



Victorian Farmers Federation

VFF Submission

Environment and Natural Resources Committee

Inquiry into Melbourne's Future Water Supply

August 2008

Foreword

The Victorian Farmers Federation is Australia's largest state farmer organisation, and the only recognised, consistent voice on issues affecting rural Victoria.

The VFF represents 19,000 farmer members, representing 15,000 farm enterprises. The VFF consists of an elected Board of Directors, a member representative Policy Council to set policy and eight commodity groups representing dairy, grains, livestock, horticulture, chicken meat, pigs, flowers and egg industries.

Farmers are elected by their peers to direct each of the commodity groups and are supported by Melbourne-based staff.

Each VFF member is represented locally by one of the 230 VFF branches across the state and through their commodity representatives at local, district, state and national levels. The VFF also represents farmers' views on hundreds of industry and government forums.



Simon Ramsay
President

I. Introduction

The VFF welcomes the opportunity to comment on the Environment and Natural Resources Committee's Inquiry into Melbourne's Future Water Supply.

The VFF submission builds on the Government's plan to allocate 75 GL of water savings, generated through the Northern Victoria Infrastructure Renewals Project (NVIRP), to Melbourne through the North-South Pipeline. This plan is not supported by the VFF. The fact is water should be seen as a constraint on development for urban growth just as it seen as a constraint on rural and agricultural growth. To interconnect supplies beyond the existing level of interconnection is essentially a population centralization policy rather than a regional development policy.

A more appropriate response on a number of grounds would be to maintain the constraint water imposes on the larger cities, and encourage development in the less developed areas. In the long term this would result in a more even distribution of population and economic activity. It would also give clear direction to communities on the water that will be available and a higher level of motivation for these communities to achieve gains in water efficiency in order to enable population and economic growth. The Government should proceed with funding the upgrading plan to sustain the agricultural and regional communities across rural Victoria without the need to take water to Melbourne. Such an approach will be the most responsible policy taken by a government to secure the future of the next generations.

Alternatively, the Government should seriously consider the relative merits of supplementing Melbourne's water supply by some or all of the many other options including further water savings that can be achieved by increased conservation and efficiency efforts; the collection of stormwater; the re-use of treated waste water; the use of groundwater; small locally based desalination plants; and any other optional water source which could be appropriate.

The VFF has a number of specific observations on some of the proposed options. They relate to areas the VFF believe need further exploration and attention.

II. New and Alternative Sources of Water:

Non-conventional water sources that are fit for purpose, practicable and cost effective can help reduce our reliance on conventional water sourced from rivers and reservoirs. Considering the current scarcity of conventional water sources exacerbated by the impact of climate change and severe drought witnessed in the last ten years, the Government should investigate options to utilize alternative water sources.

1. Integrating Wastewater Reuse into Water Resource Management:

Reclaimed water is increasingly viewed as a valuable resource for the agricultural, industrial and municipal sectors, rather than as a waste that requires disposal. Wastewater is a potential resource of great importance, with volumes rising and continuously available. With record lowest water allocations, water caps in some catchments being reached or exceeded, and water restrictions in some urban areas, water reuse is one conspicuous way of relieving pressure.

In Australia less than 10% of effluent was reused in 2001-02.¹ This represents a loss of water resources that is wasteful and in some areas inhibits development, increases polluting discharges, and requires more water to be taken from our rivers or groundwater than is necessary or sustainable. The situation is changing slowly and reuse of effluent has increase over the last few years. In Victoria, the Government has set a target of 20% recycling by 2010. The Metropolitan water authorities are making progress towards this target.² The bulk of water recycling is currently conducted at the Eastern and Western Treatment Plants in Bangholme and Werribee.

Recycled water is a possible source for obtaining water for environmental flows. The use of recycled water for environmental purposes frees up fresh water for drinking and other uses. Storing and using recycled water to augment environmental flows would be very reasonable considering the dilution factor which results in improved water quality. It also reduces the pressure to take water for environmental purposes from agricultural, urban and industrial shares and savings, such as the recently-announced \$50 million buyback of permanent water licenses in the Murray Darling Basin.

The VFF recently released a report exploring the possibility of using recycled water, which highlighted the fact that Victoria's recycled water use arrangements aren't as simple or advantageous as those of other states³.

There are several programs that use recycled water for environmental flows in place both nationally and internationally that demonstrate how recycled water can be effectively integrated into water resource management.

The Replacement Flows Project in Sydney in particular could provide a valuable model for a similar program in Victoria. The Replacement Flows Project is part of the Western Sydney Recycled Water Initiative, and is being conducted by Sydney Water. The Project plans to substitute up to 18 billion litres of drinking water, currently being released each year from

¹ CSIRO 2006

² DSE 2004

³ Issues for Farmers Considering the Use of Reclaimed Water for Agriculture, VFF Report, 2008.

Warragamba Dam into the Hawkesbury-Nepean River, with highly treated recycled water.⁴ The project satisfied an Environmental Assessment conducted before construction began, which is an important point as there is often concern surrounding the quality of recycled water being introduced into the environment.

There are similar projects taking place overseas in California, the UK, and Spain. In Windsor, California, a Water Reclamation Master Plan includes the flow of recycled water through wetlands and a discharge into the Mark West Creek.⁵ California has also used recycled water to recharge groundwater sources across the state for many years.⁶

In Essex, Britain, the Chelmer Augmentation Wastewater Reuse Scheme known as Water 2000 has a stage that involves putting purified water back in the river after advanced treatment.⁷

And in Spain 6% of the country's treated wastewater goes to ecological and environmental uses.⁸

The VFF believes that in order to promote the use of recycled water as an alternative source of water, prices paid for Reclaimed Water should attract special attention in establishing a methodology for determining water prices. Currently there are a number of inconsistencies in the pricing of recycled water. The VFF believes the regulatory bodies responsible for water pricing including ESC and ACCC should establish and publish firm guidelines for pricing recycled water. Recycled water must be priced consistently and competitively with other supplies. It is unreasonable to expect farmers using recycled water to pay a higher price than their competitors using traditional supplies. The principle of 'polluter pays' should be applied to pricing of recycled water. This would mean urban customers should bear the cost of treating and recycling waste water and providing it to users at prices competitive to alternate supplies. In Victoria, the Government has a target of recycling 20% of Melbourne's waste water by 2010. Competitive pricing of recycled water will be essential if this target is to be achieved.

The VFF's study on the Issues for Farmers Considering the Use of Reclaimed Water for Agriculture has shown the following⁹:

1. Essential Services Commission (ESC) utilizes the following guidelines for the pricing of reclaimed water:

- (a) Prices must be set so as to maximise revenue earned (by water suppliers) from recycled water services having regard to the price of any alternative substitutes and customers willingness to pay
- (b) Prices must include a usage component in order to provide appropriate signals to recycled water customers to manage resources
- (c) Any revenue shortfall arising from schemes required to meet mandated targets will be recovered through bulk water charges to the metropolitan retail water businesses¹⁰

⁴ <http://www.sydneywater.com.au/MajorProjects/ReplacementFlowsProject/>

⁵ <http://www.ci.windsor.ca.us/WR-WaterReclamationMasterPlan.pdf>

⁶ <http://www.owue.water.ca.gov/recycle/docs/ExecSummary.pdf>

⁷ <http://www.actew.com.au/water2water/GlobalExperiences.aspx#14>

⁸ http://www.ewaonline.de/journal/2007_07.pdf

⁹ Issues for Farmers Considering the Use of Reclaimed Water for Agriculture, VFF Report, 2008.

2. The NSW Government pricing regulator has established more comprehensive guidelines for the pricing of recycled water, at least for retail customers. In essence these guidelines suggest that users of recycled water should meet the cost of distribution and the treatment costs involved additional to that necessary to meet discharge license standards. The exception to this is that other water and sewerage users should meet a component of the cost of recycling equivalent to the avoided or deferred costs generated by the scheme. Recycled water schemes may enable a water and sewerage provider to avoid and/or defer costs. For example, this occurs where capital infrastructure upgrades to service growth or regulatory requirements are avoided or deferred by building a recycled water scheme.¹¹

3. It is worth stressing that in Victoria the principal objective of monopoly suppliers of reclaimed water is to maximize their revenue. The regulatory pricing guidelines in NSW are a slight improvement on the Victorian situation but even here water customers have no way of knowing the extent to which reclaimed water schemes enable water or sewerage providers to delay or defer costs.

4. In summary the existing pricing guidelines for reclaimed/recycled water adopted by both the Victorian and NSW regulators provide little comfort to reclaimed water customers that the prices charged by monopoly suppliers are fair and reasonable.

5. In practice, prices for recycled water used in agriculture are established through commercial negotiations between customers and suppliers. The suppliers of reclaimed water will seek to charge what the market will bear. Customers "willingness to pay" for recycled water will depend on a range of issues including:

- The price and security of alternative water source
- Competition for recycled water
- Costs of switching to recycled water
- Profitability of enterprise
- Quality, security and reliability of supply of reclaimed water.
- Equity with existing customers and nearby recycling schemes.
- Perception of risks associated with use of recycled water
- Costs involved in complying with regulations associated with use of recycled water.

The VFF believe that there is a pressing need to integrate reuse into water resource management strategies and planning, and recognise that this is part of a chain of events that cannot be disassociated: collection-treatment-reuse. Governments must find water savings for the environment through win-win measures for farmers, the community and the environment. Greater use of recycled water is a viable way of doing this, along with investing in improvements to irrigation infrastructure and finding system efficiencies.

Programs to facilitate and encourage greater use of recycled water will provide benefits for the State and the environment.

¹⁰Essential Services Commission, Melbourne Water Determination, 1 July 2005 – 30 June 2008 page 18
http://www.esc.vic.gov.au/NR/rdonlyres/0EC9DC49-A9F6-47DC-B010-CF2D31754CCA/0/Determination_MW_20050615.pdf

¹¹ NSW Independent Pricing and Regulatory Tribunal. Review of Prices for Sydney Water Corporation's water, sewerage, stormwater and recycled water. Water issues paper August 2007

2. Groundwater:

Many groundwater studies have defined the sustainable safe yield using the allowable drawdown limit considered to be a percentage of the saturated aquifer thickness. Alternatively, safe yield was traditionally defined as the amount of groundwater discharge which equates the annual groundwater recharge. However serious problems have been identified with the simplistic assumption that sustainable yield should equal recharge.¹² In many cases, sustainable yield will be different than average annual recharge; therefore, the general statement that sustainable or "safe" yield equals recharge is not always correct. Natural recharge does not determine sustainable yield; rather, the latter is determined by the amount of capture that it is permissible to abstract without causing undesirable or unacceptable consequences. Sustainable yield extends beyond the conventional boundaries of hydrogeology, to encompass surface water hydrology, ecology, socio-economy and other related topics.

There is currently a lack of consensus as to what percentage of safe yield should constitute sustainable yield. The issue is complicated by the fact that knowledge of several related earth sciences is required for a correct assessment of sustainable yield. Additionally, there are social, economic, and legal implications which have a definite bearing on the analysis.

The Northern Sustainable Water Strategy notes that the Government is committed to a groundwater reform in Victoria to improve understanding of groundwater available and to update maps, records and models.¹³ However, the Strategy did not discuss the estimation methodology that will be used. It notes that 'extraction levels are based on groundwater responsiveness and observed groundwater trends,' and concludes from this that 'if groundwater levels decline over a period of years, use is unsustainable and should be stopped.'¹⁴ As mentioned above, the VFF does not believe that sustainable yield can be determined this simply.

The current groundwater management arrangements were put into action in 1998 when the Department of Sustainability and Environment (DSE) assessed the groundwater resources of the State.¹⁵ The DSE measures groundwater in terms of the average rate at which they are renewed, expressed in annual volumes. The current total estimated groundwater resource (from divertible and minor sources) is 970,000 ML per year.¹⁶ The Groundwater Database contains all current information about groundwater, including maps, records and reports that have been gained through strategic drilling programs.¹⁷ Information stored on the database includes: bore construction and performance; groundwater quality and levels; aquifer details; geophysical logs and stratigraphic/geologic logs.¹⁸ Groundwater licensing controls where, when and how much groundwater is extracted.¹⁹

Given the increasing number of issues around groundwater management in Victoria, the VFF believes there is a stressing need to develop a more comprehensive framework (than that

¹² Seward et al., 2006

¹³ Discussion Paper Sustainable Water Strategy Northern Region, Pg. 86

¹⁴ Discussion Paper Sustainable Water Strategy Northern Region, Pg. 19

¹⁵ <http://www.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/water-ground>

¹⁶ <http://www.dpi.vic.gov.au/dpi/vro/vrosite.nsf/pages/water-ground>

¹⁷ [http://www.dse.vic.gov.au/CA256F310024B628/0/D57CF98992ED6492CA256FF200200237/\\$File/GWNOTE02.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/D57CF98992ED6492CA256FF200200237/$File/GWNOTE02.pdf)

¹⁸ [http://www.dse.vic.gov.au/CA256F310024B628/0/B03BEDD49B89D862CA256FF20021A784/\\$File/GWNOTE20.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/B03BEDD49B89D862CA256FF20021A784/$File/GWNOTE20.pdf)

¹⁹ [http://www.dse.vic.gov.au/CA256F310024B628/0/0C0CF5D59016489BCA256FF200217D28/\\$File/GWNOTE16.pdf](http://www.dse.vic.gov.au/CA256F310024B628/0/0C0CF5D59016489BCA256FF200217D28/$File/GWNOTE16.pdf)

described above) for groundwater management to address issues including groundwater seasonal allocation, groundwater modelling, water quality, groundwater-surface water interaction, groundwater unbundling and groundwater licensing and charges. Sufficient funds should be made available to introduce a network of monitoring bores provided with necessary data loggers to monitor groundwater levels and groundwater quality. Sustainable yield of different groundwater aquifers should be determined on a state level.

An increase in the capacity to manage the State's groundwater resources is needed as a matter of priority.

3. New Storages:

The VFF notes that the discussions on climate change anticipate more extreme weather events such as floods and droughts. On the surface these observations suggest greater water storage capacity in the region may be an appropriate response to these trends. Dams provide the best risk management approach against damaging floods and also provide capacity to capture and store peak flows. Higher storage capacity reduces the need to take water from the environment during dry periods. Greater storage capacity also provides the opportunity to mitigate the impact of a more variable climate brought on by climate change.

For these reasons the VFF supports a detailed examination of the potential for additional water storage capacity. In particular, construction of new dams should be considered to capture the water that results from those events associated with climate change. As an example, in 2007 two major events in five months flooded Gippsland last year and marked down what the future may look like in terms of rainfall distribution and intensity. A new dam in Gippsland to harvest heavy run-off in these regions before it flooded farms and towns needs to be explored.

The VFF requests that the Government takes all the necessary steps to investigate the options for extending existing dams including the Big Buffalo dam and William Hovell dam, as well as building new dams including a dam on Mitchell River and capturing more of the rain that falls over the Otways Ranges. These options should be seriously considered on their relative merit of supplementing additional water.

Land for the Big Buffalo dam was purchased off those farmers that were going to be affected and currently the land lays underutilized. William Hovell and Buffalo storages are small for the catchment area that they exist in, the Ovens and King region. Even over the dry spell that the whole state has been under for the past few years, these two storages have been filled. The benefits to gain with the increase in storage capacity of these two storages would bring increased water security for irrigators, towns, industry and the environment.

The VFF believes a review of the construction of new dams factoring in the benefits of managing a more variable climate including mitigating the potential for increased flooding, and the future water needs of the State should be conducted.

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4. Stormwater:

The VFF encourage greater use of stormwater in urban areas. Much stormwater in urban areas is currently underutilised.

A recent study on Water Supply-Demand Strategy for Melbourne 2006-2055²⁰ found that on average, about 500 billion litres of stormwater is generated throughout greater Melbourne annually – more than half as a result of the city's impervious surfaces. The study also highlighted the following key findings:

- Rain that falls on the roofs of buildings could be captured in rainwater tanks and used for non-drinking uses. While the use of rainwater tanks in Melbourne is growing, it is estimated that less than one billion litres of water a year is captured in rainwater tanks. The Victorian Government's five-star home standards require new homes to either have a rainwater tank that provides water for toilet flushing (or equivalent volumes through a dual water recycled water or stormwater supply) or a solar hot water heating system. This means that over the next 50 years, 362,000 new homes could have a rainwater tank or dual water supply. This would save up to 6.4 billion litres per year.
- There is the capacity to capture more rainwater via rainwater tanks at new and existing homes and businesses and use this water to flush toilets, for laundry and shower use and even for hot water use. In Melbourne, rainwater tanks are generally less efficient when used mainly for garden use because of the high volume required to water the garden and the irregularity of rainfall in summer.
- Capturing a proportion of the stormwater generated in Melbourne could provide significant volumes of water. Large storage facilities such as reservoirs, retarding basins, wetlands, artificial lakes or aquifers would be required to capture stormwater during heavy rainfall events. This water may require treatment depending on the intended use.

The VFF believes that there is a pressing need to integrate stormwater reuse into water resource management strategies and planning. Further research and investigation on stormwater use should be given special attention by the Government.

Programs to facilitate and encourage greater use of stormwater will provide additional and alternative sources of water to Melbourne.

5. Other options:

While supporting investigations into the feasibility of the above options as well as various other alternatives that could prove themselves to be viable (including desalination, inter-state water transfer, etc.), the VFF would strongly oppose any proposal to transfer additional water from country regions. There is ample scope for Melbourne to meet future water needs through those alternatives.

²⁰ http://www.melbournewater.com.au/content/library/water/water_storages/Water_Supply-Demand_Strategy.pdf