Smart Irrigation Saves Water

Water is precious in the arid Southwest. The plants that have adapted to living in our harsh, dry conditions require little water. Plants native to wetter climates, on the other hand, require significant amounts of supplemental water when grown in New Mexico.

But no matter what kind of landscape you have, using the right type of irrigation can substantially reduce your water use. The key to smart irrigation is to give plants the amount of water they need to grow and thrive (no more, no less)—and to deliver that water in the most efficient way possible.

By examining your existing irrigation system, fixing leaks, and converting to efficient drip emitters and sprayheads where appropriate, you'll conserve water and help preserve New Mexico's enchanting quality of life.

New Mexico Xeriscapes

The increased demand for our limited water resources has given birth to a new kind of water-efficient landscaping called xeriscaping. Xeriscapes feature plants that are appropriate to the natural environment. As a result, xeriscapes use a fraction of the water needed by traditional lawn-dominated landscapes.

Well-designed xeriscapes are lush, interesting and beautiful—and perfect for our New Mexico climate.

Five Steps to Smart Watering

1. Water early. The best time to water during warm months is before 9 a.m.

2. Don't water pavement or landscape rocks. Adjust your sprinklers to water only plants.

3. Double up your sprinkling. Set your controller to run your lawn sprinklers for a period of time, shut down for a soaking-in period, and then water again. For example, rather than watering your lawn for 14 minutes, try a seven-minute watering cycle, followed by a 30-minute "off" cycle, and then another seven-minute watering cycle. This on-off-on system will enable water to penetrate into the soil instead of running off.

4. Don't water when it's windy or raining.

5. Use drip and other water-conserving irrigation methods on gardens, flowers, shrubs and trees.

Photo by Charles Mann

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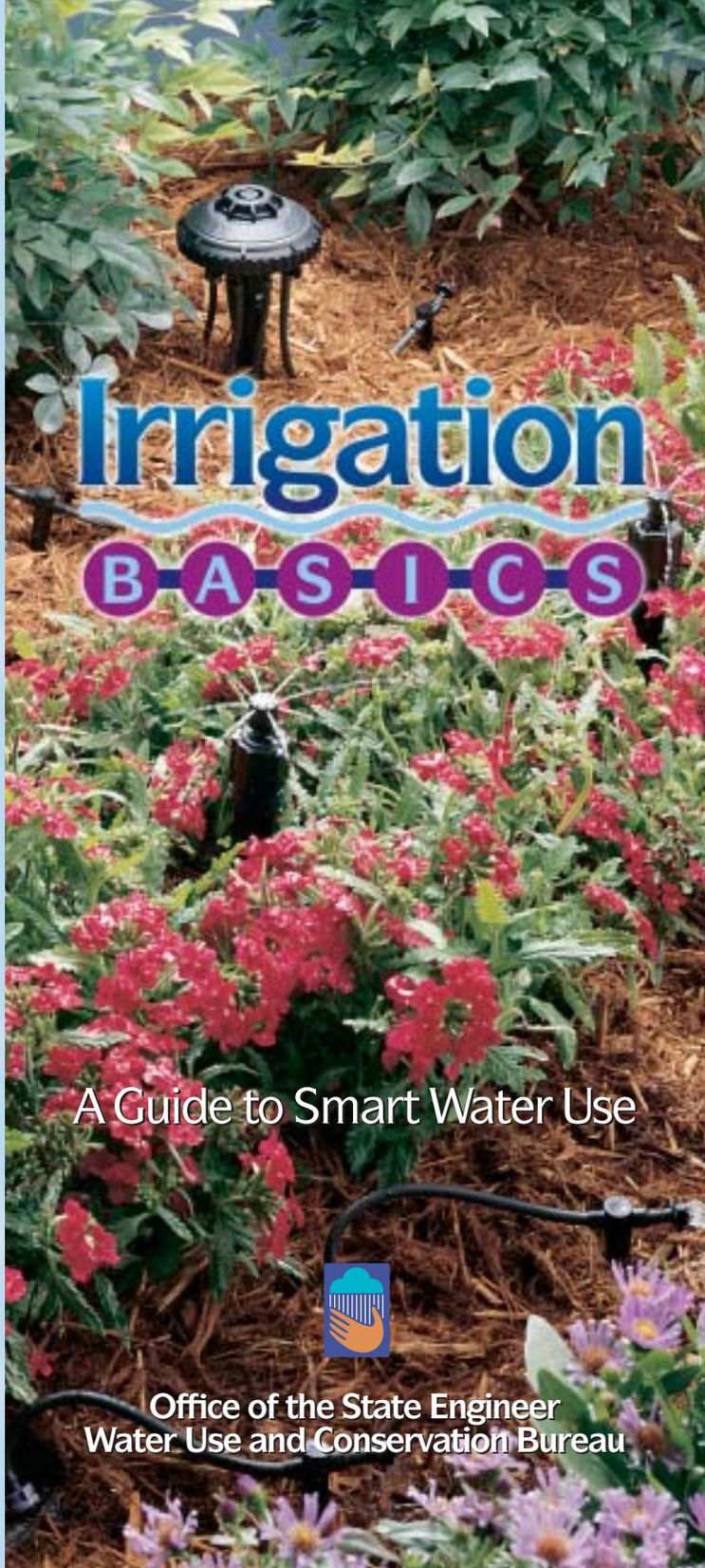


"Zoning" Your Landscape

A key to using water efficiently is to group plants of similar water requirements in the same irrigation "zone." For example, xeric trees and shrubs need far less water than bluegrass. Therefore, xeric trees and shrubs should comprise one or more watering zones and your lawn should be a separate zone. Each zone's irrigation should be controlled by a different water valve.

By dividing your landscape into zones, you can apply the right amount of water to each type of plant. Plus, zoning your landscape will help to prevent one of the most common irrigation mistakes—overwatering xeric plants!

Design Your Landscape for Water Conservation

By utilizing smart design principles, you can start saving water even before you install your landscape.

Avoid narrow strips of lawn or water-thirsty plants that must be watered by overhead sprinklers. A narrow strip of lawn (such as the median between a sidewalk and curb) is virtually impossible to irrigate without sprinkler overspray. In addition, narrow planting strips dry out more quickly than wider areas and require more frequent watering.

By using xeric plants and drip irrigation in these narrow areas, you'll ensure long-term water conservation.

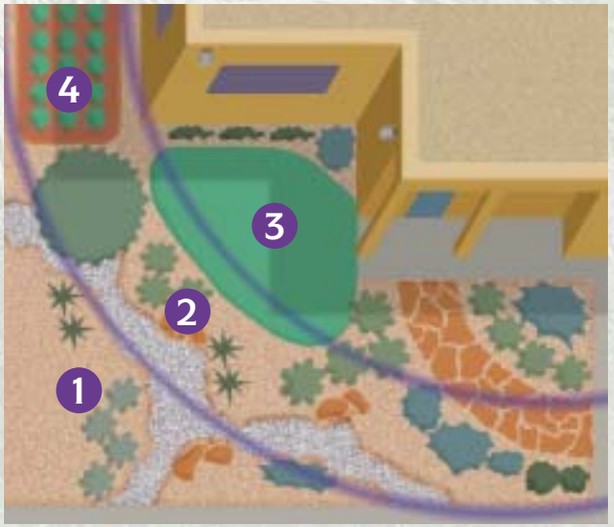
Photo by Charles Mann

What Kind of Irrigation Is Best?

It's important to use irrigation water wisely and efficiently. Different landscapes–and specific "micro-climates" within a landscape–can best be watered using very different types of irrigation.

Here are the most common irrigation methods for the various watering zones in your landscape:

1. Arid Zones



Drip irrigation is perfect for the driest zones of a landscape. A drip system saves water because very little is lost to evaporation or runoff. By delivering water slowly and directly to a plant's root zone, drip irrigation promotes healthy plant growth. Water savings can easily be 50% or more versus traditional sprinkling. Drip emitters are well-suited for most xeric trees, shrubs and perennials.

2. Transition Zones

Micro-sprayers are an efficient choice for moderate-water-use flowers, perennials and some shrubs. Small areas of groundcover can also be efficiently watered with micro-sprayers.

3. Oasis Zones

Traditional sprinklers are designed for water-thirsty turf. (Sprinklers are also commonly used for water-efficient blue grama and buffalograss— you just don't need to water as often!) Sprinklers can also be an efficient way to irrigate some densely planted xeric flowers and groundcovers. Use the new low-spray-angle heads on lawns and low groundcovers to reduce water loss due to wind.

Subsurface irrigation is a new option for some turf areas and other dense plantings. By delivering water underground directly to a plant's roots, subsurface irrigation loses virtually no water to evaporation.

4. Vegetable Gardens

Instead of watering your backyard garden with a hose, consider converting to a water-conserving drip system. Do-it-yourself kits, available at nurseries and home centers, enable you to run an efficient drip system off an existing hose faucet.

Can Sprinklers be Converted to Drip?

In many cases, existing sprinkler heads can be retrofitted to accommodate multi-line drip emitters.

Analyze your landscape to determine the most efficient way to deliver water. If some of your landscape can be efficiently watered by drip emitters (or if you're converting water-thirsty plantings to water-thrifty xeric plants), drip could be a water-wise option.

Keep in mind that sprinklers and drip emitters apply water at different rates (measured in gallons per minute and gallons per hour, respectively). It's best to put sprinklers and drip emitters on different irrigation valves. Remember, too, that a drip system requires a pressure regulator and filter. Some drip hydrants have built-in pressure regulators and filters, which makes the conversion process easier.

Drip irrigation kits (which can be used to convert vegetable gardens to drip irrigation, for example) are available at hardware stores, home centers and nurseries. In most cases, major irrigation system conversions can best be installed by professional landscape contractors and irrigation specialists.

Components of an Irrigation System

Controller/Timer

The controller/timer is the "brain" of the system. It regulates the watering cycles to activate the control valves on the times and days you select. Electronic controllers enable you to precisely adjust watering times, program multiple cycles, and skip cycles when it rains.

TIMER

Valves

Control valves are used to turn the water on and off. Automatic valves are wired to the controller and programmed to open and close at specific times and days. Manual valves must be opened by hand to water a specific zone. Most systems also have a manual shut-off/ isolation valve that allows you to shut off the irrigation system for service or emergency repairs.

FILTER

Pressure Regulator

Although most urban utility systems deliver water at approximately 50 pounds per square inch (PSI), most new irrigation devices operate best at far less pressure. (A typical drip system operates best at 20 PSI.) A pressure regulator reduces incoming water pressure to the ideal setting for the irrigation system. Review the manufacturer's specifications to make sure your system works most efficiently.

MULTI-EMITTER HYDRANT

Backflow Preventer/Anti-Siphon Valve

A backflow preventer keeps irrigation system water (and dirt, fertilizer, etc.) from being siphoned back into your drinking water. Backflow preventers are required by ordinances in most cities.

Filter

Drip systems require a built-in filter to keep particles in the water (such as sand and silt) from clogging the small emitters.

Pipes

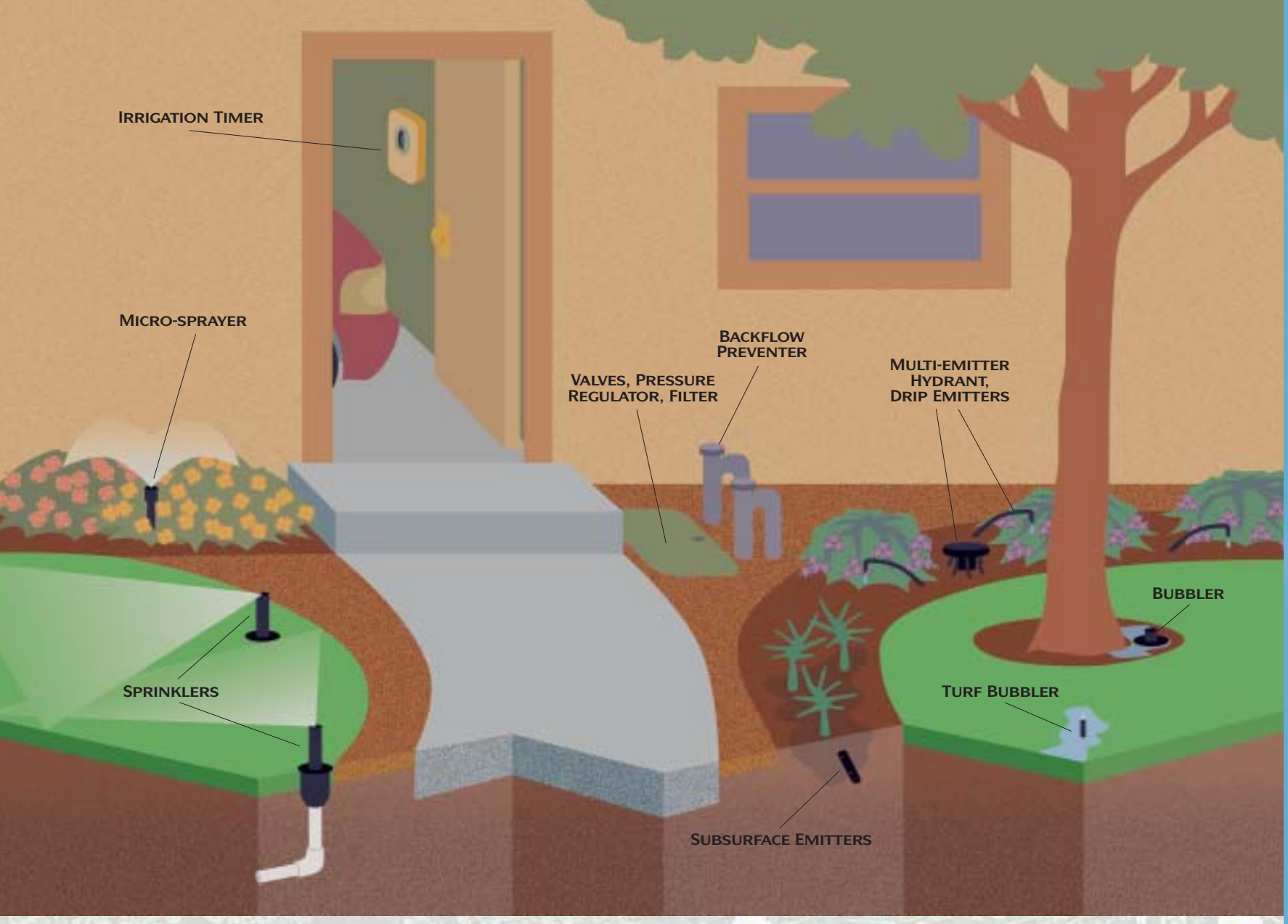
The water pipes are the "skeleton" of an irrigation system. They send water underground throughout the landscape to the water-delivery devices (drip emitters, sprinklers, etc.). Most irrigation systems use PVC pipe or polyethylene tubing.

Multi-emitter Hydrant

Some multi-emitter hydrants can replace old sprinkler heads; others are designed to fit over polyethylene tubing. The four or eight independent outlets in a multi-emitter hydrant can be fitted with emitters that deliver different amounts of water.

Micro-tubing

The micro-tubing delivers water to individual plants, typically from a multi-emitter hydrant.



Sprinklers

Sprinklers (also known as spray heads) are the most popular way to water a lawn. When properly used and maintained, above-ground sprinklers deliver small droplets of water to a large surface area. Sprinklers work best when water pressure is regulated to ensure that water is applied as a droplet, not as mist.

Drip Emitters

Each drip emitter connects to micro-tubing and delivers water to specific plants at a slow, consistent rate (such as one or two gallons per hour).

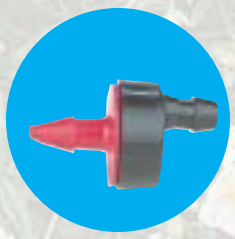
Micro-sprayers

Small groupings of flowers and other modest water-use plants can be efficiently watered with micro-sprayers, which spray water over a small, specific area.

Bubbler Emitters

Like a drip emitter, a bubbler emitter delivers water to a targeted location. Most bubblers deliver more water than a drip emitter. Bubblers are commonly used to water trees and shrubs.

TURF BUBBLER



DRIP EMITTER

MICRO-SPRAYER

Turf Bubblers

Turf bubblers are a new alternative to sprinklers. They apply water at the root level, then rely on the natural wicking action of soil to evenly spread the water.

Subsurface Emitters

By delivering water directly to a plant's root zone, subsurface emitters conserve water by reducing evaporation. Subsurface systems can be used to water trees, shrubs, flower beds and turfgrass.

Flush Valve/Cap

A flush cap, attached to the end of a drip irrigation line, can be removed so that dirt can be flushed out of the system.

Moisture Sensors (optional)

An automatic moisture sensor relays information to the controller so the landscape receives supplemental irrigation only when it needs it. When soil moisture is high (such as after rainfall), the moisture sensor will override a pre-set watering schedule.

Irrigation System Testing and Maintenance Checklist

For maximum efficiency, your irrigation system needs regular inspections and adjustments. Use the following checklist as a guide to routine maintenance.

Spring

- Set controller for watering times and durations. (Remember to adjust clock for the beginning of Daylight Savings Time.)
- Replace back-up battery in controller.
- Test manual shut-off/ isolation valve.
- Check and clean filters.
- Check and clean screens in sprinkler heads. Adjust spray pattern to eliminate water waste due to overspray.
- Inspect all drip emitters. Clean if clogged. Make sure emitters are applying water to the entire root zone of each plant.

Summer

- Adjust controller for watering times and durations during the hottest months.
- Check and clean filters.
- Inspect all drip emitters. Clean if clogged.

Late Summer

- Adjust controller to shorten watering times and durations during New Mexico's rainy season.

Fall

- Adjust controller to further shorten watering times and durations as the weather cools.
- Adjust controller clock for the end of Daylight Savings Time.
- Test manual shutoff/ isolation valve.
- Check and clean filters.
- Inspect all drip emitters. Clean if clogged. Make sure emitters are applying water to the entire root zone of each plant.

Winter

- Adjust controller to further shorten watering times and durations.
- When daytime temperatures are below 40 degrees F., discontinue automatic watering and turn on the irrigation system manually as needed.

Monthly Inspection

- Check for leaks. Inspect water lines, emitters and sprinklers to ensure optimum efficiency. Make any needed repairs and adjustments.