CASTLE ROCK water
Securing our future drop by drop
April 2016

Go Paperless with Castle Rock Water

By: Sandi Aguilar, Customer Relations Program Manager

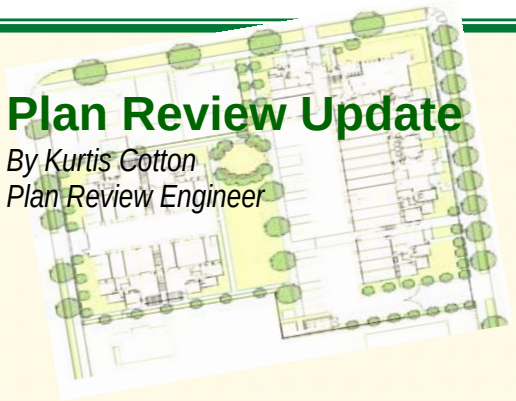
Castle Rock Water strives to conserve in more ways than just water, by encouraging our customers to Go Paperless.

After launching the H20Access online account management system in 2014, registering record numbers of accounts and winning awards for the campaign, we want more! Between May 1 – July 31, we will be giving 10 lucky paperless customers a $50 water credit on their water bill for signing up at CRgov.com/H20access and opting to go paperless.

All paperless customers signed up before July 31, 2016 are eligible for the drawing - including those that opted in before May 1.

Plan Review Update

By Kurtis Cotton
Plan Review Engineer



The applications reviewed consisted of:

- 34 1st Submittals
- 25 2nd Submittals
- 19 Special reviews

Utilities reviewed 78 applications this month which compares to 61 during the same time period in 2015. The average assigned due date by Development Services was 1.9 weeks, and Utilities completed the reviews in 1.8 weeks, which included:

3	Agreements
2	Annexations
7	Field Change Orders
1	Planned Development Plan
7	Plats
6	Preliminary Project Applications
17	Construction Drawings
15	Site Development Plans
8	Technical Criteria Variances
12	Grading, Erosion and Sediment Control (GESC) Plans

In addition to completing the above listed applications as scheduled, Utilities completed 103 building permit reviews and associated system development fees.

OUR VISION

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

From the Director's Front - Water Resources Strategic Master Plan

By: Mark Marlowe, Utilities Department Director

Castle Rock Water plans for the future every day. A key strategic plan tactic for 2016, updating our Water Resources Strategic Master Plan (WRSMP), made significant progress in April. This plan has received community endorsement in the past, and
Castle Rock Water will seek input and ultimately endorsement from the community again this year. Key goals of the plan will be reviewed. Perhaps the most fundamental question that we should revisit is, "is the goal of 75% renewable water and 25% non-renewable water by 2055 still an appropriate goal or should we go for more or less renewable water?" Other questions stem from the answer to this question, but they also help inform the answer to this question. These other questions include:

1. How much do we want to rely on conservation and efficiency to meet this goal - our current target is another 18% reduction in per capita consumption?
2. What is the right amount of storage to invest in to protect our community against drought and to firm up the yield of our renewable water supplies?
3. How do we utilize and maximize our local water resources in the most efficiently, sustainable, environmentally friendly and fiscally responsible way?
4. How much water do we import and from where?
5. How do we best protect and utilize our existing deep groundwater resources for the long term benefit of the community?
6. How much can we afford to invest in the transition to renewable water?

While all of these questions are impacted by the pace and type of community growth, questions 2, 4, and 6 are particularly important relative to the impact of community growth. In preparing for a community discussion, let's start with the current answers to each question from our 2010 plan. That plan anticipated a population of around 105,000 by 2050 and a goal of 75% renewable water for that population.

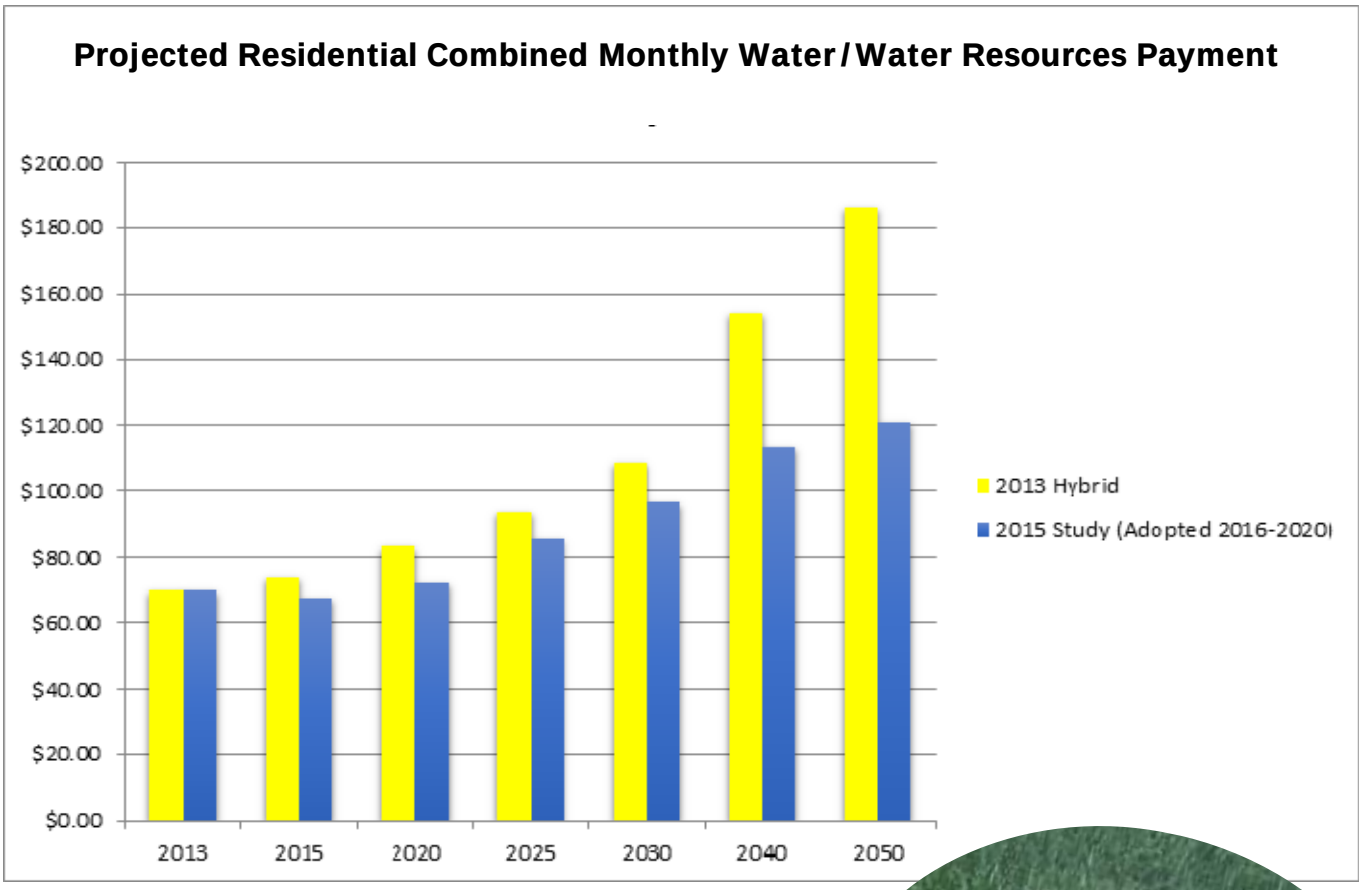
1. Additional conservation beyond what we have already achieved was not contemplated.
2. Storage of 8,000 acre feet in Rueter Hess Reservoir (a supply of around half a year for 105,000 people) was the primary storage with some additional storage in aquifer storage and recovery systems considered as an option.
3. Use of all of our local water rights and reuse of all of our local water resources, over and over again until they were completely used up, was targeted.
4. Imported water totaling about 3,500 acre feet (known in 2012 as the hybrid solution) included 1,000 acre feet of WISE water and 2,500 acre feet of alternative source water from the middle South Platte River, which was deemed financially doable.
5. Deep groundwater was going to be 25% of supply in 2050, and the system was to be maintained for drought protection over the long term.
6. The total required investments in the transition to renewable water were around $250M, with long term rate impacts as shown in **Figure 1** on the next page.

Continued on next page

From the Director's Front, continued

If we do not grow to 105,000, we will need somewhat less imported water to achieve our current goal, but the cost of the imported water we do need will be higher for our existing customers. This is because there are some economies of scale that are gained with the currently planned growth that help spread out the costs of the infrastructure to bring imported water to Castle Rock. If we were to grow beyond 105,000, additional imported water may be required, and the costs of that water will need to be evaluated in terms of the overall plan. In the coming months, we will have a conversation with the community about proposed updates to our long term renewable water plan and what all of this means for our future.

Figure 1



Castle Rock Water Hosts Water Leaders

Castle Rock Water hosted the Colorado Water Foundation for Education Water Leaders Program. This program offers the opportunity to develop leadership potential. Since 2006, the program has provided training in conflict resolution, communication and management to participants across Colorado, helping them become more effective leaders. Program participants benefit from extensive self-assessment, executive coaching, networking opportunities and application of learning to water issues statewide. Water Leaders is open to mid-level professionals in Colorado with a demonstrated commitment to water resources and career development.

During this two-day training, Mark Marlowe, Utilities Director and Eric Hecox, Executive Director, South Metro Water Supply Authority, offered behind-the-scenes perspectives on their own leadership approach, as well as benefits and lessons they've encountered for building functional water teams in the South Metro/Douglas County region.

Eric Hecox, Executive Director, South Metro Water Supply Authority and Mark Marlowe, Utilities Director

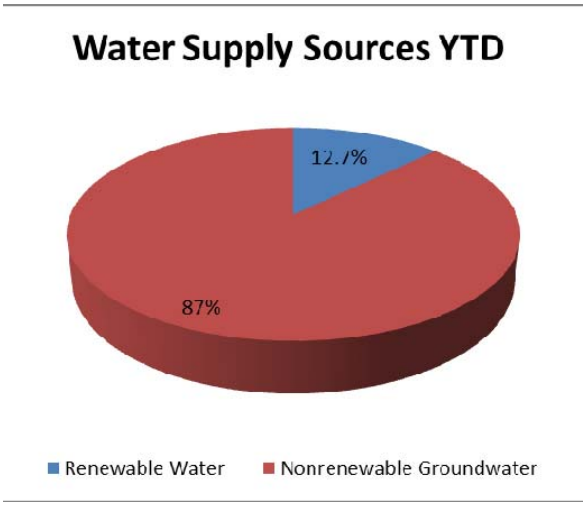
The water leaders spent two full days in Castle Rock. They were hosted in the meeting room in Castle Rock Water's new Operations & Maintenance Building. They enjoyed some of the local breweries, hiring the Town's trolley for a tour of the local night life on Monday night. On day two, after a short walk down the East Plum Creek trail, they toured the Plum Creek Water Purification Facility and participated in a water taste test.

Program attendees participating in leadership discussions

Water Leaders hiking along East Plum Creek trail

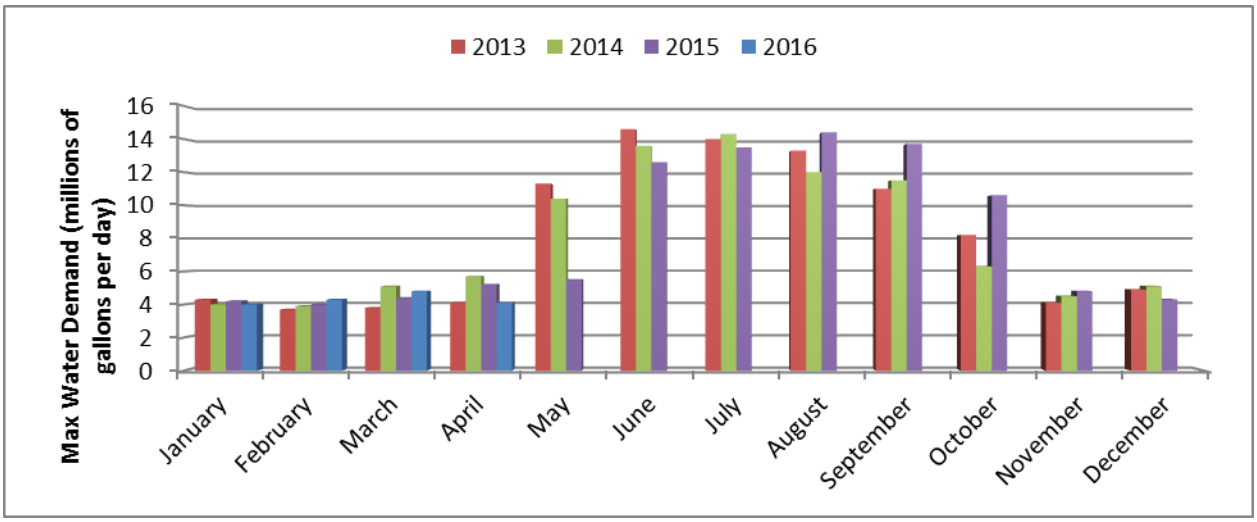
2016 Water Demands

By: Sheri Scott, Water Resources Program Analyst



The maximum daily water demands are plotted by month from 2013 to the current month. As observed by the data, the maximum demand for the month of April was 4.8 million gallons per day (MGD), which was about 29% less than the 5-year average maximum daily demand. 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. An average of the winter month (November, December, January, and February) usages, reflect indoor or base demand. The water demand total for April was 117.3 million gallons (MG), which was about a 3% decrease from the March 2016 total of 120.7 MG, and a 12% decrease from the April 2015 demand of 133.3 MG.

The Town's nine alluvial wells produced a total of 15.1 MG of renewable water during April, which represents 12% of the total water supply for the month and 13% (61.9 MG or 190 acre-feet) of the water supply year to date. The total renewable water produced since the opening of the PCWPF has surpassed 807 MG, which represents 11.4% of the Town's total water supply since the alluvial wells began pumping in May of 2013. Currently, the Town's renewable water rights surpass the capacity of the alluvial wells. The alluvial well project the Town is currently constructing will help close this gap.



The flow hydrograph (on the next page) represents stream flows in East Plum Creek taken from the stream gauge located at Haskins Gulch. The hydrograph shows that the East Plum Creek basin experienced stream flows between 30 to 50 cubic feet per second (cfs) for the first half of the month. Flows steadily increased to 110 to 130 cfs in the last half of the month, with a maximum flow of 222 cfs at end of the month as a result of several snow events. During the month there were no calls on the main stem of the South Platte, therefore a Free River condition and no out-of-priority depletions needed to be made up. The river call may change at any time as a result of downstream water diversion calls. The South Platte River Basin is through the snow accumulation season and water managers will begin waiting for the snow melt to fill reservoirs over the next couple months. As of May 3, 2016, the NRCS Colorado SNOTEL report shows the snow/precipitation for the South Platte River Basin is at 117% of average.

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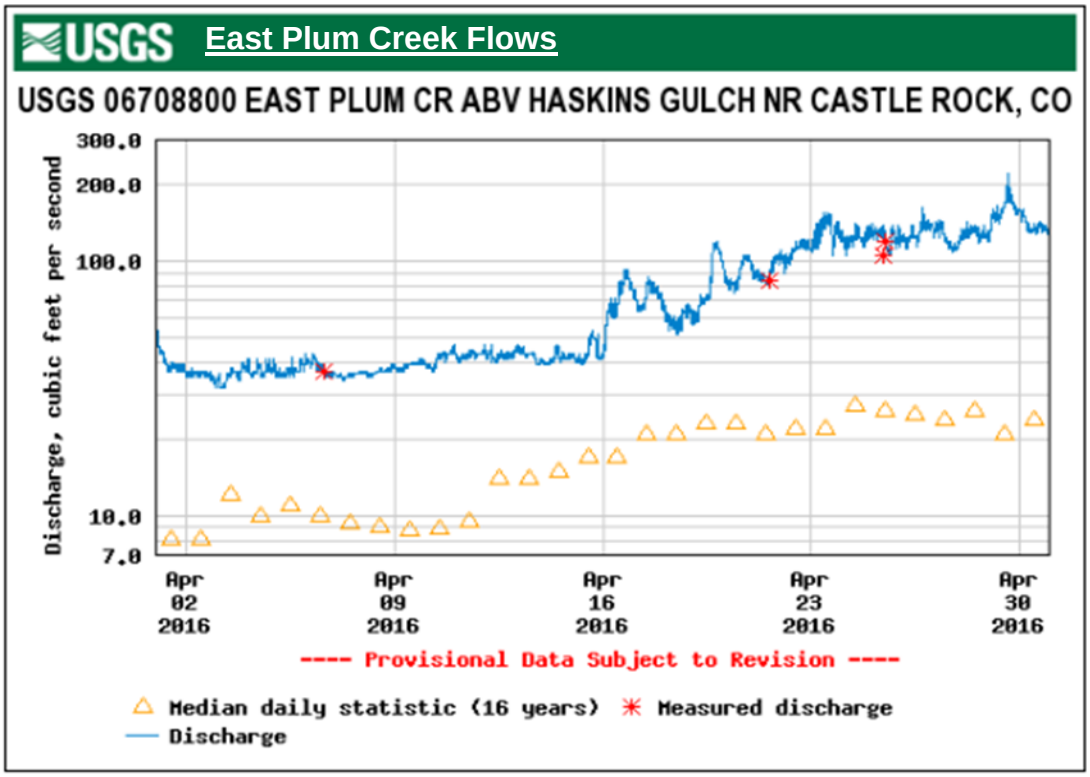
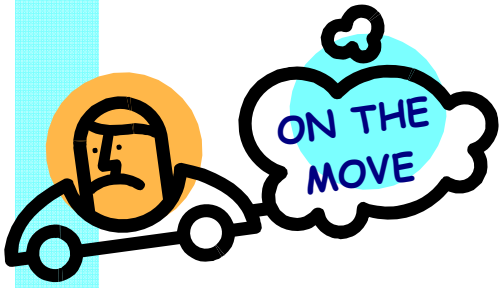
2016 Water Demands, continued



Rob Daniels
Stormwater Maintenance Tech II

Chrystal Ruby-Carrillo
Water Plant Operator II

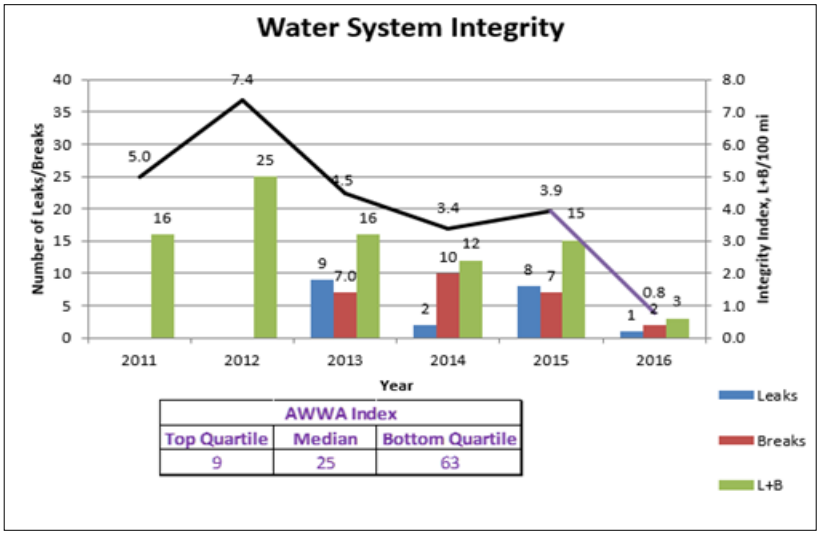


Congratulations on your recent promotion!

Erik Dam
Utilities Engineer - Stormwater

Water System Integrity

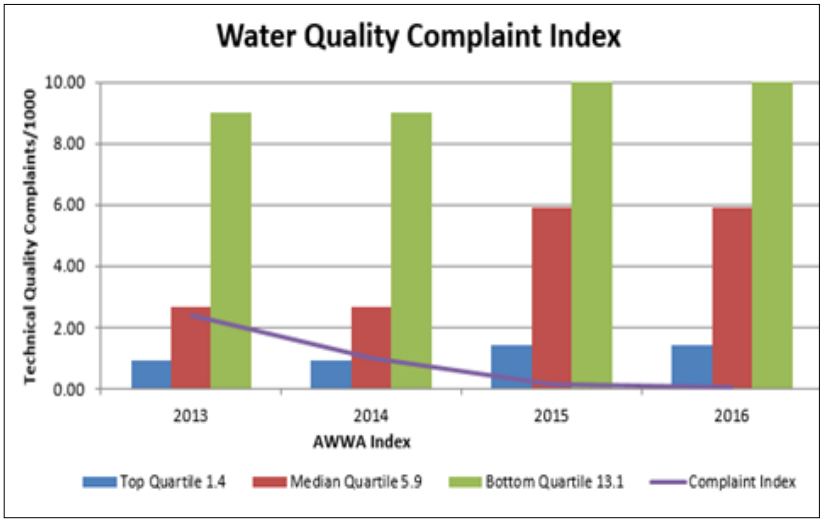
As the Water System Integrity chart indicates, our occurrence rate has generally decreased over the last four years. We have been in the top quartile, the top 25%, for water system integrity based on American Water Works Association benchmarking since 2011. There were no water system integrity issues in April.



Water Quality Complaints

The Water Quality Complaint index shows that we are doing very well in this category; rating in the Top Quartile in 2015, according to the American Water Works Association. We did not have any Water Quality Complaints in April.

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

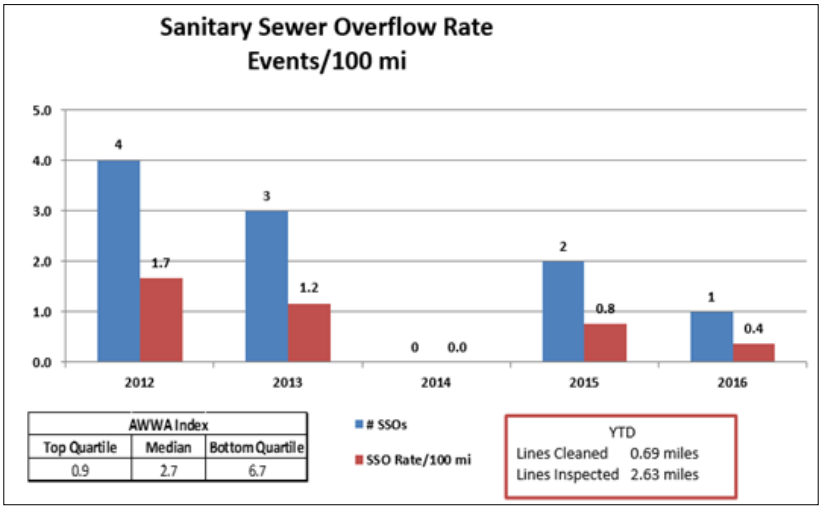


Sanitary Sewer Overflows

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, but none 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.



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.
Pressure has been maintained at or above 43 psi throughout the distribution system.

Sewer System Effectiveness
<1% of our customers will experience a sewer backup caused by the utility's sewer system per year.
There were no sanitary sewer issues in April. The Collections System Team initiated an 8-inch sewer line repair in Centennial Park. During maintenance jetting they found a blockage and replaced a 9-foot section of pipe at manhole. The pipe had been installed without the proper backfill material. The issue was discovered and repaired before any backups occurred.

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 no water supply outages in April.

Stormwater Updates

The Plum Creek ditch was repaired by the Stormwater Conveyance Team. It had become clogged with sediment, plants and debris, which caused it to spill onto Plum Creek Parkway during severe storms. This overflow created road icing, which was a safety hazard for drivers on this main arterial.

Plum Creek Ditch Before

Plum Creek Ditch After

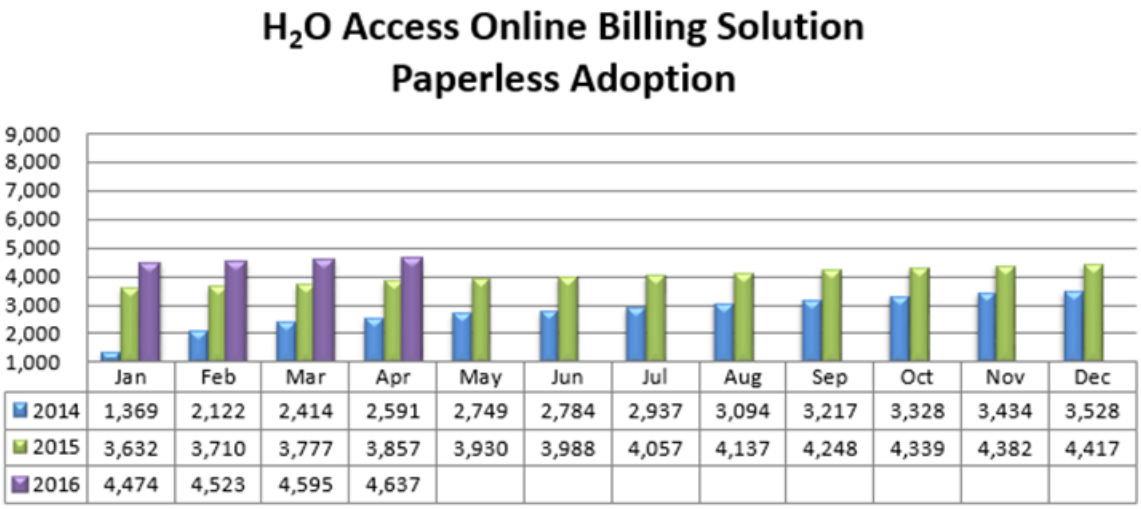
Business Solutions

Customer Statistics

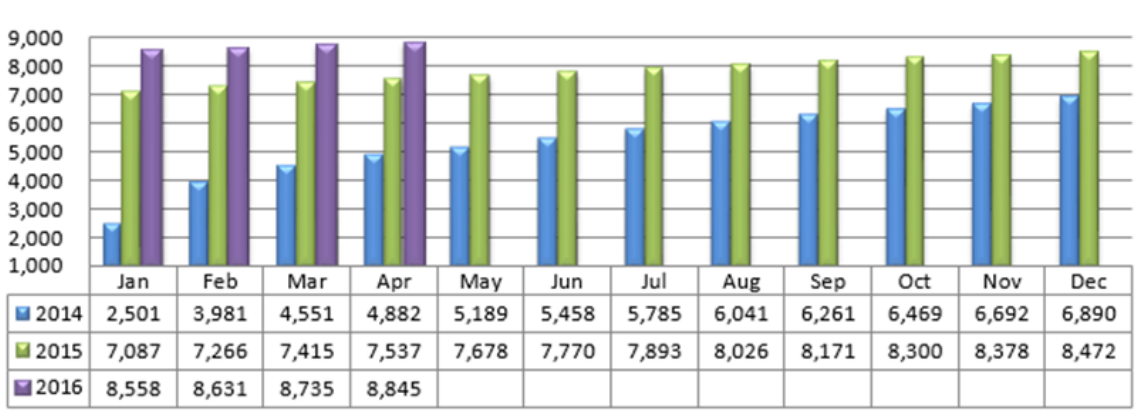
By: Anne Glassman, Business Solutions Manager

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.

Customer enrollments have continued to increase from launching the H_2O Access Online Billing Solution in January 2014. The number of customers enrolled choosing paperless billing has remained steady at 52%, and 46% of all customers we serve are enrolled with an online account. To encourage further paperless adoption, all customers who have or will sign up for paperless billing by July 31 will be entered into a drawing with a chance to win a $50 credit on their water bill.

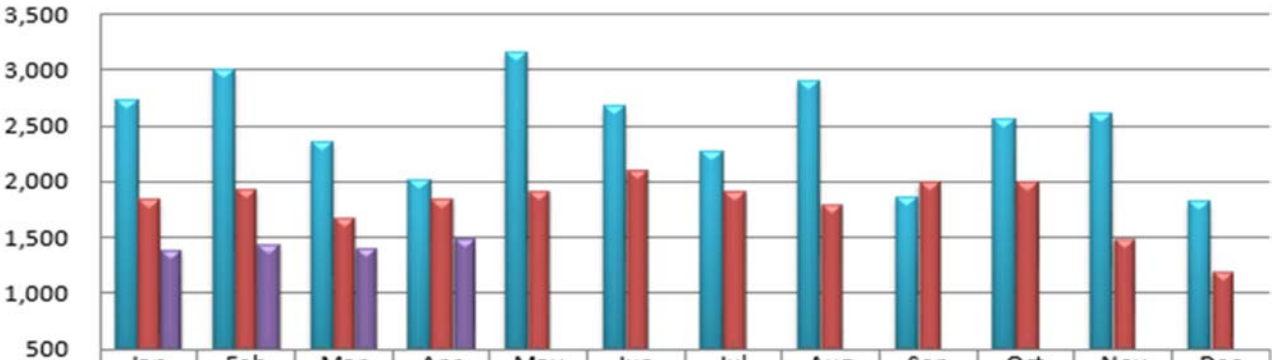


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	1,369	2,122	2,414	2,591	2,749	2,784	2,937	3,094	3,217	3,328	3,434	3,528
2015	3,632	3,710	3,777	3,857	3,930	3,988	4,057	4,137	4,248	4,339	4,382	4,417
2016	4,474	4,523	4,595	4,637								



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	2,501	3,981	4,551	4,882	5,189	5,458	5,785	6,041	6,261	6,469	6,692	6,890
2015	7,087	7,266	7,415	7,537	7,678	7,770	7,893	8,026	8,171	8,300	8,378	8,472
2016	8,558	8,631	8,735	8,845								

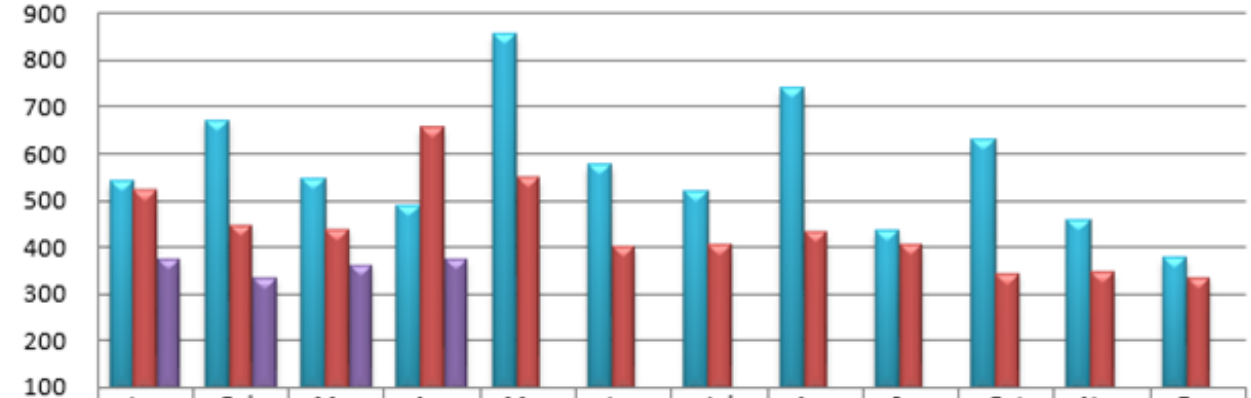
Customer Phone Calls



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	2,726	3,008	2,357	2,016	3,162	2,676	2,265	2,901	1,867	2,564	2,603	1,820
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								

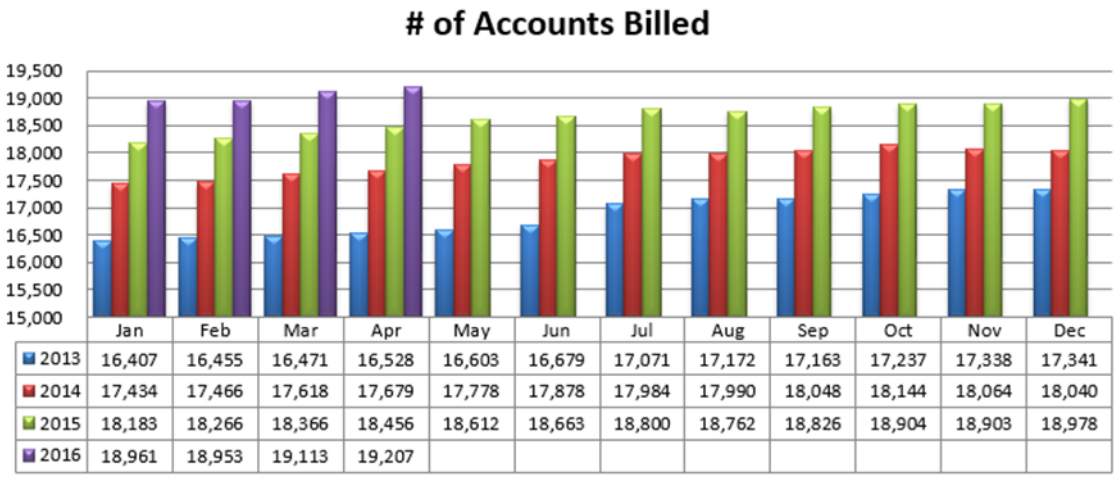
The number of customer calls has been consistent over the past few months.

Walk-In Customers



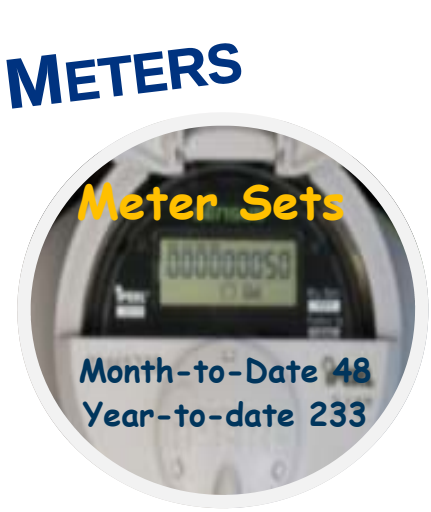
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	540	672	546	489	857	576	518	740	434	629	459	376
2015	521	446	440	655	547	403	407	432	408	346	347	338
2016	376	336	361	378								

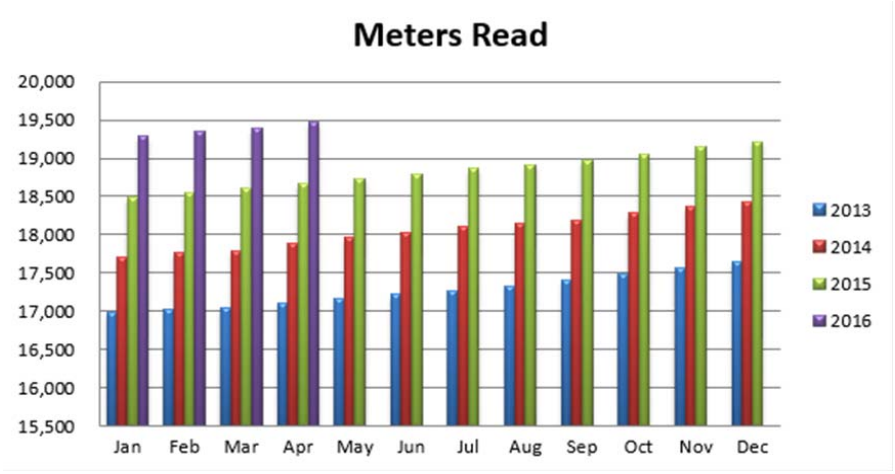
The number of walk-in customers has been consistent over the past few months.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	16,407	16,455	16,471	16,528	16,603	16,679	17,071	17,172	17,163	17,237	17,338	17,341
2014	17,434	17,466	17,618	17,679	17,778	17,878	17,984	17,990	18,048	18,144	18,064	18,040
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	19,113	19,207								

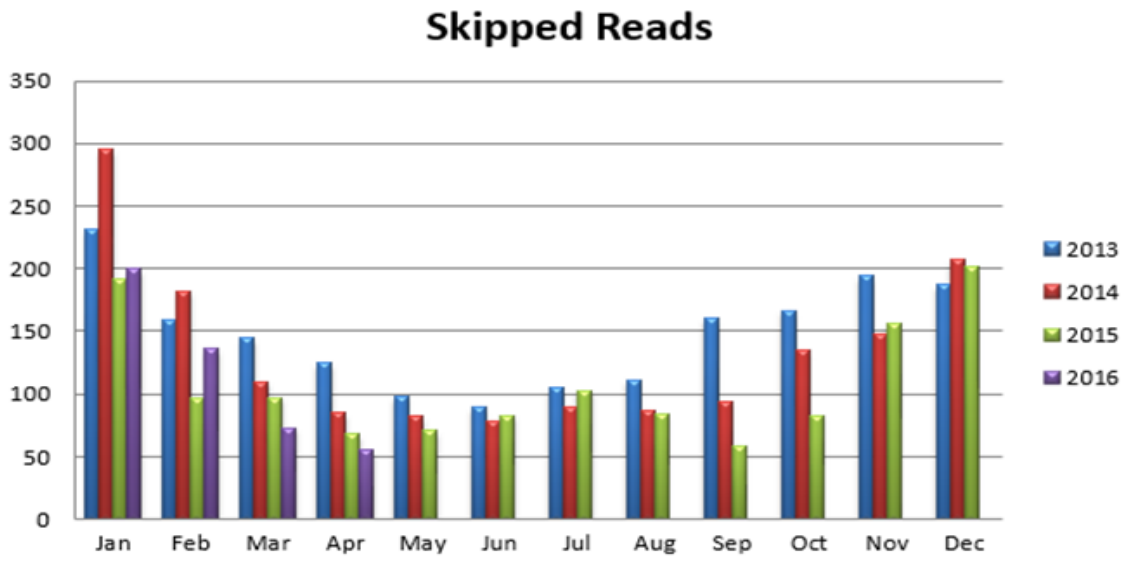
The number of accounts billed compared to April last year is up due to new residential and commercial growth.



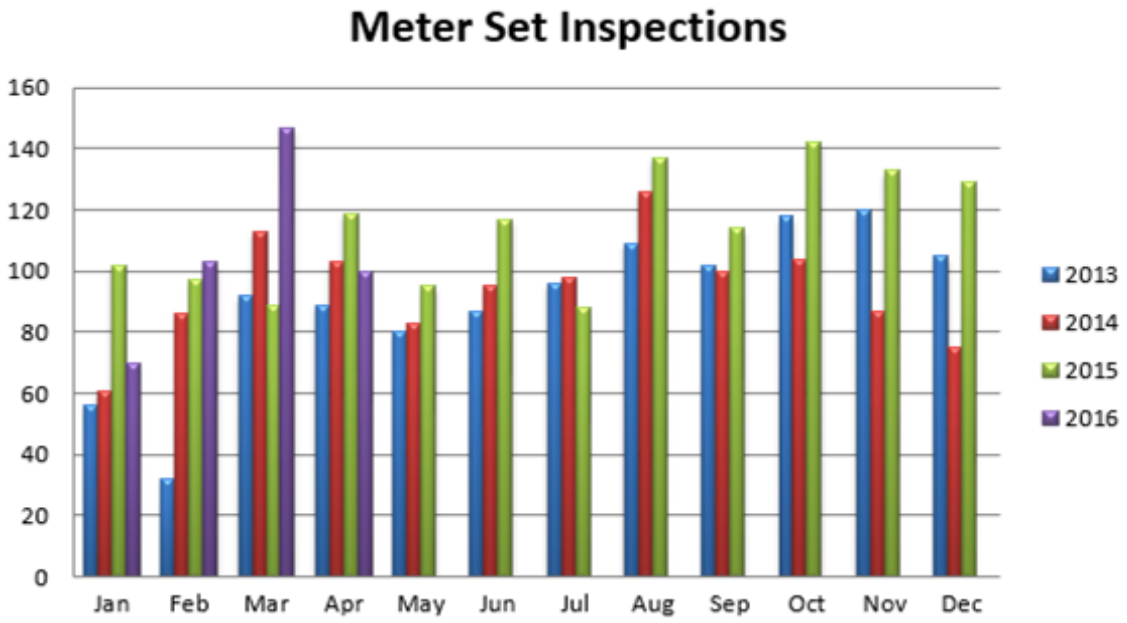


The meters read continues to increase month-to-month due to new residential and commercial accounts, with a significant increase year over year.

Meet our Meter Services Team
Left to right - Kris Julseth, John Whitesel, Nikki Hoyt, Rob Chrestensen, Dominic Roybal, and Mike Wilder.



The AWWA standard is 2%, so at 0.28% we still continue to stay well below the industry average. This is a result of continued maintenance and repair efforts on meter infrastructure.



Meter set inspections in April were consistent with prior years at the same time.

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. Below is a list of those passing various certifications this month:

Clayton Baker
Distribution 1

Dwight Keller
Distribution 1

Evan Bahn
Distribution 1

Kristen Reaves
Distribution 1

Distribution Certifications

Distribution 1 is the first of four increasingly complex licensing levels in the field of drinking water distribution. Drinking water distribution professionals operate and maintain the pipes, valves, hydrants, pump stations, tanks, and pressure sustaining stations that deliver treated drinking water to our customers. It typically takes a minimum of five years of training and the passing of four State tests to obtain the top license in this profession. Castle Rock has the following staff with the various distribution licenses:

Distribution 1: Casey Devol, Cassie Grotheer, Clayton Baker, Colton Maloney, Dwight Keller, Evan Bahn, John Ferguson, John Grahn, John Whitesel, Jon Stapp, Kristen Reaves, Loran Delong, Rob Chrestensen, and Ryan Cline

Distribution 2: Laura Giezen and Thomas Hecker

Distribution 3: Randy Mullins

Distribution 4: Andrew Dieter, John Chrestensen, Kenneth Ritchie, Kenneth Timm, Richard Platt, Shawn Griffith, and Tim Lambert

Filter Media and Underdrain Replacement Project Completed

By: Walt Schwarz, Project Manager

The filter underdrains installed during construction of the Ray Waterman Regional Water Treatment Center (Waterman Center) in 2005 were a plastic material with slotted openings on top. During normal operations filtered water collects in the underdrain, is then conveyed through piping to the clearwell, and is ultimately pumped into the water distribution system.

Since about 2010, it was becoming apparent that the original media and underdrain systems were becoming less effective when it was noted that filter media showed up in the clearwell. In 2015, Utilities worked with AWI-Anthratec to design, fabricate and install a new stainless steel underdrain system and new media system. The new AWI stainless steel underdrains are constructed with slotted openings to allow filtered water to pass, but small enough to hold back the filter media and are a significant improvement over the original plastic design.

The project was completed in March 2016 with a final cost for AWI of $559,003. Town staff disinfected the eight filter cells (total filter area of 2,400 square feet) and ensured that areas passed the required bacteriological testing. A design and construction project permit with the Colorado Department of Public Health and Environment was closed out, and the filters are back in service, on budget and on schedule, ready for the summer high demand season.

Showing stages – new underdrains installed, skimming fines off media layers during installation, and filtering water after completion.