

APPENDIX L

WATER CONSERVATION PROGRAM FOR ESTABLISHED LANDSCAPES

ESTABLISH A WATER BUDGET FOR LANDSCAPE IRRIGATION

The water applied to your landscape, including any water features such as swimming pools, should not exceed your water budget.

For properties served by public water providers, figure your water budget as follows:

1. Locate your community planning area in the table.
2. Multiply the corresponding Water Budget Factor by the area of your irrigated landscape, including the surface area of any water features. The size of your landscape should be in square feet.

Budget = Water Budget Factor * landscaped area (sq. ft.)

The water budget sets the maximum number of gallons per year that should be used to water your landscape.

The water you actually use should not exceed your budget.

Community Planning Area	Water Budget Factor
Alpine	22.2
Bonsall	20.1
Borrego Springs	32.7
County Islands	20.1
Crest	22.2
Fallbrook	20.1
Jamul/Dulzura	22.2
Lakeside/Pepper Drive-Bostonia	22.2
North County Metro	20.1
Otay	22.2
Pala-Pauma	22.2
Pendleton/DeLuz	20.1
Rainbow	20.1
Ramona	22.2
San Dieguito	20.1
Spring Valley	22.2
Sweetwater	22.2
Valle de Oro	22.2
Valley Center	22.2

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ELIMINATE OVER-WATERING

This is the easiest and most effective way to conserve water.

- You will use less water.
- Your water bill will be reduced.
- You will prevent runoff which contaminates our beaches.

Over-watering occurs when the soil is not able to absorb water as quickly as the water is applied. If your soil does not absorb water very quickly, you should irrigate for only a short time, wait until that water has completely infiltrated the soil, and then irrigate for another short time.

FIX LEAKS

How to check for leaks in your plumbing:

1. Record the reading on your water meter and mark the position of the needle.
 2. Turn off all water inside and outside, including an ice maker.
 3. Wait at least 30 minutes to one hour.
 4. Check the water meter.
 5. If the reading has changed or the needle has moved, there is a leak in your plumbing.
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FIX BROKEN IRRIGATION EQUIPMENT

A broken sprinkler head can waste water at a rate of 10 gallons per minute. That's equal to 100 gallons during a 10-minute irrigation cycle.

Check your irrigation system at least once a month.

1. Manually start the system.
2. Check the valves for leaks.
3. Check each head for leaks or puddling around the head.
4. Check for overspray onto surfaces that should not be watered such as sidewalks, structures, or patios.
5. Adjust and properly align heads.
6. Check for vegetation or other obstacles that block spray.
7. Check for over-watering or runoff.
8. Shorten the watering cycle if necessary.

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ADJUST THE IRRIGATION SCHEDULE

The amount of water that is necessary for a healthy landscape will vary depending on the time of year and the type of plants.

- During the summer months, water 2 or 3 days per week for grass and 1 or 2 days per week for other plants.
- In winter, irrigate only when the top 2 to 3 inches of soil is dry.

Force plants and lawns to develop deep roots rather than shallow roots. Plants with deep roots can be watered less often, once a week may be sufficient. Shallow roots develop from frequent watering. To develop deep roots:

1. Apply water using 2 or 3 short cycles rather than one long cycle.
2. Add one extra day between waterings.
3. After three weeks, add another day between waterings and, for overhead spray systems, increase the watering time by 1 to 3 minutes.
4. If the plants respond well, try adding another day between waterings.

Your irrigation schedule should be adjusted at least once a month.

Learn how to use your irrigation controller. Replace an old controller with a smart controller which will automatically suspend irrigation during rainy weather conditions.

Do not water when it rains. Wait until the soil dries out.

Water between midnight and 6 a.m. to reduce water loss due to evaporation and wind.

For overhead spray systems, water between 4 a.m. and 6 a.m. to allow the morning sun to dry the vegetation.

Experiment to find the most efficient schedule for your landscape.

Check the following website for a calculator that provides estimates for irrigation schedules:

<http://www.bewaterwise.com/calculator.html>

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PERFORM REGULAR MAINTENANCE

Turf

- Do not mow lawns any shorter than 3 inches to encourage deep roots.
- Leave grass clippings on the lawn to provide nutrients and reduce green waste.
- Use a mulching mower.
- Dethatch or aerate your lawn to allow water to penetrate into the soil.
- Sporadic brown spots on your lawn are usually caused by the uneven distribution of water from your spray heads. Check the heads to be sure they are not blocked and that vegetation is not obstructing the spray. Adjust the spray heads or the pressure of your irrigation system if necessary. Using more water is not the solution.

Plants

- Plant in the fall when less water is required to establish plants.
- Do not overprune shrubs and trees.
- Ornamental grasses should be groomed once a year. Do not mow.
- Use plants that are well-suited to the type of soil on your site.

Mulch

- Place a 2- or 3-inch layer of mulch over bare dirt to reduce water evaporation, improve the soil, and control weeds.
- Organic mulch absorbs and retains water. If it gets wet during irrigation, allow it to dry out. Otherwise it will become vulnerable to molds, fungi and other diseases that may spread to the plants.
- Re-mulch every 1–2 years.
- Use gravel mulch around succulents to keep the plants from becoming too wet.

Soil

- Amend the soil with compost to improve filtration, texture and nutrients which will produce healthy plants with less water.
 - For turf, 1–2 inches of compost tilled into an 8-inch depth.
 - For trees and shrubs, 2–4 inches compost tilled at least 12 inches deep.
 - If not tilling the soil, mulch with compost, then put wood chips on top for weed control.
- Use only the minimum amount of fertilizer necessary. Fertilizers result in

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higher water use, increased maintenance, and more green waste.

- When using fertilizer, try more frequent applications using smaller amounts. Fertilizer is toxic and any excess washes into waterways.
- Select slow-release or natural organic fertilizers to reduce runoff pollution.

Pests

- Select pest-resistant plants.
 - If necessary, spot treat with non-toxic insecticide.
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GIVE YOUR LANDSCAPE A MAKEOVER

Simple design changes can save water and give your landscape a fresh, new look.

Design

- Attend classes on water smart landscaping.
- Visit the Water Conservation Garden at Cuyamaca College or the Quail Botanical Gardens in Encinitas.
- Choose plants that require the same amount of water and sunlight for each irrigation zone (or hydrozone).
- Use permeable landscaping materials to create pathways and borders.

Plants

- Replace high water use lawns with water smart groundcovers, trees and shrubs.
- Plant drought-tolerant plants. After 1 to 3 years of regular watering, the plants will be able to survive with little or no irrigation.
- Plant high water use plants in shady areas that are protected from the wind.
- Consider plants native to the region. They require less maintenance and less water.
- Do not plant invasive species or plants that can easily burn or spread fire. (See Appendices G, H, and I)
- Look for low water use plants at local nurseries.

Irrigation System

- Install a water smart controller.
- Switch to drip irrigation for trees and shrubs.
- Replace old sprinkler heads with newer, more efficient heads.

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- Replace sprinkler heads with mini rotors to reduce runoff. Mini rotors have a reduced precipitation rate which allows time for water to penetrate the soil.
 - Use rotors to water large areas of 25 feet by 25 feet or larger.
 - Check with your water agency or equipment retailer for rebates on water smart irrigation equipment.
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WATERING WITHOUT AN AUTOMATED IRRIGATION SYSTEM

When watering with a garden hose:

- Always attach a trigger nozzle or a watering wand with a ball valve to a garden hose. The trigger nozzle should be the type that must be depressed continuously by hand in order to allow water to flow.
- Shut off the water when moving from plant to plant during garden watering.
- Check your hose and fittings to make sure they are in good condition and replace with quality fittings if required. Worn hoses and fittings are more likely to leak.
- Remember to shut off the water at the faucet after use.

When watering with portable lawn sprinklers:

- Do not leave the water running unattended. Set an alarm to remind you to turn it off.
 - Adjust the water pressure to avoid overspray and runoff.
 - Use a hose timer between the faucet and the hose to automatically shut off the water.
 - Remember to shut off the water at the faucet when you are done.
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HOW TO READ A WATER METER

A water meter records the amount of water used in the same way the odometer in a car records the number of miles traveled. A water meter measures water use by the cubic foot. One cubic foot equals 7.48 gallons.

To check your daily water use:

1. Record the reading on your meter.
2. Twenty-four hours later, record the reading on the meter again.
3. Subtract the reading in Step 1 from the reading in Step 2.

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4. Multiply the result in Step 3 by 7.48.
 5. The answer in Step 4 is the number of gallons used over the twenty-four-hour period.
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HOW TO DETERMINE THE AMOUNT OF WATER USED FOR OUTSIDE IRRIGATION

Most water meters measure all water used by the customer regardless of how the water is used. However, there are some methods to estimate the amount of water used for irrigation.

1. Install a water sub-meter.

The meter can be attached to the branch off the main water line that supplies water to the irrigation system. This method allows you to accurately track the amount of water used for irrigation. Be sure the sub-meter meets AWWA standards.

2. Read the main water meter.

- Check the reading on your meter.
- Turn off all water, including ice makers and manually run the full cycle of your irrigation system.
 - Check the new reading on your meter.
 - The difference between the two readings is the amount of water used by the irrigation system.

3. Check your water bill.

Each water agency has its own billing system. Some water agencies charge customers for sewer service based on the amount of water that went into the customer's sewer. Check your bill. Subtract this amount from the total amount of water used. The result gives a rough estimate of how much water was used for irrigation and outdoor use during the billing period.

Please contact your water agency if you need help reading your water bill or for information on how sewer service is billed.