

Sent from Pam McKenzie
FYI

Greg Barber MLC
Shadow Member for Water, Environment and Climate Change
Suite G-01, 60 Leicester Street
Carlton 3053

18 September 2007

Attachment 10

Dear Greg,

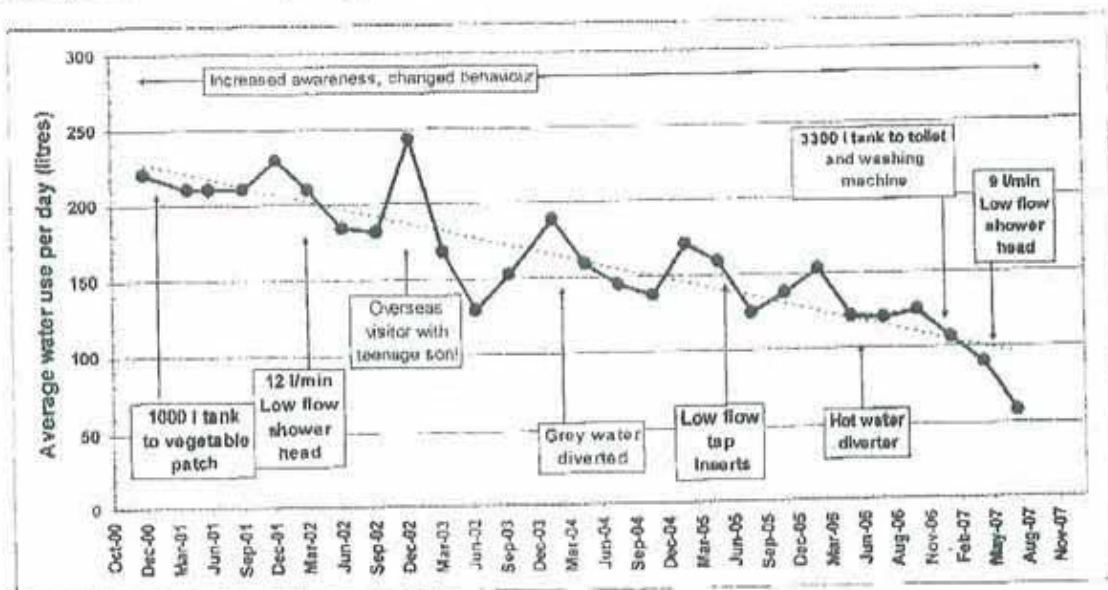
Before the Government make any further commitments term decisions regarding investments in Melbourne's water infrastructure (particularly desalination plants and the northern connector), we hope that you will take into account our experience and comments on the potential for water savings in our home and our community.

We firmly believe that the solution to our impending water crisis (when our annual demand is higher than the available supply) can be found in water savings at the domestic level. As 60% of Melbourne's water is used in the home, this should be a key focus of future management.

We live in a fairly typical inner city house in Northcote. The house is fully detached on a land area of approximately 400 m². The roof area is only about 130 m². There are two adults living there. In about 2000, we decided to implement a program to reduce our water use. Since then, we have introduced a number of water saving measures into our home. These include:

- Flow reducing inserts into all taps;
- AAA rated front loading washing machine (replaced broken top loader);
- Low flow shower head (9 litre per minute flow rate);
- Grey water system from washing machine to vegetable patch;
- Hot water diverter (recirculates cold water back into hot water system, rather than down the drain while waiting for the shower water to warm up);
- 3,300 litre rainwater tank, plumbed into toilet cistern, washing machine and a garden tap. The tank is fed from a roof area of about 70 m².

Over that time, we have reduced our water use from 220 litres/day in 2000 to 57 litres per day in 2007. That is a saving of over 160 litres per day, or a reduction of 75% in our daily water use.



Daily water use at 77 Union Street Northcote from 2000 to 2007

②

To put this figure in context, a saving of 160 litres per day is the equivalent of 58,400 litres per year. If that level of savings could be made across the 1.7 million households in Melbourne, it would save 98.6 GL of water a year (approximately half the volume of the Upper Yarra Reservoir).

If such savings had been made last year, our reservoirs would have been at about 35% full, instead of the current 29%. If such savings had been made each year over the past seven years, the reservoirs would currently be at about 75% full, and even the worst drought in recorded history would not have made any difference to Melbourne's water supply.

There are three important things that you should consider about these reductions:

- The water savings are permanent. In previous droughts, there has always been a bounce-back effect once restrictions are lifted (as gardeners revert to previous behaviour and people begin to wash their cars again). The changes we have made continue to save water into the future, which is needed to ensure that we are not affected by the next drought when it comes.
- The water savings are passive. Unlike savings due to behavioural changes (such as water restrictions) or savings that need conscious actions (collecting buckets in the shower, then carrying them to the garden), our savings do not require us to do anything (well, almost – the only thing we need to do is press a button next to the bathroom basin to operate the hot water diverter before having a shower).
- The water savings have not required us to make any changes in the way we live. Every aspect of our life is the same as it was before making the changes to our house.

These three things make water savings at the individual household scale a very attractive proposition that should be seriously considered for future actions.

And such savings are not unusual at the individual household level. A letter to the Age recently (17/5) claimed a reduction from 1700 litres per day to 400 litres per day. A number of houses in our street have also been involved in trying to save water, and 50% reductions in use are not uncommon. All of the information published on potential water savings in the home support the position that significant savings can be made at in the domestic setting.

Using water savings at the household level would seem to have none of the drawbacks associated with other plans to secure future water supplies for Melbourne.

The domestic water saving option

By far the largest dip in savings occurred in our household water use when we installed the rainwater tank connected to the toilet, washing machine and garden tap – a saving of 46 litres per day. In larger households, the daily savings from a water tank would be even greater.

Interestingly, with our rainwater tank, even the low rainfall of the past 12 months could still result in the same level of savings. The graphs on the following page show the daily rainfall recorded at Bundoora over the period May 2006 to May 2007¹ (top graph) and the volume of water that would be in a 3000 litre tank fed

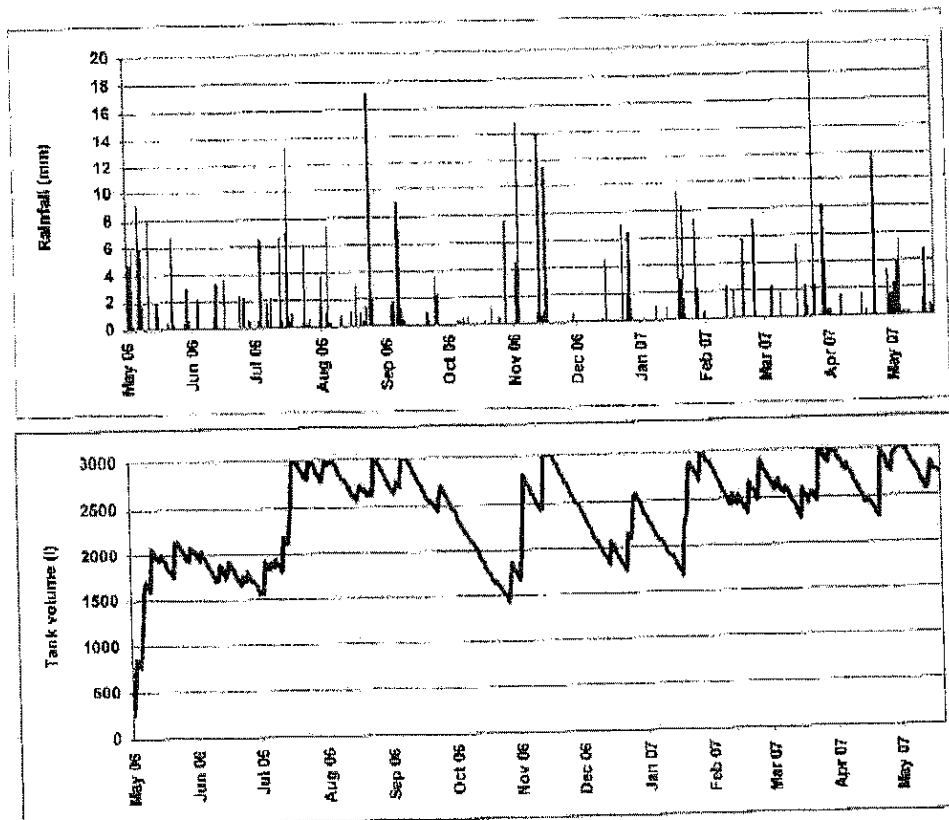
¹ Data from BOM website – total rainfall between June 2006 and May 2007 of 360.3 mm, compared to an average of 666.3 mm between 1979 and 2007.

③

from our 70 m² roof assuming a use of 46 litres per day from the tank² (bottom graph). As you can see, the tank would not have emptied during that entire dry year.

We would therefore predict that, unless even drier years are to follow, our tank will never be empty and the level of savings will be a valuable and permanent contribution to conserving Melbourne's water supply³.

Combined with the other permanent water savings measures in our house, we feel that if these can be replicated in a significant number of houses across Melbourne, it would obviate the need for the expensive options (both the initial monetary cost and the on-going economic, social and environmental costs) currently being considered.



Daily rainfall at Bundoora and volume in 3000 l tank (46 l/day use)

I guess the main question is why these permanent measures are not being adopted widely throughout the community. The research report by Marsden Jacob Associates⁴ recently released suggests that rainwater tanks are only installed in 6% of houses in Melbourne. While not specified, it is likely that about 70% of

² An annual rainfall of 360 mm would generate 36,000 litres falling onto a roof area of 100 m² during the year. Assuming a standard efficiency of collection of 90%, this would mean that about 32,400 litres could be collected from 100 m² of roof area – or 22,680 from our 70 m² roof.

³ The modelling behind this simple analysis produces an additional interesting observation – even if our tank size was only 1600 litres (suitable for very small houses), it would not have emptied during this year with similar daily use.

⁴ Marsden Jacobs Associates (2007) The economics of rainwater tanks and alternative supply options. Report prepared for Australian Conservation Foundation, Nature Conservation Council (NSW) and Environment Victoria.

(4)

houses are suitable for rainwater tanks (assuming a similar figure to Sydney quoted in the report), and by far the majority of houses would be suitable for other permanent water saving devices.

There is clearly a high level of concern and awareness in the community, but available figures suggest a low level of action. Rebates are offered for a number of water saving measures, but if we look at the uptake of these offers, it suggests that only a small percentage of the population are participating.

Year	Number of rebates ⁵
2004	62,591 ⁶
2005	42,371
2006	23,264

These figures, while seemingly high, only represent about 1% of the population seeking rebates each year (while I am sure this will be higher this year, any increase may not be sustained if significant rainfall occurs this winter).

To forestall any requirements to augment the water supply from piped water from elsewhere in the state, or a desalination plant, what is probably needed is to increase the participation rate in the community to between 5 and 10% of the population per year.

Research conducted in Queensland⁷ suggested that there were three major impediments to households becoming actively involved in water saving programs, particularly the installation of rainwater tanks:

- Lack of time.
- Cost considerations.
- Lack of knowledge about possible measures to take.

We believe that these impediments can be overcome by adopting a community-based approach to organising and delivering water savings. Over the past year, we have been involved in a community project to reduce water use in our local area that could act as a model for a more widespread approach. And one that could deliver significant water savings.

Community based water saving programs

Our community project began in June 2006 with a group of 7 residents in our local area who were interested in saving water. The group was formed after participating in the Victorian Women's Trust Watermark project.

We approached our neighbours to see if they were interested in joining our efforts as a community. The level of support in the area was high, and the most common reactions were along the lines of "I was thinking of doing this, but haven't got around to it", or "I would like to, but I think we will not be able to afford it", or "I don't know where to start". Therefore, our neighbours were responding in the same way as predicted from the Queensland research.

Within 2 weeks, we had the involvement of 46 houses in the local area, an additional 39 properties that may not have become involved in the water saving journey had the group not been started.

⁵ Figures from DSE Annual Reports.

⁶ Included 21,040 rebates for high pressure cleaners, which are no longer offered for rebates.

⁷ Ian White (2006) Social Interactions Concerning Household Rainwater Harvesting In South-East Queensland. PhD confirmation paper, Griffith University.

(5)

We formed an incorporated community group, Merri Sustainability Inc, so that we were a legal entity:

The first thing we did was organise a water audit for each of the houses who were interested. We approached a local plumber, who was willing to do the audits at a 30% discount to the price for a single audit. We also raised some money from the local traders to help pay for the audits.

The audits provided each household with a list of potential actions that they could take to reduce their water use, overcoming the impediment that they didn't know what they could do.

The organising group were able to research and provide information on the costs to the households for the different options. We were able to organise discounts from a local environment shop for a number of smaller items (such as flow reducing tap inserts).

We have also negotiated discounted prices for rainwater tanks from a local supplier. To date, seven of the houses in the group have had rainwater tanks installed. The tanks have a total capacity of nearly 21,000 litres.

We are currently in the process of preparing a grant application to the Commonwealth Community Water Grants to try to get part funding for a number of additional water tanks for houses who cannot afford the full cost of tanks, but could afford 50% of the costs.

The potential for water savings at this level are large. If each house makes the same savings as our house, it will mean that over 2,000,000 litres per year can be saved in our street.

We do not believe that we are an isolated case. Our project has generated some considerable interest in the community. We have appeared in *The Age* (5/8/2006) and twice in the local *Northcote Leader*. We have also featured in the Victorian Women's Trust Watermark website and "Our Watermark" publication⁸. As a result of this, we have been contacted by other community groups who are interested in adopting a similar approach (we prepared a list of suggestions and tips for setting it up which has been widely circulated), and have made presentations to a number of community groups including Probus, The Northcote High School parents group and the Alternative Technologies Association.

All this is made possible as it involves the facilitation of the neighbourhood to become involved by the original organising group. It is unlikely that, without the facilitation role, many of the residents would have begun to become involved. As a group, we have been able to overcome two of the main impediments to widespread adoption of domestic water savings (not enough time and not enough information). We have partly been able to defray some of the costs associated with water savings (and shown that savings can be made without much expense - including by circulating the offer for free showerheads).

However, the high cost of tanks and installation remains a serious problem. Our water tank, with a pump and plumbing, cost us \$2,770. Overall, the cost of installing various water savings devices came to around \$3,750. For all that, we are eligible for a rebate of just \$500. While the rebate helps, many in our street simply cannot afford the out-of-pocket expenses associated with installing rainwater tanks, but would be prepared to install them if they were cheaper.

We suggest that instead of allocating many billions of dollars towards desalination plants and pipelines backwards and forwards across rural Victoria, simply increasing the amount of the rebate available to a point where it becomes financially attractive to install a tank would greatly increase the participation rate, and make water savings that can match any other alternative.

For example, an average rebate of \$3000 per household, spread over 1 million households where tanks could be installed would cost \$3 billion. This is the same cost estimated so far for the desalination plant. And there would be no need for on-going very expensive energy use, pumping and delivery costs.

⁸ see www.watermarkaustralia.org.au

(6)

Melbourne should show leadership in the looming water crisis. The people of Melbourne are well aware of the water crisis, and need to be willing to take responsibility for and be directly involved in the solution, not simply think that the Government will do something and solve the problem. Providing an augmented water supply will not solve the problem by simply increasing the overall demand to match any additional supply.

And we believe that by adopting a community based approach to water savings, with local organising groups willing to facilitate a wider community group, the people of Melbourne can solve our water supply problem, and act as a model for the rest of Victoria and Australia.

Summary

In conclusion, we would urge you to support the following measures:

- Support community groups to set up street based water savings projects throughout Melbourne. This could be done through local councils who already have the facilities and skills to facilitate local groups. There are also programs and organisations like Sustainability Streets that are well versed in providing assistance to community groups who want to save water.
- Increase the level of support/rebates for installation of tanks in existing houses - ~~the cost of a tank~~ household would make water saving a practical and affordable activity for all households and income groups. Again, all the systems are already in place to process rebates.
- In addition, we suggest that ~~water tanks be made~~ mandatory in all new dwellings, with water connected to the toilet cistern and an external tap as the minimum requirement. Tanks are available for almost all situations and the costs of installation during construction would be far lower than retrofitting tanks to existing houses.

We would be happy to give you a guided tour of our house and neighbourhood and show you the practical and relatively inexpensive way that we can solve our future water crisis.

Thank you for your time and consideration.