



## MONTHLY REPORT

### AUGUST 2020



**CASTLE ROCK**  
*Water*  
Securing our future *drop by drop*

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

## Plum Creek Diversion Project

By Matt Hayes Project Manager

The Plum Creek Diversion Project is a pumping station to increase the capacity to pump the water Castle Rock Water has rights to in Plum Creek. The project also allows for recapturing the allotted reuse water currently being expelled into the creek and capturing excess water during free river events. The project incorporated refurbishing existing infrastructure, the building of new, and the collaboration with partnering water providers.



Castle Rock Water purchased the United Water and Sanitation District's Infrastructure, which includes the Plum Creek Diversion in Sedalia in



November of 2017. The Plum Creek Diversion has a capacity to capture up to 25.8 million gallons daily (mgd), but is only able to pump 1.15 mgd up to the Castle Rock Reservoir 1. Castle Rock Water contracted with Dewberry Engineers on the design of the pump station for the existing diversion facility. The new pump station is designed to pump up to 25.8 mgd of captured water from Plum Creek to Castle Rock Reservoir 1. The pump station is designed to pump up to 8 mgd from Castle Rock Reservoir 1 to the Plum Creek Water Purification Facility (PCWPF). These pumps are also designed to be expanded to pump up to 15 mgd back to Plum Creek Water Purification Facility in the future.

The construction contract was awarded to RN Civil Construction in May of 2019. The facility construction was originally scheduled to be completed in June, but the completion was delayed due to the pandemic. The delays were a result of delays in materials availability and slowed construction progress due to social distancing work practices. The project's substantial completion was achieved in early August.

## Diversion continued

During the first few days of operation, the new diversion pumps were able to capture about twice the volume of the old pumps. The raw water pumps have been completed and tested on-site. These pumps will not be pumping back to PCWPF until the Advanced Treatment Project is complete.

RN Civil is working to address the facility's punch list items to complete the project's construction. The

project will be completed within its budget. The overall project cost is approximately \$11.1 million.



## 2020 ColoradoScape Contest

Is it possible to have a beautiful, lush yard, without using a lot of water? Of course! Xeriscape is not the harshness of a mix of rocks and cactus. It is actually a method of design producing beautiful water-sustainable landscapes, using a variety of regionally adaptive plants. Xeriscape was developed in 1981 by a team of landscape architects, contractors, horticulturists, and irrigation specialists here in Colorado (at Denver Water!) Encouraging low-water landscape design is a leading approach to help Castle Rock Water reduce per person water consumption to our goal of 100 gpcd by 2050.

However, many have the mindset that xeriscape (not zero-scape!) means no plants and lots of rocks. On the contrary, while limiting turf area is a major component, xeriscape could increase a yard's total vegetated area while simultaneously reducing water use. Since this design incorporates native plants that are colorful and hardy to our semi-arid, high mountain climate, Castle Rock Water calls the design ColoradoScape.

To educate Castle Rock Water customers about the benefits, beauty and need for more ColoradoScape design, in 2019, Castle Rock Water started giving away a front yard landscape makeover, every year. Choosing the homeowner is done through a social media campaign. Customers are encouraged to provide a short video and post it on social media. Then, the committee that includes the Mayor, Town Council member, Water Commissioner and others, pick the top 5. These five finalists are put back out on social media and the video with the most likes wins.

A primary purpose of this social media campaign is to reach more people in a fun way with the ColoradoScape message.

The Lenz family won the 2020 makeover with a (3 minute!) video that imitated the Cat in the Hat with a poem about the need for water savings in their yard. They garnished 929 likes, just 46 more than the second place video. There were more than 300 shares and the campaign developed a reach of more than 30,000. You can find their video on the Town's Facebook site. This and the previous landscape renovation will be documented and shown on CRconserve.com, educating other neighbors on how easy it is to take out that water-guzzling turf and replace it with a more vibrant, water conscious landscape.



Author  
Town of Castle Rock Government



Like · Reply · 1w

929



## CONGRATULATIONS ON YOUR PROMOTION!



**Kevin Lopez**  
Senior Collections System  
Operator

*Welcome!*



**Derek Snyder**  
GIS Intern

## NEW CERTIFICATIONS

*The water, wastewater and stormwater utility business is highly technical and regulated. As such, Castle Rock Water has to maintain an extensive staff of professionally licensed individuals. Most of these licenses require specialized education and the passing of state testing, as well as proof of continuing education. Below is a list of those passing various certifications this month:*



**John Chrestensen**  
Treatment Operator A  
Certification



**Phillip Jolly**  
Distribution 1 Operator  
Certification



**Thomas Craig**  
Water Operator D  
Certification



**Kevin Lopez**  
Collections 3  
Certification

## Water 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.*



**Mark Marlowe**, Castle Rock Water Director, received the Water Star Award from Shawn Griffith for making this utility the best! Your efforts are wide and varied and make a difference. Just some of those include:

- First water provider to be awarded the Commitment Award from CDPHE
- Ongoing Gold Level in Pursuing Excellence
- Plum Creek Diversion and Reservoir 1 to further our efforts in sustainable water
- Cheerleader for Advanced Treatment to improve our incredible water quality
- Development of regional partnerships including with various organizations in the State, Aurora Water and more
- An advocate for improving field services work flow and processes
- Being an exceptional front man for Council and Commission to ensure our goals are understood and approved

***Thank you for being an incredible leader—  
your work does not go unnoticed.***

## Conservation

### Conservation is education

It's a process of explaining things in a manner that people can easily understand, and when they understand, they're more likely to make changes and use new technology to conserve. The conservation division continues to educate our residents on a regular basis. This includes Water Wiser, ColoradoScape, and Winterization workshops, and also happens through customer interaction, individual landscape and sprinkler system assessments, rebates, and yes, even the watering schedule that reminds residents of the proper time of day to water to reduce water loss through evaporation and other factors. All workshops are currently being held as webinars, provide information needed for those that have a landscape in Castle Rock, and are offered at no charge.



We offer conservation rebates for landscape renovations to remove high-water lawns and replace with something that uses low or no-water. These “ColoradoScape” designs often look better and can add value to the home. We also offer rebates on many new products that are designed to use water more efficiently, such as smart irrigation controllers. We're not only concerned about saving water, but we're also making efforts to keep old controllers out of the landfill by requiring that the rebate participant deliver these to us as part of the rebate. We collect the old controllers and recycle them once a year.



And the newest rebate in 2020 is our ultra-high efficiency toilet retrofit rebate. If a resident replaces their old water guzzling toilet with a new toilet that uses 0.8 gallons per flush or less, we give them a rebate and take their old toilets. That's right, we're collecting old toilets in the “Throne Zone”. We've partnered with Colorado Springs Utilities to recycle the old porcelain, which is crushed and then used as a road base.

## Customer Outreach

### Social media campaigns increase engagement

Castle Rock Water Outreach had two large campaigns occurring this month with extra social media postings and a high request for customer engagement. First, was the ColoradoScape contest in which Castle Rock Water gives away a low-water front yard makeover. This social media based campaign is about reaching as many people as possible with the message about beauty in a low-water landscape, with one Castle Rock household getting a new ColoradoScape. The winning video received almost 1,000 votes and the campaign reach 30,000 people. The second promotion was the Mayor's Challenge for Water Conservation. This is typically held in April, but the national sponsor, Wyland Foundation, postponed it until August. This is a friendly competition between mayors across the nation to show how water wise their community is by getting as many pledges as possible. Cities are ranked according to participation per population and Castle Rock has made in the top 10 for the past 4 years. We expect Castle Rock to be the top 5 this year!

#### Full ColoradoScape Video

954 views on YouTube & 10 likes

#### ColoradoScape Contest Entry video – posted Aug. 5

4,082 people reached

#### ColoradoScape Entry Reminder – posted Aug. 12

1,751 people reached

#### Mayor's Challenge Reminder – posted Aug. 19

2,892 people reached

#### Mayor's Challenge News Release – posted Aug. 3

3,996 people reached

#### ColoradoScape Contest extended – posted Aug. 7

2,392 people reached

#### Mayor's Challenge reminder – posted Aug. 10

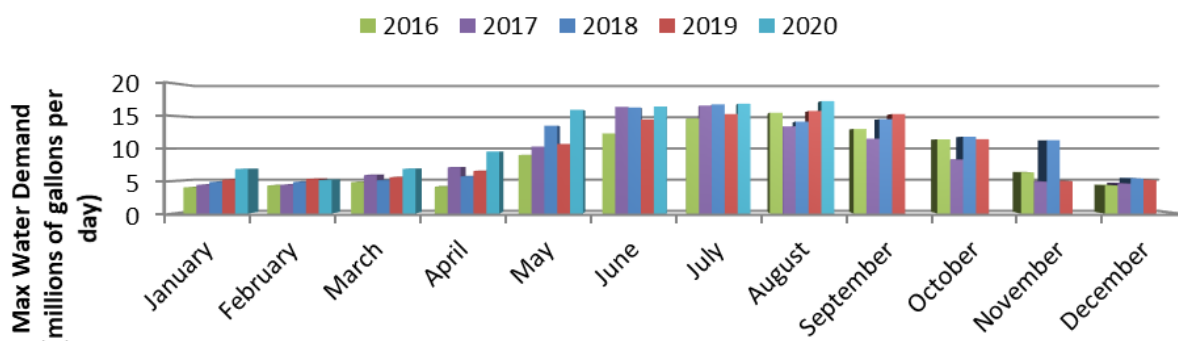
4,514 people reached

#### ColoradoScape Contest Voting – posted Aug. 25

22,196 people reached



# 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.

**August 2020**                      **17.3 million gallons/day**  
 August 5 yr. avg                15.2 million gallons/day

*Maximum daily demand to date*

**Max daily water demand in 2019**  
 15.8 MGD in August

## Water demand total

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

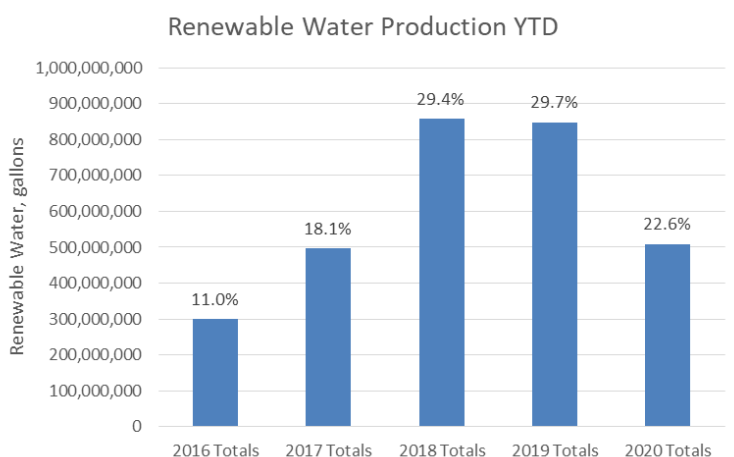
**August 2020**                      **476.4 million gallons**  
 August 2019                      430.7 million gallons

*Record high for total demand*

**Water demand total for 2019**  
 2,838.5 MG

## Renewable water supply

- The CR-1 diversion produced an average of 1.34 MGD for the month of August (including captured Well 7C and the Bell Mountain Wells' flows).
- The Town's thirteen alluvial wells and CR-1 produced a total of 24.43 MG of renewable water (and an average of 0.8 MGD).
- Imported (WISE and RHR) water supplied an additional 64.2 MG of renewable water.
- In total, renewable supplies accounted for 18.9% of the total water supply for the month and 22.6% of the annual water supply (2,250 MG or 6,904 AF) to date.



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

# Water Demand

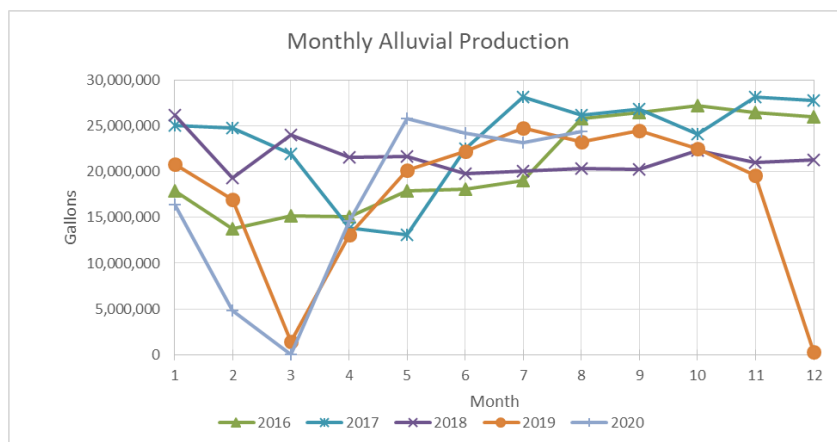
Renewable supplies are those water sources that are replenished by precipitation (think of our alluvial wells, CR-1, and WISE), whereas reusable supplies are those waters that are either from the Denver Basin (deep wells) or imported supplies (such as WISE and RHR) that can be used over and over, to extinction. The average reusable supplies used by Castle Rock for 2020 through August is 30.1% with 33.7% of available reusable supplies used in the month of August.

## Alluvial supply

**August 2020 production: 24.4 MG**

The graph shows the monthly production of the Town's alluvial well system, which helps to supply PCWPF.

We completed eight well rehabilitation projects this past fall/winter.

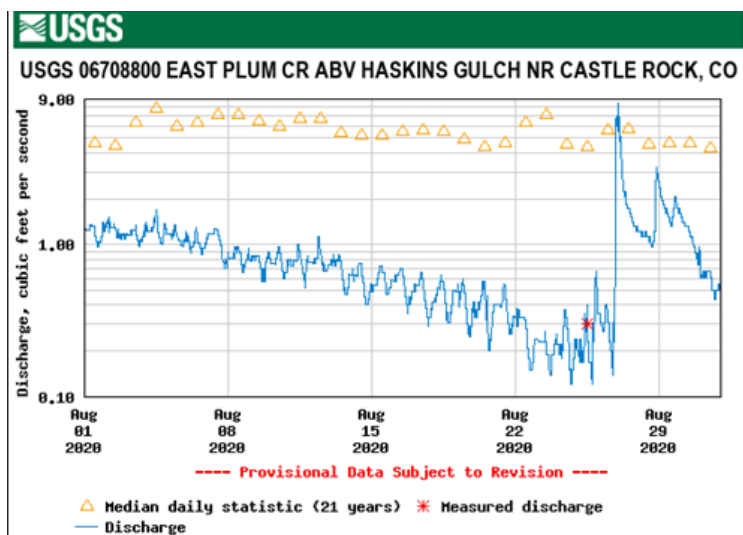


## East Plum Creek Flows

**Average Aug. streamflow: 0.83 cfs**

The flow hydrograph represents stream flows in East Plum Creek taken from the stream gauge located above Haskins Gulch. The hydrograph shows that estimated flows ranged between 0.12 and 8.44 cubic feet per second (cfs) during the month of August, with an average streamflow of 0.83 cfs. This month's average streamflow of 0.83 cfs is below the 20-year median of 5.0 cfs.

There were active calls on the South Platte River in August. 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 replenished 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. As a participant in the Chatfield Storage Reallocation Project, the Town is able to store up to 2,000 AF of water in Chatfield Reservoir. This means that our reusable water that flows down Plum Creek and past CRR1 can be captured and stored at Chatfield for later use. First storage started on May 15th and to date we have 206.4 AF of water stored in Chatfield.



# Water Demand

## Drought Monitor

The average WSI for August was 1.4, above the 1.1 trigger level, which is considered “good.”

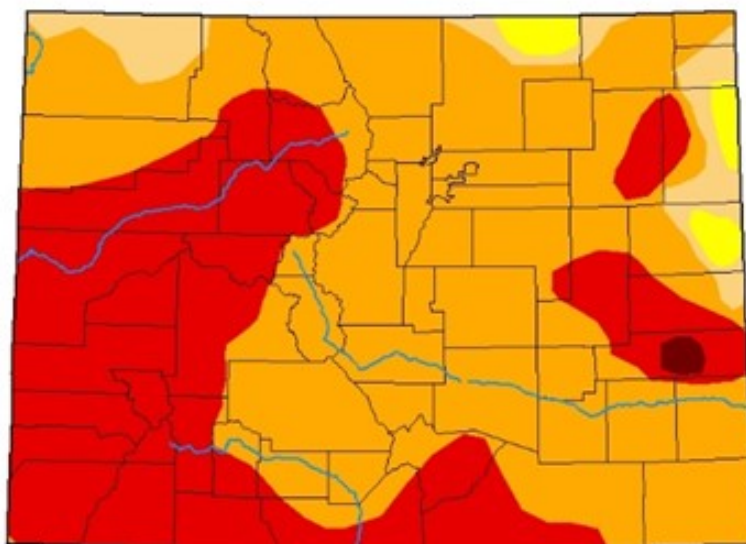
According to the U.S. Drought Monitor maintained by the United States Department of Agriculture (USDA), approximately 93% of Colorado is experiencing Severe Drought (D2) to Exceptional Drought (D4) conditions. The Town of Castle Rock Drought Management Plan uses a Water Supply Index (WSI) for the Town 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.

### The NRCS Colorado Precipitation Report Sept. 2, 2020

YTD precipitation for the  
South Platte River Basin is at  
90% of average.

## U.S. Drought Monitor Colorado

**August 25, 2020**  
(Released Thursday, Aug. 27, 2020)  
Valid 8 a.m. EDT



### Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

### Author:

David Simerai  
Western Regional Climate Center



[droughtmonitor.unl.edu](https://droughtmonitor.unl.edu)

# Plan Review

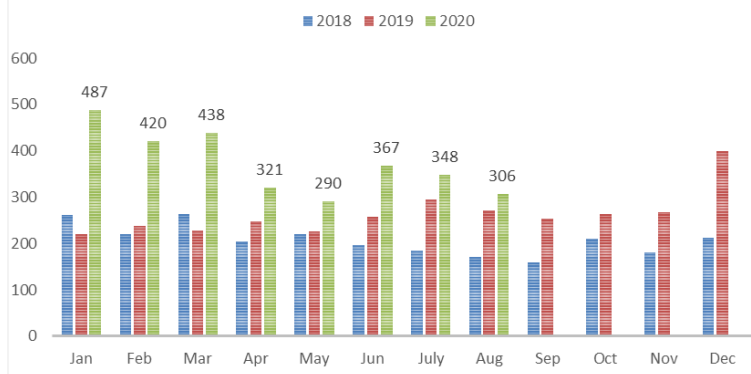
For each commercial and residential project submitted for development review, Castle Rock Water provides plan review, as appropriate, for:

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

Castle Rock Water reviews site plans, construction drawings and technical reports for each project to ensure the public infrastructure built by the developer is following the criteria set by the Town.



## TOTAL # OF CASTLE ROCK WATER PLAN REVIEWS FOR DEVELOPMENT SERVICES AND BUILDING



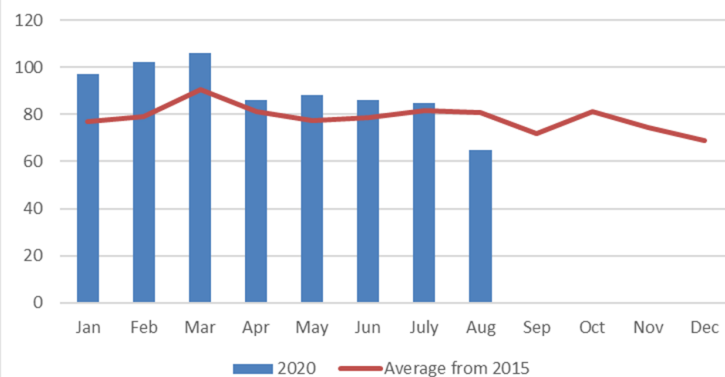
## Reviews

147 development services PROJECT plan reviews  
159 building PERMIT reviews  
For 65 separate projects

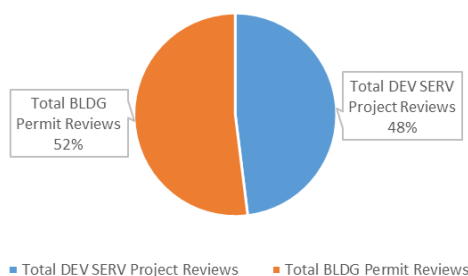
- Total number of distinct projects at its lowest for August since 2016
- Number of Distinct Projects decreased by 18% from August 2019
- The total number of development project reviews decreased by 35% from August 2019
- At 159 permits in Aug. 2020, the total number of permit reviews **increased by 115% vs. Aug. 2019**

Building permits are reviewed to calculate the system development fees for each lot, as determined by the number of fixtures, irrigated area, meter size, etc. This is necessary for proper billing.

## Monthly Projects Reviewed 2020 Average monthly reviews since 2015



Castle Rock Water Plan Review  
August 2020



## Service levels

The average number of days assigned to review: 13.8 days  
The average days to complete assigned reviews: 13.3 days

Plan Review: 91% of the reviews were completed on-time

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

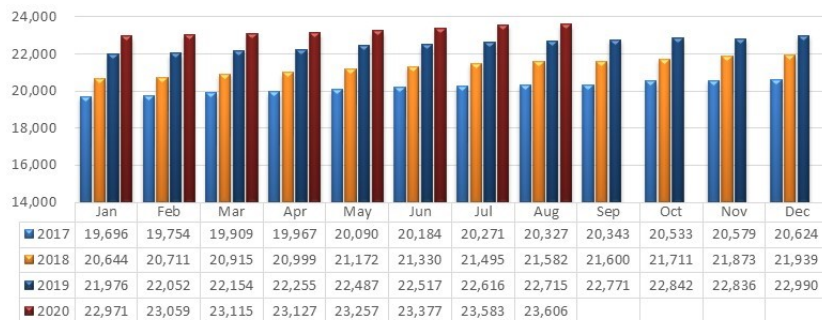


# Business Solutions



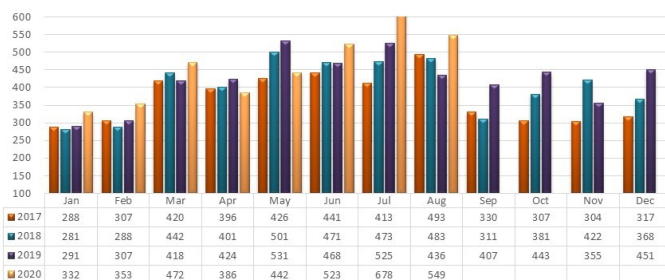
## Customer Service & Billing

# of Accounts Billed



- The front lobby opened back up to customers on June 1st, however walk in customers are still significantly lower compared to the last few years in August.
- Transfers of water service In August 2020 continue to run higher than the average for August in prior years.

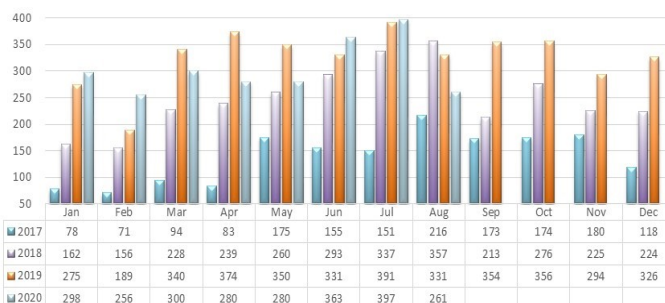
Transfers of Water Service



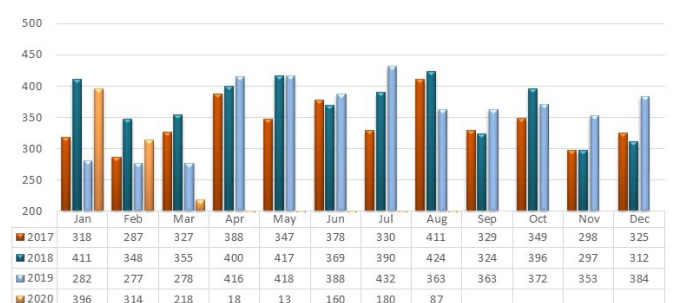
Customer Phone Calls



Mywaterbill Email Inquiries



Walk-In Customers



The online account portal which provides customers with 24/7 access to their statements, ability to pay online and the opportunity for paperless statements.

### 2020/Q2 statistics

Enrollment: 14,681 (63% of all accounts)  
Paperless: 9,183 (63% of online accounts)



The benefits of having an online H2Oaccess account:

- Access to water account 24/7
- 12 months of statement history
- Email tips with helpful water related info
- Safe and secure online payment options

Benefit of paperless billing

- Timely monthly email reminders for statement
- Less paper clutter
- No lost bills
- Electronic version of Your Town Talk
- Plus, it reduces paper and mailing costs!

# Meters



## Meters Read

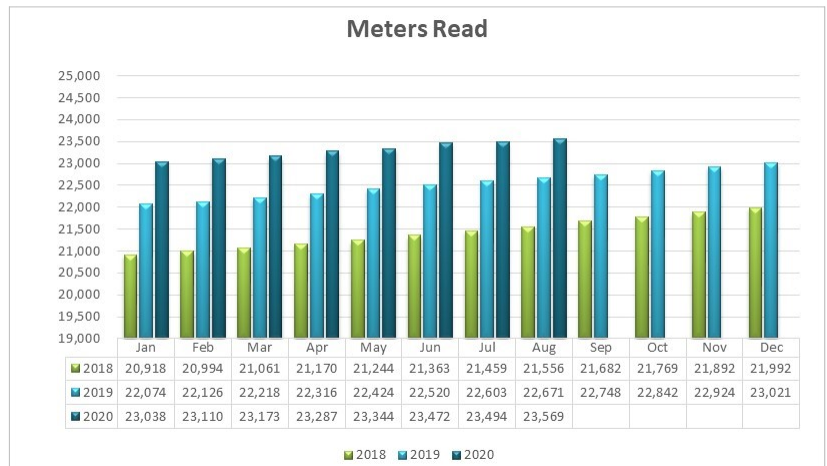
Meters are read the first three days of every month. The number of meters read continues to increase month to month and is a significant increase over last year.

## Skipped Reads

**August 2020: 0.29%**

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.*

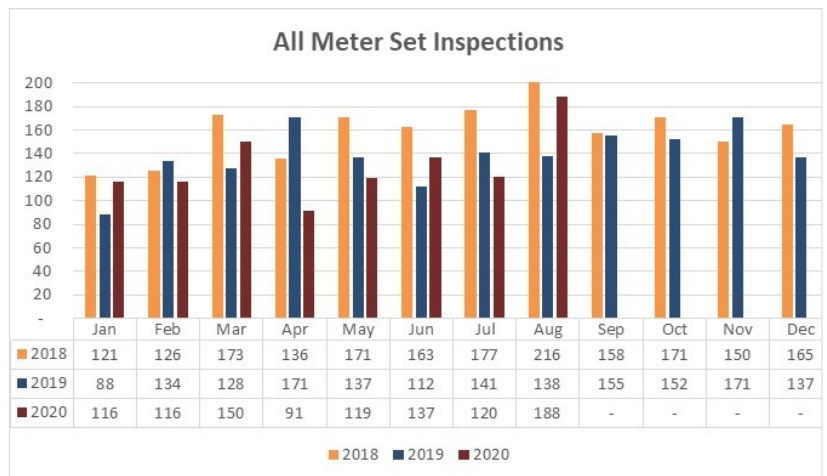


## Meter Set Inspections

**Re-inspections 39%**

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.

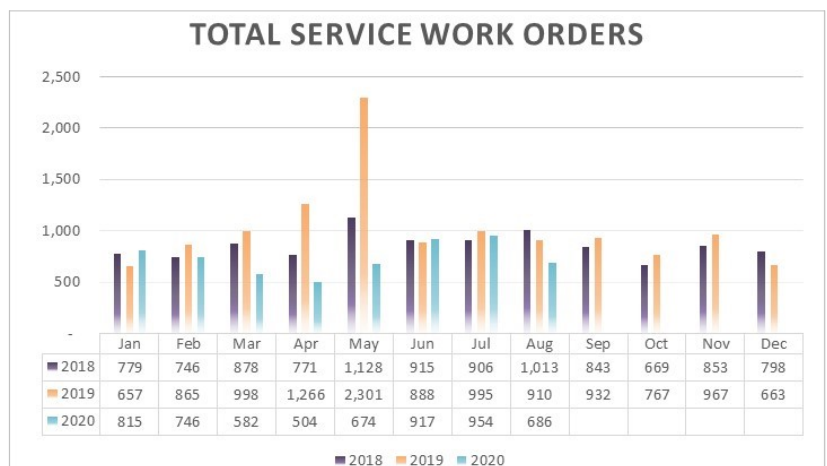
*Aug. 2020 is the highest month since Aug. 2018 for meter set inspections.*



## Work Orders

**August 2020 686**

Meter services performs a variety of service work 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, etc.



# Operations & Maintenance

## LEVELS OF SERVICE

## AUGUST 2020

<b>Drinking Water Compliance</b>	Castle Rock Water will deliver water that meets or exceeds the requirements of both Primary Drinking Water Regulations and Secondary Maximum Contaminant Levels 100% of the time.	<b><i>Ninety routine samples were completed. All samples were within the parameters set forth by the Safe Drinking Water Act and Colorado Drinking Water Standards.</i></b>
<b>Pressure Adequacy</b>	< 1% of our customers will experience less than 43 pounds per square inch (psi) of pressure at the meter during normal operations.	<b><i>There were no water pressure issues this month.</i></b>
<b>Sewer System Effectiveness</b>	<p>&lt;1% of our customers will experience a sewer backup caused by the utility's sewer system per year.</p> <p><i>Castle Rock Water remains in the Top Quartile for least number of sewer backups based on the American Water Works Association benchmarking.</i></p>	<b><i>There were no sewer system issues this month.</i></b>
<b>Drinking Water Supply Outages</b>	<p>&lt;5% of our customers will experience water outages for one or more events totaling more than 30 hours/year.</p> <p><i>Castle Rock Water remains in the Top Quartile for water system integrity based on the American Water Works Association benchmarking.</i></p>	<p><b><i>There were two water system integrity issues in August.</i></b></p> <p><i>There was a line break in Plum Creek, due to a corrosion hole on an 8" ductile iron pipe. Eight homes were affected with little to no pressure for less than four hours.</i></p> <p><i>There was also a main break in the Meadows, due to a corrosion hole in 8" ductile iron pipe. Thirty-one homes experienced little to no pressure for less than four hours during the repair.</i></p>
<b>Water Quality Complaints</b>	<i>Castle Rock Water remains in the Top Quartile for water quality complaints based on the American Water Works Association benchmarking.</i>	<b><i>There were no water quality issues this month. There was one water quality education visit in August.</i></b>



# Operations & Maintenance

## Locate Report



Know what's below.  
Call before you dig.

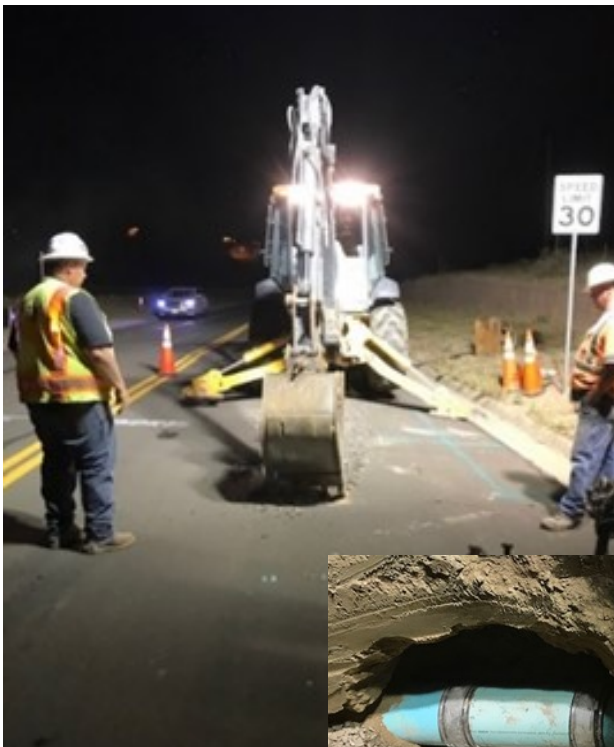
Castle Rock Water's locate requests from 811 have continued to rise, year over year. This year to date, there have been no incidences of damage to lines, as a result of incorrect locate marks.

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 and will schedule a time for us to come out to locate public water, wastewater and stormwater lines in the road and in your project area.

## ANNUAL UTILITY LOCATES

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
January	577	475	617	1,190	1,289	1,162	1,199	1,334	1,442	1,472	1,612	
February	521	485	538	1,094	1,093	1,383	1,334	1,378	1,293	1,404	1,443	
March	660	552	818	1,437	1,349	1,906	1,625	1,851	1,514	1,560	1,626	
April	838	681	1,025	1,482	1,552	1,784	1,631	1,760	1,856	1,984	2,600	
May	853	863	985	1,541	1,531	1,609	1,809	2,002	1,801	2,122	2,288	
June	969	844	982	1,314	1,399	1,654	2,075	1,872	1,854	1,716	1,931	
July	680	582	859	1,350	1,392	1,477	1,675	1,582	1,556	1,937	1,894	
August	901	723	1,123	1,476	1,468	1,494	1,651	2,001	1,986	1,603	2,096	
September	880	723	1,029	1,240	1,373	1,343	1,701	2,102	1,747	1,979		
October	715	688	1,155	1,501	1,376	1,314	1,579	1,792	2,064	1,839		
November	536	518	1,041	1,072	866	1,134	1,131	1,460	1,463	1,649		
December	415	405	925	1,005	1,043	1,063	1,059	1,277	1,293	1,175		
Totals	8,545	7,539	11,097	15,702	15,731	17,323	18,469	20,411	19,875	20,440	15,490	

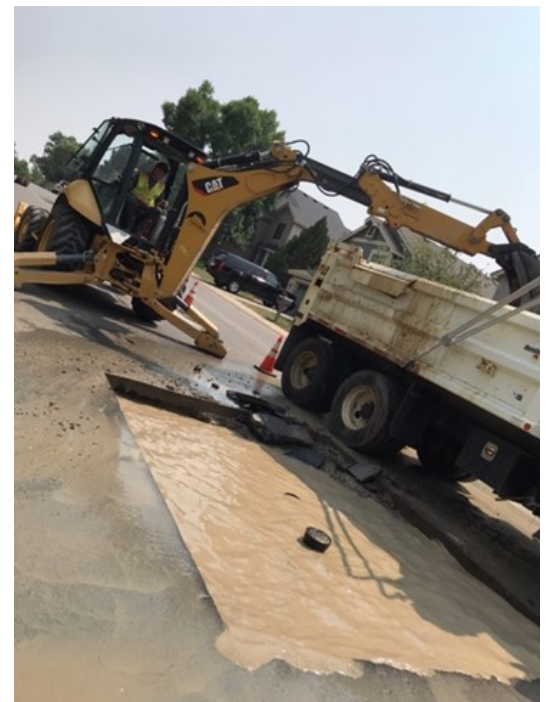
## Field Services



A drilling contractor hit a sewer main in The Meadows. There was no Sanitary Sewer Overflow (SSO) from the damage and Global Underground conducted the line repair.



Main break on Wildflowers in The Meadows



# Operations & Maintenance

## Collections

	YTD
Lines Cleaned	36.65 miles
Lines Inspected	25.89 miles
SSO Rate	0.35 SSO/100 mi

Castle Rock Water tracks within the top quartile in the Sanitary Sewer Overflow rate, according to the American Water Works Association. Our team runs a camera through the sewer mains to look for problems. When problems are identified, they are cleared with a high pressure water jet. The goal is to clean and inspect one-fifth of the collection system or 55 miles each year.

## Stormwater Field Services



The Stormwater team completed the drainage area along the new addition to the South Plum Creek Trail.

The Stormwater Team cleared the brush and cat tails, from the ditch at the MAC park, restoring proper drainage in the storm channel.

