

# Water Use Ken-Caryl Ranch

## What can you do?

As we evaluate our 107 acres of irrigated greenbelt and park areas to better identify opportunities for improved sustainability and environmental stewardship, we encourage the rest of the community to evaluate their own landscaping. We estimate that the total landscaped areas (lawns, gardens and landscape beds) throughout 3,216 private single-family lots is approximately 300-350 acres. If we all do our part this represents a great opportunity for our community to be leaders in Colorado's fight for water conservation.

## Historic Water Use

Historically speaking, when the Ken-Caryl Ranch community was originally designed and during the first few years of operation, the majority of the irrigated greenbelt corridors were not intended to be irrigated and/or maintained as turfgrass environments. The areas were intended to be native grass, recreating the natural environment of the original Ken-Caryl Ranch.

In the 1970's and 1980's, water conservation was generally not publicly viewed as critical to the overall health of our environment. The limited interest in water conservation and environmental sustainability led past Boards and staff to abandon existing dryland areas and convert many of these areas into maintained irrigated turfgrass areas. The majority of these turfgrass conversions occurred in the "Plains" portion of Ken-Caryl Ranch.



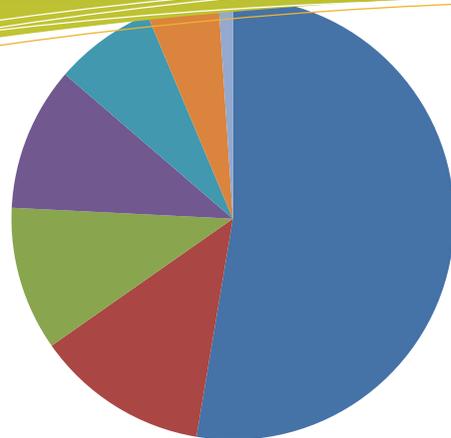
The reality of drought periods and water shortages throughout the western United States, including Ken-Caryl Ranch, is well documented today. As water demand is increased and supplies are reduced, we must do our part to protect this natural resource. The "Water" line item costs represent the largest single line item in the Ken-Caryl Ranch Metropolitan District's \$3.3 million annual budget for general operations. In the past 10 years the average annual water consumption has been nearly 56 million gallons at an average cost of nearly \$250,000 annually. Let's reduce our water expense and bring Ken-Caryl Ranch back to the true Colorado living environment that we all cherish.

# Create Practical Turf Areas

## What can you do?

Determine the “active” vs “passive” spaces in your lawn just like your Ken-Caryl Ranch community and evaluate the function of Bluegrass in your landscape. Limit Bluegrass to “active” areas that serve a purpose, such as play areas or softening a front entrance.

Bluegrass water consumption can be reduced by irrigating more efficiently, mowing at 2 ½ - 3 inches and leaving the grass clippings on the lawn. Grass clippings do not cause thatch in lawns in our semi-arid Colorado climate.



- Landscaping 50%
- Toilets 12%
- Laundry 10%
- Bathing 10%
- Faucets 7%
- Leaks 5%
- Dishwashers 1%



## Passive vs. Active Areas

The evaluation of Ken-Caryl Ranch’s irrigated greenbelts is always under evaluation. Our primary approach is to determine if the space is an “active” space or a “passive” space and then create practical turf areas accordingly. Did you know that in our Landscape Master Plan we have identified substantial acreage of additional turf grass areas where we can reduce water use and become even more environmentally responsible while improving our overall landscape aesthetic?

Active recreation areas include spaces such as athletic fields, tennis courts, pools, playgrounds, high-use areas around community buildings for youth camps, and general circulation. Passive recreation areas include spaces such as turf areas adjacent to multi-use trails, landscaped areas adjacent to the various community entrances and collector roads as well as medians.

Did you know that homeowners within Ken-Caryl Ranch use approximately 50% of their annual water use to irrigate lawns and gardens for 6 or 7 months? In most cases residents could reduce that amount (and save on their utility bills) by evaluating their lawns to determine what areas are “active” vs. “passive” and adjust their approach to landscaping and water use.

Most of the irrigated lawns in Ken-Caryl Ranch are Bluegrass. Even though Bluegrass has a higher water requirement than other species, it can be part of a sustainable landscape design.



# Choosing and Using Mulch

## Mulches for challenging sites.

Windy areas • Use any type of rock, or shredded wood and bark mulches

Slopes • Use angular rock, shredded wood or bark, or pine needles that won't roll downhill

Under trees • Use a wood or bark mulch or pine needles, not rock or gravel products

Groundcovers • Use mulches with smaller particle sizes, like fine wood chips, pea gravel or crushed gravel

## How Deep?

Wood and bark mulches around larger plants (trees and shrubs) 4 inches

Wood and bark mulches around smaller plants (flowers and groundcovers) 3 inches

Rock and gravel mulches around larger plants (trees and shrubs) 3 inches

Rock and gravel mulches around smaller plants (flowers and groundcovers) 2 inches

Using mulch is one of the best landscape practices available to conserve water and enhance the growth of landscape plants. Mulch helps plants grow to be more attractive and resilient by stabilizing moisture and temperature levels, reducing evaporation in the upper layers of soil, and preventing new weeds from germinating and growing.

Most commercially available mulches fall into one of two categories: 1) wood products like wood chips, bark chips, shredded wood, or a mixture of wood and bark, or 2) rock products like gravel, pea gravel, decorative rock, and crushed gravel.

### Wood/Bark mulch Pros and Cons

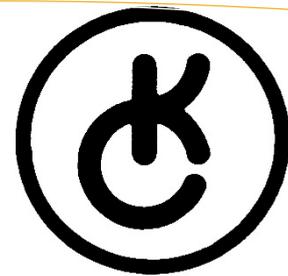
**Pros:** Best for preventing new weeds in landscape, it will breakdown and improves soil quality over time. Keeps soil cooler and moister than rock mulches

**Cons:** Breakdown means it must be replenished every one to two years. Lightweight materials may blow away.

### Rock Gravel mulch Pros and Cons

**Pros:** Doesn't blow away in windy areas. Doesn't require replenishment over time. Retains heat well, some xeriscape plants prefer rock mulch.

**Cons:** Requires regular weed control throughout the growing season. Keeps soil warmer and drier than wood or bark products, but is better than bare soil.



Despite being commercially available, there are several products that will not provide benefits to landscape plants. 1) Rubber mulch has been shown to leach potentially harmful chemicals into soil and be extremely flammable. 2) Mulches that mat down easily don't allow oxygen and water to move easily into the soil, which is required for healthy landscape plants. 3) Landscape fabric, for the most part, is problematic. Wood and bark mulches blow away much more easily when placed on top of landscape fabric. Furthermore, landscape fabric under rock and gravel mulches is not recommended because it collects dust and debris over time, worsening weed problems.

If your house is located in an area at risk for wildfire, use wood, bark, or pine needle mulches much further from your house. They are best used in peripheral areas of your property, but make sure they are limited to "island" areas separated by at least 10 feet of mowed grass or rock mulch rather than large, continuous swaths. Regularly remove lower limbs of trees and shrubs to prevent burning mulches from igniting landscape plants.



# Water Efficiently

## What can you do?

Apply 1 to 1.5 inches of water per irrigation cycle. Determine how long this takes by setting several shallow containers (such as baking pans) in different areas of the lawn for thirty minutes while irrigating.

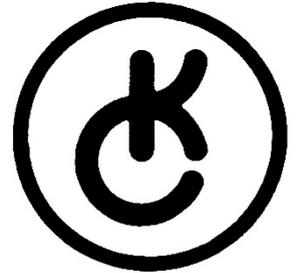
Measure, in inches, the depth of water accumulated in the containers. The average depth of water in these containers multiplied by two is the inches of water per hour emitted by the sprinkler system.

## More is not necessarily better

Many people irrigate their lawns and gardens too long and too often. Efficient irrigation can reduce water use by 30%-80%. For a healthy landscape irrigate ONLY when the plants need water and DEEPLY to encourage deeper root growth. Homeowners can determine if their lawn needs water by inspecting the turf for signs of wilt. This will often show up in the same location of the lawn time after time. Footprints or lawn mower tracks that remain at least ½ hour after traffic or the turf looking blue-gray are also indications that your lawn needs water.

Other tips for irrigating your gardens:

- Evaluate your soil type to determine its water holding capacity.
- Group plants according to their water need, creating “hydrozones.”
- Check your automatic irrigation system frequently to be sure it’s working properly.
- Only water between 10 pm and 6 am



The Ken-Caryl Ranch maintenance staff decides when to turn on the irrigation system after evaluating the soil conditions, recent precipitation and the needs of the plants. The homeowner should evaluate when water is needed and control the irrigation system. Let your plants’ condition guide you rather than watering on a fixed schedule.

