

## **Meter Replacement Project**

*By: Matt Hayes, Project Manager*

Castle Rock Water has recently completed the replacement of the water metering facilities at the Winrock Apartment Complex and the Aspen Meadows Townhomes. Meters Services identified that the existing water meters at the Winrock Apartments and Aspen Meadows Townhomes needed to be replaced. The Winrock Apartments metering facilities are individual pits located near each building. The existing pits were undersized, making maintenance and testing very difficult. A new regulation from the Colorado Department of Public Health and Environment mandates that all non-single family residential connection backflow devices be tested starting in 2020. This project constructed two new meter vaults that are centrally located within the complex's parking lot. The new vaults will allow easy access for maintenance and testing.



*Winrock Meter Vault*

The existing meter vault at the Aspen Meadows Townhomes needed to have its internal plumbing rebuilt. The existing piping within the vault is corroded to the point that failure is imminent. Staff was concerned that the isolation valve would not operate and that the piping could fail during the attempted operation. This would also prevent the performance of the required maintenance on the water meter and backflow device. This project replaced all of the internal piping and modified its configuration to allow for easier maintenance.



*Aspen Meadows Vault*

Both locations presented numerous challenges during project construction.

Castle Rock Water's mapping of the internal distribution system at the Winrock Apartments was incorrect. There was no internal looping at the site. A new 6-inch main was added to the project to supply water to the new water meter vault. Additional valves were required at the Aspen Meadows Townhomes to allow for future vault isolation due to the existing pipe configuration.

T. Lowell Construction has completed the project. The project was completed ahead of schedule and within budget. The overall project cost is \$407,000.

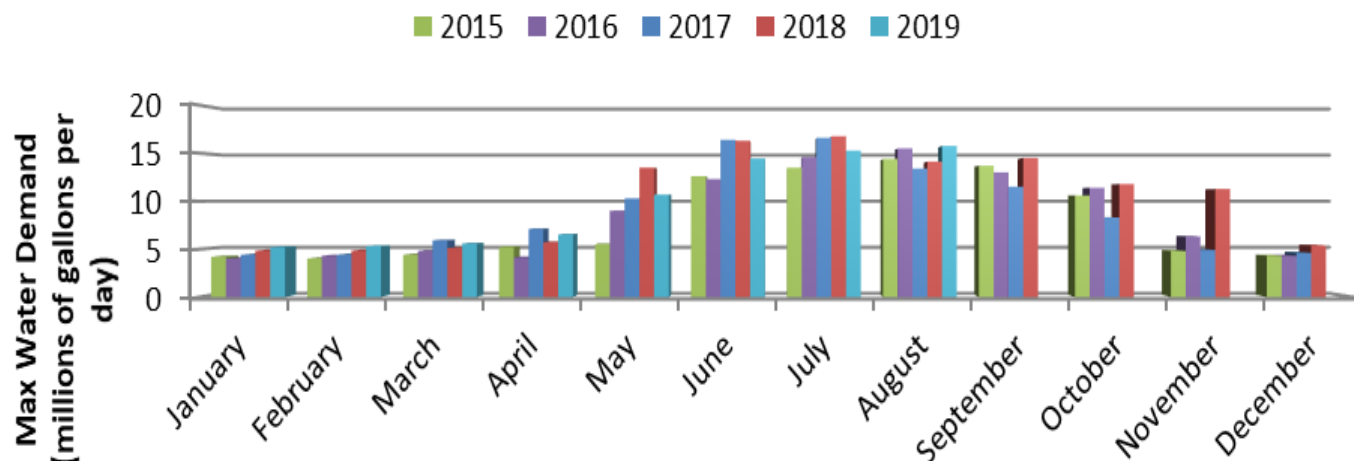
## **Our Vision**

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

# Water Demands

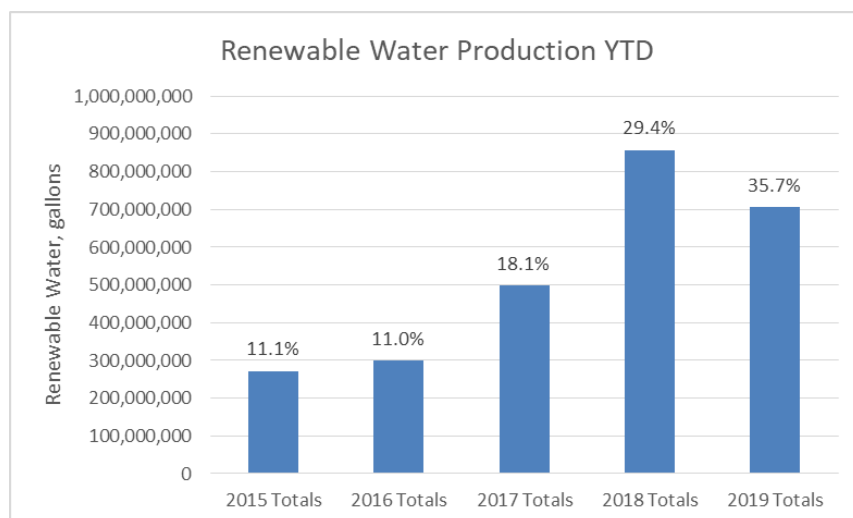
By: Lauren Moore, Water Resources Program Analyst

The maximum daily water demands are plotted by month from 2015 to the current month. As observed by the data, the maximum demand for the month of August was 15.8 million gallons per day (MGD) which is equivalent to the 5-year average maximum daily demand for the month. 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. The water demand total for August was 430.7 million gallons (MG), which was a 7% increase from the July 2019 total of 403.1 MG and a 15.5% increase as the previous year's August 2018 demand of 379.9 MG.



The CR-1 diversion produced an average of 1.18 MGD for the month of August. The Town's thirteen alluvial wells and CR-1 produced a total of 59.91 MG of renewable water (and an average of 1.93 MGD). WISE water supplied an additional 55.46 MG of renewable water. In total, renewable supplies accounted for 26.4% of the total water supply for the month and 35.7% of the annual water supply (1,979 MG or 6,074 acre-feet) to date.

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 2019 through August is 20.7% with 29.5% of available reusable supplies used in the month of August.

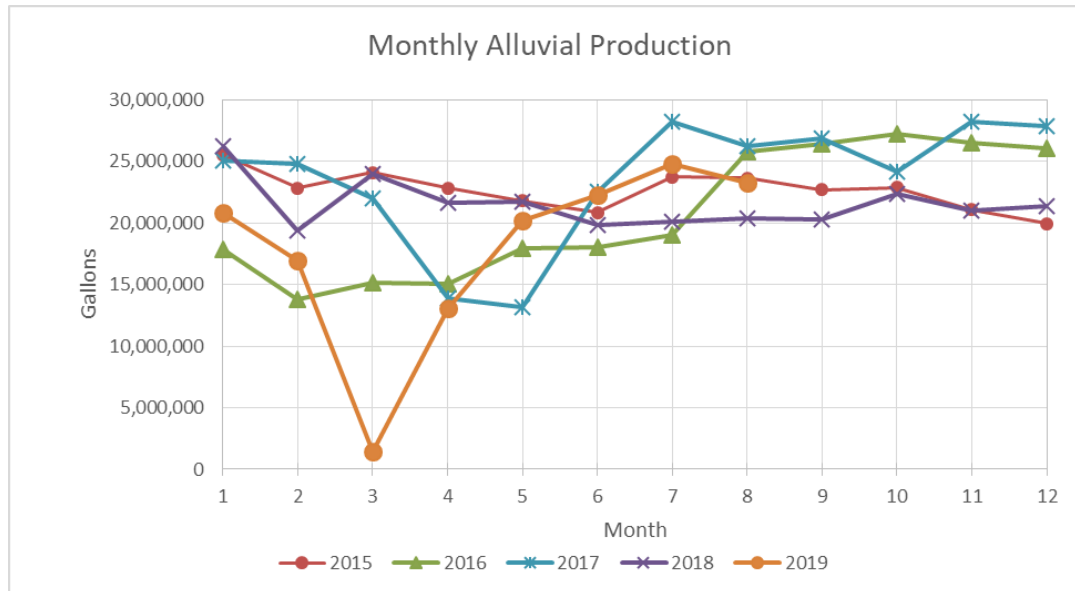


Reusable supplies over time.

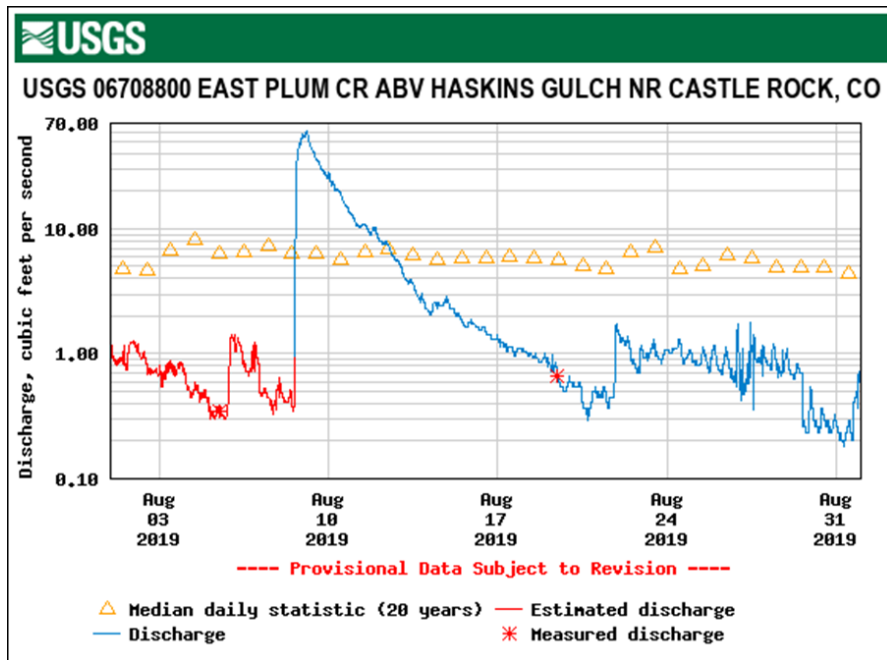
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## Water Demands, continued

The following graph shows the monthly production of the Town's alluvial well system, which help to supply PCWPF. The production from the alluvial wells in August 2019 was 23.2 MG. We completed three rehabilitation projects this past spring and more are schedule for this fall.



## East Plum Creek Flows



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 0.18 and 60.8 cubic feet per second (cfs) during the month of August, with one major precipitation event on August 9 and a few smaller events towards the second half of the month. This August, the average streamflow in East Plum Creek (EPC) was 3.79 cfs which is approximately 63% of the median daily streamflow of 6 cfs. As a comparison, in August 2018 the average streamflow in EPC was 3.49 cfs, which was 58% of the median daily streamflow. Low streamflows in EPC correspond to a decrease in the amount of water that we can divert at CR-1, negatively impacting this surface water supply. We were,

however, able to supplement East Plum Creek with 45 AF of water (minus stream losses) from our Bell Mountain Ranch wells upstream of CR-1.

There were active calls on the South Platte River during August. 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 covered 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.

*Continued on next page*



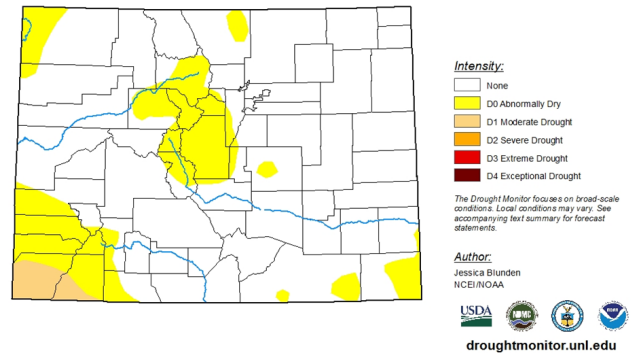
## Water Demands, continued

According to the U.S. Drought Monitor maintained by the United States Department of Agriculture (USDA), approximately 10% of Colorado is Abnormally Dry (D0), with a small portion of the southwest corner experiencing Moderate Drought (D1). 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 average WSI for August was 1.5, well above the 1.1 trigger level, which is considered "good."

The NRCS Colorado SNOTEL report for September 1, 2019 shows the water year-to-date precipitation for the South Platte River Basin is at 108% of average. In Colorado, August's precipitation was 56% of average and the monsoon season was uneventful.

U.S. Drought Monitor  
Colorado

August 27, 2019  
(Released Thursday, Aug. 29, 2019)  
Valid 8 a.m. EDT



## Strategic Planning

By Sandi Aguilar, Customer Relations Program Manager

Ensuring safe and reliable water service to our residents in a sustainable manner takes each and every one of the 90+ staff at Castle Rock Water. It also takes extensive planning. The updated Five-Year Strategic Plan was approved by Town Council in May. This document provides the direction for the department to ensure resources are effectively developed and maintained for our residents. To engage the staff in how each plays their part in the 130+ identified tactics, the staff was reminded they are nothing short of super heroes! Their mission as super heroes involved identifying each of the tactics they are assisting with and a plan to track Castle Rock Water's progress toward the 2019-2023 Strategic Plan goals.

*Strategic Plan Goals:*

1. Ensure long-term water
2. Support, engage and inspire our team
3. Enhance customer satisfaction
4. Maintain financial stability
5. Optimize infrastructure performance
6. Demonstrate industry leadership



# 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. Similar to the Town's Rock Star Award, the award is passed from one employee to another in a different division who demonstrated performance and/or behavior that supports our Vision and Mission. The award will be presented at each monthly staff meeting. The following criteria are the basis for awarding this coveted honor:



## **Safety**

*Demonstrated outstanding safety conscious behavior*

## **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**

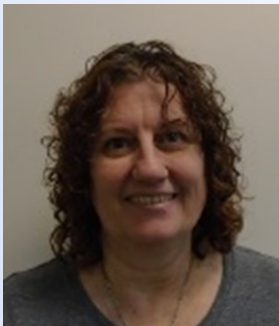
*Demonstrated superb fiscal responsibility.*



PJ Thorstenson presented the Water Star Award to Jon Stapp, Stormwater Supervisor, for his assistance in the Locate Program transition. Not only did Jon provide the background information needed to run a successful program, but never hesitated to provide additional help either with his own time or allocated staff.

## 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. Certifications earned this month:



### **Liz Knox**

*Water Treatment D  
Operator Certification*

## Welcome and Congratulations!



### **Eric Crawford**

*Joined the Field Services  
team as a Distribution  
System Operator I*



### **Michelle Strang**

*Moved from a seasonal  
meter tech to  
Meter Services  
Technician*



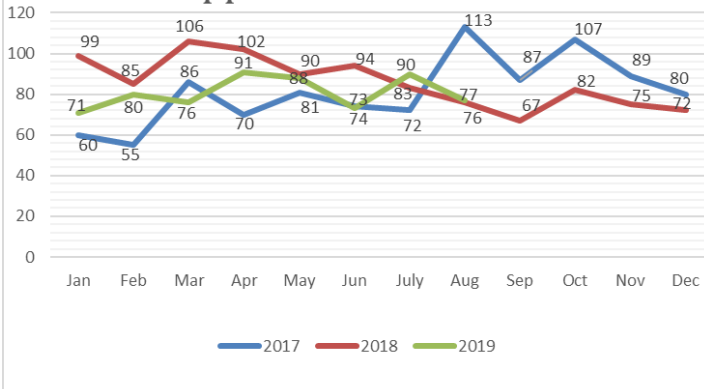
# Plan Review Update

By Tina Close, Plan Review Supervisor

Castle Rock Water provides plan review for all water, wastewater and stormwater projects submitted through the development review process.



## Monthly Development Project Applications Reviewed

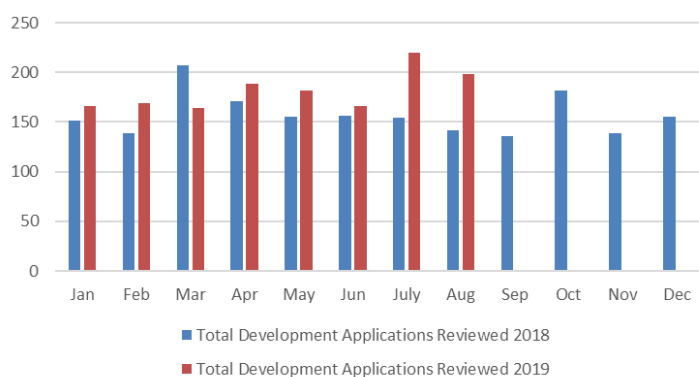


## August 2019

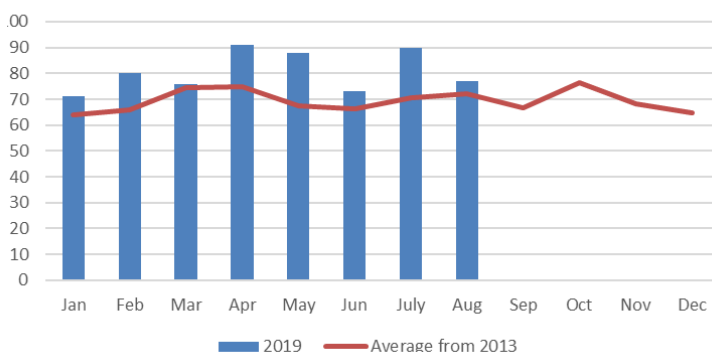
Plan Review Team completed 220 development application reviews for 90 projects for the month of August 2019, compared to 154 development applications for 83 projects in August 2018.

The average number of days assigned to review	12.7 days
The average number of days to complete assigned reviews	10.7 days
Reviews completed on time	87%
Review completed late	13%
Plan Review Team projects reviewed	63
Permits reviewed on-time	92%
Permits completed late	8%

## Total Plan Application Reviews



## Monthly Projects Reviewed 2019 Average monthly reviews since 2013

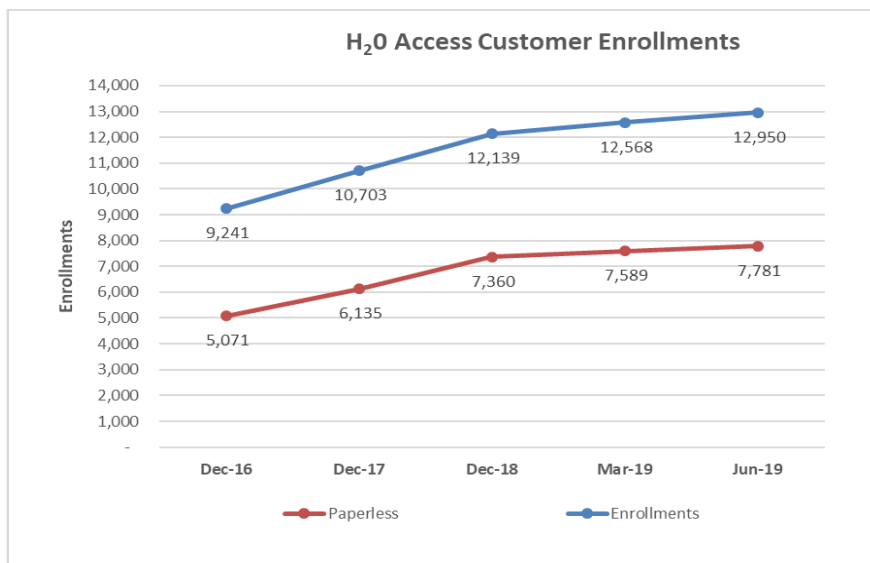




## Customer Statistics

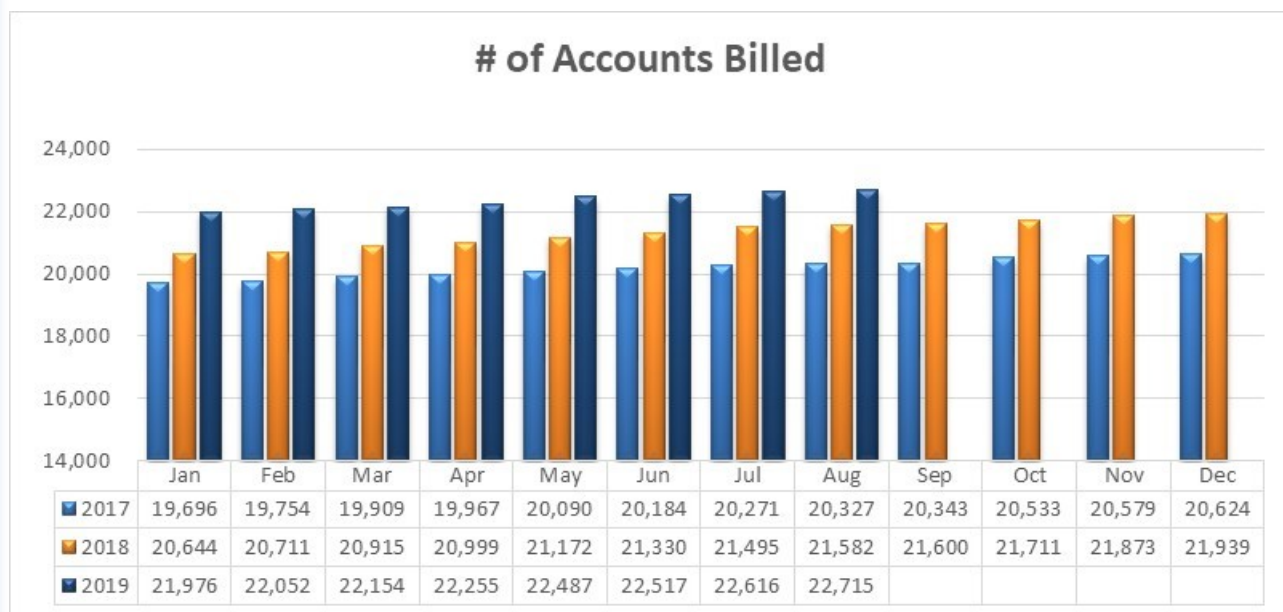
By: Anne Glassman, Business Solutions Manager

Our Business Solutions Team continues to track a host of statistics and data as we evaluate our levels of service and look for efficient ways to improve on these levels.



Updated quarterly - Data reported quarter ending 6/2019

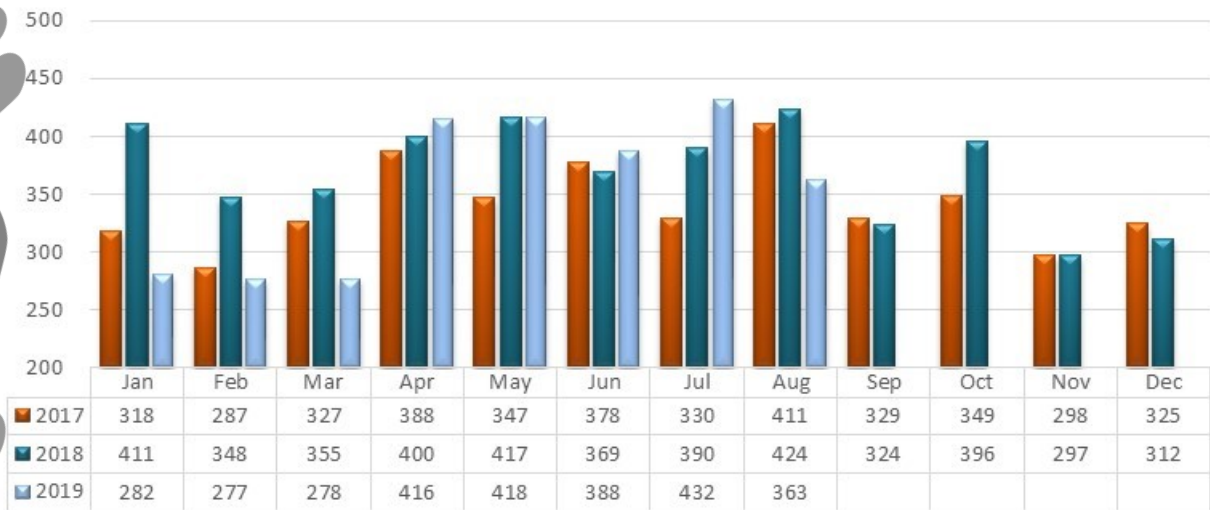
The number of customers enrolled in paperless billing has remained steady at 60% over the last several months.



The number of accounts billed continues to increase year over year due to new residential and commercial growth.



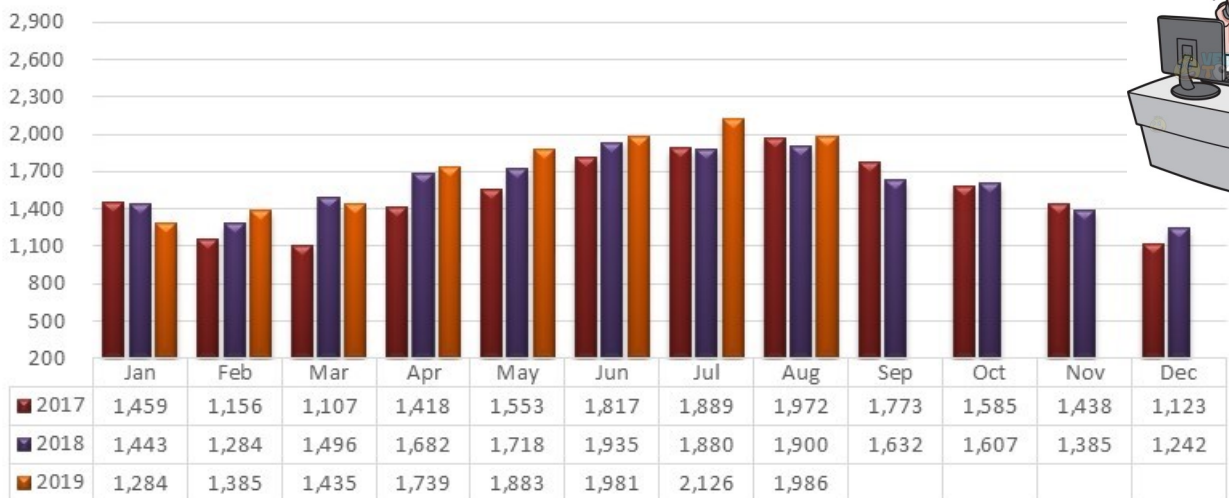
## Walk-In Customers



Walk-In customers are consistent with this time of year with most activity surrounding transfers of water service and activities surrounding water conservation programs.



## Customer Phone Calls



Customer phone calls are consistent with this time of year with most activity surrounding transfers of water service and activities surrounding water conservation programs.



# METERS

## Skipped Reads

The AWWA standard is 2%, so at .30% in August we still continue to stay well below the industry average.

This is a result of continued maintenance and repair efforts on meter infrastructure.

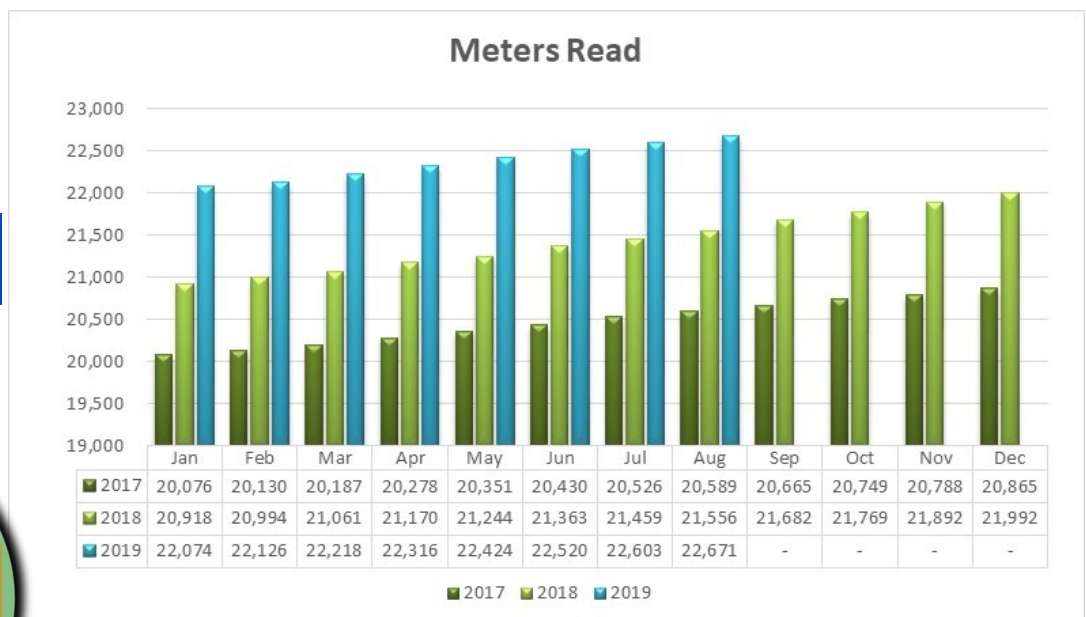


*Why is this important?*

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.

## Meter Sets

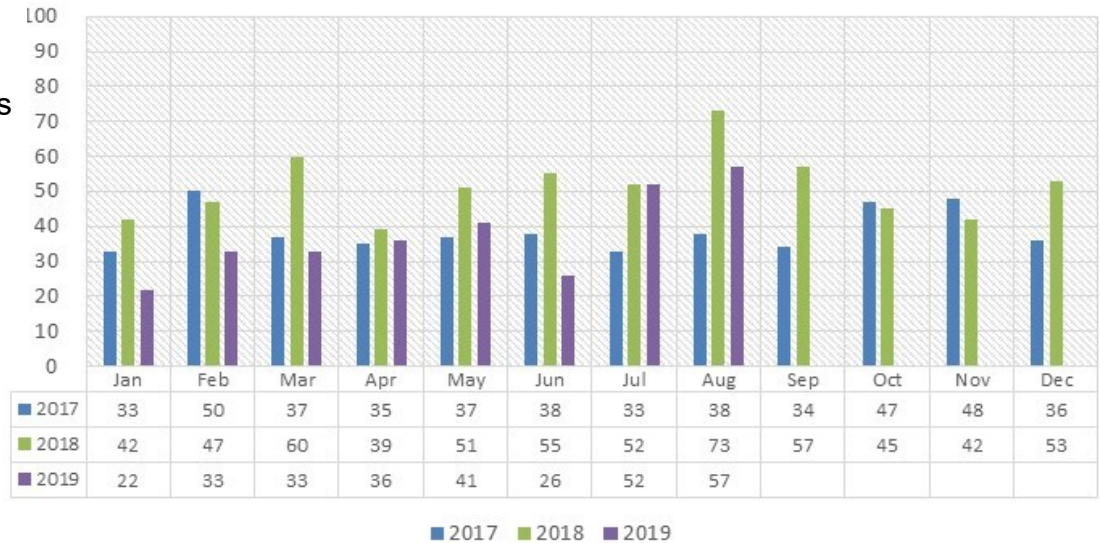
Month-to-Date 73  
Year-to-date 706



The meters read continues to increase month-to-month due to new residential and commercial accounts, with a significant increase year-over-year.

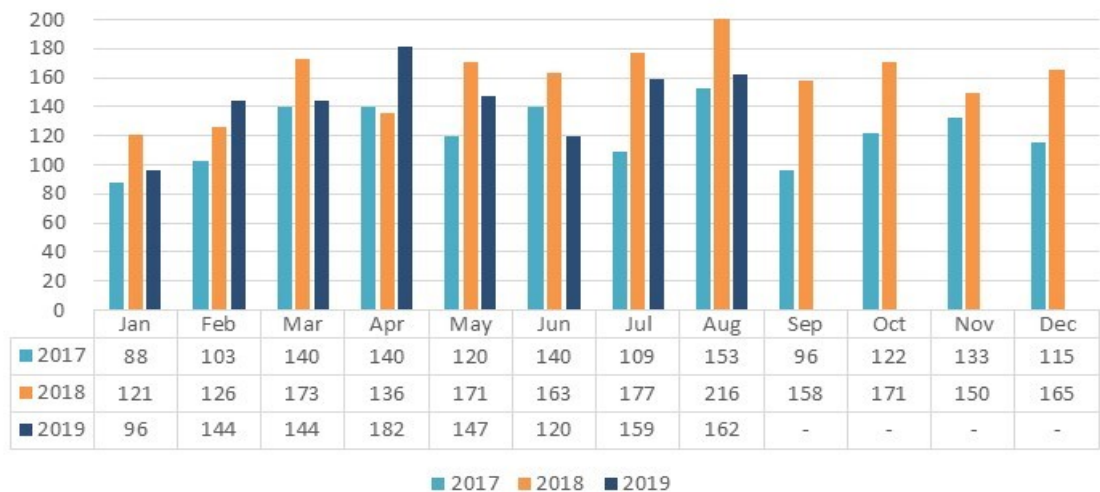
## Residential Meter Set Re-Inspections

Residential meter set re-inspections are consistent with last year at this time.

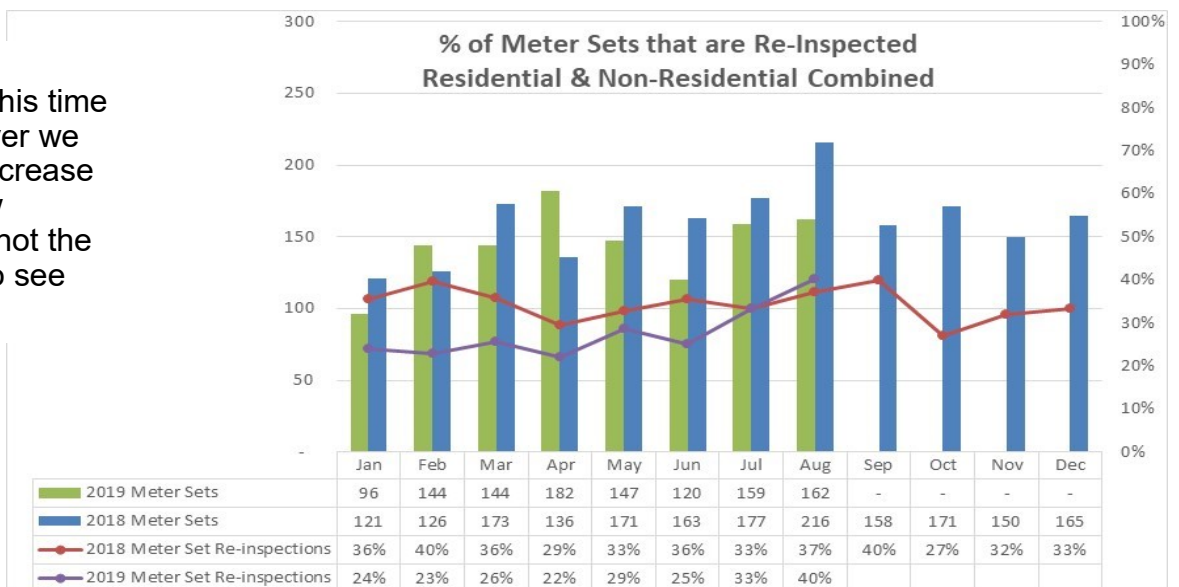


## All Meter Sets

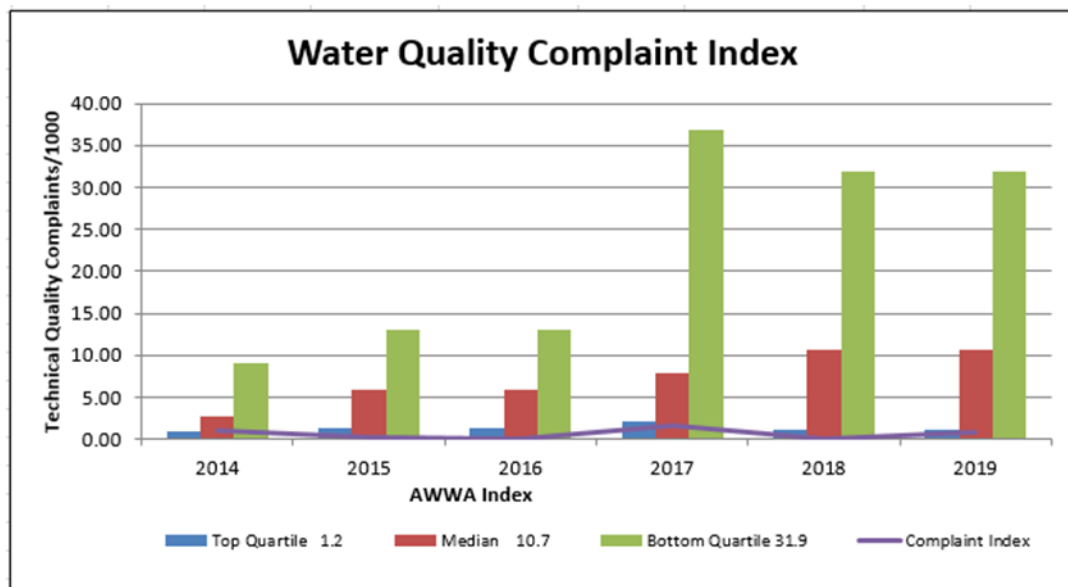
Meter sets in August 2019 are consistent for this time of year. All meter sets include re-inspections.



Meter sets are consistent with this time last year, however we are seeing an increase over the last few months. This is not the trend we want to see continue.

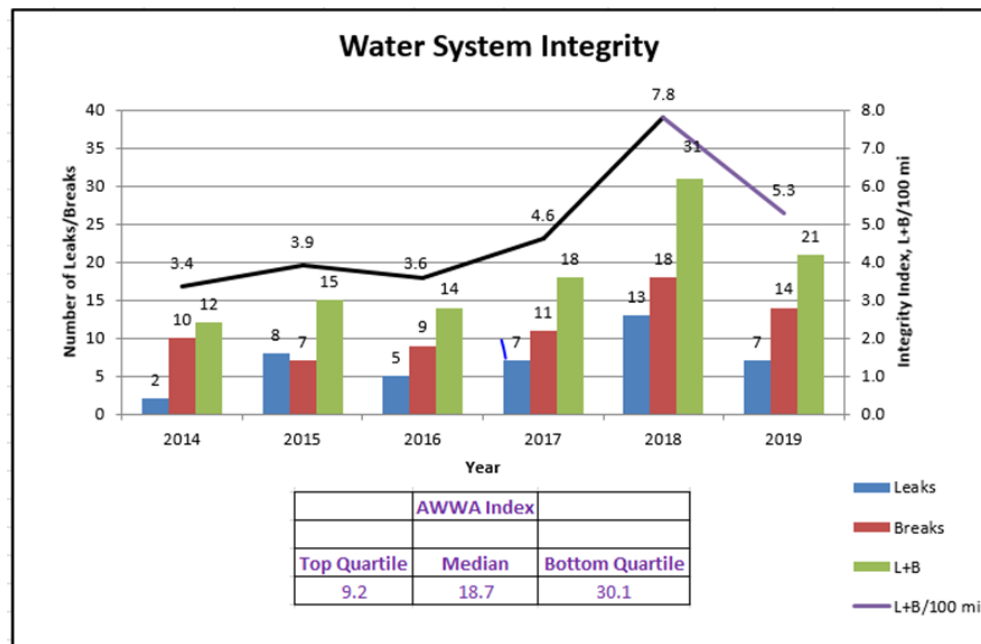


## Water Quality Complaints



The Water Quality Complaint index shows that we are doing very well in this category; rating in the top quartile since 2015 according to the American Water Works Association (AWWA). There were no water quality issues in August.

## Water System Integrity

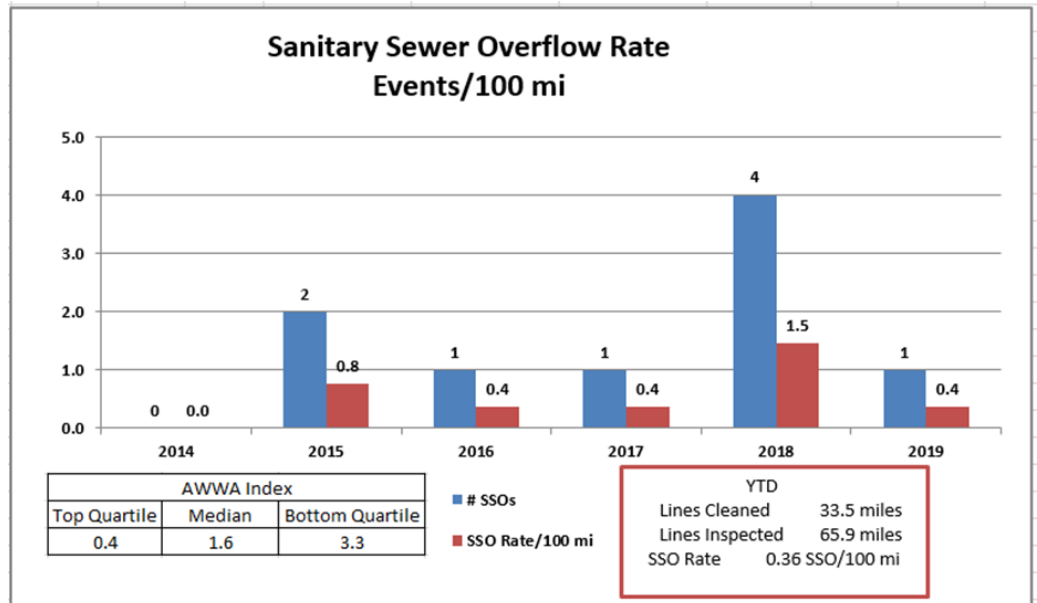


As the Water System Integrity chart indicates we are consistently in the Top quartile for water system integrity based on American Water Works Association benchmarking since 2011. There were three water system integrity issues in August.

## Sanitary Sewer Overflows

CR Water is tracking in the Top Quartile in the Sanitary Sewer Overflow Rate, according to the American Water Works Association (AWWA).

There were no sanitary sewer issues in August.



### How do we avoid overflows?

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. So far, this year we have cleaned and inspected 33.5 and 15.5 miles, respectively. The goal this year is to clean and inspect approximately one-fifth (1/5) of the collection system or about 55 miles.

AUGUST		LEVELS OF SERVICE	
Drinking Water Compliance	Castle Rock Water will deliver water that meets or exceeds 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 in August.	
Sewer System Effectiveness	<1% of our customers will experience a sewer backup caused by the utility's sewer system per year.	There were no sewer system issues in August.	
Drinking Water Supply Outages	<5% of our customers will experience water outages for one or more events totaling more than 30 hours/year.	There were three water system integrity issues in August. 1) A contractor caused service line repair. 2) A line break in the Plum Creek area, with multiple leaks on the 8" DIP. Fifty five residents in the area experienced reduced pressure, for less than eight hours, while the repair was conducted. 3) Another break on 8" DIP in the Plum Creek area. During the repair, 10 homes experienced lower than normal pressure, for less than eight hours.	





Know what's below.  
Call before you dig.

### Know what's below

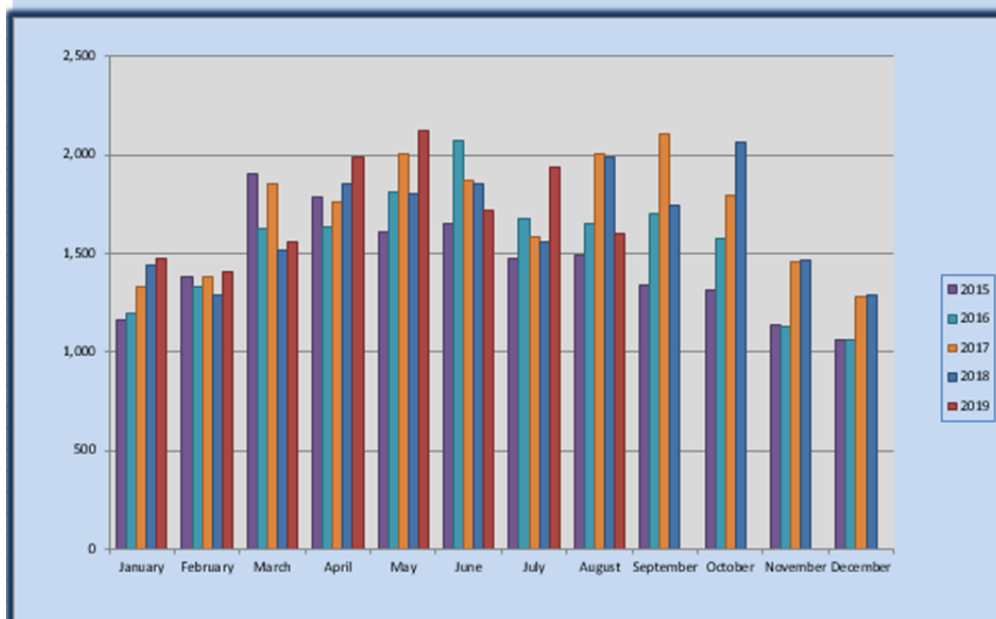
Before you start a project, call 811. Whether you are planning to do it yourself, or hiring a professional, we will help you do it safely. The local 811 Call Center will contact Castle Rock Water. We will schedule a time to come out to locate public water and wastewater lines in the road and in your project area.

Castle Rock Water's locate requests from 811 have continued to rise, year over year. This year, there has been one incidence 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		
February	521	485	538	1,094	1,093	1,383	1,334	1,378	1,293	1,404		
March	660	552	818	1,437	1,349	1,906	1,625	1,851	1,514	1,560		
April	838	681	1,025	1,482	1,552	1,784	1,631	1,760	1,856	1,984		
May	853	863	985	1,541	1,531	1,609	1,809	2,002	1,801	2,122		
June	969	844	982	1,314	1,399	1,654	2,075	1,872	1,854	1,716		
July	680	582	859	1,350	1,392	1,477	1,675	1,582	1,556	1,937		
August	901	723	1,123	1,476	1,468	1,494	1,651	2,001	1,986	1,603		
September	880	723	1,029	1,240	1,373	1,343	1,701	2,102	1,747			
October	715	688	1,155	1,501	1,376	1,314	1,579	1,792	2,064			
November	536	518	1,041	1,072	866	1,134	1,131	1,460	1,469			
December	415	405	925	1,005	1,043	1,063	1,059	1,277	1,293			
<b>Totals</b>	<b>8,545</b>	<b>7,539</b>	<b>11,097</b>	<b>15,702</b>	<b>15,731</b>	<b>17,323</b>	<b>18,469</b>	<b>20,411</b>	<b>19,875</b>	<b>13,798</b>		

## 4 Year Locate Trend



Castle Rock Water's locate requests from 811 have continued to rise, year over year. Locate requests are on pace to top 20,500 tickets for the 2019 calendar year, another all-time high for Castle Rock Water.

