



Discussion Paper: The Page Water Plan

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Introduction

The purpose of this paper is to generate discussion on the Page Centre's urban water trading plan. To date the plan has been given considerable media attention and preliminary discussions as well as public consultations have shown a strong interest in the plan. We encourage input from users and water service providers as a means to develop the plan into a workable pilot program. The objective of the Page Water Plan is to reduce the amount of water being used in urban and suburban areas by providing economic incentives and empowering users to make water management choices that show outcomes for actions taken by the householder.

Urban/suburban perception of water

Within Urban and suburban communities there exist two perceptions about water. There is the contemporary view of those people within urban and suburban community who recognise a need for water conservation and moved towards water saving devices such as shower heads or slow drip watering systems. Others still have a traditional view of water as a free and endless resource. It is taken for granted because around the home it is easily accessed and relatively cheap.¹ In urban and suburban areas both perspectives literally live next-door to each. One neighbour will find ways to conserve water around the home while the other will hose leaves or grass clippings from their drive ways.

The Page Water Plan and Perceptions of Water in Urban/suburban Areas

Campaigns to encourage better water practices around the home have had a limited impact because they rely upon all users to have an environmental conscience strong enough to change their daily habits and view about water as a resource. Appealing to a sense of "environmental morality" will only capture part of the targeted audience. To reach a larger section of the community other incentives need to be adopted. The Page Water Plan has

¹ Cadman, R, *Australia's Urban Water management*, A Submission to Standing Committee on Environment, Communications, Information Technology and the Arts References Committee, 11th July 2001.

recognised economic reward and sense of ownership as two other factors which will lead to changing traditional perceptions about water.

Economic reward under the Page water Plan allows the user the opportunity to see their efforts for water conservation in dollar term. A sense of ownership over the water will assist the user to think clearly about how their water is used. In most industries owners/managers are required to make opportunity costs analysis on a range of resource allocation issues such an analysis could be applied around the home. A sense of proprietorship over the resource within their home will encourage better choices about water allocation. Such proprietorship could not exist on a national scale. It is pointless to market the concept that Australia's water catchments are for everyone when they cannot actively manage those catchments for themselves or see the benefit of their choices to conserve water. Conservation needs to be on a scale where people can take an active part and see the rewards for their efforts.

PROPRIETORSHIP = ACTIVE MANAGEMENT = ECONOMIC REWARDS

The Page Water Plan

Based on urban/suburban perceptions about water and the concepts of proprietorship and economic reward the following plan is suggested:

- Each household is allocated an annual amount of water based on Local Government Area averages or projected /targeted usage.
- The allocated water is charged at a fixed rate.
- If a household goes over the allocation they are charged a markedly increased rate per kilolitre.
- If the household goes under their allocation they are charged at a lower rate per kilolitre.

The following is a general example:²

The benchmark allocation of water is 420 kilolitres per year³ at a price of 0.65⁴ cents per kilolitre.

Allocation bracket

-150	-100 kl	-50 kl	LGA Av.	+50	+100	+150
- 319 kl	320-369 kl	370 -	420kl	- 470kl	471-520 kl	521+
.50 per kl	.55 per kl	.60 per kl	.65 per kl	.70 per kl	.75 per kl	.80 per kl

² The example is to illustrate how the system may work not set a price on annual allocations or rates. Any rates or costs would have to be determined by local government areas.

³ This is based on an average of water usage per household in Wagga Wagga NSW.

⁴ This price is based on rates in Wagga Wagga NSW. See www.rwcc.com.au date accessed 22 Jan 2004.

Estimated water costs to the consumer ⁵ (based on example)

Reduction of kilolitres (under the allocation of 420 kl)	Rate	Annual cost
= within allocation	.65 per kilolitre	\$273.00
- 50 kilolitres bracket	.60 per kilolitre	Between \$222-251.40
-100 kilolitres bracket	.55 per kilolitre	Between \$176- 202.95
-150 kilolitres bracket	.50 per kilolitre	From \$159.50

Excess kilolitres (over the allocation of 420 kl)	Rate	Annual cost
= with allocation	.65 per kilolitre	\$273.00
+ 50 kilolitres bracket	.70 per kilolitre	Between \$294.70 – 329.00
+100 kilolitres bracket	.75 per kilolitre	Between \$353.25 - 390
+150 kilolitres bracket	.80 per kilolitre	From \$416.80

Case Studies

The following case studies are based on actual people, water suppliers and local government areas. Consumers have been chosen at random to illustrate how the Page Water Plan could work in different conditions. Each case study also features a different pricing structure used by water suppliers to highlight the variety of approaches used in Australia.

Case Study 1. Water usage.

Joe and Diane live in a suburban four bedroom home in Regional NSW. They have three children ages 3, 5 and 10. They do not have any special water saving devices either inside or outside the home but are conscious about watering the lawn. During the drier months they conserve water by watering only a portion of the backyard. Joe and Diane are charged .65 cents per kilolitre of water. The previous four periods on their water bill totalled at 380 kilolitres. Subsequently based on .65 cents per kilolitre Joe and Diane paid \$247.00 for a year's water supply.⁶

Under the Page Water Plan based on the annual allocation of 420 kilolitres charged at 0.65 cents per kilolitre Joe and Diane usage would fall into the first negative bracket. Their water bill for a 12 month period would therefore be \$228.00. Under the Page Water Plan Joe and Diane will save \$19.00 providing their usage does not change.

However, Joe and Diane:

⁵ This scale is subject to discussion and will need altering to fit with local government areas or general cost issues. Greater consultation with water suppliers would be helpful in this area.

⁶ This excludes additional charges and the availability charge.

- Installed an AAA approved showerhead and could save 20 kilolitres litres of water per person per year⁷.
- They reduced showers to 10 minutes saving 29 kilolitres.⁸
- Save 5 kilolitres by washing the car once a fortnight with a bucket rather than hose.⁹
- Joe and Diane added a dual flush system to their toilet. Such a system can save 50 percent of water with each flush. Therefore if the average toilet uses 10,400 litres per year the new toilet should use 5,200 litres or approximately 5 kilolitres per year.
- Joe then fixes the leaky taps around the house and saves a further 7 kilolitres per year.
- In addition another 20 kilolitres is saved by using the dishwasher only when it's full, 18 kilolitres is saved by filling the sink rather than running tap run when shaving and 52 kilolitres is saved by purchasing a front loading washing machine.¹⁰

By making those changes to their home Joe and Diane were able to save 156 kilolitres of water. By reducing their consumption from 380 to 224 kilolitres Joe and Diane are now in the third negative bracket and will pay only .50 cents per kilolitre. Therefore their annual water bill would be \$112.00. If Joe and Diane had made the reductions under the existing water rates they would have paid \$145.60.

If they lived in Victoria they would also be eligible for a Water Smart Gardens and Homes Rebate Scheme. Joe and Diane would get rebates for the new washing machine, replacement of toilet, shower head, water conservation home audits and garden products. This would have given Joe and Diane \$340.00¹¹ toward making the changes around the home.

Case Study 2. A comparison with existing schemes.

Dalby in South Queensland has an existing price structure which is indicative of other charging structures in many places across Australia which have an increase in price for excess kilolitres. In Dalby the average household (of about four people) uses 360¹² kilolitres per year. The local provider charges .40 cents per kilolitre on the first 180 kilolitres then 0.90 per kilolitre thereafter billed every six months. Consumers also pay \$198.00¹³ access fee per year. Subsequently the average water bill without access fee or excess costs is approximately \$144.00.

⁷ Save water argue a AAA showerhead could save 20,000 litres of water per person per year see www.savewater.com.au dates accessed 18th March 2004.

⁸ <http://www.goldcoast.qld.gov.au/> dates accessed 18th March 2004.

⁹ *ibid*

¹⁰ *ibid.*

¹¹ Price comes from Victorian Government Water Smart Homes Rebate Scheme.

¹² Average water usage is calculated at 180 kilolitres per half year to keep it in line with the structure of this paper the figures have been double to represent a 12 month period.

¹³ Users actually pay \$99.00 every six months.

Allocation brackets (per six months)

-150	-100 kl	-50 kl	LGA Av.	+50	+100	+150
- 79 kl	80-129kl	130 -	180kl	- 230kl	231-280 kl	281+
.25 per kl	.30 per kl	.35 per kl	.40 per kl	.55 per kl	.60 per kl	.65 per kl

If Dalby was to adopt the Page Water Plan it would establish an allocation of 180 kilolitres per household at a cost of .40 cents per kilolitre. Based on a recent water bill charged to a Dalby consumer it is possible to assess the Page Water Plan's impact on this particular household and water provider. In Dalby consumers receive a water bill every six months according to the bill the consumer had used 249 kilolitres during that period. The consumer was charged .40 cents for the first 183 kilolitres¹⁴ (\$73.20) then .90 cents for 66 kilolitres excess (\$59.40). The six monthly bill came to \$132.60. Under the Page Water Plan, using the above allocation bracket rate, the sixth monthly bill would be \$149.40. However, if the consumer was able to reduce their consumption using the same measures as described in case study one, they could save 78 kilolitres in the six month period. Under the existing system in operation in Dalby, the user's bill would be reduced to \$68.40. Under the Page Water Plan the user would be charged at .30 cents per kilolitre making their bill \$51.30

Case Study 3 Opportunities for the Wider Community

The Shire of Murilla has a population of 2,746. The bulk of the population aged between fifteen and forty four years.¹⁵ There are 762 homes or business connected to its water supply.¹⁶ Murilla Shire allocates its users 450 kilolitres of water per year at a price of \$233.00. If a user goes over their allocation they pay 1.35 per kilolitre over the allocation. However if users go under their allocation they do not get any rebate or reward. If the Murilla Shire were to adopt the Page Water Plan then their pricing structure may take the following format:

-150	-100 kl	-50 kl	LGA Av.	+50	+100	+150
300- 349 kl	350-399kl	400 -	450kl	- 500kl	501-550 kl	551+
.30 per kl	.35 per kl	.45 per kl	.51-.52 per kl	1.35 per kl	1.45 per kl	1.55 per kl

While there is a discrepancy between the bonus and penalty per positive and negative bracket Murilla users would gain the opportunity to be rewarded for undertaking sound water management practices which under the existing scheme they can not.

As a general example if each of the 762 homes and businesses were able to save at least 100 kilolitres of water through management practices (as illustrated in the first case study) then they would individually reduce their water bill from \$233.00 to \$122.50. Collectively Murilla Shire would save

¹⁴ According to the bill the excess does not apply until after 183 kilolitres even though the cut off point was 180. There appears to be a buffer zone between the regular price and excess price.

¹⁵ Australian Bureau of Statistics, National Regional Profile, ABS Cat. No. 1379.0.55.001

¹⁶ Based on information provided by Murilla Shire Council.

76,200 kilolitres of water per year. If the shire wanted to they could either use that water toward creating better infrastructure or attract additional business. Alternatively they could sell their water to other Local Government areas. If for example they sold their water at .52 cents per kilolitre it would equate to \$39,624.00.

Conclusion

The aim of this discussion paper was to introduce the Page Water Plan and open it to public and commercial comment. The cases studies have shown how the plan would benefit a range of stakeholders. As an interested party it would be beneficial if you applied this model to your own water consumption to evaluate its impact on your household or local community. The following questions are simply guidelines for discussion and may be used your written response.

Points for discussion

1. In what ways might this plan discriminate against various socio-economic groups?
2. Are the economic rewards great enough for consumers to see real benefits from their water management efforts?
3. Is there a significant loss of revenue for water providers and if so, how might it be overcome?
4. Should state or federal government offer rebates and advice to consumers changing over to the Page Water Plan to assist them incorporate a sound domestic water management system?
5. Is the plan simple enough to follow?
6. Is the plan applicable to your local government area? If not why not?
7. What are some problems you see with the plan?
8. Are the monetary rewards sufficient enough?

**All comments can be submitted to:
The Page Research Centre Limited
P.O. Box 5971 Wagga Wagga 2650 NSW.**

Attachment 1.

The Page Water Plan: A Special Case Study for Adelaide

Adelaide residential water is charged at .42 cents a kilolitre for the first 125 kilolitres then \$1.00 per kilolitre for consumption above the 125 per year. Based on a recent bill¹⁷ for a household in Richmond the occupants used a total of 295 kilolitres of water for the year. They were charge \$52.50 for the first 125 kilolitres then \$170.00 for the additional 170 kilolitres used. There total bill for a 12 month period would be \$222.50.

Taking into account the severity of the water situation in South Australian under the Page Water Plan would not benchmark its water allocation on average use as it did in previous examples but instead to arrive at a reasonable starting point it would give each household an allocation of 230 kilolitres per year.¹⁸

Allocation bracket

-150	-100 kl	-50 kl	LGA Av.	+50	+100	+150
- 119 kl	120-179 kl	180 -	230kl	- 280kl	281-320 kl	321+
.30 per kl	.35 per kl	.40 per kl	.50 per kl	1.00 per kl	1.50 per kl	2.00 per kl

Under the Page Water Plan the Richmond household would pay a total of \$442.50 if they did not make any effort to reduce their water consumption. However if they introduced the same water management practices as in case study 1 they could save 156 kilolitres. Therefore their total water consumption would be reduced to 139 kilolitres. This would put them in the .35 bracket and their total water bill would come to \$48.65. If the Richmond Household introduced the same water management practices under the exiting water rate in Adelaide then their water bill would be \$58.38.

¹⁷ The \$33.75 access charge and 15.00 levy has been omitted from the calculations to simplify the example.

¹⁸ This is based on the state average. In actuality the final benchmark and costs per bracket would be left to SA Water.