

2. Using water efficiently





The region's population is expected to grow from 6.2 million people to more than 10 million people by 2056, increasing the demand for drinking water and water for household use (DELWP 2019b). The wetter-than-average conditions in 2021, annual desalination orders, and ongoing water efficiency measures have meant that water supplies are secure in the short-term however climate conditions can change quickly, and we need to prepare for a future with longer, drier periods and less reliable rainfall. Small water savings can accumulate to make a big impact on the region's long-term water supplies.

2.1 By saving a little, we can all save a lot

Victorians have a strong track record of saving water, achieving large reductions in water use during the Millennium Drought and maintaining those savings in recent years. During periods of drought, Victorians have embraced voluntary campaigns such as Melbourne's Target 155 campaign and the regional campaign Target Your Water Use (see [Figure 2.1](#)). Since 2001, residential water use in Melbourne has dropped by a third (Melbourne Water et al. 2020) and Geelong uses less water today than in the early 1980s, despite doubling its population.

Using less water has many benefits in both wet and dry years. In the short-term, water efficiency initiatives can help to defer and reduce the number of future water supply infrastructure investments required, by easing the demand on drinking water supplies, largely from river water. For households

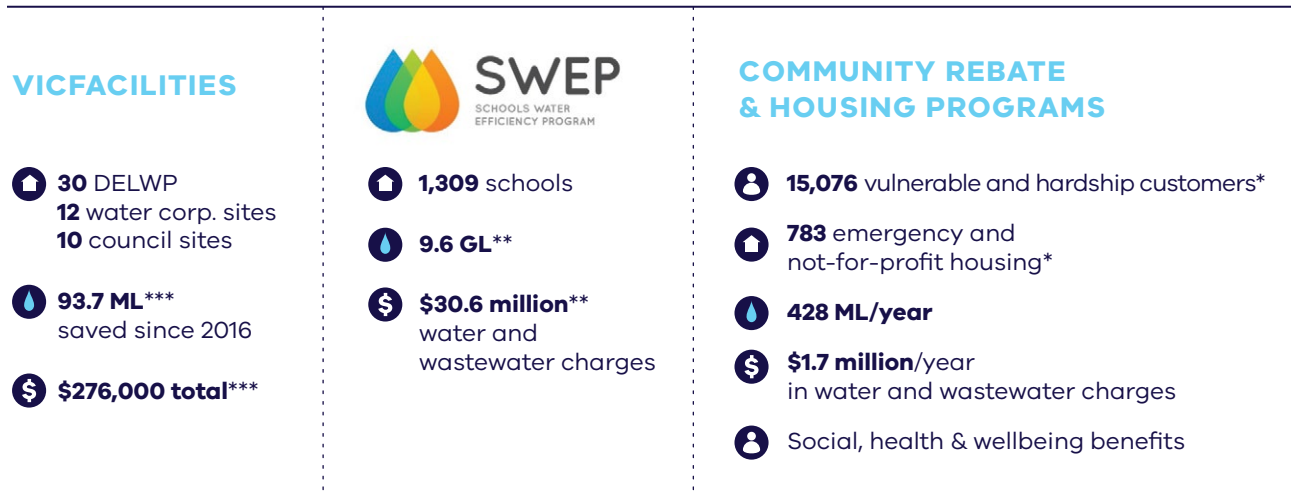
and businesses, reducing water use helps to lower water and energy bills (from hot water use). By using water more efficiently, we can also reduce the amount of wastewater we need to treat and leave more water in storages, rivers and aquifers to support other water uses and values. Water efficiency on farms and in irrigation districts is discussed in [Chapter 7](#).

Efficient water use is the most cost-effective way to manage growing water demands, but the water-saving behaviours and gains already in place mean that the potential for further savings is diminishing. Water efficiency measures will continue to help reduce demand and can help us to meet our future water needs in combination with new water supply options. To meet our future water needs, the region must increase its use of manufactured water (desalinated water, fit-for-purpose recycled water and treated stormwater). This will also help us to manage the impacts of drought, bushfires and more variable weather conditions (see [Chapter 3](#)).

VICTORIA'S CURRENT WATER EFFICIENCY PROGRAM

Since 2001, Melburnians have reduced their use by 36%, down from 247 litres per person per day to 159 litres per person per day in 2020-21. For a population of 5 million, this saves 163 GL/year, which is more than the capacity Victorian Desalination Plant.

TARGET
155



*since 2015/16, 13,613 vulnerable customers outside emergency and not-for-profit housing.

**total since 2012.

*** In water and wastewater charges – DELWP sites.

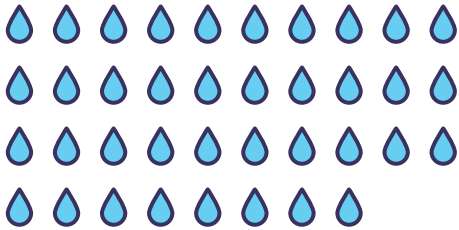
Figure 2.1: Key components of the Victorian Government's current Water Efficiency Program

Policy 2-1:

Promotion and investment in water efficiency

Promotion and investment in water efficiency across all users are foundational elements of water management to enable all users to contribute to securing the region's water supplies.

WE WILL CONTINUE TO SUPPORT THE URBAN WATER SECTOR, HOUSEHOLDS AND BUSINESSES TO FIND COST-EFFECTIVE WAYS TO USE WATER MORE EFFICIENTLY.



These initiatives combined will save

up to 38 GL

per year across the Central and Gippsland Region by 2030, including:



up to 2 GL

a year through improved irrigation efficiency (2 GL) for public open spaces (Action 3-8)

up to 22 GL

a year through stronger building and plumbing controls for more efficient showers, toilets, and taps (11.1 GL) and greater use of rainwater tanks (10.5 GL) (Action 2-2)

up to 3 GL

a year through a residential 4 or 5-star showerhead exchange (Action 2-4)

up to 2 GL

a year through targets to reduce urban water system leaks (Action 2-8)



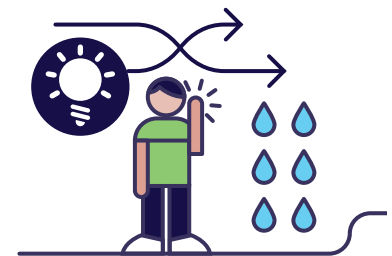
up to 2 GL

a year by continuing the Community Rebate and Housing Retrofit programs (0.4 GL) and by continuing and expanding the Schools Water Efficiency Program, or similar programs, to all government schools in the region (1.6 GL) (Action 2-5 and Action 2-6)



up to 1 GL

a year through a non-residential fixture rebate program (with higher savings achieved by expanding to other assets, such as cooling towers) (Action 2-7)



up to 6 GL

a year through behaviour change campaigns (Action 2-1)

Figure 2.2: Supporting the urban water sector, households and businesses to find cost effective ways to use water more efficiently

2.2 Water efficiency at home

Our plan:

- increase community awareness of water supply demands and challenges and promote simple ways to reduce water use at home

Changing behaviours at home

Households are responsible for about two-thirds of the water used in cities and towns in the region. As our population grows, and climate change makes rainfall less reliable, we all need to continue to find ways to save water at home. More than half of Melbourne's water customers preferred to make changes at home rather than pay higher water bills, when surveyed in 2017 Melbourne Urban Water Strategy consultation.

Following the Millennium Drought, residential drinking water use in Melbourne decreased from 247 litres per person per day in 2000–01 to 159 litres per person per day in 2008–09. However, as the Millennium Drought recedes from memory, community awareness of the need for water efficiency is declining. For example, residential water use in Melbourne has plateaued, with an average of 159 litres per person per day in 2020–21 and sales of relatively inefficient 3-star washing machines have increased (Institute for Sustainable Futures 2018). There are many ways that we can reduce our water use without reducing our quality of life, such as using

more efficient fixtures and appliances, watering our gardens more efficiently or installing rainwater tanks for garden irrigation.

In 2019–20, the Make Every Drop Count campaign encouraged people to limit their water use to 155 litres per person per day (Target 155). Equipped with better data, we now have an opportunity to refine behaviour-change programs to focus on those water uses that will bring the greatest savings. We will work with urban water corporations to develop new campaigns that help people continue to reduce their water usage at home. This includes using smart technology, such as digital water meters, to track water use and make simple and cost-effective changes at home.

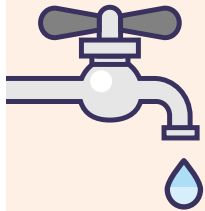
New daily water use targets

While average residential water use in Melbourne was 159 litres per person per day in 2020–21, many residents are using less. In a recent survey, 54 per cent of sampled households in Melbourne were using less than 150 litres per person per day (**Figure 2.3**). In light of this, we are changing Melbourne's average per capita water use target from 155 to 150 litres per person per day. Similarly, water corporations will explore per person water use targets for regional areas that allow for geographical differences through their urban water strategies. Performance against all targets will be published in water corporation annual reports.



REDUCING PER CAPITA CONSUMPTION HAS SIGNIFICANT WATER SECURITY IMPLICATIONS. FOR EXAMPLE, WE COULD SAVE:

MELBOURNE

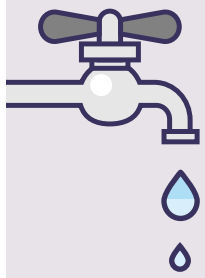


Reducing residential per capita water use from 159 L/day to 150 L/day which is **one bucket a day**

SAVES →



REGIONAL CITIES AND TOWNS



Reducing residential per capita water use from 188 L/day to 181 L/day which is **less than a bucket a day**

SAVES →



*approximate figures based on 2019–20 demand

Figure 2.3: The significant water security implications from reducing per capita consumption

Action 2-1: Changing behaviours at home

Urban water corporations, in partnership with the Victorian Government, will help people change water behaviours at home by:

- setting a new aspirational average water use target for Melbourne of 150 litres per person per day, with regional water corporations setting equivalent per capita targets reflective of local conditions
- developing and investing in water efficiency behaviour-change campaigns targeting residential users likely to generate the greatest water savings
- using new technologies, such as apps and digital water meters that provide daily usage data, to encourage behaviour change.



By 2024

Water-efficient buildings and rainwater tanks

In urban areas, rainwater captured in rainwater tanks can be used in homes and businesses for a range of uses such as flushing toilets, watering gardens and washing clothes, helping to save valuable drinking water supplies. The availability of rainwater depends on the amount of rain, tank size, number of connections (such as toilets) and area of roof harvested, as well as the number of tanks installed and operating effectively at any given time.

In 2018, an estimated 6.5 gigalitres of rainwater was captured in Greater Melbourne by residential buildings (5.3 gigalitres), and commercial and industrial premises (1.2 gigalitres). Rainwater use is generally higher in recently built homes that have tanks connected for both internal and external use and in properties without potable water access in peri-urban areas. Even with less rainfall, there is an opportunity to increase the overall volume of rainwater we use through greater uptake of properly installed and maintained rainwater tanks. Increasing the use of rainwater tanks also reduces harmful urban stormwater impacts, by reducing the amount

of stormwater that flows into waterways and bays from the urban drainage system. Other actions to reduce the impact of stormwater are discussed in **Chapter 3**.

Fixtures that use water such as showerheads, toilets and taps have become much more water efficient, without detrimental impacts on useability. While more efficient fixtures are sometimes more expensive, they save a lot of water (and for taps and showers they save energy too from reduced hot water use) which means there is a relatively rapid return on this investment. For example, the additional cost of purchasing a 4 or 5-star showerhead (instead of a 3-star showerhead) will be paid back within two years.

Building and plumbing controls

Although individuals in established homes may install a rainwater tank as a personal choice, a Victorian variation to the 2019 National Construction Code (NCC) for efficiency requires all new freestanding homes and townhouses to install either a rainwater tank or a solar hot water system. Of these properties, approximately one-third of new homes currently choose to install tanks.

This variation will likely cease due to proposed national updates to energy efficiency standards that will supersede the energy component of this variation. In its place, we will implement new Victorian variations for water efficiency in the 2022 version of the NCC. These variations, for both rainwater tanks and water-efficient fixtures, will ensure that Victorian water efficiency requirements remain visible to practitioners through the NCC.

In addition, we will investigate the cost and benefits of new Victorian regulations to:

- improve and extend current rainwater tank requirements
- introduce higher water efficient fixture standards for all buildings.

A regulatory impact statement will be prepared to test and consult on these potential changes to state regulations, which would complement the NCC variations.

Regular maintenance is needed for tanks to function correctly, so ways to improve the maintenance and functionality of tanks will also be assessed to help increase water efficiency and support implementation of any future tank requirements.

Action 2-2: Water-efficient buildings

The Victorian Government proposes to implement new variations to the National Construction Code, and stronger state building and plumbing regulations for water efficiency, to improve the water efficiency of all buildings, subject to a regulatory impact statement and stakeholder and community consultation.



By 2024

Action 2-3: Better information and standards for appliances

The Victorian Government will advocate for stronger minimum Water Efficiency Labelling and Standards (WELS) scheme ratings for appliances and fixtures, and will collaborate with water corporations to increase awareness of WELS ratings and minimum standards in Victoria.



Ongoing

Better information and standards for appliances

Water efficiency labels and ratings for appliances are set nationally, through the Water Efficiency Labelling and Standards (WELS) scheme, and help consumers make informed choices about the water-using products they are buying. While most appliances and fixtures display water efficiency rating labels, or provide this information online, currently only washing machines and toilets have minimum water efficiency standards that must be met at the point of sale. However, minimum WELS standards for showers, taps, dishwashers (all 3-star) and urinals (2-star) are being considered, including changing the minimum standard for toilets from 1-star to 3-star, to align with NCC water efficiency requirements.

Applying minimum standards to a wider range of products would prevent the sale of inefficient products. It would also ensure the sale of more water efficient products and the replacement of old appliances with more efficient models. In the longer-term, this would encourage innovation and reduce the cost of the more efficient products (by increasing their sales and range), while phasing out inefficient products.

Showerhead replacement

About 40 per cent of all water used in the home is used in the bathroom. Replacing an inefficient showerhead is a cost-effective and simple way to reduce water and energy use and save money on household bills. Replacing a very inefficient showerhead (1-star or 2-star) with a 4-star showerhead can save a family of four around \$315 per year in water bills, plus significant energy savings.

Discounts on low flow (6.0-7.5 L/min) water-efficient showerheads are already offered through the Victorian Energy Upgrades program. Between September 2006 and May 2010, 390,000 showerheads were exchanged under the Melbourne Showerhead exchange program, and savings were estimated to be in the order of 12.7 gigalitres per year. To encourage even more people to replace their ineffective showerheads, we will investigate options to extend this program, such as offering free installation.

Action 2-4: Showerhead replacement

The Victorian Government will develop a business case to expand statewide incentives for water-efficient showerheads and implement initiatives. This could include incentives for even more efficient showerheads or offering free installation.



By 2025

Since July 2015, the Community Rebate and Community Retrofit programs have assisted 15,859 water customers, saving more than 428 megalitres of water a year. This equates to total annual bill savings of \$1.7 million or approximately \$90 per customer, or \$435 per social housing property.

Action 2-5: Community rebates and community housing retrofits

Urban water corporations will continue to support customers who are vulnerable or experiencing hardship to become more water efficient and reduce their water bills through the Community Rebate and Community Housing Retrofit programs.



Ongoing

Assistance for customers who are vulnerable or experiencing hardship

Victorian urban water corporations offer rebates for customers who are vulnerable or experiencing hardship to upgrade and fix water-using fixtures and appliances, and fix leaks, to increase water efficiency. The Community Rebate Program targets low-income and vulnerable water customers by improving the water efficiency of their homes, leading to lower water bills and increased wellbeing. The Community Housing Retrofit Program assists not-for-profit organisations providing housing for individuals or families in a vulnerable or hardship situation.



2.3 Water efficiency in schools, businesses and industry

Our plan:

- help schools, businesses and industry to monitor and reduce their water usage through targets and incentives

Waterwise schools

The Schools Water Efficiency Program helps students to learn about water efficiency and track the school's water use online, including by detecting leaks. An ongoing review of the program (at the end of each school term) shows that about 28 per cent of water used by schools is due to leaks and unnecessary usage. Since 2012, more than 1,309 Victorian schools (more than 50 per cent of all Victorian schools) have signed up to the program, saving a total of 9.6 gigalitres that would have cost more than \$30.6 million in water and wastewater charges up to December 2021.

To encourage more schools to be waterwise, the Schools Water Efficiency Program, or other similar digital metering and education programs, will be expanded to all government schools in the Central and Gippsland Region by 2030. Non-government schools will also be strongly encouraged to participate.

Action 2-6: Waterwise schools

The Victorian Government, in collaboration with water corporations, will ensure that all government schools in the Central and Gippsland Region become waterwise, by participating in the Schools Water Efficiency Program (including use of school curriculum material) or other similar digital metering and education programs, by 2030, with a mid-term target of capturing 80 per cent of government schools by the end of 2026.



By 2030

(with a mid-term target of 80% by end 2026)



Image: Children watering school vegetable garden, Brunswick Primary School, Wurundjeri Woi-wurrung Country

Maximising water efficiency in business and industry

Non-residential customers – including businesses, industry and institutions – account for 28 per cent of water used in cities and towns across the Central and Gippsland Region, and are becoming increasingly water efficient. In Melbourne during the Millennium Drought, non-residential water customers collectively reduced their water consumption by almost 20 per cent, making a significant impact on the state of the region's water storages (DELWP 2020b).

New programs will be developed to target the non-residential water users most likely to generate the greatest water savings, to encourage them to continue using water more efficiently and to actively involve them in achieving long-term water security for the region. These programs could use digital meters and water usage benchmarking to help these customers better understand and lower their water use.

Action 2-7: Maximising water efficiency in business and industry

Urban water corporations, in partnership with the Victorian Government, will implement a targeted non-residential water efficiency program, including investigating the merits of:

- benchmarking water usage across business and industry
- re-introducing Water Management Action Plans (a tool used successfully during the Millennium Drought)
- rebates for digital water meters (for large water users not captured by other programs) or other water efficiency upgrades.



By 2025

Targets for reducing urban water system leaks

Australia has among the lowest levels of water system leakage in the world, but 10 per cent of Australia's drinking water is lost to leaks every day (WSAA 2019). In the Central and Gippsland Region, system losses account for approximately 8 per cent. Over the past 10 years, there have been significant advancements in leak identification methods, often involving the use of electronic monitoring, including digital metering. Reducing leaks across the urban water network can save large quantities of water and money. For example, Central Highlands Water reduced system losses (mainly through leakage reduction) from as much as 20 per cent in the early 2000s to just 10–11 per cent in 2017, saving 1.3 to 1.5 gigalitres per year.

To encourage further water savings, urban water corporations will set individual targets for leakage reduction (where possible), that look beyond the costs and benefits to their businesses and consider broader social and environmental costs and benefits. Targets will vary, because the costs and benefits of reducing leaks across different water supply systems are dependent on local conditions and system characteristics, such as the age of supply system infrastructure.

Action 2-8: Targets for reducing urban water system leaks

Urban water corporations will

- set targets (where possible) for managing distribution system leaks and losses, which consider the broader social and environmental costs and benefits
- work with the Essential Services Commission, Bureau of Meteorology and Water Services Association of Australia to review annual leakage reporting and increase transparency and benchmarking of leakage performance.



By 2025



Image: Hose watering garden, Erica rural property, Gunaikurnai Country