Information Sheet

water forever

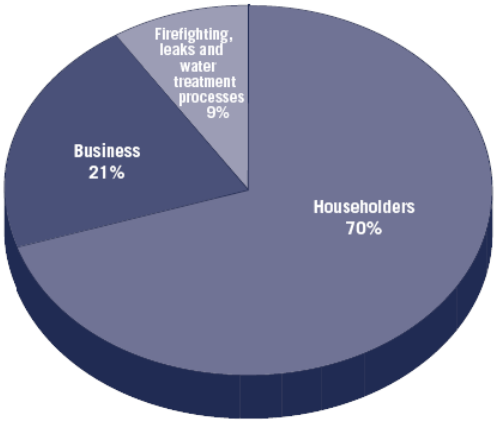
Water Efficiency

Background

Water efficiency is about using less water - making the most of every drop of water we use.

Water, like any other resource, should be used efficiently because we need to minimise our impact on the natural environment. The State Water Plan 2007 has a central objective to "Use and recycle water wisely". Water efficiency (or smarter use of water) is an important part of the Water Corporation's Security through Diversity approach.

Water efficiency is enabled by technology and by changing our behaviour to use less water. For example, we can use washing machines that have a high water efficiency rating (technological improvement) and only use them when they are full (behavioural change). The Water Corporation's water efficiency program is focussed on all customers - households, industry, commerce and community organisations such as hospitals and schools.



Public water supply uses less than 20% of all water in Western Australia, and households use 70% of this amount. The Water Corporation works closely with households and all other sectors to conserve water and use it more efficiently.

The Water Corporation has developed a range of programs to support a sustainable reduction in water use.

A Diversified Approach to Water Efficiency

System → Behavioural

Infrastructure	Regulation/ Legislation	Non Drinking Water	Research & Development	Retrofitting	Water Efficiency measures	Waterwise Programs	Community Education
Pressure reduction trials	Water efficiency policy	NDW demo projects (Brighton)	Integrated Resource Planning	Waterwise Rebates Program	Daytime sprinkler ban	Businesses	Waterwise Accounts
Reduced flow meters	Mandatory National Labelling	NDW decision making frameworks	Water Sensitive Communities	Waterwise Plumbers trials	2 day/week sprinkler roster	Schools	Community Based Social Marketing
Leak detection program	Smart Approved Watermark	Corporate NDW positioning	Soil moisture sensor trials	Corporation building retrofit		Plumbers	Education
	Household sustainability assessment tool		Watersmart project			Land Developments	Marketing
	5 Star Plus building codes		Water efficient turfs			Display Villages	Seminars
	Cost-reflective pricing					Garden Centres	
						Irrigators	
						Partners	
						Local Councils	

Water efficiency in homes

Water efficiency programs for homes use a range of measures:

- water efficiency labelling
- technological improvements
- community awareness and education
- social marketing
- regulation and legislation
- research and development
- Waterwise accreditation and
- trials of new initiatives.

Outside water use is the largest single component of typical household usage in Western Australia. A number of programs have focussed on this use given the significant scope for improvement. Further details on these programs can be found in the information sheets on Waterwise homes, gardens and communities, Water Efficiency Measures, rainwater tanks and greywater reuse systems.

Water efficiency in businesses and institutions (e.g. schools)

Businesses and organisations such as schools and hospitals can make significant contributions to savings in scheme water use. The Waterwise Business program has made significant gains in this area already and the Waterwise Schools program has been very successful in educating students on the value of water as well and helping schools to use less.

Current Situation

The Water Corporation integrates water efficiency into planning processes for new sources. This means that water efficiency is a primary consideration, prior to developing new drinking water sources.

A number of approaches are currently being progressed by the Water Corporation.

Social marketing

Two trial projects have been completed which worked with volunteer households who received water saving education on opportunities in their home. The process involved one-on-one interaction with customers and monthly water consumption monitoring and feedback. Ongoing savings of 5 – 10% have been achieved at costs between 20 – 30 cents a kilolitre.

Another pilot program is now underway, building on this success. This program is working with customers in Duncraig and is scheduled to be complete in June 2008. Initial results of the third pilot are encouraging. This program could be expanded throughout Perth.

Building Code of Australia 5 Star Plus - Phase 2

In May 2007 the Government announced new building standards for all new homes to support water and energy efficiency. Phase 1 was introduced in September 2007 with various measures including water efficient taps, showerheads, toilets and swimming pool covers.

The Department of Housing and Works is coordinating the drafting and introduction of Phase 2 of the program. Proposals include:

- separate pipework to clothes washing machines and toilets for ease of connection to an alternative water supply;
- separate pipework from showers, baths, laundry troughs and washing machine drains for ease of connection to a greywater diversion system;
- for houses with more than two showers or toilets, mandatory connection of toilets and clothes washing machines to an alternative water supply; and
- for houses on large lots, mandatory connection of garden taps and irrigation systems to an alternative water supply, or connection of all shower, bath, laundry trough and washing machine drains to an approved grey water system.

The Water Corporation is working with land developers to promote water efficiency throughout new developments via the Waterwise Land Development Program.

Pressure management

Trials are underway in the suburbs of Waterford, Shelley and Rossmoyne to reduce excessive water pressure, which can result in high water usage and leakage and bursts in the pipe network. Initial evaluation of the Waterford trial will be carried out by May 2008 and by December 2008 the Shelley and Rossmoyne program will be evaluated.

It is expected that each trial will continue for a further 12 months after these dates. At this time, the Water Corporation will evaluate the feasibility of extending these trials.

More information on bills

Since July 2007 single residential households have been receiving consumption information on their water use accounts showing a comparison of their usage with the average for the local area. The “average” information distinguishes between lot size and whether or not a garden bore is being used. In addition, bills also show comparative use at the same dwelling for the previous year.

In 2008 the Water Corporation will conduct a survey to review this initiative with a view to widen the coverage to individually metered multi-residential properties.

Individual metering for multi-residential units and apartments

Currently only 16% of multi-residential properties are individually metered. Local and overseas evidence suggests that water savings of at least 10% could be anticipated for individually metered properties compared with properties fitted with a single common meter.

Introducing individual meters in multi-residential developments would require new systems and processes such as automated meter reading. The Water Corporation is investigating changes in this area.

Efficient irrigation for new lawns and gardens

Currently, homes putting in new gardens can be granted exemption for a period of time from sprinkler rosters to allow them to establish. In 2008, new requirements will be introduced which will require efficient irrigation systems to be installed as a condition of these temporary exemptions.

The Biggest Reducer

Some Water Corporation staff are participating in a trial to use less water, called 'The Biggest Reducer'. This helps staff to walk the talk about water efficiency and is a pilot for a community challenge that could be held in the summer of 2008/09.

The aim of the project is to help users be aware of their water use and to encourage waterwise behaviour. Participants enter their meter readings into a website that calculates per capita water use and compares it with the target set in the State Water Plan for each person to use less than 100 kilolitres a year. People that are under the target stay in the draw for monthly and major prizes.

The Future

A number of other initiatives could be introduced in the future, to further support water use efficiency.

Household retrofits

About 15 kilolitres a year could be saved in homes by replacing inefficient showerheads, installing tap flow control devices and fixing visible leaks. This has been trialled on three occasions with either the customer or the Water Corporation paying the full cost.

In the third pilot (April 2007) a free water audit, leak repair and installation of flow control devices for taps and showers was undertaken, which resulted in a very high 40% participation rate. Guidelines are now in place to support ongoing water savings in these homes, which could be supported with incentives. The next step is to trial the incentive scheme to evaluate savings and cost-effectiveness.

A further 20 kilolitres a year could be saved through a retrofit of inefficient toilet suites.

Building Code of Australia 5 Star Plus - Phase 3

Phase 3 of the new Building Codes will investigate the possibilities for minimum water efficiency standards for existing homes as well as the requirement for a water efficiency audit and rating at the point of sale.

Lawn replacement program

About 100 kilolitres of water a year can be saved by replacing 100m^2 of well maintained turf with paving or synthetic grass. Alternatively, 50 kilolitres of water a year could be saved by replacing this area with a Waterwise garden. Homes may also benefit through lower costs and less maintenance by installing paving, synthetic grass or a Waterwise garden.

Guidelines can be established to determine what would qualify as turf and replacement materials, and an incentive paid to customers who participated. A trial project would be required.

More frequent billing

Customers' knowledge of their individual water consumption is currently limited to the advice they receive twice a year with bill. More frequent billing may assist customers relating to water use more directly when accompanied with practical tips on how to save water.

Leakage detection and repair

More investment in leakage detection and repair may help to save water when targeted in areas where the condition of pipes is likely to be deficient based on pipe type and age, frequency of leaks

and bursts and operational water pressure. Trial projects in selected areas using the latest technology could be used to assess the potential for these programs.

Winter sprinkler ban

The introduction of a total sprinkler ban over the winter months could be expected to result in estimated water saving of 1 – 3 gigalitres a year in Perth. Guidelines covering exemptions for new gardens and gardens under cover would need to be developed, and the measure could trialled over a one to two year period.

Pricing options

Currently the Government is phasing in changes to water prices by increasing volume charges while decreasing the fixed water charge. This does not increase overall revenues, but sends a stronger pricing signal to high water users.

Other changes that could be investigated are linking water tariffs to wastewater charges and introducing a 'Green Power' style scheme where customers may elect to pay a premium for water to invest in water efficiency and recycling projects.

Domestic water use study

Knowledge of the end use of water informs decisions regarding water saving and future water demand. Household end use is the major component of all Water Corporation water supply schemes.

A project has commenced in Perth to update a previous study to better understand current water use in the home. The project is scheduled for completion by December 2008.

Summary of programs, potential yields and costs

Program		**Assumptions**	
Retrofit - replacing inefficient showerheads, installing tap flow control devices, and fixing visible leaks		1.5 gigalitres a year - 100,000 households / 15 kilolitres a year saving	
Retrofit - replacing inefficient toilet suites		2 gigalitres a year - 100,000 households / 20 kilolitres a year saving	
Building Code of Australia 5 Star Plus – Phase 3		2 gigalitres a year - 100,000 households / 20 kilolitres a year saving	
Lawn replacement program – paving or synthetic turf		5 gigalitres a year - replace 100m^2 / 50,000 households / 100 kilolitres a year	
Lawn replacement – Waterwise garden		2.5 gigalitres a year - replace 100m^2 / 50,000 households / 50 kilolitres a year	
Quarterly billing		2.5 gigalitres a year	Not costed
Leakage detection and repair		2.5 gigalitres a year	
The Biggest Reducer		1 gigalitre a year	
sprinkler ban		1 – 3 gigalitres a year	

More Information

- Five star Plus building standards http://www.5starplus.wa.gov.au/premier/
- Water Corporation website for information on how to be waterwise http://www.watercorporation.com.au/W/waterwise_index.cfm?uid=0837-2686-2368-6916
- Other fact sheets on Waterwise homes, gardens and communities, Waterwise Schools, Waterwise businesses, Water Efficiency Measures, Rainwater tanks and Greywater reuse systems.
- National Guidelines for Residential Customer's Water Accounts 2006, available at http://www.awa.asn.au/AM/Template.cfm?Section=Customer_Water_Bill_Guidelines&Template=/CM/ContentDisplay.cfm&ContentID=5696

Key

Potential source yield (in 50 year planning horizon)

Potential cost (2007 $)

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