

City of Aspen *Water Efficient Landscaping Standards*

A Summary

By: Rick Magill, Water Efficiency Plans Review Technician

The City of Aspen has been promoting water efficiency since the mid-1990s. The City approved its first water conservation plan in 1996. Aspen's water utility currently has limited storage and the water supply is most vulnerable from the late summer into fall when vegetation is thirsty and resulting landscape irrigation demands are still high while stream flow from melted snow pack is diminishing. This water conservation/efficiency program is focused on efficient outside water use, which helps mitigate this vulnerability.

As much as 60 percent of residential water use was going towards landscaping in the City of Aspen, even though outside irrigation is only necessary during the relatively short growing season of this well-known Colorado mountain community. According to a 2015 water efficiency study by the City, outdoor residential use of water accounts for the largest percentage of use of the city's treated water. From 2009 to 2013, the City's water customers used an average of 795 acre-feet a year for residential outdoor watering, according to the study, while using 598 acre-feet for indoor commercial uses, 486 acre-feet for indoor residential uses and 151 acre-feet for snowmaking.

The resource conservation-oriented mindset of the City and its residents, along with the recent recommendations of local and regional water efficiency and conservation efforts, resulted in the passing of a *Water Efficient Landscaping Standards Ordinance* by Aspen City Council in June of 2017.

The creation and implementation of water efficient landscaping regulations required coordination and time commitments from Parks, Engineering, Building, Community Development, Attorneys, Pitkin County, Colorado Parks and Wildlife, and outside consultants. The process took more than ten (10) months with over a dozen stakeholder meetings and significant input from private industry involved in landscape design, landscape installation and landscape maintenance.

The purpose of the adoption of Water Efficient Landscaping Standards (WELS) is to promote the values and benefits of healthy landscapes while recognizing the need to invest water and other resources as efficiently as possible; establish a structure for planning, designing, installing, maintaining and managing water-efficient landscapes in new construction and renovated/rehabilitated projects; and use water efficiently without waste by setting a "maximum applied water budget" as an upper limit to reduce water use to the lowest practical amount.

The WELS ordinance provides policies, guidelines, and minimum landscaping design, installation, maintenance, and management standards criteria to governmental agencies, design professionals, private developers, community groups, and homeowners for new development and significant remodels. These standards promote efficient development and use of water within the City of Aspen's water service area. The water efficiency and landscaping standards are also applicable to properties in adjacent Pitkin County that use City water. Implementation of these standards fulfills certain recommendations identified in the City of Aspen's Municipal Water Efficiency Plan (updated in 2015), the Roaring Fork Regional Water Efficiency Plan (2015), and the Roaring Fork Watershed Plan (2012).

A 12-month pilot phase began in June of 2017. In August of 2018 the pilot phase was extended by City Council to the end of the year. During the pilot phase, all the water efficiency standards will be required, but the City will not deny a project a Certificate of Occupancy for failure to meet the

Maximum Applied Water Budget standard or on the results of the post-installation irrigation audit report. The City encourages efforts be made, to the extent possible, to meet the Maximum Applied Water Budget standard during the pilot phase. The Utilities and Parks Departments fully expect cessation of the pilot phase and enter into full force and effect of the Ordinance by early 2019.

The WELS review is required for projects that meet or exceed the following thresholds:

- Landscaping, grading, installing or disturbing hardscapes, additions to structures, etc. that has a disturbance area greater than 1,000 square feet and greater than 25% of the entire site.
- All new construction with internal work only that demolishes greater than 50% of the existing structure (based on the entire square footage of rooms where floors, ceilings, or walls are exposed over the square footage of the structure).

As part of the building permit process, the City requires commercial and residential projects (new or remodels) submit a landscape design plan, an irrigation design plan, and a water budget analysis to promote the efficient and appropriate use of water, plants, and soil amendments in the landscape.

Another requirement of the WELS ordinance is that an audit of the irrigation system be completed by a certified third-party auditor to assure it has been installed according to the irrigation design and is functioning efficiently. The City Parks Department may also inspect landscaping and irrigation systems prior to issuance of a Certificate of Occupancy.

The total irrigation water cannot exceed a Maximum Applied Water Budget of 7.5 gallons/season/square-foot of irrigated landscape area (12 inches/season), unless one or more of the following special features to incentivize healthy landscapes are included: Non-irrigated protected native vegetation areas; Ecological restoration areas; Bioretention areas; Non-irrigated permeable areas; and Storm-water conveyance infrastructure. If any combination of the special feature areas totals to at least 5% of the total irrigated area, then the Maximum Applied Water Budget increases to 8 gallons/season/square foot (12.8 inches/season). If any combination of the special feature areas totals to at least 10% of the total irrigated area, then the Maximum Applied Water Budget increases to 8.5 gallons/season/square foot (13.6 inches/season). Rain barrels are incentivized when used to irrigate plantings in the Low or Very Low water use category with drip irrigation. For these areas, the calculated Irrigation Water Need may be decreased by 125 gallons per season for one (1) 55-gallon rain barrel, or by 250 gallons per season for two (2) 55-gallon rain barrels.

A few projects, specifically in the West End of Aspen, were coming in above the 7.5 gal/season/sq. ft. water budget, in part because of the cool-season turf planted along and in the public right-of-way. In a revision to the original WELS Ordinance, the City has now excluded the public right-of-way from the water budget calculations to address that issue. A large majority of the WELS applications to date are proposing to use less than the 7.5 gal/season/sq. ft. water budget standard.

To date, the City of Aspen Parks and Utilities Staff have reviewed and approved twenty-three (23) WELS reviews, which allows an applicant/permit to proceed in the City building permit approval process. At this writing, there are twenty-seven (27) active permits in various stages of review, and these are expected to achieve WELS review approval in the next three to six (3-6) months. The City expects third-party irrigation audits and landscape inspections to begin in the summer of 2019.

At the beginning of the WELS ordinance process, there was some concern about the lack of qualified irrigation auditors in the region. Since that time, a QWEL certification workshop took place in Aspen, which resulted in at least six (6) certified irrigation auditors for hire in the Aspen area. There are at least twelve (12) other certified auditors for hire in state of Colorado. The WELS requires that auditors be certified by the Irrigation Association, the Qualified Water Efficient Landscaper (QWEL) program, a professional trade association, or other program labeled by the US Environmental Protection Agency WaterSense program. The City of Aspen will be hosting the second annual QWEL workshop in Aspen spring/summer of 2019 (date: TBD).

Tools/Resources

(Ctrl+Click to follow the links below)

City of Aspen Website:

<https://www.cityofaspen.com/199/Landscape-Ordinance>

Links to specific documents:

[WELS Documentation Requirements List.pdf](#)

[Water Efficient Landscaping Standards](#)

[WEL- Water Budget Calc Sheet .xls](#)

For more information and/or assistance with the WELS program, please contact City of Aspen Parks Department at 970.920.5120 or email: efficientlandscape@cityofaspen.com.