

MONTHLY REPORT

JULY 2022



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

TENORM at Castle Rock Water

Castle Rock Water utilizes both groundwater and surface water sources to provide safe drinking water to the Town. An inevitable result of our water treatment processes is the generation of waste. Treatment process waste comes in the form of treatment residuals (solids) that are removed from source waters, and are largely made up of contaminants that occur naturally by contact with soil and rock. Some of the naturally occurring contaminants that are removed from source water include radioactive elements (radium, in the case of Castle Rock).

Undisturbed, and naturally occurring radioactive material (NORM) from soil and rock is considered technologically enhanced when it is pulled from the undisturbed environment and concentrated in the accessible environment by way of human activity – such as drinking water treatment. The good news is that these constituents are removed from the water, making it safe to drink. There are several other industries that generate Technologically Enhanced Naturally Occurring Radioactive Material (TENORM), and they include mining, energy production, and fertilizer production, among others. Recently, TENORM generators have become subject to Federal guidance and State of Colorado regulations. Castle Rock Water is a TENORM generator, and is included in this regulated community.

Regulatory action began in Colorado in 2018, when the State Senate gave authority to the Colorado Department of Public Health and Environment (CDPHE) to promulgate rules for the safe management of TENORM. In that same year, CDPHE began to develop a regulatory framework for the



Treatment residuals loadout at PCWPF.

Rule, and in 2020, through a stakeholder engagement process, the TENORM Rule was adopted. Finally, the Rule became effective in January 2021 and in August 2022 the TENORM requirements will become enforceable.

As a normal part of the water treatment process, Castle Rock Water always has produced treatment residuals. These residuals (sludge) typically consist of a mix of water and solids from filtration including metal oxides and hydroxides, among other solids. Prior to the adoption of the TENORM regulations, the State of Colorado allowed for residuals to be discharged into the sanitary sewer system, treated through the wastewater treatment process, and ultimately incorporated with wastewater treatment

residuals (biosolids) for beneficial use through land application on nearby farmland. This will still be the case for the residuals that are generated from our four groundwater treatment facilities, as it will be for many such facilities across the state. Conversely, our Plum Creek Water Purification Facility (PCWPF), which is equipped to treat groundwater and surface water, will be required to collect, de-water, and transport all residuals to an approved landfill for disposal. The reason for the distinction is that PCWPF was commissioned in 2013 and is a relatively new facility. While CDPHE had allowed the discharge of treatment residuals into the sanitary sewer from our groundwater facilities, they were unwilling to allow increased long-term discharge into the system from PCWPF that could negatively impact the concentration of radium isotopes applied to farmland. At the time of commission, CDPHE, knowing that TENORM regulations would soon become a State of Colorado statute, allowed a short-term exemption for the discharge of residuals from PCWPF into the sanitary sewer system. Recently, the design and construction of new Advanced Treatment processes to the PCWPF were completed. As part of the design, and in anticipation of the new TENORM regulations, PCWPF is equipped for removal and transport of treatment residuals for disposal. This solids handling process has been in practice since March 2021.

As it relates to Castle Rock Water, the regulatory structure of the new Rule first calls for a TENORM determination. That is, an evaluation must take place to determine whether our treatment residuals are subject to the Rule and, if so, whether they can be exempted from the Rule. This determination is made through a characterization process that involves the collection and evaluation of sampling and analysis data from each of our water treatment facilities.

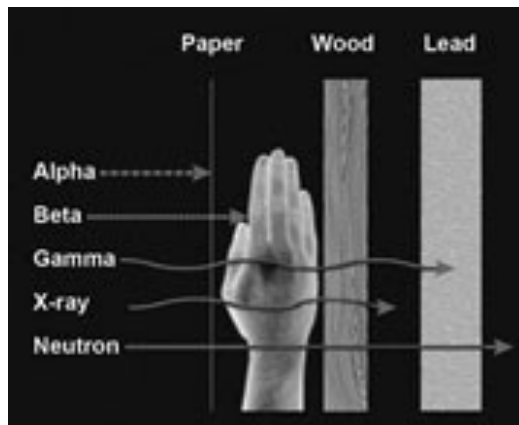
Castle Rock Water has completed the characterization process, and it has been determined that exemption from the Rule will not apply to us. Instead, Castle Rock Water must

register as a TENORM generator with the CDPHE. Generally, the requirements associated with registration include annual registration and fees, employee training, and the appropriate transport and disposal of TENORM residuals from PCWPF in an approved landfill. The definition of TENORM points to the interaction between NORM and human activity, and implies the question of impact on worker health and safety. In December 2020, Castle Rock Water procured the services of a radiation protection consultant for a twofold purpose: 1) to perform a health hazard assessment (HHA) in the immediate and surrounding areas of the solids handling areas of PCWPF, and 2) as counsel in the various aspects of functional TENORM management, including registration, and transport and disposal of TENORM waste. With respect to health and safety, the objective of the HHA was to evaluate the potential for

occupational radiation exposure above natural background levels. Three different methods were used to measure radiation exposure. They included a real-time survey to measure gamma exposure rate at 151 locations throughout the facility, the placement of six dosimeters to measure long-term gamma exposure, and the placement of six dosimeters to measure

long-term radon exposure. The results of all three independent assessments were consistent with each other, and revealed that there is no evidence of occupationally received radiation exposure to employees at PCWPF that approaches regulatory dose limits. Rather, these methods revealed that employee exposure was, in fact, a fraction of existing natural background levels in Colorado. Our consultant provided training to all affected employees and upper management that included an explanation of the results of the HHA, as well as basic radiation training.

The task of TENORM management will continue for the foreseeable future, as Castle Rock Water goes about the work of providing safe drinking water that complies with all Federal, State, and local regulations to the Town using state of the industry treatment processes.



Types of radiation.

Good job!

Promoted!

Welcome
NEW HIRES



John Grahn
Stormwater Inspector



**NEW
CERTIFICATIONS**



Michelle Strang
CO Water Professionals
Distribution 1 Certification



Joe Compton
CO Water Professionals
Water Treatment B Certification



Matt Arpaio
CO Water Professionals
Water Treatment B Certification



Water Star Award

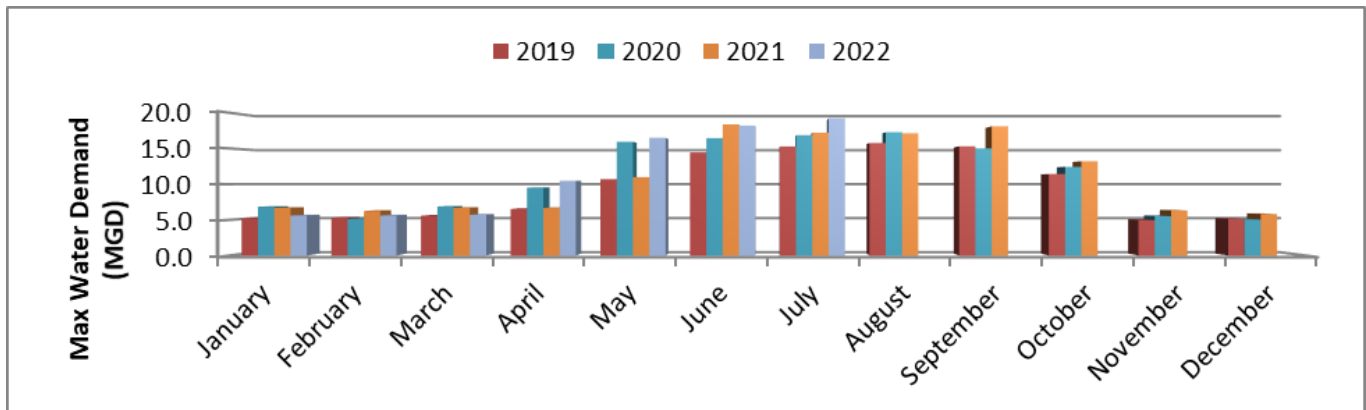
The Water Star Award recognizes a coworker within Castle Rock Water for doing an excellent job in fulfilling the Department's Vision and Mission.

John Grahn, Stormwater Inspector, was awarded the Water Star Award from Andy Dieter because of his spirit of cooperation. John is a team player who is always quick to volunteer. Andy appreciates, that with no direct reports, John provides deferred leadership. His attention to safety and always being on task is a top priority and provides exceptional service to the organization and his coworkers. He makes this balancing act look easy!

Water Resources

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.



May Max Daily Demand:

- 19.2 million gallons/day
- 5-year average, 17.1 million gallons/day
- 13% higher than the 5-year average

Water Demand Total:

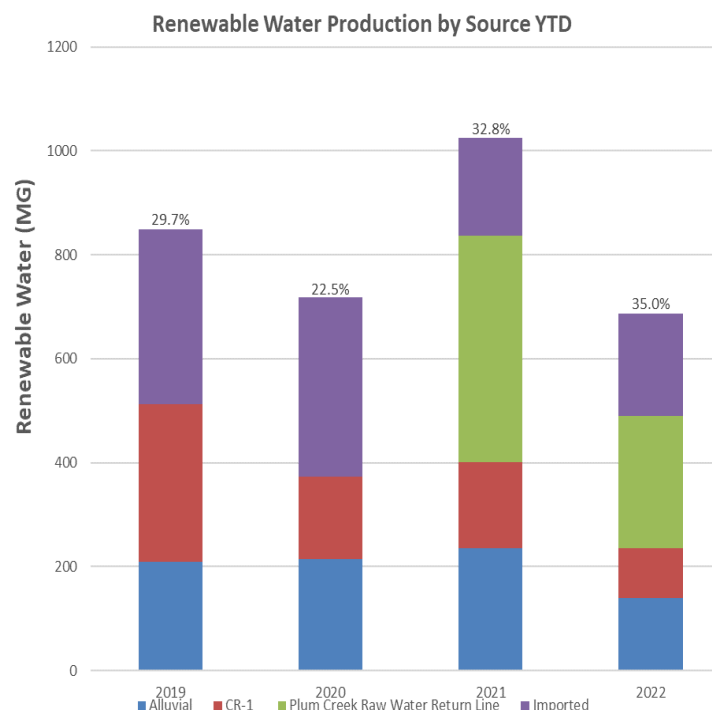
- The water demand total for July was 495.2 million gallons (MG) [1,519.7 acre-feet (AF)]
- 4% higher from the June 2022 total of 475 MG
- 9.2% increase from the previous year's July 2021 demand of 453.6 MG.

Renewable supplies

Renewable supplies are those water sources that are replenished by precipitation.

In total, renewable supplies accounted for 22.3% of the total water supply for the month and 35.0% of the annual water supply (1,964 MG or 6026 AF) to date.

- The CR-1 diversion produced an average of 0.0 MGD.
- All flows captured at CR-1 during the month were recapture of the three Bell Mountain wells that flow into East Plum Creek
- The PC diversion produced an average of 2.7 MGD.
- The 14 alluvial wells produced an average of 0.71 MGD.
- The renewable water production average was 3.52 MGD.
- The renewable water total production was 109.06 MG (334.7AF).



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

Water Demand

Reusable supplies

Reusable supplies are 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 2022 through July is 57.3%.

Storage

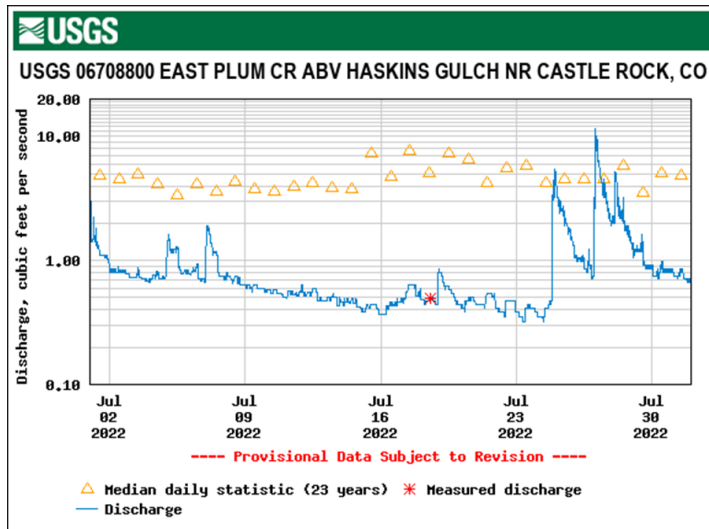
Current reservoir storage

- Chatfield: 787.21 AF
- Rueter-Hess: 110 AF
- CRR1: 168.26 AF

Drought

According to the U.S. Drought Monitor maintained by the United States Department of Agriculture (USDA), **Castle Rock is experiencing Abnormally Dry (D0) to Severe Drought (D2) conditions.**

Local Plum Creek supplies

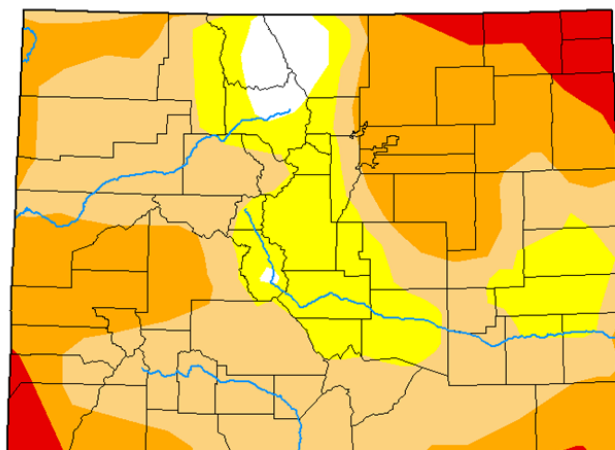


The hydrograph shows the estimated flows in the East Plum Creek basin.

- Flows ranged from 0.32 – 11.7 cubic feet per second (cfs).
- The monthly average streamflow was 0.9 cfs.
- The 22-year mean is 9.7 cfs.

U.S. Drought Monitor Colorado

July 26, 2022
(Released Thursday, Jul. 28, 2022)
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:

Curtis Riganti
National Drought Mitigation Center



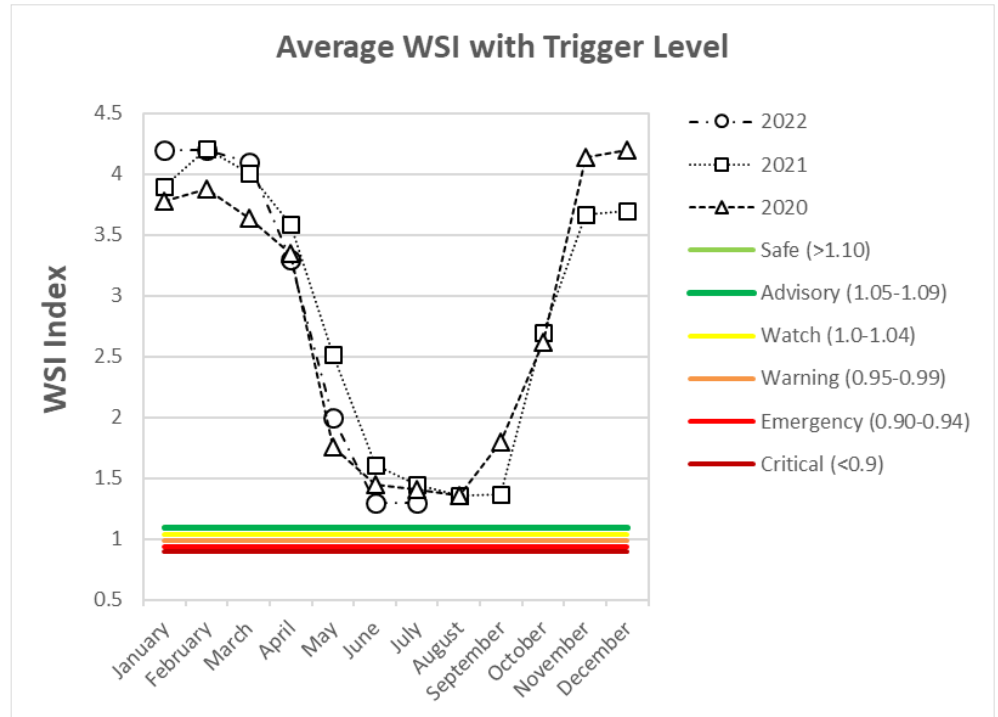
droughtmonitor.unl.edu

Water Demand

Water supply index

The Town of Castle Rock Drought Management Plan uses a Water Supply Index (WSI) for the Town that accounts for local conditions relative to the Town's capability to address our water resources and daily water demands. Anything below a 1.1 will trigger a drought stage relative to its severity.

- The average WSI for July was 1.3.



With the Water Supply Index hovering precariously near or at the triggering 1.1 mark for several days in July, messaging for customers to be mindful of water waste and to reduce irrigation was sent out.

Business Solutions

Customer Service & Billing

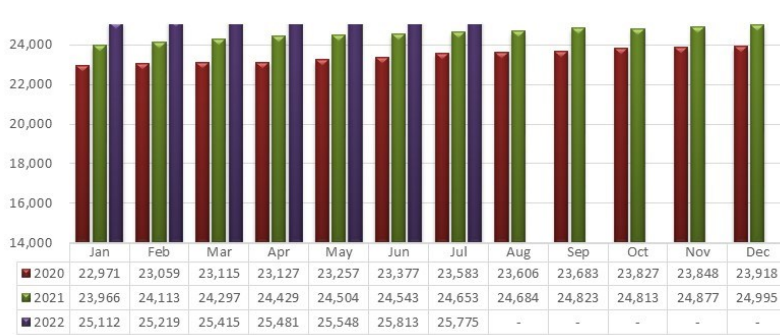


2022/Q2 statistics

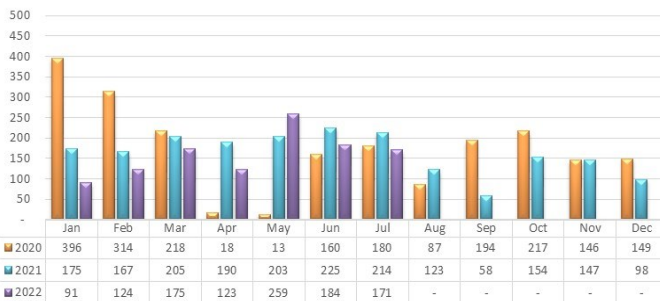
- 18,380 (71%) have an online account
- 11,832 (64%) are paperless

Customers benefit from having an online H2Oaccess account with 24/7 access to statement information, 12 months of statement history, helpful email account reminders and safe and secure online payment options. Customers are encouraged to use paperless billing to reduce clutter, be environmentally friendly and save mailing costs.

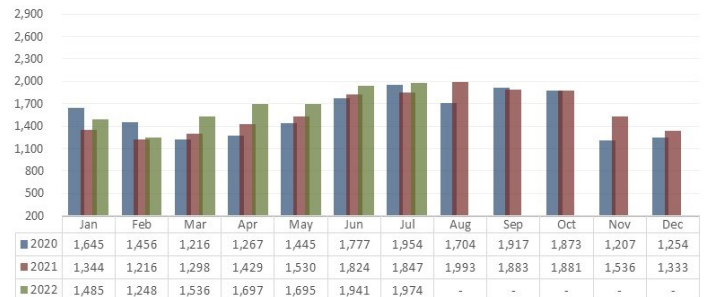
of Accounts Billed



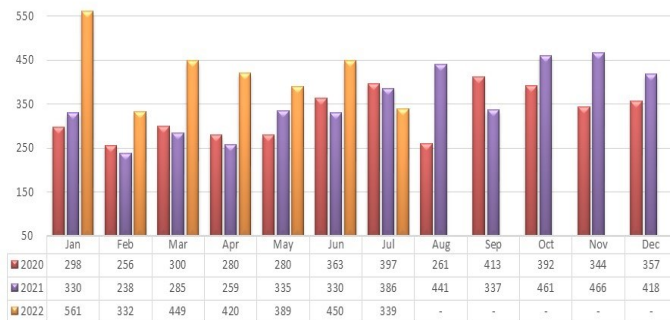
Walk-In Customers



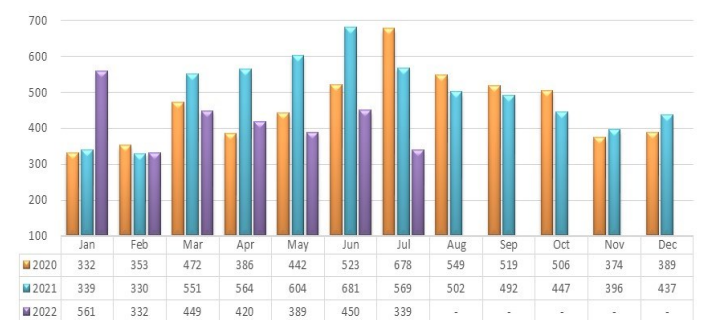
Customer Phone Calls



Mywaterbill Email Inquiries



Transfers of Water Service



Customer Outreach

Keeping customers informed about the value of water.

Water Outreach Social Media Stats	REACH
July is Smart Irrigation Month—July 6	8,406 people
Proposed Paintbrush Park Pond open house notice— July 12	3,488 people
Turf type and irrigation— July 13	4,150 people
No Poop Fairy: Bo— July 19	2,908 people
It's not zero-scape— July 20	11,129 people

Drought warning— July 27	1,923 people
Email: Irrigation is more than turning the sprinkler on—July 13	10,739 opened (64% open rate)
HOA Email: The drought is impacting us— July 20	122 opened (61% open rate)



Messaging, including a Council Proclamation, coordinated with this national campaign.

Meters



Meters Read

Meters are read the first two 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

July 2022: 0.35 %

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

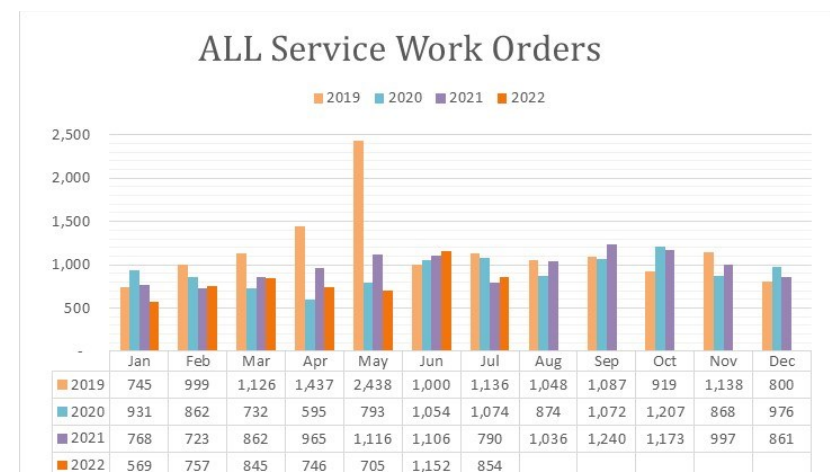
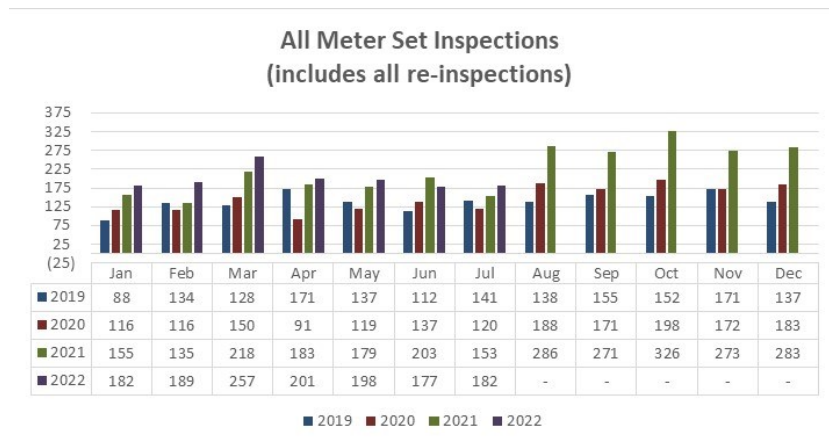
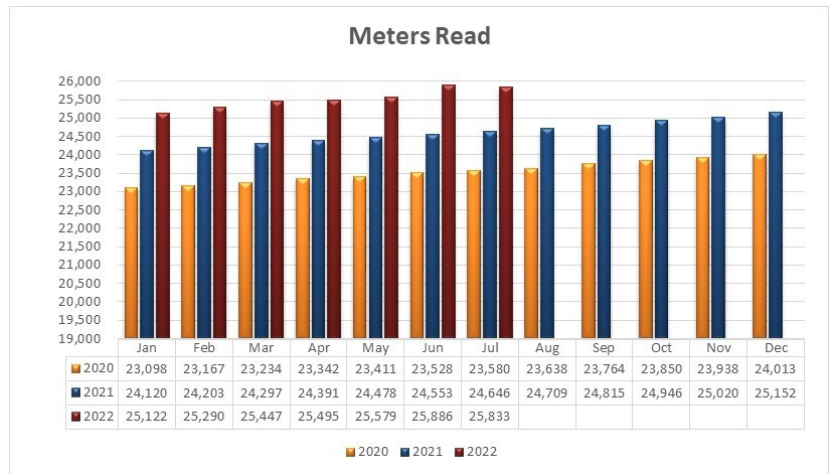
Re-inspections: 42%

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

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.

Disconnections were at an annual high of 153. The team shut off 101 in one day, with the help of Operation cross-training.



Operations & Maintenance

LEVELS OF SERVICE

July 2022

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.

One hundred routine samples were completed. 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.

Pressure Adequacy

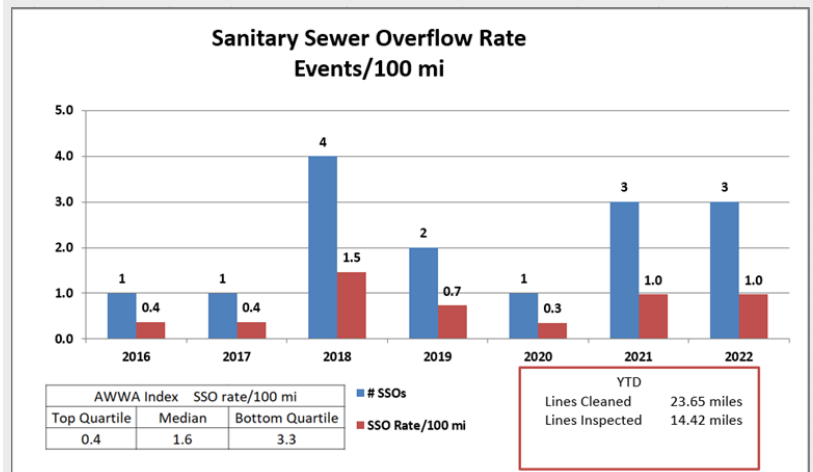
< 1% of our customers will experience less than 43 pounds per square inch (psi) of pressure at the meter during normal operations.

There were no water pressure issues in July.

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 AWWA benchmarking.

There were no sanitary sewer issues in July.



Water Quality Complaints

Castle Rock Water remains in the Top Quartile for water quality complaints based on the AWWA benchmarking.

There were no water quality complaints or issues in July.

Operations & Maintenance

LEVELS OF SERVICE

Drinking Water Supply Outages

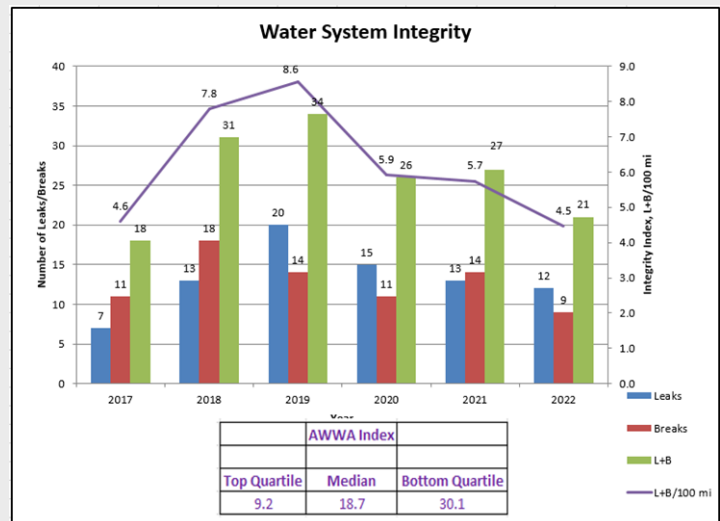
<5% of our customers will experience water outages for one or more events totaling more than 30 hours/year.

Castle Rock Water remains in the Top Quartile for water system integrity based on the American Water Works Association benchmarking.

July 2022

There were five water system integrity issues in July:

- Distribution staff conducted an emergency valve replacement on a leaking valve in the Woodlands.
- The contractor working on the library project hit a 2" service line; customers in the adjacent strip mall were affected with little or no pressure as the contractor conducted the repair.
- A contractor hit a service line at Topeka and Atchison.
- A contractor hit a 3/4" irrigation line, while working north of Dominos on Jerry St. The water was off for less than ten minutes, to area businesses, while the contractor conducted a repair.
- There was a service line leak in Founders involving a meter pit that serviced two homes. The two homes were out of water for six hours during the repair.



Utility locates

Water locates conducted

- July : 2,257 tickets



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.

Operations & Maintenance

Operations

Field Operations had a very busy month:

Leaking valve replacement in the Woodlands



Service line leak in Founders



The Distribution team replaced a non-operational fire hydrant.



There was a fire line break at a local restaurant. Distribution assisted the Meters division in helping the contractor shut off the fire line service, so a temporary repair could be conducted by their contractor.

