

# Fact Sheet: **Outdoors**

Water can be used in many areas outdoors, therefore it is important to use water efficiently and only when needed. Water restrictions may also need to be taken into consideration.

Visit [www.westernwater.com.au](http://www.westernwater.com.au) for current water restrictions information.

## **Landscapes**

Irrigation and the care of landscapes is an important area for water efficiency. Advances in landscape design and maintenance technologies have made the upkeep of healthy, water-efficient landscapes simple and cost effective.

Ecologically balanced landscapes conserve resources and money, physically improve property & reduce long-term maintenance costs.

Benefits of planning your landscape include:

- Minimising the environmental impacts from runoff, pesticides, fertiliser, water consumption and other effects of maintenance practices.
- Providing for pedestrian access.
- Keeping nutrients onsite.
- Reducing energy use and pollution.
- Reducing water pumping and water treatment.
- Reducing runoff of stormwater and irrigation water.
- Reducing maintenance and labour costs.
- Increasing quality of landscape and surrounding habitat.

Good landscape care and water efficiency involve the following principles:

### **Planning and design**

A comprehensive design plan is the first step to a water-efficient landscape. A well thought-out and researched design will minimise cost and determine plant and sprinkler placement. The following factors should be considered:

- Site conditions such as drainage, soil type, sun exposure/shade, aesthetic preferences, existing plantings, slope/grade, and water availability.
- Intended use of the site, including recreation, habitat and traffic.
- Trees, shrubs and grass all require different amounts of water. Plants should be placed in groups according to their respective water needs, called hydro zones. This way an irrigation system can be designed to properly match the needs of the plants, soils and weather conditions.
- Place plants with high water demands at the bottom of slopes.
- Incorporate existing trees, plants and wildlife areas to add

value to the site.

- Consider creating shade areas, which can be 20°C cooler than unshaded areas.
- Minimise the use of impervious surfaces to help reduce runoff and subsequent stormwater pollution.
- Consider using porous materials.
- Consider grading and directing surface runoff and rainfall gutters to landscaped areas instead of into drains.

### **Soil analysis and improvement**

- Soil testing will help determine soil quality and absorptive capacity. Plants should be chosen based on these findings.
- Organic matter such as compost, mulch or manure increases the water-holding capacity of soil and nutrient retention and can help improve water distribution. For clay soil, mulches and gypsum promote better infiltration during the summer months and better drainage in winter.
- Adding water-absorbing crystals can also prolong water retention. They are especially beneficial in reducing transplant shock, reducing plant losses.
- When improving the soil, it is important to treat a large area around the planting to allow ample space for root systems.
- Do not allow heavy construction equipment to compact soil around trees or other sensitive areas.

### **Proper plant selection**

- The selection of drought-tolerant species will greatly reduce maintenance costs and can improve the aesthetic presentation of a site.
- Consider the plant's water demand, pest tolerance as well as its soil nutrient and drainage requirements.
- Native species are adapted to work together in similar soils and benefit each other's growth by forming symbiotic relationships.

### Practical turf areas

- During different stages of water restrictions, watering of turf areas may be prohibited or an exemption may need to be issued. Please contact Western Water for further information.
- Turf grasses have the largest water consumption patterns of any plant group. Plant turf only where it will provide optimal functional and aesthetic benefits. Water-saving lawns like Palmetto have deep roots that make them extremely drought tolerant. They also do not need mowing as often as other lawn types.
- Avoid very small turf areas under 3 metres wide.
- Proper watering of turf (i.e. less frequent and deeper versus frequent and light watering) will promote deep root development and make the turf more drought tolerant.
- Whenever possible, plant alternative groundcovers that require less water, or consider the use of patios and decks, further reducing water demand.



### Efficient irrigation

Fixed watering systems are convenient and are available with drip, micro-spray or pop-up sprinklers. They can be controlled manually; however a timer is preferable to avoid forgetting to turn the system off. Timers can be manual or automatic; however automatic systems are inefficient if they turn on when it is raining.

- To ensure your system is efficient, invest in rain and/or soil moisture sensors. These devices act as an override facility and trip the power supply to temporarily prevent the system from working when there is enough moisture in the soil. Rain sensors are inexpensive and are a common option for most automatic timers.
- Effective irrigation waters plants deeply, infrequently and slowly. Saturating the soil deep enough to assist root growth is crucial; light, frequent watering will restrict growth. Extra water is required during establishment for most plantings.

- Use electronic controllers with precise timing, multiple irrigation zones, multiple cycles and rain sensors. Automatic systems are a cost-effective way of ensuring that proper watering occurs, although it is important to adjust the system regularly for weather changes and plant growth.
- Trees, shrubs and groundcovers are watered most effectively through drip pipes or sprays that target the root zone of each plant.
- The key ingredient in irrigation efficiency is uniformity of the water application. Sprinkler uniformity is affected by the operating pressure, the nozzle used and the sprinkler spacing.
- Observe the water consumption rates of plants to learn their needs as seasons change.
- Overspray that falls on concrete or other impervious areas is not just a waste of water but can contribute to runoff, pavement damage and pollution of adjacent waterways. Adjust sprinkler nozzles to overcome this problem.
- The excessive or improper use of irrigation systems can severely affect soil nutrition. Nutrients can leach out of the soil and contaminate groundwater or adjacent waterways.
- Consider alternative sources for irrigation water, including rainwater tanks, water reuse options or treated greywater. Consider directing surface runoff and rainfall into collection tanks that can supply water to landscape areas. Ensure the health and safety of people using the site by making sure the water used meets any legislative requirements. EPA Victoria publishes guidelines for use of recycled water. Visit [www.epa.vic.gov.au](http://www.epa.vic.gov.au)
- For facilities such as golf courses and sporting grounds, recycled water offers significant cost and environmental benefits provided that issues such as nutrients and salinity are appropriately managed.
- Use separate irrigation zones for different planting areas and turf areas.
- Use dedicated water meters for landscaping water use.

### Mulch

Mulches are various organic materials such as pine/oak bark, pine straw, aged wood chips and compost mixtures that are placed around the root zone of a plant.

- The use of mulch around plantings is highly effective in retaining soil moisture and reducing the need for watering and maintenance.
- To prevent weed growth, ensure the mulch does not contain seeds.

- Spread mulch evenly up to 3 – 4 centimetres deep to insulate roots from heat and limit the germination of weeds.
- Fine textured mulches help retain more moisture than coarse mulches.

Mulching can reduce evaporation by up to 70 per cent

### Proper maintenance and watering

The most crucial element in maintaining water efficiency in any landscaped site is ensuring that a regular maintenance schedule is met. Attention to the landscape and irrigation system at regular intervals will reduce the cost of maintenance and increase the effectiveness of irrigation. Adhering to current water restrictions requirements is also mandatory.

- Never mow grass to less than one-third of its original height. Leave grass at two centimetres or higher and maintain this length by cutting off the top third of the leaf area. In dry conditions, leave the clippings on the lawn to keep moisture in the ground.
- Regular aeration of clay soils will improve water-holding abilities and prevent runoff.
- Schedule irrigation to ensure deep and healthy root systems.
- Keep nutrient levels balanced throughout the seasons.
- Once a month inspect and adjust the sprinkler emitters, filters, valves and controllers for proper operation.
- Replace sprinklers with like sprinklers.
- Ensure spray heads are aligned with the grade of the land.
- Replace worn spray nozzles.
- Regulate pressure for system demands.
- Check for leaking valves.
- Inspect low-volume emitters for blockages.
- Inspect sprinklers for clogged nozzles.
- Adjust sprinklers to water plants and not footpaths or roads.
- Adjust the operating times of the sprinklers to match seasonal or monthly requirements and current water restrictions requirements.
- Take soil samples to look for compaction or thatch build-up.

- Water in the early morning or late evening to maximise absorption and minimise evaporation. This can save up to 25 per cent of water and is a requirement of the permanent water-saving rules. Water when wind is less than 16 kilometres an hour.
- Water only when plant groups are showing signs of heat stress.

## Swimming pools and water features

Pools, spas and fountains lose water through evaporation, splashing, filter operations and leaks.

### Best practice

There are many ways water can be saved in swimming pools. The table below outlines potential water savings that can be achieved:

Pool facility water use		
Typical water use	Best practice target	Potential reduction (%)
70L/user/day	40L/user/day	33

Source: Sydney Water

A large proportion of the available savings at a swimming pool can be achieved through improved management of toilets and showers. Refer to Amenities factsheet.

## Potential water-saving opportunities

### Behavioural change

- Appoint a member of staff to manage water conservation and water use as part of their daily duties.
- Increase user awareness of water conservation through adequate signage (e.g. put up stickers or posters in toilet & shower blocks which provide staff with a contact name and phone number to report leaks. These are available from Western Water).
- Increase staff awareness of water conservation through regular training and induction procedures.
- Lower pool water levels to reduce water lost through splashing.
- Evaluate filter back-wash schedule. Reduce back-washing to a minimum without compromising public health and safety.
- Maintain proper chemical levels and adequate circulation time. Pool water will be safer and cleaner, and you will avoid the need to drain your pool or use excessive water to correct problems.
- If heated, reduce your pool and spa water temperature.

Warmer water evaporates more quickly.

- Shut down unnecessary fountains and waterfalls. Check current water restrictions for operation requirements. Aeration causes a significant amount of water to evaporate.
- Use biocides in water features to prevent microbial growth in the water. This will lengthen the time between cleaning; however ensure chemicals do not cause corrosion of the water feature pipework.

### Equipment modification

- Install check-meters on the supply lines of pool and water features. These meters should be regularly read and recorded to identify any leakage or excess use. Check-meters will also assist in determining evaporation rates.
- Install drainage barriers around a pool to collect any overflows or splashes and reuse for pool make-up water.
- If outdoors, consider using a pool/spa cover after hours to reduce evaporation and heat loss.
- Use water-efficient equipment for cleaning (e.g. ensure that hoses are fitted with spray guns, and use brooms and mops rather than hosing wherever possible).
- Consider the water use requirements of various filter options at the time of equipment installation or upgrades, e.g. sand or cartridge filters. Take the time to investigate other filter types which may be available for your system and provide a better performance.
- Repair any swimming pool or spa leaks. A loss of 25 millimetres per day in a 5 x 10 metre pool can waste approximately 450,000 litres per year.

## Recreational facilities

As each sporting/recreational facility will have individual requirements, Western Water recommends you seek the advice of a specialist with regard to the playing surface/turf selection especially as many advances have been made in this area. The following guidelines are provided as general information only.

Studies by Sydney Water have shown that the amount of water used to irrigate a standard bowling green should be between 1,500 and 2,000 litres a day (during summer).

### Potential water-saving opportunities

#### Behavioural change

- Ensure that irrigation practices are in accordance with Western Water's permanent water-saving rules and water restrictions requirements.

- Ensure users/visitors of the amenities/showers are aware of the water they are wasting by having long showers or leaving taps running. Refer to the amenities fact sheet for further information.
- Encourage users to report leaks to relevant maintenance personnel.

### Equipment modification

- Install a rainwater tank to collect run-off from the roof to water the grounds.
- Install a check-meter on the water supply line to the irrigation system. This will help determine the amount of water used for irrigation and also help identify leaks.
- Select grass species that are drought tolerant while providing a high standard of playing surface.
- Avoid over-watering by ensuring a rain sensor and suitably programmed irrigation controller are used, rather than manual on/off valves. Over watering will reduce the availability of air to the root system and increase problems with compaction. Water running off the surface of the grounds during irrigation indicates excessive water use.
- Consider installing a reuse/recycling scheme to replace the use of drinking water in irrigation. Refer to the rainwater and greywater factsheet available from Western Water.

**Information for this fact sheet has been adapted from the City West Water "Water Conservation Solutions Handbook"**

### Further information

**Western Water**

**1300 650 425**

**[www.westernwater.com.au](http://www.westernwater.com.au)**