

**MARCH 2018**



# Mayor's Conservation Challenge

The Mayor officially pronounced April as Water Efficiency Awareness Month. One of the key activities that we will be promoting as part of Water Efficiency Awareness Month is the Mayor's Conservation Challenge. If you live in Castle Rock (or have a computer and job in Castle Rock), join us in the Mayor's Conservation Challenge by pledging to conserve our natural resources. The pledge will be happening April 1-30 and only takes one minute to complete. There are over \$50,000 in prizes including \$5,000 toward your home utilities.

Last year, residents from over 4,800 cities in all 50 U.S. states pledged to reduce their annual consumption of freshwater by 2.2 billion gallons, reduce waste sent to landfills by 52 million pounds, and prevent more than 114,000 pounds of hazardous waste from entering our watersheds. Plus, every city gets ranked nationally by the number of pledges they get. We've made it in the top 10 for the past two years we have participated!



**CRconserve.com/WaterPledge**

**Visit [CRconserve.com/WaterPledge](http://CRconserve.com/WaterPledge) to pledge  
and help us reach #1**

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## **OUR VISION**

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



## Water Use Management Plan

The Town of Castle Rock, through the implementation of the Water Use Management Plan (WUMP), is committed to the wise development and efficient use of water resources. The water use management program is designed as a demand management tool to control peak demand, and operates in concert with the Landscape and Irrigation Performance Standards and Criteria Manual, and the Water Efficiency Master Plan to encourage wise use of a finite resource.

The Town of Castle Rock has used mandatory water demand management for landscape irrigation since 1985. Peak season demands are managed through an alternating irrigation schedule.

The Plan addresses:

- Identification of regular days and hours for landscape irrigation during designated peak demand months
- The need for alternative schedules due to various hardships and/or irrigation system limitations, including special watering circumstances, such as hand watering
- Enforcement of water use management strategies by issuance of warnings, surcharges and ultimately the potential for discontinuance of water service.
- Appeals and variance issues.

Town Council recently approved the 2018 program, and below is a list of significant changes:

- Five-year expiration of the Water Wiser exemption (see below for more details)
- Non-residential customer watering schedule further defined
- Non-residential customers water violation surcharges increased
- Water waste violation enforcement throughout the year
- Irrigation exemptions changed from 30 to 21 days for sod; and from 45 to 30 days for seed

For more information about this and other water plans, visit [CRgov.com/waterplans](http://CRgov.com/waterplans).

## Water Wiser Expiration

With potentially 20 to 75 percent water wasted through inefficient irrigation and poor water management, these workshops show how to improve the efficiency of your sprinkler system, detect water waste, and better understand your landscape watering needs. Completion of this workshop earns you a “Water Wiser” designation and exempts you from the every-third-day watering schedule. There is no charge to attend this workshop; however, the designation expires after five years at which time the course must be retaken to maintain the designation.

For a complete list and to register for upcoming workshops, visit [CRconserve.com/waterwiser](http://CRconserve.com/waterwiser).

## Rebate and Customer Incentives

Town Council also approved the 2018 rebate and customer incentives program. Each of these offer ways for you to be more efficient. Applications for all of these rebates are currently being accepted. The rebates include:

- Residential Smartscape renovations
- Smart irrigation controller retrofit
- Rotary nozzles retrofit
- NEW in 2018 is the Smartscape renovation program for non-residential customers

To apply for any of these rebates, visit [CRconserve.com/rebates](http://CRconserve.com/rebates)

# 2018 Water Demands

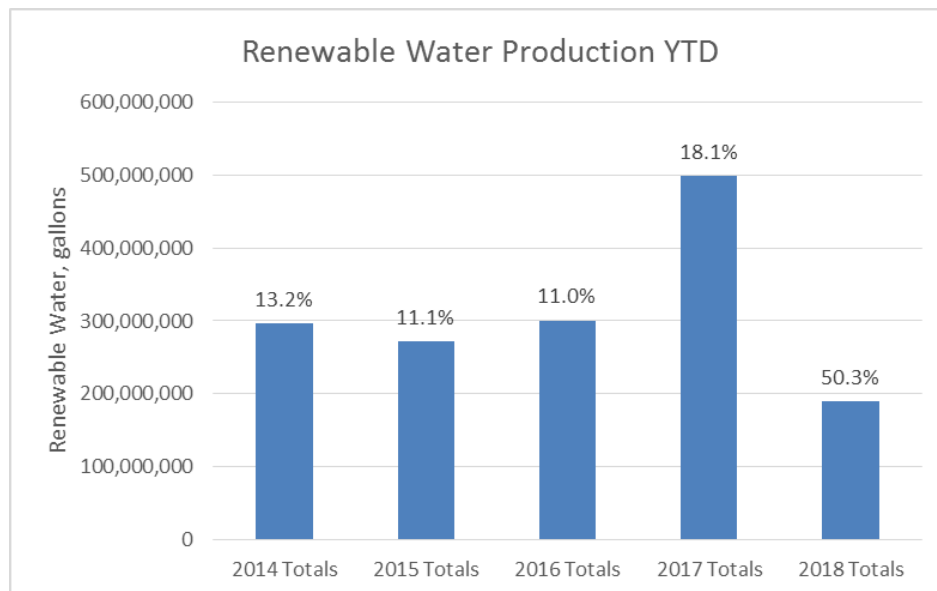
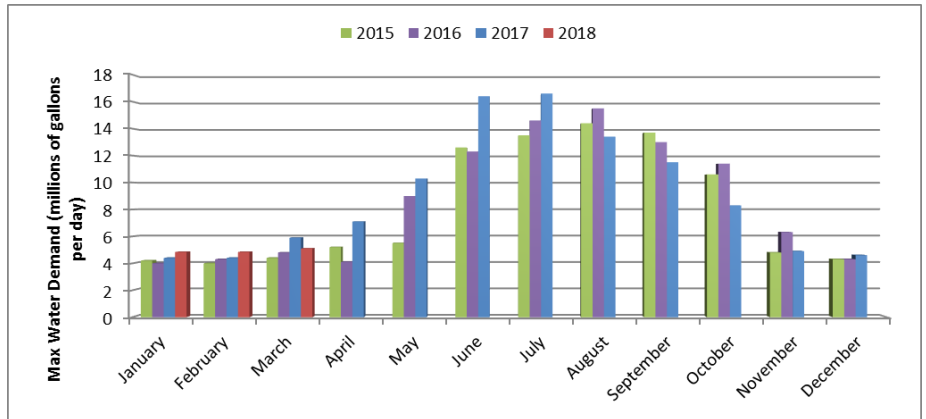
By: Lauren Tyner, Water Resources Program Analyst

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 March was 5.1 million gallons per day (MGD) which equals 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 March was 128.6 million gallons (MG), which was about a 2.4% increase from the February 2018 total of 125.6 MG, and a 4.3% decrease from the March 2017 demand of 134.5 MG.

The CR-1 diversion produced an average of 1.6 MGD for the month of March. The Town's thirteen alluvial wells and CR-1 produced a total of 72.7 MG of renewable water during March, which represents 52.7% of the total water supply for the month (138 MG or 423 acre-feet) and 50.3% of the annual water supply (379 MG or 1,162 acre-feet).

The total renewable water produced since the opening of the PCWPF has surpassed 1,734 MG, which represents 13.9% 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 (like we will be getting with WISE) that can be used over and over, to extinction. The average reusable supplies used by Castle Rock for 2018 through March is 60.0% with 67.5% of available reusable supplies being used in the month of March.



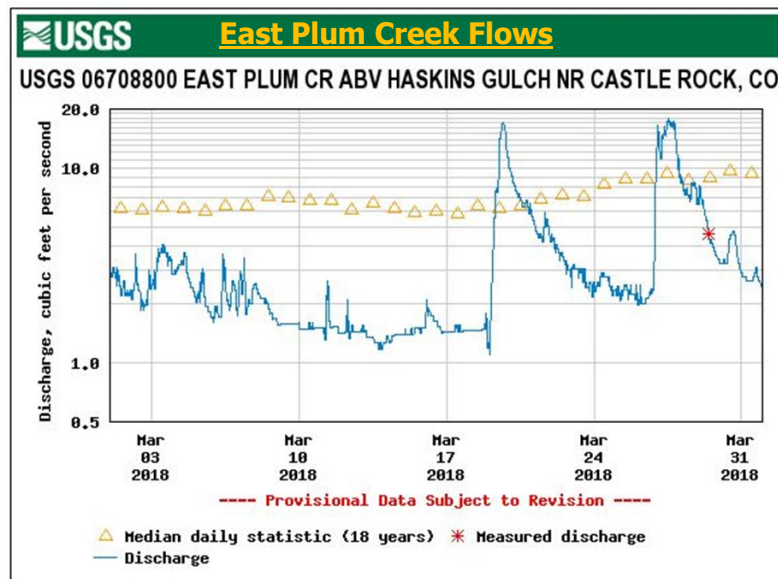
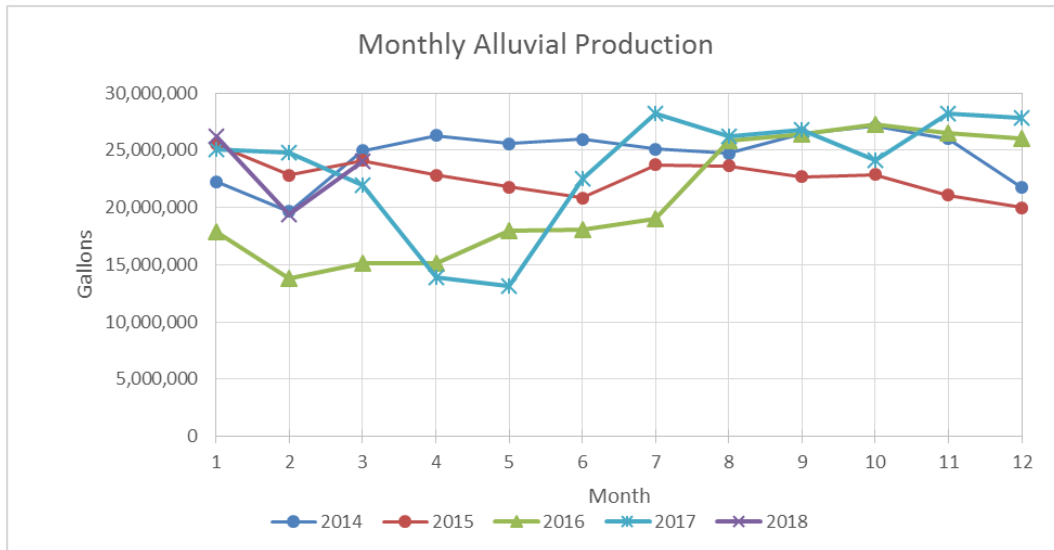
\*2018 renewable production will vary as demand increases and additional sources are brought online.

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

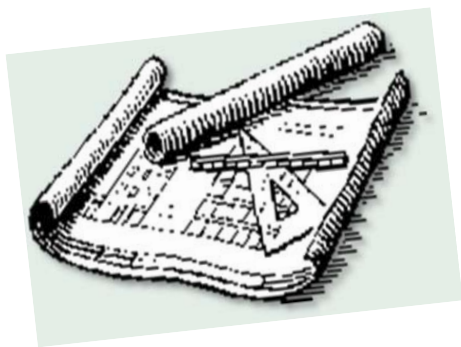
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## Water Demands, continued

The following graph shows the monthly production of the Town's alluvial well system. The production from the alluvial wells in March 2018 was 24 MG, which has been similar to what we have experienced in previous years.



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 19 cubic feet per second (cfs) during the month of March, with flows averaging around 2 cfs for the first half of the month and two precipitation events in the second half of the month causing spikes up to 19 cfs. During March 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 April 3, 2018 shows the snow water equivalent (SWE) for the South Platte River Basin is at 84% of median.



# Plan Review Update

*By Tina Close, Plan Review Engineer*

Castle Rock Water reviewed 106 applications (see below) this month which compares to 86 during the same time period in 2017. The average assigned due date by Development Services was six days, and Castle Rock Water completed the reviews in an average of six days.

- 4 Agreements
- 3 Planned Development Plans
- 10 Field Change Orders
- 17 Grading, Erosion, and Sediment Control (GESC) Plans
- 3 Miscellaneous
- 4 County Referrals
- 4 Plats
- 5 Preliminary Project Applications
- 21 Construction Drawings
- 26 Site Development Plans
- 8 Technical Criteria Variances
- 1 Floodplain Development Plan

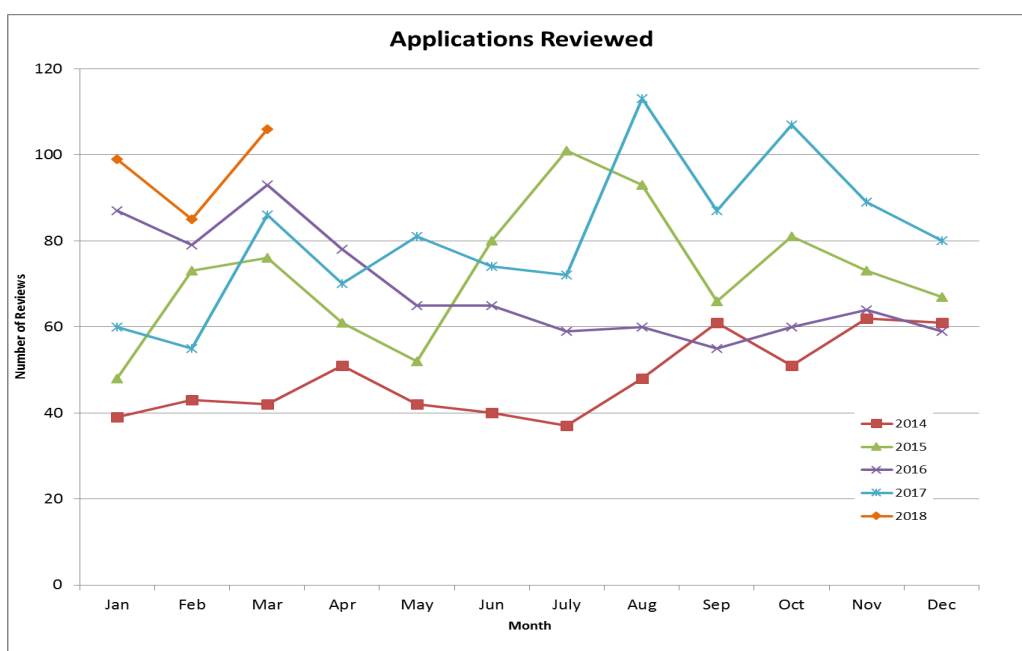
The applications reviewed consisted of:

- 56 1<sup>st</sup> submittals
- 21 2<sup>nd</sup> submittals
- 14 3<sup>rd</sup> submittals
- 15 Special reviews
- 49 Completed late\*
- 82 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 63 building permit reviews and associated system development fees.

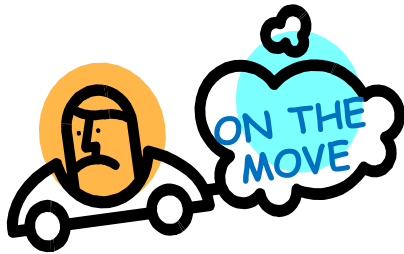
Castle Rock Water provides plan review for all water, wastewater and stormwater projects submitted through the development review process. The line graph (below) shows development activity data (by month and year) since 2014.



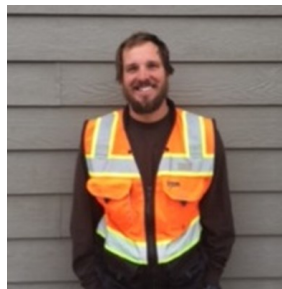




**Linda Gould**  
Water Conservation  
Technician



***Congratulations on your recent promotion!***



**Jonathon Cornwell**  
Distribution Operator II

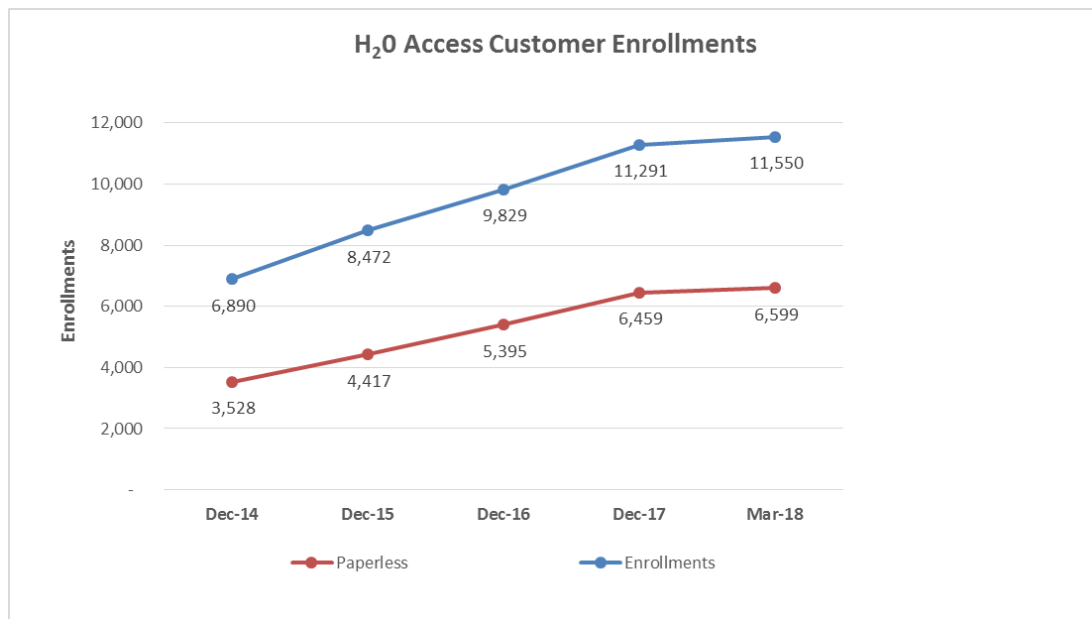


**Lauren Tyner**  
Water Resources  
Program Analyst

## Customer Statistics

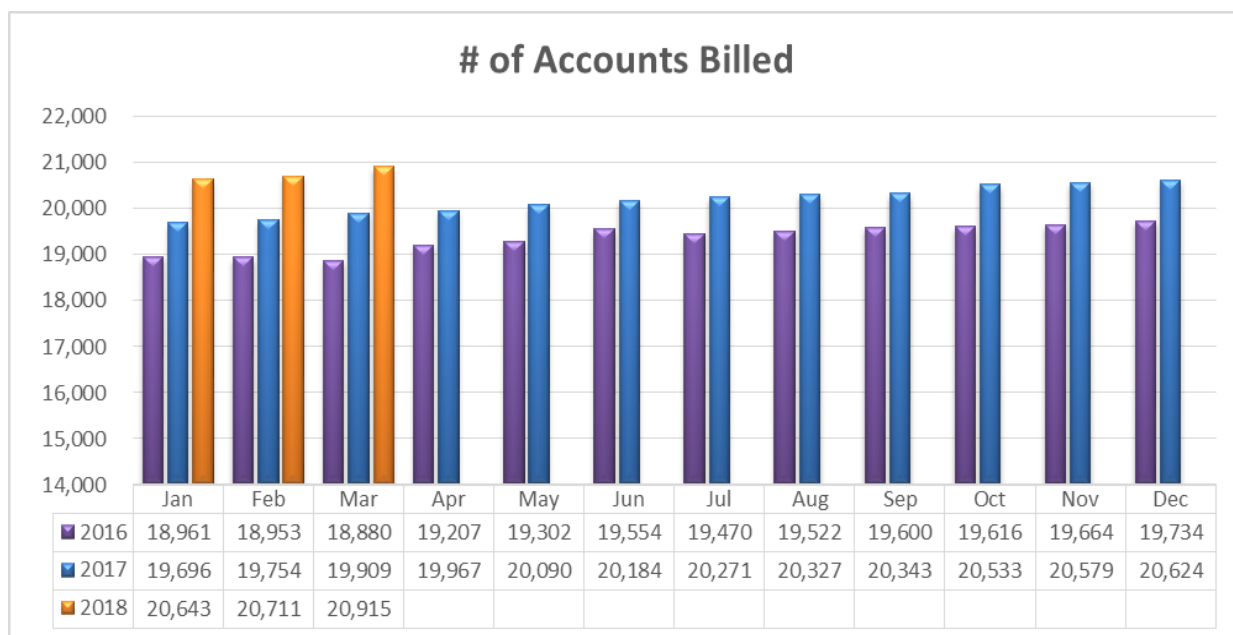
By: Anne Glassman, Business Solutions Manager

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

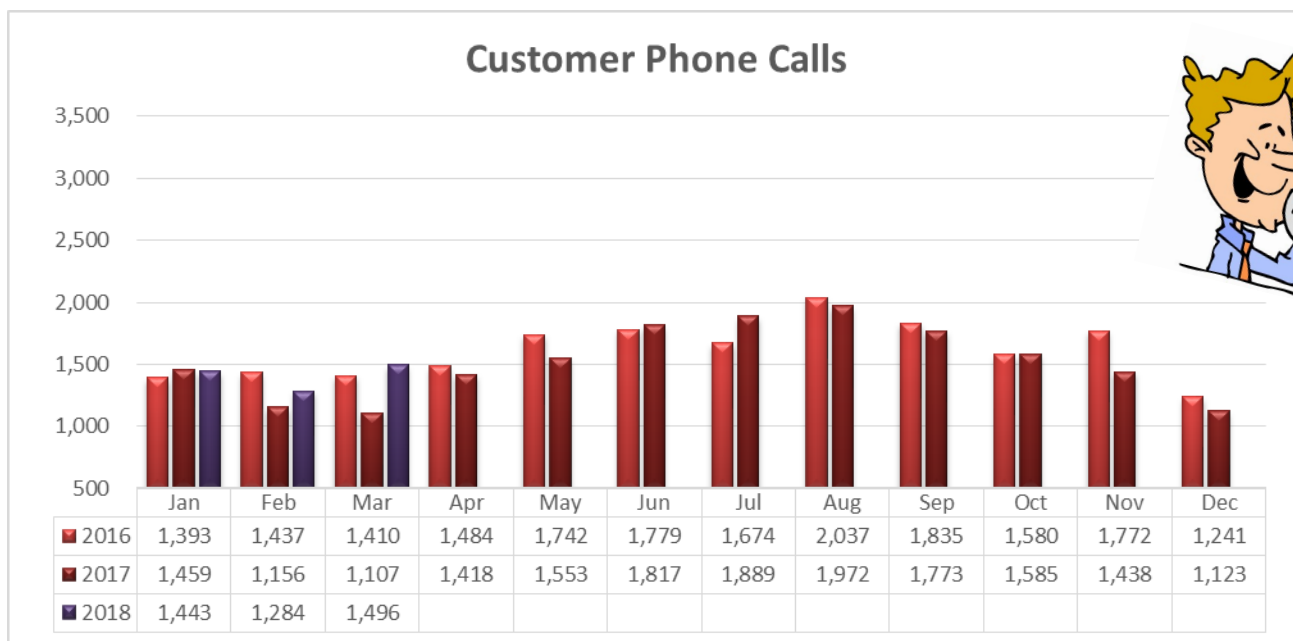
The number of customers enrolled in paperless billing has remained steady over the last several months.



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



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



Customer phone calls are fairly consistent with this same time in the previous years.

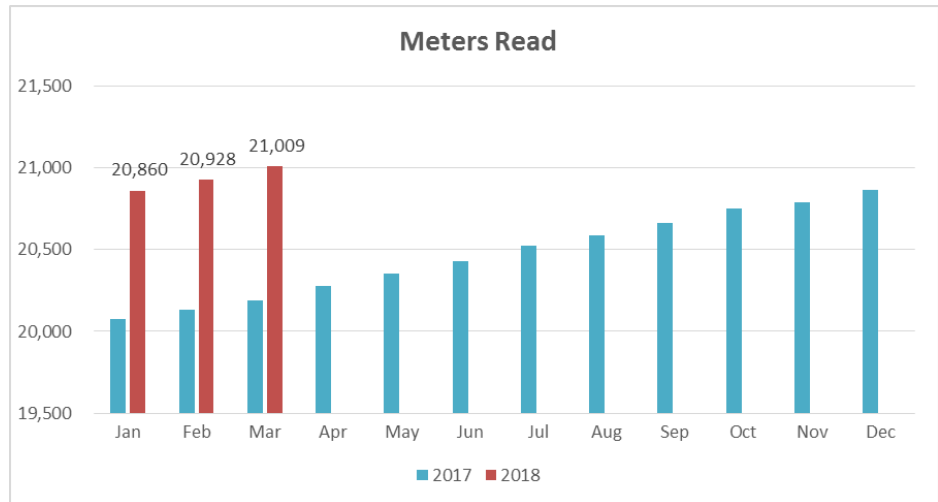


# METERS



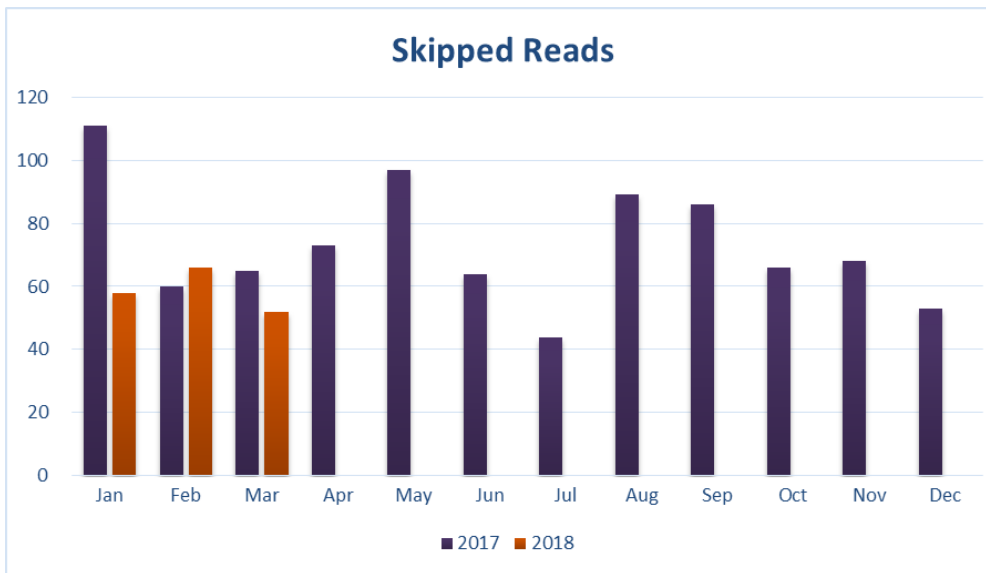
## Meter Sets

Month-to-Date 106  
Year-to-date 246



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

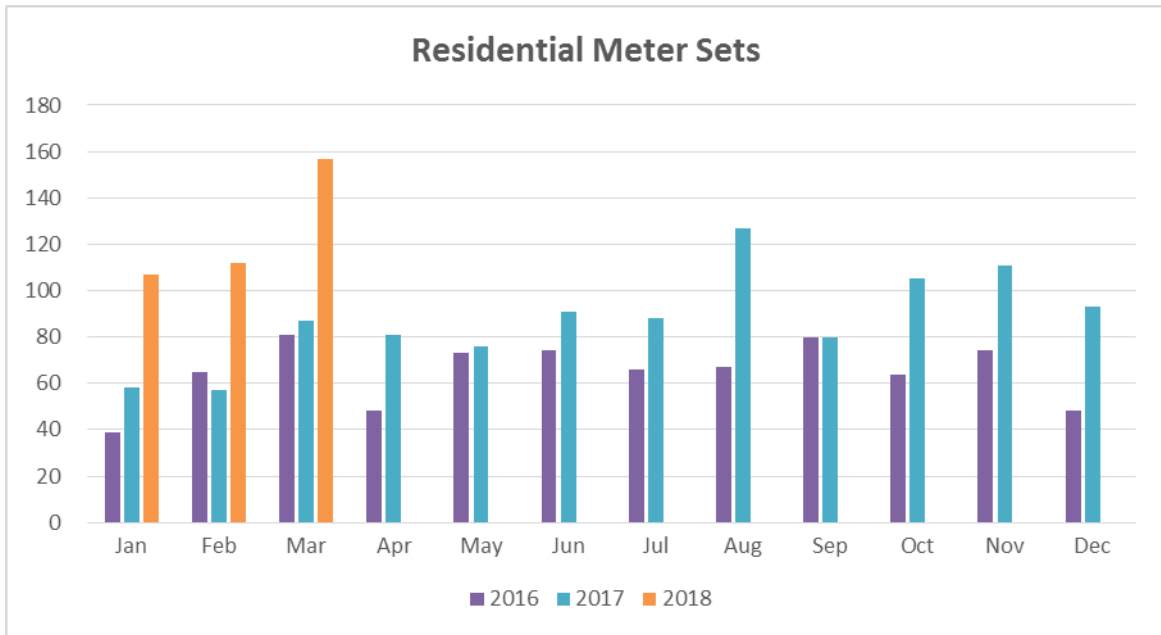
## Skipped Reads



The American Water Works Association (AWWA) standard for skipped reads is 2 percent, so at 0.25 percent in March, we still continue to stay well below the industry average. This is a result of continued maintenance and repair efforts on meter infrastructure.

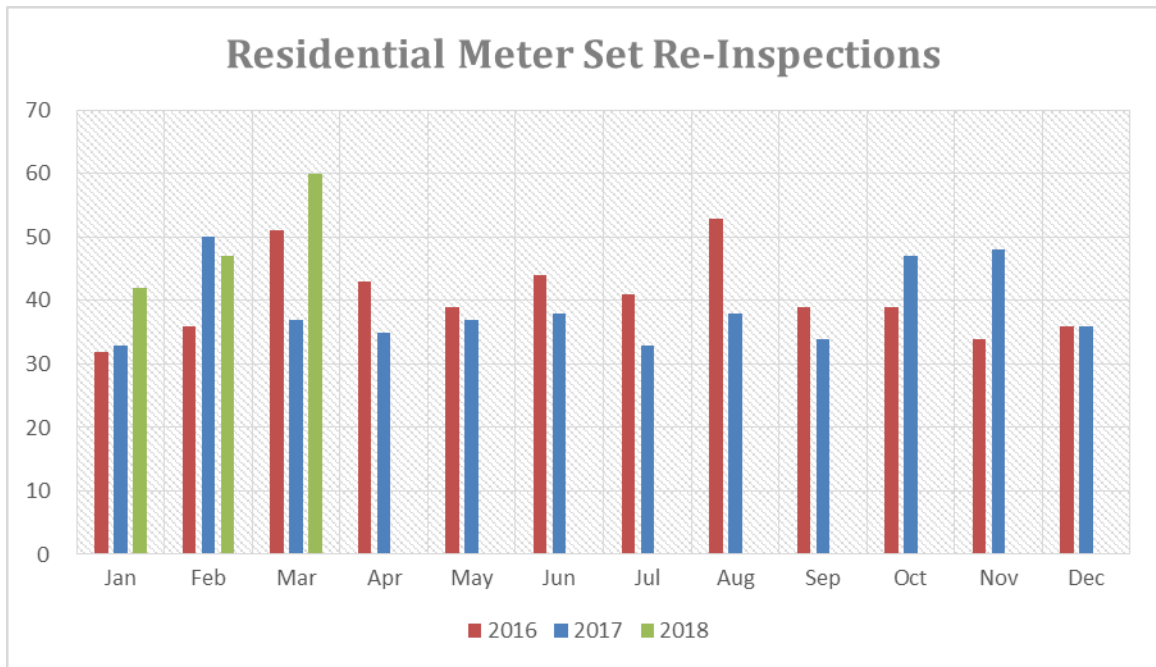
## WHY IS THIS IMPORTANT?

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 are significantly higher than last year at this time due to the increased number of meters that have been released for new residential development.

**This is a record high for number of residential meters set in one month - MARCH.**



Residential meter set re-inspections are up due to the overall increase in the number of meters being released and the meters set.



## STORMWATER UPDATE

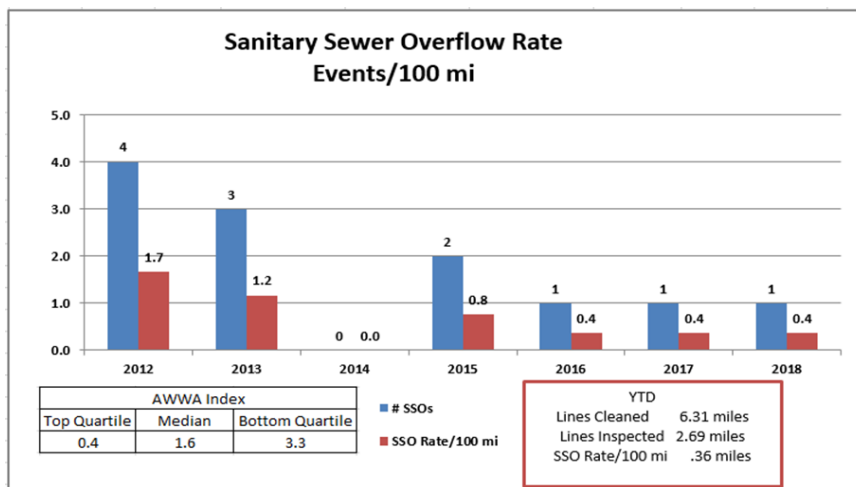
*Our team of four “storm troopers” maintains over 138 miles of pipe and drainageways, 110 detention ponds and 4,439 inlets as well as completes special projects designed to improve water quality.*



*Castle Rock Water is setting up a pilot system at the Plum Creek diversion to test new water treatment processes. The Stormwater Team improved the Plum Creek diversion access road by grading and adding culverts. This created a much safer roadway for staff and vendors who will access the recently acquired Plum Creek Diversion in Sedalia and created a road to allow set up of the pilot system.*

## 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 March.



### ***How do we avoid overflows?***

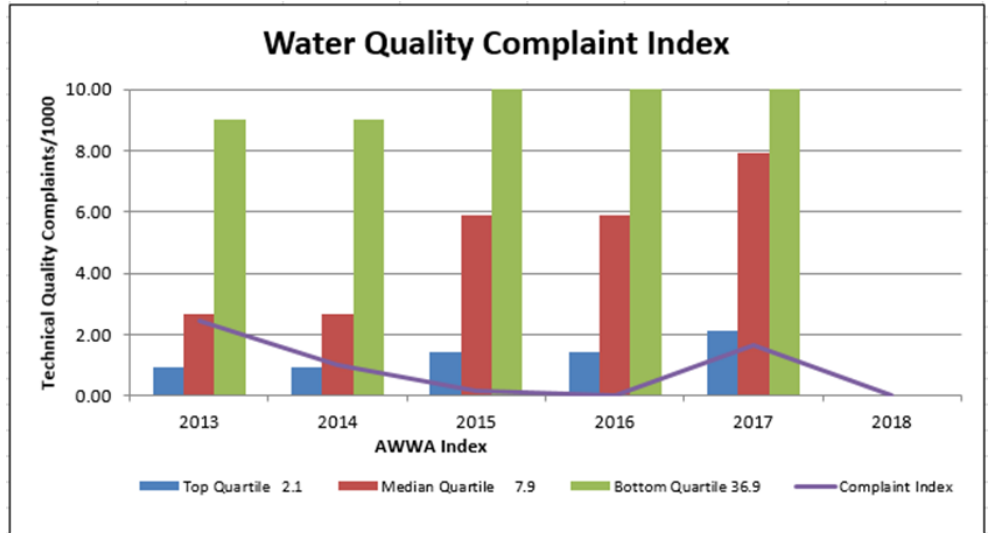
Our team runs a camera through the sewer mains to look for problems. When problems are identified, they are cleared with a high pressure water jet.

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



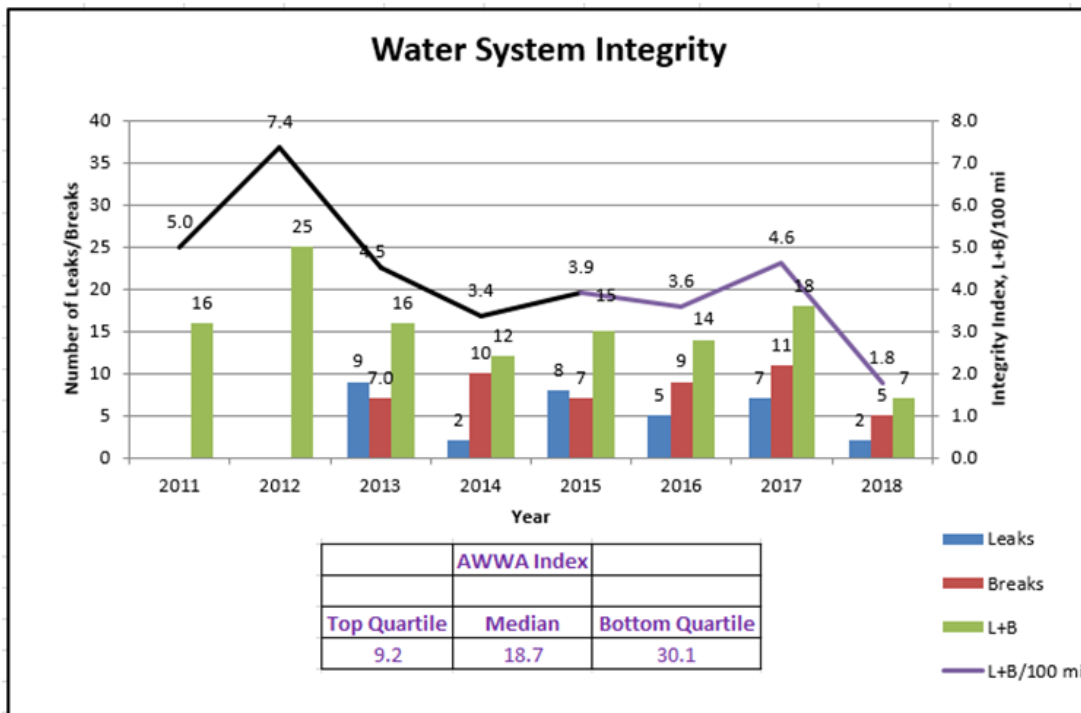
## Water Quality Complaints

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 March 2018.



For more information, view the current water quality report at [CRgov.com/waterqualityreport](http://CRgov.com/waterqualityreport).

## Water System Integrity



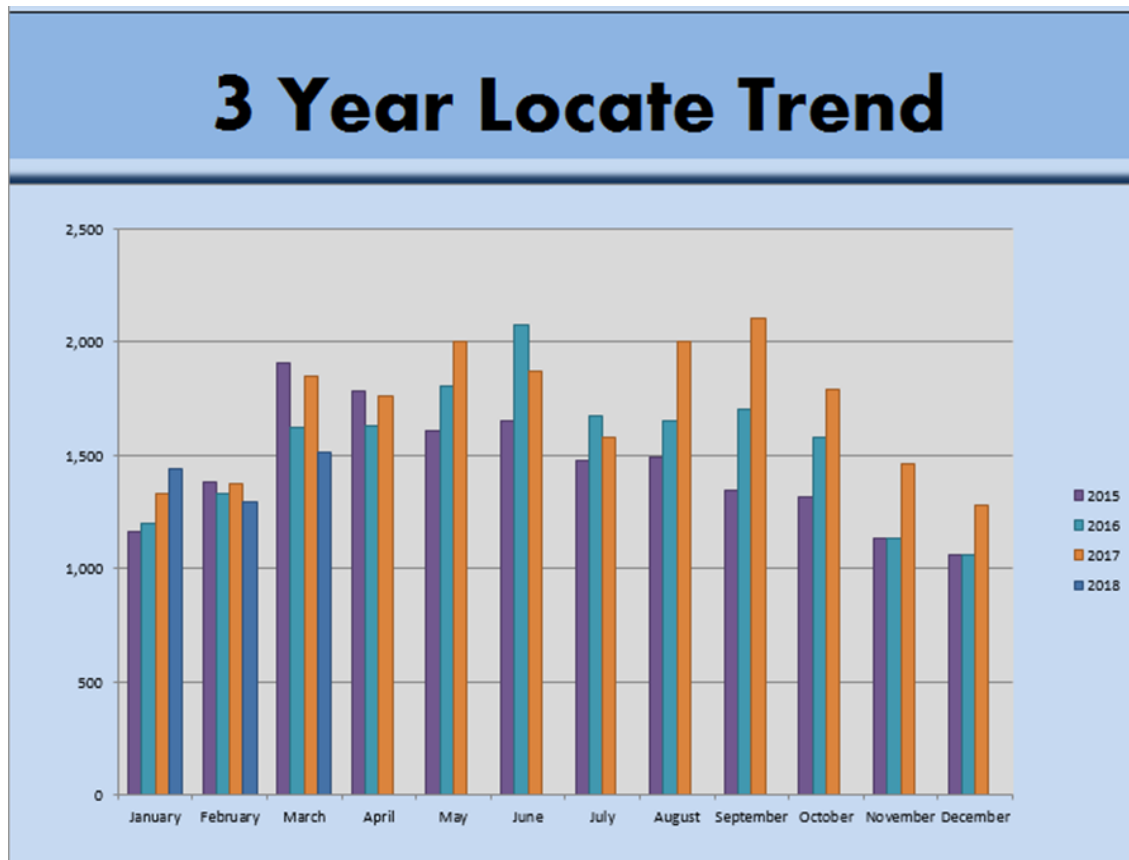
As the Water System Integrity chart indicates we have consistently remained in the top quartile based on American Water Works Association benchmarking since 2011. There were three water system integrity issues in March.



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				
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	866	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	4,249			



# MARCH 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 was one water pressure issue in March, but the pressure remained above 43 psi, so this will not be tracked for our AWWA accounting. Customers in the Diamond Ridge area noticed lower than normal pressures and investigation showed a valve problem near tank 11. The issue was resolved and resident pressures were back to normal within an hour.*

## **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 March.*

## **Drinking Water Supply Outages**

**<5% of our customers will experience water outages for one or more events totaling more than 30 hours/year.**

*There was one service line repair in The Meadows in March involving pinhole leaks in the copper pipe. The distribution team replaced the service line. Twenty houses were out of water less than five minutes, while the repair was made. The home with the leak was out of water for less than four hours.*

*Work on a water main project in The Meadows resulted in approximately 60 residents being without water for less than two hours while the issue was being investigated.*

*There were two water main breaks in the Plum Creek neighborhood. The first repair was completed overnight and the following day the second break was repaired. There were 51 residents with limited to no water pressure during the overnight repair.*