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Thursday 28 August 2008

Executive Officer  
Environment and Natural Resources Committee  
Parliament House  
Spring Street  
EAST MELBOURNE VIC 3002



Via email: [enrc@parliament.vic.gov.au](mailto:enrc@parliament.vic.gov.au)

Dear Sir/Madam,

**RE: INQUIRY INTO MELBOURNE'S WATER SUPPLY**

In March of 2007 Hume City Council won the savewater® Awards 'government' category and the overall Award for Excellence for City-wide initiatives that conserved more than 70ML of potable water per year. Hume City Council endeavours to continually address the challenges of drought and climate change and to lead the way in conserving Victoria's precious water resources, improving rates of recycling and reducing our greenhouse gas emissions.

While the *Inquiry into Melbourne's Water Supply* is obviously focussed on potable water conservation issues and alternative water supplies, it is important that implemented measures do not exacerbate existing environmental problems through the use of resource intensive technologies.

Hume City Council would like to propose investigation into and State Government support of alternatives such as water-use efficiency, dual reticulation, rainwater tanks and stormwater reuse.

**1. Further water savings that can be achieved by increased conservation and efficiency efforts.**

Residential Sector

Achievable water use standards should be set for households by the State Government. Targets of between 65,000 -85,000 litres of potable water per average household per year should be set.

New houses should be designed to incorporate rainwater to supply toilet cisterns and washing machines, taking pressure off potable water supplies. This could be achieved through individual or communal water tanks fed by rain gardens from houses and streetscapes incorporated at the subdivision design phase. Grey water systems, water saving shower heads, flow restrictors and dual flush toilets should be incorporated into building standards for new houses.

Rebates should be made available to existing households to encourage retrofits.

Subsidies should be made available for households that plant indigenous species, create a Raingarden or plant a low water-use garden, utilise mulch or use water saving crystals.

#### Commercial and Industrial Sectors

Rebates should be made available to business that incorporate rainwater tanks, Raingardens and low water-use landscaping into their buildings in order to reduce their need to draw on the potable water supply.

Water saving equipment and technology should be subsidised for non-residential water customers whose daily operations requires potable water usage in excess of 10ML per annum.

## **2. The collection of stormwater.**

The SmartWater website states that Melbourne's Annual Stormwater Discharge is 530GL, while Melbourne's annual water use is 420GL. Stormwater harvesting, namely the collection and reuse of rainwater entering the stormwater drainage system, could complement other urban local or household management practices such as greywater reuse systems, water recycling and the use of rainwater tanks.

Within residential areas, stormwater harvesting could supplement potable water supply and reduce the demand on Melbourne's dams and groundwater supplies. Stormwater harvesting would require temporary storage of stormwater in small dams or preferably tanks, to avoid evaporation (could be located underground), treatment to remove contaminants such as pathogens and pollutants, and distribution to users.

Stormwater harvesting schemes should be incorporated at the subdivision design phase of new developments, where they can be implemented into the developments at a substantially lower cost than retrofitting into most existing suburbs. Stormwater could be utilised for public open space irrigation and toilet flushing in new suburbs, where the opportunity exists to install a dedicated reticulation system (e.g. a third pipe network).

In existing developments the water will have to be treated to potable standard if connected into the existing reticulation system, as stormwater can be highly polluted from organic materials and particles from road vehicles such as rubber and other chemicals. Technologies exist to do this but they are expensive (financially and environmentally) to run and maintain when operated at multiple locations.

There may be some opportunities for stormwater harvesting and re-use schemes as adjuncts to wastewater treatment plants producing high-grade recycled water. The Victoria Government should also consider the diversion of stormwater to the sewer system in order to boost the supply of purified recycled water.

*Harvesting excessive amounts of urban stormwater runoff could be detrimental to stream health. Therefore, stormwater harvesting schemes should be designed with "multi-purpose" considerations to provide both environmental flow enhancement and a substitute for potable water supply.*

## **3. The re-use of treated wastewater.**

Within Hume City the conventional source of alternative non-potable water is treated wastewater or reclaimed water. Localised wastewater treatment systems, such as those that exist in Hume at the Western Water Treatment Plant in Sunbury and the Yarra Valley Treatment Plant in Craigieburn have substantial upfront capital costs, however, are still more cost effective than comparable desalination plants.

Without investment in a dual water supply network or a political shift to embrace wastewater reclamation and integration with potable water, the diversity of water sources and infrastructure can never be realised in existing urban environments.

At present the recycled water pipelines from the Western Water Treatment Facility in Sunbury collect from a large urban and semi-rural area and continually discharges significant quantities of Class A recycled water for use as irrigation to numerous sporting fields within the township. This flow could readily be reticulated to substitute potable water use for toilet flushing, irrigation and laundry demands, a model which could be successfully established across Melbourne. Alternatively, following a change to the existing legislation, this supply could be piped to supplement the potable water supply.

The next logical step is to ensure treatment standards are adequate to allow this water to be reintroduced into potable systems.

**4. Any other optional water source which appears to the Committee to be appropriate.**

Groundwater should not be considered as an alternative to potable water supplies. Following a long history of unregulated groundwater extraction and surface water allocation licences combined with a prolonged period of reduced rainfall, Victoria's aquifers are greatly depleted, resulting in reduced stream flow and a substantially lowered water table.

**5. Small locally based desalination plants.**

Small locally based desalination plants should only be considered as a last resort to a severe water crisis as they have the potential to exacerbate existing environmental problems and contradicts the response required to climate change.

Desalinations plants:

- ▶ negative impacts on marine life,
- ▶ use a lot of energy resulting in the production of greenhouse gas (based on estimations that a reverse osmosis desalination plant producing 500ML of water per day would produce 950,000 tonnes of greenhouse gases per year),
- ▶ discharge large amounts of waste into the ocean (some desalination plants are known to produce 1.5 million litres of brine per day, often containing toxic metals and the chemicals used during de-fouling of plant equipment and pre-treatment).

If the whole of Melbourne uses an average of 420GL of potable water per year, a desalination plant running to supplement a quarter of this demand (105GL) would create approximately 533,780 tonnes of greenhouse gases per year.

Should you require any further information in relation to Council's response to the *Inquiry into Melbourne's Water Supply*, please contact Rebekah Ritchie, Environment Officer on 9205 2487.

Yours sincerely



**DOMENIC ISOLA**  
**CHIEF EXECUTIVE OFFICER**