

Landscape Irrigation Management

Efficient Practices – Sustainable Results

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WaterSense, a U.S. Environmental Protection Agency Partnership Program, estimates residential outdoor water use across the United States accounts for nearly 9 billion gallons each day, mainly landscape irrigation. In Colorado, and other arid western states, it is generally accepted that 50% of municipal water use is attributable to landscape irrigation.

The Case for Conservation:

Irrigation waste carries a high price. Municipal water used for irrigation, can range in price from \$5/thousand gallons to potentially \$15/thousand gallons along the front-range of Colorado, depending on water purveyor and specific rate structures. Irrigation excess is often 20%, 30%, 40% or more of landscape water requirements. As an example: Consider a front-range landscape where the seasonal water requirement (water budget) is 10,000,000 gallons. This would be a typical seasonal budget for a site with approximately 550,000 – 600,000 square feet of irrigated landscape. 25% excess (waste) will come at a cost of more than \$17,000 annually for this site when the billable rate is \$7/1000 gallons. Additional cost, not as easily measured, is the cost associated with excess water accumulation on non-permeable surfaces. Runoff, puddling, and water collection on asphalt and other impervious surfaces shortens the life expectancy of these surfaces.

Increased irrigation efficiency will reduce water collection on surfaces where water adds no value, and typically does harm. Efficient irrigation and proper management also contribute to more predictable, and therefore more manageable water and irrigation service related expenses. Budget overruns and expensive surprises can greatly be reduced, if not eliminated.

Additionally, plant health and visual appeal improve when plants receive the correct amount of water, at the correct time. And let's not forget social responsibility. We all own some responsibility for conservation and resource stewardship.



Achieving Conservation & Irrigation Efficiency:

Irrigation Management

Proper management is a critical component to achieving water conservation objectives. With the accelerated rate of new technology introduction, management plays an even more important role in achieving desired results. Irrigation Management is more than just repairs, it includes responsibility and accountability for a water budget derived from a given landscape's seasonal water requirement.

What is effective management comprised of?

❓ Irrigation Assessment (Audit)

Begin with the end in mind. An irrigation assessment (audit) becomes the road map that outlines the actions and initiatives that should be undertaken to improve the performance and overall efficiency of an irrigation system. The assessment will also produce the information needed to calculate the landscape water requirement (water budget) for the property. In many instances, a seasonal landscape water budget may already exist. The assessment should also prioritize efficiency improvements based on payback opportunity. Irrigation system improvements/upgrades do not all deliver the same return on investment. Additionally, the assessment can be an initiative that produces a map, typically plotted on a satellite image, showing locations of key irrigation system components and potentially other assets. A map becomes very useful tool at a time of management and/or service provider change.

❓ Implementation

The irrigation assessment, in and of itself, produces no water savings or efficiency gains. All too often, we see examples of audits and assessments completed with no action taken on any recommendations. Given the costs associated with water waste and inefficiency, irrigation audits/assessments should be given serious review. There are almost always opportunities for phased-in improvements. Realized savings from initial phase improvements may become the revenue source to fund additional improvements.

❓ Scheduling – (Weather-Based Irrigation Controllers)

Proper irrigation scheduling is the single largest contributor to the reduction of water waste in the landscape. Watering schedules must be adjusted frequently in response to changing weather conditions and changes in any given plant's water requirement to reduce waste.

Combined with proper management, weather-based irrigation controllers become the most effective tool for reducing water waste and improving plant health and visual appeal. Most weather-based controllers combine horticulture science and real-time weather data to automate the process of calculating and adjusting irrigation schedules. It's a process of taking guess work out of irrigation scheduling and putting sound science to work.

Remote management can typically be enabled via connected devices to deliver even greater flexibility and efficiency.

🔍 **Maintenance**

Once an irrigation system is operating in an efficient manner, ongoing maintenance is the key to keeping the system operating at peak performance. Frequent inspection of all components in operation is the cornerstone of effective maintenance. Line leaks, sprinkler head failures and other water wasting conditions should be discovered quickly and corrected in a timely and cost-effective manner. In those situations, where conventional controllers are still in use, frequent site visits are necessary to keep controller schedules properly adjusted.

Sustainable Results:

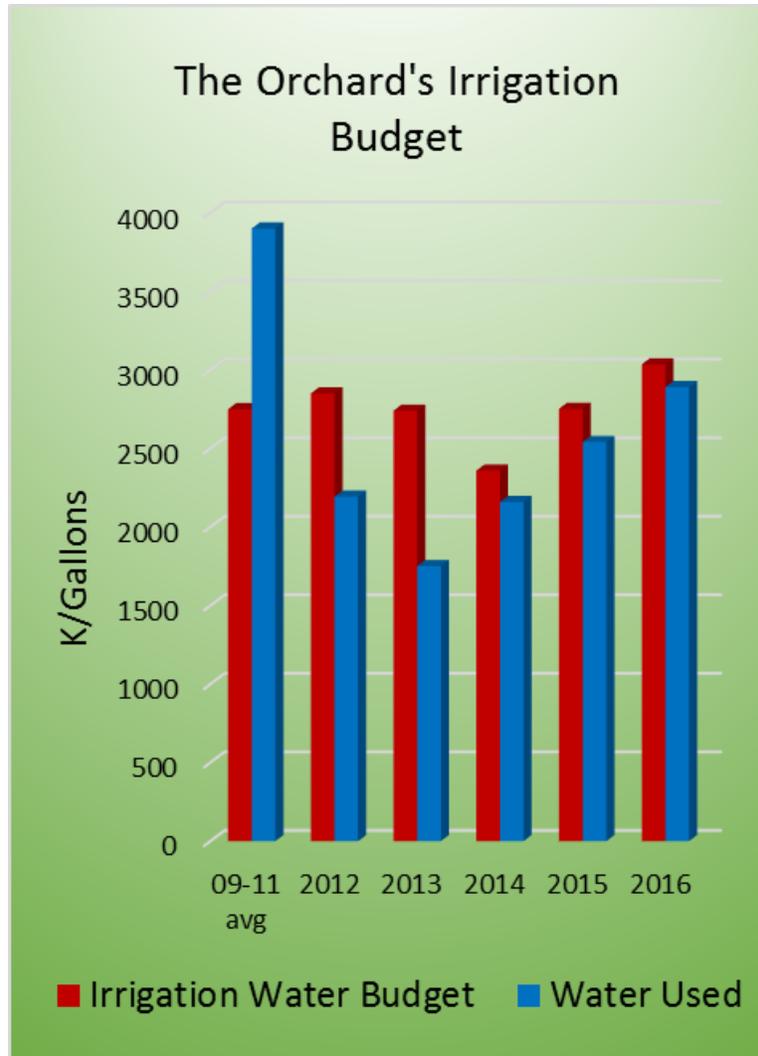
Efficient technologies, coupled with sound irrigation management practices, can produce 20%, 30% possibly even 40% reduction in landscape water use on many sites. A local water utility conservation manager recently made the following comment after a 2-year pilot study. ***It is evident that an ET, weather-based controller, with proper management, can have a great impact on applied irrigation throughout the growing season. While the addition of higher efficiency heads and nozzles give an additional benefit, it has much lower impact than sound water management practices.***

** Taken from 2015/2016 Aurora ET Controller Pilot Study*

Over the last eight years, Denver Water has made significant progress through its “Use Only What You Need” campaign. Now, Denver Water is customizing water budgets based on irrigated area for its largest commercial customers. Water budgets allow both Denver Water and its customers to know exactly “what they need.” *Taken from Colorado Water Plan – Published December 2015

With 5 years of results

- Over 6,000,000 gallons of use reduction
- Over \$30,000 in avoided water cost
- Sustained results 5 years running



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ET Irrigation is a Landscape Water Management company that helps clients reach their conservation goals.*