

Water sensitive urban environments

Stormwater harvesting and water efficient design



The Greens urban water plan will help reduce demand for water through the introduction of mandatory minimum water efficiency building standards, and bolster supply by promoting greater use of stormwater.

Australia is the driest inhabited continent with highly variable rainfall and frequent droughts. Yet despite widespread water restrictions in recent years, we are the highest consumers of water per capita in the world – consuming 100,000 litres of fresh water each per yearⁱ. As a result, most Australian cities are experiencing a water crisis, and this will only get worse as Australia faces a hotter, drier future as a result of climate change.

The Greens urban water plan will:

- Introduce national mandatory water efficiency standards for all new residential and industrial/commercial developments, including a requirement for basic minimum water sensitive design features such as:
 - o A second pipe network to supply non-potable water to all buildings in the development for use in toilets, laundry, and for non-potable industrial applications;
 - o Water efficient showerheads and tap ware (3 star WELS rating) and toilets (dual flush, 4 star WELS rating) in each building;
 - o A system for rainwater capture and reuse, such as a rainwater tank;
 - o Industry-specific water efficiency features, following a review by DEWHA of the broad range of existing guidelinesⁱⁱ to identify consistent, mandatory minimum features for each industrial application.
- Customise developer tariffs to give incentives for more involved water sensitive design (e.g. stormwater capture, water recycling, 'smart sewers') during the development stage, when the greatest efficiencies may be achieved.
- Strengthen the National Urban Water and Desalination Plan by:
 - o Lowering the minimum capital cost of eligible projects under the scheme to \$500 000 (where larger, cooperative projects are not feasible) to permit greater involvement by local councils.

Water sensitive urban environments

Stormwater harvesting and water efficient design



- o Including criteria that capture the public amenity benefits available from stormwater harvesting projects that store the water in lakes and wetlands dispersed throughout our cities.

Details of water efficiency measures

The need for a second pipe

For water efficiency best practice a second water supply pipeline for non-potable water is essential if we are to make best use of alternative non-potable water sources such as stormwater and recycled water. Professor Tony Wong notes that implementation of a second pipeline would be easier if there was a requirement for greenfield development and urban renewal redevelopment projects to be fitted with a dual water supply network.ⁱⁱⁱ

Attempting to retrofit this kind of infrastructure would involve massive expense and disruption, so it is essential that it is installed up front if we are to make best use of alternative water supplies such as stormwater, recycled water and others.

Developer Tariffs

Developers pay tariffs to local authorities to hook up essential services, such as water, to new developments. Huge water savings are available if these tariffs are structured to provide incentives for water sensitive design. The Prime Minister's Science, Engineering and Innovation Council reported in 2007 that 'savings potentially obtainable as a result of decisions by developers and builders may be as high as 80 per cent of total available savings'^{iv}.

The Pimpama-Coomera development on the Gold Coast is a good example of what may be achieved through developer tariffs. It used a second pipe network, water recycling, rainwater tanks, smart sewers, and stormwater management to yield 'a 65 percent decrease in potable water consumption and an 85 percent decrease in wastewater released to the environment... at an increased cost of 6 percent'^v.

Water sensitive urban environments

Stormwater harvesting and water efficient design



The National Urban Water and Desalination Plan

1) Lower minimum eligible capital spend

The Plan should be adapted to better accommodate stormwater harvesting projects. The minimum capital expenditure for an eligible project under the Plan is \$30 million, of which the Government will contribute 10%. Yet stormwater infrastructure is often handled by local councils who do not have these sorts of funds. Lowering the minimum spend to \$500,000 would enable a greater diversity of smaller projects to secure funding, and may well address the 'lower than expected demand' identified in the 2010-11 budget papers^{vi}. However, there is value in encouraging local councils to work cooperatively to implement more integrated projects over larger areas, so councils seeking to implement smaller projects should be required to demonstrate that they've explored more ambitious, cooperative options in concert with neighbouring councils, water corporations, or other relevant parties.

2) Expand application criteria

The criteria for funding under the Plan could also be tweaked to take account of the full range of benefits of stormwater harvesting projects that create dispersed urban lakes and wetlands to store the captured water. This results in attractive green spaces in our cities, counteracts the urban 'heat island' effect, and contributes to the health of urban waterways. Without criteria that capture these benefits, the Plan is pre-disposed to approve cheaper stormwater projects that store the captured water underground in aquifers. The upshot of this is that the other potential benefits of stormwater harvesting are foregone, and most of the projects that are funded are confined to locations where suitable aquifer storage has been identified (eg. Adelaide).

i <http://www.savewater.com.au/index.php?sectionid=42>

ii <http://www.environment.gov.au/water/policy-programs/weo/best-practice.html>

iii Professor Tony Wong, *Sustainable Nation: Managing Australia's Future*, 2007, p.42.

iv *Water for Our Cities: building resilience in a climate of uncertainty*, p.17.

v Marsden Jacob Associates, *RUWA Response to the ESC Draft Decision on New Customer Contributions: Follow-up Paper*, 25 May 2005, p.5.

vi *Budget Paper No. 2*, p.169.