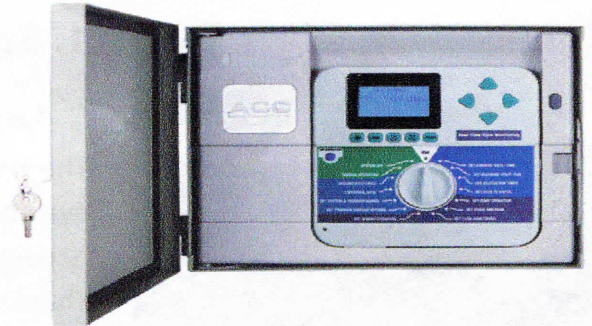


Irrigation Evaluation Report

This report contains the results and summary of an irrigation evaluation performed by Colorado Springs Utilities at Parkside Home Owners Association on 08/22/2016.

What we want to share with you:

1. How Much Water?
2. Irrigation Evaluation Findings
3. What's Next?



How Much Water?

Importance of water- how it affects you

We know you face a host of challenges such as multiple contractors, home owner concerns, property damages, and maintenance issues, so we appreciate the interest you have taken in trying to improve your water use. It is our goal to meet with our customers to show them how to maximize budgets while improving plant health. Your site was particularly tricky because of the recent redesign of the property. Unfortunately we aren't able to get an accurate landscape measurement of your property due to the recent reconstruction. This prevents us from being able to accurately know what the water use your site should be.



Based on what we found during the inspection, we believe there are many ways you can improve your water use to allow you to have a better looking property while stretching your budget. Here are our findings:

Irrigation Evaluation Findings

Current Irrigation Condition- The Immediate Issues

Taking into account the many difficulties you faced while reconstructing your property, the irrigation was in good shape. We know it had to be quite the task to get all the new individual houses hooked up to the main line system that feeds the community. We did however, find some issues we feel could help reduce water consumption and improve efficiency.



1. Breaks & Leaks

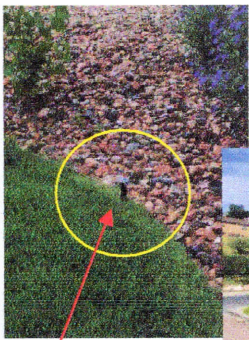
\$ -Low Cost 💧💧💧💧 **-High water savings**

There weren't many of these water wasters on your property but even one is too many when trying to conserve water. Most of these issues were in the section of houses with the original landscaping. These water wasters are almost impossible to avoid and waste a lot of water very quickly. Each broken head is estimated to waste up to **20 gallons per minute**. Installing a flow sensor and master valve at each backflow is recommended (see the [stretching your water further](#) section). These additions help determine if there are any leaks and prevent them from running if they occur. The key is to set good parameters to make sure the flows for these zones are accurate.

While hard to avoid, breaks in the irrigation system cause significant water loss.

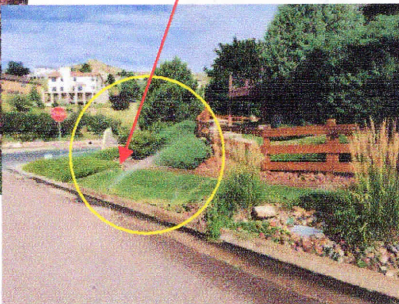
How do you fix it?

Fix heads, verify flow parameters (if a flow sensor is installed) and check the irrigation periodically. Don't forget to check drip areas that can be easier to overlook.



A 360 nozzle where a 180 should be

A rotor zone designed to spray over a sidewalk



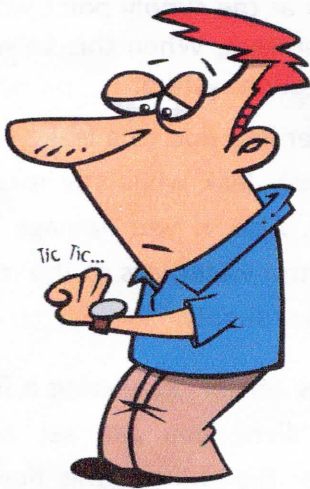
2. Overspray/ Nozzle Selection

\$ -Low cost 💧 **-Low Water Savings**

The second most apparent efficiency issue we discovered on your property was the overspray. Some of this was caused by improper nozzle selection while some heads could just use minimal adjustments. Another cause of these issues comes from poor design where rotors were used to spray over sidewalks to get coverage. These issues are common at many properties but the high number we found at your property made it the number 2 issue.

How do you fix it?

Allowing time and budgeting for these minor fixes and adjustments to be made will improve the overall performance of the irrigation system. The design issues will require more intense problem solving but nothing that is unachievable.



3. Programming

\$ -FREE 💧💧💧 **Moderate water savings**

The number one, easiest, most effective way to stretch water is to adjust the irrigation program to maximize your water use. This single factor will allow you to get the most beneficial use from your water while creating a healthier turf. The current programming on the controllers we were able to check gave us the impression that you may be over watering. All your zones are scheduled to run twice a day, 5 days a week. The drip system is programmed to water every day. One start time is scheduled for 7 p.m. which is outside of our recommended watering window.

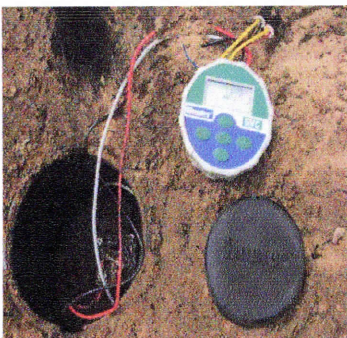
Change start times to minimize run off and water between 10pm to 6am. Make sure you are watering according to the season (1-2 days per week in the spring and fall, 2-3 days per week in the heat of the summer) and applying about a ½" of water each watering day. To apply a half inch of water a spray head takes about 20 minutes,



a rotor takes about 45 minutes and rotary sprays take about 60 minutes. **Want even more savings?** Use the **cycle soak method** to get the most use out of your water. What is cycle soak? Cycle soak is where each zone is set to run for multiple fractions of the total run time and given time to soak in before running the same zone for the next fraction of the designed time. This allows the water to soak deeper into the soil, encouraging deeper roots, i.e. a more drought resistant turf. Try to achieve a ½" of watering each watering day. This means, if running 2 cycles, each cycle should water about ¼". Cycle and soak is **EXTREMELY** important when you have spray nozzles. We have found that with some conditions it might be best to cut the times in thirds or fourths to try and penetrate the ground more. This will have huge impact on your property because of the amount of hills and the clay soils that are harder to water correctly. The measurements from our soil samples show that right now the grass roots are between 2" and 2½". Try and get to 4" to 6" root depth.

4. Battery Controllers

\$\$\$ -Mod- high cost 💧💧💧 **-Mod-high Water Savings**



Some areas of turf are controlled by battery operated valve controllers because the original zone wires were damaged at some point and never repaired. These controllers can be problematic because they have no communication with the rest of the system. This can cause problems with programming creating overlapping run times. Also they can't be connected to a rain sensor which means during a rain storm some zones will still use irrigation water. If a master valve and flow sensor (see the **stretching your water further** section) are installed on the backflows they will also have no way to monitor and control these zones.

The Solution: While tracking dead wires can get costly, it is the only correct way to solve this issue. Coming up with a way to work this into the budget will benefit the community in the long run.

Stretching your water further:



A master valve is an electric valve installed at the supply point which controls water flow into the main piping system. When this valve is closed water will not be supplied to the irrigation system.

A master valve will greatly reduce any water loss due to a leaky zone valve because the leaky zone valve can only leak while the master valve is providing pressure to the system. Also, if you damage the irrigation main line, a master valve will control water loss so the main can be repaired without shutting off the water supply.

Another great water saving device is a flow sensor. By pairing a flow sensor with communicating smart controllers, you can set zone parameters based on the efficient flow for the zone. If this flow is exceeded (or is too low), the flow sensor will shut off the zone, and send an alert to the irrigation technician. We've seen this technology save thousands of dollars for customers! **We also offer a rebate for smart controller conversions. The rebate is half of the equipment purchase price up to \$400.**

So what happens if you do nothing...?

Whenever you water, water is being wasted through breaks and leaks overspray, Programming issues, and battery controllers.

What's Next?

Taking action & follow up inspection

The information you just read may seem overwhelming, but we would love to assist you in any way possible. The next step is to take action. Create a plan to resolve the immediate **issues 1-4** and start saving today! There is potential for even more savings by implementing "Stretching your water further" suggestions by the end of the year. In the end, all of these changes will help you stretch your water while improving plant health.

If you have any questions, please feel free to contact us at 668-8283.