



Water use

As every caravan and tourist park operator knows, water is a major operational cost and waste water can be major problem. In fact water is identified by operators participating in the project¹ as the third highest operational expense. Taking advantage of water conservation measures can result in significant cost savings from water use charges; hot water heating, trade or sewage charges and reduced wear and tear will reduce maintenance costs.

Water use across all parts of a parks operation can be significantly reduced through either changing current practices and/or installing flow control devices. Installing water saving technology is an effective approach, as it saves trying to educate short stay visitors.

This information is designed to be practical advice on how to conserve water and save money without sacrificing service levels and the comfort of visitors.

Showers

- The greatest environmental and cost savings for your business can be achieved through efficient showers.
- Showers were identified as the activity that used the greatest amount of water in caravan park, using from an average 18 litres of water a minute though a high 32 litres per minute.
- Reducing the flow rate to 9 litres per minute can reduce your water bill by half.
- Reducing the flow rates will reduce your water expense, heating expense, waste water expense and maintenance costs.
- Water-efficient showerheads vary greatly in cost and the quality of shower delivered. When shopping for shower heads try some first and buy the cheapest one that works well.
- Water recirculation devices can be used to capture the water wasted while customers wait for showers to heat up.

Water efficient shower issues

- User satisfaction with water-efficient showers is much lower if there is excessive air movement in a bathroom (from an exhaust fan or draughts), as the moving air evaporatively cools the persons body. Install an exhaust fan away from the shower, and do not wire the exhaust fan into the bathroom light switch.
- Installing flow control disc/washer is a cheaper alternative to replacing the showerheads and you can avoid negative perceptions customers may have associated with a water efficient shower head.
- Flow rates from instantaneous units may cause issues with flow restriction devices. Contact the manufacturer for advice.
- Water quality can be an issue reducing the effectiveness of some products.

Taps

Did you know hand basins can use over 20 litres of water per minute? The same amount as showers! The same areas of cost savings for showers are achievable with hand basins.

- Reduce water consumption and heating costs by installing water flow devices.
- Replace taps with reduced-flow models. Quarter turn taps with ceramic seats give greater flow control and are less prone to leakage.
- Install fixed flow taps that deliver a fixed quantity of water when operated (eg push-button taps).
- Install spring-loaded taps that shut off immediately after use.



Water flow devices are a cheap alternative to a shower head. They cost as little as \$5 each and will save you thousands or dollars over their life time.



Flow restrictors can be fitted to older equipment cheaply and easily.



¹The information in this document was developed for the Sustainable Caravan Park Project (refer to <http://nevrwaste.vic.gov.au/businesses/sustainable-caravan-parks/?searchterm=caravan> for more information) and is derived from various sources and is understood to be correct at the time of publications November 2007. However, the information may not be error free and may not be appropriate for the particular purpose. The project partners accept no liability whatsoever to any person for any injury, loss or damage that may arise in connection with any use or reliance on the information.



Toilets

- Replace older toilets that use up to 14 litres per flush with new 3/6 litre dual flush toilets.
- When replacing older toilets you need to consider replacing the entire system as the older pans are designed for larger volumes of water.
- Urinals can have their flush volume reduced or be replaced with water less urinals or infra-red systems. You may consider removing them altogether.
- Flush valves for toilets and urinals can be adjusted to reduce flow without reducing flushing effectiveness. Flow reducing devices can also be installed. Retrofit devices of various types, such as toilet dams, displacement devices, or early closing flappers, are available to reduce the volume of flushing. Plastic bottles with water and/or sand can also be used.



New toilets reuse water from the hand basin to flush the toilet.

Washing Machines

One load of washing may use up to 200 litres of water (a third of which may be heated). Front loading machines can reduce water use by 50%. A 4-star or AAAAA water efficient washing machines save more than 21,000 litres of water a year compared to older machines.

Grounds watering

Where watering is required there are a number of strategies to reduce usage including;

- Sprinklers which have efficient watering patterns and droplet sizes which encourage soil penetration
- Timers and moisture meters or sensors to avoid over watering
- Drip irrigation or subsurface soaker hoses which leak water at very low pressure and eliminate runoff and evaporation
- The use of soil conditioners to encourage water infiltration and plant absorption
- If you mulch around your trees and plants, you can save up to 50% of the water they need. Mulching significantly reduces evaporation, keeping the moisture around the plant's roots where it's needed. The best time to mulch is spring
- When you water trees or plants, direct the hose around the base, so the water goes straight to the roots. Don't waste water by watering the leaves. It's of no use to the tree and plant and the moisture will quickly evaporate.
- Make sure you put a timer on any sprinkler system. Then, you won't waste water if you forget to turn the tap off.
- A good deep watering will be much better than a quick sprinkle. If you can use a watering system, get drippers for a better deeper soaking, rather than sprayers. This will encourage the growth of deeper stronger roots.
- Aerate your soil or lawn by occasionally forking holes into it, to reduce run off and ensure that the water soaks in better.
- Plant more native trees and plants. They need less water than more exotic species. Those plants natural to your local area are generally the most economical with water.
- When planting a lawn, choose a low maintenance slow growing grass with deeper roots and one that doesn't demand a lot of water. Don't cut the lawn too short and again, use the clippings for mulch elsewhere in the garden.
- Top dressing your lawn cuts the amount of water it needs. It helps reduce evaporation.
- Don't use your hose as a 'broom', washing down paths or washing away leaves. Sweeping can be good exercise!



NORTH EAST WATER



Benchmark your water usage

If you decide to install water saving equipment in your caravan park, first benchmark and record your current usage, so you are aware of the results you are achieving once you have installed water saving equipment.

The first step is to understand your park's water use habits. Once you know that you can begin to make changes.

Not on town water supply?

Operators who source their water from bores, rivers, rain or springs often believe that water is a minimal expense, though the hidden cost of pumping water can cost \$0.30-\$0.50 a Kilo Litre. So any strategy which reduces water consumption reduces pumping requirements and costs (often at peak rates).

A dripping tap can waste up to 31,000 litres each year – more than half the volume of a backyard swimming pool. That's \$35 in water consumption and \$26 in trade waste charges. If it is a hot water tap it could cost you an additional \$259. Just 10 minutes replacing a tap washer could save you \$320 money in your pocket and not down the drain.

Grey water reuse in caravan parks

An increasing amount of Caravan Park operators are seeking to explore their grey water reuse options. This area is difficult as there are many hurdles for which parks need to overcome which include meeting the local and state regulations for grey water reuse. Although national standards and guidelines are currently being developed for grey water reuse, the past lack of a national approach has created difficulties for manufacturers of wastewater treatment systems. Consequently there is a lack of suitable products available to suit caravan parks (most are developed to suit domestic use) those that are available are designed for much larger developments and are cost prohibitive.

What is grey water?

Grey water is the wastewater generated from the bathroom, laundry and kitchen that has not originated from the toilet (black water). Whilst grey water does not contain toilet waste, it nevertheless contains the same types of pathogenic micro-organisms found in toilet waste, though in much lower numbers.

Health authorities throughout the world agree that caution must be exercised for safe garden irrigation with grey water. The best method of using grey water, without using expensive treatment and disinfection methods, is through sub-surface irrigation. Grey water also contains oils, fats, detergents, soaps, nutrients, salts, particles of food, hair and lint that impacts on the long-term performance of a grey water irrigation system.

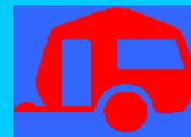
Grey water contains contaminants, which includes nitrogen, phosphorous and potassium, which in most cases are beneficial to plants - except for a number of native plants that have a low phosphorous tolerance.

Grey water also has a slightly alkaline pH making it preferable not to use to irrigate acid loving plants, unless the pH is managed by conditioning the soil around your irrigation trenches. Some laundry detergents and bleach can result in grey water with high levels of sodium salts, which can be detrimental to healthy plant growth. It is recommended that you use products with low sodium levels.

Grey water pre-installation approval requirements

Controls on the use of grey water are understandably strict, but current technology is increasing to overcome some of the grey water safety problems. Generally, approval to install any wastewater or grey water reuse system in Australia must (by law) be obtained from the approving authority and local government, prior to commencing any installation work. The approving authority in Victoria is the Environment Protection Authority.

Further information is available from your local government or the Environment Protection Authority.



New regulations - Water Management Plans

To ensure a secure and reliable water supply for Victoria, the *Our Water Our Future* initiative incorporates a holistic approach to urban water management, including targets to reduce drinking water consumption.

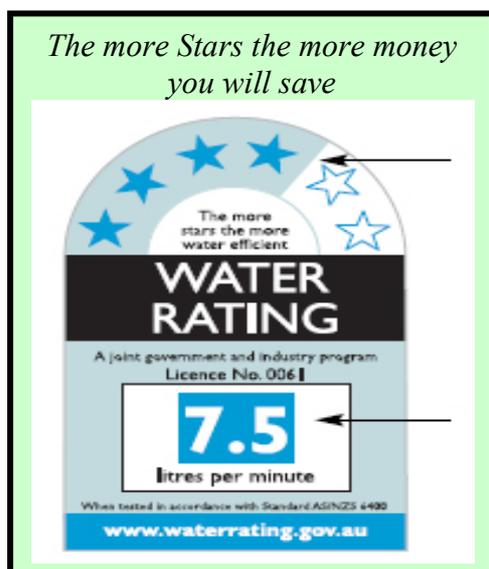
To meet these water conservation targets, the Victorian Government requires major commercial, industrial and institutional customers that consume 10 ML a year or more of water from an urban water supply to:

1. Register their intent to develop a Water Management Action Plan (WaterMAP)
2. Develop and submit a WaterMAP
3. Annually report to their local water corporation on the implementation of their WaterMAP and water savings;
4. Review their WaterMAP at the request of their water corporation.

These tasks are conditions outlined in Victoria's Water Corporation's Permanent Water Saving Plans (PWSP) created under the Water Act 1989 and Water Industry Act 1993 and are therefore mandatory. In addition, businesses are encouraged to display signage promoting water conservation near all water fixtures.

Who needs to complete a WaterMAP?

Non-residential customers that use 10 ML a year or more at any one site of potable (drinking quality) water from an urban supply are required to prepare a WaterMAP.



Useful Information

National Government

Water Efficiency Labeling and Standards
www.waterrating.gov.au/index.html
Department of Environment and Heritage
www.waterrating.gov.au/index.html

State Government

Department of Sustainability and the Environment www.dse.vic.gov.au
Sustainability Victoria
www.sustainability.vic.gov.au
Essential Services Commission
www.esc.vic.gov.au
Water Smart - www.watersmart.vic.gov.au

National Organisations

Australian Water Association
<http://www.awa.asn.au>
Water Services Association of Australia
www.wsaa.asn.au
Water busters - www.waterbusters.com.au

Catchment Management Authorities

Goulburn Broken Catchment Management Authority – www.gbcma.vic.gov.au
North East Catchment Management Authority
www.necma.vic.gov.au

Water Authorities

Goulburn Murray Water - www.g-water.com.au
Goulburn Valley Water
www.gvwater.vic.gov.au
North East Water – www.nerwa.vic.gov.au

Grey Water Reuse

Victorian EPA
<http://www.epa.vic.gov.au/water/Reuse/reuse.asp>
Australian Water Association
<http://www.awa.asn.au/AM/Template.cfm?Section=Greywater&Template=/CM/HTMLDisplay.cfm&ContentID=4600>
Alternative Technology Association
http://www.ata.org.au/?page_id=35

Solar Hot Water

Australian Greenhouse Office
<http://www.greenhouse.gov.au/yourhome/technical/fs43.htm>
Moreland Energy Foundation
<http://www.mefl.com.au/sitemap/>
Alternative Technology Association
<http://ata.org.au/>

Products

Australian Consumers Association
<http://www.choice.com.au>