



Reuse Water Coming to Castle Rock

By: Sandi Aguilar, Customer Relations Program Manager

Reuse water involves producing safe drinking water from wastewater. Once water has been used in our homes and businesses, it flows to the Plum Creek Water Reclamation Authority (PCWRA) facility, where it is treated to regulatory standards and then released into East Plum Creek. Instead of allowing this water to go to other communities downstream, Castle Rock will recapture this water and transport it back to the Plum Creek Water Purification Facility (PCWPF), where it will go through advanced treatment to meet or surpass water purity standards. Reuse water will constitute about one-third of our Town's water supply and will be a part of our supply in 2020. Why am I telling you something you already know? Because you are part of the strategy to educate our customers on the safe, reliable and sustainable supply that reuse water provides. Castle Rock Water held an open house on April 13 in which we had about 75 residents attend. After talking to the water professionals and touring the plant, people were more confident with the treatment and the rationale of having this supply. We also saw this transformation at the 'postponed' open house that was originally held on Feb. 23. Not everyone got the notice that we were snowed out and about 75 people attended that open house too! The February event was preceded by several television news stories. Most everyone walked away understanding how reuse works. As an added treat at the April 13 event, attendees were able to taste wine made from reuse water, and it was enjoyed by everyone.



Reuse wine!



Pictures from the Open House



Our Vision

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

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 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.



March's Water Star Award recipient, Tim Lambert passes the award to Walt Schwarz, Project Manager (left to right). Walt has been with Castle Rock Water since 2001.

The 2019 Water Quality Report
is now available at
CRgov.com/waterqualityreport.



Promenade Water Line Connection Project

Construction started in April on a 228 foot-long, 42-inch bored casing pipe and over 1,200 feet of 24-inch waterline under the railroad and State Highway 85 near Promenade Parkway. The complete pipeline will be an extension of the Town of Castle Rock's water distribution system. Castle Rock Development Company and Dominion Water and Sanitation District are jointly funding the project. BT Construction is completing the bore portion of the project as a subcontractor to Reynolds Construction, who will complete the pipeline. The shared connection will deliver Dominion's WISE Water, which the Town, by agreement, wheels through the Town's water distribution system from the WISE pipeline in Castle Oaks. The point of connection to the Town and the 200 foot long pipeline will also serve as a third point of potable water connection and fire flow to the future Filing 19 development of Castle Rock Development Company.

This project includes the installation of 1,200 feet of 24-inch diameter ductile iron pipe, starting west of State Highway (SH) 85 and south of Castle Rock Parkway to the point of the 228-foot long bore under the railroad and SH85 to right of way near Promenade Parkway. Project Engineers secured license agreements and permits with the Union Pacific Railroad (UPRR) and Colorado Department of Transportation (CDOT). The pipeline will be able to convey up to 10 million gallons per day of potable water under a max day and fire flow condition. The bore portion of the project will be complete by June 1, 2019.



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 April was 6.5 million gallons per day (MGD) which was 14% greater 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 April was 151.9 million gallons (MG), which was about an 11% increase from the March 2019 total of 136.5 MG. There was no change from the previous year's April 2018 demand of 152.1 MG.

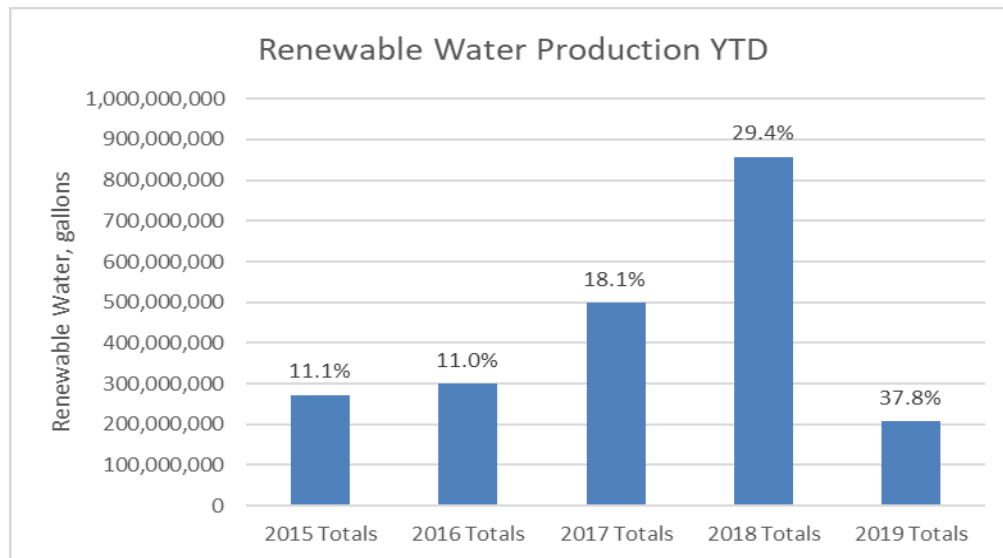
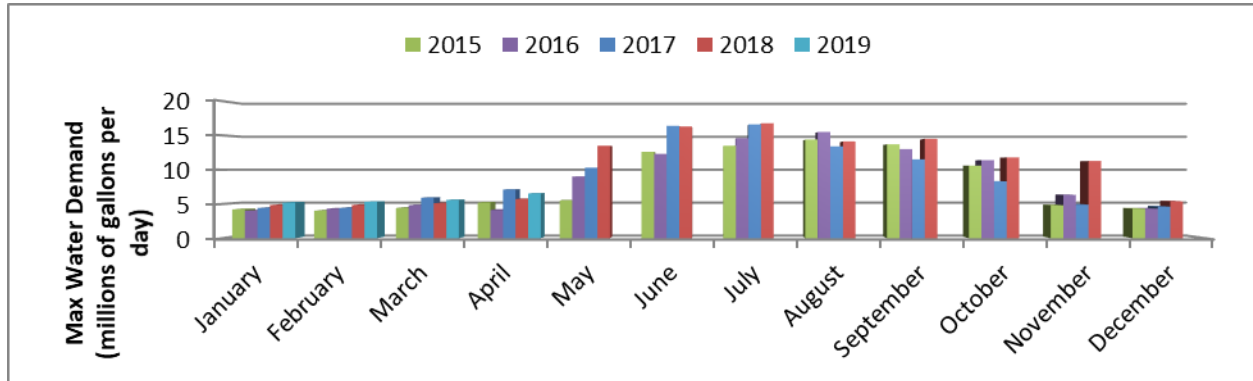
The CR-1 diversion produced an average of 1.18 MGD for the month of April. The Town's thirteen alluvial wells and CR-1 produced a total of 48.54 MG of renewable water. WISE water supplied an additional 21.3 MG of renewable water. In total, renewable supplies accounted for 43.2% of the total water supply for the month and 37.8% of the annual water supply (552 MG or 1,693 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 April was 17.6%.

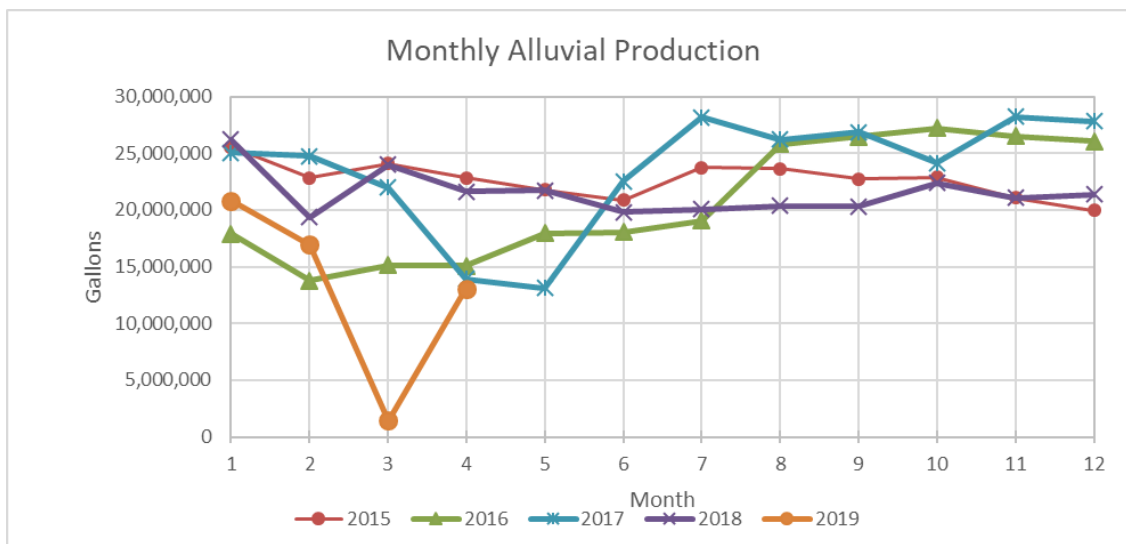
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Water Demands

By: Lauren Moore, Water Resources Program Analyst

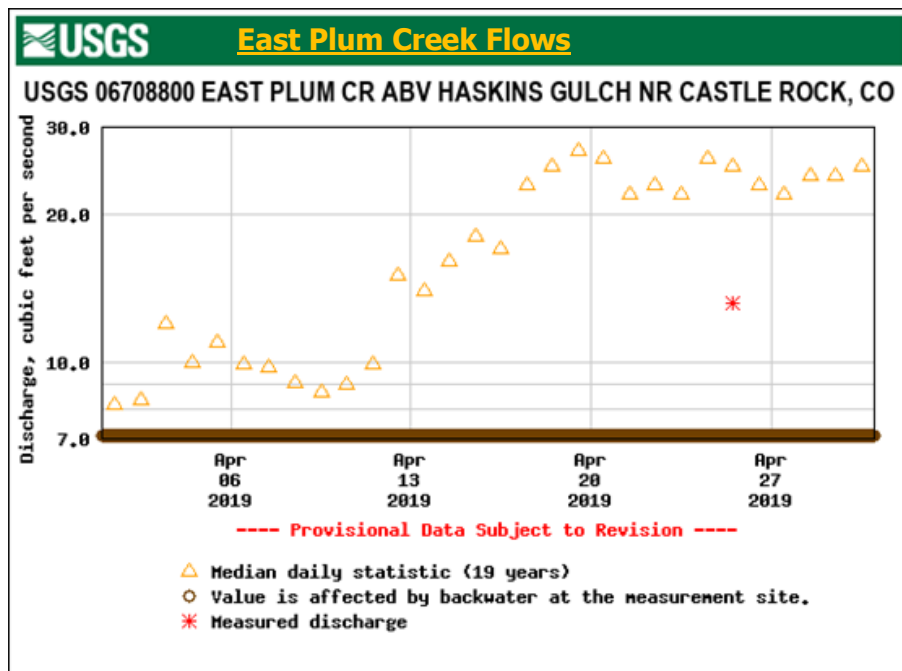


The following graph shows the monthly production of the Town's alluvial well system. The production from the alluvial wells in April 2019 was 13.1 MG, which is less than the second half of 2017 (when the last alluvial well rehab project was completed). Alluvial wells help to supply PCWPF. Six of the 13 alluvial wells are scheduled for rehabilitations this spring, which began in March.



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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. As the graph illustrates, data for the month is not available due to backwater at the measurement site. The U.S.G.S. is currently working on this issue. The one measured discharge during the end of the month was around 13.2 cubic feet per second (cfs), which is higher than max discharge of 10.5 cfs during April of last year, indicating the potential for a wetter than normal year.

There were active calls on the South Platte River in April. 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.

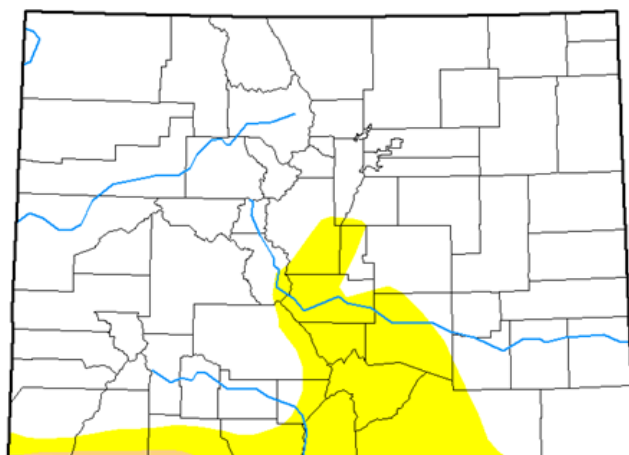
According to the U.S. Drought Monitor from USDA, the majority of Douglas County has been removed from drought classification, with only a small percentage of the southern county limits classified as experiencing Abnormally Dry conditions. There have been major improvements and removal of drought classification for roughly 95% Colorado, while 5% of the central and southern parts of Colorado are still experiencing Abnormally Dry to Moderate Drought. 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 April was 3.2, well above the 1.1 trigger level, which is considered "good."

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Water Demands, continued

U.S. Drought Monitor Colorado

April 30, 2019
(Released Thursday, May 2, 2019)
Valid 8 a.m. EDT



Intensity:

- 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.

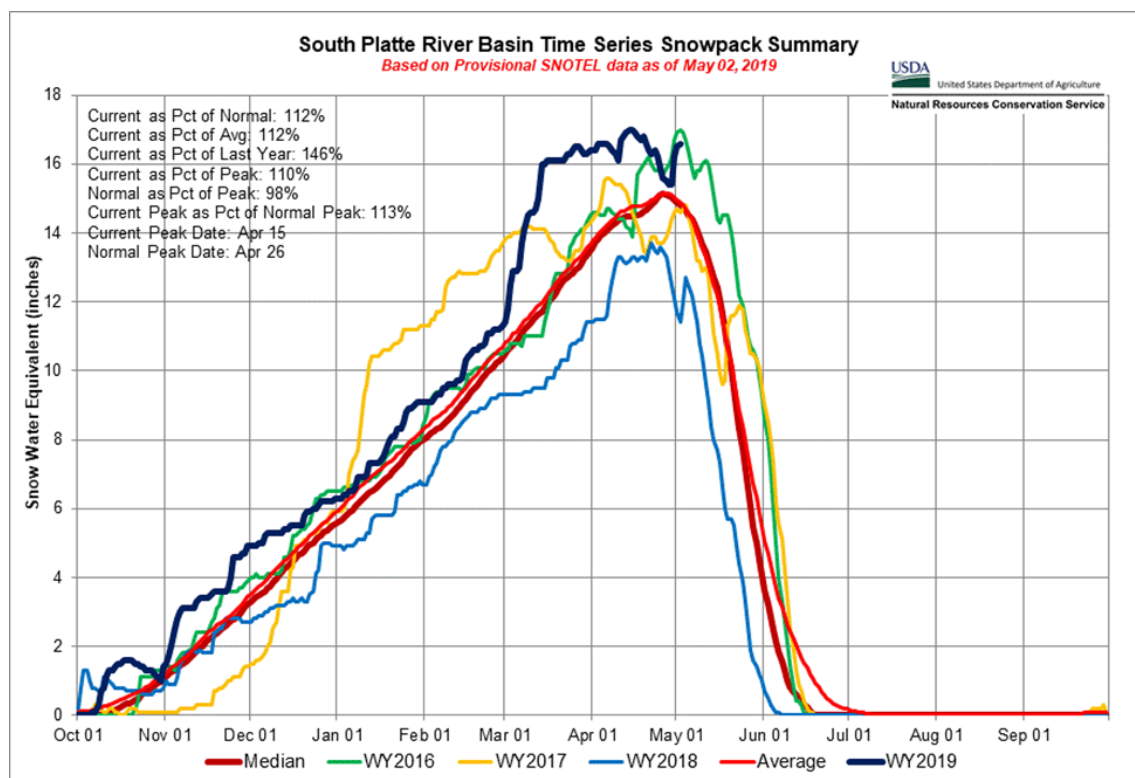
Author:

Brad Rippey
U.S. Department of Agriculture



<http://droughtmonitor.unl.edu/>

The NRCS Colorado SNOTEL report for May 2, 2019 shows the water year to date precipitation for the South Platte River Basin is at 115% of average and the snow water equivalent (SWE) is at 112% of median.

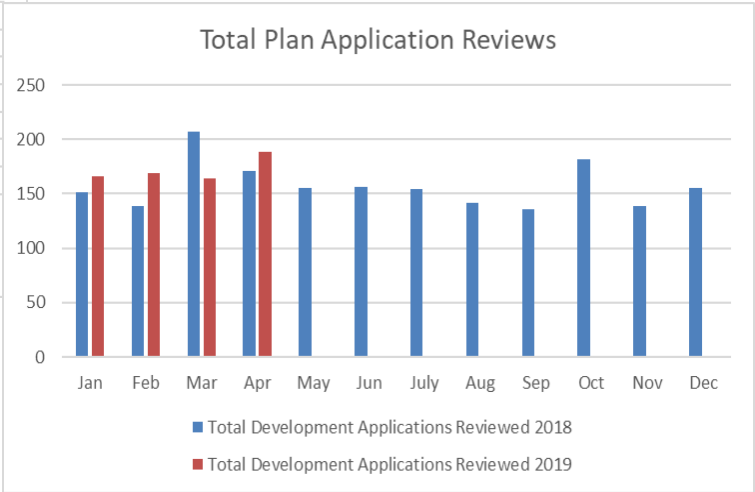
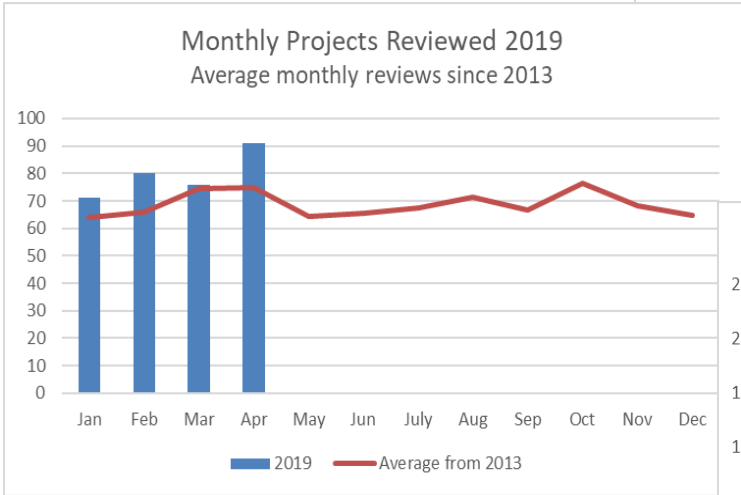
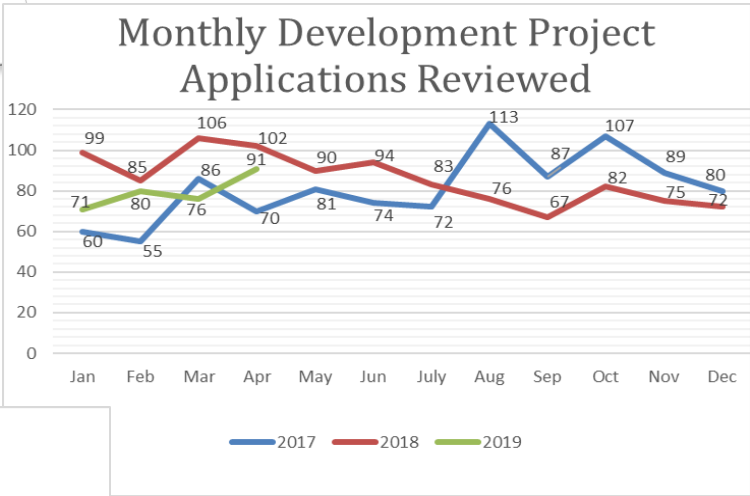


Plan Review Update



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.



The Plan Review Team completed 189 development application reviews, encompassing 91 projects for the month of April. This is in comparison to 172 development applications and 102 projects during the same month in 2018.

The average number of days assigned to review: 12.2 days

The average number of days to complete assigned reviews: 11.8 days

Reviews completed on-time	74%	Permits* reviewed on-time	97%
Reviews completed late:	26%	Permits* completed late:	3%

*Total number of permits reviewed were 59

Blue Zone Pump Station Improvements

Since 2018, Plant Maintenance staff completed or oversaw extensive improvements to the Blue Zone Pump Station, to increase the pump station's pumping capacity, extend the usable life of the existing pumping equipment, and improve the overall appearance and condition of the facility.

The Blue Zone Pump Station was originally built in 1986 as a pressure sustaining pump station to supply water from the Meadows water treatment plant to the Meadows distribution system. As the area grew over time, the station transitioned into a water transfer pump station, moving distribution water from Yellow Zone up to the Blue Zone. The pump station was originally configured to supply water using two high service pumps (1700 gpm each) and one light duty service pump (350 gpm). Over time, it became apparent that the light duty pump was no longer able to meet the higher pumping demands and needed to be upsized to match the production of the existing high service pumps.

The plant mechanic staff contracted with Water Technology Group to purchase and replace Pump 1 with a larger Aurora pump, electric motor, piping, and mounting hardware. They also contracted with Sun Valley Electric to replace Pump 1's circuit breaker and electrical conduits. The plant mechanics purchased and installed a new Mitsubishi Variable Frequency Drive, motor cables, and modified the pump control panel in-house.

In order to better protect the existing pumping equipment and correct an on-going high temperature problem at Blue Zone Pump Station, staff contracted with Westco Systems to install an HVAC system. Additionally, staff contracted with Water Technology Group to rebuild Pump 3's rotating assembly, which was badly cracked, worn, and failing.

Finally, to improve the overall look and condition of the pump station, staff contracted with Zenith Painting & Coatings to repaint the pump station floor with a three-part polymer coating. This included a moisture mitigating primer coat, followed by a color coat, and then a clear coat with polypropylene grit to enhance traction.

The recent improvements to the Blue Zone Pump Station will ensure the facility is able meet the Meadows pumping needs for the next ten to fifteen years. The total cost for the improvements was \$89,876.

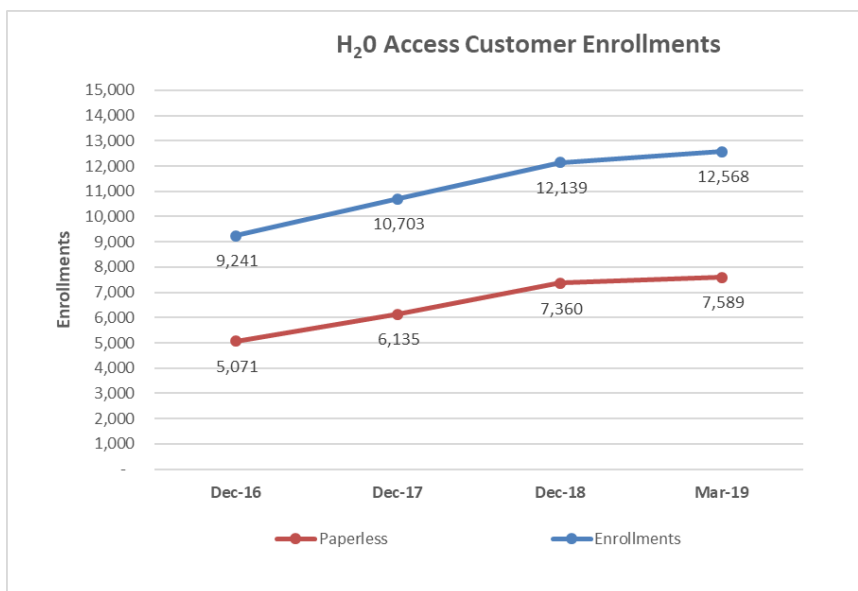


Photos of new equipment

Customer Statistics

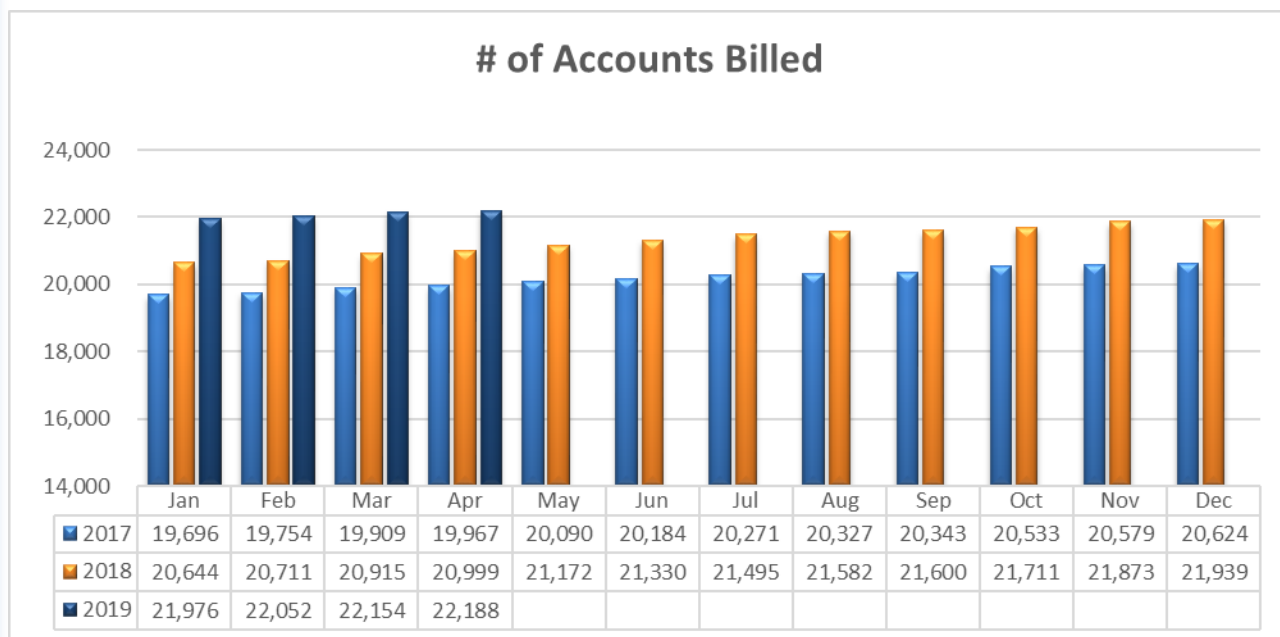
By: Anne Glassman, Business Solutions Manager

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 3/2019

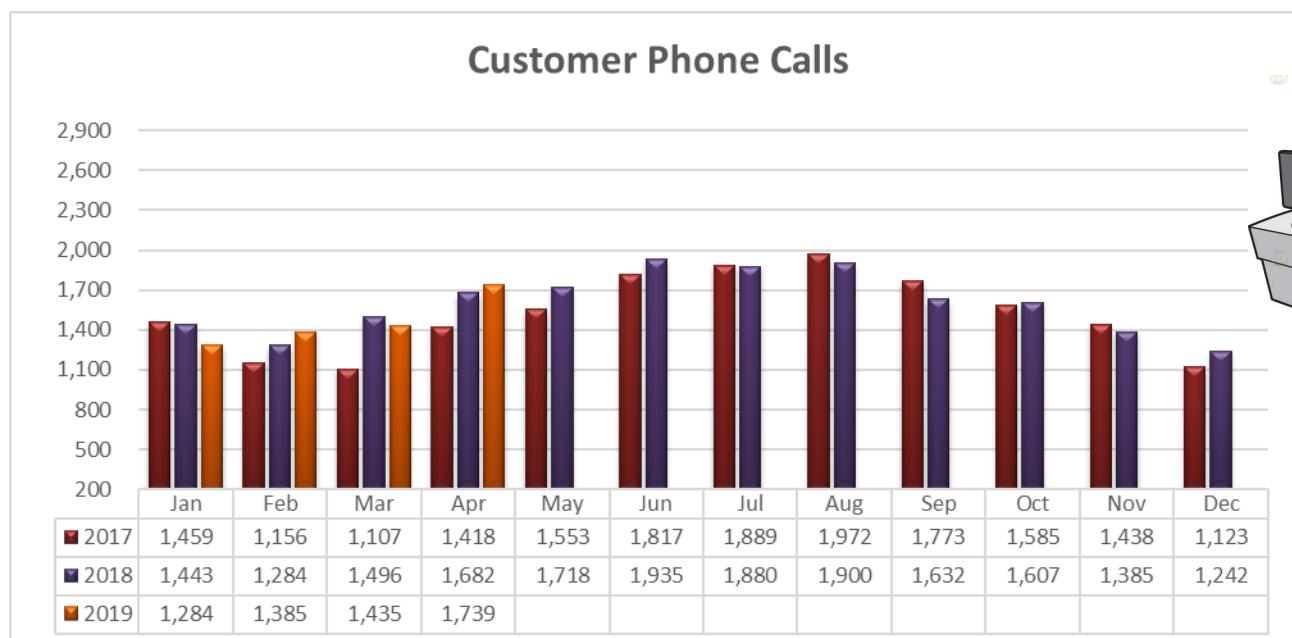
The number of customers enrolled in paperless billing has increased to 60% over the last several months.



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



Walk-in customers have been consistent over the last few months.



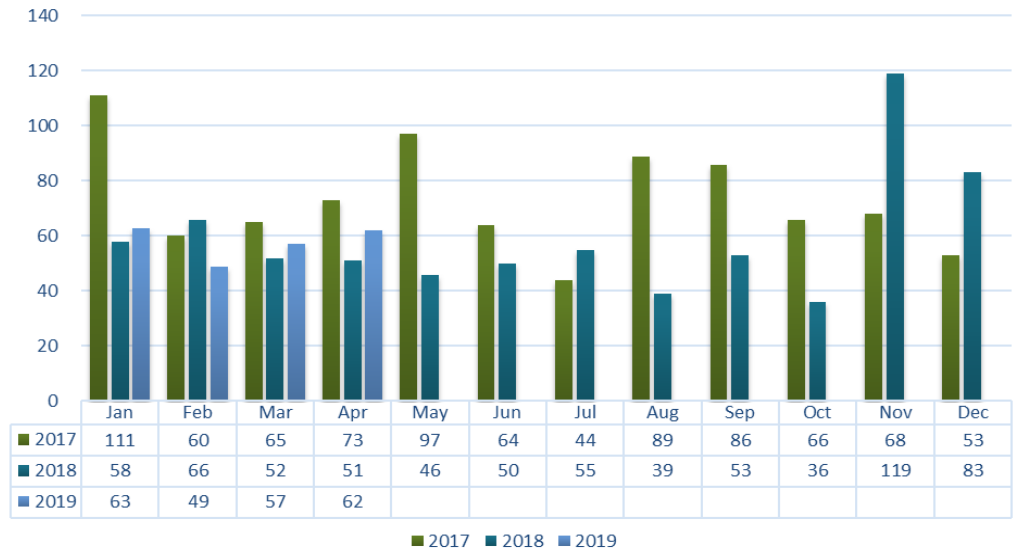
Customer phone calls are consistent with this time of year.

METERS

Skipped Reads

The American Water Works Association (AWWA) standard for skipped reads is 2 percent, so at 0.28 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.

Skipped Reads



Why is this important?

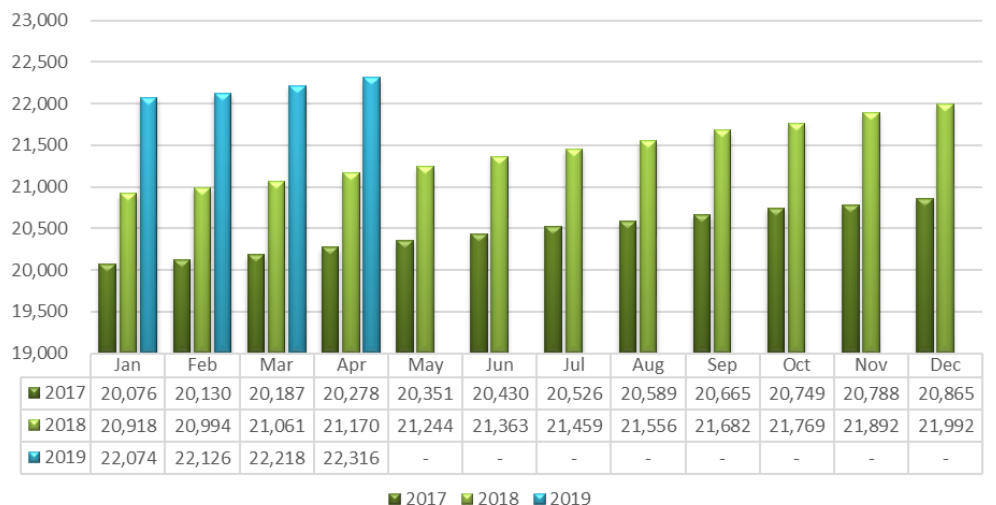
It is a strong indication of the level of preventative maintenance being done by our team. A skipped read is indicative of a problem with the metering infrastructure (i.e. battery, wiring, etc.). Fewer skipped reads means more properly working meters, which is good for all our customers.

Meter Sets

Month-to-Date 123
Year-to-date 413

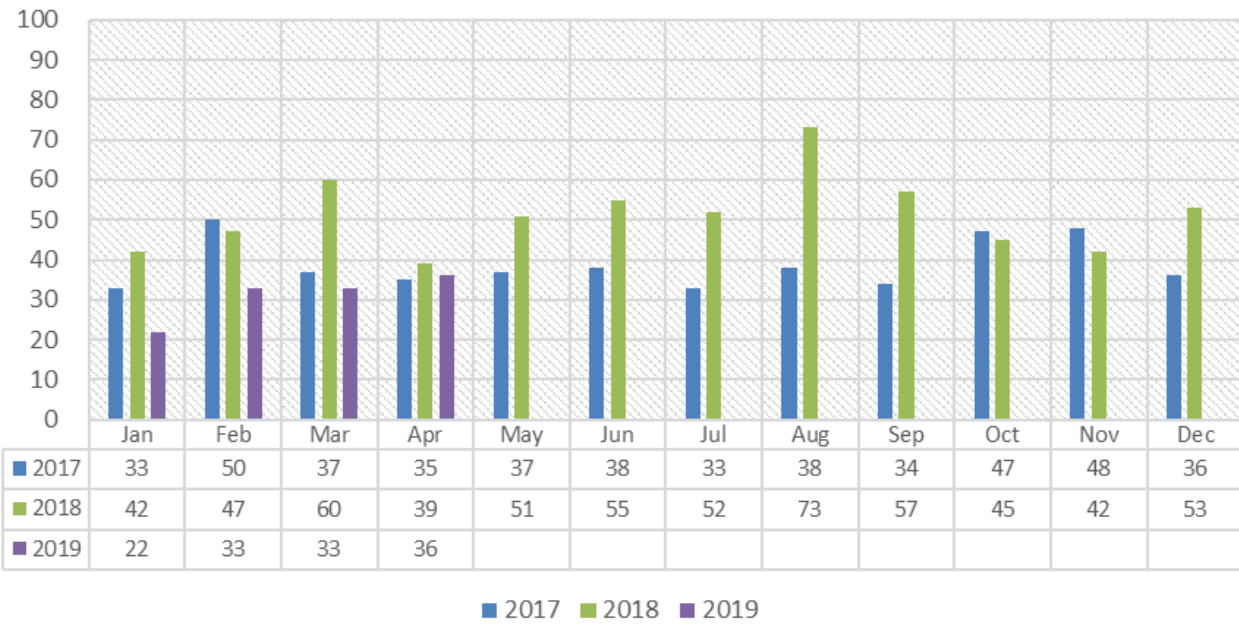


Meters Read



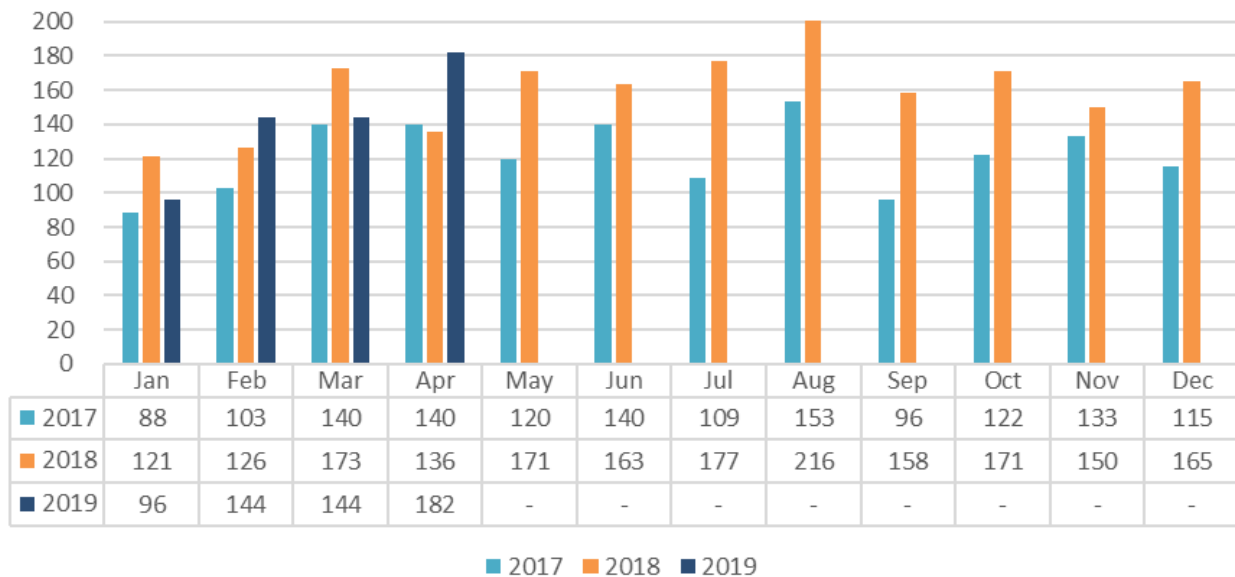
The meters read continues to increase month-to-month due to new residential and commercial accounts, with a significant increase year-over-year.

Residential Meter Set Re-Inspections

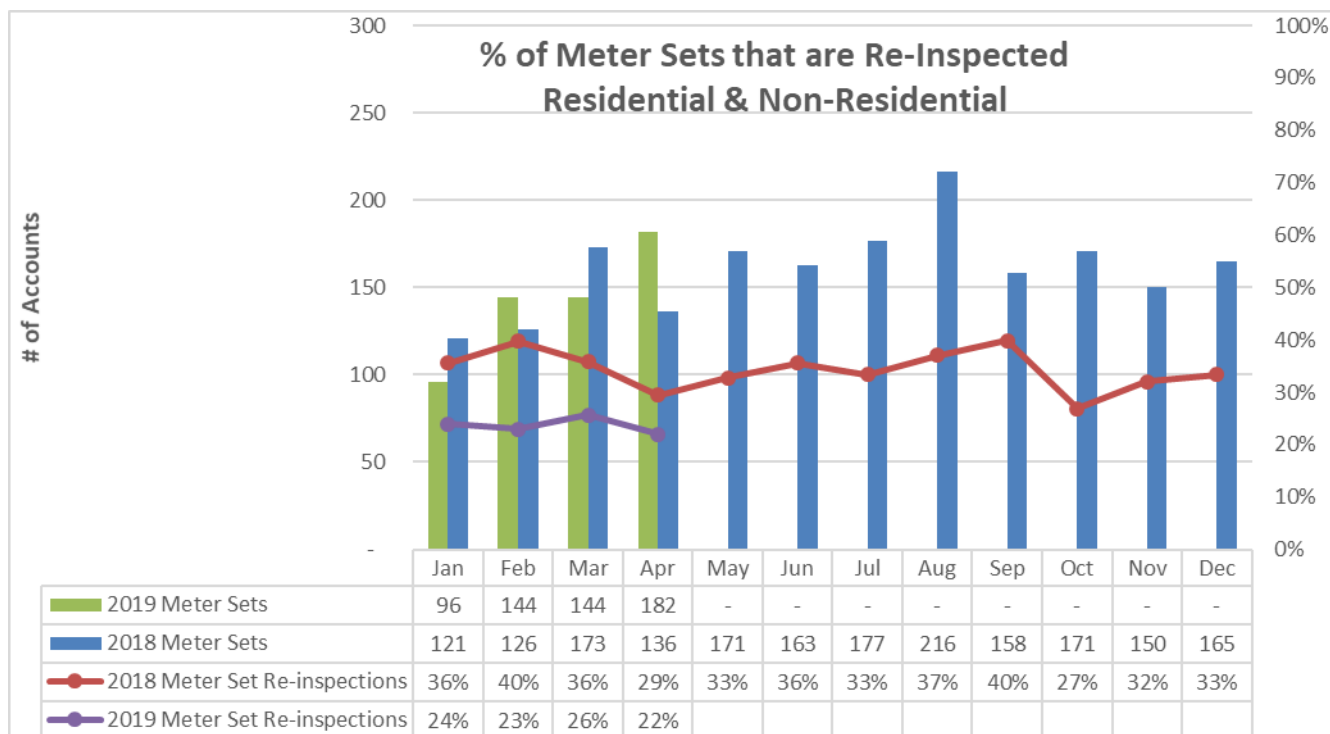


Residential meter set re-inspections are improving from last year. This indicates that more meter set inspections are passing on the original inspection and requiring less site visits.

All Meter Sets

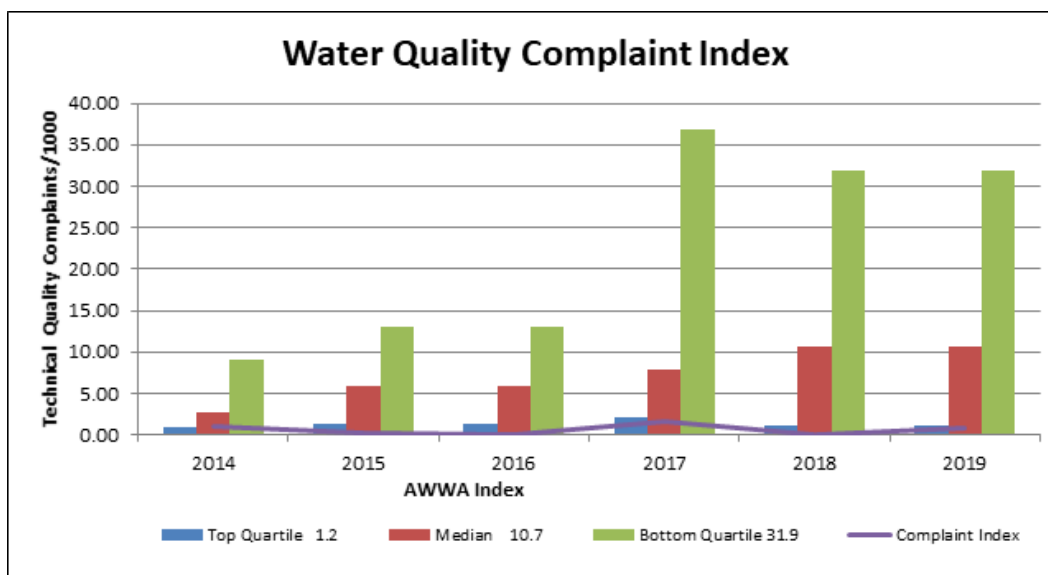


Meter sets, including residential and non-residential, are starting to trend back up which is normal for this time of year. This table (All Meter Sets) includes re-inspections too.



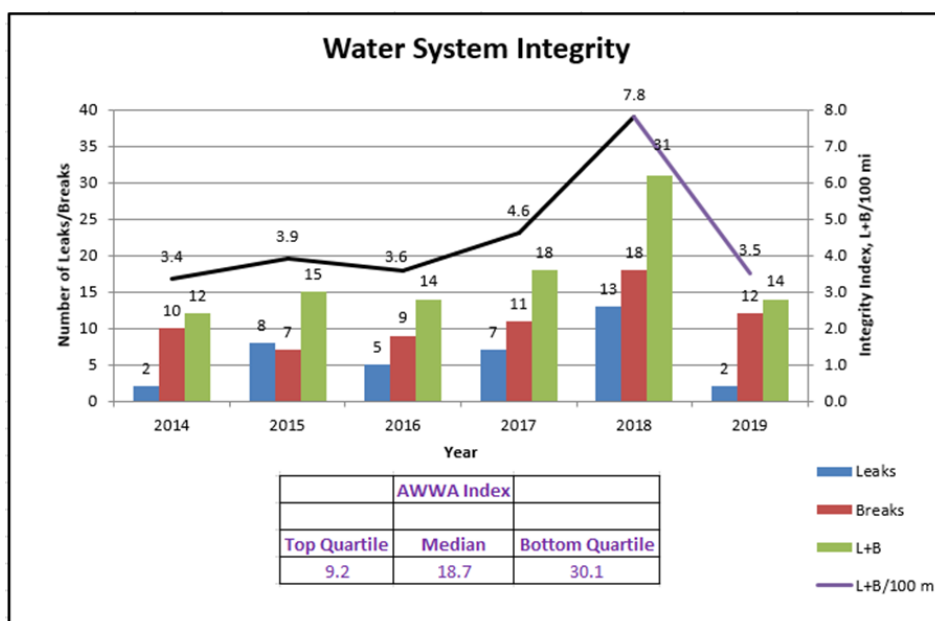
Meter sets are up in April compared to this time last year, however, we expect this trend to increase as the summer months approach. Re-inspections are down 7% from last year at this same time which is a good trend to see. This indicates that more meter set inspections are passing on the original inspection and requiring less site visits.

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 April.

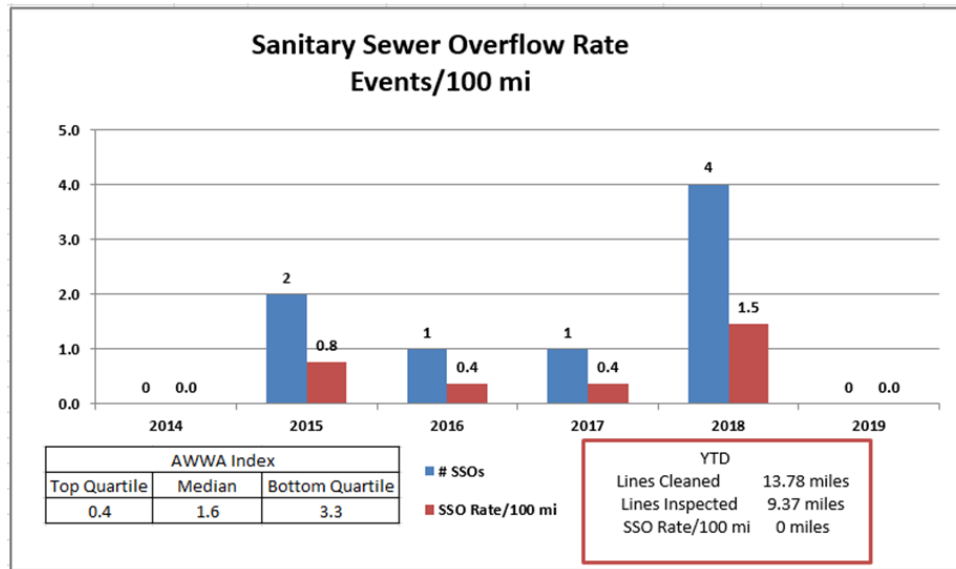
Water System Integrity



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 three water system integrity issues in April.

Sanitary Sewer Overflows

We are tracking in the Top Quartile in the Sanitary Sewer Overflow Rate, according to the American Water Works Association (AWWA), showing no incidents 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. So far, this year we have cleaned and inspected 13.78 and 9.37 miles, respectively. The goal this year is to clean and inspect approximately one-fifth (1/5) of the collection system or about 55 miles.

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.

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.

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 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 sewer system 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.

- Planned valve replacement in The Woodlands affecting 75 residents with low pressure or no water for four to eight hours.
- Water main break on eight-inch ductile iron pipe in Plum Creek impacting 51 homes with minimal pressure while the emergency repair was completed.
- Water main break occurred in the downtown area on a six-inch cast iron pipe affecting ten business with low pressure overnight for approximately six hours.
- Service line break repair in The Meadows impacting 12 homes for less than four hours while the new service line was repaired.



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.



Brush and trash removed from the stormwater pond near Hampton Inn during routine maintenance.



The Stormwater team restored the Plum Creek Diversion Pump Station access road. The quarter mile road was regraded, roadside ditches were cut in, and resurfaced with crushed concrete, making it safe and accessible in all weather.



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.

The graphs below show our monthly utility locates and a chart showing the year-to-year comparison. To date, 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			
June	969	844	982	1,314	1,399	1,654	2,075	1,872	1,854			
July	680	582	859	1,350	1,392	1,477	1,675	1,582	1,556			
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	4,436		



Know what's below.
Call before you dig.

4 Year Locate Trend

