at \$0.61 per kL (in real dollar values of 2007/08).

Long run marginal cost is an estimate of the present value of the costs that will be incurred (at some future date) to ensure that demand is met. The general principle underlying long run marginal cost pricing is that incremental water usage decisions that are long term in nature, such as investing in a garden, should be influenced by the incremental costs of providing that water over a similar time period. It is a concept that has been applied in other jurisdictions in Australia and the Government is phasing-in LRMC pricing to metropolitan customers by 2013/14.

The Authority has again given consideration to the appropriateness of implementing LRMC pricing in both Bunbury and Busselton. A particular issue is whether LRMC pricing should be applied or whether the water has a higher value based on the price that Water Corporation or other purchasers would be prepared to pay for the water. This price would be capped at the Water Corporation's or other purchaser's least cost alternative to purchasing water from the Water Boards. Based on existing water allocations and current demand, in aggregate AQWEST and Busselton Water could potentially trade on a temporary basis approximately 5 GL per year of their licensed allocation.⁵

³ For further details, see the 2005 Inquiry on Urban Water and Wastewater Pricing.

⁴ See Grafton, R. and Ward, M. (2007) Price versus rationing: Marshallian surplus and mandatory water restrictions, Australian National University Economics and Environment Network Working Paper EEN0707 for a discussion of various Australian studies.

⁵ AQWEST has a total allocation of 14.8 GL/annum, including a 9.2 GL/annum licensed allocation for current use, 2 GL draft allocation and a 3.6 GL/annum reserve allocation to meet future demand (current use is around 6 GL/annum). Busselton Water has a total allocation of 18 GL/annum, including a 6 GL/annum licensed allocation for current use and a 12 GL/annum reserve allocation to meet future demand (current use is around 4 GL/annum). Source: *Department of Water 2007, South West Water Resources – A Review of Future Trends*.

Identifying appropriate usage charges for the Water Boards is likely to require substantive analysis which includes public consultation. The Authority considers that this analysis should be undertaken as part of the next major review of the Water Boards' pricing.

In the absence of such analysis, the Authority has considered two options for setting tariffs for 2008/09. The first option commences in 2008/09 with a transition from up to six usage charges to two usage charges. The two targets for the usage charges are somewhat academic at this stage as they would be subject to revision as part of the major review.

The two tier pricing structure for the Water Boards could be based on the current targets for Perth usage charges (which are \$0.89 per kL up to 550 kL per year and \$1.64 per kL above 550 kL per year, in real dollar values of 2008) but adjusted to reflect transportation costs. For example, the Authority considered usage charge targets of \$0.66 up to 500 kL per year and \$0.85 per kL for usage above 500 kL.

However, the Authority found that this option was not suitable as it resulted in a minimal service charge for the Water Boards over the longer term (note that where usage charges are set and other revenue projections are provided, such as for developer contributions and interest earnings, the fixed charge becomes the balancing item to equate revenue with projected costs). Given costs and developer contributions will be assessed at the major review in 2008/09, the Authority considers it is not appropriate at this stage to commence a major change in the current pricing structure.

The Authority's preferred option, is therefore to set usage charges in 2008/09 at levels that are in line with those that currently apply. Usage charges that are currently higher than \$1.20 per kL (and are likely to be reduced following a major review) have been held at their current levels (i.e. constant in nominal terms). Usage charges that are currently lower than \$1.20 per kL (and which may be increased following a major review) have been increased to reflect inflation (i.e. constant in real terms).

In addition, the fixed charges for customers have been set at a level sufficient to enable the Water Boards to recover their revenue targets (after deducting revenue gained from the usage charges, developers' contributions and other revenue), while at the same time:

- maintaining the Water Boards' transition to fixed charges based on meter size for non-residential customers (due to be completed by 2009/10); and
- maintaining a constant cost share between residential and non-residential customers.

Note that the Water Boards are currently phasing out the single rate-based charge (based on the value of the property) for commercial customers, which included a consumption allowance. This structure is being replaced with a two-part charge, namely a service charge based on the diameter of the meter installed⁶ and a variable charge reflecting the level of usage.⁷

⁶ With this methodology, fixed charges increase in proportion with the size of the meter (meters range in size from 20mm to 350mm). Higher fixed charges for larger meters are derived from the relative difference of the diameter of the 20mm and larger Non-residential meter sizes.

⁷ Further details on the phasing-in system and the associated non-residential charging regime can be found on the respective Water Boards' web sites.

Recommendations

- 1) Pricing structures need to be reassessed as part of a major review of the Water Boards' costs and tariffs.
- 2) For the purpose of setting tariffs for 2008/09:
 - usage charges that are currently more than \$1.20 per kL should be held at their current levels, while usage charges that are less than \$1.20 per kL should be increased with inflation;
 - non-residential fixed charges should be set in accordance with the Water Boards' current transition path to meter-based charges; and
 - the residential fixed charge should be set at a level sufficient to enable the Water Boards to recover their costs (after deducting revenue gained from other charges, developer contributions and other revenue).

1.4.3 *Legitimate business interests*

The Authority analyses future tariffs with the aid of its financial model of the Water Boards' tariffs.

The Authority's financial model balances net revenue with the cost of service over the forecast period. The Authority determines a tariff path for the Water Boards that equates the present value of costs (that are expected to be prudently incurred over the next ten years) with the present value of revenue, thus ensuring the ongoing viability of the businesses. For the purpose of this review, the Authority has used the most recent capital and operating expenditure plans provided by the Water Boards.

Any changes, such as a reduction in the volume of water consumed (following restrictions) are incorporated into the model, so that the unit charge for water increases to ensure that net revenue balances with the cost of service.

The Authority has continued to apply the rate of return (a real pre-tax weighted average cost of capital of 5.87 per cent) that was calculated during the 2005 inquiry. In calculating the rate of return, the Authority was conscious of providing a return adequate to protect the legitimate business interests of the Water Boards. It is recognised that changes in interest rates since the 2005 inquiry will impact on required rates of return and it is therefore intended that the rate of return would be re-calculated at the next major review. This approach is consistent with the treatment of the Water Corporation.

2 AQWEST

2.1 Data and Assumptions

2.1.1 Expenditure

The Authority has not reviewed AQWEST's proposed expenditure programme as part of this inquiry. Such analysis will be undertaken as part of a major review. However, it is understood that the capital expenditure programme will be considered by the Expenditure Review Committee of Cabinet as part of the Budget deliberations.

- AQWEST's projections for capital expenditure are as per the Capital Investment Plan submitted to and approved by the Department of Treasury and Finance. There has been a significant increase in capital expenditure with a total capital works program in 2007-08 of over \$13 million dollars (an increase of \$11 million since the 2005 review). The primary reason for higher capital expenditure in 2007-08 has been expenditure on water mains and land purchases.
- Detailed estimates for future operating expenditure were provided to the Authority. These figures reflect an annual efficiency gain of approximately 1 per cent.

2.1.2 Tariffs

As noted above in section 2.3, the assumptions used for deriving the recommended tariffs for AQWEST in 2008/09 are as follows:

- charges for residential usage up to 500 kL increase in line with inflation (constant in real terms), while charges for usage above 500kL remain at their current levels (constant in nominal terms);
- charges for non-residential customers are based on AQWEST's transition to meter based charging;
- the residential fixed charge is set at a level sufficient to enable AQWEST to recover its costs (after deducting revenue gained from other charges, developer contributions and other revenue)⁸; and
- an inflation rate of 3.39 per cent for 2008/09, in accordance with the estimated inflation rate recommended by the Department of Treasury for use by government enterprises.

⁸ Note that the Authority has assumed a constant cost share is maintained between residential and non-residential customers for the ten year period over which the modelling is undertaken. The residential cost share in 2005/06 (58 per cent allocated to residential customers) is maintained at the end of the ten year modelling period. To achieve this objective, the residential fixed charge is increased at a different rate to the non-residential fixed charges.

2.2 Recommended Tariffs⁹

Overall, water charges (expressed as an average charge per kL after taking into account revenue from fixed and usage charges) for both residential and non-residential customers increase by 4.3 percent in nominal terms or 0.9 per cent in real terms (see Table 2.1).

Table 2.1 Projected Charges for Residential and Non-residential Customers in 2008/09

	2007/08	2008/09
Average charge per kL (nominal)	1.18	1.23
Change		4.3%
Average charge per kL (real \$2007)	1.13	1.14
Change		0.9%

2.3 Impacts on Customers

For residential customers, charges increase on average by 1.8 per cent (in real terms) in 2008/09. The impacts on residential customers using varying amounts of water are shown in Table 2.2.

**Table 2.2 Impact on Residential Customers' Bills
(change in average annual payments 2007/08 to 2008/09)**

Usage (kL)	\$ change	% change
150	\$6	3.9
250	\$6	2.6
350	\$6	2.0
550	\$4	0.7
750	-\$5	-0.7
Fixed charge (2009)	\$6	6.7

Note: real dollar values of 2006/07

The majority of residential customers pay an extra \$6 in 2008/09 under the Authority's recommendations. This outcome reflects the \$6 increase in the residential fixed charge for 2008/09.

The impacts on non-residential customers using varying amounts of water are shown in Table 2.3.

⁹ All quoted dollar figures are in terms of real dollar values of 30 June 2007, unless stated otherwise.

Table 2.3 Impact on Non-residential Customers' Bills
(change in average annual payments 2007/08 to 2008/09)

Meter (mm)	Usage (kL)	\$ change	% change
20	300	-\$86	-11.4
25	1000	\$4	0.3
40	2000	\$277	10.7
50	5000	\$746	13.5
Fixed charge 2009 (20mm meter)		-\$107	-18.2

1 Note: real dollar values of 2006/07

2 Fixed charge is an average of the meter-based and rate-based charges.

With the transition to meter-based non-residential charges, average charges for the majority of small non-residential customers¹⁰ decrease by approximately 11 per cent per annum in 2008/09, with high usage customers¹¹ incurring annual increases of approximately 17 per cent (in real terms). The majority of non-residential customers (which have 20mm meters) on average pay \$86 less in 2008/09.

It should be noted that these impacts are primarily the result of the Authority accepting that charges for 2008/09 should be in line with AQWEST's non-residential charging regime (which reflects the transition to meter-based charging).

Further detail on the customer impact under the Authority's recommended tariffs are provided in Appendix 3.

2.4 Impacts on AQWEST

The implementation of the Authority's recommendations would have a limited impact on AQWEST's finances for 2008/09, given it is recommended that the average charge per kL of water sold increase by 0.9 per cent (in real terms). Annual tariff revenue (less discounts) will increase from \$6.2 million in 2007/08 to \$6.3 million in 2008/09.

However, water restrictions will have a short-term impact on AQWEST finances (noting that the outcome from the financial model is to increase tariffs to offset the short-term decline in the volume of water sold). If restrictions had not been imposed, it is estimated that tariff revenue would be approximately 6 per cent higher (or \$0.39 million) in 2008/09.¹²

In addition, restrictions will result in higher prices on average for customers. This is due to the need to recover a similar amount of costs (given that water restrictions result in only limited savings in operating costs) from a volume of residential water consumption that is lower by 12 per cent.

¹⁰ Note that 75 per cent of non-residential customers have 20mm meters and use less than 300kL per year.

¹¹ Note that only 11 per cent of non-residential customers have meters greater than 25mm.

¹² It is noted that the Department of Water requested the Water Corporation to undertake an assessment of the impact of the restrictions on consumption and revenue for AQWEST and Busselton Water. The Water Corporation's method was to apply to AQWEST and Busselton Water the same percentage reduction in demand that occurred in Perth following the introduction of two day per week restrictions in 2001. This reduction in residential demand was 12 per cent. The impacts on the Water Boards' revenue was estimated to be 6 per cent for AQWEST and 5 per cent for Busselton Water.

The future annual payment by residential customers is estimated to be an average \$4 higher than it otherwise would have been if restrictions had not been imposed. For non-residential customers, annual payments are not impacted by restrictions, given the assumption that their usage is not affected by restrictions.

2.5 Impacts on Government Finances

Table 2.4 shows the impacts of the Authority's recommendation on the State Government's finances. The payments to the Government are tax payments under the National Tax Equivalent Regime. The Government does not receive dividends from AQWEST nor does it make CSO payments to AQWEST.

As is shown in Table 2.4, annual tax equivalent payments to the State Government are expected to be \$0.40 million in 2008/09, in comparison to \$0.77 million in 2007/08.

The decrease in payments is a result of lower net profits resulting from lower revenue. Although tariff revenue is higher in 2008/09, this revenue is more than offset by a reduction in other income, which includes interest received and developer contributions. Interest revenue is lower because significant capital expenditure in 2007/08 is funded by a reduction in reserves.

Table 2.4 Impact on Government Finances - AQWEST

	Annual payments for 2007/08 (real dollar values of 30 June 2008)	Annual payments for 2008/09 (real dollar values of 30 June 2008)
Tax equivalent payments	\$0.770m	\$0.401m

3 BUSSELTON WATER

3.1 Data and Assumptions

As noted above for AQWEST, this annual inquiry is not intended to be a comprehensive assessment of Busselton Water's expenditure. It is understood that the capital expenditure programme will be considered by the Expenditure Review Committee of Cabinet as part of the Budget deliberations.

3.1.1 Expenditure

Busselton Water's projections for capital expenditure are as per the 10 year Plan submitted to the Department of Treasury and Finance in 2007. Since the 2005 review, there has been a significant increase in forecast capital expenditure. Capital expenditure of \$25 million is now expected to be spent over the period 2007/08 to 2014/15, compared to the amount of \$18 million (all in 2007 dollars) forecast in the 2005 review.

Busselton Water's projections for operating expenditure are also as per the 10 year Plan.¹³ These figures reflect an annual efficiency gain of approximately 2 per cent.

3.1.2 Tariffs

As noted in section 2.3, the assumptions used for deriving the recommended tariffs for Busselton Water in 2008/09 are as follows:

- charges for residential usage up to 750 kL increase in line with inflation (constant in real terms), while charges for usage above 750kL remain at their current levels (constant in nominal terms);
 - Note that the 750kL tier is higher than the 500kL tier used for AQWEST. This is because Busselton Water's usage charges do not exceed \$1.20 per kL until usage exceeds 750kL, whereas AQWEST's usage charges exceed \$1.20 per kL when usage exceeds 500 kL;
- charges for non-residential customers are based on Busselton Waters' transition to meter based charging;
- the residential fixed charge is set at a level sufficient to enable Busselton Water to recover its costs (after deducting revenue gained from other charges, developer contributions and other revenue)¹⁴; and
- an inflation rate of 3.39 per cent for 2008/09, in accordance with the estimated inflation rate recommended by the Department of Treasury for use by government enterprises.

¹³ Noting that the operating expenditure used in the financial model excludes depreciation.

¹⁴ Note that the Authority has assumed a constant cost share is maintained between residential and non-residential customers for the ten year period over which the modelling is undertaken. The residential cost share in 2005/06 (66 per cent allocated to residential customers) is maintained at the end of the ten year modelling period. To achieve this objective, the residential fixed charge is increased at a different rate to the non-residential fixed charges.

3.2 Recommended Tariffs¹⁵

Overall, water charges (expressed as an average charge per kL after taking into account revenue from fixed and usage charges) for both residential and non-residential customers increase by 3.8 percent in nominal terms or 0.4 per cent in real terms (see Table 3.1).

Table 3.1 Projected Charges for Residential and Non-residential Customers in 2008/09

	2007/08	2008/09
Average charge per kL (nominal)	1.06	1.11
Change		3.8%
Average charge per kL (real \$2007)	1.02	1.02
Change		0.4%

3.3 Impacts on Customers

For residential customers, on average, charges decrease by 2.9 per cent (in real terms) in 2008/09. The impacts on residential customers using varying amounts of water are shown in Table 3.2.

**Table 3.2 Impact on Residential Customers' Bills
(change in average annual payments 2007/08 to 2008/09)**

Usage (kL)	\$ change	% change
150	-\$7	-4.3
250	-\$7	-3.2
350	-\$7	-2.5
550	-\$7	-1.7
750	-\$7	-1.3
Fixed charge (2009)	-\$7	-6.8

Note: real dollar values of 2006/07

The majority of residential customers pay \$7 less in 2008/09 under the Authority's recommendations. With limited changes to the usage charge structure in 2008/09, the change in residential customer's bills is due to the change in the fixed charge.

As the residential fixed charge is the balancing item in the financial model (balances revenue and costs over time), the reduction in the fixed charge reflects the forecast expenditure and non-tariff revenue (such as interest received and developer

¹⁵ All quoted dollar figures are in terms of real dollar values of 30 June 2007, unless stated otherwise.

contributions). The Authority notes that the magnitude of any change in the residential fixed charge is dependent on the underlying expenditure and revenue data and that this data will require further investigation at the next major review.

The impacts on non-residential customers using varying amounts of water are shown in Table 3.3.

With the transition to meter-based non-residential charges, average charges for the majority of small non-residential customers¹⁶ will increase by around 8 per cent per annum in 2008/09, with high usage customers¹⁷ incurring annual increases of around 14 percent (in real terms). The majority of non-residential customers (which have 20mm meters), on average, pay \$42 more in 2008/09.

It should be noted that these impacts are primarily the result of the Authority accepting the fixed and usage charges associated with Busselton Water's transition to meter-based charging.

**Table 3.3 Impact on Non-residential Customers' Bills
(change in average annual payments 2007/08 to 2008/09)**

Meter (mm)	Usage (kL)	\$ change	% change
20	300	\$42	7.8
25	1000	\$120	11.4
40	2000	\$369	15.4
50	5000	\$764	14.3
Fixed charge 2009 (20mm meter)		\$25	7.0

1 Note: real dollar values of 2006/07

2 Fixed charge is an average of the meter-based and rate-based charges

Further detail on the customer impact under the Authority's recommended tariffs are provided in Appendix 4.

3.4 Impacts on Busselton Water

The implementation of the Authority's recommendation would have a limited impact on Busselton Waters' finances for 2008/09. Expected annual tariff revenue (less discounts) of \$3.66 million in 2008/09 is in line with expected revenue of \$3.55 million in 2007/08.

However, water restrictions will have a short-term impact on Busselton Water's finances (noting that outcome from the financial model is to increase tariffs to offset the short-term decline in the volume of water sold). If restrictions had not been imposed, it is estimated that tariff revenue would have been approximately 7 percent higher (or \$0.26 million) in 2008/09.¹⁸

¹⁶ Note that 75 per cent of non-residential customers have 20mm meters and use less than 300kL per year.

¹⁷ Note that only 11 per cent of non-residential customers have meters greater than 25mm.

¹⁸ It is noted that the Department of Water requested the Water Corporation to undertake an assessment of the impact of the restrictions on consumption and revenue for AQWEST and Busselton Water. The Water Corporation's method was to apply to AQWEST and Busselton Water the same percentage reduction in demand that occurred in Perth following the introduction of two day per week restrictions in 2001. This

As with AQWEST, restrictions will result in higher prices on average for Busselton Water residential customers. The future annual payment by Busselton Water residential customers is estimated to be an average \$7 higher than it otherwise would have been if restrictions had not been imposed.

3.5 Impacts on Government Finances

Table 3.4 shows the impacts of the Authority's recommendation on the State Government's finances. The payments to the Government are tax payments under the National Tax Equivalent Regime. The Government does not receive dividends from Busselton Water nor does it make CSO payments to Busselton Water.

As is shown, annual tax equivalent payments to the State Government are expected to be \$0.73 million in 2008/09, in line with the \$0.75 million expected in 2007/08.

Table 3.4 Impact on Government Finances – Busselton Water

	Annual payments for 2007/08 (real dollar values of 30 June 2008)	Annual payments for 2008/09 (real dollar values of 30 June 2008)
Tax equivalent payments	\$0.751m	\$0.730m

reduction in residential demand was 12 per cent. The impacts on the Water Boards' revenue was estimated to be 6 per cent for AQWEST and 5 per cent for Busselton Water.

APPENDICES

Appendix 1 Terms of Reference

BUNBURY AND BUSSELTON WATER BOARD

INQUIRY INTO TARIFFS

I, ERIC RIPPER, Treasurer, pursuant to Section 32(1) of the Economic Regulation Authority Act 2003, request that the Economic Regulation Authority (the Authority) undertake an annual inquiry into the tariffs of the Bunbury (Aqwest) and Busselton Water Board (as established by the Water Boards Act 1904).

While a major review of tariffs is envisaged, perhaps once every three years, this annual review under these Terms of Reference would be more limited and may focus on particular issues of relevance at the time.

The inquiry is to make recommendations on the appropriate tariff levels and structures for both Water Boards based on:

- the previous work of the Authority in its 2005 “Inquiry into Urban Water Tariffs”; and
- subsequent information provided by the Water Boards.

The Authority must give consideration to, but will not be limited to, the following matters:

- the current structure and level of water prices;
- the legitimate business interests of the Boards;
- considerations of demand management and long term resource sustainability;
- the impact of the inquiry’s recommendations on customers, on borrowing and capital, and on payments to Government.

In developing its recommendations the Authority is to have regard to the Government’s social, economic and environmental policy objectives and to the pricing principles of the 1994 Council of Australian Governments water reform agreement and the National Water Initiative.

The Authority is to consult with the Water Boards as part of this inquiry.

The Authority will make available to the Treasurer a final report before close of business on 8 February 2007.

ERIC RIPPER MLA

TREASURER

Appendix 2 The 2005 Inquiry on Urban Water and Wastewater Pricing

In relation to the Water Boards' tariffs, the Authority's recommendations as part of the 2005 Inquiry on Urban Water and Wastewater Pricing included:

- Prices for the urban water and wastewater water businesses should be established as price paths over a 10 year period based on current best forecasts of costs and demand, and these prices should be updated periodically through rolling reviews on a more frequent basis that take into account updated forecasts of costs and demand for services.
- Where a water business is faced with substantial demand uncertainty a revenue cap form of price control should be adopted so that in each review of prices, the target revenue for the water business is adjusted for under-recovery or over-recovery of revenue in the previous period to the extent that this results from differences between realised demand and forecast demand.
- A cost-based system of pricing should be introduced for the determination of prices for water and wastewater services. Prices should be established that will permit the business providing the services to recover the cost incurred in constructing assets, to earn a commercial rate of return on the un-recovered cost of assets, and to recover the efficient costs of operating and maintaining the assets.
- A "building block" methodology should be applied to determine revenue requirements for each water business.
- Initial asset values should be established for each of the water businesses as a value consistent with current forecasts of service prices and revenues. For AQWEST and Busselton Water, the forecast revenue stream applied in determining the initial regulatory asset value should be adjusted to include a notional value of a return on an equity proportion of asset value. Assets should subsequently be re-valued by a "roll-forward" methodology, whereby the regulatory asset value is updated by adjustment for efficient new capital expenditure, depreciation, asset disposals and inflation.
- Regulatory rates of return for each of the water businesses should be determined on the basis of benchmark assumptions of financial structure based on reasonable assumptions that would apply to a commercial provider of the same services.
- Cost forecasts used in the determination of revenue requirements for each service provider should incorporate efficiency gains reasonably envisaged to be achievable over the period of the forecast.
- Prices for water services should be structured so that usage charges are set at levels to reflect the estimated long-run marginal cost of developing new water resources to meet water demand. Other charges should be set at levels necessary to ensure that revenue requirements are met after taking into account revenues from usage charges.
 - [The Authority recommended that usage charges for residential customers of each Water Board be established at \$0.56 per kL for water use of 1 to 500 kL per year and \$1.20 for water use in excess of 500 kL per year (in real dollar values of 30 June 2005. The Authority recommended that usage charges for non-residential customers of each Water board be established at \$0.56 per kL for all levels of water usage. Usage charges were to transition to the new charges over a four year period.]
- The impacts of changes in price structures on customers should be managed, to the extent considered appropriate, through the gradual phasing-in of new price structures over a number of years or billing periods. Any further assistance that

the Government might consider should be provided in a way that minimises efficiency losses.

- AQWEST's current plan for capital works to increase water supplies provides for a timing of development that is necessary and appropriate. The forecast cost of implementing these plans may appropriately be incorporated in forecasts of costs applied in the setting of water prices.
- An initial regulatory asset value of \$25.1 million in real dollar values at 30 June 2005 should be established for AQWEST's physical assets.
- A rate of return of 5.87 per cent (real, pre-tax) should be applied in determining AQWEST's revenue requirement
- Prices established for the AQWEST's water services should be consistent with a present value of forecast revenue for AQWEST over the period 2005/06 to 2014/15 of \$39.8 million at a discount rate of 5.87 per cent (real, pre-tax)
- The Authority recommends prices for water services provided by the AQWEST as set out in Schedule 2 of this report, subject to escalation for inflation and review prior to the 2010/11 year.
 - [The average price of water services, expressed as a price per kilolitre delivered to all customers, is projected to decline in real terms over the period 2005/06 to 2008/09 from \$1.08 per kL to \$0.96 per kL (in real dollar values of 2005/06), and then remain approximately constant in real terms.]
- Busselton Water's current plan for capital works to increase water storage provides for a timing of development that is necessary and appropriate. The forecast cost of implementing this plan may appropriately be incorporated in forecasts of costs applied in the setting of water prices.
- An initial regulatory asset value of \$14.7 million at 30 June 2005 should be established for Busselton Water's physical assets.
- A rate of return of 5.87 per cent (real, pre-tax) should be applied in determining Busselton Water's revenue requirement.
- Prices established for Busselton Water's water services should be consistent with a present value of forecast revenue for Busselton over the period 2005/06 to 2014/15 of \$25.3 million at a discount rate of 5.87 per cent (real, pre-tax).
- The values of developer charges levied by Busselton Water should be subject to scrutiny to determine that they are set at appropriate levels to meet the capital costs associated with new land development.
- The Authority recommends prices for water services provided by Busselton Water as set out in Schedule 3 of this report, subject to escalation for inflation and review prior to the 2010/11 year.
 - [The average price of water services, expressed as a price per kilolitre of water delivered to all customers, is projected to increase over the period 2005/06 to 2009/10 from \$0.96 per kL to \$1.02 per kL (in real dollar values of 2005/06) and then increase slightly to \$1.03 per kL in 2014/15.]

One of the most significant recommendations was the introduction of a cost-based system of price determination to transparently link tariffs to the costs incurred in operating these businesses. In the absence of such a cost-based method of price determination, the Water Boards have typically received Ministerial approval to increase their charges at the rate of inflation even though costs may or may not have increased at this rate. It is common regulatory practice to establish prices that will permit the service provider to recover the cost incurred in constructing assets, to earn a commercial rate of return on the un-recovered cost of assets, and to recover the efficient costs of operating and maintaining the assets.

In order to undertake this cost-based form of pricing, the Authority recommended that the rate of return applied to the Water Boards be determined on the basis of benchmark assumptions of financial structure that would apply to a commercial provider of the same services. In other words, the Authority recommended that the Water Boards be assumed to have debt-financed 40 per cent of their assets (and equity financed 60 per cent), even though the Water Boards have decided to finance their capital expenditure from retained earnings and reserves for specific purposes. As debt is a cheaper form of finance than retained earnings, the Authority's recommendation is designed to provide a financial incentive for the Boards to adopt the financing structure of a commercial provider of the same services, while at the same time not penalising customers should the Boards elect not to do so. Note that this methodology is also used in the current review.

In estimating the costs that should be reflected in prices, the Authority was required to establish an appropriate initial value for each Water Boards' assets¹⁹. The Authority had initially intended to apply the asset valuation method that was applied to the Water Corporation. This method involves recognising that there are three costs in any business: a return on assets, depreciation and operating costs. The return on assets and depreciation are dependent on the value of assets and as such it is necessary to determine the value of the asset base. It is possible to calculate an initial asset value that equates the present value of costs to the present value of revenue over a future period of, say, ten years (where the costs and revenue are as estimated by the water business).

However, a complicating factor in this estimation was the view proposed by the Water Boards, and accepted by the Authority, that prices set by the Boards were lower than would be set by a commercial provider of the same services because the Boards were not required to pay dividends to their shareholders. The Authority amended the method used to calculate the initial asset value by assuming that the Water Boards generated additional revenue from their customers to reflect a return on equity.²⁰

The Authority assessed the Water Boards' operating efficiency by considering trends in operating expenditure and by benchmarking operating costs against a number of other domestic water service providers. As the Water Boards' cost forecasts indicated efficiency gains over the forecast period that were greater than the Authority's target, the Authority considered that their forecasts of operating expenditure provided an appropriate basis for the determination of service prices.

In relation to capital expenditure, the Authority considered that the Water Boards' forecasts for capital works required to increase water supplies for future development was necessary and appropriate. The forecast cost of implementing these plans was then incorporated into the future costs applied in the setting of water prices.

¹⁹ Assets would subsequently be re-valued by a "roll-forward" methodology, whereby the regulatory asset value is updated by adjustment for efficient new capital expenditure, depreciation, asset disposals and inflation.

²⁰ The allowance for a return on equity was calculated as (estimated cost of equity less cost of debt) *multiplied by* the proportion of assets assumed to have been equity financed, under the benchmark capital structure assumed for pricing purposes.

Appendix 3 AQWEST

Table A 1 Tariffs and Impact on Residential Customers (\$2006/07) – AQWEST

			2007/08	2008/09
Service charge			92.88	99.04
Water Usage charge		0 - 150 kL	0.39	0.39
		151 - 350 kL	0.71	0.71
		351 - 500 kL	1.02	1.02
		501 - 700 kL	1.35	1.31
		701 - 1000 kL	1.62	1.57
		Over 1000 kL	2.37	2.29
Total Charge	Usage level	150 kL	152	158
		250 kL	223	229
		350 kL	293	300
		550 kL	515	519
		750 kL	798	793
		1000 kL	1203	1184
		1500 kL	2385	2328
Increase \$	Usage level	150 kL		6
		250 kL		6
		350 kL		6
		550 kL		4
		750 kL		-5
		1000 kL		-19
		1500 kL		-57
Increase %	Usage level	150 kL		4.1%
		250 kL		2.8%
		350 kL		2.1%
		550 kL		0.8%
		750 kL		-0.7%
		1000 kL		-1.5%
		1500 kL		-2.4%

Table A 2 Tariffs and Impact on Residential Customers (Nominal) – AQWEST

			2007/08	2008/09
Service charge			97.00	106.93
Water Usage charge		0 - 150 kL	0.41	0.42
		151 - 350 kL	0.74	0.77
		351 - 500 kL	1.07	1.11
		501 - 700 kL	1.41	1.41
		701 - 1000 kL	1.69	1.69
		Over 1000 kL	2.47	2.47
Total Charge	Usage level	150 kL	159	171
		250 kL	233	247
		350 kL	307	324
		500 kL	538	560
		750 kL	834	856
		1000 kL	1256	1278
		1500 kL	2491	2513
Increase \$	Usage level	150 kL		12
		250 kL		15
		350 kL		17
		500 kL		22
		750 kL		22
		1000 kL		22
		1500 kL		22
Increase %	Usage level	150 kL		7.6%
		250 kL		6.2%
		350 kL		5.6%
		500 kL		4.2%
		750 kL		2.7%
		1000 kL		1.8%
		1500 kL		0.9%

Table A 3 Tariffs and Impact on Non-residential Customers (\$2006/07) – AQWEST

		2007/08	2008/09
Avg Rate-based Charge		382.29	205.54
Service Charges by meter size			
	Meter = 20mm	207.98	277.33
	Meter = 25mm	324.41	433.33
	Meter = 40mm	831.91	1109.33
	Meter = 50mm	1299.86	1733.33
	Meter = 80mm	3327.64	4437.31
Water Usage charge			
	0-1000kL	0.56	0.63
	over 1000kL	0.82	0.93
Total Charge			
	20mm, Usage = 300kL	757	671
	25mm, Usage = 1ML	1262	1266
	40mm, Usage = 2ML	2593	2870
	50mm, Usage = 5ML	5531	6277
	80mm, Usage = 10ML	11677	13621
Increase \$			
	20mm, Usage = 300kL		-86
	25mm, Usage = 1ML		4
	40mm, Usage = 2ML		277
	50mm, Usage = 5ML		746
	80mm, Usage = 10ML		1944
Increase %			
			-11.4%
			0.3%
			10.7%
			13.5%
			16.7%

Table A 4 Tariffs and Impact on Non-residential Customers (Nominal) – AQWEST

		2007/08	2008/09
Avg Rate-based Charge		399.24	221.93
Service Charges by meter size			
	Meter = 20mm	217.20	299.45
	Meter = 25mm	338.80	467.89
	Meter = 40mm	868.80	1197.80
	Meter = 50mm	1357.50	1871.56
	Meter = 80mm	3475.20	4791.20
Water Usage charge			
	0-1000kL	0.58	0.68
	over 1000kL	0.86	1.00
Total Charge			
	20mm, Usage = 300kL	790	724
	25mm, Usage = 1ML	1318	1367
	40mm, Usage = 2ML	2708	3098
	50mm, Usage = 5ML	5777	6778
	80mm, Usage = 10ML	12194	14707
Increase \$			
	20mm, Usage = 300kL		-66
	25mm, Usage = 1ML		49
	40mm, Usage = 2ML		390
	50mm, Usage = 5ML		1001
	80mm, Usage = 10ML		2513
Increase %			
			-8.4%
			3.7%
			14.4%
			17.3%
			20.6%

Appendix 4 Busselton Water

Table B 1 Tariffs and Impact on Residential Customers (\$2006/07) – Busselton Water

			2007/08	2008/09
Service charge			108.39	101.00
Water Usage charge		0 - 150 kL	0.42	0.42
		151 - 350 kL	0.60	0.60
		351 - 550 kL	0.66	0.66
		551 - 750 kL	0.80	0.80
		751 - 1150 kL	1.33	1.29
		1151 - 1550 kL	1.89	1.82
Total Charge	Usage level	150 kL	172	164
		250 kL	232	225
		350 kL	292	285
		550 kL	424	417
		750 kL	585	578
		1000 kL	918	900
		1500 kL	1778	1731
Increase \$	Usage level	150 kL		-7
		250 kL		-7
		350 kL		-7
		550 kL		-7
		750 kL		-7
		1000 kL		-18
		1500 kL		-47
Increase %	Usage level	150 kL		-4.3%
		250 kL		-3.2%
		350 kL		-2.5%
		550 kL		-1.7%
		750 kL		-1.3%
		1000 kL		-2.0%
		1500 kL		-2.6%

Table B 2 Tariffs and Impact on Residential Customers (Nominal) – Busselton Water

			2007/08	2008/09
Service charge			113.20	109.06
Water Usage charge		0 - 150 kL	0.44	0.45
		151 - 350 kL	0.63	0.65
		351 - 500 kL	0.69	0.71
		501 - 700 kL	0.84	0.87
		701 - 1000 kL	1.39	1.39
		Over 1000 kL	1.97	1.97
Total Charge	Usage level	150 kL	179	177
		250 kL	242	242
		350 kL	305	308
		500 kL	443	450
		750 kL	611	624
		1000 kL	959	971
		1500 kL	1857	1869
Increase \$	Usage level	150 kL		-2
		250 kL		0
		350 kL		2
		500 kL		7
		750 kL		13
		1000 kL		13
		1500 kL		13
Increase %	Usage level	150 kL		-1.1%
		250 kL		0.1%
		350 kL		0.8%
		500 kL		1.6%
		750 kL		2.1%
		1000 kL		1.3%
		1500 kL		0.7%

Table B 3 Tariffs and Impact on Non-residential Customers (\$2006/07) – Busselton Water

		2007/08	2008/09
Average Rate-based Charge		148.57	103.77
Service Charges by meter size			
	Meter = 20mm	208.18	277.87
	Meter = 25mm	324.92	434.16
	Meter = 40mm	468.24	711.34
	Meter = 50mm	833.35	1111.46
	Meter = 80mm	1301.58	1736.66
Water Usage charge			
	0-1000kL	0.58	0.64
	over 1000kL	0.83	0.91
Total Charge			
	20mm, Usage = 300kL	531	573
	25mm, Usage = 1ML	1055	1176
	40mm, Usage = 2ML	2389	2758
	50mm, Usage = 5ML	5335	6099
	80mm, Usage = 10ML	11497	13335
Increase \$			
	20mm, Usage = 300kL		42
	25mm, Usage = 1ML		120
	40mm, Usage = 2ML		369
	50mm, Usage = 5ML		764
	80mm, Usage = 10ML		1838
Increase %			
			7.8%
			11.4%
			15.4%
			14.3%
			16.0%

Table B 4 Tariffs and Impact on Non-residential Customers (Nominal) – Busselton Water

		2007/08	2008/09
Average Rate-based Charge		155.16	112.05
Service Charges by meter size			
	Meter = 20mm	217.41	300.03
	Meter = 25mm	339.33	468.79
	Meter = 40mm	489.00	768.07
	Meter = 50mm	870.30	1200.10
	Meter = 80mm	1359.30	1875.16
Water Usage charge			
	0-1000kL	0.61	0.69
	over 1000kL	0.86	0.98
Total Charge			
	20mm, Usage = 300kL	555	619
	25mm, Usage = 1ML	1102	1269
	40mm, Usage = 2ML	2495	2978
	50mm, Usage = 5ML	5572	6586
	80mm, Usage = 10ML	12006	14398
Increase \$			
	20mm, Usage = 300kL		64
	25mm, Usage = 1ML		167
	40mm, Usage = 2ML		483
	50mm, Usage = 5ML		1014
	80mm, Usage = 10ML		2392
Increase %			
			11.5%
			15.2%
			19.3%
			18.2%
			19.9%