

APRIL 2018



We Got WISE

By: Walt Schwarz, Project Manager

Project Update: 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 (PWSD) infrastructure near Outer Marker Road in Douglas County to the Town's 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. Construction of this pipeline project is now complete and the final contract price was \$13,249,731. The new WISE pipeline system was officially placed in service conveying WISE water from PWSD to Castle Rock on April 30, 2018. Capacity of the WISE Local pipeline is approximately 14 million gallons per day (MGD) with pressure coming from a future PWSD water storage tank. Castle Rock is currently receiving approximately 0.62 MGD of WISE (flows to increase in the future). Garney Construction continues to do a great job responding to warranty type work items that are brought to their attention and needing immediate corrective actions. Reseeded areas are responding well to the spring rains and the Grading, Erosion and Sedimentation Control (GESC) measures will continue to be maintained in accordance with permit requirements.

Castle Rock is now able to receive long term renewable water with the completion of this project. To commemorate this occasion, a WISE Water Celebration is planned (see informational flyer below).

Join us

WISE Water Celebration

Friday, June 8, 2018
4:30-6:30 p.m.
Gemstone Park
6145 Sapphire Point Blvd.



OUR VISION

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

We got WISE

9 years of planning
13 regional partners
\$50 million in infrastructure



Come celebrate a major milestone in securing water for our future! Join us from 4:30-6:30 p.m. Friday, June 8, at Gemstone Park, 6145 Sapphire Point Blvd., for food, fun and festivities!

In 2009, Castle Rock Water became part of the Water Infrastructure and Supply Efficiency (WISE) Partnership with 10 South Metro organizations to import renewable water from Denver and Aurora. Sharing the costs and resources of more than 60 miles of pipes, a new water treatment plant and storage tank, renewable water is now being imported, ensuring a strong water future for Castle Rock.

For additional information,
 visit CRgov.com/water.

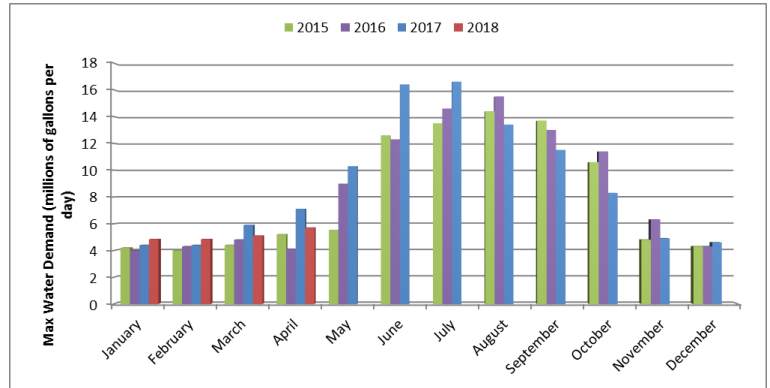


2018 Water Demands

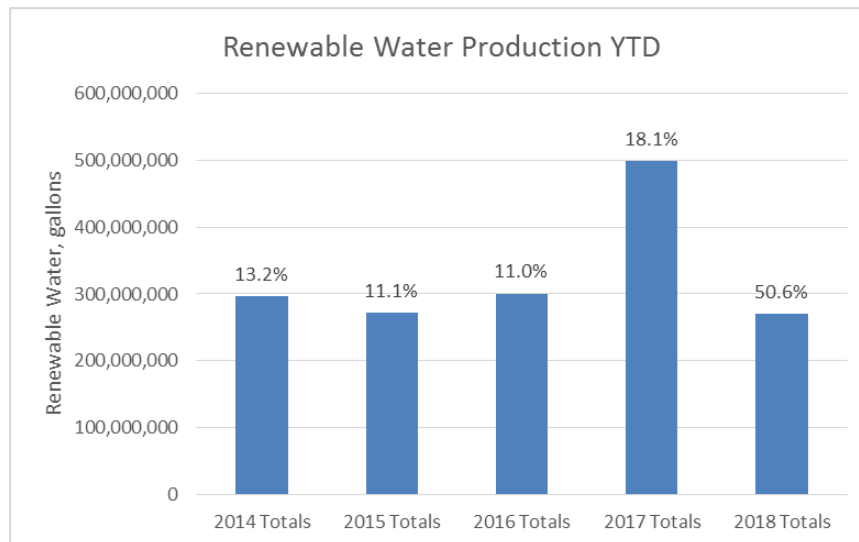
By: Lauren Tyner, Water Resources Program Analyst

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 April was 5.7 million gallons per day (MGD) which was 3% greater than the 5-year average maximum daily demand for the month. Summer time 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 April was 152.1 million gallons (MG), which was about an 18.3% increase from the March 2018 total of 128.6 MG, and a 5.8% decrease from the April 2017 demand of 161.5 MG.

The CR-1 diversion produced an average of 1.9 MGD for the month of April. The Town's thirteen alluvial wells and CR-1 produced a total of 79.9 MG of renewable water during April, which represents 51.5% of the total water supply for the month (155 MG or 477 acre-feet) and 50.6% of the annual water supply (534 MG or 1,638 acre-feet). The total renewable water produced since the opening of the PCWPF has surpassed 1,814 MG, which represents 14.4% of the Town's total water supply since the alluvial wells began pumping in May 2013.



Renewable supplies are those water sources that are replenished by precipitation (think of our alluvial wells or CR-1) whereas reusable supplies are those waters that are either from the Denver Basin (deep wells) or imported supplies (such as WISE) that can be used over and over, to extinction. The average reusable supplies used by Castle Rock for 2018 through April is 64.2% with 76.2% of available reusable supplies being used in the month of April. WISE water deliveries officially began during the month of April. Although we only received water for two days throughout the month, we received over 0.5MG which is 3.2% of the overall supply for the month.



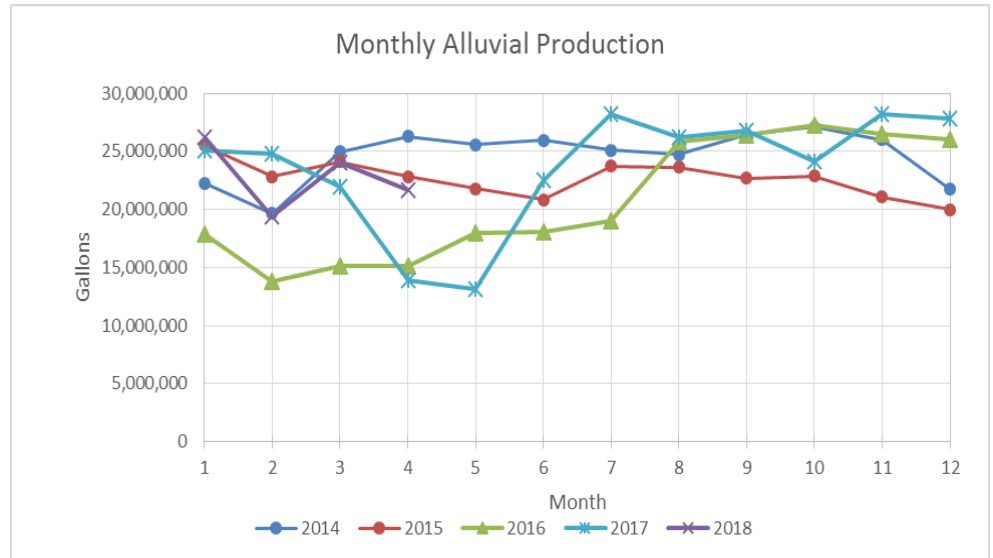
**2018 renewable production will vary as demand increases and additional sources are brought online.*

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

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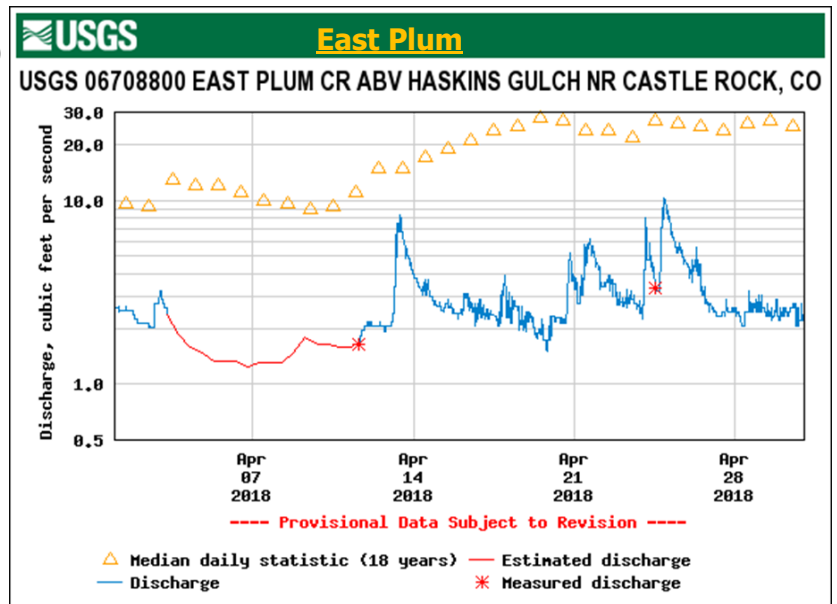
Water Demands, continued

The following graph (right) shows the monthly production of the Town's alluvial well system. The production from the alluvial wells in April 2018 was 22 MG, which is less than other April's and the second half of 2017. Lower production combined with rising water levels indicates that the wells are due for a cleaning. Well rehabilitation is scheduled for this fall.



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 1 and 10 cubic feet per second (cfs) during the month of April, with flows averaging around 1.8 cfs for the first half of the month and numerous precipitation events in the second half of the month causing spikes up to 10.3 cfs. During April 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.

According to the U.S. Drought Monitor from USDA, Douglas County is considered to be in a moderate drought. The NRCS Colorado SNOTEL report for May 2, 2018 shows the snow water equivalent (SWE) for the South Platte River Basin is at 77% of median. In April, Town Council approved a Town of Castle Rock Drought Management Plan. This 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 April was 3.4, well above the 1.1 trigger level, which is good.





Plan Review Update

By Tina Close, Plan Review Engineer

Castle Rock Water reviewed 102 applications (see below) this month which compares to 70 during the same time period in 2017. The average assigned due date by Development Services was five days, and Castle Rock Water completed the reviews in an average of six days.

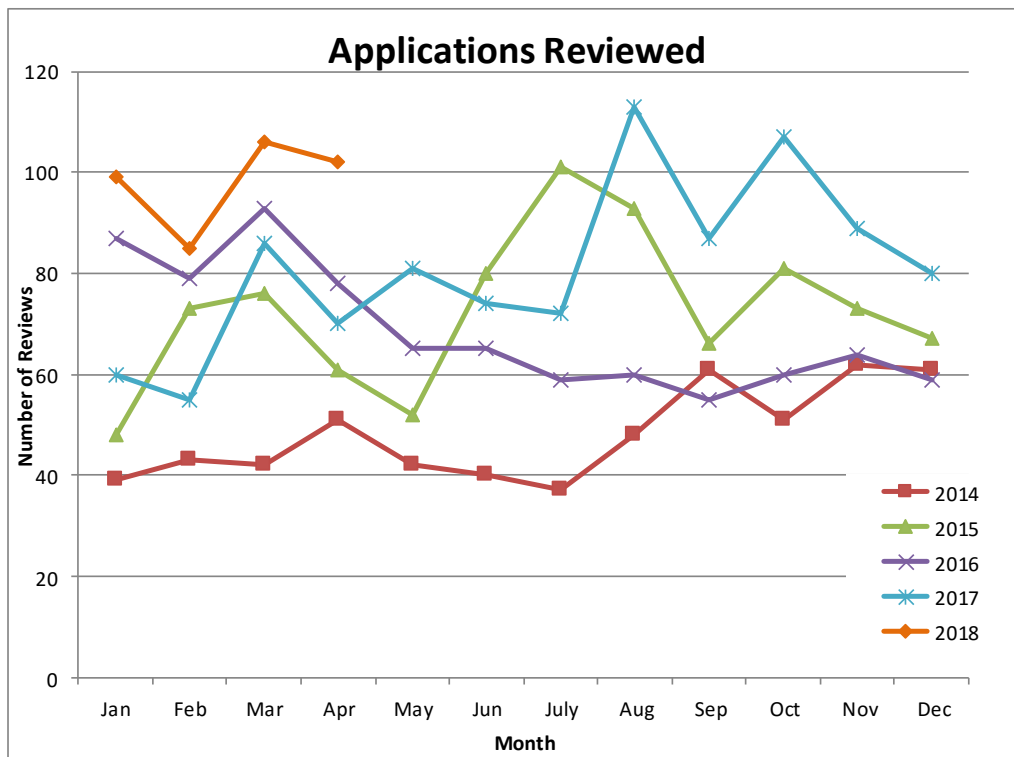
- 12 Agreements
- 2 Use by Special Reviews
- 7 Field Change Orders
- 16 Grading, Erosion, and Sediment Control (GESC) Plans
- 1 Miscellaneous
- 4 County Referrals
- 6 Plats
- 4 Preliminary Project Applications
- 21 Construction Drawings
- 18 Site Development Plans
- 8 Technical Criteria Variances

The applications reviewed consisted of:

- 46 1st submittals
- 25 2nd submittals
- 15 3rd submittals
- 16 Special reviews
- 29 Completed late*
- 73 Completed on-time as scheduled

In addition, Castle Rock Water completed 38 building permit reviews and associated system development fees.

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.



**Welcome to our
Team!**



Matthew Anderson
Utility Locator

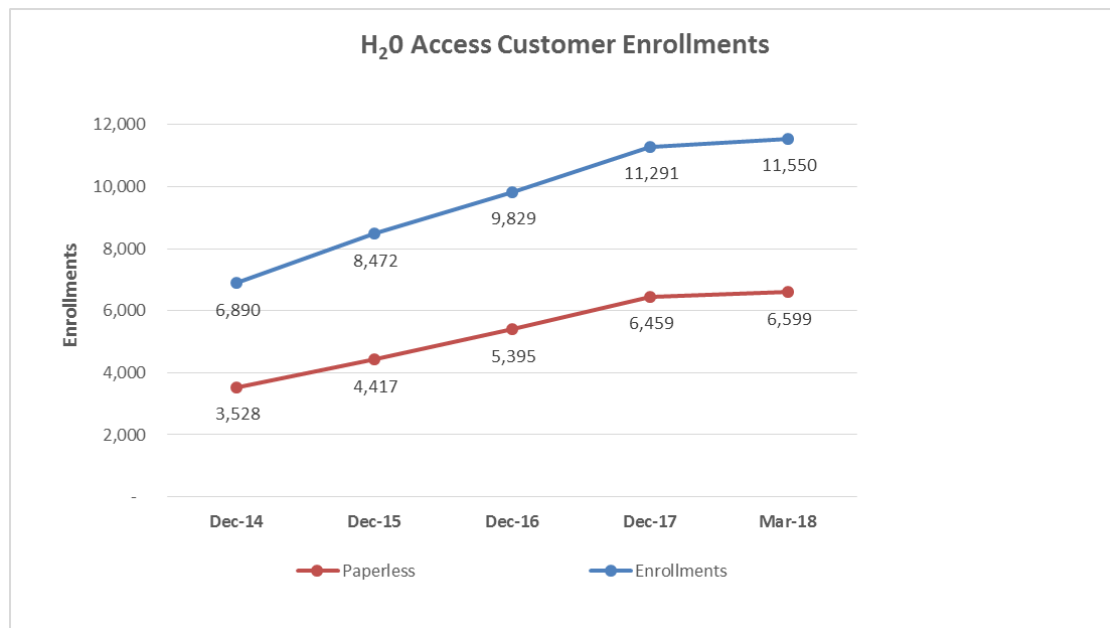


Grant Garvin
Wastewater Operator I

Customer Statistics

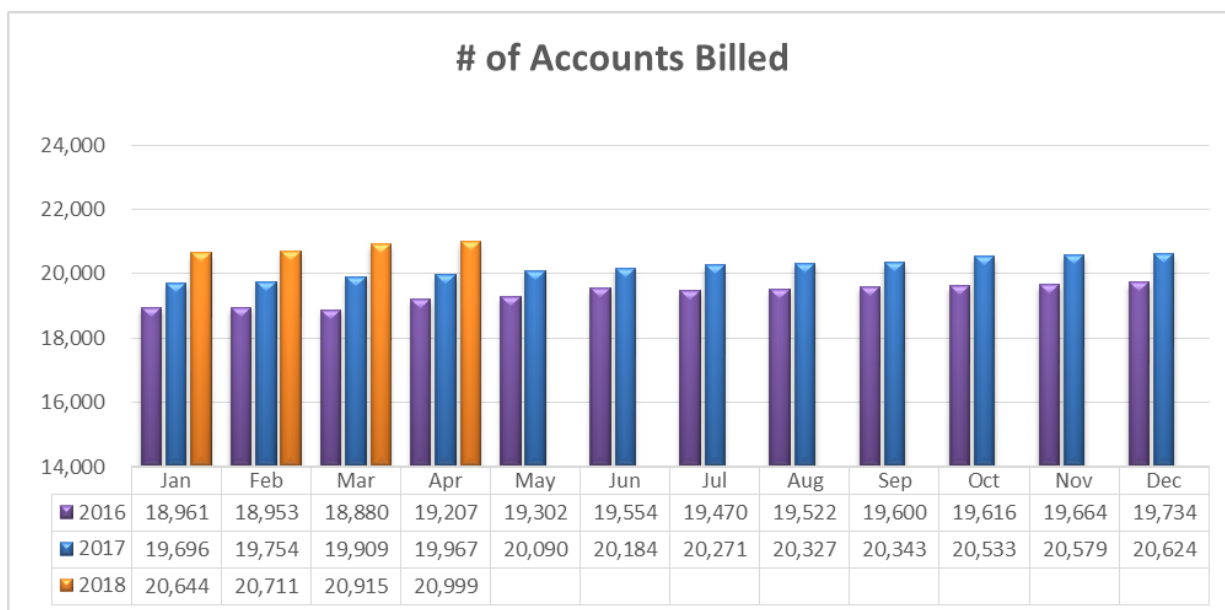
By: Anne Glassman, Business Solutions Manager

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.



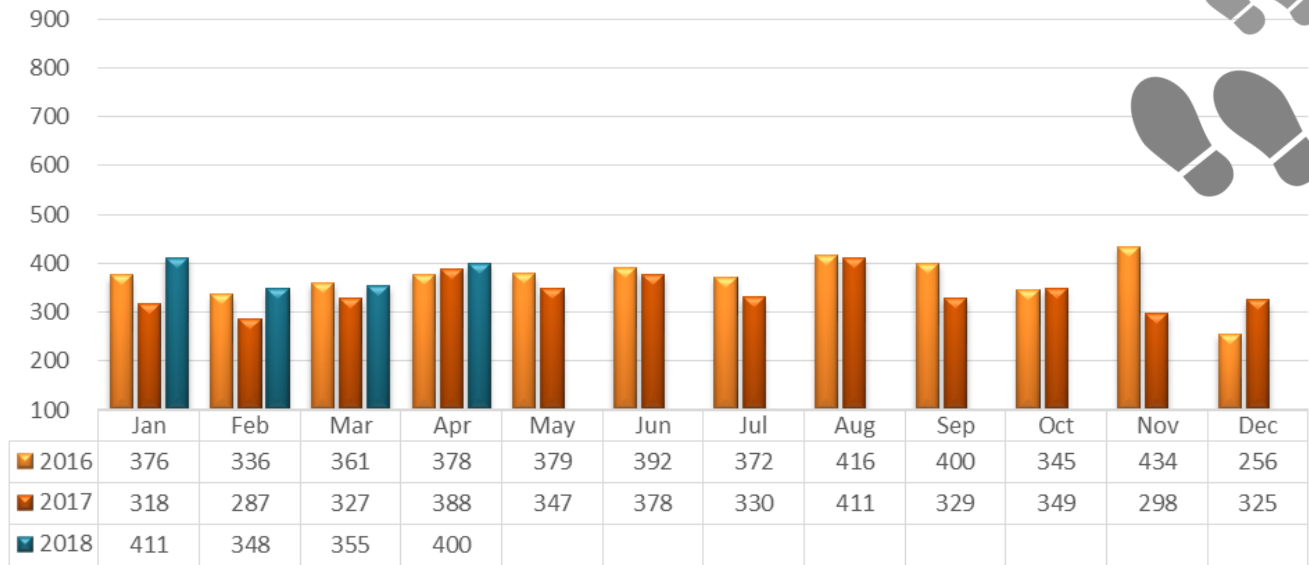
Updated quarterly - Data reported quarter ending 3/2018

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



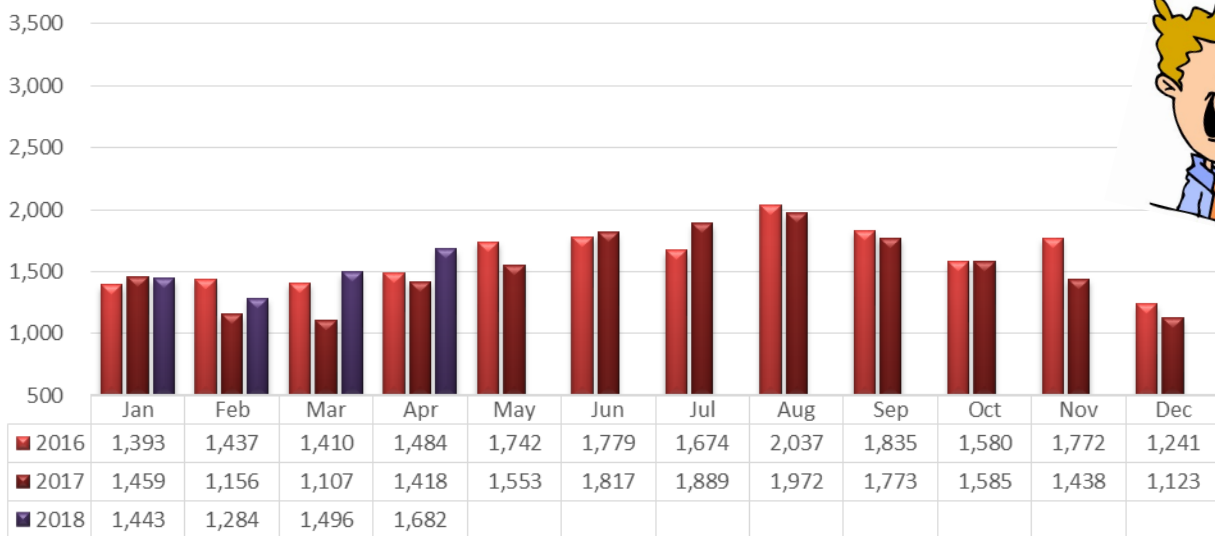
The number of accounts billed continues to increase year over year due to new residential and commercial growth.

Walk-In Customers



Walk-in customers are fairly consistent with this same time in the previous years.

Customer Phone Calls



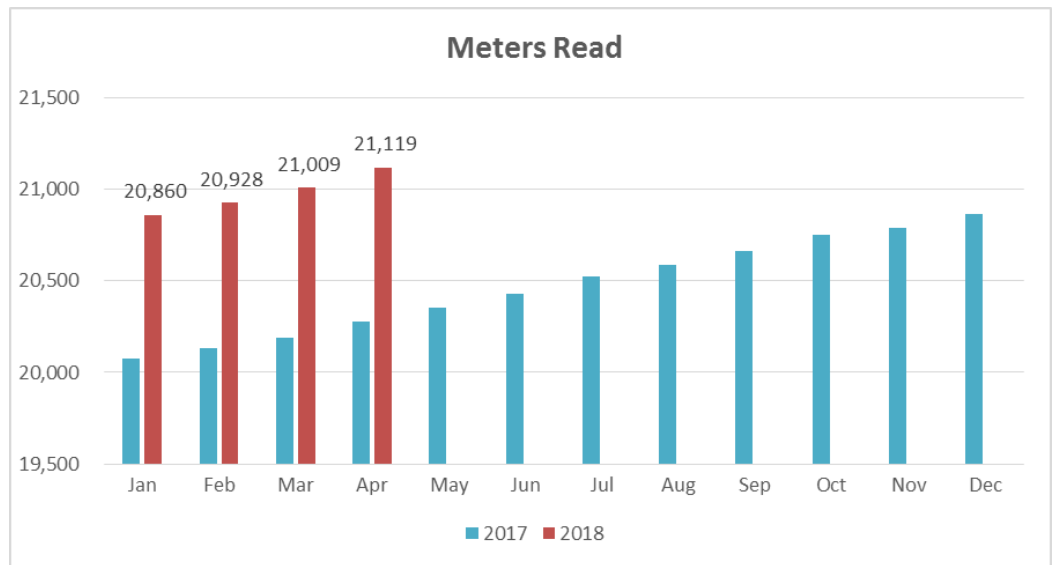
Customer phone calls are higher in April than in March due to the start up of irrigation and general water conservation calls.

METERS



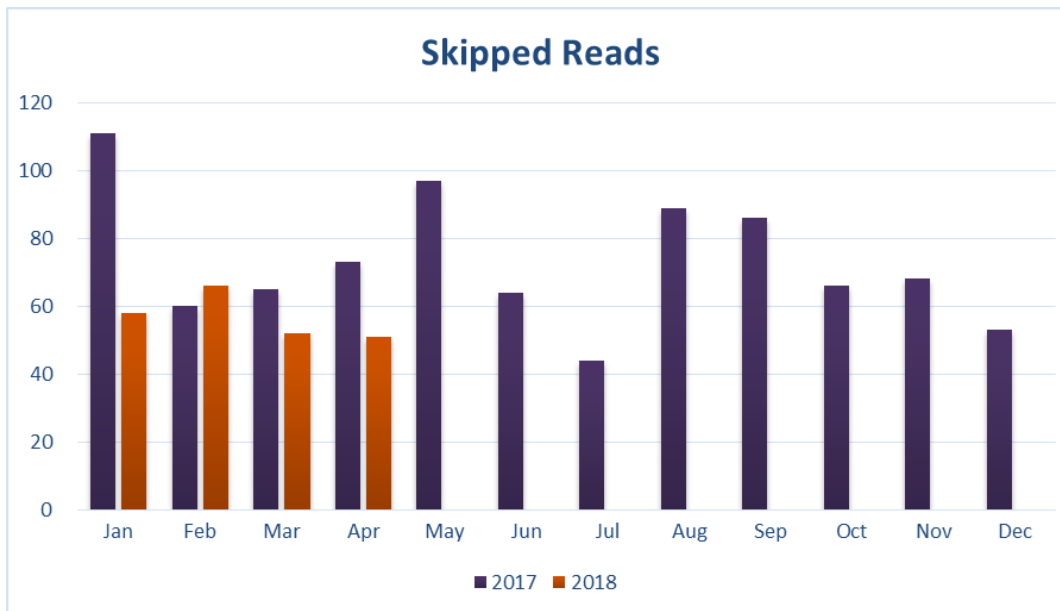
Meter Sets

Month-to-Date 87
Year-to-date 333



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

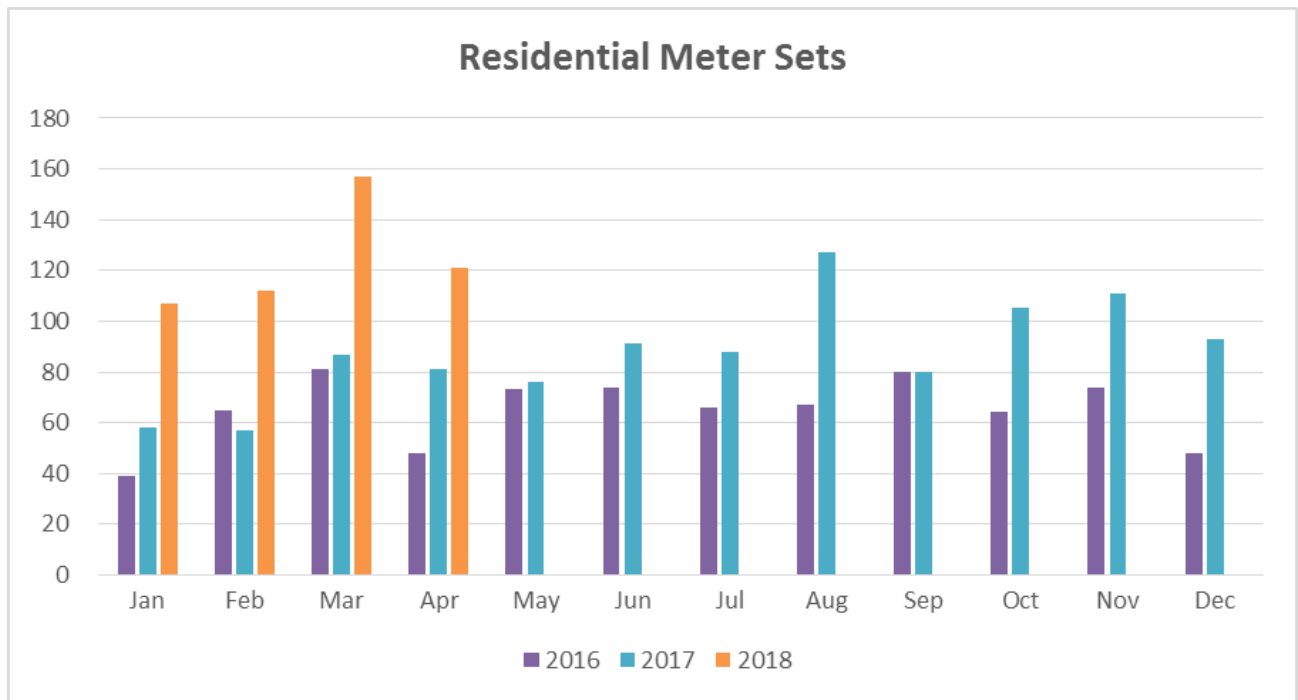
Skipped Reads



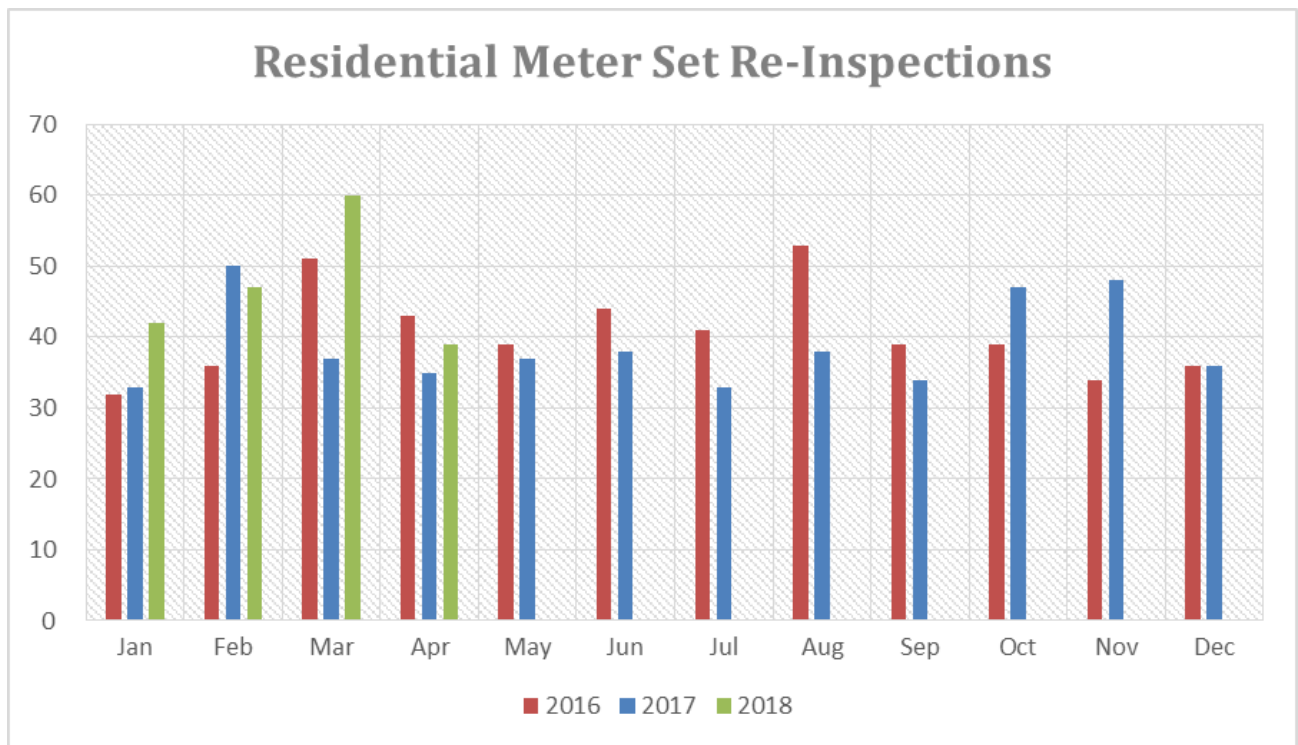
The American Water Works Association (AWWA) standard for skipped reads is 2 percent, so at 0.24 percent in April, we still continue to stay well below the industry average. This is a result of continued maintenance and repair efforts on meter infrastructure.

WHY IS THIS IMPORTANT?

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.



Residential meter sets continue to remain higher than last year due to new commercial and residential development.



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



STORMWATER UPDATE

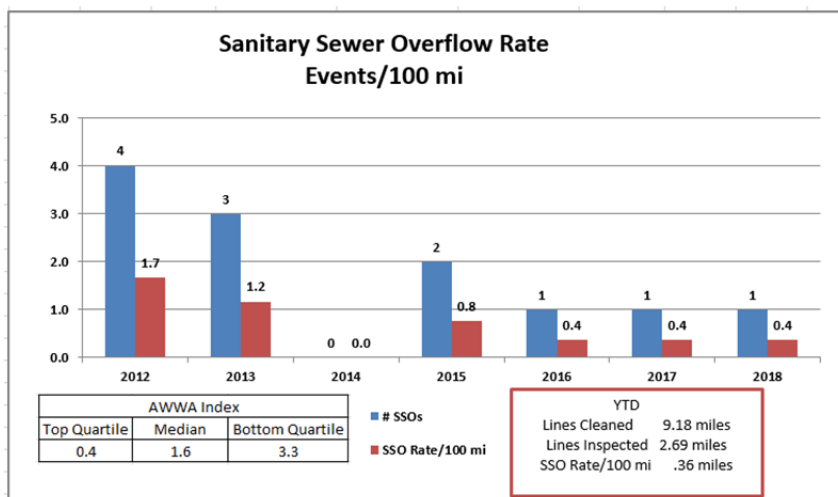
Our team of four “storm troopers” maintains over 138 miles of pipe and drainageways, 110 detention ponds and 4,439 inlets as well as completes special projects designed to improve water quality.



The Stormwater Team worked on the outfall at Festival Park which will allow the runoff to flow properly in the channel and reduce erosion.

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 for the year. There were no sanitary sewer issues in April.



How do we avoid overflows?

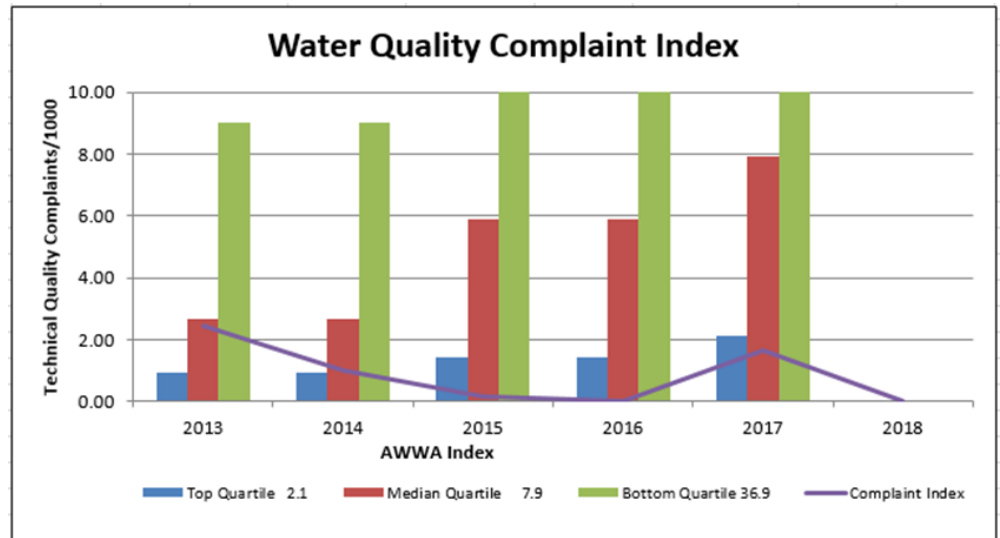
Our team runs a camera through the sewer mains to look for problems. When problems are identified, they are cleared with a high pressure water jet.

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



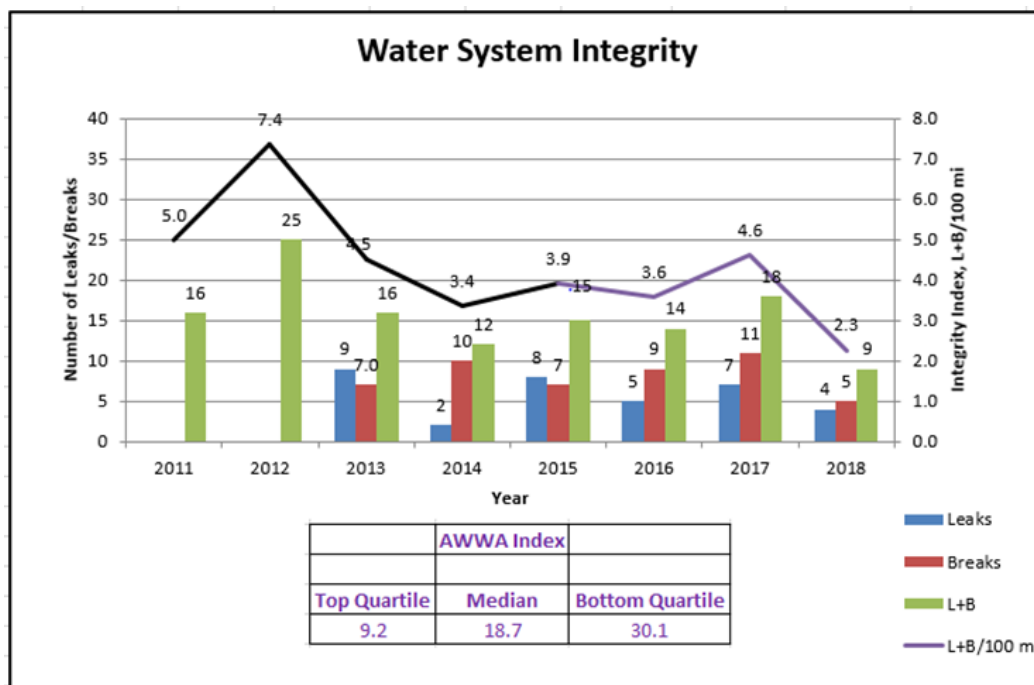
Water Quality Complaints

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. There were no water quality complaints in April 2018.



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

Water System Integrity



As the Water System Integrity chart indicates we have consistently remained in the top quartile based on American Water Works Association benchmarking since 2011. There were two water system integrity issues in April.



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

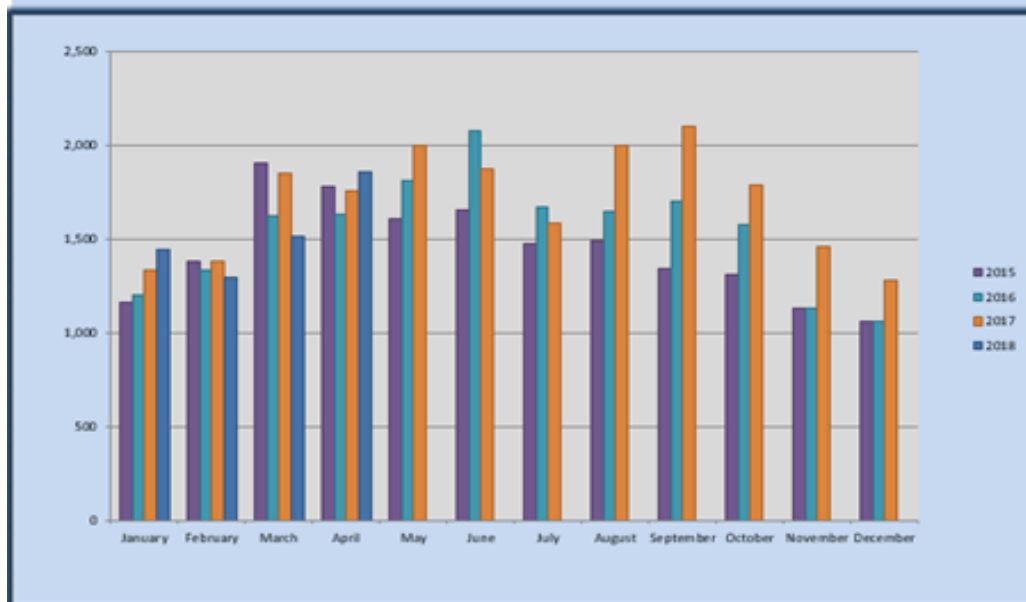
ANNUAL UTILITY LOCATES

	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	1,442			
February	521	485	538	1,094	1,093	1,383	1,334	1,378	1,293			
March	660	552	818	1,437	1,349	1,906	1,625	1,851	1,514			
April	838	681	1,025	1,482	1,552	1,784	1,631	1,760	1,856			
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	2,102				
October	715	688	1,155	1,501	1,376	1,314	1,579	1,792				
November	536	518	1,041	1,072	886	1,134	1,131	1,460				
December	415	405	925	1,005	1,043	1,063	1,059	1,277				
Totals	8,545	7,539	11,097	15,702	15,731	17,323	18,469	20,411	6,105			



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

3 Year Locate Trend



APRIL 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 ten internal water pressure customer issues in April.

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 April

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 distribution system issues in April. One involved a service line leak in The Meadows. One house was affected for less than four hours. The other was an equipment failure in a pressure reducing valve (PRV) vault in the Liberty Village area. Water service was disrupted for a short time while the valve was isolated and repaired.