

MONTHLY REPORT Sept. 2019

Our Vision: We will be a national leader among water utilities, focused on customer satisfaction and delivering outstanding quality and value.

Environmental Leadership

By: Lauren Moore, Water Resources Program Analyst

Staff members from the Castle Rock Water Environmental Management System Committee recently attended the annual Environmental Leadership Program Awards event. This event recognizes companies across Colorado who have voluntarily gone above and beyond the rules and regulations set forth by the

Colorado Department of Public Health and Environment to serve their communities and protect the environment. Castle Rock Water maintains Gold Status for the second year in a row and was on hand to welcome the new members entering into the Bronze, Silver, and Gold level status. The implementation of the Environmental Management System in 2018 propelled Castle Rock Water to the Gold level. This document identifies the goals and tactics for minimizing impacts on the environment and includes actions focusing on increasing renewable water, reducing electrical usage, enhancing watershed water quality and best recycling practices within the office.



Lauren Moore and Sandi Aguilar with CDPHE ELP Coordinator Lynette Myers

Clear Sky Elementary tour at PCWPF

By: Shawn Griffith, Operations Manager

Plant Operations and Water Conservation staff hosted a tour of Plum Creek Water Purification Facility (PCWPF) for Clear Sky Elementary School on September 29, 2019. Attending the tour were over 120 sixth grade students, eight

parent volunteers and four teachers in two tour group sessions. Each session was divided into two rotating groups, with one group receiving a plant tour with the water treatment operators, while the other group received a lecture in the conference room from the conservation staff.

Water conservation staff discussed water sources and the importance of protecting and conserving water resources. Plant operators took students



sedimentation basins, micro-filtration Pall membranes, water treatment chemicals, disinfection processes, high service pumping, and the water treatment operator control room. The students asked great questions and enjoyed their visit.

The gift of clean water By: Sandi Aguilar, Customer Relations Program Manager



Students at Academy Charter wrote thank you notes after a presentation from Castle Rock Water staff on pollution in watersheds and treatment filtration processes. The students also made a rudimentary water filter.

While classroom presentations are part of what we do. sometimes Castle Rock Water is spurred by the students. The Academy Charter 7th grade Enrichment Class had joined the National Geographic GeoChallenge focusing on tackling plastics in our waterways and requested a classroom presentation by Castle Rock Water. Microplastics are more of an ocean problem as they do not have a chance to form in our headwaters. However, given the buzz about microplastics, our water quality division looked into it. Most microplastics are typically 5-100 µm and as our membrane filters remove everything > 0.1 μ m, there should be no microplastics in our finished drinking water. The students were excited to learn they prompted this research by their local water provider!

Checking off the tactics

By: Mark Marlowe, Director

Castle Rock Water rolled out the new five year strategic plan to staff in August. A summary of the strategic plan was created with a superhero theme and staff dressed for the occasion. In addition, a system for tracking progress on the strategic plan was presented to staff. Staff celebrated the completion of the first tactic from the new plan, 6-4-1 which was to establish an Apprenticeship Program in collaboration with local colleges/ universities that will attract new people to the water utility industry. Further, staff was invited to create their own super hero name and identify their mission from the strategic plan. By way of example,



The Director of Castle Rock Water will now be known as "Captain Shower Cap, putting an end to long showers everywhere."

Huge progress is also being made on tactic 3-3-6, to create an online Water Wiser course. The final touches are being put on this tactic and the online course should be available by the end of the year. Several years ago Castle Rock Water created a requirement whereby Water Wiser customers had to renew their training every five years to maintain the designation which allows them to water on any day during the proper watering hours. This online class is being created to make that renewal process more convenient for our customers.



The ColoradoScape contest was sponsored by Canvas Credit Union, YMS Landscaping, ColoradoScapes Landscaping, and Rainbird.



Changing the landscape

By: Sandi Aguilar, Customer Relations Program Manager

Fifty percent of all the water used in their landscape. Three 1200 lbs. Castle Rock goes to watering the landscape and the yard is also the easiest place to reduce water consumption. Educating our residents on how beautiful a lowwater landscape can be was the purpose of the ColoradoScape contest. This summer, we asked our residents to submit a short video on why their yard sucks-water that is. The Schumans won the social media vote and this fall, they got their water guzzling Kentucky bluegrass lawn replaced with a vibrant and colorful ColoradoScape. More than 70 xeric plants, trees and shrubs were professionally designed into



boulders and a meandering dry creek bed were added to provide additional interest and focal points to the yard.

Despite adding more plants, this low-water design is expected to save the Schumans thousands of gallons of water every year. And instead of mowing the lawn, they can pick flowers!

Castle Rock Water is developing videos from the ColoradoScape transformation to educate residents on what it takes to make a beautiful, low-water landscape with seasonal interest.



Nater Star Award

The Water Star Award recognizes a coworker within Castle Rock Water for doing an excellent job in fulfilling the Department's Vision and Mission. Similar to the Town's Rock Star Award, the award is passed from one employee to another in a different division who demonstrated performance and/or behavior that supports our Vision and Mission. The award will be presented at each monthly staff meeting. The following criteria are the basis for awarding this coveted honor:



Safety

Demonstrated outstanding safety conscious behavior Exceptional Service

Provided exceptional service to either an internal or an external customer.

Quality

Delivered excellent quality service or product. Value

Provided remarkable value for our customers. Environmental

Demonstrated extraordinary environmental responsibility. Fiscal

Demonstrated superb fiscal responsibility.



Jon Stapp awarded David VanDellen, Stormwater Manager, for his outstanding customer service and dedication to a successful Stormwater Department.

Water Demand



Max daily water demand

Maximum demands inform us of the size of the infrastructure necessary to provide water service over short periods of time and help us to plan future water resources needs.

Sept. 2019 Average Difference **15.3 million gallons** 13.6 million gallons 12% greater

Renewable water supply

- The CR-1 diversion produced an average of 0.85 MGD for the month of September, supplemented by 30.49 AF (minus stream losses) from our Bell Mountain – Denver Well during the second half of the month.
- The Town's thirteen alluvial wells and CR-1 produced a total of 49.97 MG of renewable water (and an average of 1.67 MGD).
- WISE water supplied an additional 25.16 MG of renewable water.

Water demand total

Water demand total is how much water was used over the entire month. Population and weather changes can significantly affect usage.

Sept. 2019 Average Difference **392.2 million gallons**375 million gallons4.6% increase



Our goal is to reach 75% renewable water by 2050.

In total, renewable supplies accounted for 18.7% of the total water supply for the month and 32.8% of the annual water supply (2,382 MG or 7,311 acre-feet) to date.

Water Demand continued...

Alluvial supply Sept 2019 production: 24.5 MG

Well projects: Three rehabilitation projects this past spring and more are scheduled for this fall.



Reusable supply

YTD	20.4%
Sept. 2019	18.5%

Renewable supplies are those water sources that are replenished by precipitation (think of our alluvial wells, CR-1, and WISE), whereas reusable supplies are those waters that are either from the Denver Basin (deep wells) or imported supplies (such as WISE and RHR) that can be used over and over, to extinction.

East Plum Creek FlowsSept 2019 avg flow:3.42 cfs

The flow hydrograph represents stream flows in East Plum Creek (EPC) taken from the stream gauge located above Haskins Gulch. The hydrograph shows that estimated flows in the East Plum Creek basin ranged between 0.08 and 70.7 cubic feet per second (cfs) during the month of September, with two major precipitation events around September 7th and a few smaller events towards the second half of the month. This September, the average streamflow in East Plum Creek (EPC) was 3.42 cfs, which is approximately 86% of the median daily streamflow of 4 cfs. As a comparison, in September 2018 the average streamflow in EPC was 1.07 cfs, which was 27% of the median daily streamflow. Low streamflows in EPC correspond to a decrease in the amount of water that we can divert at CR-1, negatively impacting this surface water supply. We were, however, able to supplement East Plum Creek with 30 AF of water (minus stream losses) from our Bell Mountain Ranch - Denver well upstream of CR-1.

There were active calls on the South Platte River during September. Some of the active calls have had

a more senior water right than some of the Town's water rights. This means that those diversions are out-of-priority, so the stream depletions will be covered by non-tributary return flows. This also means that the Town will have slightly less reusable water going down Plum Creek during an active call. The priority date on a river call may change each day depending on the stream flow available and the seniority of the diversions that need water on that day.



Water Demand continued...

Drought Monitor

The average WSI for September was 1.5, well above the 1.1 trigger level, which is considered "good."

According to the U.S. Drought Monitor maintained by the United States Department of Agriculture (USDA), approximately 60% of Colorado is Abnormally Dry (D0) on the western side of the state, with a small portion of the southwest corner experiencing Moderate Drought (D1). The Town of Castle Rock

Drought Management Plan uses a Water Supply Index (WSI) for the Town that is similar to the U.S. Drought Monitor in that it provides us an indicator to drought level; however, the WSI accounts for local conditions relative to the Town's capability to address our water resources and daily water demands. The WSI is calculated by taking the sum of our supply (deep groundwater, alluvial wells, surface water, and WISE) and dividing that by our maximum daily demand. We generally want to see a WSI above 1.1, which means that we have enough resources to meet our demands. Anything below a 1.1 will trigger a drought stage relative to its severity.



Precipitation report *105% above average*

The NRCS Colorado SNOTEL report for October 1, 2019 shows the water year-to-date precipitation for the South Platte River Basin is at 105% of average. While we had a plentiful and late runoff season earlier this summer, July thru September were historically dry.



Plan Review

For each commercial and residential project submitted for development review, Castle Rock Water provides plan review, as appropriate, for:

- Water
- Sanitary sewer
- Stormwater
- Landscape/irrigation
- Temporary erosion and sedimentary control

Projects submitted				
Sept. 2019	85			
Sept. 2018	67			
Plans reviewed				
Sept. 2019	183			

Sept. 2018 136

Permits reviewed

Sept. 2019

70

Permits are system development fees assessed for each individual unit after the project is completed including the number of fixtures, irrigated area, meter size, etc. This is necessary for proper billing.

Service levels

The average number of days assigned to review: 13.6 days The average days to complete assigned reviews: 12.6 days

Plan Review: 82% of the reviews were completed on-time

Permit Review: 90% completed on-time

Review time for each plan is 1 to 5 weeks, a permit is 3 days.







Total Plan Application Reviews

The Town reviews the plans for each project to ensure the public infrastructure built by the developer is following the criteria set by the Town.

Business Solutions

Customer Service

By: Anne Glassman, Business Solutions Manager

The Business Solutions department encourages customers to create an online account at H2Oaccess. This online portal allows customers to access their account 24/7, make payments and review 12 months statement history.

Paperless customers receive statement notifications and Your Town Talk via email. Paperless billing is a cost saving measure for Business Solutions.





The Business Solutions Team tracks a host of statistics and data as we evaluate our levels of service and look for efficient ways to improve on these levels. **Levels are consistently rising due to the growing number of accounts.**









Meters Read



Meters are read the first three days of every month. The number of meters read continues to increase month to month and is a significant increase over last year.

Skipped Reads

Sept. 2019: 0.31%

Measuring skipped reads is a strong indication of the level of preventative maintenance being done by our team. A skipped read is indicative of a problem with the metering infrastructure (i.e. battery, wiring, etc.). Fewer skipped reads means more properly working meters, which is good for all our customers.

The AWWA standard is 2%, so we still continue to stay well below the industry average.

Meter Set Inspections		
Sept. 2019	108	
YTD	939	
Re-inspections	55	

Meter set inspections are required on all new meters installed. This ensures that the meters are installed per specifications and according to Town code. At the time of the inspection, the curb stop is tested for operability and the MXU is installed which provides reading capability for our drive by technology. Re-inspections are needed to ensure installation meets code when original inspections are failed.

Work Orders

Sept. 2019

932

Meter services performs a variety of service orders every month beyond meter reading. These include curb stop maintenance, meter replacement and repair, final reads for transfer of service, disconnection and reconnections, meter set inspections, just to name a few.







Operations & Maintenance

SEPT	LEVELS OF SERVICE		
Drinking Water Compliance	Castle Rock Water will deliver water that meets or exceeds both Primary Drinking Water Regula- tions and Secondary Maximum Contaminant Levels 100% of the time.	<i>Ninety routine samples were completed.</i> All samples were within the parameters set forth by the Safe Drinking Water Act and Colorado Drinking Water Standards.	
Pressure Adequacy	< 1% of our customers will expe- rience less than 43 pounds per square inch (psi) of pressure at the meter during normal opera- tions.	There were 0 water pressure issues this month.	
Sewer System Effectiveness	<1% of our customers will experi- ence a sewer backup caused by the utility's sewer system per year. Castle Rock Water remains in the Top Quartile for based on the American Water Works Associa- tion benchmarking.	There were 0 sewer system issues this month.	
Drinking Water Supply Outages	<5% of our customers will experi- ence water outages for one or more events totaling more than 30 hours/year. <i>Castle Rock Water remains in the</i> <i>Top Quartile for water system</i> <i>integrity based on the American</i> <i>Water Works Association bench-</i> <i>marking.</i>	 There were 4 water system integrity issues this month. In the Meadows a contractor damaged a 1.5" copper service line, which was repaired by our staff, no customers were affected by this repair. A service line leak was repaired in the Plum Creek neighborhood which caused twelve residents to have reduced pressure during the repair. A copper service line was repaired Downtown which caused eight homes to be out of water for less than four hours. There was a water main repair in Plum Creek, which caused thirteen residents to be without water, for less than two hours, during the repair. This leak, a 1" hole caused by corrosion, was on 8" ductile iron pipe. 	
Water Quality Complaints	Castle Rock Water remains in the Top Quartile for based on the American Water Works Associa- tion benchmarking.	There were 0 water quality issues this month.	

Operations & Maintenance



Locate Report

Before you start a project, call 811. Whether you are planning to do it yourself, or hiring a professional, we will help you do it safely. The local 811 Call Center will contact Castle Rock Water. We will schedule a time to come out to locate public water and wastewater lines in the road and in your project area.

YTD:	15,777
Sept. 2019:	1,979

Castle Rock Water's locate requests from 811 have continued to rise, year over year. To date, there has been **one** incidence of damage to lines, as a result of incorrect locate marks.

Field Ops pics



The Collections Team cleaned out the wet well at Mitchell Creek Lift Station. That suit was white when he went in!



Jared and Grant at PCWRA



The Stormwater team made short work of the Cantril Pond project utilizing their new Brushcutter.

Stormwater

Gordon Drive

Castle Rock Water and the Public Works Department are making infrastructure improvements along Gordon Drive to address stormwater flows and minimize street flooding. The project entails the addition of stormwater infrastructure; water and sanitary sewer line modifications and replacement; and pavement maintenance along Gordon Drive.









This project was planned rehabilitation for the water systems and was coordinated to coincide with the scheduled pavement maintenance program.



Plus, our team of "storm troopers" maintains over 166 miles of pipe and culverts, 96 town-owned detention ponds and 4,978 inlets in addition to completing special projects designed to improve water quality.