

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

Fair Street Storm Sewer Project

The Fair Street storm sewer failed in the spring of 2020. Castle Rock Water staff were able to repair the damaged section of pipe, but it was determined that the existing pipe was at the end of its useful life. This project replaced the existing corrugated metal pipe with a new reinforced concrete pipe. The project also included three new manholes, an outlet structure, and an asphalt patch for the emergency pipe repair.

The project was awarded to 53 Corporation. During the construction of the project, the contractor encountered an excessive amount of buried trash. Unfortunately, this material could not be used as backfill. This material was hauled off to the landfill and clean material was brought into the project to backfill the new pipe.

The total project cost was \$290,485 to design and construct the storm sewer in Fair Street. The project was over budget due to the unexpected trash but was completed on schedule.

A piece of history

During the construction of the project, the contractor exposed a section of the old wooden water main that supplied water to Town. The pipe was a 12" wooden pipe that was installed in 1891. The pipeline supplied







water from East Plum Creek collected south of Town and conveyed it to the downtown area. The pipeline was approximately 3.9 miles long and included 2.6 miles of 8" pipe to distribute the water in Town. That project also included a 147,000

gallon reservoir. The State granted the Town a water right of 3.46 cubic feet per second of water for this pipeline. The section of wooden pipe that was exposed had to be removed due to a conflict with the new storm sewer pipe.

Good Job!

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.



Avery Worland Distribution 3 Operator Certification



Jonathon Weikle CDL license



Jared Poyner Water D Operator Certification



Matt Poland Water Treatment B Operator Certification



Ken Ritchie Collections Operator 3 Certification



Matt Spooner Distribution 1 Operator Certification



Lewis Brown Distribution 2 Operator Certification



Chaz Busse CDL license

Good Job!

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 **John Ferguson,** Water Plant Operator Supervisor, was awarded the Water Star from Jeff Lehman. Jeff finds John an extremely reliable employee who is never bothered by the constant need for providing assistance with water quality data. John consistently keeps Jeff updated on water quality



distribution, samples and monitoring plans. This is no easy task as many times the water quality data is not easy to decipher and John patiently helps explain it. With all the job stresses of his primary responsibility, to keep the water treatment plants up and running, John is always available to help others. His internal customer service is exemplary and shows through in his great attitude for helping a fellow employee.



Lauren is testing stream flows in a future sight of imported water in which Castle Rock has water rights.

Castle Rock Water is more than water.

Lauren Moore, CWP, is a Water Resource Program Analyst for Castle Rock Water. Her chemistry and environmental sciences education, along with experience in water quality testing and regulation knowledge has led her to be the primary for determining when one of Castle Rock's 70 plus wells need rehabilitation. She doesn't wait for efficiency to dwindle, but evaluates the rate of pumping, age of wells, maintenance issues, water quality variations and water level changes. Along with these calculations, cameras are used to scope these wells, some as deep at 2300 feet. Other than general wear and tear, a usual culprit causing deterioration is iron bacteria. Sometimes a 'simple' cleaning is warranted but extending the life expectancy of these wells beyond the typical 40 to 50 years also involves the replacement of pumps, bits and parts. With each new well exceeding \$1 million in cost, rehabilitation is an efficient way to keep customer rates down.

■ 2018 ■ 2019 ■ 2020 **■** 2021



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.

Jan. 2021

6.7 million gallons/day

Jan. 5 yr. avg.

5.6 million gallons/day

19% 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.

Jan. 2021	158.0 million gallons
Jan. 2020	147.0 million gallons

7.7% increase from last year

Water demand total for 2020 3,251.7 MG



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

Renewable water supply

- The CR-1 diversion produced an average of 0.37 MGD in January.
- The Town's thirteen alluvial wells, CR-1, and the Plum Creek Raw Water Return Line (PCRWRL) produced a total of 31.95 MG of renewable water (and an average of 1.03 MGD).
- In total, renewable supplies accounted for 18.7% of the total water supply for the month and 18.7% of the annual water supply (186 MG or 572 AF) to date.

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 January is 19.4% with an additional 72% of available reusable supplies stored in the month of January.

Alluvial supply

Jan. 2021 production: 20.6 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 December was 20.6 MG. We have three alluvial well rehabilitation projects scheduled this year.



East Plum Creek Flows

Average Jan. streamflow: 3.5 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 1.31 and 32.6 cubic feet per second (cfs) during the month of January, with an average streamflow of 3.5 cfs.



This month's average streamflow of 3.5 cfs is below the 20-year median of 5.5 cfs.

There were active calls on the South Platte River in January. 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 1,051 AF of water stored in Chatfield.

Drought Monitor

The average WSI for January was 3.9, 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 100% of Colorado is experiencing Moderate Drought (D1) to Exceptional Drought (D4) conditions, with nearly all of Douglas County in the highest drought category – Exceptional Drought (D4). Due to the sustained 100% drought conditions, Governor Polis directed a shift from Phase 2 to Phase 3 of the Colorado Drought Plan, which will hopefully better prepare the State for continued severe conditions in 2021. 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 Feb. 3, 2021

South Platte River Basin:

- YTD precipitation is at 73% of average
- YTD snowpack is at 74% of average

U.S. Drought Monitor Colorado

January 26, 2021 (Released Thursday, Jan. 28, 2021) Valid 7 a.m. EST





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 Tinker CPC/NOAA/NWS/NCEP



droughtmonitor.unl.edu

Conservation

Conservation is ... continually learning

As every Castle Rock Water employee knows, we're pretty serious about water conservation and Castle Rock Water leads the industry among our neighboring municipalities in water conservation efforts.

We not only provide educational tools for our residents but we also attend many trainings ourselves, on an annual basis, to remain current in water conservation efforts. As technology and techniques improve, we incorporate those findings into our current regulations which can be found in the Landscape and Irrigation Criteria Manual (LICM). The conservation team, along with several Town coworkers from Development Services, Parks, and Golf have spent many hours over the last several months reviewing and updating this manual, which has





valuable information and details our current regulations. When used in conjunction with the Water Use Management Plan (which was recently updated by the conservation team and approved by Town Council), the landscape and irrigation design, installation, or maintenance contractors have the tools they need to do the job right.

Since around 50% of our potable water is used for outdoor irrigation it's extremely important that the equipment they install and the techniques they use meet our regulations to help continue to conserve, especially in the landscape setting.



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

117 Development Services PROJECT plan reviews 185 Building PERMIT reviews for 52 separate projects

Total Distinct	2020:	2021:	Decreased
Projects	97	52	46%
Total Dev Review	2020:	2021:	Decreased
project reviews	237	117	by 51%
Total Bldg permit	2020:	2021:	Increased
reviews	124	185	49%

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: 12.9 days The average days to complete assigned reviews: 11.6 days

Plan Review: 96% 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







Customer Outreach

Keeping customers aware of activities within the department, the benefits of conservation and the value of water is accomplished through social media, email, newsletters and billing messaging, along with periodic events and campaigns.

January started a new campaign, Castle Rock is More Than Water, in which staff are highlighting various jobs that go into providing safe, reliable and sustainable water for the community.



H₂Oaccess

Customers benefit from having an online H20access account with 24/7 access to statement information, 12 months of statement history, helpful email account reminders and safe and secure online payment options.

2020/Q4 statistics

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- 15,602 or 65% of our total customers have enrolled in an online account
- 9,905 or 63% of the customers with an online account have chosen to go paperless billing





Email reach: Social media reach:

5,528 accounts (29% open rate) 4 posts with 3,592 average reach

Water Social Media Stats	REACH			
Checking for Leaks — Jan. 6	2,135 people			
Field ops working 24/7 — Jan. 13	4,913 people			
Household Chemical Roundup — Jan. 20	4,578 people			
Gallon per Capita Daily — Jan. 27	2,745 people			

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

Jan. 2021: 0.63%

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: 52%

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

Jan. 2021: 815

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, etc.



All Meter Set Inspections (includes all re-inspections) 200 180 160 140 120 100 80 60 40 20 Aug 2019 88 134 128 171 137 112 141 138 155 152 171 137 2020 116 116 150 91 119 137 120 188 171 198 172 183 2021 155 ■2019 ■2020 ■2021





Operations & Maintenance

LEVELS OF	SERVICE	JAN. 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	<i>Ninety routine samples were completed.</i> All samples were within the parameters set forth by the Safe Drinking Water Act and Colorado Drinking Water Standards.					
	Levels 100% of the time.	A water quality issue arose due to treatment changes at PCWPF causing manganese to exceed the secondary Maximum Contaminant Level (MCL).					
Pressure Adequacy	< 1% of our customers will experience less than 43 pounds per square inch (psi) of pressure at the meter during normal operations.	<i>There were no water pressure issues this month.</i>					
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.	<i>There were no sewer system issues this month.</i>					
Drinking Water Supply Outages	<5% of our customers will experience water outages for one or more events totaling more than 30 hours/year. <i>Castle Rock Water remains in the Top Quartile for water system integrity based on the American Water Works Association benchmarking.</i>	There were no water system integrity issues in January.					
Water Quality Complaints	Castle Rock Water remains in the Top Quartile for water quality complaints based on the American Water Works Association benchmarkina.	There was one water quality issue in January. Treatment changes at PCWPF caused manganese to exceed the secondary MCL, resulting in yellow/brown water in a portion of the distribution system. Approximately 32 residents contacted Castle Rock Water.					

Operations & Maintenance

Stormwater



The Stormwater team was tasked with taking a large depression out of the road at the Plum Creek Diversion. The grade made it difficult for large vehicles and trucks pulling trailers to access the site.



Collections



The Woodlands Manhole Rehabilitation project is complete.







Operations & Maintenance

Locate Report



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	1,803
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	1,306	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	385	1,541	1,531	1,603	1,809	2,002	1,801	2,122	2,288	
June	363	844	382	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	1,386	1,603	2,096	
September	880	723	1,023	1,240	1,373	1,343	1,701	2,102	1,747	1,979	2,026	
October	715	688	1,155	1,501	1,376	1,314	1,579	1,792	2,064	1,839	1,913	
November	536	518	1,041	1,072	866	1,134	1,131	1,460	1,463	1,643	1,734	
December	415	405	325	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	

Collections

YTD Lines Cleaned 0.00 miles Lines Inspected 1.55 miles SSO Rate 00 SSO/100 mi Castle Rock Water tracks within the top quartile in the Sanitary Sewer Overflow

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.