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

PCWPF Advanced Treatment project

By Walt Schwarz, Project Manager

Eight new treatment tanks filled with granular activated carbon

Castle Rock Water is fulfilling its long-term renewable water plan and will be utilizing reuse water in January 2021. Reuse water is a safe, cost effective, environmental-friendly and sustainable solution for water supply in our community and will ultimately constitute one-third of our entire water supply.

White Liquid Oxygen tank for ozone generation and concrete solids settling tank in background.

Castle Rock Water is pumping reusable surface water from the Town-owned reservoir in Sedalia to the Plum Creek Water Purification Facility (PCWPF). This reservoir is a new source of supply and is located downstream from the Plum Creek Water Reclamation Authority. Pilot testing of advanced treatment technologies performed by Castle Rock Water prior to this project showed good removal rates associated with regulated and non-regulated contaminants. The treatment processes identified work well with the conditions and processes within the Town of Castle Rock. The primary goal of the PCWPF Advanced Treatment project is to meet or exceed requirements of the United States EPA Safe Drinking Water Act, as well as additional requirements from the Colorado Department of Public Health and Environment.

Construction of the Plum Creek Water Purification Facility Advanced Treatment Project was awarded to Garney Construction on May 21, 2019. The project included construction of the 1 million gallon (MG) raw water blending tank, a new building to house treatment equipment, a backwash solids settling tank (and centrifuge equipment for solids production), a raw water meter vault, an emergency electrical generator, and converting the existing PCWPF greensand filter to a biologically active filter. In addition, advanced treatment equipment installed in the new building takes a multiple barrier treatment approach and includes ozone oxidation, granular activated carbon adsorption, and UV disinfection systems.

As of the end of December 2020, Garney has started up and operated all new treatment systems and is currently working to fine tune these operations. Garney is also working to complete all punch list work items as noted by Burns & McDonnell Engineering project designers and Castle Rock Water staff.

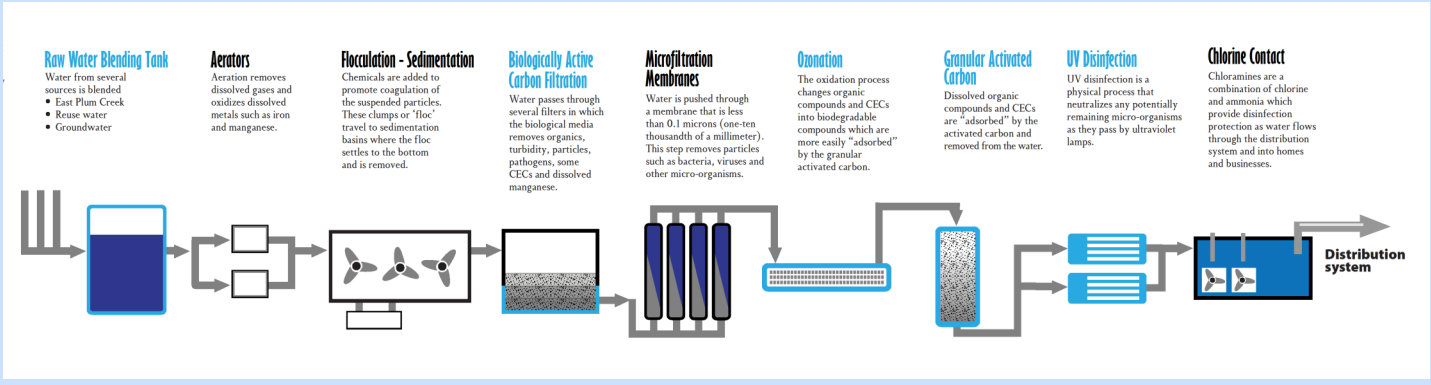
Stainless steel loop reactor piping is part of the ozone system.

Training of Castle Rock Water staff by manufacturer representatives and BMcD staff is ongoing. If all proceeds as planned, the project team anticipates beginning to treat the Sedalia Pump Station water supplies during week of January 11, 2021. Final completion of the project is scheduled for February 11, 2021 and the project is proceeding within the authorized budget of $28,452,538.

Plum Creek Water Purification Facility—TREATMENT TRAIN

This state of the art drinking water facility is being expanded to include Advanced Treatment processes, which are denoted in blue. While treatment already meets local, State and Federal regulations for safe drinking water regardless of sources, the Advanced Treatment processes provide added redundancies, focus on removal on contaminants of emerging concern (CECs), and address new standards being established by reuse systems throughout Colorado and the U.S.

Traditional and reuse treatment systems include physical, chemical and biological processes for a comprehensive treatment for purity in drinking water. These processes are designed to remove Giardia, Cryptosporidium, viruses, suspended solids, bacteria, algae, fungi and CECs such as pharmaceuticals and personal care products.



New community partnerships help Castle Rock Water support local restaurants

Keeping the community connected has never been more important. Castle Rock Water has several new partnerships with local businesses that are setting an example of how we can all support each other this season.

Given the economic concerns created by the COVID-19 pandemic, Castle Rock Water has launched conservation efforts focused on the businesses that have been hit the hardest – small, local food and beverage establishments. The goal is to help offset immediate financial burdens, while helping achieve long-term conservation goals.

Several locally owned restaurants have been invited to participate in Castle Rock Water's To-Go Box Assistance Program. These small establishments have received a supply of to-go boxes courtesy of Castle Rock Water. The boxes are made from recycled water bottles. The restaurants are then asked to spread a message of water conservation when using the boxes for to-go services. It's a partnership that highlights the important role restaurants play in the community.

"Castle Rock's small businesses have been especially hard hit by the pandemic," said Castle Rock Water Director Mark Marlowe. "We wanted to do something to help. Since everyone is ordering more take out, helping provide extra to-go boxes seemed like a good fit. The hope is that we can help offset some immediate costs for the business. All we ask is that they help spread a message of water conservation."

The partnership continues with asking restaurants to only serve great-tasting Castle Rock water upon request and to place that statement on their menu. Saving those glasses of unwanted water and promoting our tap water at the same time imbues an increased value of water.

Details and applications can be found at CRgov.com/Conservation Partnerships.

PARTICIPATING RESTAURANTS
Angie's Restaurant
B & B Café
Black Eyed Pea
Crowfoot Coffee
Dos Amigos
Fish & Company
Garlic & Spice Kitchen
Guadalajara Family Mexican
Hideaway Bar and Grill
No Cow Café
Ohana Hawaiian Grille
Pegasus Restaurant
Romo's Tacos
The Old North End Restaurant
Tribe at Riverwalk
Union Bistro
Yolanda's Tacos

To date, 90 cases, an equivalent of 18,000 to-go boxes, have been provided to locally-owned restaurants.

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

Jeff Lehman, Regulatory & Water Quality Compliance Analyst, received the Water Star Award from Heather Justus. After much consideration and appreciation for her team, Heather felt she received the utmost Exceptional Service from Jeff. Along with being kind, he is always willing to discuss, brainstorm and help find solutions. He is thorough in his explanations and understand the point of his answers helping to make informed decisions. The defining moment for this award was when Heather called Jeff out to the well site to collect water quality samples that were needed after the Town had shut down for the snow cyclone. He understood the necessity not only for the continuance of well operation, but the service to Heather as a project manager.

NEW CERTIFICATIONS

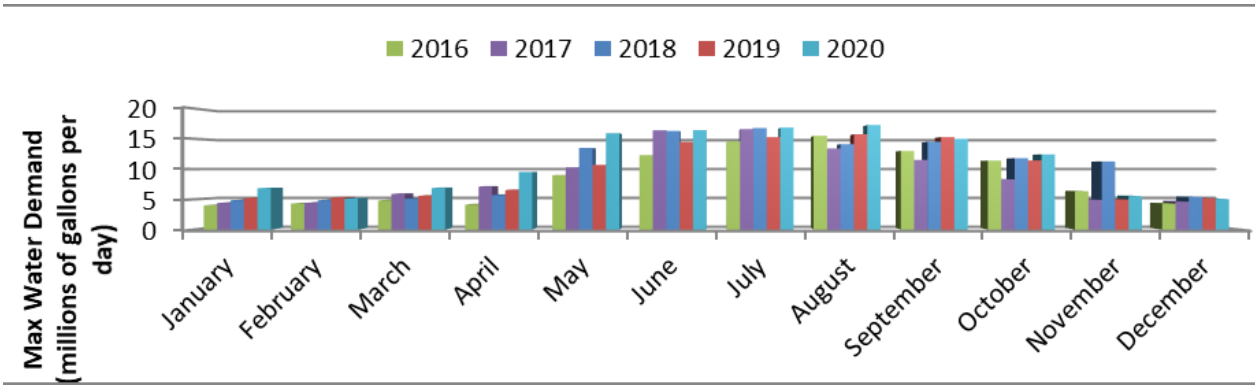
Lewis Brown
CDL license

Aaron Dugan
CDL license

Kevin Moore
Distribution 3 Operator Certification

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.

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.

Dec. 2020	**5.0 million gallons/day**
Dec. 5 yr. avg	4.9 million gallons/day

3% 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.

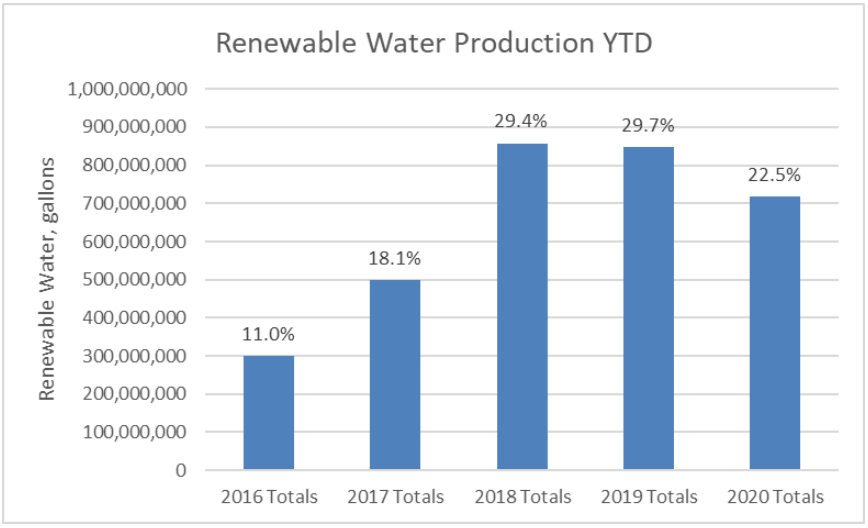
Dec. 2020	**147.0 million gallons**
Dec. 2019	140.3 million gallons

4.8% increase from last year

Water demand total for 2020
3,251.7 MG

Renewable water supply

- The CR-1 diversion produced an average of 0.45 MGD for the month of December.
- The Town's thirteen alluvial wells and CR-1 produced a total of 38.06 MG of renewable water (and an average of 1.23 MGD).
- In total, renewable supplies accounted for 26.2% of the total water supply for the month and 22.5% of the annual water supply (3,187 MG or 9,779 AF) to date.



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

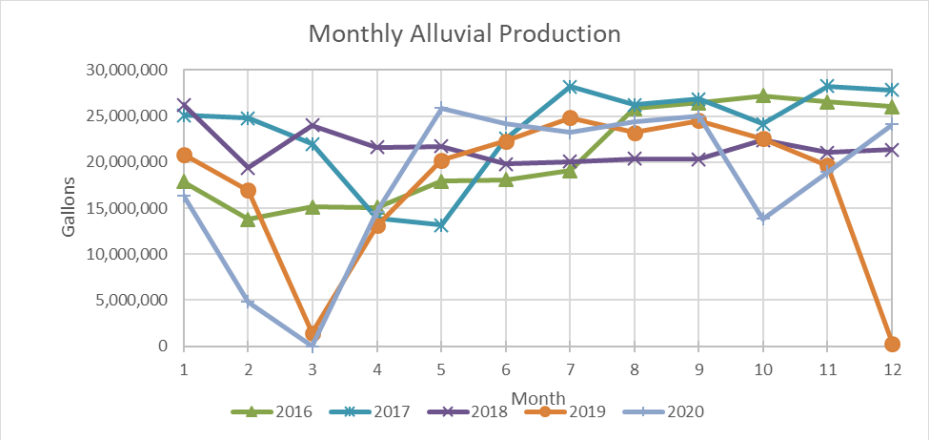
Water Demand

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 December is 42.9% with 96% of available reusable supplies used in the month of December.

Alluvial supply

Dec. 2020 production: 24.1 MG

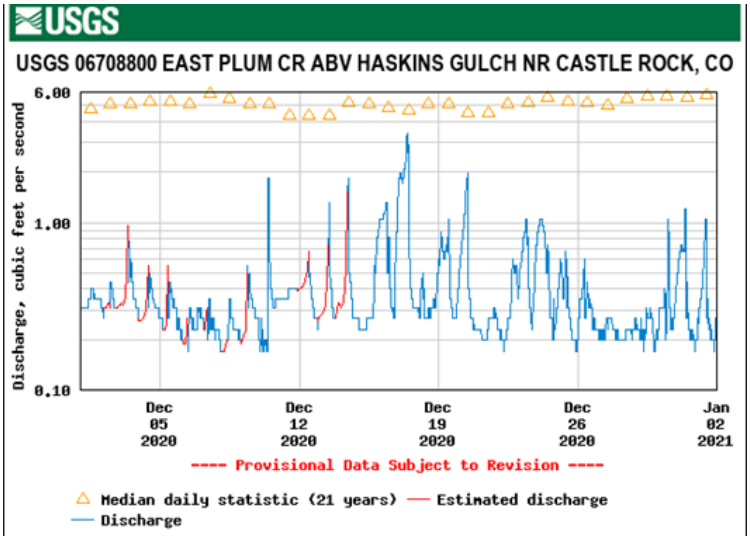
The graph shows the monthly production of the Town's alluvial well system, which helps to supply PCWPF. The production from the alluvial wells in December was 24.1 MG. We completed nine well rehabilitation projects this year.



East Plum Creek Flows

Average Dec. streamflow: 0.41 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 0.17 and 3.41 cubic feet per second (cfs) during the month of December, with an average streamflow of 0.41 cfs. This month's average streamflow of 0.41 cfs is below the 20-year median of 6.0 cfs.



There were active calls on the South Platte River in December. 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 774 AF of water stored in Chatfield.

Water Demand

Drought Monitor

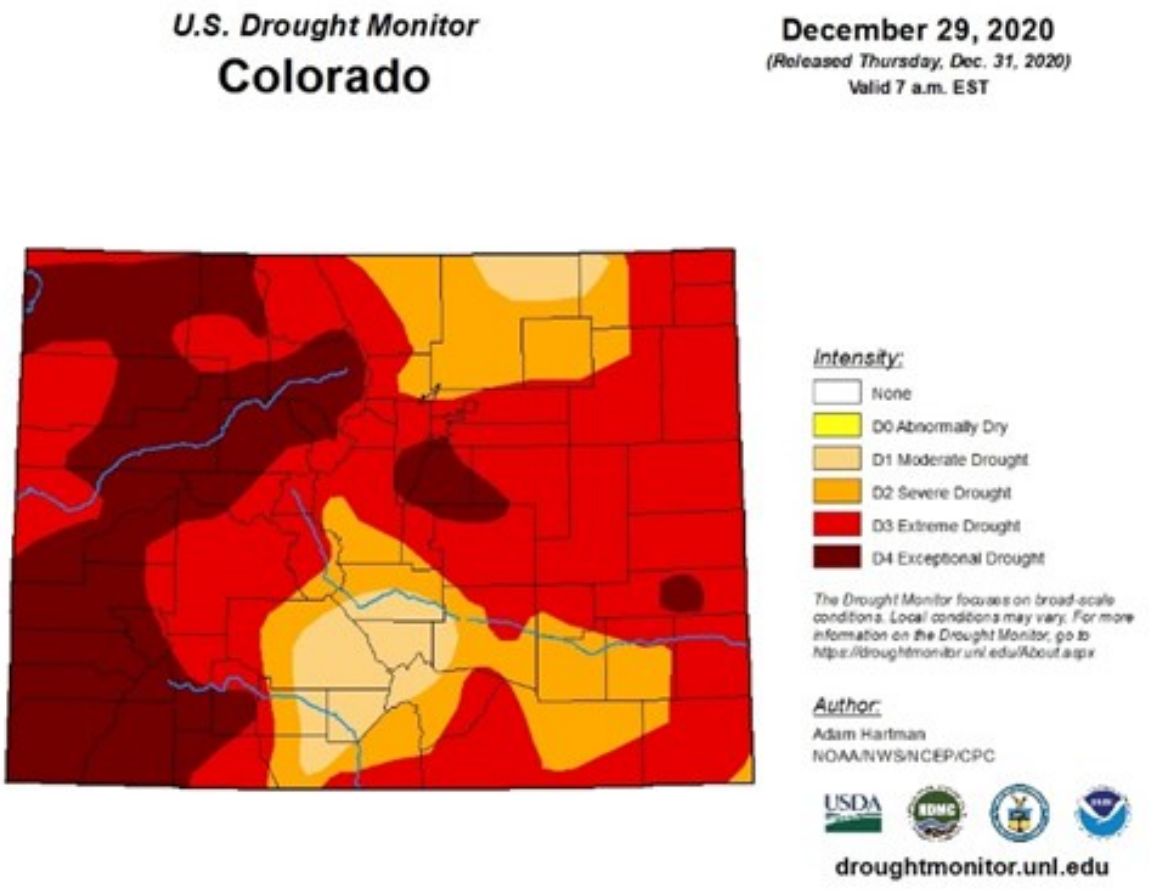
The average WSI for December was 4.20, above the 1.1 trigger level, which is considered "good."

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
Dec. 29, 2020

South Platte River Basin:

- YTD precipitation is at 78% of average
- YTD snowpack is at 83% of average



Water Demand

Conservation

Conservation is … summarizing the year we leave behind

The conservation team continued to serve our customers in many ways during 2020 by offering several educational opportunities. These workshops were conducted through WebEx meetings.

- Three school presentations
- One ColoradoScape workshop
- One Winterization workshop
- Twelve Water Wiser workshops

    Water Wiser designations increased by 425 new participants and renewed 224 more. This gives us a total of 3,316 current Water Wiser participants.

- One three-day Qualified Water Efficient Landscaper (QWEL) training

    Local landscape and irrigation installers, maintenance, and design folks gathered in February for this training.

Rebates continued to come in with

- 40 residential SmartScape renovations
- Four non-residential SmartScape renovations
- 98 smart controllers
- 19 rotary nozzles
- 25 toilet applications totaling 66 toilets rebated
- Seven whole-home water monitoring systems

These various rebates totaled $97,371.69, which is paid out of revenue from water violations and conservation surcharges.

The watering schedule not only helps demand, but also reduces water loss through evaporation which benefits plant material and helps with water conservation. Unfortunately, it's often difficult to convince the customers of these benefits so watering violations are issued when we see disregard. This past year resulted in

- 4,078 residential violations
- 425 non-residential violations
- Totaling 4,503 violations and $100,950 in fines

The Water Conservation team also completed 17 sprinkler system assessments for residents needing a little extra help with their irrigation system and conservation guidance.

Last but not least, the team also issued 1,090 watering exemptions for new sod, seed and other plant material.

Stormwater

2020/Q4

As an integral part of the Town's vision of providing residents the highest quality services at the best value, the Stormwater Division manages stormwater runoff to minimize flooding hazards and to protect water quality in our watersheds.
Services the Stormwater Division provides include:

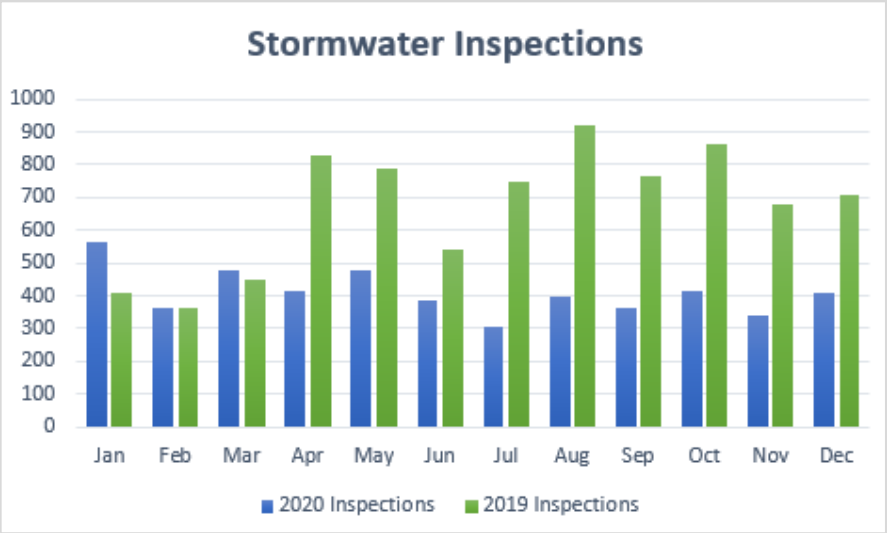
- Storm sewer system development and maintenance
- Watershed water quality protection
- Pollution prevention, detection and elimination
- Construction site stormwater runoff control
- Floodplain management

Inspections

The inspection team regulates permitted residential and commercial properties.

As expected, inspection numbers dropped from their highs during the migration to TESC in 2019. Prior to the migration, staff was conducting individual residential lot inspections. This new approach consolidates neighborhood inspections into one activity to improve efficiency.

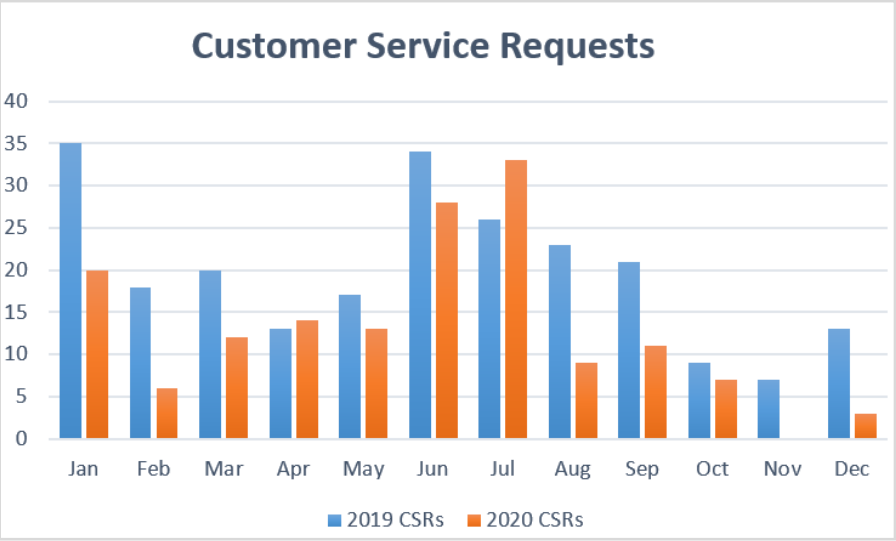
We saw a 39% drop in total inspections over 2019.



Customer Service

The Stormwater Division receives various customer concerns from nuisance groundwater and illicit discharges to dust to maintenance of infrastructure. Complaints often rise and fall with weather patterns.

There was a major decrease in requests from July (35) to August (8). Staff anticipates the drop in requests in the second half of 2020 is due to dry weather and influences from the pandemic.

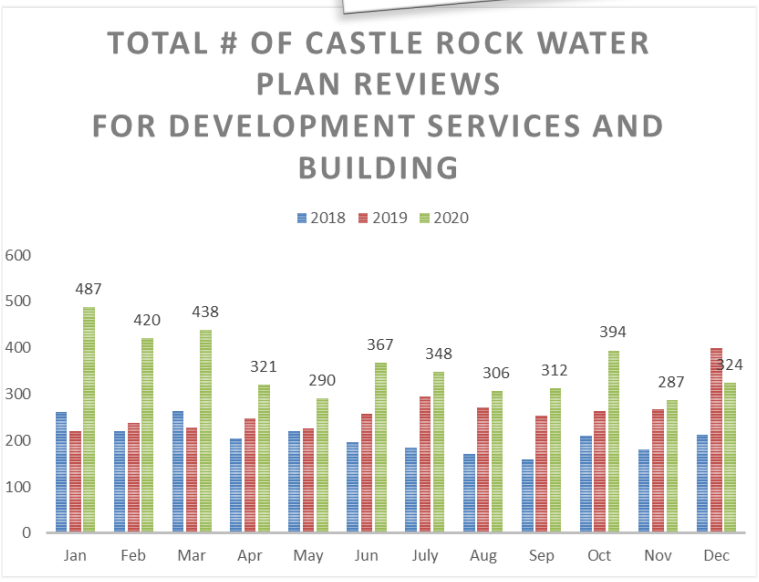


Plan Review

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.

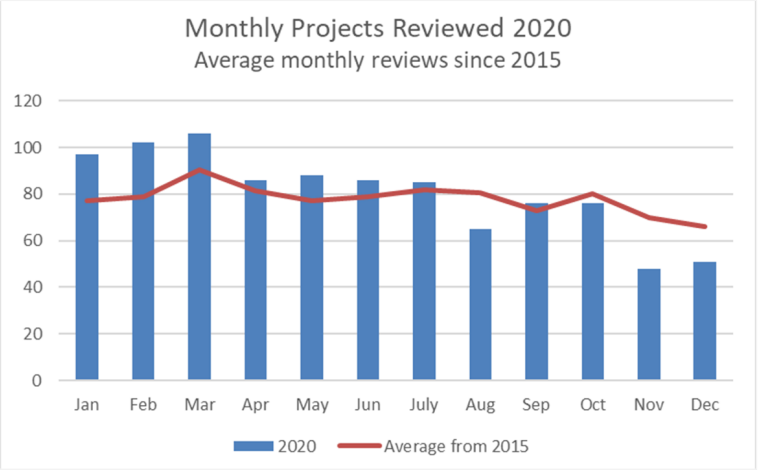


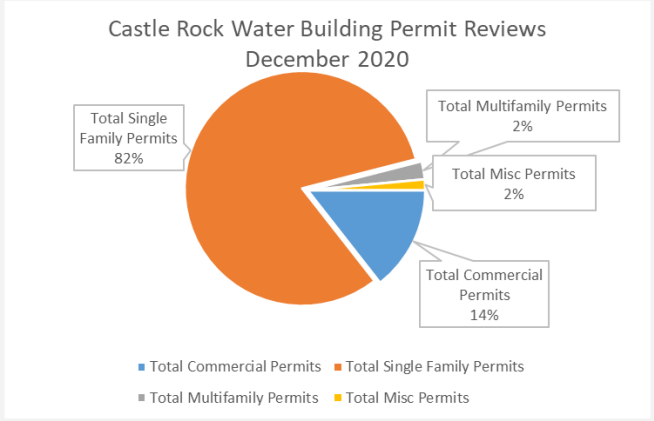
Reviews

123 Development Services PROJECT plan reviews
201 Building PERMIT reviews for
51 separate projects

- Number of Distinct Projects decreased by 23% from December 2019.
- The TOTAL number of development project reviews decreased by 28 % from Dec. 2019.
- Total number per building permits decreased by 13% from December 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

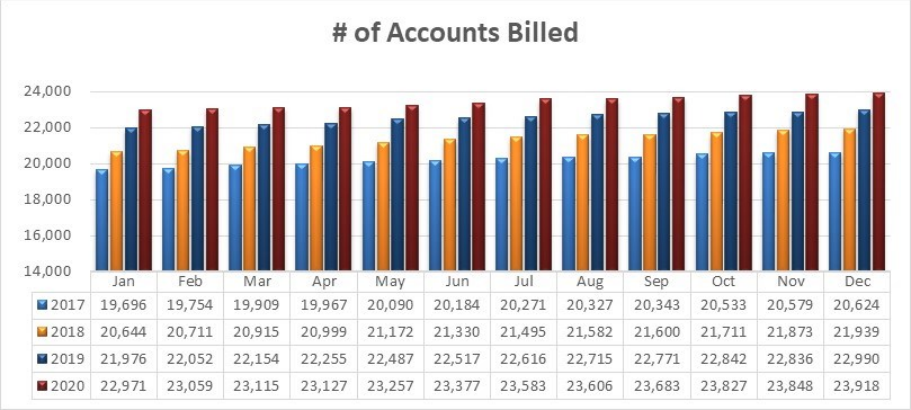
The average number of days assigned to review: 12.9 days
The average days to complete assigned reviews: 11.5 days

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 & Billing

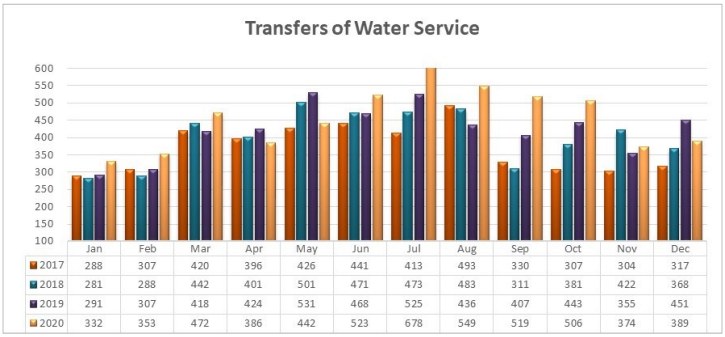


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	19,696	19,754	19,909	19,967	20,090	20,184	20,271	20,327	20,343	20,533	20,579	20,624
2018	20,644	20,711	20,915	20,999	21,172	21,330	21,495	21,582	21,600	21,711	21,873	21,939
2019	21,976	22,052	22,154	22,255	22,487	22,517	22,616	22,715	22,771	22,842	22,836	22,990
2020	22,971	23,059	23,115	23,127	23,257	23,377	23,583	23,606	23,683	23,827	23,848	23,918

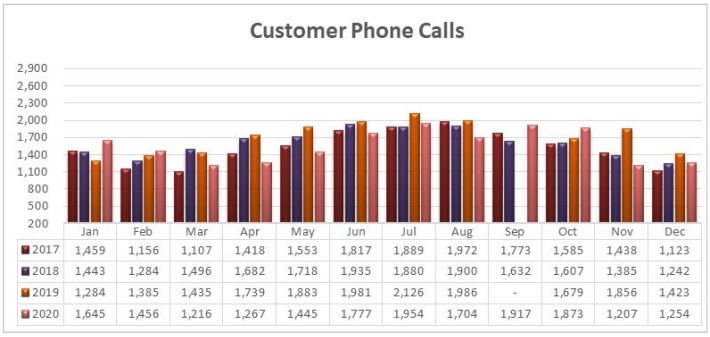
H2Oaccess

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

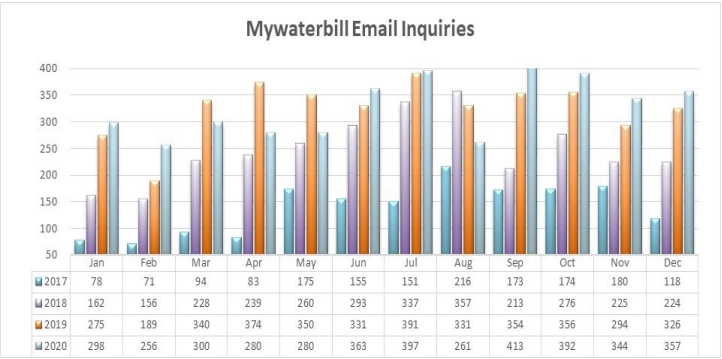
- 15,602 or 65% of our total customers have enrolled in an online account.
- 9,905 or 63% of the customers with an online account have chosen to go paperless billing



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	288	307	420	396	426	441	413	493	330	307	304	317
2018	281	288	442	401	501	471	473	483	311	381	422	368
2019	291	307	418	424	531	468	525	436	407	443	355	451
2020	332	353	472	386	442	523	678	549	519	506	374	389



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	1,459	1,156	1,107	1,418	1,553	1,817	1,889	1,972	1,773	1,585	1,438	1,123
2018	1,443	1,284	1,496	1,682	1,718	1,935	1,880	1,900	1,632	1,607	1,385	1,242
2019	1,284	1,385	1,435	1,739	1,883	1,981	2,126	1,986	-	1,679	1,856	1,423
2020	1,645	1,456	1,216	1,267	1,445	1,777	1,954	1,704	1,917	1,873	1,207	1,254



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	78	71	94	83	175	155	151	216	173	174	180	118
2018	162	156	228	239	260	293	337	357	213	276	225	224
2019	275	189	340	374	350	331	391	331	354	356	294	326
2020	298	256	300	280	280	363	397	261	413	392	344	357

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2017	318	287	327	388	347	378	330	411	329	349	298	325
2018	411	348	355	400	417	369	390	424	324	396	297	312
2019	282	277	278	416	418	388	432	363	363	372	353	384
2020	396	314	218	18	13	160	180	87	194	217	146	149

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.

Castle Rock Water instituted two conservation partnerships to assist local, small business restaurants. The first is To-Go boxes that were recycled from water bottles and the second an ultra-efficient toilet retrofit.

To-go box news release **4,120 people**

Email reach: **7,286 accounts (38% open rate)**
Social media reach: **5 posts with 3,558 average reach**

Water Social Media Stats	REACH
COVID Assistance Programs—Dec. 2	1,751 people
Insulating Pipes — Dec. 9	2,301 people
Garbage Disposal —Dec. 16	2,715 people
Water for Santa — Dec. 23	2,587 people
DIY Ice Melt — Dec. 30	8,439 people

Meters

Meters Read

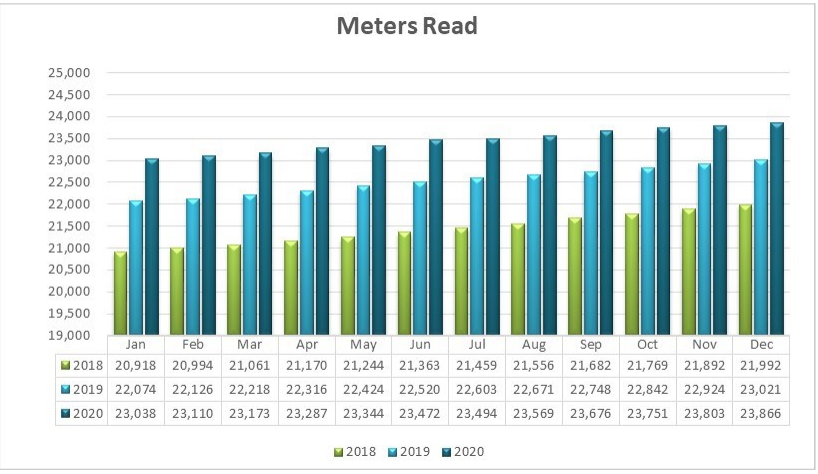
Meters are read the first three days of every month. The number of meters read continues to increase month to month and is a significant increase over last year.

Skipped Reads

Dec. 2020: 0.61%

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.

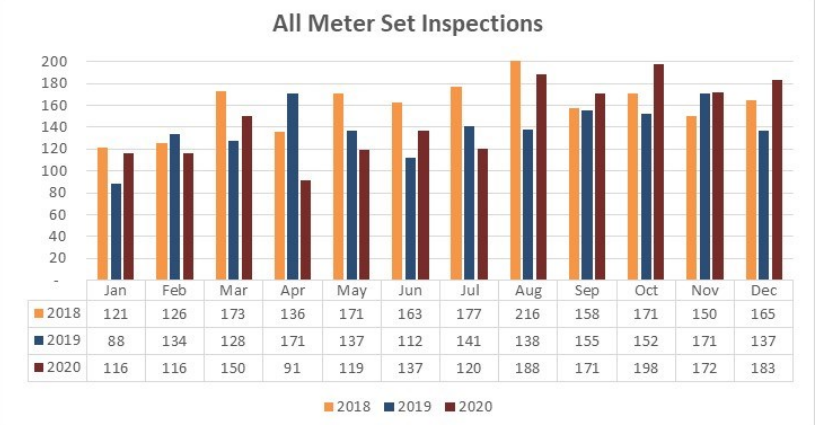


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	20,918	20,994	21,061	21,170	21,244	21,363	21,459	21,556	21,682	21,769	21,892	21,992
2019	22,074	22,126	22,218	22,316	22,424	22,520	22,603	22,671	22,748	22,842	22,924	23,021
2020	23,038	23,110	23,173	23,287	23,344	23,472	23,494	23,569	23,676	23,751	23,803	23,866

Meter Set Inspections

Re-inspections: 41%

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.

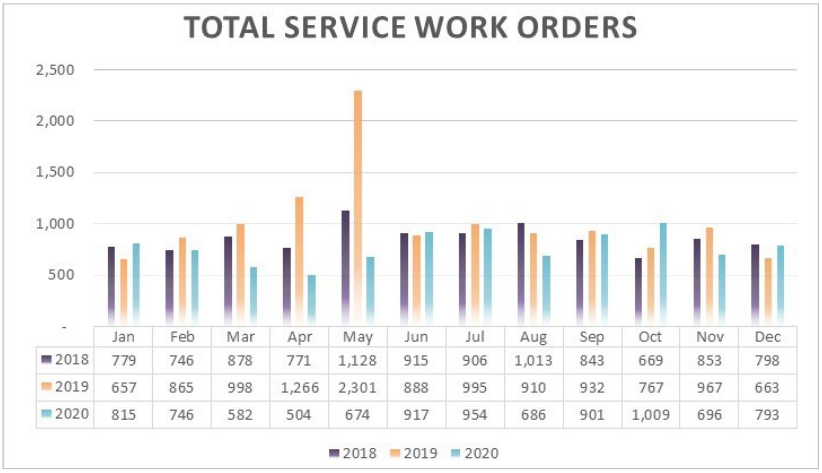


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	121	126	173	136	171	163	177	216	158	171	150	165
2019	88	134	128	171	137	112	141	138	155	152	171	137
2020	116	116	150	91	119	137	120	188	171	198	172	183

Work Orders

Dec. 2020: 793

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 transfer of service, disconnection and reconnections, meter set inspections, etc.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018	779	746	878	771	1,128	915	906	1,013	843	669	853	798
2019	657	865	998	1,266	2,301	888	995	910	932	767	967	663
2020	815	746	582	504	674	917	954	686	901	1,009	696	793

Operations & Maintenance

LEVELS OF SERVICE		DEC. 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.	***Ninety routine samples were completed.*** *All samples were within the parameters set forth by the Safe Drinking Water Act and Colorado Drinking Water Standards.*
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 this month.***
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 no sewer system issues this month.***
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 two water system integrity issues in December.*** *There was a large pipeline rupture, on the 16" PVC raw water line near the substation off Prairie Hawk, that feeds Plum Creek Water Purification Facility (PCWPF). Global Underground conducted the repair, no residents were affected by this incident.* *There was a service line leak in Founders, caused by a pencil sized hole on the 2" copper line, no customers were impacted by this repair.*
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 December. There was one water quality education visit in December.***

Operations & Maintenance

Locate Report

Know what's below. Call before you dig.

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.

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.

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	2,288	
June	969	844	982	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	1,986	1,603	2,096	
September	880	723	1,029	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	1,469	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	

Collections

YTD

Lines Cleaned	**68.97 miles**
Lines Inspected	**34.52 miles**
SSO Rate	**0.35 SSO/100 mi**

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.