

Saving Water: Make it Your Business Amenities

Water use in public and staff amenities can account for 15% to 40% of your total water usage depending on the business activity. Often the volume of water used by toilets, showers and basins are overlooked making this area an easy target for water savings. The installation of water efficient devices in heavily used public areas can be very cost effective.

For example a full flush toilet uses about 11 litres per flush compared to a dual flush toilet which can reduce each full flush to 4.5 litres and each half flush to 3 litres. If you have 100 users on a daily basis this could save up to 1100,000 litres annually.

Appliance type	Best practice flow rate	Non water saving fixture	Water savings per person (kL/yr)	Water savings (\$/person/yr)
Toilet	4.5/3 dual flush (avg 3.3L/flush)	11L/flush	11	\$30.25
Hand Basin	4.5 L/minute	18 L/minute	20	\$55.00
Shower (10 min)	7 L/minute	18 L/minute	40	\$110.00
Shower (4 min)	7 L/minute	18 L/minute	16	\$44.00

* Calculation of water cost is based on 2010/11 second tier commercial water pricing of \$2.75per kL

Toilets

Single/dual flush systems

These are the most common of all systems and rely on gravity to flush water through the system. These systems have improved flush volumes over the years. Generally the most common in commercial facilities are:

- Single flush – 11litres/flush
- Dual flush – 6 litres per full flush and 3 litres per half flush (6/3)
- Dual flush – 4.5 litres per full flush and 3 litres per half flush (4.5/3)

Potential water saving opportunities - equipment modification and maintenance

- Reduce single flush volumes by modifying the float arm. Successful modification can reduce single flush volumes from 11 litres to 9 litres per flush.
- Upgrade older cisterns to the most efficient 4 star WELS 4.5/3 litre dual flush models. This will produce the most significant water savings. If you replace the cistern, ensure that the pan is suitable for use with lower flow rates of the cistern you are installing, or install a complete matching suite.
- Cistern seal rubbers should be replaced approximately every two years before leakage occurs. Detection of a leak is often difficult and the best method is to add a small volume of blue dye to the cistern, avoid flushing then check the back of the pan after an hour for traces of the dye.
- Ensure units are inspected for leaks at least every month and task daily cleaners with reporting any obvious leaks.
- Ensure that the toilet is not used as a rubbish bin. High volumes of water are wasted when toilets are used to dispose of general waste. This behaviour may also potentially lead to blockages.

Further information

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Flushometer systems

Flushometer systems use water pressure controlled by a valve to produce a flush into a toilet bowl fixture. Due to variance in pressure and the nature of the flush controller, these systems can use 13 litres or more per flush.

Potential water saving opportunities - equipment modification and maintenance

- Ensure units are inspected for leaks at least every month and task daily cleaners with reporting any obvious leaks.
- Flush volumes can be reduced by up to 30% with the installation of flow control regulators (use a licensed plumber).
- Replacing these systems with efficient 4.5/3 litre dual flush systems will produce the most water efficient solution.
- Seal rubbers should be replaced approximately every two years before leakage occurs.
- Periodically replace valves and ball valves.
- For automatic flush systems, check the timing of cycles and volumes, sensitivity of operation and ensure they are appropriate for your building's operating hours.

Urinals

Some urinals can waste a lot of water, especially those with cyclic flushing cisterns. **Single stall, manual flush urinals are the most efficient as they only require water to cleanse the contaminated area.** Waterless urinals are also a water efficient alternative.

Potential water saving opportunities - equipment modifications and maintenance

- Urinals that flush on sensors or timers can be very inefficient if set incorrectly. If using a sensor or timed flushing system ensure they service the minimum number of urinals and contain smart technology (e.g. count the number of users per flush or have a sensor configured that can only be activated by the close proximity of the user). Individual sensor flush units should be considered and the sensitivity set to minimise flushing where possible.
- Flushing devices/cisterns should be monitored daily and sealing rubbers replaced approximately every two years before leaks occur.
- Waterless urinals are a water efficient alternative.

Before installing waterless systems

- Consult a licensed plumber to assess your plumbing, refer to the Plumbing Installation Standard AS/NZS 3500.
- Assess aesthetic and health issues.
- Ensure the system is suitable for installation in your business.
- Consider ongoing chemical and maintenance costs.
- Educate users and cleaning staff to ensure the system is used correctly.
- Install signage promoting the efficient use of waterless technology.



Single stall waterless urinal

Showers

Adopt water saving practices

- Encourage customers and staff to take shorter showers. Aim for four minutes or less, remind customers by using SA Water water wise stickers, shower hangers and basin cards. Educational material is available from SA Water's Business Sustainability Group. Encourage users to report leaks and ensure rectification works take place.

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Potential water saving opportunities - equipment modifications and maintenance

- Reduce flow rates by installing flow restriction devices inside the shower head.
- Consider isolating the mains supply to large shower blocks and limiting the pressure to reduce flow.
- Replace shower heads with at least a WELS 3 star rated (9 litres per minute) water efficient shower head.
Note: Water efficient shower heads are mainly designed for storage hot water systems. The reduced flow rate from these devices may be inadequate to activate instantaneous hot water systems.
- Consider installing push button showers which deliver a set quantity of water for a specific time period when operated.

Taps and hand wash basins

Adopt water saving practices

- Encourage staff and customers to turn taps off when not in use.
- Use educational signage to encourage users to reduce the amount of water used for hand washing and other activities.
- Encourage staff to proactively report leaks and repair leaks quickly.

Potential water saving opportunities - equipment modifications and maintenance

- Tap flow rates can be reduced by fitting aerators or flow restrictors*. Some taps have provision for external aerators while for others such as classic pillar cock taps in line flow restrictors can be fitted. Flange flow controls can also be fitted to wall mounted taps and shower heads.
- Reduce:
 - kitchen taps to less than 9 litres per minute and;
 - hand basin taps to less than 6 litres per minute.
- Install automatic shut off valves or spring loaded taps, so when the handle is released the water stops.
- Install sensor activated taps, when the sensor beam is broken the tap delivers a set quantity of water to the user. Once installed review the activation time period and adjust for maximum water efficiency.



In line flow restrictor



Aerators



Common aerator for end of tap fitment

*To help you choose the most water efficient appliances, Australia has a national mandatory water efficiency labelling and standards scheme (WELS). This applies to all showerheads, washing machines, toilets, dishwashers, urinals and some types of taps. In addition, the scheme includes minimum water efficiency standards for toilets and voluntary water efficiency labels on flow control devices. WELS labels display from 1 to 6 stars, the more stars the more water efficient the product.

To measure your current appliance flow rates simply use a jug / bucket and stopwatch and record the water volume against elapsed time.

For further information on water efficient products visit the product registry on the WELS website www.waterrating.gov.au

*When altering flow rates ensure restriction devices are watermark certified and compatible with your water heater and the Australian Standard for Plumbing and Drainage AS/NZS 3500 is adhered to.

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