Water efficiency is smart use of the water we have

**It is estimated the Water Efficiency and Labelling Standards (WELS) scheme is saving over seven billion litres each year through certifying and labelling of water efficient appliances.**

By using water wisely, whether it comes from rivers and dams, desalination or water recycling initiatives, Sydney will have enough water to meet the needs of its growing population and the environment.

Through water efficiency programs we will save 145 billion litres of water a year by 2015, or equivalent to 24 percent of Sydney's current water needs*.

## Water efficiency

Over the past 20 years, the impact of Sydney's rapid population growth on the water supply system has been managed by reductions in demand per person. These reductions have been achieved through low cost, highly effective water efficiency measures, quarterly meter readings and use based pricing (introduced in 1990), as well as six years of drought restrictions. As a result, Sydney now uses the same amount of water as it did in the early 1970s, even though the number of people living in the region has increased by 1.4 million.

Since 1999 Sydney has reduced its annual demand for drinking water by over 100 billion litres a year through water efficiency. Maximising water efficiency is a key community planning principle and remains a major part of the *2010 Metropolitan Water Plan*.

Consistent with the *2006 Metropolitan Water Plan* and the *NSW State Plan*, water efficiency programs will save 145 billion litres a year by 2015 – that's 24 percent of Sydney's current water needs*.

*Based on the long-term average water use of 600 billion litres per year

## We all have a part to play

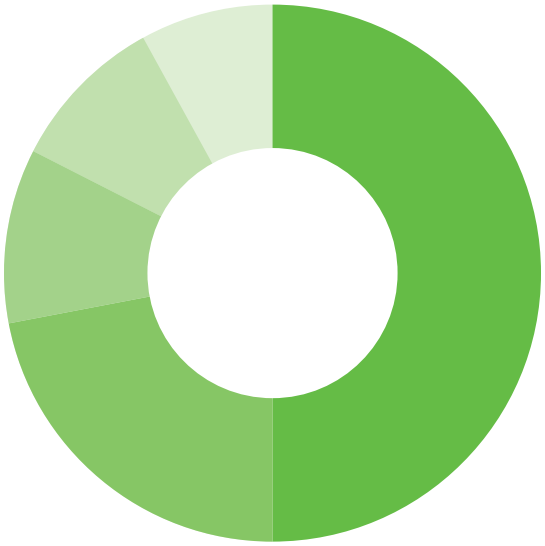
Household water use accounts for about 73 percent of water used in Sydney. But saving water is not just the responsibility of householders – business, industry, farmers and government all play a role. The community acknowledges this shared duty in the planning principle that government and community have joint responsibility for water management.

Millions of dollars have been invested in a range of water efficiency programs and initiatives targeting each sector.

Growth in savings from water efficiency programs will level out over time. This is because using water wisely is becoming normal behaviour and old appliances and fixtures have largely been replaced with water efficient models. While identifying areas for increasing water efficiency savings will become more difficult, new programs will continue to be developed and introduced wherever they are cost effective.

"I have been so cautious and efficient for so long it's now habit. I value the resource because it's precious, scarce and finite."

***Community comment, Consultation workshop 2009***



**Drinking water consumption by sector**

- Residential single dwelling 51%
- Residential multi-unit 22%
- Commercial 10%
- Industrial 9%
- Government and other (including agriculture) 8%

## Residential water savings

With households using such a large proportion of water in greater Sydney, residential water efficiency programs will continue to play a vital role in saving water inside and outside the home. Current programs are saving almost 20 billion litres (or 3.5 percent) of drinking water a year compared to 1999. This is a saving of around 12 litres a day for every person.

Current residential water efficiency programs offered by Sydney Water include:

- WaterFix – from only $22 a qualified plumber installs water saving devices in the home
- Do It Yourself (DIY) Water Saving Kits – an alternative to WaterFix providing water saving devices that people can install themselves
- Toilet Replacement Service – replacing single flush toilets with 4 star dual flush models saving customers up to $370 on the cost of the toilet and installation
- Rebates – offering rebates for the purchase of rainwater tanks
- Outdoor water conservation – an ongoing campaign to encourage and educate the community on practical ways they can save water, for example, Water Wise Rules (see page 43).

Detail about Sydney Water's rebates can be found at www.sydneywater.com.au/Water4Life/InYourHome/.

Some of these programs are reaching their full potential in water savings and will begin to be phased out. However, ongoing water savings in residential households will be realised through two main initiatives: the national Water Efficiency and Labelling Standards (WELS) scheme and the Building Sustainability Index (BASIX).

The WELS scheme enforces mandatory ratings and labelling for a range of appliances and fittings and develops minimum performance standards for products. As new water efficiency appliances and fittings are released to retailers, customers are encouraged to purchase new and efficient appliances and fittings when their existing inefficient ones break down. It is estimated that WELS saves over seven billion litres of water each year through the rating and labelling of water efficient products.

The BASIX program applies to new homes that are built in New South Wales. BASIX is a planning policy that ensures new residential properties are designed to use less drinking water. BASIX also applies for alterations and additions in existing homes. As new homes are built or existing ones are modified, households are required to meet certain requirements to ensure drinking water savings are achieved, for example, installing a rainwater tank. It is estimated that BASIX is saving almost six billion litres each year by increasing the water efficiency of new homes and homes with additions and alterations.

**More than 310 schools in greater Sydney are saving over 241 million litres of water each year.**

Alternative ways for households to save water will continue to be investigated. Research and development programs that are currently taking place include:

- monitoring study to measure the long-term water and energy performance of rainwater tanks with the aim of identifying potential improvements
- trialling the use of smart metering technology which will provide customers with real time information about their water use through an in-home display
- working with Energy Australia on a Smart Home which showcases both current best practices and the home of tomorrow for water and energy saving technologies
- collecting data on water end uses in the home (such as toilet flushing, clothes washing and showering) to better forecast demand and target future water efficiency programs
- investigating the options of setting up a Valuing Water Framework approach that may be used to develop future community education programs and to evaluate and improve existing ones.

Some households in greater Sydney also use water drawn direct from rivers, streams and aquifers under domestic and stock rights. Such water use can help in reducing the demand for drinking water. The Government is developing *Reasonable Use Guidelines* to ensure that the quantity of water used under this right is appropriate. A draft of the guidelines has been completed will be publicly exhibited for comment.

## Schools water savings

Schools account for one percent of water used in greater Sydney (about six billion litres a year). Two programs currently target schools: the Every Drop Counts in Schools program and the Rainwater Tank in Schools Rebate. Over 310 schools have participated in the programs and received rebates, saving over 241 million litres of water each year.

### Virtual home helps make actual savings – in water and money

Sydney Water has developed an online tool to promote water efficient behaviours in the home, helping householders save water, energy and money.

As a result of the many water efficiency programs that have already been implemented, residents of greater Sydney are saving over 100 billion litres of drinking water each year through water wise behaviour.

Drought restrictions were lifted in 2009, but sensible water use practices adopted during the drought are being maintained under the Water Wise Rules (see page 43) and encouraged in other ways. To help, an online water efficient home is available on Sydney Water's website (www.sydneywater.com.au).

The interactive tool takes the viewer through each area in the house and garden providing information on Water Wise Rules and promoting available rebates and appliances that can help save water. For instance, in the garden if the viewer positions their cursor over the car, the Water Wise Rule will appear 'washing vehicles is allowed, but if possible, park on the lawn'.


The tool also calculates how much water and money the viewer can save by being water wise; so if they click on the shower button, a box will appear detailing the 'WaterFix' program and how much water and money they could save each year if they take part in the program. A tally of water and money saved and details of the selected programs is provided for the viewer to download.

### Business water savings

Business and industry water use accounts for 20 percent of water used in greater Sydney. Business water efficiency programs running since 2001 are saving over 24 billion litres of water each year.

The business water efficiency program includes:

- Every Drop Counts in Business – working with businesses in greater Sydney to help them cut water use and business costs. Working one-to-one with large water users (those using more than 80,000 litres each day), and helping smaller businesses through targeted programs
- BizFix – retrofitting service to install water efficient devices in business, for example, taps, toilets, and showers
- Online Monitoring Program – online water meter monitoring service for the highest water using businesses.

Information about these programs can be found on Sydney Water's website at www.sydneywater.com.au/Water4Life/InYourBusiness/.

Apart from these projects, we will also work towards setting up benchmarks for water use in businesses and develop best practice guidelines targeting all sectors.

To further help businesses save water, the NSW Climate Change Fund provides funding to commercial and industrial businesses for water and energy saving projects.

**Almost 420 large water using businesses have joined the voluntary Every Drop Counts Business Program saving around 17 billion litres of water a year.**

## Minimising water lost through leaks

Like all water pipe networks around the world, Sydney's water distribution system has breaks and leaks. Leaks are caused by deterioration of joints and fittings, and by cracks in the pipes caused by ground movement or pressure changes.

Sydney Water is responsible for maintaining the systems that deliver water to the people of greater Sydney. Leak detection and repair is a major priority for Sydney Water, and in 2009–10 water lost through leakage was impressively low and in the top performance band for leakage according to international standards.

Sydney Water's leak reduction programs use the latest methods and technologies to detect and repair hidden leaks and reduce the amount of water lost.

With Sydney Water now investing over $100 million each year, water lost through leakage has been reduced by around 30 billion litres each year since the program began (that's enough to supply 150,000 average households). This has been achieved through:

- actively detecting and repairing leaks
- reducing pressure in the pipes
- improving response times to main breaks
- placing meters on the pipe system to detect leaks.

For example, in 2009–10 Sydney Water inspected 21,000 km of pipes – laid end to end that's the distance from Sydney to Los Angeles and back. During the year, 100 kilometres of water mains were replaced.

**Sydney Water's leak reduction programs are estimated to be saving 30 billion litres each year.**

**The WaterSmart Farms program is helping farmers improve their water efficiency and reduce nutrient run-off.**

## Government water savings

Although only about four percent of greater Sydney's total water use is by government facilities, it is vital that government leads by example. The *NSW Government Sustainability Policy* sets targets and strategies for government agencies to reduce their water use by 15 percent by 2011.

Thirty four government agency sites and 44 local councils have completed Water Savings Action Plans to promote and achieve water wise use. These include 19 hospitals, five prisons and four education facilities. Cost effective actions identified in the plans will save more than 1.7 billion litres of drinking water.

## Water efficiency on farms

Sydney farmers produce a wide range of fresh produce for local consumption. Crops such as field and greenhouse vegetables, dairy products, flowers, turf and fruit trees have an estimated farm gate value of at least $450 million and provide significant employment benefits.

The WaterSmart Farms program incorporates education, training and community awareness activities to assist farmers in the lower Hawkesbury-Nepean catchment area to improve their water efficiency and reduce nutrient runoff.

The program is part of the Hawkesbury-Nepean River Recovery Program and receives funding through the Australian Government's Water for the Future program and the NSW Government's Climate Change Fund.

By improving water efficiency on farms it is possible to improve river health, save money and help reduce pressure on drinking water supplies.

"Water use efficiency should be maximised across all sectors irrespective of the level of water storage. This will work to preserve the economic efficiency of supply side investment and will minimise the need for restriction."

***Community comment, Consultation workshop 2009***

## Smart water use becomes our way of life – Water Wise Rules

In addition to the water efficiency programs described above, Water Wise Rules introduced in June 2009 continue to build on the water saving behaviours the people of greater Sydney adopted during the drought.

In 2007, the government announced long-term water saving rules would be introduced once drought restrictions were lifted. Water Wise Rules came into effect once the total dam storage level had remained steady at around 60 percent for 12 months and drought restrictions were lifted.

Water Wise Rules are simple, common sense actions that apply to everyone using drinking water in greater Sydney including residents, businesses, local councils and government agencies. They are:

- all hoses must now have a trigger nozzle
- to avoid the heat of the day, watering is allowed before 10am and after 4pm
- no hosing of hard surfaces such as paths and driveways
- washing vehicles is allowed
- fire hoses must only be used for fire fighting activities.

By improving the efficiency of outdoor water use – not just during drought – we can make better use of our available water supplies. Drought restrictions will continue to be applied as needed in the future to reduce pressure on supplies during drought periods (see Chapter 8).

Water Wise Rules will save an estimated 19 billion litres of drinking water each year. However, current overall water savings since the introduction of Water Wise Rules in mid 2009 are greater than this because people have kept up their water wise behaviours established during the drought.

### Keeping our parks, ovals and open spaces green

Before 2003, at least 4.3 billion litres of Sydney's drinking water was being used to irrigate parks, ovals and open spaces each year.

A number of different water sources are now replacing drinking water for irrigation including recycling, stormwater reuse, greywater recycling, sewer mining and rainwater capture. Now, one billion litres of recycled water a year is being used for urban irrigation, saving our drinking water for drinking.

There are also water efficiency programs available to ensure that whatever the source of water being used for irrigation, it is being used as efficiently as possible. The Irrigation and Landscape Efficiency Project run by Sydney Water under the Hawkesbury-Nepean River Recovery Program aims to save 1.06 billion litres a year of drinking water. This will be achieved by using improved technology, land and site management practices.

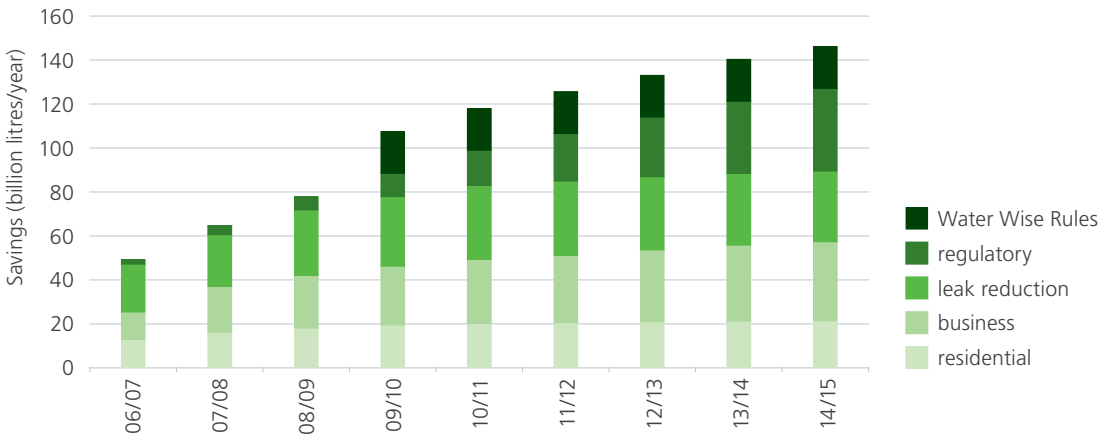
Sydney Water is also working with a panel of experts to develop a set of industry guidelines to promote best practice for irrigating parks, ovals and open spaces. It will be a practical guide to the sustainable management of open space turf areas, which includes everything from Stadium Australia to the local neighbourhood park. The guidelines aim to balance various aspects of open space management to achieve the best turf performance all year round.

**Stormwater reuse is just one of the many water sources now replacing drinking water for irrigation, helping keep sporting fields like Lindfield Oval green and safe.**

## Our major achievements

- Since the inception of the programs, rebates for over 56,000 rainwater tanks and 186,000 water efficient washing machines have been paid, totalling almost $50 million and saving 5.4 billion litres of water each year.
- Since 2008, nearly 21,000 dual flush toilets have been installed saving 452 million litres a year.
- 477,000 homes have received a WaterFix since 2000 and nearly 210,000 free Do-it-yourself Water Saving Kits have been given away, saving 10 billion litres and 786 million litres a year respectively.
- Since 2007, over 23,000 households took part in Sydney Water's Love Your Garden program, helping them use water wisely in their gardens and saving about 174 million litres a year.
- The Home Water Action Program has been delivered to over 2,600 people from culturally diverse communities, helping save millions of litres of water (see page 48).
- Almost 420 large water using businesses have joined the voluntary Every Drop Counts Business Program saving around 17 billion litres of water a year.
- Nearly 80 smaller water using businesses have also taken advantage of the Every Drop Counts Business Program saving almost 260 million litres of water each year.
- The Smart Rinse program has installed over 4,200 smart rinse valves in restaurants and cafes saving over one billion litres of water a year.
- 162 large water using businesses have connected to Sydney Water's online monitoring system saving 247 million litres of water a year.
- 106 businesses have taken part in the BizFix amenities retrofit service saving 349 million litres of water a year.
- The NSW Green Business Program has provided funding to seven commercial and industrial water saving projects saving around 100 million litres a year.
- Water Savings Action Plans have been developed for large water using businesses, 34 government agency sites and 44 local councils, identifying cost effective actions to save water.
- Over 310 schools have completed the Every Drop Counts in Schools Program and received rainwater tank rebates.
- WaterSmart Farms program launched in 2009 comprises several projects to help farmers improve water efficiency while maximising their yields. Projects include training events, some with a specific non-English speaking background focus, and water efficiency irrigation, which is a combined training and incentive program.
- The *Draft Reasonable Use Guidelines* for domestic and stock rights water are being finalised and will be publicly exhibited for comment.
- The *NSW Government Sustainability Policy* was released in 2008, which includes targets and strategies for the NSW Government to improve its water efficiency.
- Sydney Water's leak reduction programs are estimated to be saving around 30 billion litres each year through investing $100 million and inspecting more than 20,000 kilometres of pipes annually.
- Water Wise Rules have saved an estimated 19 billion litres of drinking water since being introduced in June 2009.

**Water efficiency programs: saving 145 billion litres a year by 2015**



## What's next

- Water efficiency programs now in place will achieve savings of 145 billion litres a year by 2015. Beyond this, we will continue to implement programs where there are still savings to be made and investigate new ways to improve water efficiency in households, businesses, government, schools and farms.
- Continue to improve water efficiency in households using sensible regulatory tools, for example, through proposals to expand the Water Efficiency Labelling and Standards (WELS) scheme.
- Carry out a study to measure the long-term water and energy performance of rainwater tanks with the aim of identifying potential improvements.
- Trial the use of smart metering technology which will provide households with real time information about their water use through an in-home display.
- Work with Energy Australia to develop a Smart Home to showcase best practice and the latest water and energy saving technologies.
- Collect data on specific water uses in the home (such as toilet flushing, clothes washing and showering) to better forecast demand and target future water efficiency programs.
- Focus the Every Drop Counts Business Program on targeting small to medium water using businesses.
- Continue existing programs to save water from outdoor residential use, businesses, schools and councils.
- Continue to research and monitor global industry directions to ensure that innovations are trialled and incorporated into water efficiency programs.
- Continue to implement the Water for Life *Water Education Plan for greater Sydney 2008–2012*.
- Monitor and analyse the longer-term water savings from the pilot WaterSmart program with a view to expanding the program in the future if initial savings are sustained.
- Continue to implement the WaterSmart Farms program.
- Finalise and implement the *Reasonable Use Guidelines* for domestic and stock basic water rights.
- Investigate setting up a framework to help develop future community education programs and to evaluate and improve existing ones.