

Saving Water with Landscape Conversion: What practices can stretch our water supply?

Our community continues to grow but our water supply is limited. Where are the best opportunities for saving water and stretching our supply? Colorado Springs Utilities has proven some valuable, water saving options through the Parks Efficiency Program.

Since 2010, Colorado Springs Utilities has worked collaboratively with City Parks to identify important ways to improve irrigation efficiency, save water and sustain valuable landscapes across Colorado Springs. Through 2014, nearly 78% of all neighborhood parks have received irrigation system upgrades resulting in 13.7 million gallons of water saved (overall irrigation efficiency improvement of nearly 20%).

Parks Efficiency Program Savings						
	2010	2011	2012	2013	2014	Total
Number of Parks	20	21	17	20	17	95
Acres	91.13	106.2	96.85	103.34	57	455
Annual Savings* (million gallons)	3.04	3.14	3.40	2.85	1.28	13.72

*Savings based on assumption that City Parks waters to the prescribed requirements to maintain bluegrass. In recent years, Parks has not had the budget to water bluegrass in our parks to the prescribed levels; during these years efficiency programs have helped Parks stretch their available watering budget.

Situation

As part of the Parks Efficiency Program, Colorado Springs Utilities selected areas of Kentucky bluegrass to convert to native grasses. By converting low-use, high maintenance and high water use areas with a sustainable and attractive landscape, Colorado Springs Utilities goal was to improve Parks Efficiencies and identify new solutions for city managed areas. The results have demonstrated dramatic improvements in the appearance and cost of watering and maintaining our Parks.

Before Colorado Springs was developed, much of the original vegetative cover was native grasses. From 1970-2000, large areas of Kentucky bluegrass were installed in Colorado Springs parks and medians. At the same time Colorado

Springs experienced sustained drought conditions (2002-2014), poor economic conditions forced a significant decrease in the City Parks budget (85% decrease across 2007-2010). Kentucky bluegrass suffered throughout the city and such conditions led Colorado Springs Utilities and City Parks staff to consider other, more sustainable landscaping options that require less irrigation.

Kentucky Bluegrass

3x/week watering
1x/week mowing
Suffers during drought
Less sustainable

Native Grass Mix

2x/month watering
3x/year mowing
Withstands drought well
Better appearance

The Opportunity

City Council asked Colorado Springs Utilities to collaboratively develop an efficiency program that would assure more accountability for how water is used in our parks. The Parks Efficiency Program was defined as a pilot project with a goal of determining long term, sustainable ways to reduce irrigation across 530 acres of city parks. It included re-defining watering schedules, upgrading equipment, training irrigation managers and technicians and implementing new, proven technologies.

The Parks Efficiency Program has provided our community with a more efficient use of water services and improves the quality of our parks. Through 2014, nearly 78% of all neighborhood parks have received irrigation system upgrades resulting in an overall irrigation efficiency improvement of nearly 20% savings.

In addition to upgrading irrigation systems, Colorado Springs Utilities worked with City Parks to select areas of Kentucky bluegrass to convert to native grasses as part of a pilot landscape conversion program. We identified low-use areas where maintaining Kentucky bluegrass proved challenging. Examples include medians, right of ways, peripheral areas of parks, and low-visibility areas. By converting Kentucky bluegrass to native grasses, we expected to lower water requirements and maintenance costs.

In 2013, Utilities and Parks staff selected four projects for conversion. Two were large areas of neighborhood parks, one median and one right of way. We targeted different sizes and land uses to compare the costs and benefits. The initial results have demonstrated exciting potential improvements in both the appearance and cost of watering and maintaining City-managed areas.



Barnes Median, before and after native grass conversion.

Initial Results

Of the four pilot projects implemented in 2013, we discovered that costs and potential benefits are quite positive, and include a wide range of results. Two contrasting projects are worth highlighting:

In **Keller Park** we converted 7.5 acres of Kentucky bluegrass to a native grass mixture. This was a large, low-use area that had an unhealthy stand of bluegrass. One year later, native grasses have covered the area well, and have experienced an annual savings of nearly 2 million gallons of water. Including watering and maintenance savings, the return on investment is 4 months and \$8,108 per acre annually. The water savings for such projects comprise about 30% of the overall savings, with the remaining due to reduced mowing requirements.

At the **Barnes Median** (across from Sky Sox Stadium), a 1/3 acre bluegrass area was converted to native grass. This difficult-to-reach median is a south facing, sloped area that proved unsustainable for bluegrass. Because of its location, a more labor-intensive and costly approach was required to remove

the existing vegetation. One year later the conversion has resulted in an annual savings of 133,600 gallons of water. Including water and maintenance savings, the return on investment is 5.5 years and \$281 per acre annually.

Work In Progress

Most landscape professionals advise that native grasses typically require 3 years for establishment. In our four pilot projects, native grasses established more quickly—in 2014, we were able to cut watering back to two times per month during the irrigation season (compared to the typical 3 days per week



Unmowed native grass gone to seed in early fall.

necessary for bluegrass). Another future benefit during drought years is that native grasses are better adapted to withstand periods when less water is available. If they are not watered, they will go dormant. In years of shortage, this water savings could allow our community to allocate water to more critical uses.

We are encouraged by the initial results of this program, and there are several items that warrant further consideration. First, we learned that to establish native grasses, for the first month, it takes as much water as is required to keep well-established bluegrass healthy.

Second, while native grass conversions can be a good water conserving landscaping option, their benefits are best applied to larger

areas—from 0.5 to 15 acre sites such as business campuses, churches, city properties, commercial buildings, HOA and SIMD maintained areas. Other landscaping options might be more appropriate in high-use or high-visibility areas. Third, native grasses require a different, long-term maintenance program compared to Kentucky bluegrass—a process that will require further development for specific growing conditions in our community. Fourth, native grass may look unfamiliar to people used to Kentucky bluegrass. As a community we must be willing to understand what native grasses are, appreciate their aesthetic appeal and understand their use.

Next Steps

We anticipate partnering with organizations that desire to learn more about such landscape conversions and convert large areas of their own properties. With such partnerships we intend to be a valuable resource for education, consultation and support, and in so doing, help our community transition to a much lower landscape watering footprint with beautiful and sustainable landscape solutions. For more information contact Eric Becker at 719-668-4572 or ebecker@csu.org.



Keller Park, before and after native grass conversion.