



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

Castle Rock Water passes regulatory survey with flying colors

The Colorado Department of Public Health and Environment Water Quality Control Division (CDPHE WQCD) conducted a Sanitary Survey for Castle Rock Water on September 29 and 30 of this year. These surveys ensure that water providers are producing and distributing safe drinking water. Sanitary Surveys are required by Section 11.38 of Regulation 11 – Colorado Primary Drinking Water Regulations 5 CCR 1002-11. This survey included remote document reviews and on-site inspections by CDPHE inspectors.

During the physical on-site inspection, the inspectors visited each of the Town’s five water treatment plants, 14 storage tanks, and multiple wells and pump stations. They inspected each site to ensure that conditions were satisfactory for sanitary water production, storage and distribution. They also tested the water at each location to ensure that the disinfection readings matched local instrumentation.

At the water treatment plants, every basin hatch was opened and inspected for seal integrity and evidence of insect infestation. CR Water has over one hundred basin hatches, and no insect evidence in the hatches was found.

During this year’s survey, the inspectors found no major discrepancies or violations. The last survey occurred in 2017, and previously in 2013, and the results of those surveys also included no violations or deficiencies.

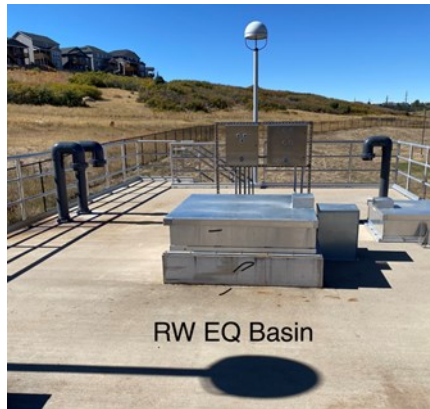


Document Review

- Cross Connection Control Program
- Annual Cross Connection Control Reports
- Tracking spreadsheet for Backflow Prevention and Cross Connection Control (BPCCC) program
- Storage Tank Program Plan
- Storage Tank Periodic Inspections
- Storage Tank Comprehensive Inspections
- Monitoring Plan including a system diagram with sampling locations
- Ground Water Entry Point Chlorine Residual Logs
- Calibration logs for turbidimeters of Surface Water System
- June 2019 turbidity data used for Monthly Operating Reports (MOR) for Surface Water System
- Secondary check for chlorine analyzers
- Lab results for 2012 Nitrate
- Total Coliform /Escherichia Coli slips
- Regulation 100 delegation of duties operation plan
- Updated inventory of all water treatment plant equipment, processes, and chemicals used for producing safe drinking water



In response to new regulations regarding facility venting, the plant maintenance team installed new “candy cane” style vents at Ray Waterman WTP and Tank 9.



Continued...

Castle Rock Water had one year to address some items identified by the inspectors. Castle Rock addressed all of the items within two weeks and sent documentation to CDPHE. The items included:

- ◆ Staff added 16 mesh screen to all HVAC inlets, outlets, and vents at all water treatment plants.
- ◆ Staff updated 13 Ray Waterman Water Treatment Plant basin vents to the newly adopted candy cane style vents.
- ◆ Staff replaced a failed door sweep at the Founders Water Treatment Plant.
- ◆ Staff made CDPHE requested improvements to the Comprehensive Storage Tank Inspection plan:
 - ⇒ It now includes procedures for selecting qualified tank inspectors and documenting the names of the inspectors within the plan.
 - ⇒ Staff added timelines to the Comprehensive Storage Tank Inspection plan for repairs; if and when deficiencies are discovered.
 - ⇒ Staff provided exact information to the Comprehensive Storage Tank Inspection plan relating to the types and sizes of the tank overflow/drain flapper valves and listings of the exact types of tank hatches and hatch seals.

Keeping infrastructure up-to-date

At the heart of our water service is the more than \$730 million in water treatment plants, pipelines, stormwater inlets and meter connections. Being proactive in maintaining this infrastructure while providing reliable service and protecting public health is a priority for Castle Rock Water. Long-term planning and funding incorporates the capital improvement projects to these structures and facilities that operate water, wastewater and stormwater service. Castle Rock Water currently has a multitude of projects in the works primarily improving drainageways and correspondingly replacing water and sewer lines.



Project details and updates can be found at CRgov.com/WaterProjects

Plus, find what the Town is building at the Town Projects tab on the Development Activity Map.

Good job!

Congratulations

Look who got PROMOTED!



Phil Jolly
Sr. Collections System
Operator



Jared Poyner
Collections
Supervisor



Alex Tarnawski, Ryan Livingston and John Chrestensen attended pressure reducing valve (PRV) training in Tennessee. The supervisors will then train the Distribution team on PRV repair and maintenance.



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

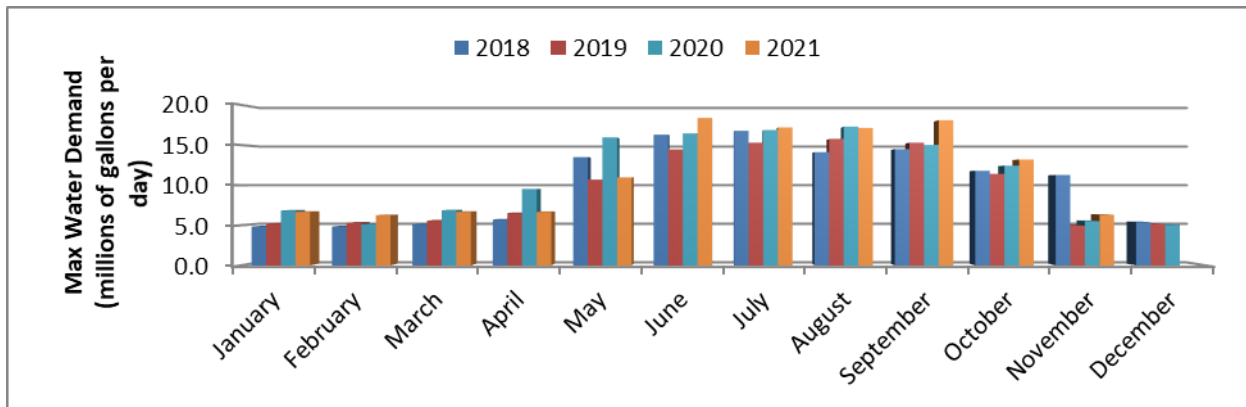
Fiscal

Demonstrated superb fiscal responsibility

Dawn Tiffany, Water Operations Administrative Assistant, was awarded the Water Star Award by Jane because she appreciated Dawn's consistent, cheerful and thorough answers to Jane's endless line of questions. While it is always hard to choose who to present this award to among the great staff that works together, Dawn just made Jane feel less silly!



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.

Nov. 2021 **6.3 million gallons/day**
 Nov. 5 yr. avg. 6.6 million gallons/day
4% lower than average

Max daily water demand in 2021
 18.1 MGD

Water demand total

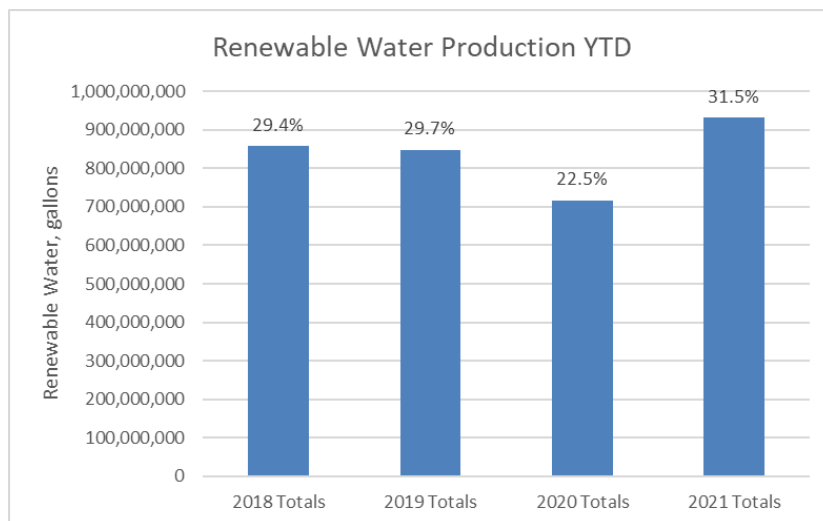
Water demand total is how much water was used over the entire month. Population and weather changes can significantly affect usage.

Nov. 2021 **163 million gallons**
 Nov. 2020 144.6 million gallons
12.7% increase from last year

Water demand total for 2020
 3,251.7 MG

Renewable water supply

- The CR-1 diversion produced an average of 0.34 MGD for the month of November.
- The Town’s fourteen alluvial wells, the CR-1 diversion, and the Plum Creek Raw Water Return Line (PCRWRL) delivered a total of 60.56 MG (185.7AF) of renewable water (and an average of 2.02 MGD).
- In total, renewable supplies accounted for 37.8% of the total water supply for the month and 31.5% of the annual water supply (2,960 MG or 9,084.9 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.

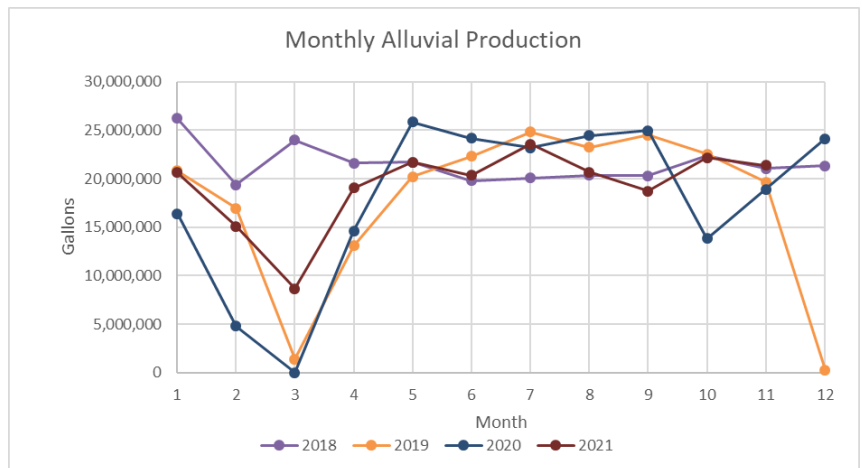
Water Demand

Renewable supplies are those water sources that are replenished by precipitation (think of our alluvial wells and CR-1 diversion), whereas reusable supplies are those waters that are either from the non-tributary Denver Basin (deep wells) or imported supplies (such as WISE) that can be used over and over, to extinction. The average reusable supplies used by Castle Rock for 2021 through November is 45.2%.

Alluvial supply

Nov. 2021 production: 21.4 MG/65.6 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 Nov. was 21.4 mg.
- We had three alluvial well rehabilitations completed this year.



East Plum Creek Flows

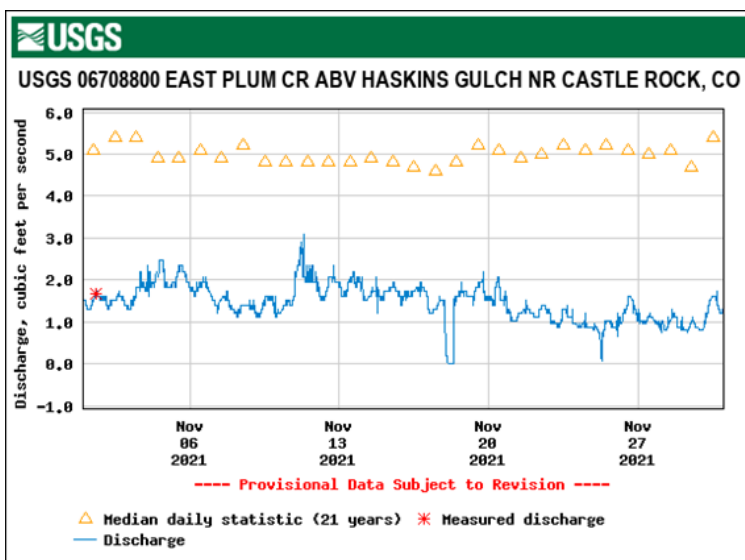
Average Nov. streamflow: 1.5 cfs

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 and 3.1 cubic feet per second (cfs) during the month of November,

with an average streamflow of 1.5 cfs. This month’s average streamflow of 1.5 cfs is below the 20-year median of 5.0 cfs.

There were active calls on the South Platte River in November. 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 November, we have approximately 1,602.9 AF of water stored in Chatfield.



Water Demand

Drought Monitor

The average WSI for November was 3.6, 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 95.45% 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

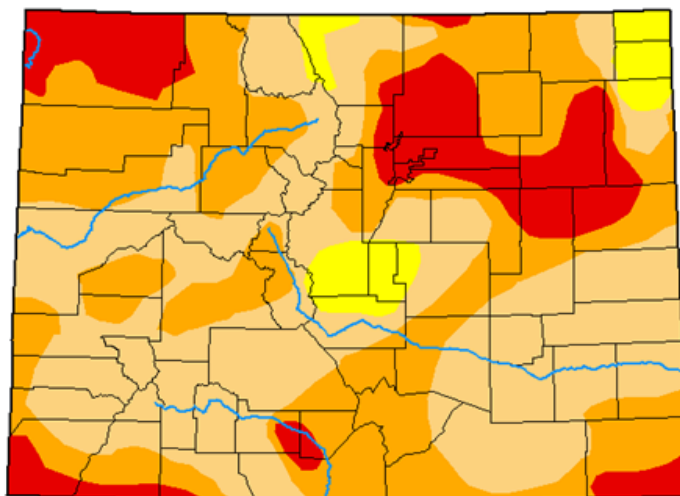
Dec. 2, 2021

South Platte River Basin:

- YTD precipitation is at 76% of average
- Snow Water Equivalent (SWE) at 65% of average

U.S. Drought Monitor Colorado

November 30, 2021
(Released Thursday, Dec. 2, 2021)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	95.45	52.30	14.34	0.00
Last Week 11-23-2021	0.00	100.00	88.10	40.83	8.75	0.00
3 Months Ago 08-31-2021	49.43	50.57	36.47	24.44	15.05	3.91
Start of Calendar Year 12-29-2020	0.00	100.00	100.00	93.73	76.17	27.60
Start of Water Year 09-28-2021	12.72	87.28	46.42	26.30	15.05	3.91
One Year Ago 12-01-2020	0.00	100.00	100.00	93.71	74.68	26.71

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:

Richard Heim
NCEI/NOAA



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.

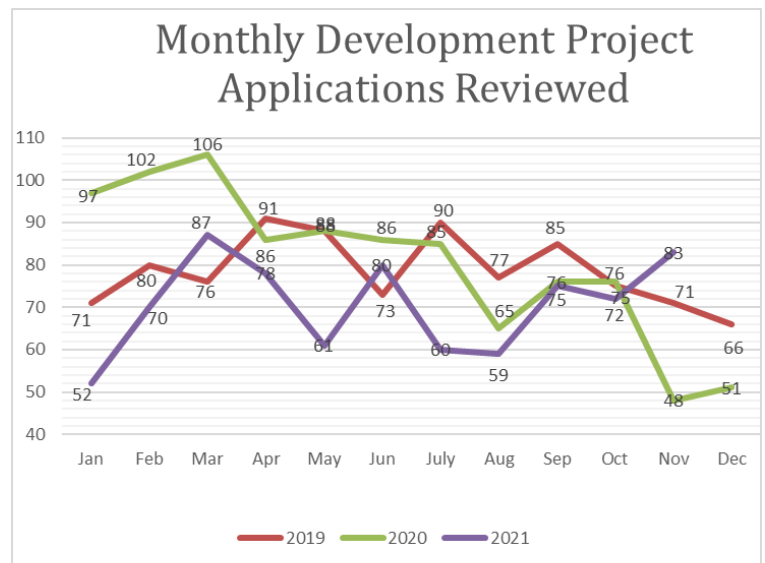
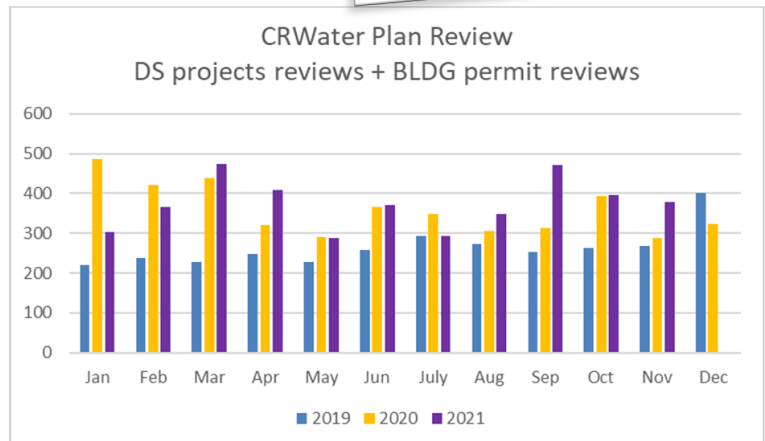
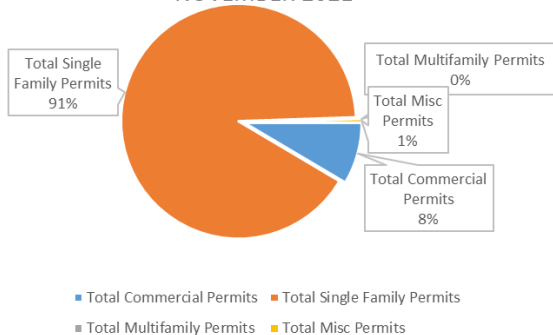
Reviews

190 Development Services PROJECT plan reviews
 188 Building PERMIT reviews for
 83 separate projects

Total Distinct Projects	2020: 48	2021: 83	Increased 73%
Total Dev Review project reviews	2020: 172	2021: 190	Increased 10%
Total Building permit reviews	2020: 172	2021: 188	Increased 9%

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.

Castle Rock Water Building Permit Reviews
 NOVEMBER 2021



Nov. 2021 total reviews: 378

Service levels

The average number of days assigned to review: 14.6 days
 The average days to complete assigned reviews: 13.5 days

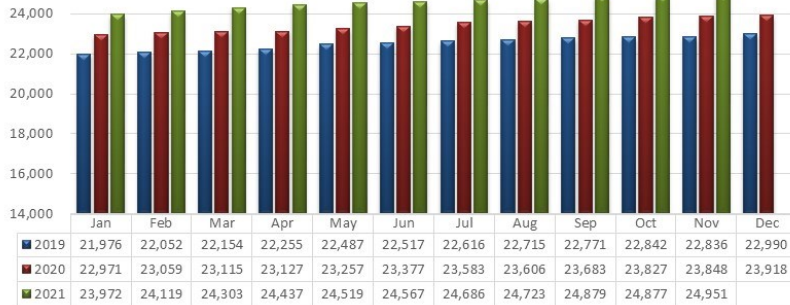
Plan Review: 85% of the reviews were completed on-time

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

Business Solutions

Customer Service & Billing

of Accounts Billed

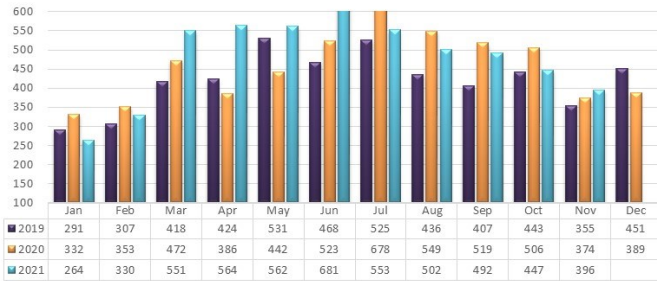


Going paperless could pay off!

Ten Castle Rock Water customers were randomly chosen on Nov. 30 to receive \$50 off their December bill for going to paperless billing.

Having an online H2OAccess account provides the benefits of 12 month's history and account access 24/7. Going paperless reduces clutter, is environmentally friendly and provides substantial cost savings to the billing dept.

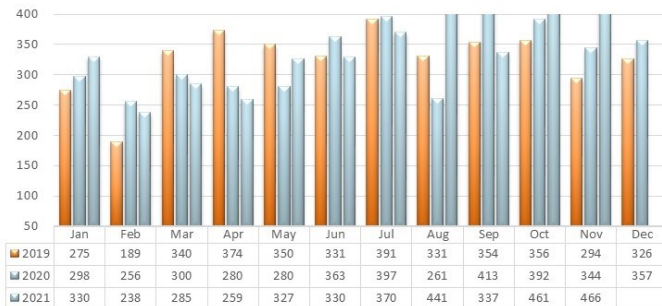
Transfers of Water Service



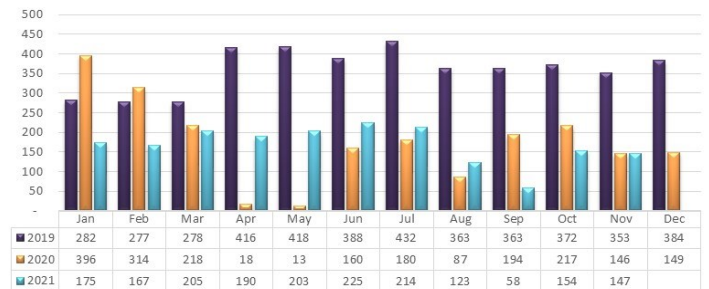
Customer Phone Calls



Mywaterbill Email Inquiries



Walk-In Customers



Customer Outreach

FOGs or Fat, Oil and Grease are major contributors to clogged and smelly plumbing. Messaging focused on residents scraping food scraps from pots and plates into the trash instead of down the drain. And case in point, a sewer back up this month was directly caused by FOGs!

Castle Rock Water partners with regional organizations in outreach. One of our communications partner, Colorado Water Wise, provided some graphics to share.



Water Outreach Social Media Stats

REACH

Poop Fairy: Blondie, Dozer, Monday—Nov. 2	7,596 people
Glovers, Craig & Gould projects—Nov. 3	3,616 people
LLYLI: Cost of tap water—Nov. 10	4,549 people
World Toilet Day/Wipes—Nov. 17	2,937 people
No to FOGs—Nov. 24	5,424 people
EMAIL: Paperless, pipes and payments	4,845 opened (24% open rate)

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.

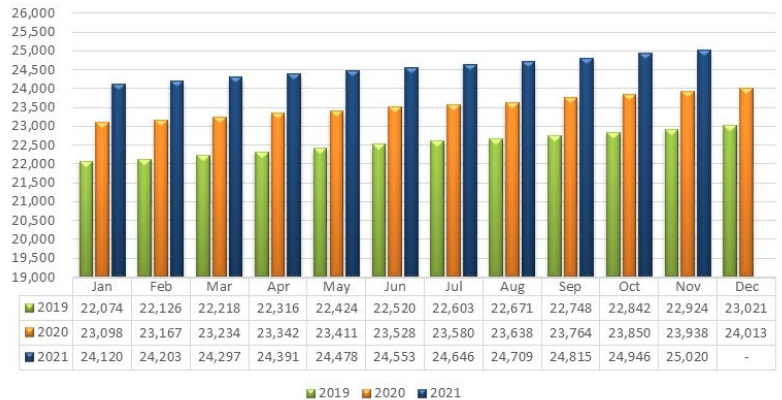
Skipped Reads

Nov. 2021: 0.84%

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

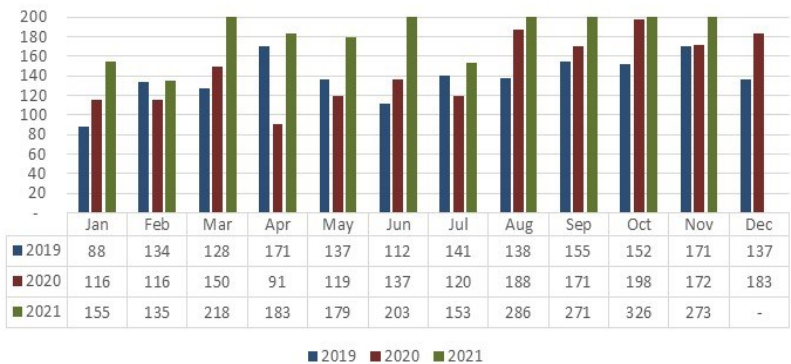


Meter Set Inspections

Re-inspections: 67%

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.

All Meter Set Inspections
(includes all re-inspections)



Work Orders

Nov. 2021: 997

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		Nov. 2021
Drinking Water Compliance	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.	Ninety routine samples were completed. <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>
Pressure Adequacy	< 1% of our customers will experience less than 43 pounds per square inch (psi) of pressure at the meter during normal operations.	There were no water pressure issues in November.
Sewer System Effectiveness	<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.	There were two sewer system issues this month. <i>There was a main backup in the sewer main on Castlegate, caused by a buildup of fats, oils and grease (FOG).</i> <i>There was also an SSO at the Founders Park restrooms, caused by debris in the main.</i>
Drinking Water Supply Outages	<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.	There were three water system integrity issues in November: <i>There was a main break in Glovers on 6" cast iron pipe (CIP), 24 customers had reduced pressure during the repair, which took less than four hours.</i> <i>There was a service line leak on Willow Oak Rd. Sixteen customers were out of water for less than an hour during the repair.</i> <i>The Distribution team assisted meters with a meter gasket replacement off Canyon Dr. Forty residents had water shut down for less than 15 minutes while the new gasket was installed.</i>
Water Quality Complaints	Castle Rock Water remains in the Top Quartile for water quality complaints based on the American Water Works Association benchmarking.	There were no water quality issues in November. There were no customer education visits.

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.

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	659	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	1,851	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	2,050
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	24,385

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	26.02 miles
SSO Rate	0.0 SSO/100 mi

Nov: Two sanitary sewer issues.

Field Services



The Collections and Stormwater teams investigated, removed debris and conducted clean up and disinfection operations on two sewer system overflows.

Fats, oils and grease, and debris were the cause of the blockages.

