



## MONTHLY REPORT

APRIL 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.

## COVID-19 Financial assistance for our customers

By Sandi Aguilar

With many businesses being closed or severely reduced in operations due to the recent public health orders, Castle Rock Water understood that some customers may have a difficult time paying their water bills. Immediately, we discontinued charging fees for past due, late payments or returned payments, and were not disconnecting water service due to non-payment. Additionally, we have developed two customer assistance programs. The programs are available for two types of customers where the biggest impacts seem to be apparent, small businesses and residential customers. The funds for these programs, approved by Town Council, are coming out of Castle Rock Water's Rate Revenue Stabilization Reserve.



The programs consisted of \$1500 for small businesses and \$300 for individuals with 50% as a loan and 50% as credit. The credit does not need to be paid back and the loan is interest-free with repayment spread out over a 12-month period. These amounts were established from the average three-month bill for the respective customer class.

To date, 53 small businesses and 45 residential customers have been approved for the assistance programs. There are still funds available and outreach is continuing to reach additional customers in need. Applications are found on [CRgov.com/CRWaterCares](https://www.cr.gov/CRWaterCares) and Douglas County Help and Hope is assisting with qualifying residential customers.

## Re-drilling Castle Rock Wells CR27 and CR-49

By Heather Justus

Part of keeping our Town's water supply adequate and available is maintaining and replacing aging infrastructure, which includes our older municipal wells. These older wells have provided water to our community since the 1980's. By replacing the wells at their historic locations, we can reduce the costs by making upgrades to the existing well house facilities. Over the winter, CRW replaced two wells in the



Meadow's Community. Both sites were challenging, as the sites are in residential communities with small footprints.

Both replacements wells are approximately 1,700 feet deep drilled into the Arapahoe Aquifer. They are expected to provide approximately 0.7 million gallons per day. Due to the nature of drilling in the Denver Basin, once drilling activities begin, those activities must continue around the clock to maintain an open borehole. To help mitigate the noise, thirty-foot tall sound walls were installed around the well site.

The drilling portion of the project lasted over the holiday season and on Christmas Day, several residents brought treats over for the drilling crew to enjoy. The new wells are designed with upgraded technology that will help keep the wells cleaner and more efficient. We are hoping the newer materials will give these wells a longer life. One of the new technologies is a glass bead filter pack shown in the picture. This filter pack will not break down over time, will help reduce the biofouling and help maintain well efficiency.



The next phase of the project is to equip the wells with the new pumping equipment and modify the well facilities to accommodate the new well locations. This work is currently out to bid and is expected to be awarded later this month. The expected completion date for 27R is June 24 and end of July for CR-231.

## Administration Building Construction Deferred

By Tim Friday

Due to the pandemic and resulting economic stress, construction of the Administration Building has been delayed. This project was approved for construction by Town Council on March 17, 2020 and then was consequently awarded to Iron Mike Construction based in Centennial, CO. However, after the Stay at Home Order was issued, Castle Rock Water chose to wait to see how this affected the local economy and working situation. The contractor graciously agreed to extend the contract pricing for an additional 30 days beyond the contractual deadline for issuing a notice to proceed. By April 7, it became clear that starting construction of a new office building did not make sense for several reasons. With almost all office staff working remotely coupled with public health concerns and economic stress, the timing just did not seem right. Therefore, it was decided to delay construction to late 2020 or early 2021. The contract which had been awarded was subsequently cancelled. This project will be rebid at a future date and it is anticipated to be built in 2021 and occupied by the end of that year.





# Employee Recognition

Please  
welcome  
our  
2020  
seasonal  
water  
monitors



Alex Sarabi



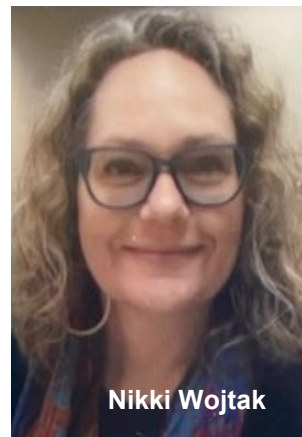
Stephanie Dietrich



Dennis Novak



Annie Julseth



Nikki Wojtak

## 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.*

**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.

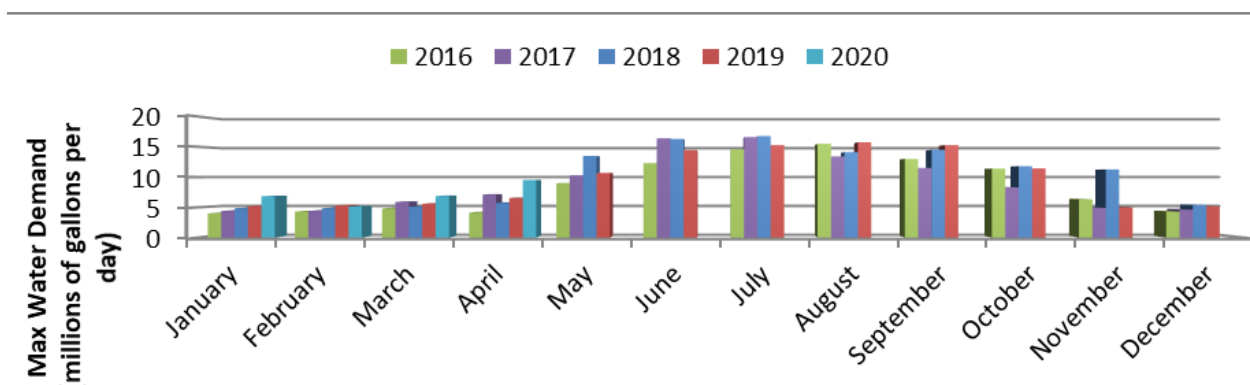
**Environmental** —Demonstrated extraordinary environmental responsibility.

**Fiscal**—Demonstrated superb fiscal responsibility.



**PJ Thorstenson**, Asset Program Manager, received the Water Star Award from Casey because he is a rock star in every sense of the word (both figuratively and literally)! Casey has greatly appreciated how PJ took Cartegraph and made it a working tool for staff to use, not just his department. It has made processes and tracking so much easier and more beneficial to the 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.

<b>Apr. 2020</b>	<b>9.5 million gallons/day</b>
Mar. 5 yr. avg	6.6 million gallons/day
Difference	45% higher

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

## Water demand total

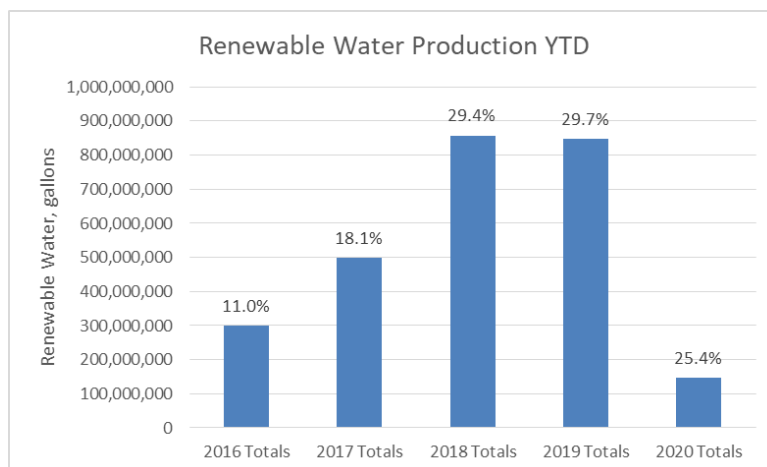
Water demand total is how much water was used over the entire month. Population and weather changes can significantly affect usage.

<b>Apr. 2020</b>	<b>166.4 million gallons</b>
Apr. 2019	151.9 million gallons
Difference	9.5% increase

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

## Renewable water supply

- The CR-1 diversion produced an average of 1 MGD for the month of April. The Town's thirteen alluvial wells and CR-1 produced a total of 44.77 MG of renewable water (and an average of 1.49 MGD).
- WISE water supplied an additional 19.2 MG of renewable water.
- In total, renewable supplies accounted for 37.7% of the total water supply for the month and 25.4% of the annual water supply (582 MG or 1,786 AF) to date.



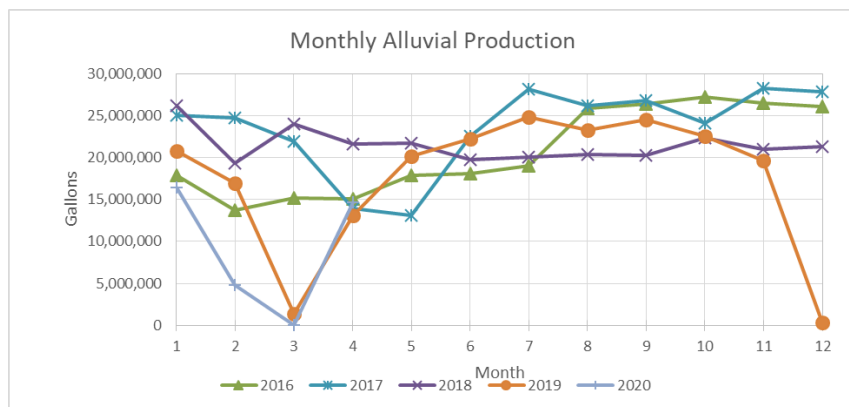
*Our goal is to reach 75% renewable water by 2050.*

# 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 April is 8.7% with 22.1% of available reusable supplies used in the month of April.

## Alluvial supply

**Mar. 2020 production: 0 MG**

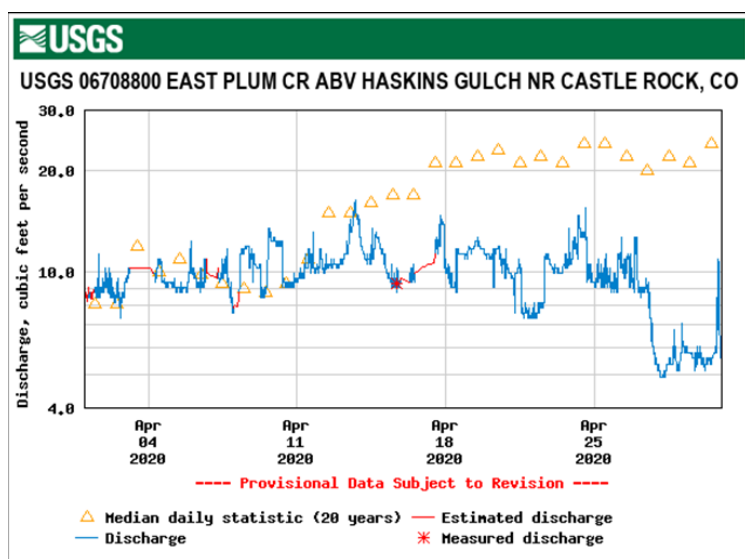


The graph shows the monthly production of the Town's alluvial well system, which helps to supply PCWPF. The production from the alluvial wells in April was 14.6 MG.

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

## East Plum Creek Flows

**Mar. 2020 avg flow: 13.3 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 4.9 and 16.4 cubic feet per second (cfs) during the month of April, with an average streamflow of 9.7 cfs. This month's average of 9.7 cfs is below the 20-year median of 19.0 cfs.

There were active calls on the South Platte River in April. 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. There were 6 days of Free River in April.

# Water Demand

## Drought Monitor

The average WSI for April was 3.3, 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 76% of Colorado is experiencing Abnormally Dry (D0) to Severe Drought (D2) 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 SNOTEL Report

May 4, 2020

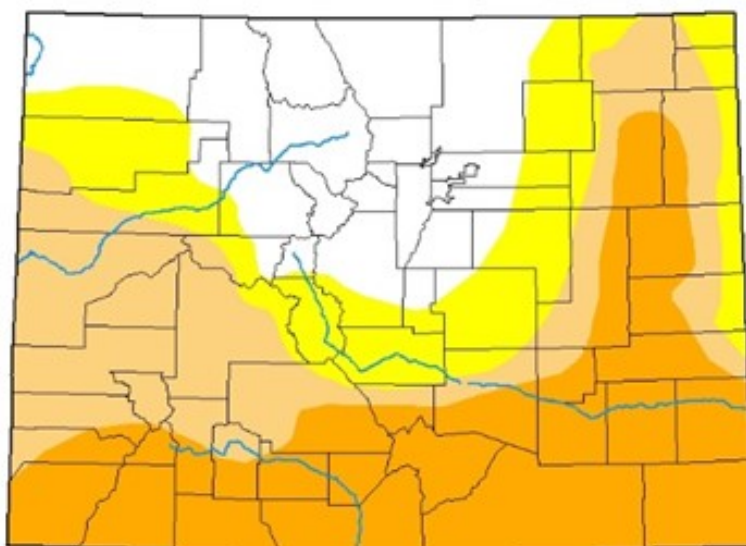
- YTD precipitation for the South Platte River Basin is at 102% of average
- The snow water equivalent is at 103% of median

## U.S. Drought Monitor Colorado

April 28, 2020

(Released Thursday, Apr. 30, 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:

Deborah Bathke  
National Drought Mitigation Center



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



# Plan Review

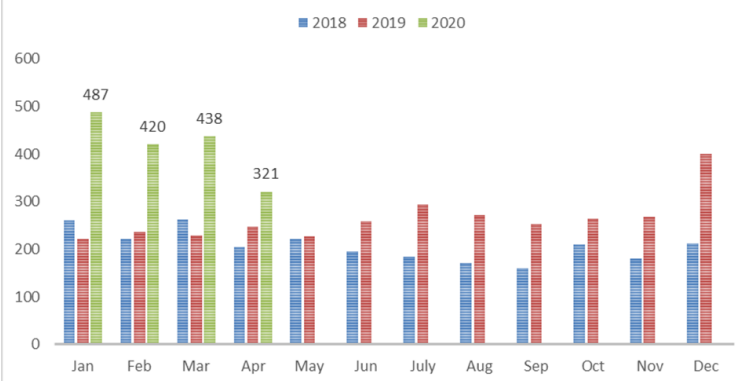
For each commercial and residential project submitted for development review, Castle Rock Water provides plan review, as appropriate, for:

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

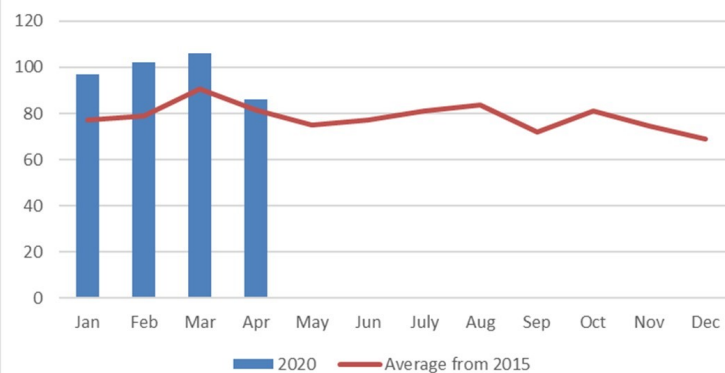
Castle Rock Water reviews site plans, construction drawings and technical reports for each project to ensure the public infrastructure built by the developer is following the criteria set by the Town.



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



## Monthly Projects Reviewed 2020 Average monthly reviews since 2015



## Reviews

206 development services PROJECT plan reviews  
115 building PERMIT reviews  
For 86 separate projects

- Number of distinct projects decreased 5% from April 2019
- Total of 86 distinct projects permits were reviewed
- Number of project reviews increased 29% from April 2019
- Permit reviews increased 95% from April 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.

## Service levels

The average number of days assigned to review: 14.2 days  
The average days to complete assigned reviews: 13.8 days

Plan Review: 90% of the reviews were completed on-time

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

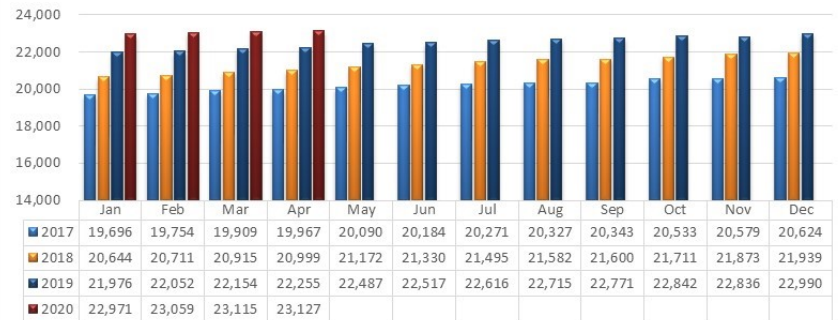
# Business Solutions



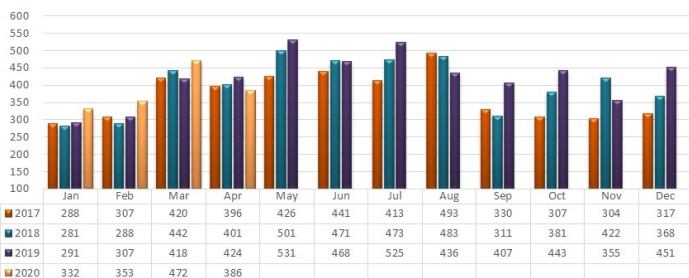
## Customer Service

With the COVID-19 Pandemic, the customer service lobby was closed to walk-in customers, reducing customer contact. Disconnection notices were not mailed in March and April as well as no service disconnections were conducted, which reduced customer call volume significantly.

# of Accounts Billed



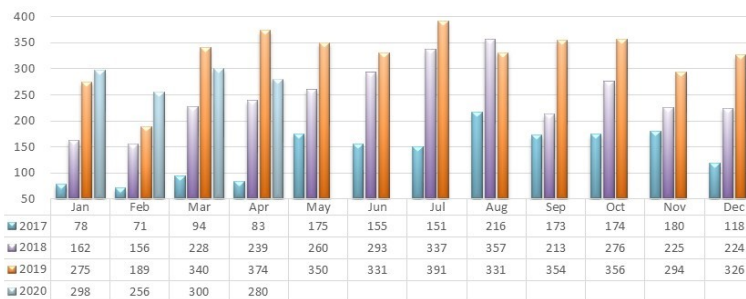
Transfers of Water Service



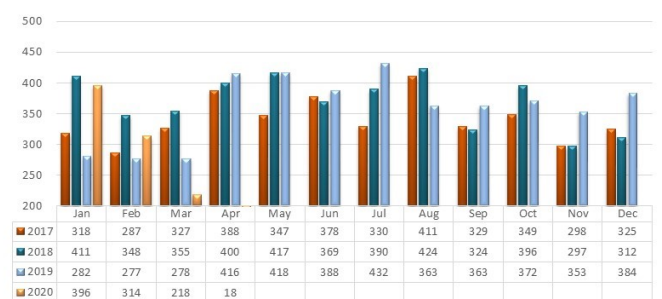
Customer Phone Calls



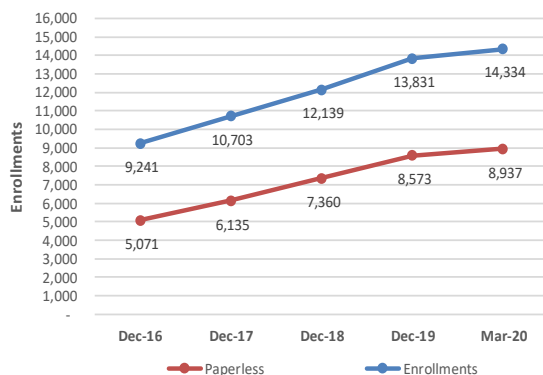
Mywaterbill Email Inquiries



Walk-In Customers



H<sub>2</sub>O Access Customer Enrollments



- Walk-in customers were significantly down due to limited customer interaction from COVID-19 social distancing.
- With business continuing, despite closing the lobby doors, transfers of service, email inquiries and new accounts continue to be steady.
- Customers creating online accounts through H2Oaccess, the online payment portal, remains steady and paperless customers increased to 62% in 2020Q1.



# 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

**Apr. 2020: 0.24%**

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

**Apr. 2020 91**  
**YTD 373**  
**Re-inspections 25%**

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.

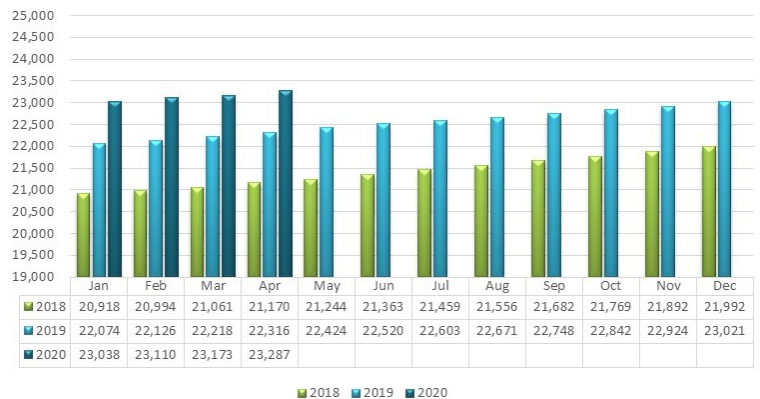
## Work Orders

**Apr. 2020 504**

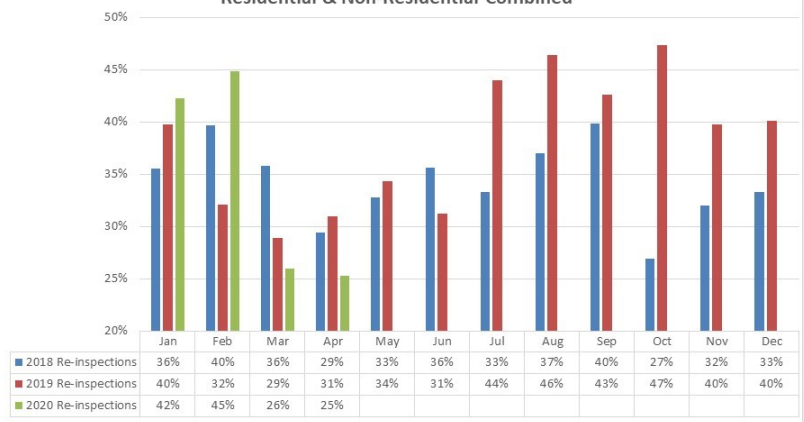
Work orders were down in April due to no disconnection service orders conducted in response to COVID-19. Service for customers was conducted only for exterior building access or emergency situations, beginning 3/16/20.

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, etc.

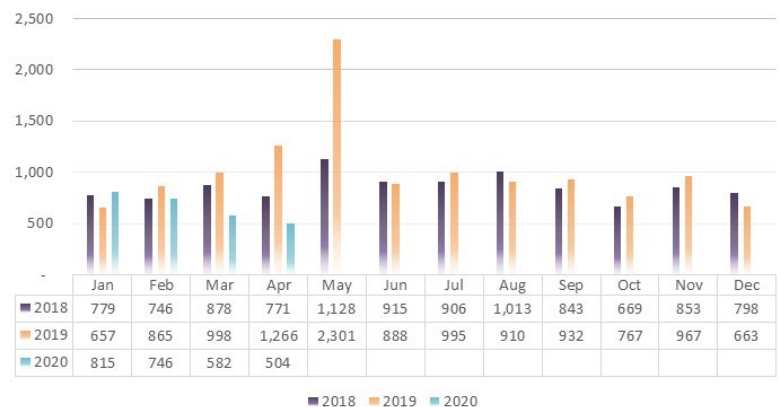
Meters Read



% of Meter Sets that are Re-inspected  
Residential & Non-Residential Combined



TOTAL SERVICE WORK ORDERS



# Operations & Maintenance

LEVELS OF SERVICE		MAR. 2020
Drinking Water Compliance	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>
Pressure Adequacy	< 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>
Sewer System Effectiveness	<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 issue this month.</i></b>
Drinking Water Supply Outages	<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 3 water system integrity issues in March.</i></b></p> <p><i>A contractor hit a 12" DIP distribution line along Prairie Hawk Dr. The repair was made by our emergency repair contractor, Global Underground. No residents were affected during this incident.</i></p> <p><i>There was a line break on the Ravenna pipe line. This break occurred at a low point blow off and is being repaired by Global Underground. No residents were affected during this incident.</i></p> <p><i>There was a leak in Plum Creek caused by a corroded 2" blow off assembly. During the repair, 44 residents experienced less than normal pressure.</i></p>
Water Quality Complaints	<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 were no water quality customer education visits.</i></b>

# Operations & Maintenance

## Operations Updates

The Operations Department has modified its work schedule to accommodate social distancing and to provide redundancy should a team member from a group or division become ill. As of the first of May, the schedule changes have been effective and all staff are healthy.

The Distribution Team has kept development going forward this past month. In support of development activities, they have completed a total of 52 waterline tasks, requiring 225.5 labor hours and 260,000 gallons of water to complete these tasks.

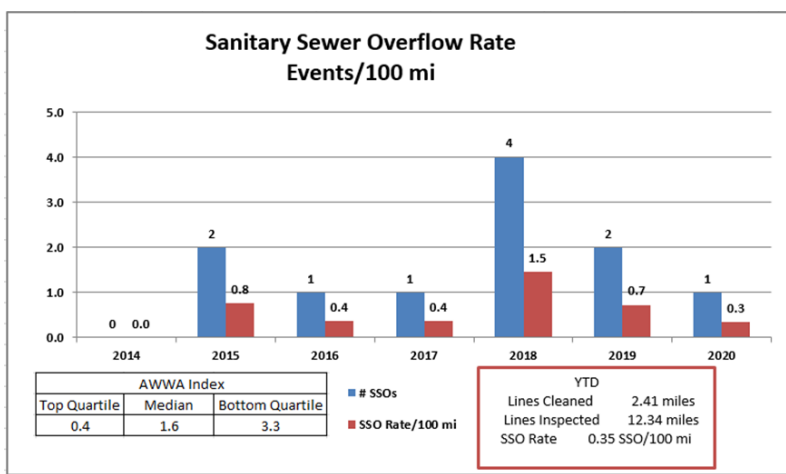
They have also been working, independently social distance style, conducting valve and hydrant maintenance. In April, 123 valves and 559 fire hydrants were inspected and maintained. During these inspections, they found nine fire hydrants that were not functioning properly and completed the needed repairs.

## Collections

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.

### YTD:

Lines cleaned: 2.41 miles  
Lines inspected: 12.34 miles  
SSO Rate: 0.35 SSO/100mi



The Collections Team has been keeping a close eye on the H2S levels in the Woodlands line. Our chemical contractor, Evoqua, installed a Smart Feed System for Bioxide at Mitchell Creek and Castle Oaks Lift Station. Because of this we have been able to all but eliminate the H2S/odor in the line. Quite an accomplishment!



The new Trunk Line Inspection Program, which will be completed annually by the Collections Team, identified a major tree root issue. The team was able to clear a large tree root mass, near the Fifth Street overpass, before a sewer overflow occurred.

During their inspection the Collections Team also found an uncovered trunk line manhole in the Meadows. The cover had been hit by an HOA mowing contractor, leaving the 15" sewer main uncovered, which created a hazardous situation. The team replaced the damaged frame and installed a new manhole cover.





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

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

## 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		
June	969	844	982	1,314	1,399	1,654	2,075	1,872	1,854	1,716		
July	680	582	859	1,350	1,392	1,477	1,675	1,582	1,556	1,937		
August	901	723	1,123	1,476	1,468	1,494	1,651	2,001	1,986	1,603		
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	1,469	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	7,281	

## Stormwater Field Services



The Stormwater team replaced a storm sewer manhole on a very busy street. The Public Works Streets department assisted greatly with this project by providing a traffic plan, traffic control boards, lights and barricades to keep workers and residents safe. The street was jackhammered, the old ring was removed and a riser ring was installed, along with a new cover. After the new manhole was installed Streets repaved the project area. Rob Daniels, Stormwater Supervisor, did a great job managing this project. He planned the repair, procured the parts and reached out to Public Works, which allowed it to be completed in a safe and efficient manner.

## Facility Maintenance

The Facility Maintenance Team did some spring cleaning at the Weaver Well site. Mike Wilder was heard to say, "Sidewalks are for people, not plants!"

