

## MONTHLY REPORT

OCT. 2021

**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.

### Castle Rock Water recognized for environmental leadership

The Town's water future is Castle Rock Water's number one priority. But, accomplishing that priority while protecting the community's environmental future is also important. That's the message of the department's new recognition for environmental leadership.

Colorado's Environmental Leadership Program recently awarded Castle Rock Water Director Mark Marlowe with the 2021 24-Karat Gold Award. The organization honored Marlowe for going above and beyond required job duties to create and implement a sustainable initiative to impact the environment, the economy and the community.

Castle Rock Water was specifically recognized for its reuse water project. Ultimately, reuse water could account for one-third of the Town's annual water consumption.

"It's really humbling to receive this award from Colorado's Environmental Leadership Program," said Marlowe. "Reuse water was truly a team effort. Our water resource analysts, treatment engineers, water quality consultants, financial analysts and outreach specialists all worked together to make reuse water a viable option for long-term water in the Castle Rock community."

The Environmental Leadership Program is a statewide program that recognizes and awards organizations that go beyond compliance with environmental regulations by advancing sustainability in Colorado.



And a few other recent awards:

- Outstanding Water Treatment Plant from Rocky Mountain Section of AWWA for Plum Creek Water Purification Facility
- Water Treatment Plant Maintenance award to Casey Devol from Rocky Mountain Section of AWWA
- Engineering Excellence from the American Council of Engineering Companies (ACEC) for Burns & McDonnell's design of Advanced Treatment at PCWPF
- Best Projects (Water/Environment) from Engineering News Review (ENR) Mountain States for Burns & McDonnell's design for Advanced Treatment at PCWPF
- Gold Level (4th year) of the Environmental Leadership Program by Colorado Department of Public Health and Environment

## Douglas and Arapahoe County water providers partnering for a strong water future

One strategy in long-term water planning is having the storage to manage renewable water supplies when they are available. The Cherry Creek Project Water Authority (CCPWA) was created in 2005 so local water providers could partner for water supply opportunities. The newest project is the construction of Walker Reservoir, a 650-acre-foot (AF) water storage facility.

The partners, the Pinery Water and Wastewater District, Cottonwood Water and Sanitation District, Inverness Water and Sanitation District, and the newest member, Castle Rock Water will share in ownership and cost of the approximately \$12 million reservoir, located near Franktown. The Authority contracted Wenck, now a part of Stantec, for design of the reservoir and construction observation, and HPM Contracting was selected to construct the full reservoir.

The purpose of the reservoir is for the Authority, and its members, to store up to 650 acre-feet (AF) of water for use during dry months when demands are high. The proximity of this property to Cherry Creek and the partnering communities,



*Castle Rock Water Commissioner Gienger and staff attended a ground-breaking ceremony Sept. 27, with stakeholders from each water provider to commemorate this collaborative partnership.*



makes this reservoir a cost-effective option. The reservoir is for drinking water storage and not open to the public. Construction activities began in October 2021 and project completion is scheduled for Spring 2023.

## Conservation



### **Conservation is .... Education, education, education, and more education!**

Professional landscapers working in the Town of Castle Rock must attend an irrigation efficiency course. They receive the how-to's on best practices in efficiency practices, from the certifying QWEL agency, South Metro Water Supply Authority. Castle Rock Water staff provides information on the regulations from the Town and why they are important to community goals for conservation and quality of life. These workshops are usually held every month during non-irrigation season.



# Good job!

## Welcome NEW HIRES



**Greg Kropkowski**  
Business Solutions  
Manager



**Erin Sweeney**  
Cross-Connection  
Control Technician



**Julia Wells**  
Office Assistant II  
(part-time)

## Look who got PROMOTED!

*Congratulations*



**Grant Garvin**  
Plant Mechanic II



## 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 in performing a job or task.*

### **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*

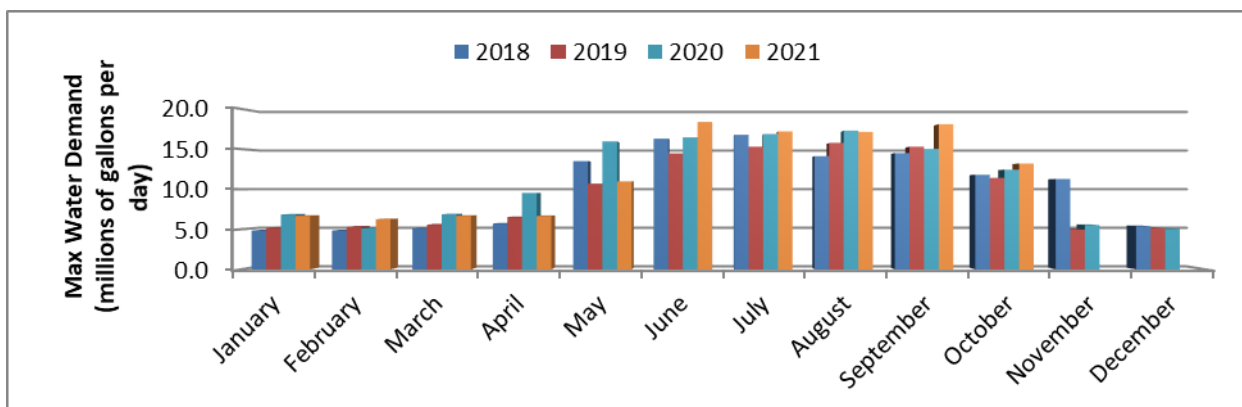
### **Fiscal**

*Demonstrated superb fiscal responsibility*

**Jane Chrestensen**, Senior Billing Specialist, was awarded the Water Star Award by Jaret due to her flexibility, adaptability and team attitude. With the department being so short staffed, Jane was there to fill in the gaps and do her best to help out. Most specifically, Jaret appreciated her helping Meters in so many different capacities, making his job and his department function smoothly.



# 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.

**Oct. 2021** 13.24 million gallons/day  
 Oct. 5 yr. avg. 11.4 million gallons/day  
 15% higher than average

**Max daily water demand in 2020**  
 17.3 MGD in August (record breaking)

## Water demand total

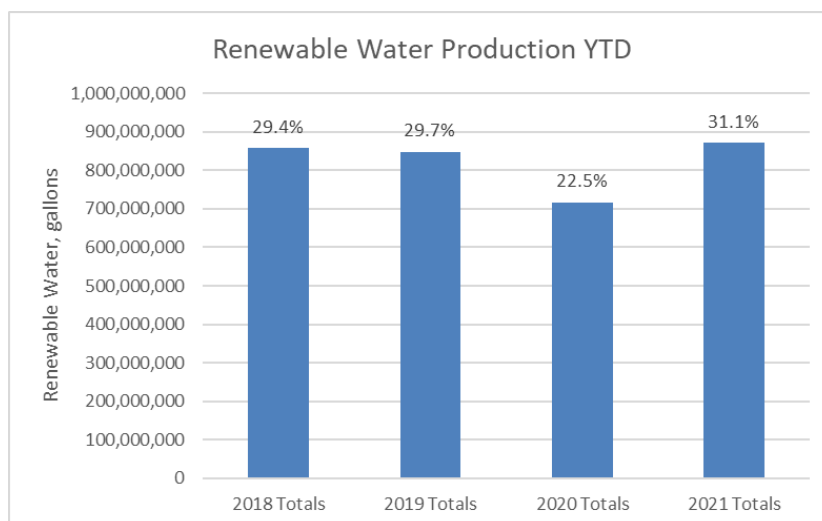
Water demand total is how much water was used over the entire month. Population and weather changes can significantly affect usage.

**Oct. 2021** 253.1 million gallons  
 Oct. 2020 264.2 million gallons  
 4.2% decrease from last year

**Water demand total for 2020**  
 3,251.7 MG

## Renewable water supply

- The CR-1 diversion produced an average of 0.19 MGD for the month of October.
- The Town's fourteen alluvial wells, the CR-1 diversion, and the Plum Creek Raw Water Return Line (PCRWRL) delivered a total of 64.1 MG (196 AF) of renewable water (and an average of 0.9 MGD).
- In total, renewable supplies accounted for 26.8% of the total water supply for the month and 1.1% of the annual water supply (190,615,035 MG or 8,593 AF) to date.



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

*Note: In 2020, renewable water production was down due to the construction of Advanced Treatment processes to the Plum Creek Water Purification Facility.*

# Water Demand

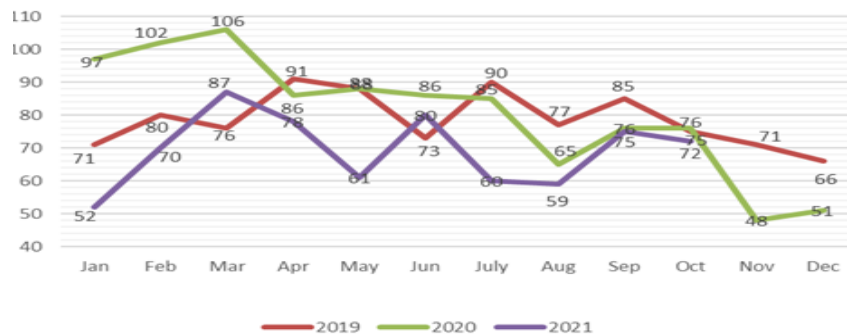
Renewable supplies are those water sources that are replenished by precipitation (think of our alluvial wells, CR-1, PCRWRL, and WISE), whereas reusable supplies are those waters that are either from the Denver Basin (deep wells) or imported supplies (such as WISE, RHR, PCRWRL) that can be used over and over, to extinction. The average reusable supplies used by Castle Rock for 2021 through October is 56.9%.

## Alluvial supply

**Oct. 2021 production: 22.1 MG/67.8 AF**

- 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 Oct. was 22.1 mg.
- We had three alluvial well rehabilitations completed this year.

## Monthly Development Project Applications Reviewed



## East Plum Creek Flows

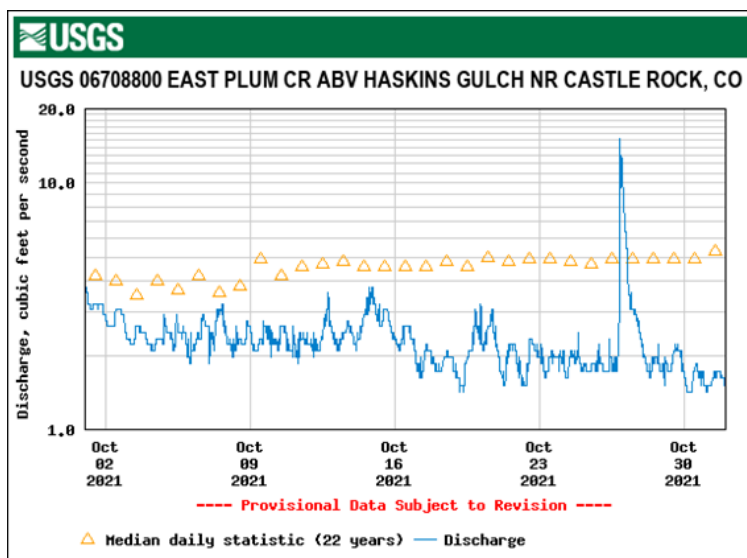
**Average Oct. streamflow: 2.7cfs**

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 1.41 and 15.2 cubic feet per second (cfs) during the month of October,

with an average streamflow of 2.7 cfs. This month's average streamflow of 2.7 cfs is below the 20-year median of 4.7 cfs.

There were active calls on the South Platte River in October. Most of the active calls have had a more senior water right than some of the Town's water rights. This means that the Town's diversions were out-of-priority, so the stream depletions were replenished by non-tributary return flows. This also means that the Town had slightly less reusable water going down Plum Creek during the active calls. 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 the Plum Creek Diversion can be captured and stored at Chatfield for later use. First storage started on May 15, 2020 and as of the end of October, we have approximately 1,530 AF of water stored in Chatfield.



# Water Demand

## Drought Monitor

The average WSI for October was 2.7, well above the 1.1 trigger level, which is considered “good.”

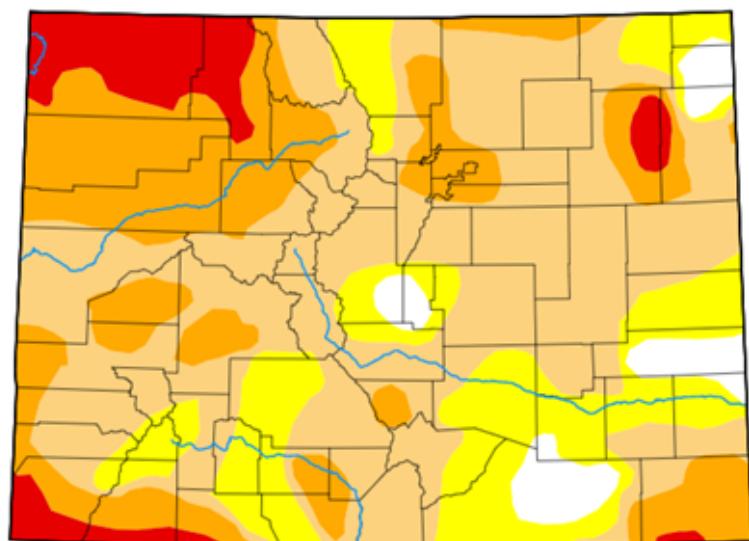
According to the U.S. Drought Monitor maintained by the United States Department of Agriculture (USDA), approximately 76.77% of Colorado is experiencing Moderate Drought (D1) to Exceptional Drought (D4) conditions, with Moderate Drought conditions in Douglas County. The Town of Castle Rock Drought Management 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

Nov. 1, 2021

South Platte River Basin:

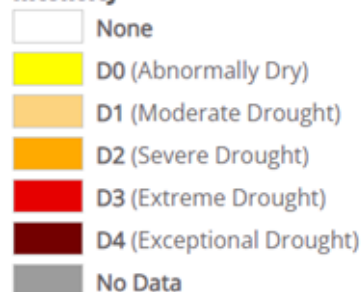
- YTD precipitation is at 80% of average
- Snow Water Equivalent (SWE) at 81% of average



Map released: Thurs. November 4,  
2021

Data valid: November 2, 2021 at 8 a.m. EDT

## Intensity



## Authors

United States and Puerto Rico Author(s):  
Adam Hartman, NOAA/NWS/NCEP/CPC

Pacific Islands and Virgin Islands Author(s):  
Curtis Riganti, National Drought Mitigation Center

# Plan Review

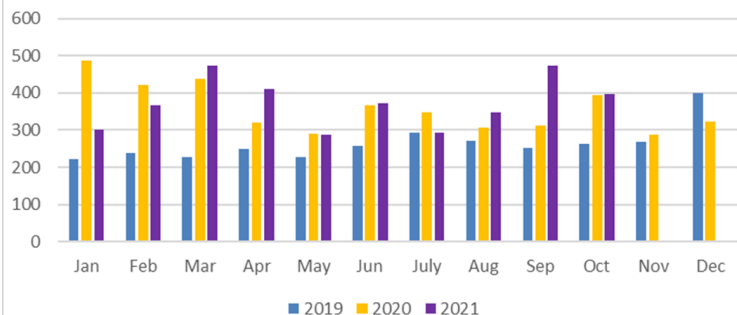
For each commercial and residential project submitted for development review, Castle Rock Water provides plan review, as appropriate, for:

- 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.



CRWater Plan Review  
DS projects reviews + BLDG permit reviews



## Reviews

179 Development Services PROJECT plan reviews

218 Building PERMIT reviews for

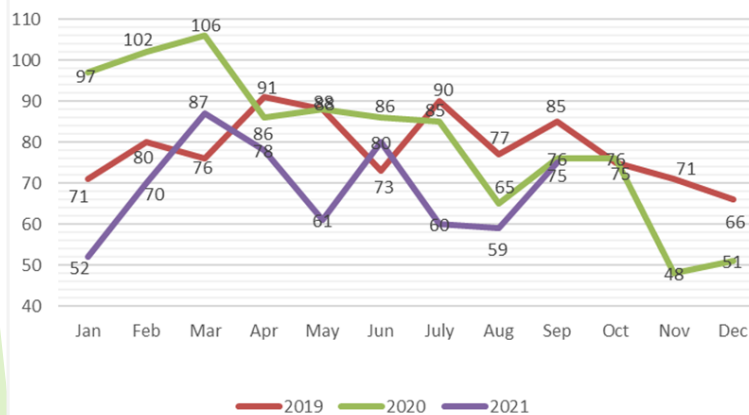
72 separate projects

Total Distinct Projects	2020: 76	2021: 72	Decreased 5%
Total Dev Review project reviews	2020: 208	2021: 179	Decreased 15%
Total Building permit reviews	2020: 186	2021: 218	Increased 16%

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.

The team has completed more building permits by the end of October than the total building permits in 2020!

Monthly Development Project Applications Reviewed



Oct. 2021 total reviews: 397

## Service levels

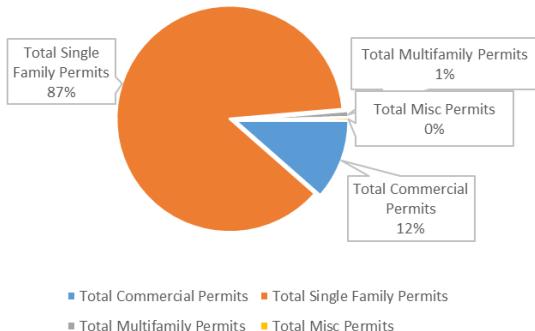
The average number of days assigned to review: 12.2 days

The average days to complete assigned reviews: 11.0 days

Plan Review: 89% of the reviews were completed on-time

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

Castle Rock Water Building Permit Reviews  
OCTOBER 2021

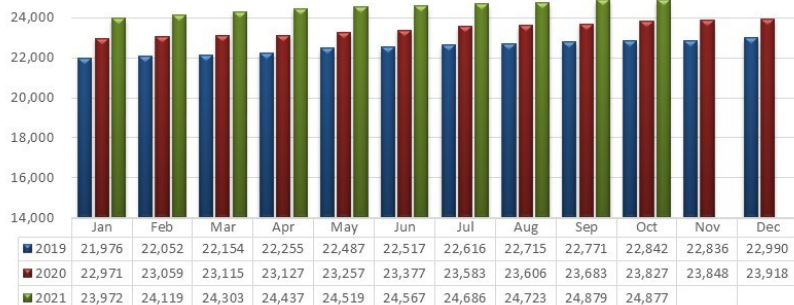




# Business Solutions

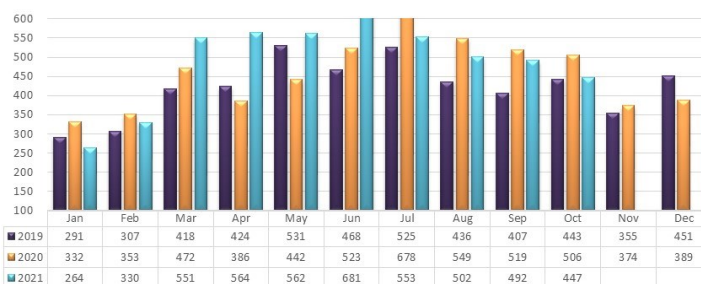
## Customer Service & Billing

# of Accounts Billed

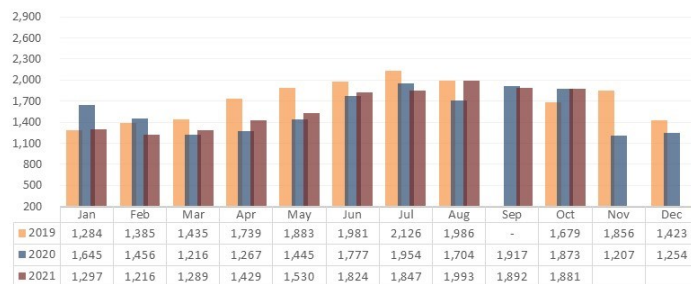


Sign up for an online water account, opt-in for paperless billing by Nov. 30 and be eligible to win \$50 of your bill!

Transfers of Water Service



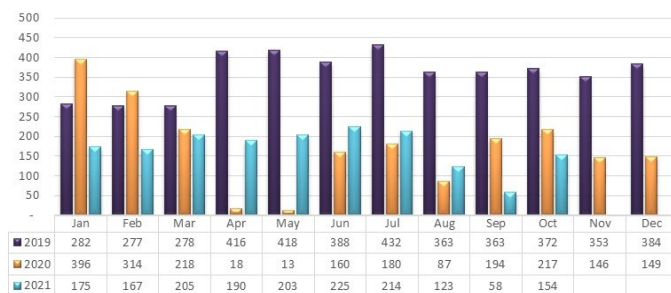
Customer Phone Calls



Mywaterbill Email Inquiries



Walk-In Customers



## Customer Outreach

### Keeping customers informed about the value of water.

Everyone uses water and thus we collaborate on communication efforts across the nation. October was Shower Better Month with the EPA's message about changing showerheads to WaterSense ones and taking shorter showers. (We personalized it with our cute pug in a showercap!) Castle Rock Water also partners with Live Like You Love It (ColoradoWater.org), the U.N.'s Toilet Day (Nov.), and Imagine a Day Without Water, among others. How we manage water at home, wherever that is, affects us all.

Water Outreach Social Media Stats	REACH
Shower Better Month—Oct. 6	2,414 people
Insulating Indoor Pipes—Oct. 13	2,643 people

Prepare Your Yard for Winter—Oct. 20	2,398 people
ColoradoScape Contest Reveal—Oct. 27	6,258 people
WRSMP Open House post—Oct. 4	1,946 people
Imagine a Day Without Water—Oct. 21	200 people
ELP 24-Karat Gold Award news—Oct. 27	3,036 people
Water Use Can Be Scary—Oct. 29	2,220 people
EMAIL: Join us Oct. 21 to talk about our water future	7,964 opened (37% open rate)
HOA EMAIL: How do irrigation practices affect your budget?	90 opened (38% open rate)



# Business Solutions

## Customer Outreach

**Before we wind down from the 'season', we have one more thing to say.**

Having an informed community, means our customers better understand and support the projects and funding for our award-winning utility. It also helps determine the direction the community would like Castle Rock Water to go. On multiple occasions in October (and September), Castle Rock Water had face-to-face interaction with customers to provide updates and answer questions.

First, there were several Town Council open houses in which every department in the Town was represented. Water not only spoke about budgets and needs, but also long-term projects. Additionally, Castle Rock Water hosted Your Town Academy on Oct. 8. This 8-week class had just under 30 adult students learning about the government processes. The students learned about the finances, operations and planning for the department, as well as took a tour of the Plum Creek Water Purification Facility.

On Oct. 21, residents were invited to the new Administration and Customer Service building to learn about and provide input on the updates to the Water Resources Strategic Master Plan. Most questions were about the timeline of the various projects anticipated. Several took the opportunity to ask about water issues and projects in their specific neighborhood.



*One Your Town Academy student remarked, "Each department had a unique way of presenting and showing us what they do and why; but regardless of the night one consistent common theme was passion and love for the work they do for the Town. Each presentation was interactive, unguarded and fun."*



Castle Rock Water gave away another front yard ColoradoScape makeover for the third year in a row. The purpose of the social media contest is to further educated residents about the beauty of a low-water landscape. All of the turf was removed to save water and to reduce maintenance needs in the yard. Three trees were added to fill in large areas and help protect sun-drenched plants. The design encompassed forty plants to add color, attract hummingbirds and provide low maintenance options. Several paths were added for design interest as well as create more functionality to the space.



*Flowers and shrubs placed throughout the mulch and rock areas create a better design flow.*

*A special thanks to JPL Cares, the landscape contractor, and TOCR's Julie Kirkpatrick, landscape designer, for their contribution to making our community a more beautiful place!*

*Lemon thyme, growing in between the pavers will provide a lemon scent when trampled on.*

# 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.

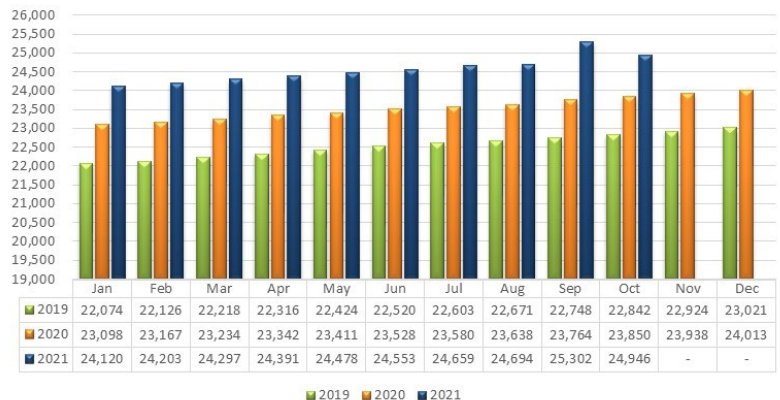
## Skipped Reads

**Oct. 2021: 0.68%**

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.*

Meters Read



## Meter Set Inspections

**Re-inspections: 71%**

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.

October 2021 saw a record high for monthly meter set inspections and, unfortunately, a record high for failed inspections and re-inspections. New failed inspection processes and rates have been put in place to curb this inefficient practice.

All Meter Set Inspections  
(includes all re-inspections)



## Work Orders

**Oct. 2021: 1,173**

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 transfers of service, disconnection and reconnections, meter set inspections, and more.

ALL Service Work Orders





# Operations & Maintenance

LEVELS OF SERVICE		Oct. 2021
<b>Drinking Water Compliance</b>	Castle Rock Water will deliver water that meets or surpasses the requirements of both Primary Drinking Water Regulations and Secondary Maximum Contaminant Levels 100% of the time.	<b>Ninety routine samples were completed.</b> <i>One of the samples tested positive for total coliform. As a result, three additional samples were tested and all three samples were negative for coliform, satisfying the regulatory requirements set forth by the Safe Drinking Water Act and Colorado Drinking Water Standards. The positive test result was attributed to sample contamination and/or laboratory error and was not an indication that drinking water within the Town's water system was contaminated. Total chlorine residual at the time of sample collection was 2.20 mg/L, which is well above the minimum level of 0.28 mg/L.</i>
<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>There were no water pressure issues in October.</b>
<b>Sewer System Effectiveness</b>	<1% of our customers will experience a sewer backup caused by the utility's sewer system per year.  Castle Rock Water remains in the Top Quartile for least number of sewer backups based on the American Water Works Association benchmarking.	<b>There were no sewer system issues this month.</b>
<b>Drinking Water Supply Outages</b>	<5% of our customers will experience water outages for one or more events totaling more than 30 hours/year.  Castle Rock Water remains in the Top Quartile for water system integrity based on the American Water Works Association benchmarking.	<b>There were three water system integrity issues in October.</b> <i>There was a main break on Oakwood, near the site of a previous repair on an 8" ductile iron pipe. Another corrosion hole was found and the team was able to extend the existing repair clamp, to complete the repair. Twenty-one homes were affected with lower than normal pressure during the repair.</i> <i>Operations assisted the Meters division with a service line that was damaged during a shut off, affecting only one homeowner who was out of water for less than eight hours. A contractor located and repaired a damaged service line, with Distribution's help, affecting two homeowners for less than one hour during the repair.</i> <i>There was a beam break on 6" cast iron pipe in the Glovers neighborhood. The main was throttled back during the repair and 24 homes experienced reduced pressure for less than four hours.</i>
<b>Water Quality Complaints</b>	Castle Rock Water remains in the Top Quartile for water quality complaints based on the American Water Works Association benchmarking.	<b>There were no water quality issues in Oct.</b>



# Operations & Maintenance

## Locate Report



Castle Rock Water's locate requests from 811 have continued to rise, year over year.

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	1,803
February	521	485	538	1,094	1,093	1,383	1,334	1,378	1,293	1,404	1,443	1,958
March	660	552	818	1,437	1,349	1,906	1,625	1,851	1,514	1,560	1,626	2,253
April	838	681	1,025	1,482	1,552	1,784	1,631	1,760	1,856	1,984	2,600	2,524
May	853	863	985	1,541	1,531	1,609	1,809	2,002	1,801	2,122	2,288	2,524
June	969	844	982	1,314	1,399	1,654	2,075	1,872	1,854	1,716	1,931	2,278
July	680	582	859	1,350	1,392	1,477	1,675	1,582	1,556	1,937	1,894	2,311
August	901	723	1,123	1,476	1,468	1,494	1,651	2,001	1,986	1,603	2,096	2,589
September	880	723	1,029	1,240	1,373	1,343	1,701	2,102	1,747	1,979	2,026	2,133
October	715	688	1,155	1,501	1,376	1,314	1,579	1,792	2,064	1,839	1,913	1,962
November	536	518	1,041	1,072	866	1,134	1,131	1,460	1,469	1,649	1,734	
December	415	405	925	1,005	1,043	1,063	1,059	1,277	1,293	1,175	1,859	
Totals	8,545	7,539	11,097	15,702	15,731	17,323	18,469	20,411	19,875	20,440	23,022	22,335

## 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 70.63 miles  
Lines Inspected 25.90 miles  
SSO Rate 0.0 SSO/100 mi

Oct: No sanitary sewer issues.

## Stormwater Maintenance



The Stormwater team repaired two failed outfalls and the basin near Lowes.

They dried out and removed over 150 cubic yards of sediment while restoring the pond.