

Imagine.....

You walk around a city like Melbourne or Geelong. Everywhere you look there are signs of real water efficiency. Gardens flourish with beautiful drought-resistant plants watered by tank or grey water. You see suburban backyards with 10,000 litre water tanks near back fences. Go inside houses, schools, leisure centres, hospitals, public buildings, factories and business premises, and you find they have all been retro-fitted with available, low cost water efficient technologies.

Larger tanks (40,000 litre) are commonplace in open spaces and on industrial sites. Other large open areas collect rainwater too. Huge rubber bladders have been “planted” under these spaces. They have also been laid down on the beds of rivers and the deeper estuaries, in harbours and coastal inlets. Stay in a hotel or motel and you find dual flush toilets, water efficient shower roses and squirt taps.

During every storm event, millions of litres of water are trapped and later treated and reticulated for use. Small solar-powered water treatment plants are dotted across the landscape.

Waste water (treated sewage) is available and able to be used outside homes and on public open space. All new suburban developments are seen as a great opportunity to construct buildings that are genuinely water and energy efficient.

City skyscrapers now test their fire sprinkler systems by flushing captured stormwater rather than wasting fresh water. The spaces under these buildings are now used to capture and store water instead of providing car parking. There are water treatments plants in the basements. It is common knowledge that when possible, industries now use the same water over and over again in various manufacturing processes.

The *Watermark* Australia Project enabled us to come to this vision. A long-term vision like this has a simple starting point – every house or business is built or retrofitted for maximum water efficiency.

But first, some background on the *Watermark* Australia Project. Beginning in 2001 as an initiative of the Victorian Women’s Trust, it was financed with two early grants from The Myer Foundation followed by substantial contributions from a small group of private donors. The project culminated in the production of a public document *Our Water Mark* which was released in July 2007. Since then, with further private donor support, 37,000 copies of this document are being distributed free of charge.

The *Watermark* Australia project is a world first in the way that people across the broader community have been able to engage and consider a major national resource issue that must be responded to and very soon.

Watermark Australia involved several thousand people coming together in small groups from all walks of life and in various locations around Australia in a process of community engagement aimed at raising water literacy. These groups met several times, usually in someone's home. They drew on discussion materials prepared by the *Watermark* Australia secretariat. Each group's deliberations were summarised and reported back to the secretariat. Their experiences, views and ideas were integrated with input from a small number of eminent scientists as well as wide-ranging information and data in various government, scientific and other published reports. This uniquely-blended body of knowledge and a framework for action was then published as *Our Water Mark*.

Our Water Mark describes the water situation that is facing many parts of Australia as a "crisis" that must be responded to by governments and citizens. *Our Water Mark* identifies various factors that are at work here and which collectively are underwriting this water crisis. It proposes as a national goal, water efficiency in every action and activity that is undertaken. After achieving this, we would then move towards "super efficiency".

Our Water Mark outlines a set of principles that should underpin a reform process. It details actions that can be taken now and as well, it identifies some of the major issues that the nation must respond to, if we are to move towards becoming genuinely water efficient.

SOME HARSH REALITIES

Our rainfall and stream flows are highly variable. This variability will increase with predicted climate change. Over the last one hundred and twenty years, governments responded to this variability lay by building nearly 500 large dams to achieve water security for cities and rural enterprises. Most of our suitable catchments and river systems have now been dammed. Projected rainfall decline along the eastern seaboard suggests that the construction of more dams will not guarantee water security.

Cities along the Eastern seaboard, including Melbourne, are poorly placed to respond to the predicted decline in freshwater availability. Indeed, the south east of mainland Australia, from around Tamworth in NSW to Euroa in Victoria is now included by the United Nations on its list of the Top Ten Global Water Hotspots.

Our water use has been increasing. Since the mid-1980s we have been ramping up our water use both in agriculture and in our cities. In just thirteen years, between 1983 and 1996, water use increased by 67%. It has since levelled off, driven by the past decade of low rainfall. With the expectation of another one million people wanting to locate in Victoria, and many of these locating in Melbourne, the question of water demand will sharpen.

We are one of one of the highest water users per capita on Earth.

According to ABS statistics for 2004-05, an average family of four is likely to directly consume over 1100 litres of water per day, every day of the year. Business and industry in Australia use significant amounts of water. Service industries in particular, are emerging as major water users. The same ABS report indicates they accounted for 1041 billion litres (GL) compared with mining and mineral processing (397 GL) and manufacturing (541 GL).

We have been slow to capture and use stormwater in our cities.

While the size of Australian cities has steadily increased, the use of storm water has been largely overlooked for two generations. The volume of urban stormwater run-off is only slightly less than the total volume of water consumed by households. For the cities of Brisbane, Sydney and Melbourne, this estimated volume is 1285 GL in an average year.

We have been slow to re-use waste water. For a dry continent, it is puzzling that we have for decades dragged the chain on any large scale water recycling. Despite the looming water crisis, there is still inertia. In Australia, 86% of effluent water is unproductive. Sydney alone allows 450 GL of barely treated sewage to be pumped into the ocean, while Melbourne discharges 360 GL of treated sewage into Bass Strait and Port Phillip Bay.

Across Australia, recycling of available waste water from cities is very low – Sydney (2.3%), Melbourne (2%), Brisbane (6%), Adelaide (11.1%), Perth (3.3%), Hobart (0.1%).

The future supply of adequate water to city populations will present some significant challenges over the next 2-3 decades. Except for Perth and Adelaide, most of the freshwater used our cities is surface water. With the effects of climate change, the volumes of surface water available to all cities (other than Darwin and Hobart) are predicted to decline significantly. However by 2030, an extra 4.5 million people are projected to be living in our cities, with capital-city populations predicted to increase by between 8% and 69%.

RAPID POSITIONING NEEDED FOR A CHANGING CLIMATE

The water crisis in Australia is deeper and more profound than just another drought. It is accentuated when we factor in climate change and its potentially significant impacts, particularly on the south-eastern part of Australia.

Predictions of major climate change in our part of the world will translate to a substantial reduction in the frequency of rainfall events, reduced surface water running into our storages, more, hotter days each year so that the land is a lot drier and a greater risk of major bush fires. In addition, this part of Australia produces nearly 80% of the food required by our city populations.

More than half of the nation's population lives in three capital cities on the eastern seaboard. These cities are hugely wasteful of water and are currently poorly placed to deal with impending climate shift.

We need nothing short of a revolution in our thinking and practices around water efficiency and we need to start this dramatic turnaround now.

Greater Melbourne will have become genuinely water efficient when per capita use of potable water has reduced by at least 50%, when suburbs, business precincts and industrial areas are configured so that at least 50% of all storm water is captured, treated, reticulated and re-used and people are using at least 50% of treated sewage water.

A PROGRAM FOR ACHIEVING URBAN WATER EFFICIENCY

Our Water Mark proposes a coordinated program over the next five to ten years to achieve water efficient suburbs, business precincts and industrial areas.

Such a program would have at least the following six key elements:

- ▶ Setting of new state targets covering domestic and industrial water saving technologies, appliances and equipment.
- ▶ State Governments prepared to use considerably more intervention and regulation as well as providing new and novel services in order to bring about appropriate behaviour change throughout Victoria. This change will need to take place with some urgency and speed so that we achieve the level of water efficiency necessary to achieve sustainable water use.
- ▶ An agreed timetable indicating the completion date for the retrofitting of households, business precincts and industrial areas. The first emphasis should be placed on retrofitting all low income housing, public and community facilities.
- ▶ Specific purpose sought loans from the Commonwealth by the State Government to finance the early stages of retrofitting programs.
- ▶ Regular reporting by the State Government to the people of Victoria.
- ▶ A program of special purpose grants available to Local Governments and communities to facilitate an immediate and massive expansion of stormwater collection, treatment and reticulation.

Government vision and boldness is fundamental

There is widespread community anxiety and concern about the lack of vision and boldness on display in Victoria with respect to the management of water as our most critical resource.

The public impression is of a Government more interested in managing urban water use for political risk rather than for achieving sustainable water use in the face of serious climate change impacts.

Despite grim warnings and **now almost a decade of opportunity**, there has been no metropolis-scale policy, program and budgetary effort to boost recycling, stormwater capture and use, and retrofitting with water efficient technologies.

Soft-stroking the public is completely missing the mark in terms of the amount of industry and household behaviour change that is required to maintain Melbourne's liveability let alone provide for further population increase. Since the election of the Bracks' Government in 1999, at least 3 major media contracts have been awarded to one agency to assist in promoting government messages on water.

None of this campaigning has seriously attempted to take the Melbourne public into its confidence on the potentially fraught future facing Melbourne unless the city effects huge efficiencies in water use. Instead, the public gets warm, fuzzy congratulatory assurances that they are doing enough simply by reducing demand – from one of the highest levels of domestic consumption in the world! Incidentally, the Government's publicised figures are never substantiated.

All the signs currently coming from Government are that the huge investment in the desalination strategy comes at the expense of public investment in alternative water options for Melbourne. In the Government's Water Policy documentation of 2007, there is scarcely a genuine reference or commitment to the wide-ranging ways to achieve real water efficiency. Instead, the document speaks of being able to take Melbournians off water restrictions – largely by increasing water supply from a high-energy, greenhouse gas emitting desalination plant, and supplemented by taking piped water from already stretched Goulburn-Murray catchment areas to satisfy a city that remains wasteful in its water use.

Bipartisan leadership and agreement is pivotal

In any other comparable situation of a deep threat, our governments – state and federal – would be expected to go on to a 'war footing.' Actions and responses would occur quickly, with total commitment and deployment of appropriate resources.

Party-political responses, adversarial politics and point scoring are a recipe for delay and disaster. We need circuit-breaking and bipartisan political leadership of a kind that we would expect in times of community threat and emergency.

Challenging and recasting the concept of water efficiency

‘Water efficiency’ is a term in common use within the water sector and government quarters. It tends to be narrowly defined, focusing only on ways of reducing direct water consumption, such as cutting down shower times or not hosing driveways. It suggests that we become water efficient simply when we use less water in everyday activities. We are currently profligate users of the highest quality fresh water. A token reduction in our daily use of such water does not equate with real water efficiency.

Real water efficiency is reached when we significantly reduce the volumes of potable water *and* when we use all available water (rainfall, stormwater, treated waste water) again, and again, before we finally discharge it. It also includes a recognition of the amounts of water embodied in the production and delivery of goods and services and strategies and technologies to drive these amounts down without compromising quality. Using less water in these is also a vitally important part of achieving efficiency.

Regulation is critical

A set of uniform changes to government regulations and building codes is required so that all new building construction produces homes, commercial and public buildings that meet new mandated water efficiency standards covering the use of potable water, stormwater and treated waste water inside and outside of the building. The changes should include:

- mandating water efficient technology and appliances in households and industry
- mandating pressure reduction valves,
- regulations minimizing dead space between the domestic/industrial hot water service and the main area where water is used,
- fitting of “dead-space” water valves,
- collection and use of stormwater, and where possible the use of treated waste water and grey water.
- Compulsory reporting and auditing of water used in industries and government facilities.

Widespread retro-fitting is essential

The existing range of incentives and rebates are nowhere near adequate in achieving the quantum improvement in domestic and industrial water efficiency that must take place.

For instance, while the dual flush toilet has been mandated for over 20 years, still nearly 30% of homes are without one. The rate of take-up of simple water saving technologies such as low-flow showerheads is parlous. Unlike Adelaide, where close to 40% of households gave water tanks, the rates in the eastern cities are barely into double figures. Tens of thousands of new homes are being added to Australia’s stock of housing annually, and very few are genuinely water efficient.

We have to break with the mindset that the current demand management approach is sufficient.

We need a new way of financing for water saving in our urban areas that can achieve a dramatic improvement in water efficiency. Consider the following: A household or business signs up to a retrofitting plan. The initial cost of the retrofitting is financed by loan funds being made available to the water retailer. The household or business agrees to pay future water bills at the current amount until such time as the value of the water savings pays back the retailer. In turn, the water retailers are able to repay the State Government which then repays the initial Commonwealth loans.

Under this financial scenario, each urban water retailer is best placed to take the lead role with its customer base so that at the end fifteen years, each premises has been fitted with –

- Modern dual-flush toilets.
- Certified water efficient shower roses.
- Dead space water valves
- Pressure reduction valves
- Rainwater tanks close to premises and at other locations on the property
- Squirt taps (in commercial and public buildings)

At an appropriate point after initiation of the national action (say 2-3 years), state governments would introduce new regulations covering property sales. These would have the effect of requiring any property that is coming onto the market for sale/re-sale to be already retro-fitted. New regulations would require businesses to develop, display and submit to water retailers a three year water saving plan. Compliance with such plans would be audited.

Victoria's water situation is now so serious that it requires a concerted, long-term national response. This response should not be limited to desalination and piped water from the Goulburn-Murray catchment areas, and water efficiency improvements in agriculture. Melbourne needs to become dramatically more water efficient – and as soon as possible.

Enough time and resources have been squandered without any significant progress towards making Melbourne a genuinely, and exemplary, water efficient metropolis. Now is the time.

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