

HOMEOWNERS' GUIDE

**For Water Conservation,
Drought-Tolerant Plants
And Artificial Turf**



MISSION VIEJO
Make the Environment Your Mission

Water Conservation and Sustainability

Runoff, Rainwater, and Reuse

Where Does Water Runoff Go?

Stormwater (water from rainfall events) and runoff from outdoor water use, such as sprinklers and hoses, flow from homes directly into catch basins and the storm drain system.



After entering the storm drain, the water flows untreated into streams, rivers, bays and, ultimately, the Pacific Ocean. Runoff can come from lawns, gardens, driveways, sidewalks and roofs. As water flows over hard, impervious surfaces, it picks up pollutants. Some pollutants carried by water runoff include trash, pet waste, pesticides, fertilizer, motor oil and more.

What is Low-Impact Development?

Low-Impact Development (LID) is a method of development that seeks to maintain the natural hydrological character of an area. LID provides a more sustainable and pollution-preventive approach to water management. Implementing rain gardens, vegetated rooftops, rain barrels, and permeable pavements to your lawn or garden can reduce pollution in our environment, conserve water, and reduce your water bill.

What is Xeriscape?

Xeriscape is a landscape design philosophy that incorporates various principles in an effort to reduce water consumption. Some of these principles include creating a layout of your garden for planting, soil amendments, efficient irrigation, suitable plant selection layout/grouping, mulching and maintenance.

Water Conservation

Pollution not only impairs the water quality for habitat and recreation, it can also reduce the water available for reuse. Runoff allowed to soak into the ground is cleaned as it percolates through the soil, replenishing depleted groundwater supplies. The majority of south Orange County water is imported water from the Colorado River, the Sacramento Bay Delta (via the State Water Project) and the Metropolitan Water District of Southern California.

Imported water is transported through a series of tunnels, aqueducts and pipelines. When land is covered with roads, parking lots, homes, etc., there is less land to absorb the water and percolate into the local aquifers.



In Orange County, 60-70% of water used by residents and businesses goes to irrigation and other outdoor uses. Reusing rainwater to irrigate lawns not only reduces the impact of water pollution from runoff, but it's also a great way to conserve our precious water resources and replenish our groundwater basin. In Mission Viejo, the public landscape is irrigated with 75% reclaimed water.

Options for Rainwater Harvesting and Reuse

Rainwater harvesting is a great way to save money, prevent pollution, and conserve potable water use. To harvest rainwater, simply redirect the runoff from roofs and downspouts to rain barrels. Rain gardens are another option since they reduce runoff and encourage infiltration.

Rain Barrels

Rain barrels capture rainwater flow from roofs for reuse in landscape irrigation. The capacity of rain barrels needed for your home will depend on the amount of roof area and rainfall received.

When purchasing your rain barrel, make sure it includes a screen, spigot to siphon water for use, an overflow tube to allow for excess water to run out, and a connector if you want to connect multiple barrels to add capacity of water storage.



Mosquito growth prevention is very important when installing a rain barrel. The best way to prevent mosquito breeding is to eliminate entry points by ensuring all openings are sealed tightly. If these methods are unsuccessful,

there are products available that kill mosquito larvae but are harmless to animals and humans. Regular application of these products is essential.

Downspout Disconnection/Redirection

Disconnecting downspouts from pipes running to the gutter prevents runoff from transporting pollutants to the storm drain. Once disconnected, downspouts can be redirected to rain gardens or other vegetated areas or be connected to a rain barrel.

Rain Gardens

Rain gardens allow runoff to be directed from your roof downspouts into a landscaped area. Vegetation and rocks in the garden will slow the flow of water to allow for infiltration into the soil. Plants and soil particles will absorb pollutants from roof runoff. By utilizing a native plant palette, rain gardens can be maintained all year with minimal additional irrigation. These plants are adapted to the semi-arid climate of Southern California, require less water, and can reduce your water bill.

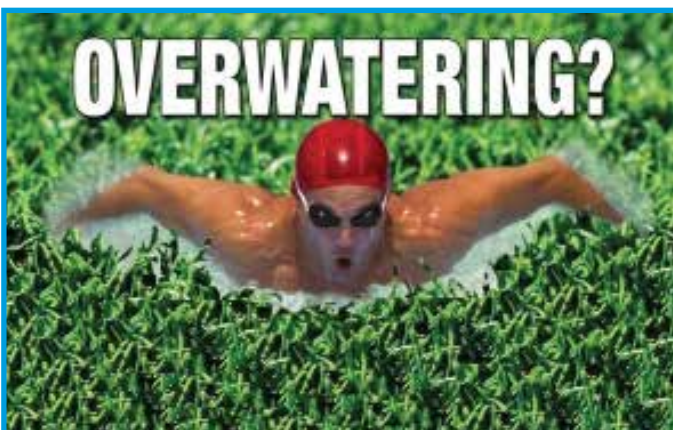


Before modifying your yard to install a rain garden, please consult with the Mission Viejo Building Division and/or Community Development Department to ensure your garden plan follows pertinent building codes and ordinances. Besides codes and ordinances, some homeowners associations also have guidelines for yard modifications. If your property is in a hilly area or includes engineered slopes, please seek professional advice before proceeding with changes.

- **Aim your sprinklers at your lawn, not the sidewalk.** By simply adjusting the direction of your sprinklers, you can save water, prevent water pollution from runoff, keep your lawn healthy, and save money. Save water by using a drip irrigation system and grouping plants together that use the same amount of water.
- **Set a timer for your sprinklers.** Lawns absorb the water they need to stay healthy within a few minutes of turning on the sprinklers. Time your sprinklers; when water begins running off your lawn, you should turn them off. Your timer can be set to water your lawn for this duration every day. Timer information is available online at <http://www.bewaterwise.com>. Adjust your automatic sprinklers according to the season, and have them run more frequently in the spring and summer and less frequently in the fall and winter.
- **Water your lawn when it needs it.** Step on your grass and if it springs back when you lift your foot, it doesn't need water. This can save between 750 to 1,500 gallons of water per month. Use a broom rather than hosing off the sidewalk when cleaning.



- **Water at sunrise.** Watering early in the morning will reduce water loss due to evaporation. Additionally, winds tend to die down in the early morning, so the water will get to the lawn as intended.
- **Sprinklers.** Utilize a drip irrigation system when possible and try to group plants together that require the same amount of water.
- **Fix leaks.** Nationwide, households waste one trillion gallons of water per year to leaks—that is enough water to serve the entire state of Texas for a year. If your garden hose is leaking, replace the nylon or rubber hose washer and ensure a tight connection. Fix broken sprinklers immediately. Monitor the monthly water usage, and examine the small red triangle on your water meter to make sure it does not rotate when all water fixtures are off. If you notice the dial rotating, even slightly, there may be a water leak somewhere in the home's water distribution system. Call a plumber for a more detailed investigation. In addition, you can place a water alarm (9V battery-operated) under your water heater or sinks and toilets. This device rests on the floor surface and will sound an alarm (like a smoke detector) when moisture or water is detected.



Drought-Tolerant Vegetation

Vegetation and Maintenance



Drought-tolerant vegetation can significantly reduce water use. These plants often require far less fertilizers and pesticides, which are two significant pollutants found in Orange County waterways. Replacing water-thirsty plants and grass with water-efficient plants is a great way to save water and reduce the need for potentially harmful pesticides and fertilizer. As for watering, a general rule is to water drought-tolerant plants, like succulents, once a week in hotter weather and once a month or once every other month in colder weather. Another method is to thoroughly water the soil when it is dry and then let it re-dry. It is safer to under water than overwater succulents.



Soil Amendments

Soil amendments, such as food and compost, can be a significant source of nutrients and can help feed the roots of plants. However, they can cause algal blooms if they get into our waterways, which reduces the amount of oxygen in the water and impacts most aquatic organisms.



It's important to apply soil amendments more than 48 hours before predicted rainfall. All planting beds should be mulched every six months. It is important to use composted mulch with a 2-3" layer on top of the plant beds. This will keep the soil moisture intact and reduce the need to irrigate while principle nutrients to plant material overturn.

Plant Material Selection

The style of landscape for a home is a direct, personal reflection of the homeowner. Residents can choose any style—from an arid, drought-tolerant California look to a lush green landscape appearance. However, either style should embrace the key principle of xeriscape, which is a style of landscape design requiring little or no irrigation. The specific plants used in xeriscaping depend upon the climate, and differs from natural landscaping because the emphasis in xeriscaping is on selection of plants for water conservation, not necessarily selecting native plants.

If you want to eliminate turf or install it for play, selecting the right plant for the space can directly affect irrigation methods and plant material selections. See page 9 for a list of plant materials that are drought-tolerant and considered to be low or moderate water users. The “Lush” list can create a more green look, while the “California” list can create an arid appearance. The “Mission Viejo” landscape list contains plant material found along many of the streets, slopes and parks in Mission Viejo, which create the colorful and diverse landscape of the city. The Mission Viejo list is a blend of lush and arid plants (all drought-tolerant), which provide vibrant color, bold forms and produce a visual impact.



More information is available in the brochure titled *Succulents, Grasses, and Drought-Tolerant Plants* available at Mission Viejo City Hall and the book *Landscape Plants for California Gardens* by Bob Perry available at the Mission Viejo Library. In addition, see the California Friendly Garden Guide produced by the Metropolitan Water District of Southern California and associated Southern California water agencies for a catalog of California-friendly plants and other garden resources at www.bewaterwise.com/gardensoft.

Weed-Free Yards

Weeds are water thieves! They often reproduce quickly and rob your yard of both water and nutrients. Weed your yard by hand, if possible. If you use herbicides to control the weeds, use only the amount recommended on the label and never use it if rain is forecast within 48 hours of application.



Home Composting

Composting is often described as nature's way of recycling organic waste because the biological process breaks down organic material into nutrient-rich fertilizer or soil amendment, which is returned back to the earth to feed our plants and gardens. Organic waste includes items such as food scraps, leaves, twigs, grass trimmings, paper and coffee grounds.

Approximately 11 million tons of organic waste is dumped in California landfills each year. Organic waste disposed in landfills takes up valuable space and contributes to climate change. Residents can help by practicing the three Rs of solid waste management.

Reduce

It's always best to start by reducing waste in the first place. Residents can reduce the amount of yard waste sent to local landfills through the simple practice of grasscycling. This simply means leaving grass clippings on the ground after mowing. The clippings will break down in 7 to 10 days and act as a natural fertilizer. Not only is grasscycling easy, it's beneficial to the environment and will help keep your grass healthy and green.



Reuse

When you can't reduce waste, look for ways to reuse the waste you create. Home chippers can be used to grind small branches, twigs and other woody material into beneficial mulch. The mulch can then be used for ornamental purposes or to control weeds.



Recycle

Composting or vermicomposting (composting with worms) food scraps and yard waste is a great way to reduce the amount of waste sent to landfills. The City offers free home composting and vermicomposting workshops twice per year so that residents can learn how to turn their yard waste and food scraps into valuable organic compost for their gardens.

Home compost and worm bins are provided for sale at the workshops, and residents who attend the workshops receive a discount voucher that can be used toward the purchase of a bin. For more information, visit the City's website at www.cityofmissionviejo.org/green.

Artificial Turf

The City of Mission Viejo allows artificial turf in the side and rear yards of single-family residential homes out of public view. However, in order to preserve a natural, vegetative look as seen from the public right-of-way, artificial turf installed in the front yard will be allowed as long as it follows the guidelines listed here.

Additionally, residents residing within a homeowners association (HOA) need to check with the HOA to see if it allows artificial turf and to see if there are any additional requirements and procedures prior to installation.

Low-impact development (LID) and sustainable water use prevents water pollution and conserves water for drinking and reuse. Reducing your water use and the amount of water flowing from your home protects the environment and saves you money.



Artificial Turf

- is installed in conjunction with other water conservation measures, such as drought-tolerant landscaping, efficient irrigation systems, or rainwater harvesting and reuse techniques.
- does not occupy more than 50% of the front yard.
- contains only lead-free polyethylene monofiber/hybrid polyethylene monofiber.
- is at least 1.625” in pile height (height of the blade of grass).
- has a minimum 50-ounce face weight (determines quality and density of material).
- is fire resistant.
- has color that replicates real grass (shades of green).
- shall not contain crumb backing or crumb base; only porous sand, stone, concrete, and non-toxic backing and base allowed.
- the manufacturer’s certified installation shall be done per manufacturer’s specifications by a licensed contractor.
- must be porous with a drainage system installed underneath with a solid barrier buffer between the artificial turf and live plant materials and soil. Consider planting a natural landscaping buffer between the sidewalk and the artificial turf to soften the appearance with drought-tolerant native plants.
- shall have a minimum 8-year warranty.
- shall be maintained by the property owner in a fashion that mimics the appearance of a flourishing, maintained lawn without (including but not limited to) fading, visible seams, gashes, dents, ruts, debris, damaged areas, stains, revealing worn-out unnatural appearance, odors, matted areas, weeds and roots, loose edges, mold, ponding and general dirtiness.

Drought-Tolerant Trees and Shrubs

LUSH—Creates a greener look

Trees

- *Arbutus* (*Strawberry Tree*)
- *Cercis* (*Western Redbud*)
- *Cupaniopsis* (*Carrotwood*)
- *Lagerstroemia* (*Crepe Myrtle*)
- *Laurus* (*Sweet Bay*)
- *Magnolia* (*Dwarf Magnolia*)
- *Pyrus* (*Bradford Pear*)
- *Quercus* (*Oak*)

Shrubs

- *Baccharis* species (*Coyote Bush*)
- *Buxus* (*Boxwood*)
- *Coprosma* (*Mirror Plant*)
- *Euonymus* (*Euonymus*)
- *Hebe* (*Hebe*)
- *Heteromeles* (*Toyon*)
- *Juniperus* (*Juniper*)
- *Ligustrum* (*Privet*)
- *Pittosporum* (*Mock Orange*)
- *Podocarpus* (*Yellow Wood*)
- *Prunus* (*Carolina Cherry*)
- *Raphiolepis* (*Indian Hawthorne*)
- *Rhus* (*Lemonade Berry*)
- *Rosa* (*Landscape Rose*)

CALIFORNIA—Creates an arid appearance

Trees

- *Acacia* (*Wattle*)
- *Agonis* (*Peppermint Willow*)
- *Callistemon* (*Bottle Brush*)
- *Chilopsis* (*Desert Willow*)
- *Geijera* (*Australian Willow*)
- *Parkinsonia* (*Palo Verde Tree*)

Shrubs

- *Acacia* (*Wattle*)
- *Buddleia* (*Butterfly Bush*)
- *Cistus* (*Rockrose*)
- *Echium* (*Pride of Madeira*)
- *Encelia* (*California Sunflower*)
- *Epilobium* (*California Fuchsia*)
- *Hesperaloe* (*Hesperaloe*)
- *Lantana* (*Lantana*)
- *Lavatera* (*Mallow*)
- *Lavendula* (*Lavender*)
- *Leonotis* (*Lions Tail*)
- *Phlomis* (*Jerusalem Sage*)
- *Salvia* (*Sage*)
- *Senecio* (*Senecio*)
- *Westringia* (*Coast Rosemary*)

MISSION VIEJO—Blend of Lush and California Plants (all drought-tolerant)

- *Agavaceae* (*Agave*)
- *Aloe* (*Coral Aloe*)
- *Anigozanthos* (*Kangaroo Paw*)
- *Asclepias* (*Milkweed*)
- *Centranthus* (*Jupiter's Beard*)
- *Chondropetalum* (*Cape Rush*)
- *Cotyledon* (*Cotyledon*)
- *Echeveria* (*Afterglow*)
- *Epilobium* (*California Fuchsia*)
- *Gaura* (*Gaura*)
- *Juncus* (*California Rush*)
- *Leymus* (*Lyme Grass*)
- *Lobelia* (*Mexican Lobelia*)
- *Muhlenbergia* (*Deer Grass*)
- *Nassella* (*Mexican Feather Grass*)
- *Penstemon* (*Beard Tongue*)
- *Verbena* (*Verbena*)



Anigozanthos
(Kangaroo Paw)



Lagerstroemia
(Crepe Myrtle)



Asclepias
(Butterfly Milkweed)



Agave
(Oso Creek Trail)



Aloe Strata
(Marguerite Recreation Center)



Lyme Grass
(Oso Creek Trail)



Verbena
(Marguerite Parkway at Pacific Place)



Juncus
(Village Green)



Epilobium
(Marguerite Parkway at Pacific Place)



Mexican Feather Grass
(Norman P. Murray Center)



Penstemon
(Marguerite Parkway at Pacific Place)



Cotyledon
(Village Green)

Additional resources for information:

Metropolitan Water District of Southern California and associated southern California water agencies

California-Friendly Garden Guide

<http://www.bewaterwise.com/gardensoft/index.aspx>

Las Virgenes Municipal Water District

A California-Friendly Guide to Native and Drought-Tolerant Gardens

<http://www.lvmwd.com/home/showdocument?id=711>

Municipal Water District of Orange County

<http://www.mwdoc.com>

El Toro Water District

<http://etwd.com>

Moulton Niguel Water District

<http://www.mnwd.com/>

Santa Margarita Water District

<http://www.smwd.com>

UC Davis

Drought-Tolerant Plants

https://caseagrant.ucsd.edu/sites/default/files/Drought-Tolerant-Plants_8-7-09-2.pdf

EPA

Smart Irrigation Controls: <https://www3.epa.gov/watersense/products/controltech.html>

Drought-Tolerant Landscaping: https://www3.epa.gov/watersense/docs/water-efficient_landscaping_508.pdf

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