

Conservation Landscaping for the Lake Tahoe Basin



How To: Improve Irrigation Efficiency

For Water
Conservation

Design

- Group plants that have similar water needs together and irrigate them on separate zones. This is referred to as 'hydrozoning.'
- Adjust for varying water needs due to slopes, soil type, sunlight, wind exposure and establishment.
- Use sprinklers for turf and micro-irrigation systems for planted areas. Micro-irrigation systems are far more efficient than traditional sprinkler systems because there is less evaporation, runoff, and the water is applied directly to the root zone of the plants.
- Use caution when designing a system that combines drip emitters and micro-sprays on the same zone. Micro-sprinklers can deliver much higher volumes of water over traditional drip emitters, so system run times may vary depending on emitter flow volumes.
- Use sprinkler heads with matched precipitation rates.
- To eliminate sunken and misaligned heads in turf areas, select a minimum size of a four inch spring loaded pop-up spray heads.
- To prevent overspray and structural damage, spray nozzles should be placed three to four inches and rotaries six to eight inches from hardscapes or structures.
- Use the proper spray pattern in the appropriate location. For example, use a quarter head in a 90-degree corner, a half head along a 180-degree edge, and/or an adjustable angle head in an oddly shaped area.
- Mount sprinklers on swing joints risers to improve mobility of sprinklers during and after installation.
- Install pressure regulators where operating pressure exceeds manufacturer's specifications. Most pressure regulators are installed at the valve, but on some nozzles and emitters they are incorporated at the individual sprinkler heads.
- Install rain, wind and freeze sensors to temporarily suspend automated run times at the controller in adverse conditions.
- Utilize check valves to eliminate low head drainage.
- Maintain a map of the irrigation system to avoid damaging lines and aide in system repair.

Existing Systems

- Relocate improperly spaced sprinkler heads to ensure even head-to-head coverage.
- Convert sprinklers to micro-irrigation in non turf areas.
- Install pressure regulators or booster pumps to maintain consistent pressure.
- On sloped turf areas, install low precipitation rate spray nozzles of ½ inch per hour or less and practice cycle-soak programming to eliminate run-off.
- Remove any turf that is less than 10 feet wide, is irregularly shaped (difficult to irrigate), or on a steep slope and replace with low water use vegetation on micro-irrigation.
- Remove high flow rate bubblers that are not contained within a tree watering well and replace with drip emitters.
- Aerate and/or vertically cut cool season turf areas at least once a year to improve water infiltration rates and reduce run-off.
- Top dress turf with less than a ¼ inch layer of fine textured finished compost every spring and fall to improve soil health, increase turf vigor and conserve water.
- Do a walk through inspection on a weekly basis to make sure the sprinkler and emitter nozzles are not clogged, the sprinkler output streams are not being deflected and that all rotating sprinklers are turning normally. Repair or replace all broken sprinkler heads, broken risers, leaks in the irrigation lines and valves.
- Adjust spray patterns so minimal water is falling onto hardscapes such as driveways, decking and unplanted areas.
- Reassess placement of sprinkler heads and/or plant material where spray patterns are obstructed.
- Test sprinklers after mowing to identify any breaks or sprinkler operation problems.
- Replace broken sprinklers and micro-irrigation emitters with the same type of water delivery device to maintain uniformity.
- Comply with local drought regulations, mandates and water budgets.

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Scheduling

- Develop proper irrigation schedules based on evapotranspiration rates, micro-climates, degree of slope, soil conditions and plant water needs.
- Run sprinklers at night or early morning when there is less wind and evaporation potential.
- Implement a monthly base watering schedule that corresponds to seasonal weather variations and plant requirements.
- Reduce runtimes until minor stress of plants occurs to help determine your base schedule. Turf is under stress when grass blades do not spring back after being walked on.
- Probe the soil monthly to determine the depth of water penetration and adjust schedule as required. Allow full root zone saturation and soil moisture depletion without watering deeper than the root zone.
- To avoid run off, cycle short runtimes that are two hours apart to ensure that the water is absorbed by the soil until water requirements are met.
- Use automatic controllers to improve water conservation.
- Consider using a remote control to allow for easier irrigation schedule adjustments.
- Newly planted vegetation does not have an extensive root system and requires supplemental water. Temporary hand water these areas to help them along rather than increasing irrigation runtime for entire planting area.
- Perform an Irrigation Audit to improve efficiency.

Additional Resources

- Turf Irrigation Scheduling Tip Sheet
- Turf Watering Management Tip Sheet

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