

Hwy 85 Transmission Project

By: Matt Hayes, Project Manager

CR Water is constructing the Highway 85 Transmission Main Project. During the planning process for the 2017 Water Master Plan, the Highway 85 Transmission project was identified in the 2018-2022 Planning Horizon. CR Water added Wise Water as a new source of supply in 2018. Wise Water subscription rates will increase yearly for the next few years. The Wise Water enters the water distribution system at the Ray Waterman Regional Water Treatment Facility (RWRWTF). The water flows throughout Town based on the needs of the system. The master planning effort identified a restriction in the movement of water from the RWRWTF to the Meadows and Promenade subdivisions. The master planning effort identified the Highway 85 Transmission Project to eliminate this restriction.

The Highway 85 Transmission project installed a new 20-inch main between Justice Way and Meadows Parkway. The new pipeline ties into existing stubs located at Meadows Parkway, Industrial Way, and Justice Way. A majority of the pipeline is located within the southbound lanes. A short section north of Industrial Way is located in the northbound lane to make the tie-in to the existing stub in Meadows Parkway.



T. Lowell Construction will be completing the project in August. The project will be completed ahead of schedule and within budget. The overall project cost is estimated to be about \$650,00.

Stormwater Division responds to localized flooding issues in June

By: David VanDellen, Stormwater Manager

Several back to back thunderstorms in June caused flooding in localized areas of the Meadows and Promenade. The storm events were so localized that much of the heavy rain was not picked up by registered rain gages throughout town. The Stormwater Division of Castle Rock Water received reports of up to 2.3 inches of rain in less than 30 minutes during one event. With each storm came phone calls and reports of localized issues. Here are a few of the highlights.

Promenade Commercial

The Division received calls from concerned residents who witnessed normally dry channels and ponds fill to capacity during the storm events. Staff worked closely with these residents to hear their concerns and ensure the system was functioning properly. Minor maintenance to ensure overgrowth in the channel does not cause future obstructions is underway this summer and fall. Unfortunately,

Our Vision

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

Stormwater, continued

the heavy rains brought with them significant debris that resulted in damage to trash racks and other hardware at one of the regional detention ponds. This damage impacts the low flow functions of the pond but does not cause any immediate risk to the public. The Division is working closely with the development team to identify root causes and engineering solutions to make the necessary repairs and prevent this condition from occurring in the future.



Storm flows at Promenade during and after the storm.



Meadows Residential

The Division received several calls from residents in the Meadows reporting concerns of street and open space flooding in June. Additionally, the Division responded to temporary street closures during the heavy rain storms. These closures resulted from upset conditions that occurred on active construction sites and at locations where the local storm sewer pipe network was overwhelmed by the high intensity rainfall over a very short period of time. The Division responded quickly to clear the streets and ensure lanes were safe for vehicular travel before reopening the roadways. Follow up actions included working with our builder partners to make necessary repairs and site drainage revisions to reduce the potential for future upset conditions during large scale grading operations. It is important to note, however, that temporary traffic closures during events such as were experienced in June are to be expected. That being said, the Division takes these opportunities to review our system to determine if engineering modifications are warranted to



Castle Rock Water Staff work to clear drains to address street flooding.



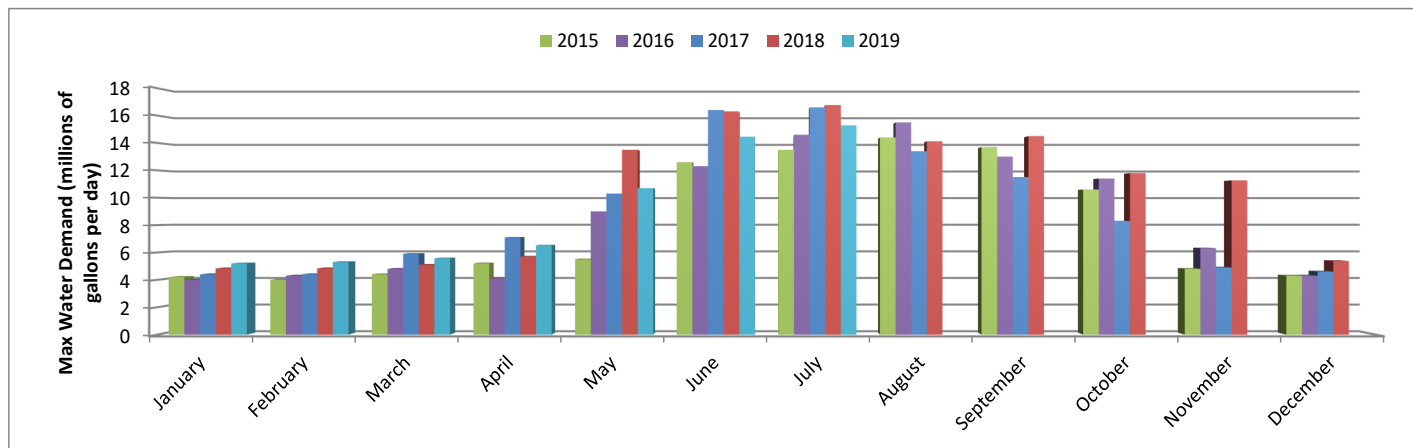
reduce public risk. The Division also provides education to our customers on what to expect during heavy rains, when to call for assistance and how to respond when encountering flooding on streets and in open spaces to avoid unnecessary hazards.

To learn more, see the Focusing on Flood Control article in the Fall 2019 edition of Outlook Magazine.

Water Demands

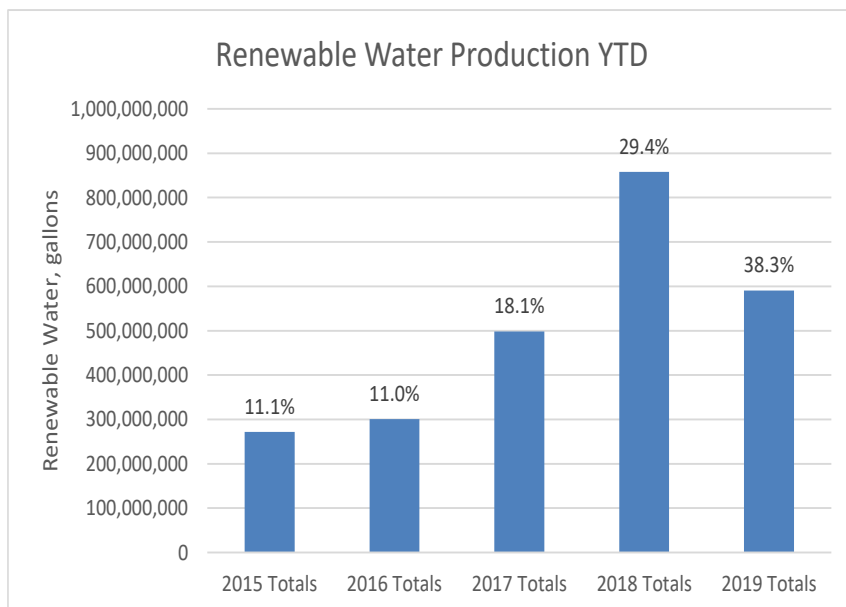
By: Lauren Moore, Water Resources Program Analyst

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 July was 15.3 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 July was 403.1 million gallons (MG), which was a 17% increase from the June 2019 total of 344.6 MG and essentially the same as the previous year's July 2018 demand of 402.9 MG.



The CR-1 diversion produced an average of 0.97 MGD for the month of July. The Town's thirteen alluvial wells and CR-1 produced a total of 55.01 MG of renewable water (and an average of 1.77 MGD). WISE water supplied an additional 80.41 MG of renewable water. In total, renewable supplies accounted for 34.1% of the total water supply for the month and 38.3% of the annual water supply (1,542 MG or 4,733 acre-feet) to date.

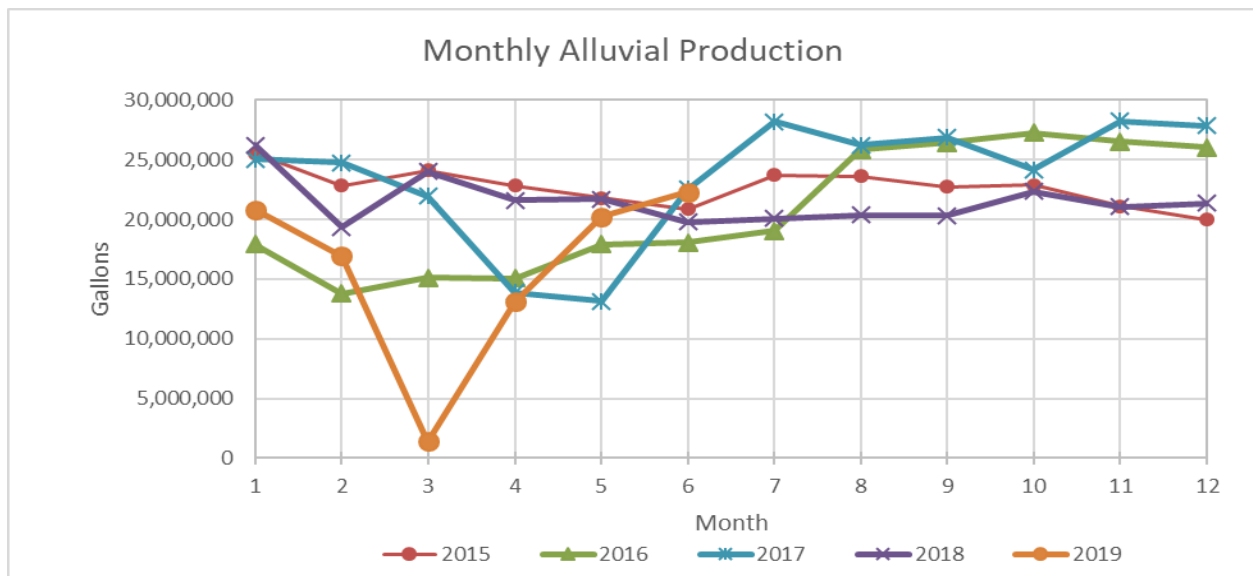
Renewable supplies are those water sources that are replenished by precipitation (think of our alluvial wells, CR-1, and WISE), whereas reusable supplies are those waters that are either from the Denver Basin (deep wells) or imported supplies (such as WISE and RHR) that can be used over and over, to extinction. The average reusable supplies used by Castle Rock for 2019 through July is 19.6% with 12.5% of available reusable supplies used in the month of July.



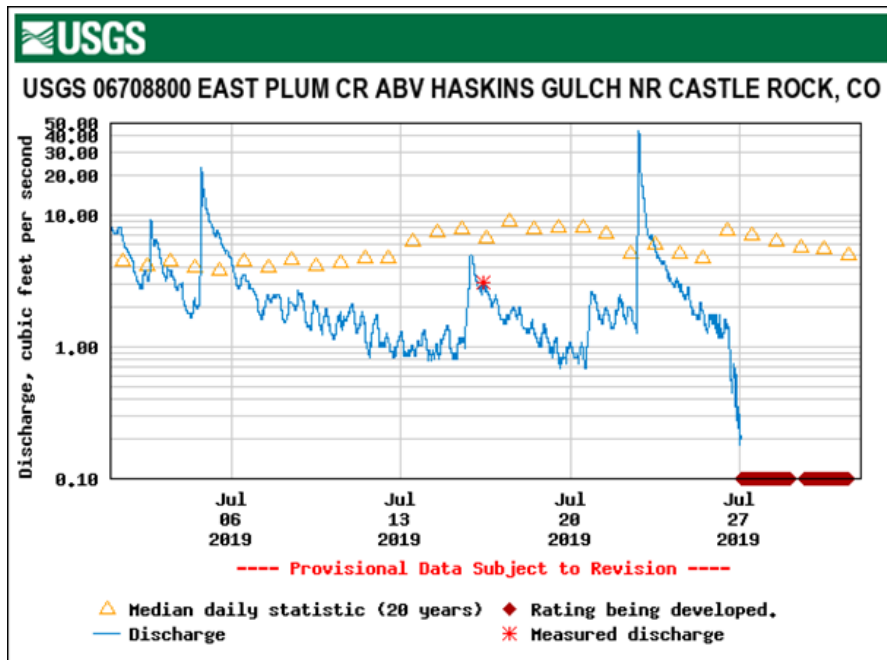
Reusable supplies over time.

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 July 2019 was 24.8 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 taken from the stream gauge located above Haskins Gulch.

For the past several months, the stream gauge above Haskins Gulch has had backwater due to beaver ponds directly affecting the measurement site. Recent removal of beaver ponds will allow for more accurate flow measurements at this location. On July 27, United States Geological Survey (USGS) staff began working on creating a new rating curve that better accounts for the streambed changes that have occurred due to ponding in the area.

The hydrograph shows that estimated flows in the East Plum Creek basin ranged between 0.18 and 43.7 cubic feet per second (cfs) during the month of July, with several precipitation events

throughout the month. 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 close to 4 AF of water (minus stream losses) from Well 7. Well 7 is pumped into a nearby storm drain, which has an outlet along Sellers Gulch. This water then flows down Sellers Gulch, through the Town, and eventually reaches East Plum Creek, where the flows are captured at CR-1.

There were active calls on the South Platte River during the second half of July. Some of the active calls have had a more senior water right than some of the Town's water rights. This means that those

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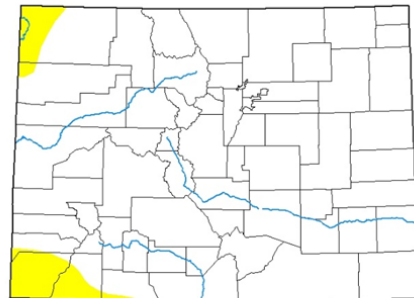
Water Demands, continued

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. However, there were 12 days during July in which Castle Rock Water operated under Free River conditions (as determined by the State) which meant the Town was able to pump as much water as operationally possible until a call was again placed on the river.

According to the U.S. Drought Monitor maintained by the United States Department of Agriculture (USDA), Colorado remained drought-free throughout the month of July, with only a very small portion of the northwest and southwest corners reporting as abnormally dry. 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 July was 1.6, well above the 1.1 trigger level, which is considered 'good.' The NRCS Colorado SNOTEL report for August 1, 2019 shows the water year-to-date precipitation for the South Platte River Basin is at 112% of average.

U.S. Drought Monitor
Colorado

July 30, 2019
(Released Thursday, Aug. 1, 2019)
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. See accompanying text summary for forecast statements.

Author:
Curtis Riganti
National Drought Mitigation Center

USDA   
droughtmonitor.unl.edu

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 person presenting the award will explain why he/she chose the recipient, and the recipient will pass it along at the next staff meeting. The following criteria are the basis for awarding this coveted honor:

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.



Adan Rivas presented the Water Star Award to PJ Thorstenson, Asset Program Manager, for his eagerness to help out whenever called upon.

Plan Review Update

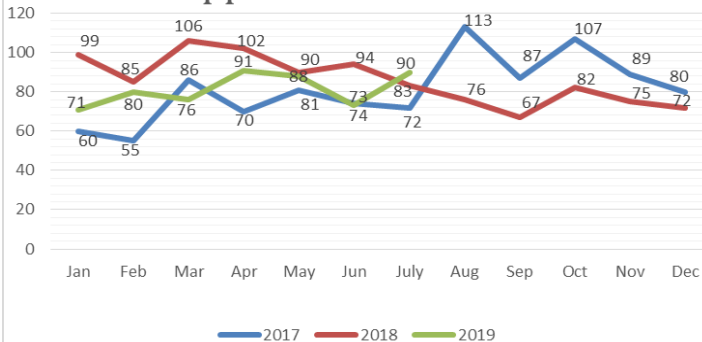
By Tina Close, Plan Review Supervisor

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

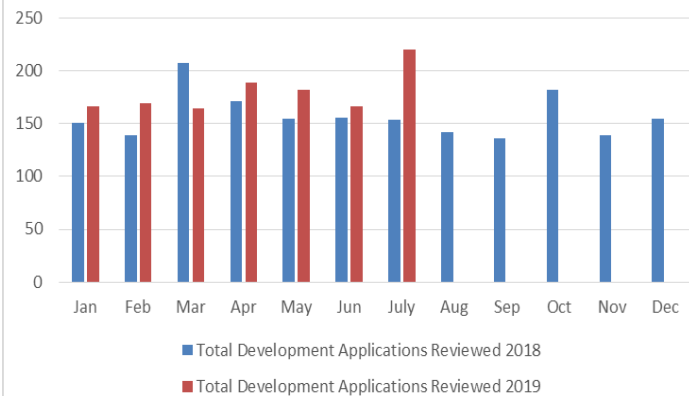


Plan Review Team completed 220 development application reviews for 90 projects for the month of July 2019, compared to 154 development applications for 83 projects in July 2018.

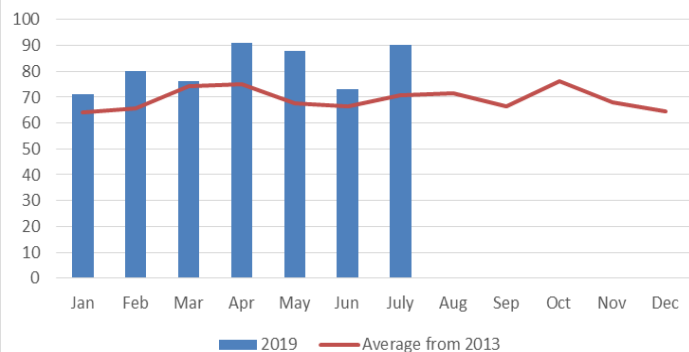
Monthly Development Project Applications Reviewed



Total Plan Application Reviews



Monthly Projects Reviewed 2019 Average monthly reviews since 2013

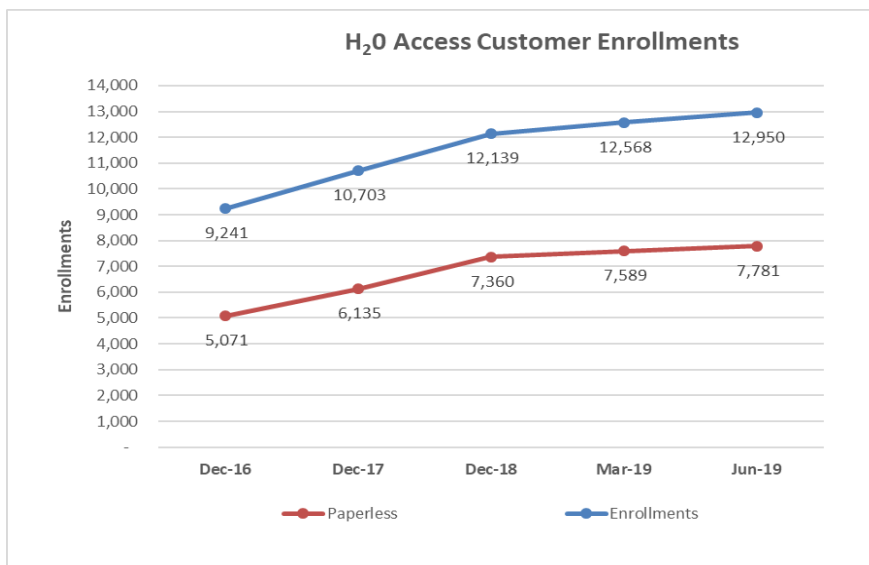


The average number of days assigned to review	11.7 days
The average number of days to complete assigned reviews	10.4 days
Reviews completed on time	87%
Review completed late	13%
Permits reviewed on-time	91%
Permits completed late	9%

Customer Statistics

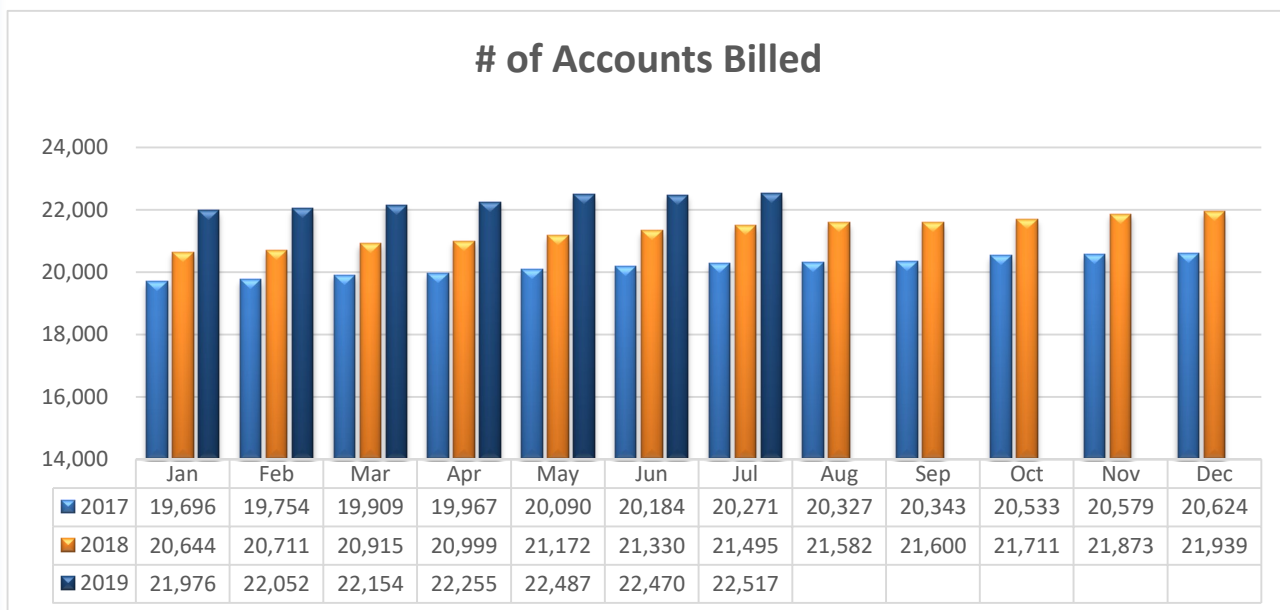
By: Anne Glassman, Business Solutions Manager

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.

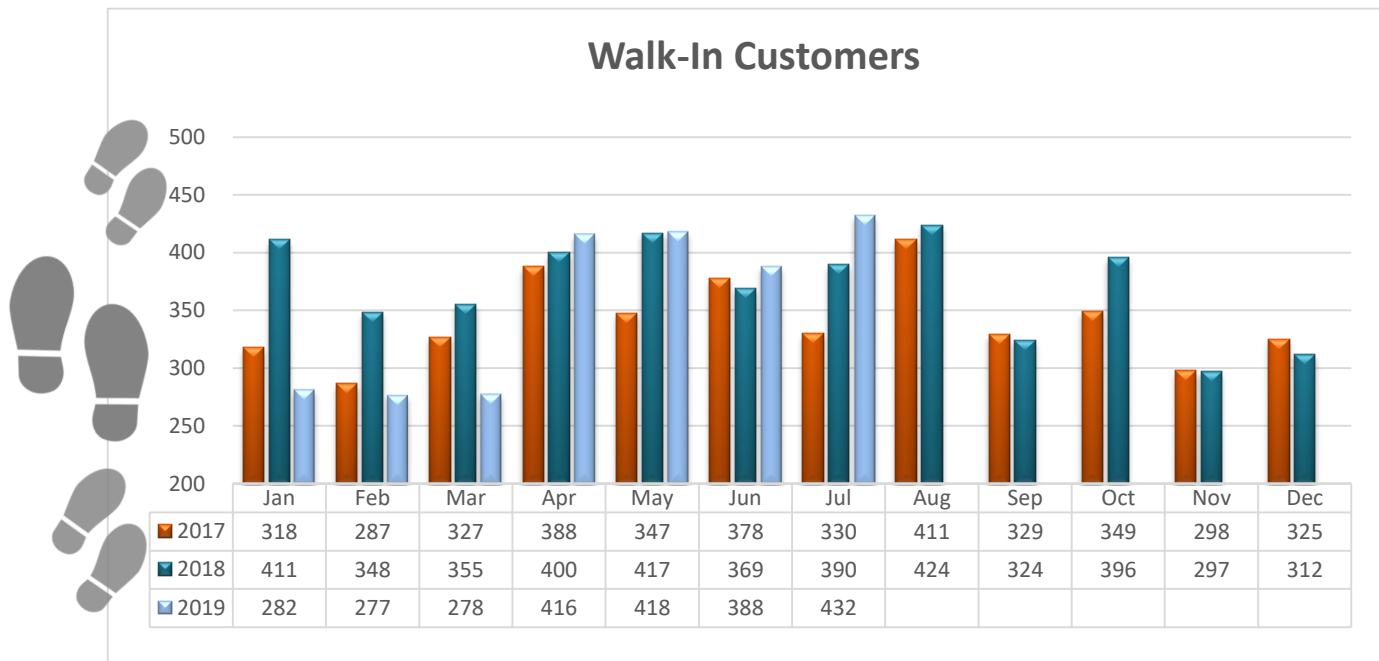


Updated quarterly - Data reported quarter ending 6/2019

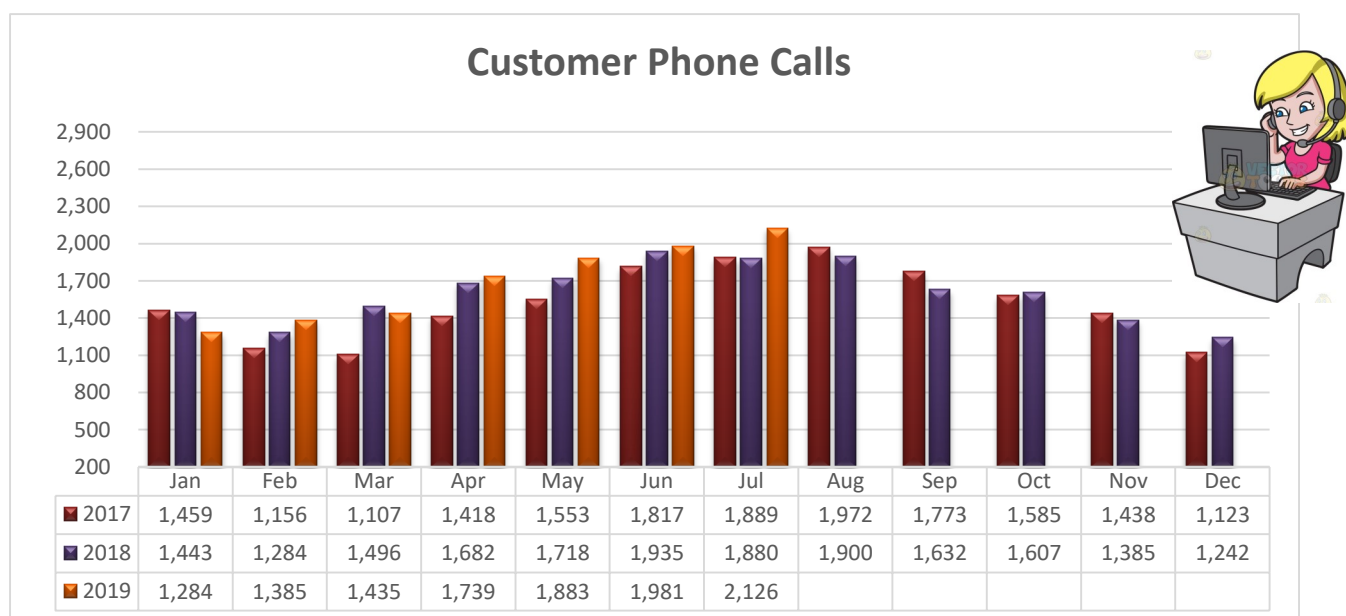
The number of customers enrolled in paperless billing has remained steady at 60% over the last several months.



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



Though reaching all-time highs, the volume of walk-in customers are consistent with this busy time of year.



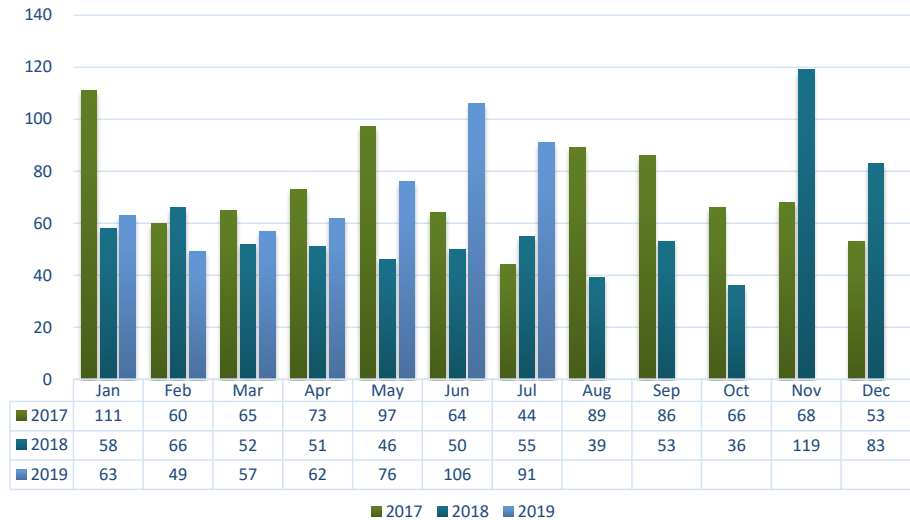
Phone calls were a bit higher this month due to a local bank changing routing numbers, a large number of transfers of service, inquiries on high-consumption and many conservation questions.

METERS

Skipped Reads

The American Water Works Association (AWWA) standard for skipped reads is 2%, so at 0.40% in July, we still continue to stay well below the industry average. This is a result of continued maintenance and repair efforts on meter infrastructure.

Skipped Reads



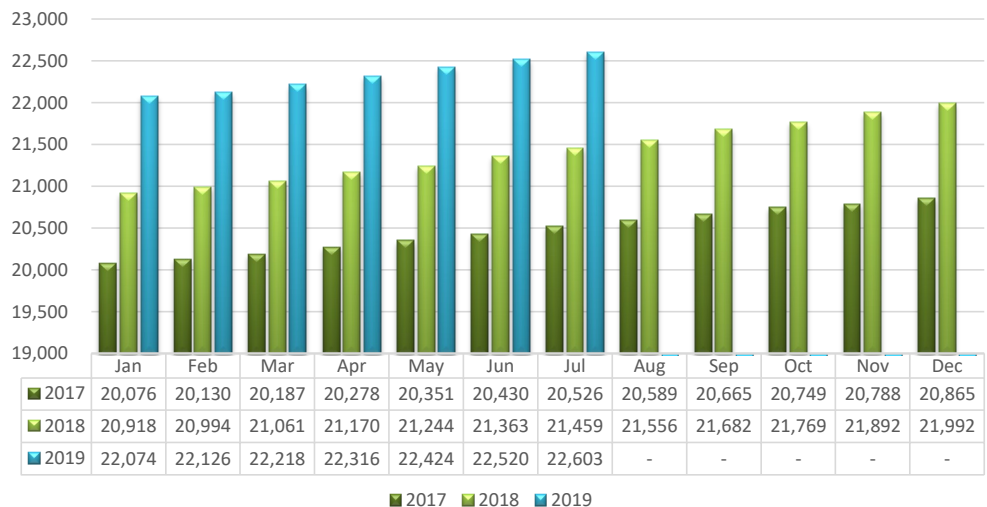
Why is this important?

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 78
Year-to-date 633

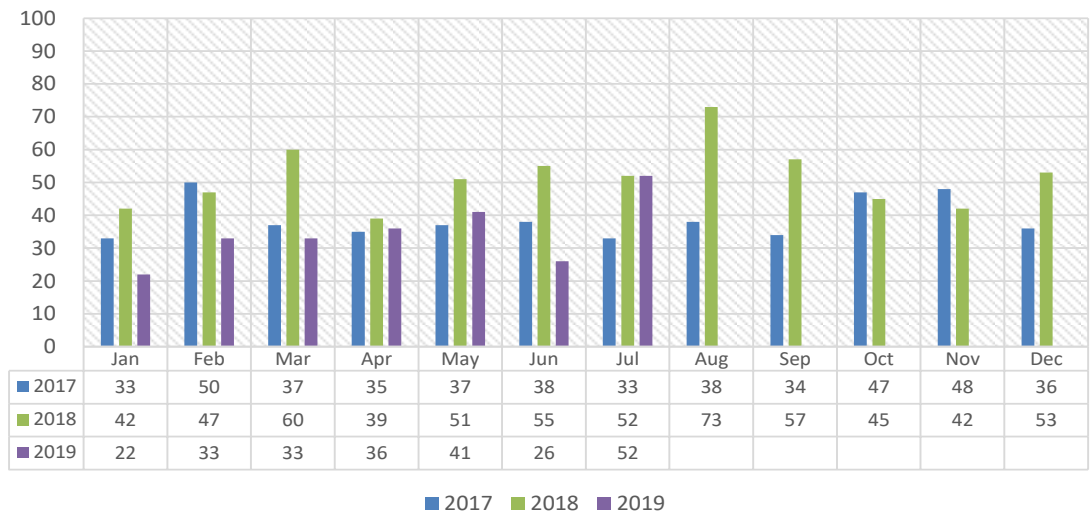
Meters Read



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

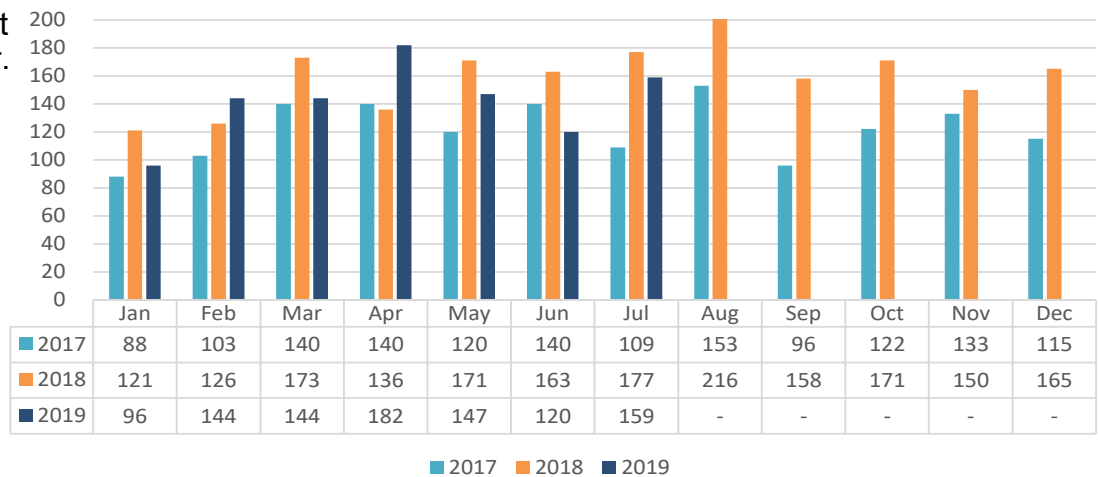
Residential meter set re-inspections are consistent from July 2018 and July 2019.

Residential Meter Set Re-Inspections



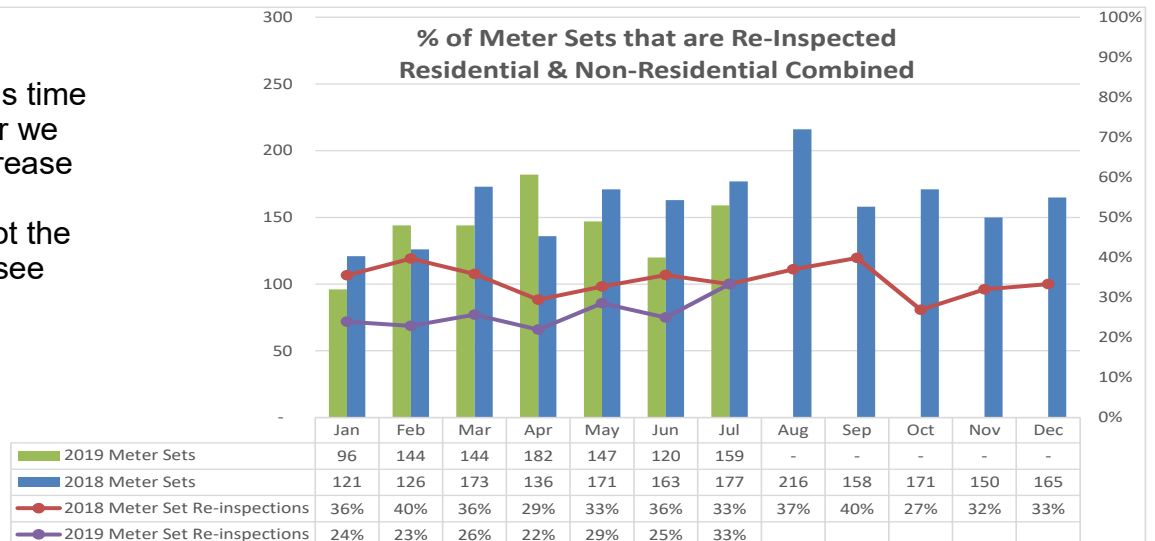
Meter sets in July 2019 are consistent for this time of year. All meter sets include re-inspections.

All Meter Sets

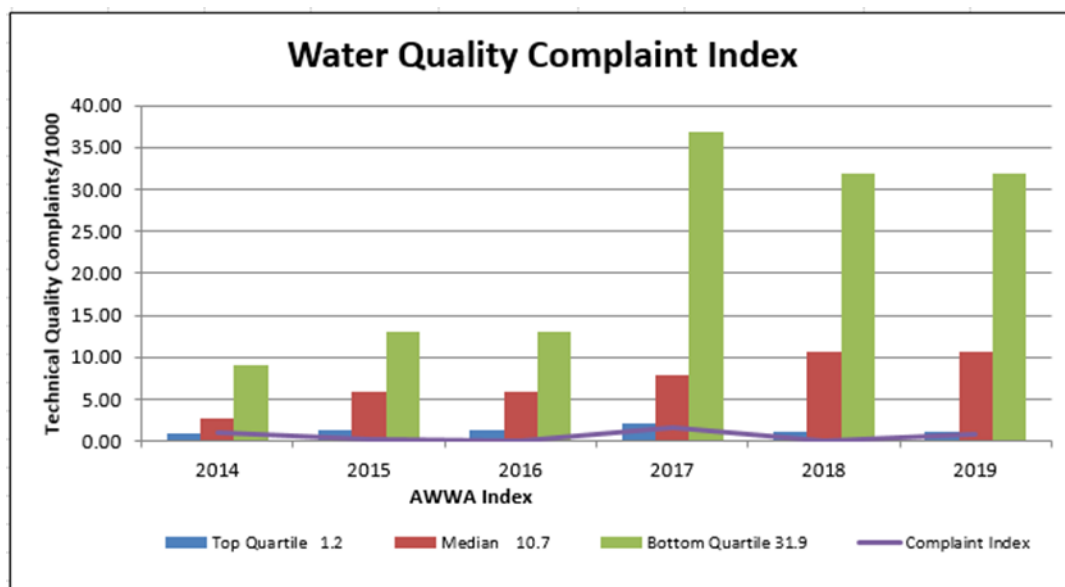


Meter sets are consistent with this time last year, however we are seeing an increase over the last few months. This is not the trend we want to see continue.

% of Meter Sets that are Re-Inspected Residential & Non-Residential Combined

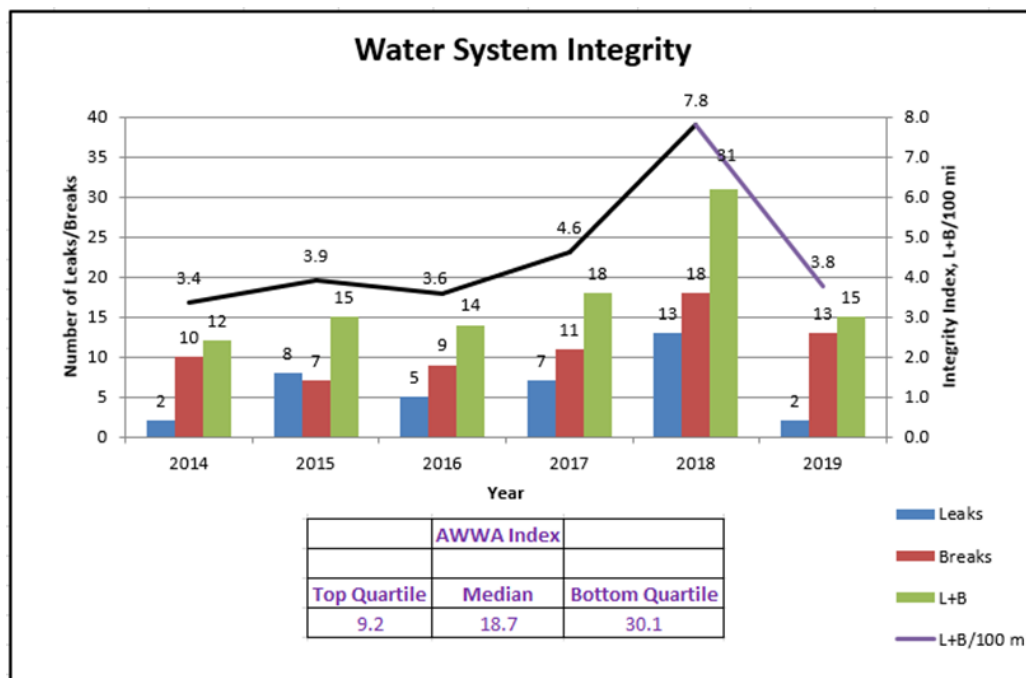


Water Quality Complaints



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 July.

Water System Integrity

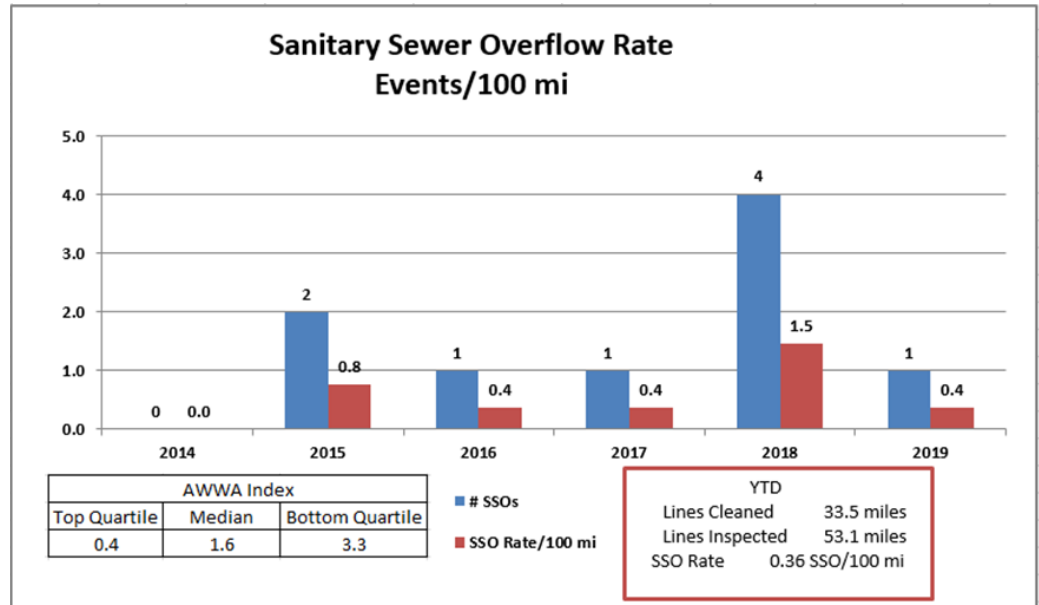


As the Water System Integrity chart indicates we have consistently remained in the top quartile for water system integrity based on American Water Works Association (AWWA) benchmarking since 2011.
There were no water system integrity issues in July.

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 has only been one sanitary sewer issue for the year, which occurred in July.



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.

JULY	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.	<i>Ninety routine samples were completed. All samples were within the parameters set forth by the Safe Drinking Water Act and Colorado Drinking Water Standards. Our annual Consumer Confidence Report is available to view at CRgov.com/waterquality.</i>
Pressure Adequacy	< 1% of our customers will experience less than 43 pounds per square inch (psi) of pressure at the meter during normal operations.	<i>There were no water pressure issues in July.</i>
Sewer System Effectiveness	<1% of our customers will experience a sewer backup caused by the utility's sewer system per year.	<i>There was one sewer system issue in July. A level transmitter malfunction caused an overflow at the Sellar's Gulch Lift Station in Crystal Valley. No customers were impacted by this incident.</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>There was a contractor caused main break on Gordon Dr., which caused the main to be shut down briefly. During the repair 41 homes were out of water for less than four hours and one home was out of water for less than eight hours. There was also a service line leak on Gordon Dr. During the repair 18 homes experienced reduced pressure for less than two hours.</i>



STORMWATER UPDATE

Our team of four “storm troopers” maintains over 166 miles of pipe and culverts, 96 town-owned detention ponds and 4,978 inlets as well as completes special projects designed to improve water quality.

The Stormwater team restored flow to two failed outfalls on Cameron Ct.





Know what's below.
Call before you dig.

Know what's below

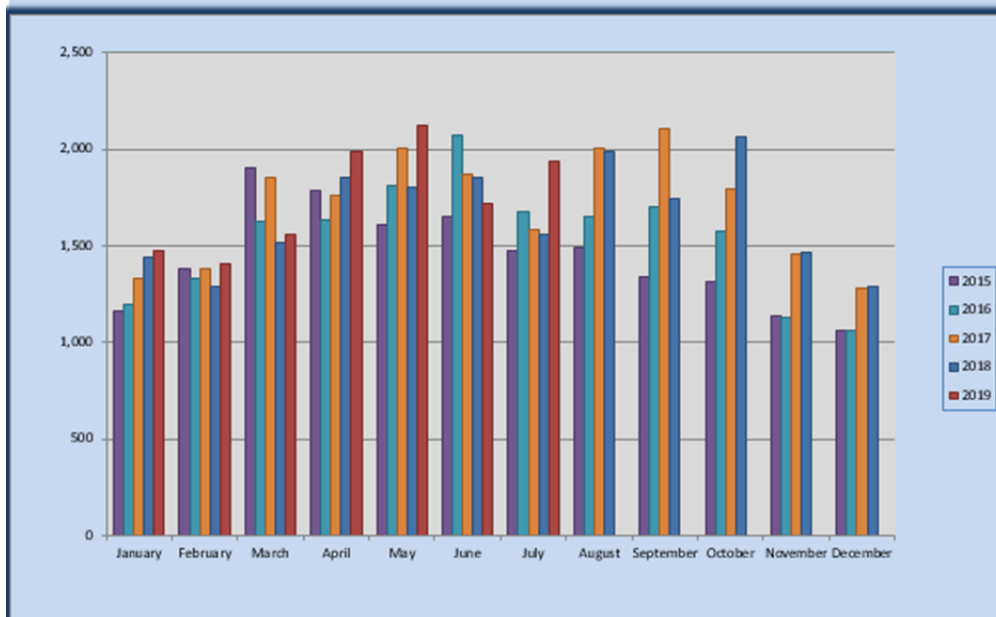
Before you start a project, call 811. Whether you are planning to do it yourself, or hiring a professional, we will help you do it safely. The local 811 Call Center will contact Castle Rock Water. We will schedule a time to come out to locate public water and wastewater lines in the road and in your 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			
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			
Totals	8,545	7,539	11,097	15,702	15,731	17,323	18,469	20,411	19,875	12,195		

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.

