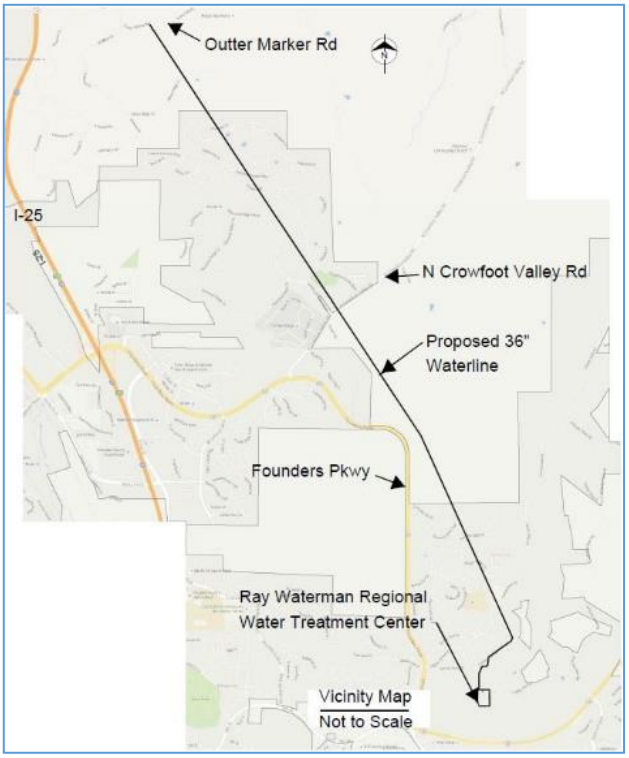
CASTLE ROCK water
Securing our future drop by drop

OCTOBER 2017

WISE Local Infrastructure Project Nears Completion

By: Walt Schwarz, Program Manager

A near-term source of imported, renewable water will be from the Water Infrastructure and Supply Efficiency (WISE) Project. Work for the WISE Local Infrastructure construction project generally consisted of installing a potable water pipeline to convey WISE water from Parker Water & Sanitation District infrastructure near Outter Marker Road in Douglas County to the Ray Waterman Regional Water Treatment Center (RWRWTC). Work included installation of approximately 5.1 miles of 36-inch diameter PVC and 1,300 linear feet of 24" diameter PVC potable waterlines.



Garney Construction was awarded the construction contract in the amount of $13,448,015 and began site mobilization in mid-January 2017. As of October, Garney has completed installation of the 36" and 24" diameter pipeline sections. Pressure testing and bacteriological testing of the 36" pipeline has also been successfully completed. All the concrete vaults needed for the project are installed and final electrical and control software work is being completed on the flow control and meter vaults installed near the RWRWTC. Final seeding and site restoration work is ongoing and Grading, Erosion and Sedimentation Control (GESC) measures will continue to be maintained in accordance with permit requirements.

The project is proceeding under budget and Garney is scheduled to complete all work items including Castle Rock Water generated punch list items by the end of November, 2017.

Meter and flow control vaults being installed near the RWRWTC.

Reseeded section shows new grass growth. (photo taken looking south towards Sapphire Pointe)

OUR VISION

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

East Plum Creek Stream and South Well Field Improvements

By: Barbara Horton, Program Manager

The primary objectives of this project were to protect existing utilities and Town infrastructure along East Plum Creek (EPC) and provide stream stabilization improvements consistent with the Stormwater Master Plan. Improvements include stream and bank stabilization adjacent to the Town's water supply wells.

The stream improvements were needed to address a severely eroded stream bank immediately adjacent to the well field. The wells are a critical component of the Town's renewable water supply system needed to keep up with the projected water demands.

53 Corporation, LLC was awarded the construction contract which began in March and was substantially completed in August. The total construction cost for the project was approximately $1.2 million. This was a multi-disciplined project utilizing Water, Stormwater and Water Resources funds to cover engineering and construction costs.

Steel sheet pile cutoff walls were installed across the stream and sculpted concrete drop structures were constructed to mimic exposed sedimentary rock. This provides an attractive feature in the live stream while guiding and controlling stream flow in EPC.

A critical component of this project is the revegetation effort. We have obligations under Town, State and Federal permitting to restore construction disturbances, which includes wetlands and woody vegetation to restore this area as a vibrant riparian habitat for wildlife and water quality. The construction zone has been seeded and our contractor will be returning in the spring to plant trees, shrubs and wetland plugs.

The Parks Department is working on a designated foot path to the creek and drop structures for limited public access. A concrete trail extension east of the well field is currently under design and Parks has plans to extend a soft surface trail loop through the project area in the spring. The Town asks that users please refrain from accessing the project area where revegetation is underway.

Overlook of completed project

Castle Rock Water reviewed 107 applications (see below) this month which compares to 60 during the same time period in 2016. The average assigned due date by Development Services was six days, and we completed the reviews in an average of sixteen days.

9	Agreements
2	Planned Development Plan
12	Field Change Orders
16	Grading, Erosion, and Sediment Control (GESC) Plans
1	Annexation
6	Use by Special Review
10	Plats
3	Preliminary Project Application
20	Construction Drawings
16	Site Development Plans
9	Technical Criteria Variances
3	County Referral

The applications reviewed consisted of:

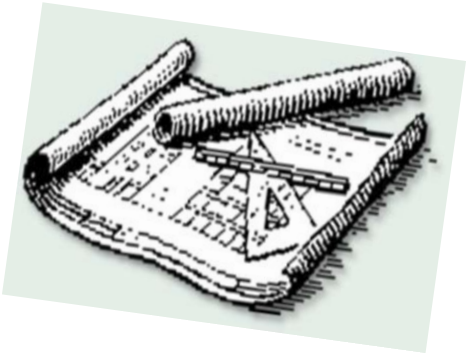
47	1st Submittals
28	2nd Submittals
27	Special reviews
45	Completed late*
81	Completed on-time as scheduled*

* Total late/on-time applications are greater than the total number of projects, due to some projects being reviewed by multiple reviewers, so it was both late and on-time, depending on reviewers work load.

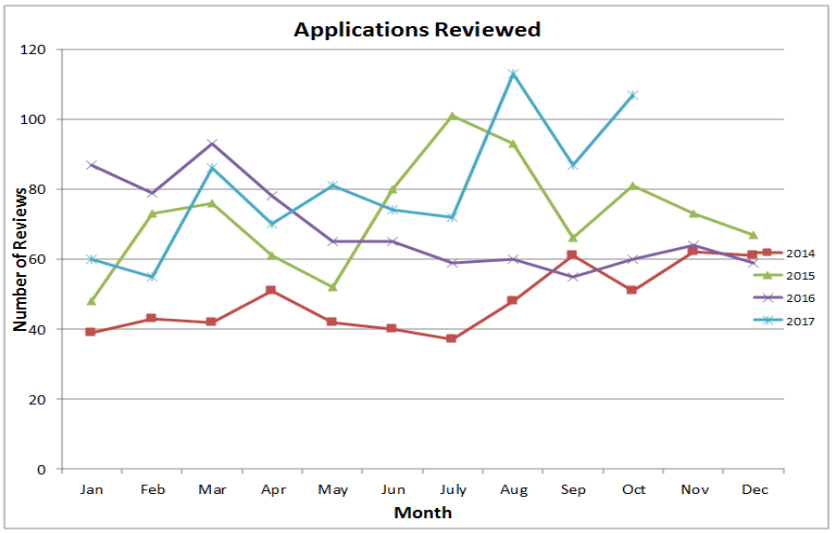
In addition, Castle Rock Water completed 58 building permit reviews and associated system development fees.

Plan Review Update

By Tina Close
Plan Review Engineer



Castle Rock Water provides plan review for all water, wastewater and stormwater projects submitted through the development review process. The line graph (below) shows development activity data (by month and year) since 2014.



2017 Water Demands

By: Kurtis Cotten, Water Resources Program Analyst

The maximum daily water demands are plotted by month from 2014 to the current month. As observed by the data, the maximum demand for the month of October was 8.3 million gallons per day (MGD) which was about 8 percent less than 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 October was 174.08 million gallons (MG), which was about a 51 percent decrease from the September 2017 total of 356.8 MG, and a 31% decrease from the October 2016 demand of 251.1 MG.

The CR-1 diversion produced an average of 1.2 MGD for the month of October. The Town's thirteen alluvial wells and CR-1 produced a total of 61 MG of renewable water during October, which represents 33.8 percent of the total water supply for the month and 13.7 percent (340 MG or 1,043 acre-feet) of the water supply year to date. The total renewable water produced since the opening of the PCWPF has surpassed 1,385 MG, which represents 11.7 percent of the Town's total water supply since the alluvial wells began pumping in May 2013. Currently, the Town's renewable water rights surpass the capacity of the alluvial wells. Completion of the CR-1 diversion is helping close this gap.

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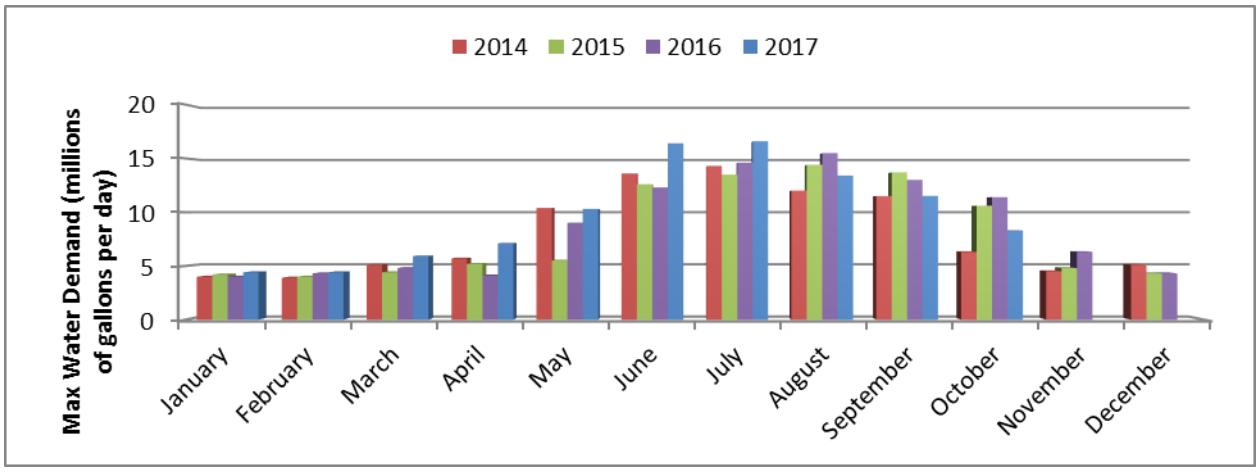
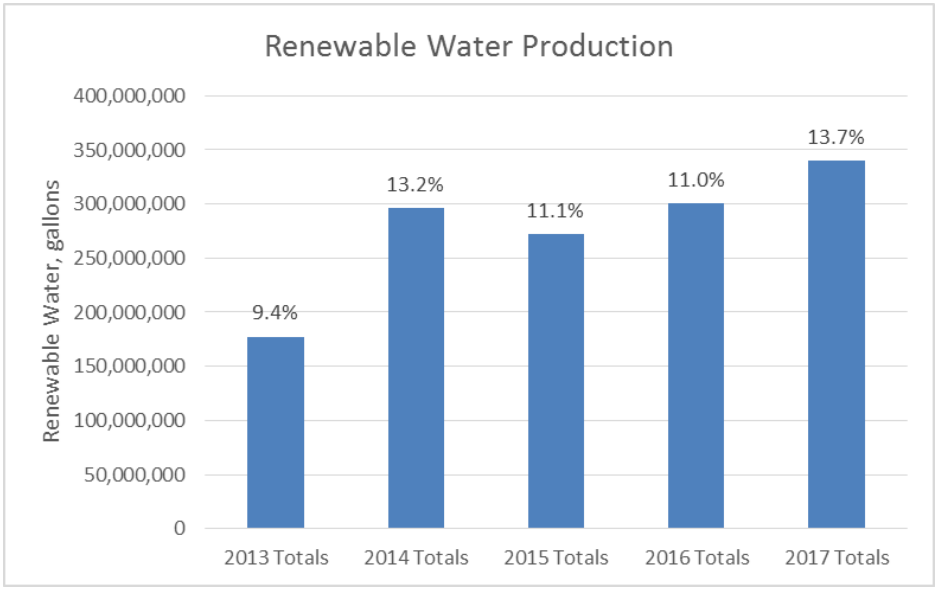
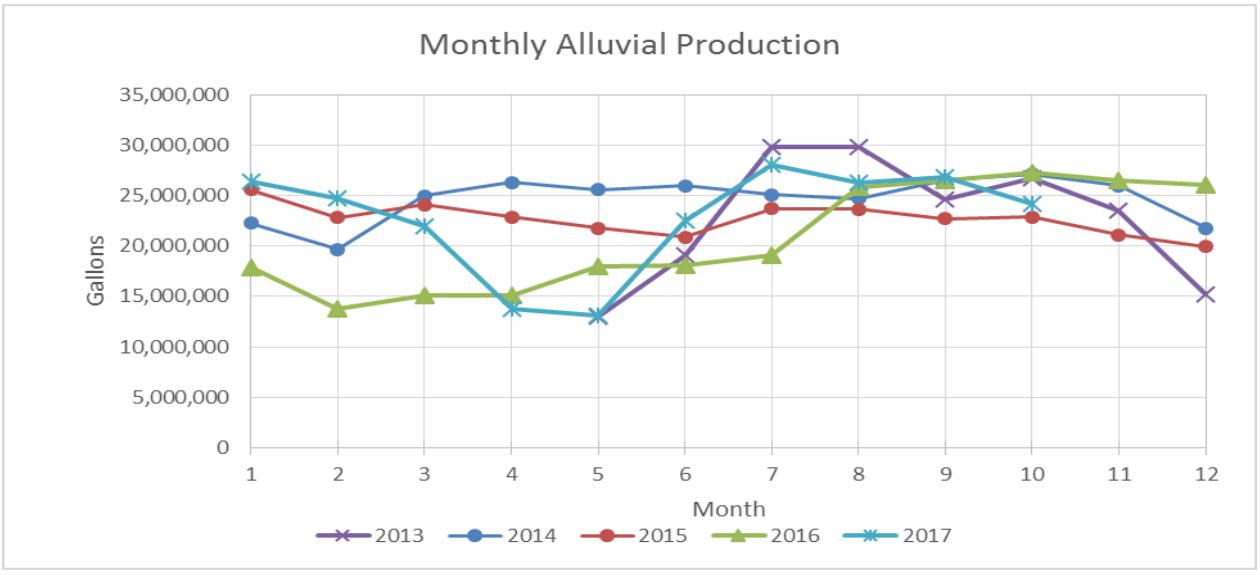
Water Demands, continued





The percentage shown on top of the bars is the amount of renewable water relative to total water production.



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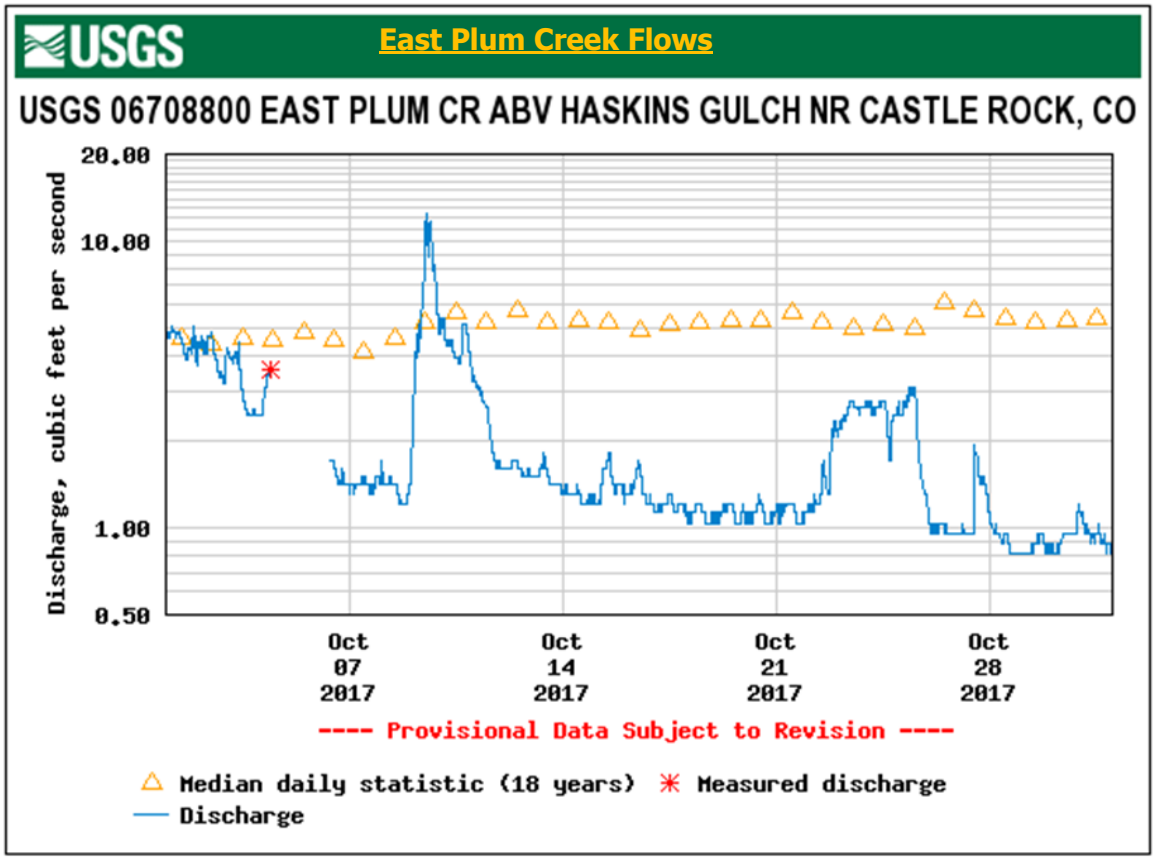
Water Demands, continued

The flow hydrograph represents stream flows in East Plum Creek taken from the stream gauge located above Haskins Gulch. The hydrograph shows that flows in the East Plum Creek basin ranged between 0.8 and 13 cubic feet per second (cfs) during the month of October, with flows averaging around 1.5 cfs. During October, there were active calls on the South Platte River. 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.



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.

Lanre' Olanrewaju Ajayi
Water Operator C

Ross Stanley
Water Distribution II

Kristen Reaves
Collections II

Avery Worland
CDL

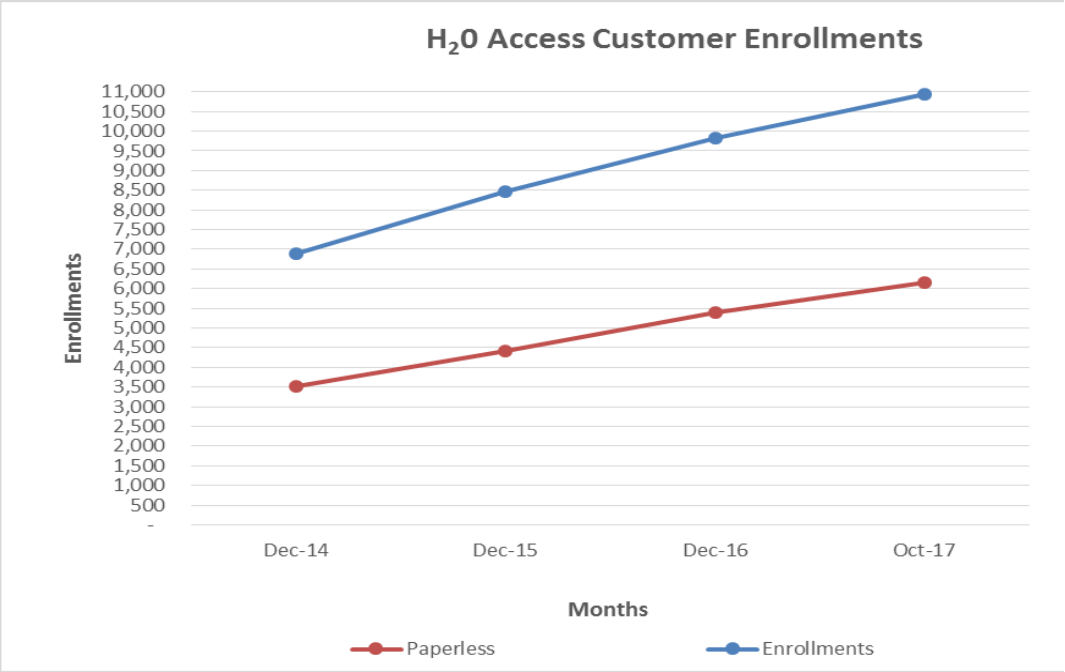
Chris Damrow
Marathon Leadership Program

Business Solutions

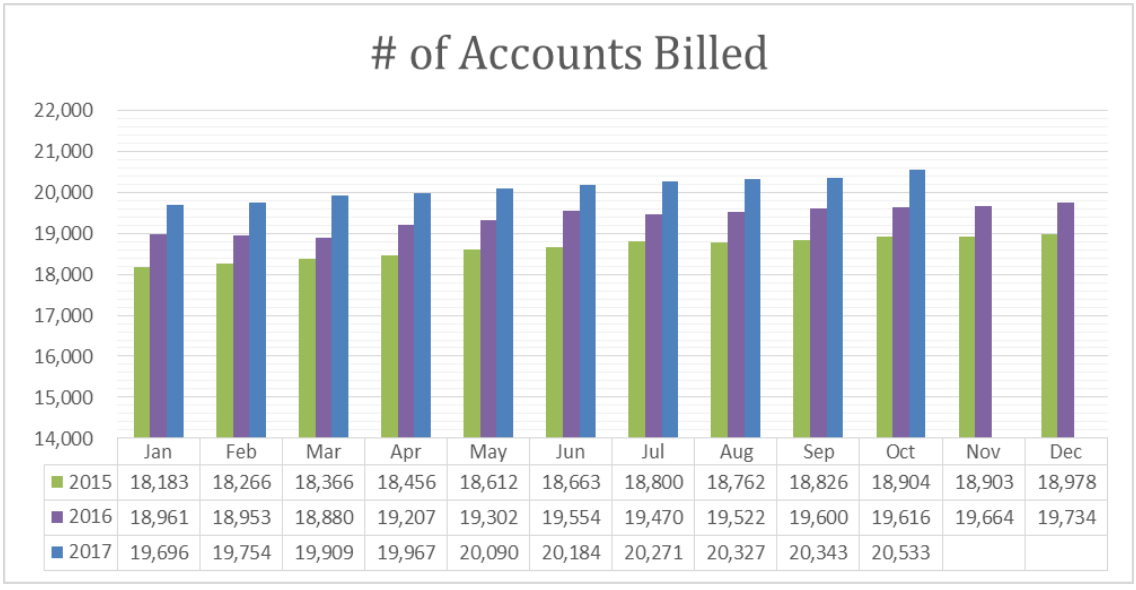
Customer Statistics

By: Anne Glassman, Business Solutions Manager

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

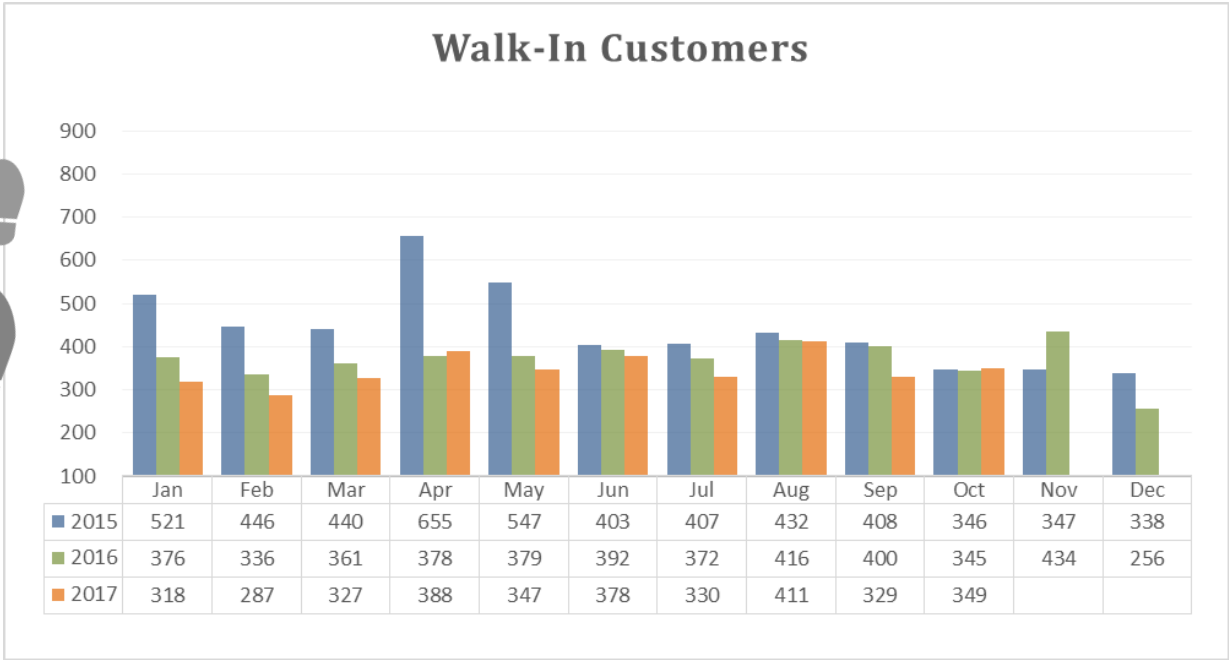


Although 56 percent of our customers who have enrolled in H_2OAccess have also chosen to go paperless, we would like to see that adoption continue to grow. With that, we launched a “go paperless” campaign in October where any customer who signs up by November 30 will have a chance to win a $50 water bill credit.



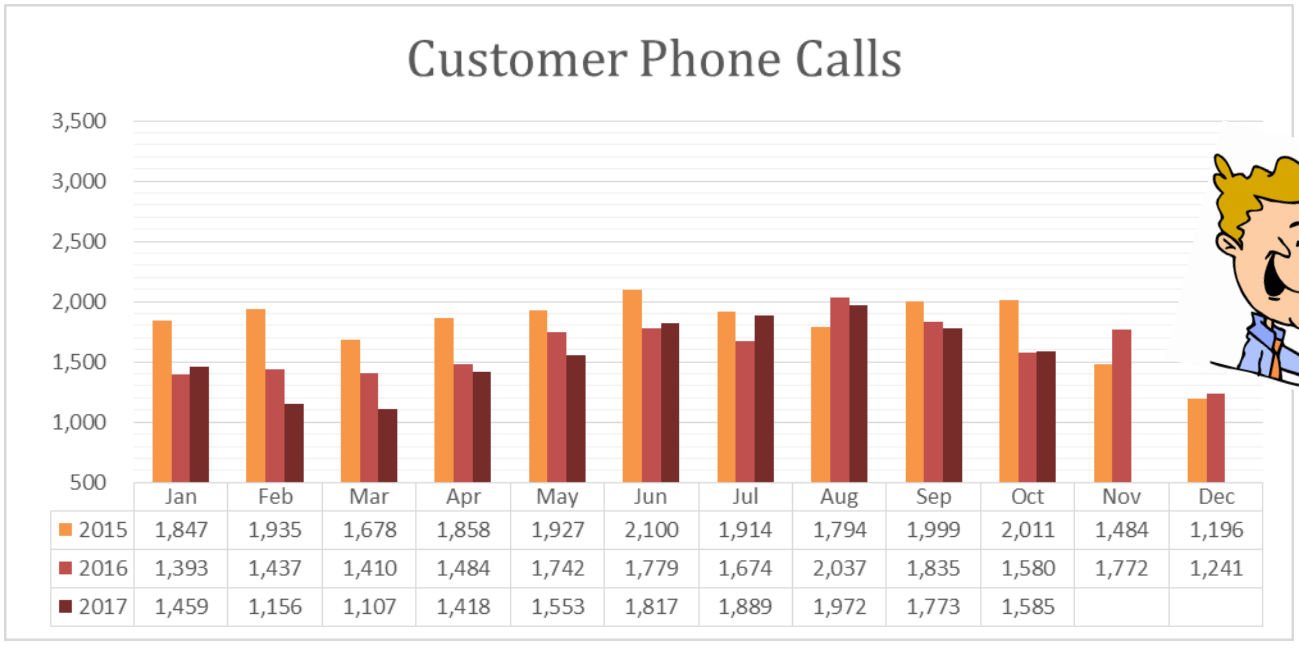
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	18,183	18,266	18,366	18,456	18,612	18,663	18,800	18,762	18,826	18,904	18,903	18,978
2016	18,961	18,953	18,880	19,207	19,302	19,554	19,470	19,522	19,600	19,616	19,664	19,734
2017	19,696	19,754	19,909	19,967	20,090	20,184	20,271	20,327	20,343	20,533		

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



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	521	446	440	655	547	403	407	432	408	346	347	338
2016	376	336	361	378	379	392	372	416	400	345	434	256
2017	318	287	327	388	347	378	330	411	329	349		

Walk-in customers in October are consistent with this same time last year.



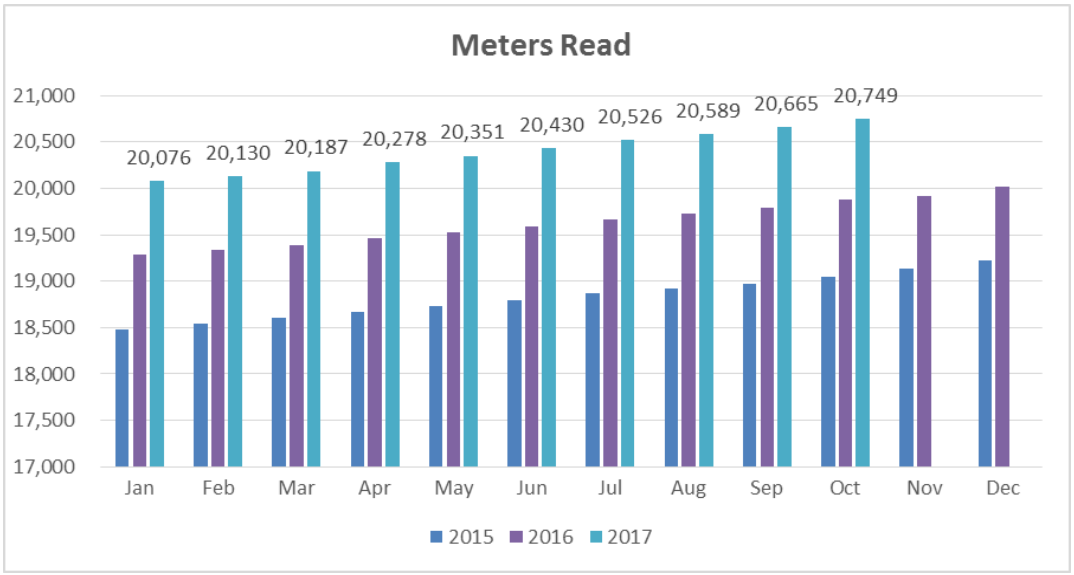
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015	1,847	1,935	1,678	1,858	1,927	2,100	1,914	1,794	1,999	2,011	1,484	1,196
2016	1,393	1,437	1,410	1,484	1,742	1,779	1,674	2,037	1,835	1,580	1,772	1,241
2017	1,459	1,156	1,107	1,418	1,553	1,817	1,889	1,972	1,773	1,585		

Customer phone calls are consistent with this same time last year.

METERS

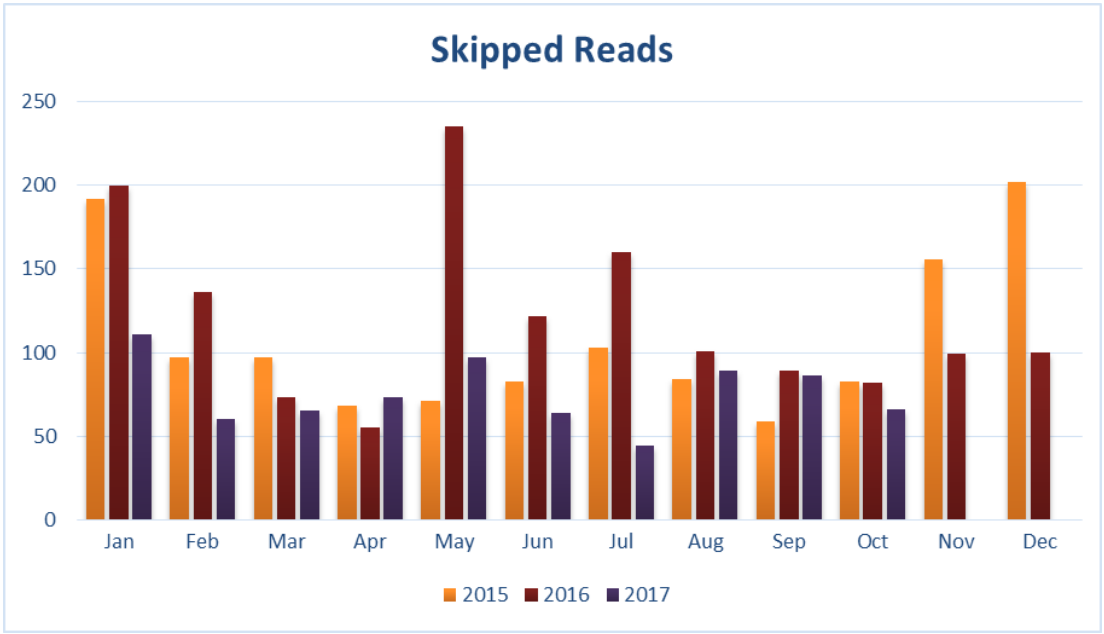
Meter Sets

Month-to-Date 58
Year-to-date 743



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

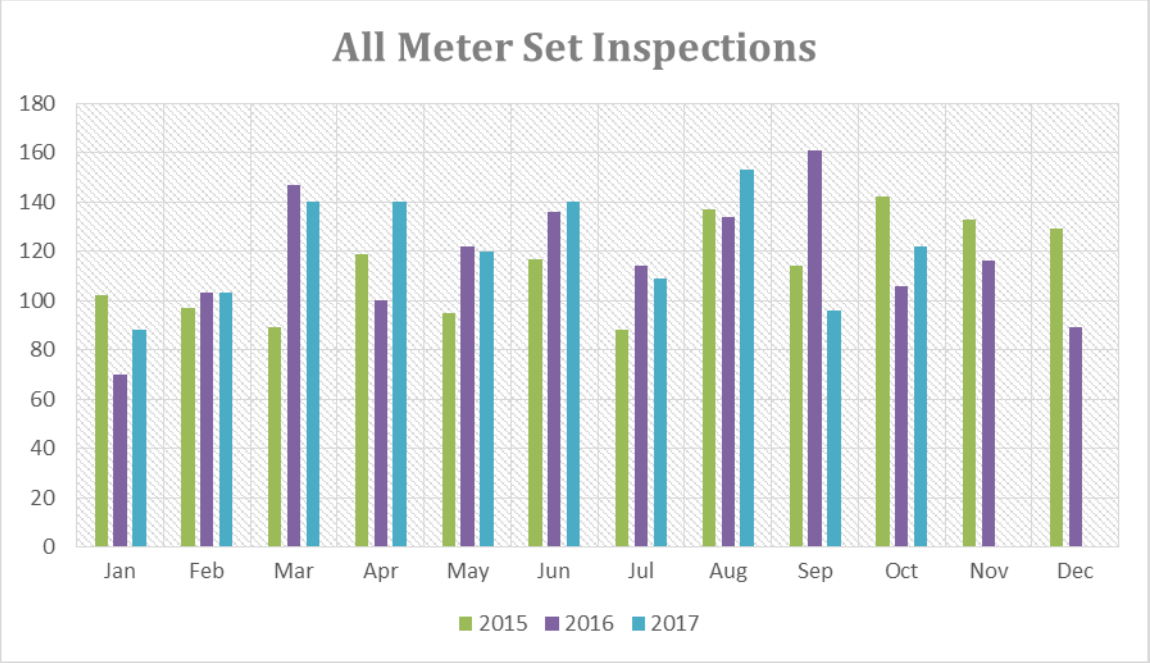
Skipped Reads



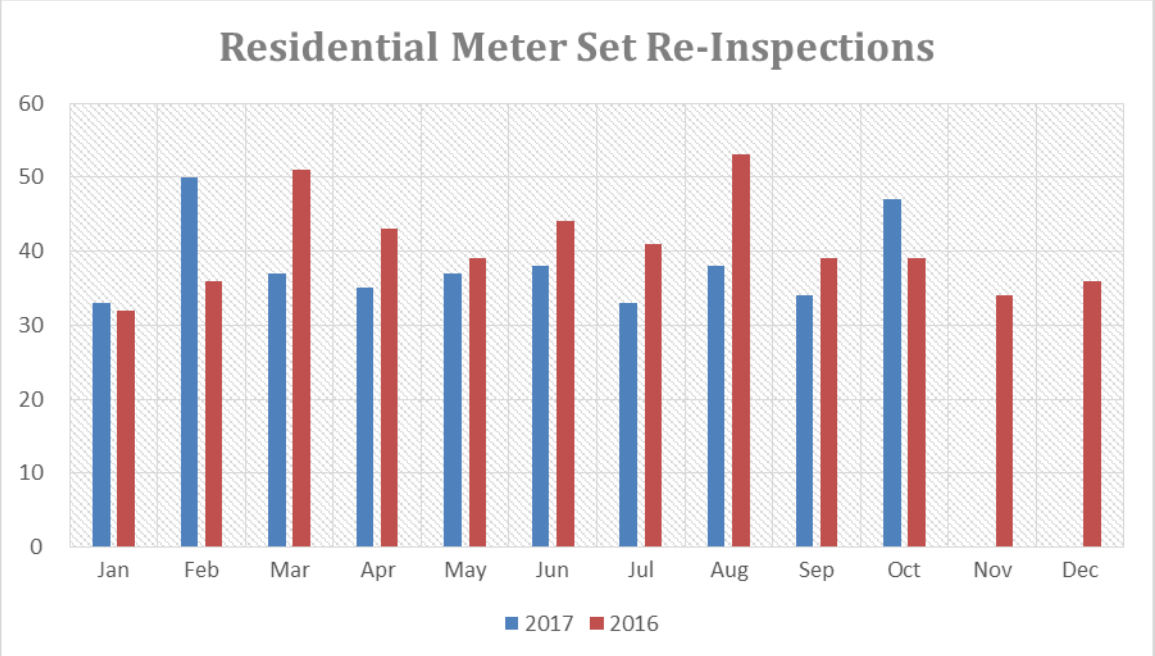
The American Water Works Association (AWWA) standard for skipped reads is 2 percent, so at 0.32 percent in October, we still continue to stay below the industry average. This is a result of continued maintenance and repair efforts on meter infrastructure.

WHY IS THIS IMPORTANT?

It 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 set inspections are consistent with the trends we see this time of year.



Residential meter set re-inspections for year-to-date 2017 are lower than last year at this time. This is a good indication meters are being set properly the first time, thus not creating additional inspections. The team will be investigating why the number increased from October 2016 to October 2017

Stormwater Update

Our team of four "storm troopers" maintains over 138 miles of pipe and drainageways, 110 detention ponds and 4,439 inlets as well as completes special projects designed to improve water quality.

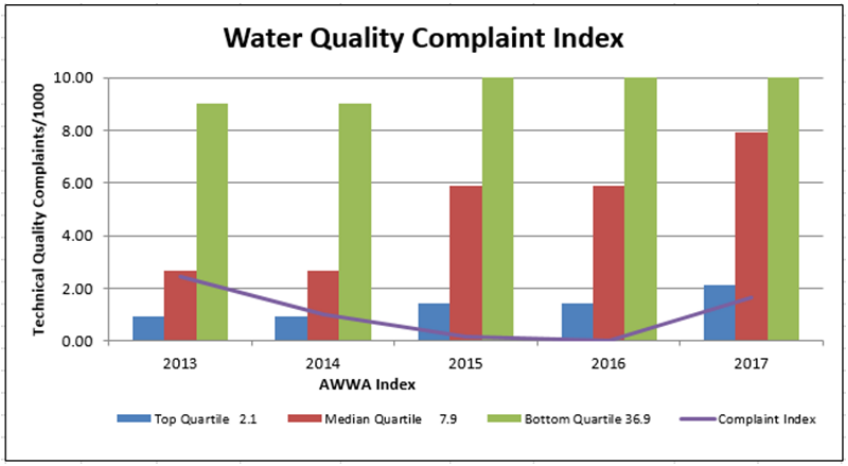
Grates were also installed on stormwater pipe in this area to improve public safety.

The stormwater team is renovating the stormwater ditch near the P.S. Miller Activity Complex.

Our team maintains about 810 miles of water, wastewater and stormwater pipeline, enough to run from Castle Rock to Las Vegas, Nevada.

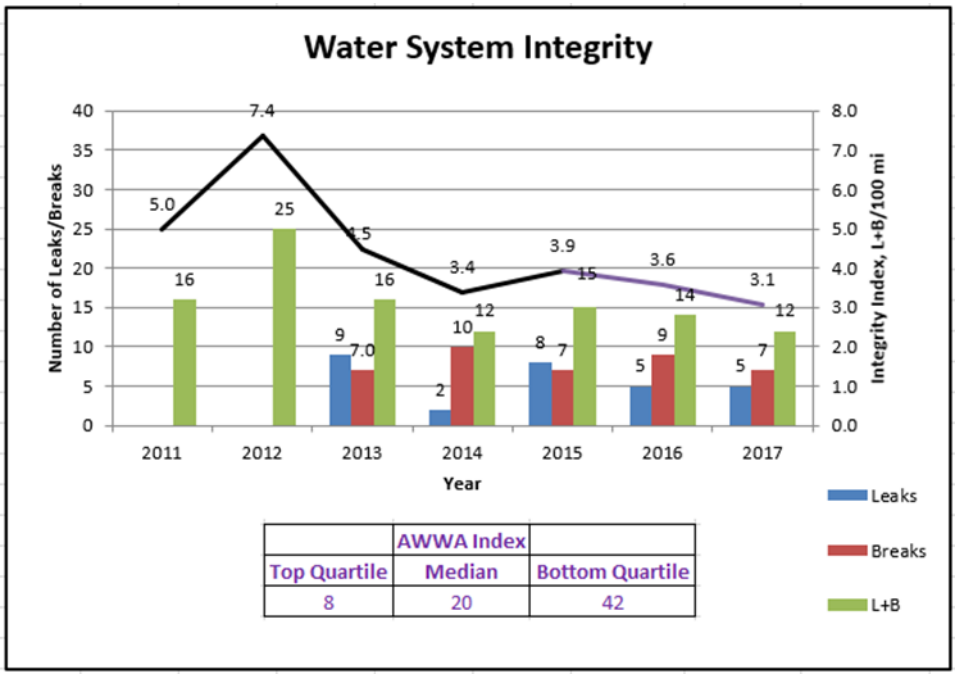
Water Quality Complaints

The Water Quality Complaint index shows that we are doing very well in this category; rating in the Top Quartile since at least 2015 according to the American Water Works Association. Our score was even better in 2016! There were no water quality complaints in October, 2017



For more information, view the current water quality report at CRgov.com/**waterqualityreport**.

Water System Integrity



As the Water System Integrity chart indicates, our occurrence rate has generally decreased over the last four years. We have been in the top quartile, the top 25%, for water system integrity based on American Water Works Association benchmarking since 2011. There were two water system integrity issues in October.

Before you start a project, call 811. Whether you are planning to do it yourself, or hiring a professional, we'll 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.

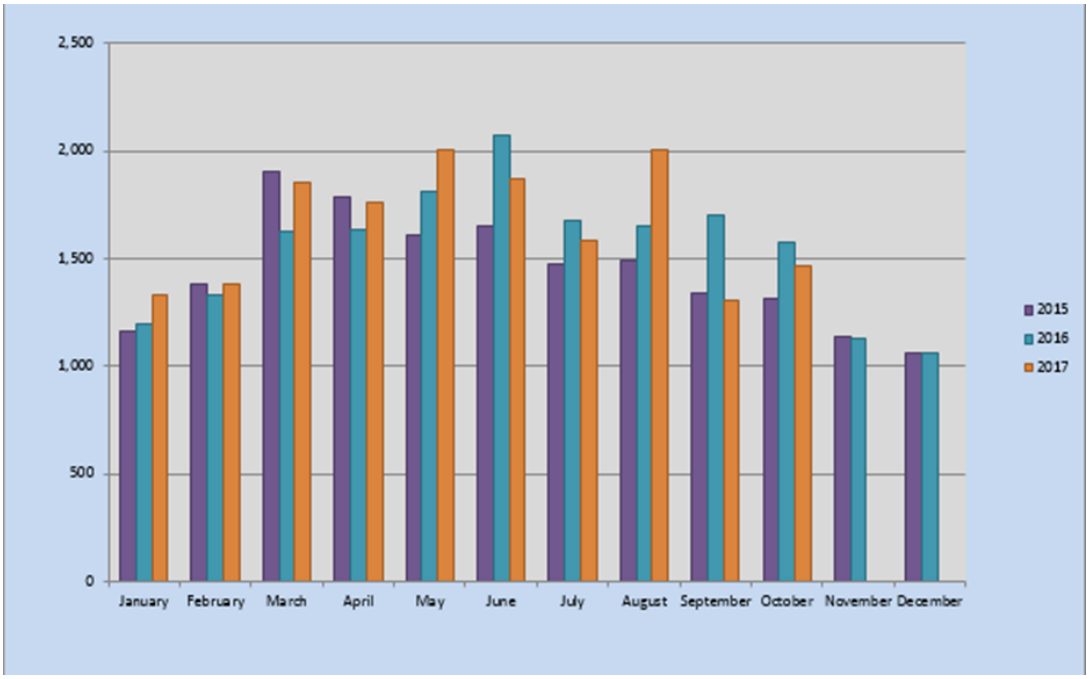
The graphs below show our monthly utility locates and a chart showing the year-to-year comparison

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				
February	521	485	538	1,094	1,093	1,383	1,334	1,378				
March	660	552	818	1,437	1,349	1,906	1,625	1,851				
April	838	681	1,025	1,482	1,552	1,784	1,631	1,760				
May	853	863	985	1,541	1,531	1,609	1,809	2,002				
June	969	844	982	1,314	1,399	1,654	2,075	1,872				
July	680	582	859	1,350	1,392	1,477	1,675	1,582				
August	901	723	1,123	1,476	1,468	1,494	1,651	2,001				
September	880	723	1,029	1,240	1,373	1,343	1,701	1,309				
October	715	688	1,155	1,501	1,376	1,314	1,579	1,463				
November	536	518	1,041	1,072	866	1,134	1,131					
December	415	405	925	1,005	1,043	1,063	1,059					
Total	8,545	7,539	11,097	15,702	15,731	17,323	18,469	16,552	0	0	0	0
Difference from previous	N/A	-1,006	3,558	4,605	29	1,592	1,146	-1,917	-16,552	0	0	0

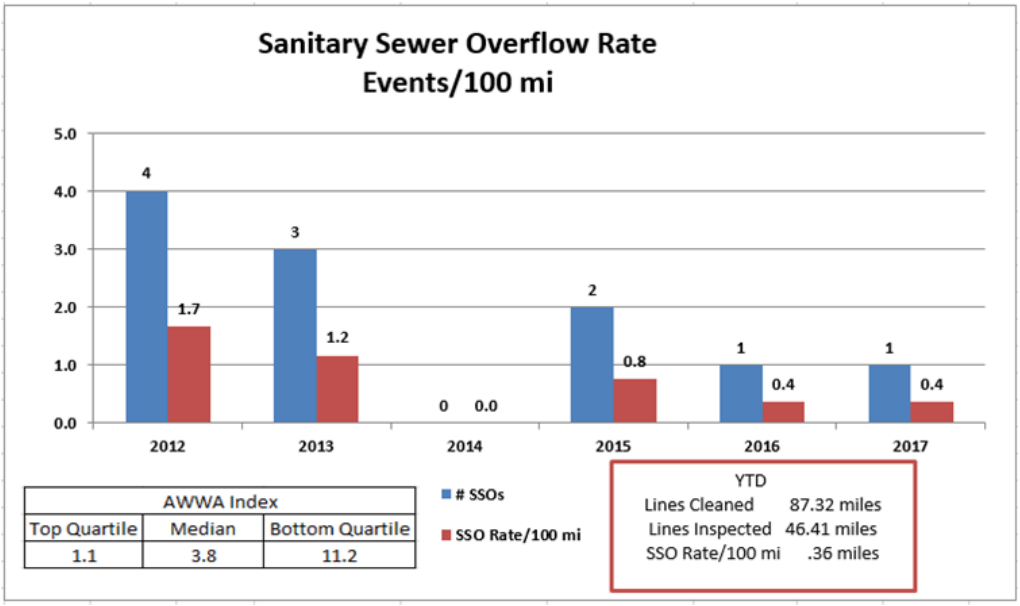
811 Know what's below. Call before you dig.

3-YEAR LOCATE TREND



Sanitary Sewer Overflows

We are also tracking in the Top Quartile in the Sanitary Sewer Overflow Rate since 2014, according to the American Water Works Association, showing one incident in 2017. There were no sanitary sewer issues in October.



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.

The goal this year is to clean and video approximately 33 percent of the collection system or about 90 miles.

October 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.
Seventy routine samples were completed. All samples were within the parameters set forth by the Federal 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 issues in October.

Sewer System Effectiveness
<1% of our customers will experience a sewer backup caused by the utility's sewer system per year.
There were no issues in October.

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 two service line breaks—one in The Meadows and one in Founders Village. Three homeowners were out of water for less than four hours.