UTILITIES DEPARTMENT

Water - Water Resources - Wastewater - Stormwater

April 2015

Plum Creek Water Purification Facility Receives "Environmental" Design Award

Eight projects honored with Town's 2014 Design Awards

There's something special about Castle Rock. It has a unique character all its own, and a Town award program is recognizing new projects that further that vision.

Eight development projects in Town received Town Council recognition in April with the 2014 Site Design Awards.

The Site Design Awards were established in 2009 to honor projects that reflect the Town's Vision 2020. The Vision 2020 identifies four cornerstones for the community. One cornerstone is Town identity. These awards recognize that cornerstone, which is to "preserve Castle Rock's character as a distinct and physically separate community that is the center of Douglas County."

Leader in Water Conservation

By: Matt Benak, Water Resources Manager

Castle Rock is leading the Front Range in water conservation efforts. These efforts were the focus of a recent article in the *Castle Rock News-Press* on April 23, 2015. The entire story is available at http://castlerocknewspress.net/stories/Town-leads-way-in-water-conservation,186623

The 2015 update to the Water Conversation Master Plan (to be renamed Water Efficiency Master Plan) will help ensure the community continues to build on this success. The goal of the plan is to reduce the community's water consumption another 18 percent by 2050. Many of the programs outlined in the original 2006 plan will stay the same. There are several additional programs being implemented or under consideration, including: Advanced Metering Infrastructure; a formal meter test program; an indoor conservation rebate/ incentive program; and hot water recirculation units for new residential and nonresidential development.

The state-mandated plan is available for public review and comment through June 22. If you have thoughts or recommendations, visit ***CRgov.com/WEMP***.

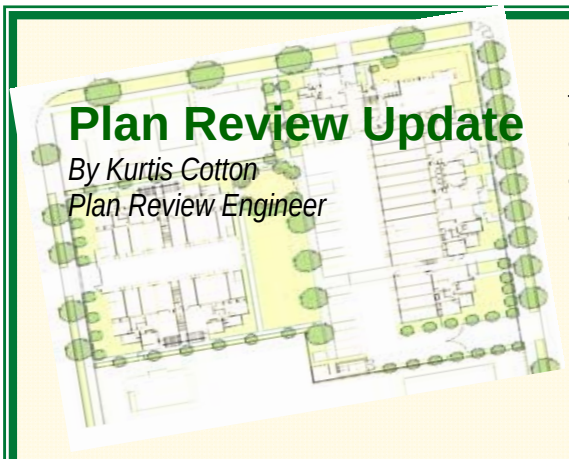
Castle Rock water WISER! Smartscape solutions for your lawn and home.

OUR VISION

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

OUR MISSION

We provide our community with exceptional service that protects public health and balances social, environmental and fiscal responsibilities in a sustainable manner.



Plan Review Update

By Kurtis Cotton
Plan Review Engineer

Utilities reviewed 61 applications this month which compares to 51 during the same time period in 2014. The average assigned due date by Development Services was 1.8 weeks, and Utilities completed the reviews in 1.5 weeks. These applications included:

- 3 Agreements
- 2 Use by Special Review
- 3 Planned Development Plans
- 2 Preliminary Project Applications
- 5 Plats
- 13 Construction Drawings
- 9 Site Development Plans
- 5 Technical Criteria Variances
- 6 Field Change Orders
- 9 Grading, Erosion and Sediment Control (GESC) Plans
- 3 Low Impact GESC Permit
- 1 Lot Line Vacation

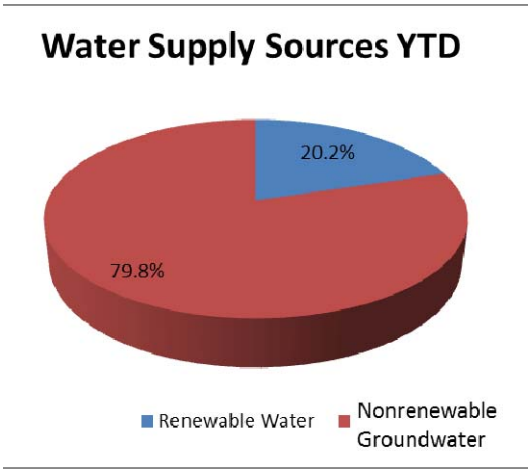
The applications reviewed consisted of:

- 26 1st Submittals
- 19 2nd Submittals
- 16 Special reviews

In addition to completing the above listed applications on-time, Utilities completed 103 single family utility reviews and associated system development fees.

2015 Water Demands

By: Heather Justus, Water Resources Program Analyst

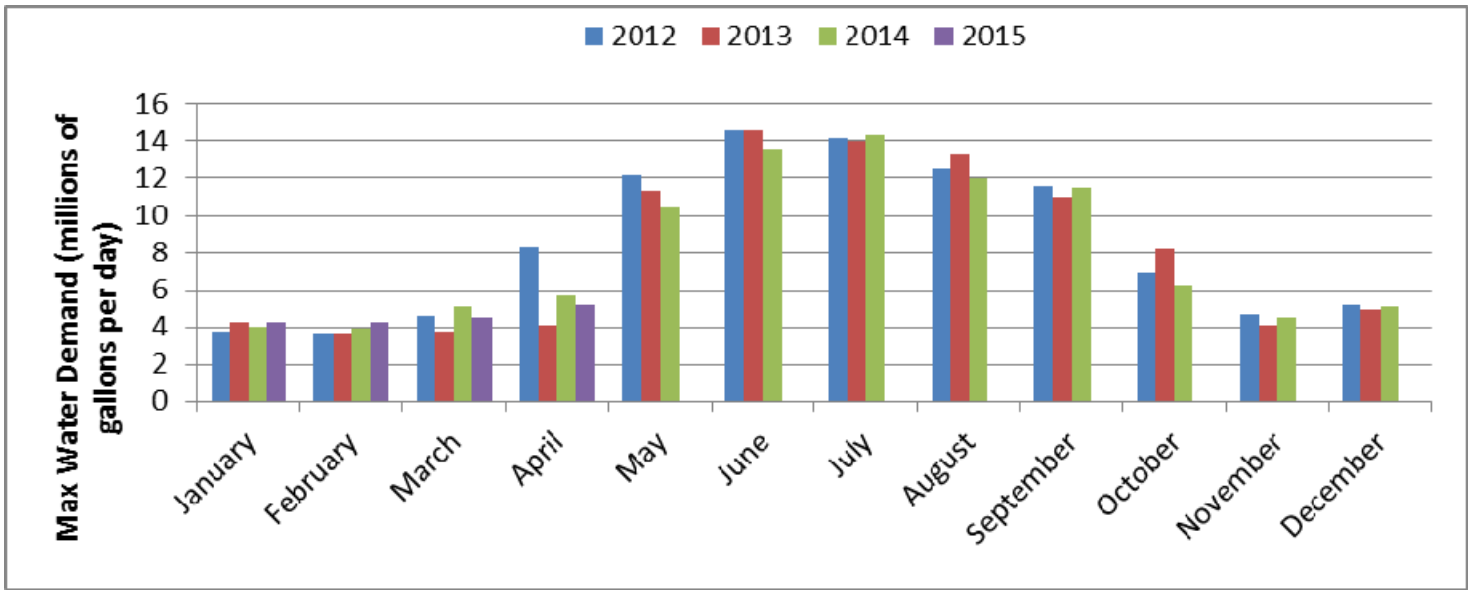


As the days are becoming warmer, we are seeing irrigation increasing and the maximum daily demand is increasing. The maximum daily water demands are plotted by month from 2012 to the current month. As observed, the maximum demand of 5.2 million gallons per day (MGD) for April is 13% higher than the March maximum of 4.5 MGD. 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 129.5 million gallons (MG), which was an 11% increase from the March 2015 total of 115.4 MG, and a slight increase (0.4%) from April 2014 demand of 129 MG.

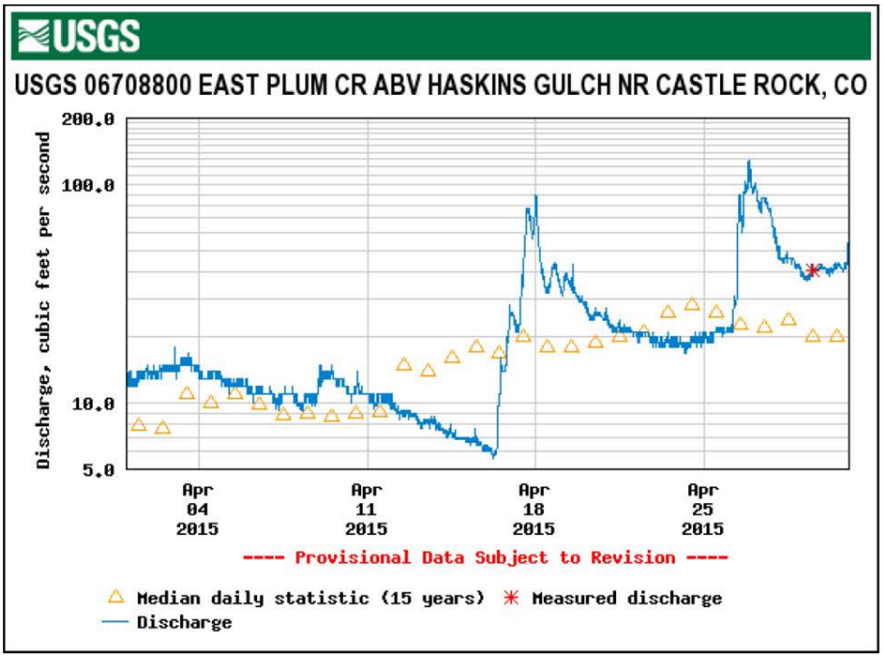
The Town's nine alluvial wells produced a total of 22.8 MG of renewable water during April, which represents 16.9% of the total water supply for the month and 20.2% (95.3 MG or 293 acre-feet) of the water supply year to date. The total renewable water produced since the opening of the PCWPF has surpassed 568 MG, which represents 12.2% of the Town's total water supply since the alluvial wells began pumping in May of 2013. Ideally, when flow in Plum Creek increases and water levels rise in the wells, we should take advantage of this and increase the rate of production to divert the additional water that is available. Currently, the Town's renewable water rights surpass the capacity of the alluvial wells.

Continued on next page

2015 Water Demands, *continued from previous page*



The flow hydrograph represents stream flows in East Plum Creek taken from the stream gauge located at Haskins Gulch. The hydrograph shows that the Plum Creek basin, over most of the month of April, experienced stream flows between 5 to 20 cubic feet per second (cfs) with some days at or above 100 cfs. Castle Rock's new stream gage on West Plum Creek at Sedalia was installed in March and started operating April 1st. At this time, the gage will show gage height until the USGS can rate the stream with varied measured flow. Although our basin had record snowfalls in February, March followed with below average precipitation. After a dry March, much need precipitation fell in the Denver Metro area over the month of April, which was slightly above average. There were two active calls on the main stem of the South Platte River that called out the Town's Central Alluvial Well Field. This means that the depletions from the alluvial wells will be covered by the Town's nontributary return flows and / or the Douglas Park water rights. The active calls lasted 10 days and then the Plum Creek stem was then under a free-river status. Free-river status means that senior water rights were not diverting the river/surface/tributary water and allowing it to be available to junior water rights and any water users who could put the water to beneficial use including storage. 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. The NRCS Colorado SNOTEL Snowpack Update Reports for May 3rd states that the South Platte River Basin index is at 89% of median snowpack.



Supervisory Certificate Program

Tim Lambert (highlighted in yellow)

Tim Lambert recently graduated from the Rocky Mountain Section of the American Water Works Association and Rocky Mountain Water Environment Association (RMSAWWA / RMWEA) Supervisory Certification Program. He participated in monthly one-day training sessions covering topics such as communications; leadership; planning and goal setting; motivating others; performance reviews; coaching, counseling and discipline; and interviewing, hiring and onboarding.

Tim joins previous graduates, Nikki Hoyt, Matt Hayes, Jon Stapp, John Chrestenson, David Van Dellen and Zac Beavers.

Congratulations to our own Eric Layton for his own personal cardboard recycling and re-use initiatives, waste reduction efforts, as well as his overall awareness of the environment. These efforts support the Project Green's vision, mission and values statement, and earned him the **2015 Individual Green Leaf Award**.

New Operations & Maintenance Building Under Construction

By: Tim Friday, Asst. Utilities Director

Construction of the new O&M Building officially began when an excavator broke ground April 29, 2015 to start excavating for the foundation. Town Council approved the construction contract with Taylor Kohrs LLC on April 7 in the amount of $4,416,330 plus a town-managed contingency of $80,000. The project is scheduled to be substantially complete in mid-December 2015.

In order to accommodate construction activities, a temporary fence has been erected to separate the active construction site from the rest of the Utilities' compound. This limits the amount of space available for parking, so all employee parking has been consolidated

to the western part of the property near Liggett Road. This may be inconvenient in the short term, but well worth it once the new building is complete. Other site work with this project includes some improvements to the existing stormwater pond for this property located on the south side of Kellogg Court. The existing pond has been excavated deeper to account for an increased volume of runoff associated with more impervious area and the outlet of the pond is being modified accordingly.

Meadows Water Treatment Plant Roof Replacement

By: Jeanne Stevens, Engineering Manager

Meadows Water Treatment Plant (MWTP), placed into service in 1987, is one of the Town's older treatment facilities. The facility, expanded in 2003, has a treatment capacity of approximately 8.0 MGD and is typically utilized as a seasonal facility to help meet peak summer demands. The roof over the original building had skylights that were leaking and created a potential source of problems to the water treatment filters located directly beneath the skylights. Staff contracted with Douglas Colony Roofing to remove the skylights, an unused roof access hatch, replace roofing membrane, and install sufficient new ballast to meet current building roof requirements.

The Meadows WTP Roof Project is typical of future capital improvement projects that will be funded by the Facilities Capital Replacement account. Currently the Town has four active water treatment plants (WTP), one inactive WTP that will be decommissioned, fifteen water storage tanks, 57 ground-water wells with associated well buildings, nine pump station facilities, two odor control facilities, ten wastewater lift stations and other smaller appurtenant facilities. Many facilities, like MWTP, date back to the 1980s and require new roofs, painting, and other on-going maintenance, especially as they age.

Continued on next page

Meadows Roof Repairs, *continued*

Pictures showing the many skylights in the filter bay at Meadows WTP before the new roof – most were leaking

After the skylights were removed, the roof was patched and additional rock ballast installed

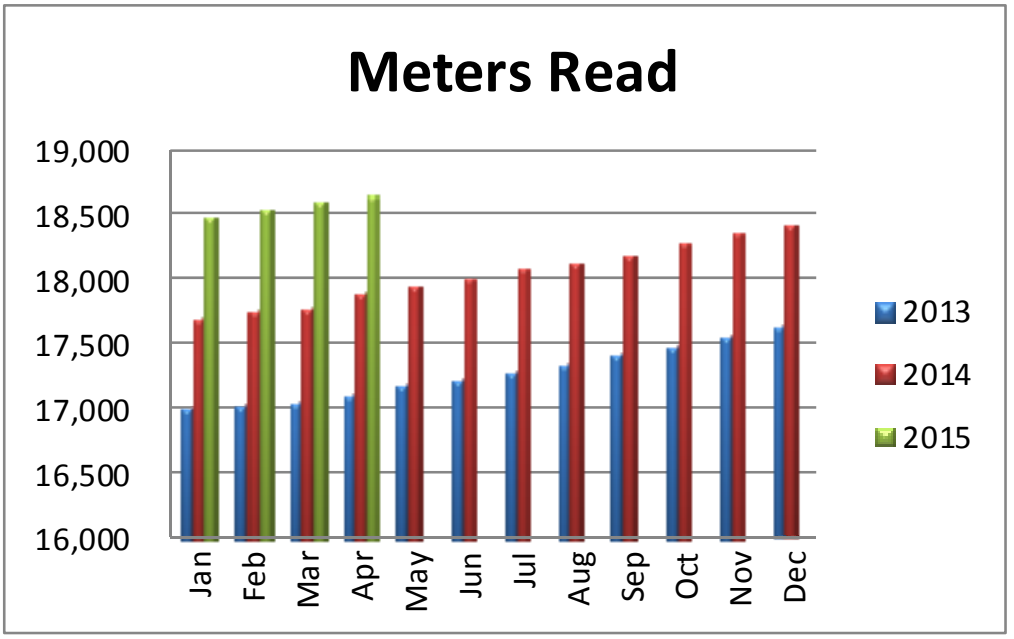
In anticipation that more of our facilities will require repairs/maintenance, and that more of our aging waterlines and sewer lines will eventually require rehabilitation and/or replacement, Utilities will begin establishing an Asset Renewal/Replacement (R/R) Program so that the associated capital costs can be captured in the annual Utilities Rates and Fee study. The Asset R/R program will be based on industry standard practice for design life of various assets, and acceptable levels of risk. For example, the life cycle of a pump station may be 50 years, but individual equipment, such as pumps, may need replacement every 5-7 years. Cartegraph OMS, the Utilities asset management software program in use since 2014, will become instrumental in keeping track of assets, their age and condition, costs, and developing a time line for R/R.

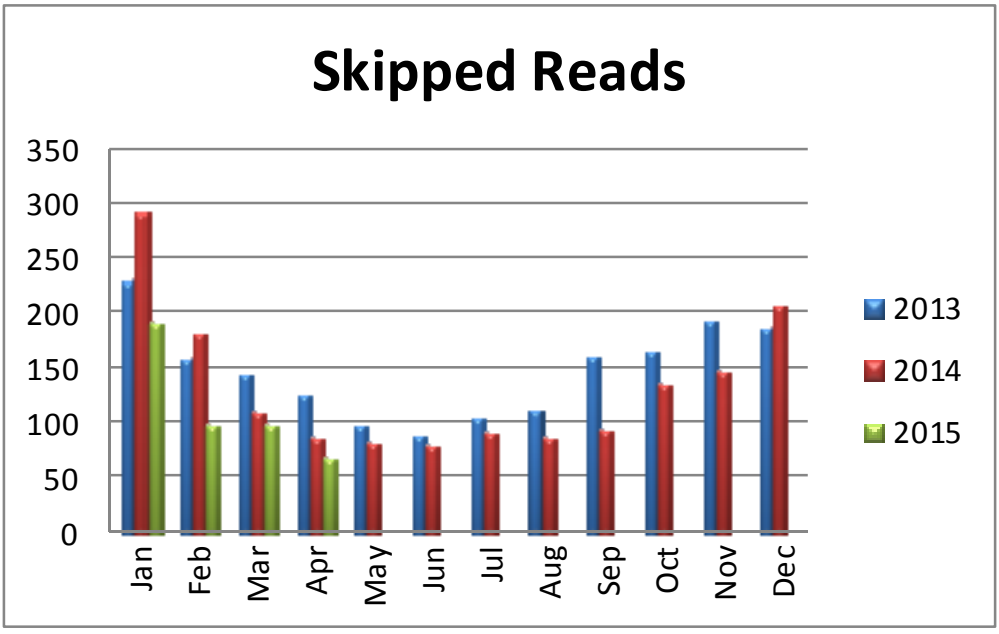
84” Pipe Cleaning

The Primrose 84” culvert cleaning was last completed in 2008 under the guidance of Jon Stapp, the Stormwater Supervisor. At that time, the project took four months, using a small track mounted piece of equipment, and a lot of back labor. Jon and his crew had seven short years to conceive another way to achieve a clean, and blockage free, 800 feet of 7 foot high pipe. Jon had a vision, and then an epiphany. They would use the natural forces of nature, much like the forces that deposited a three foot high sediment throughout the entire length of the culvert. The stormwater crew set out to excavate a detention pond, find an 8” self-contained pump, and procure 1000’ of HDPE pipe, all in an effort to provide a continuous re-recirculation of water through the pipe. After some experimentation, the crew determined that a flow of 1400 GPM and some minimal hand shoveling provided the most efficient removal. The combined efforts of seven weeks of recirculating water and the use of a front end loader produced astonishing results! Jon and his crew estimated that their efforts removed approximately 540 cu yds. of material. The project will button up in about a week; thereby, cutting nearly two months from the previous effort. Great Job, Jon S, John G, Eric , and Casey!!!

Meters

The meters read continues to increase month-to-month due to new residential and commercial accounts, with a significant increase from April 2014.





Skipped reads in April 2015 are significantly lower than in the previous two years as a result of the continued maintenance and repair efforts on meter infrastructure. The American Water Works Association (AWWA) standard is 2%, so at 0.36% we still continue to stay well below the industry average.

New Record!

Skipped reads of 68 in April sets a record for the lowest amount of skipped reads recorded.

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 meter. Less skipped reads means more properly working meters, which is good for all our customers.

Welcome to our Team!

Linda Gould
Office Assistant I

Dominic Roybal
Meter Services Technician

April Levels of Service

Drinking Water Compliance
The Utilities Department will deliver water that meets or exceeds both Primary Drinking Water Regulations and Secondary Maximum Contaminant Levels 100% of the time. *All tests were within or met regulations.*

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 pressure issues.*

Drinking Water Supply Outages
<5% of our customers will experience water outages for one or more event totaling more than 30 hours/year. *There were no outages this month.*

Sewer System Effectiveness
<1% of our customers will experience a sewer backup caused by the utility's sewer system per year.
No sewer backups reported.

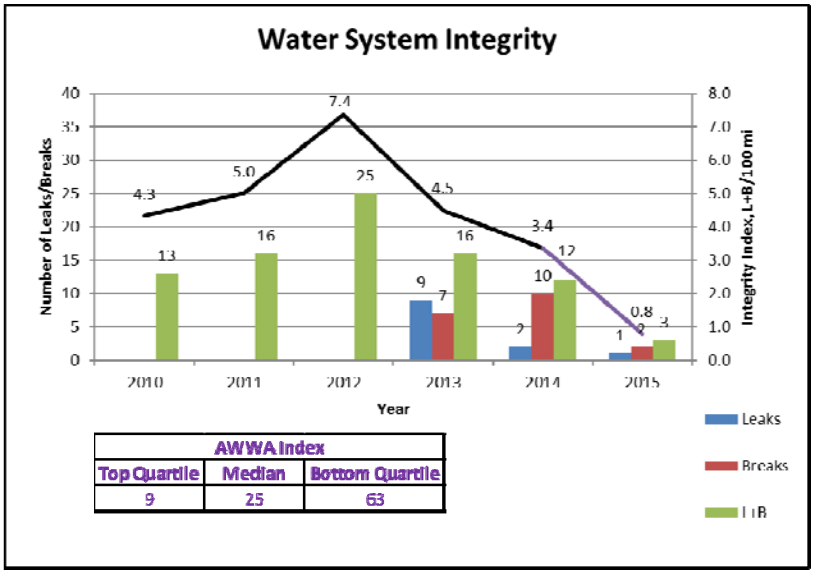
Hydrant Meter Permits
Twenty-two (22) open meter permits.

Backflow Prevention Devices
Mailed approximately 650 backflow test letters for devices due in May.

Water System Integrity

There were no leaks reported in April 2015. An overall rating of 3.4 breaks per 100 miles kept us in the top quartile as compared to national standards for 2014. We are on-track in the top quartile in 2015 based on performance year-to-date.

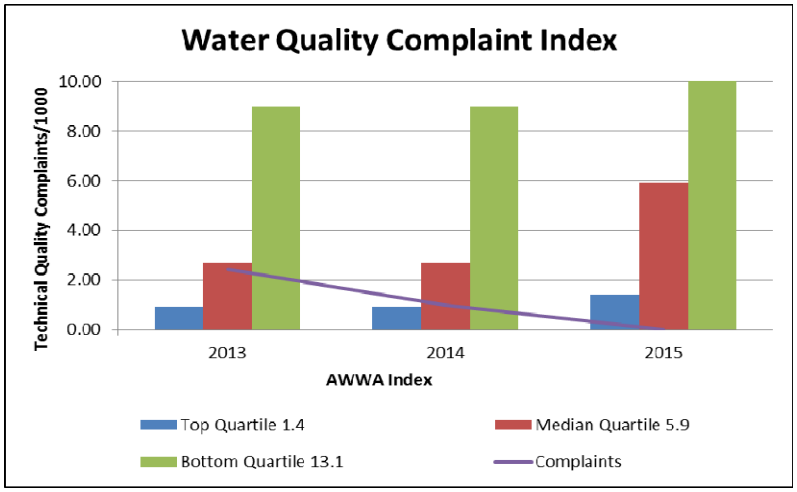
The annual leak detection survey was completed in March 2015. Five leaks were identified—one resulting from snow runoff and the other four were hydrants. Repairs have been made.



Water Quality Complaints

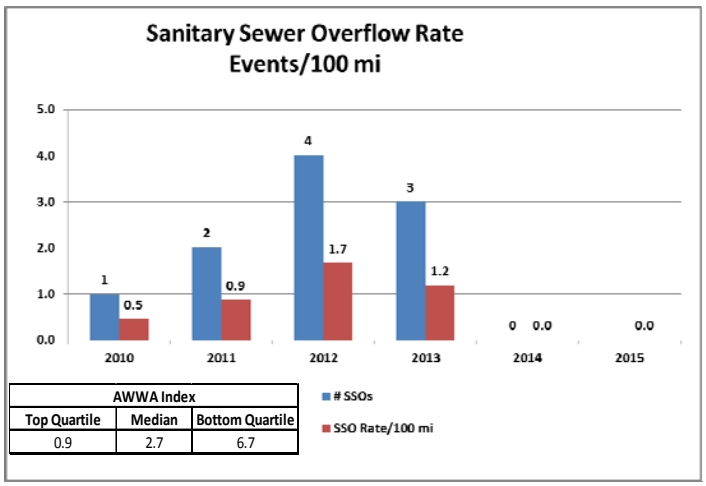
There were no water quality complaints in April 2015. Castle Rock Water compared favorably to industry standards falling just outside the top quartile (best of the best) for this metric in 2014. Year-to-date we are on-track to be in the top quartile this year.

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



Sanitary Sewer Overflows

We ended 2014 with no sewer overflows or backups which is the best performance over the last five years. There were no sanitary sewer overflows in April 2015 and we have had none year-to-date. Our 5-year average is 0.83 events per 100 miles, which is in the Top Quartile (the best) of American Water Works Association (AWWA) entities participating in the national benchmarking. *The lower the number the better the performance!*



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. In 2014, the camera was run through 21.4 miles of pipe, and we cleaned 18.7 miles. So far in 2015, we have inspected 7.78 miles of pipe, and cleaned 3.99 miles.

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:

Grant Garvin
Collection 1

Jamie McCracken
Class 4 Distribution
Class 4 Collections

Kevin Fackerell
Collections 1

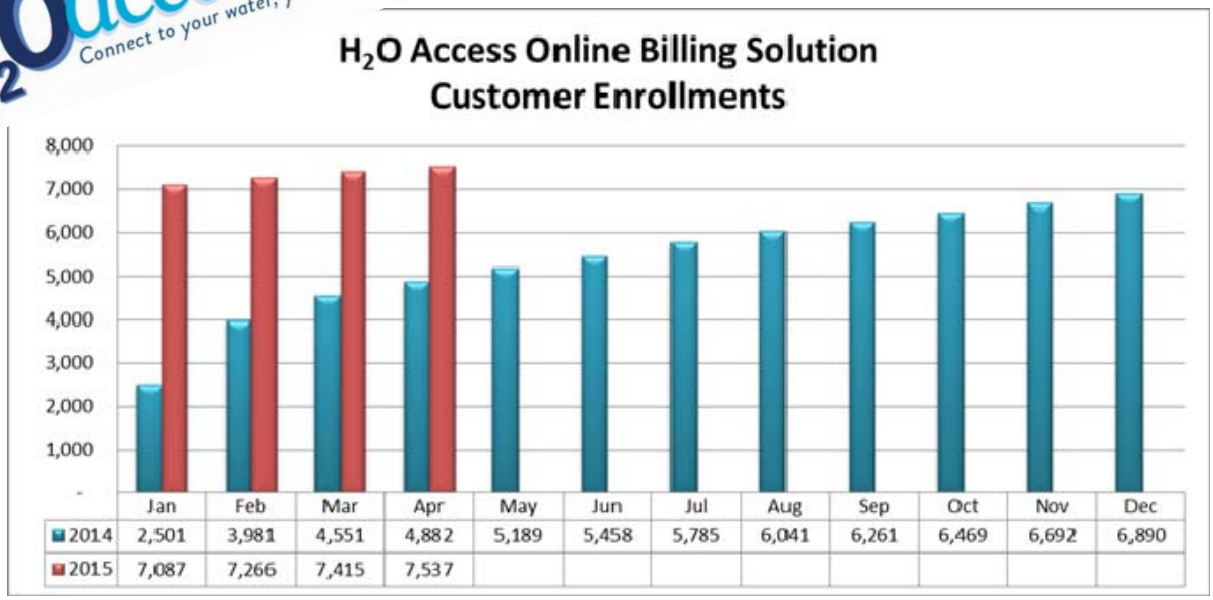
Erin Sweeney
Cross Connection
Control Specialist

John Whitesel
CDL

Customer Statistics

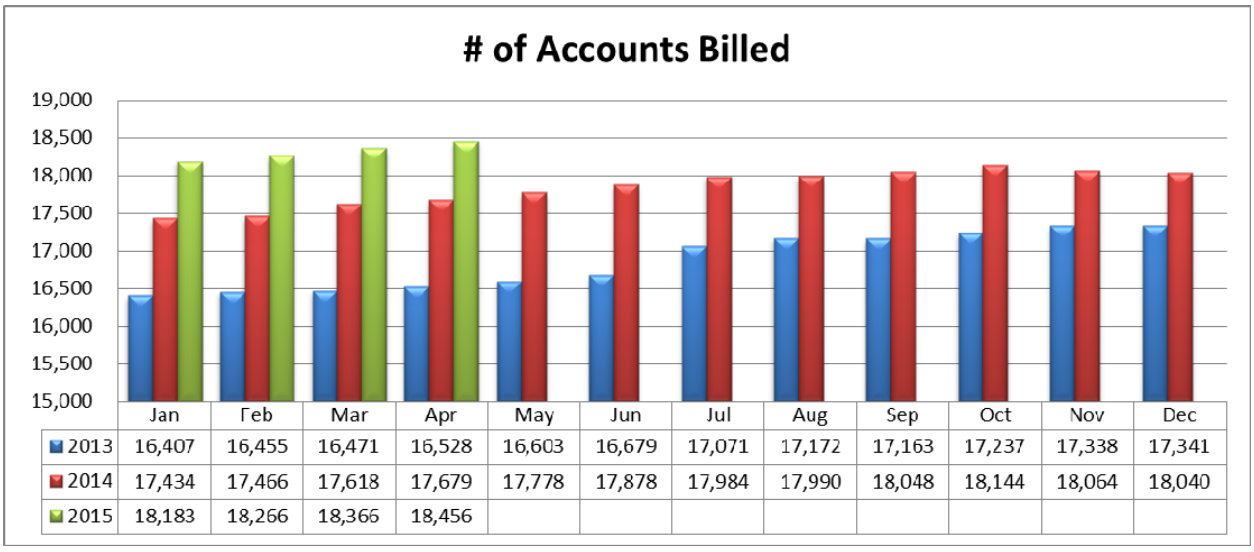
By: Anne Glassman, Business Solutions Manager

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.



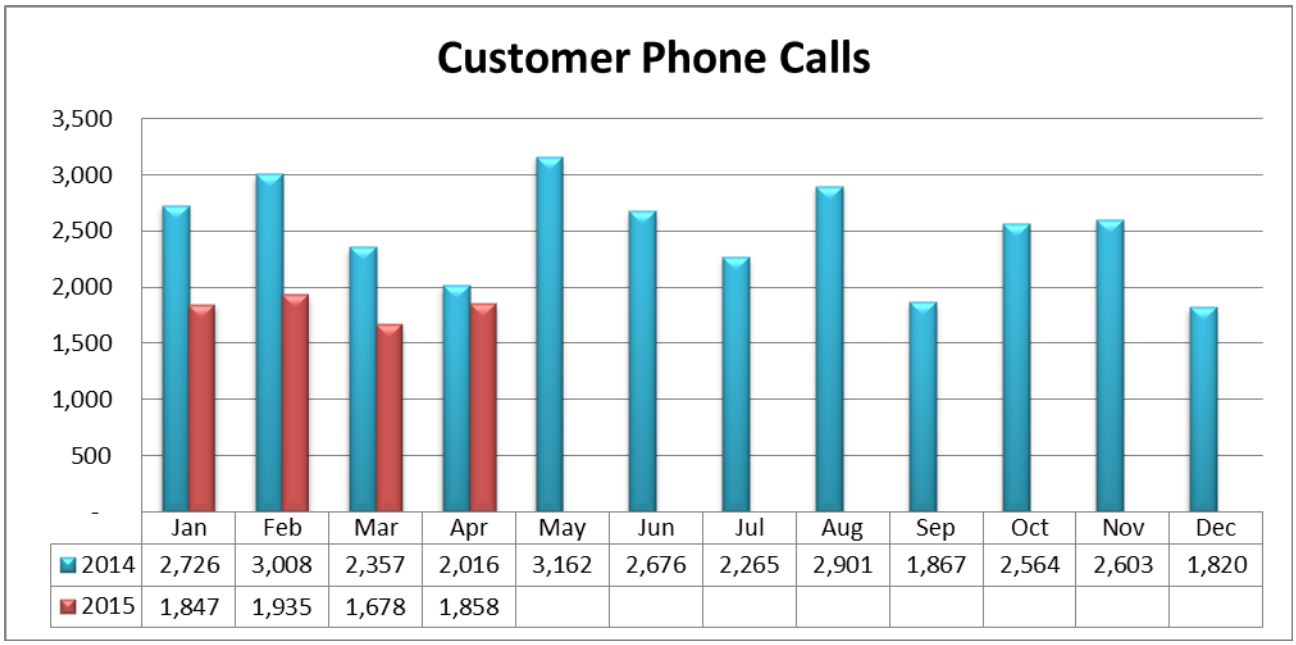
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	2,501	3,981	4,551	4,882	5,189	5,458	5,785	6,041	6,261	6,469	6,692	6,890
2015	7,087	7,266	7,415	7,537								

The H_2OAccess online billing solution was launched in January 2014. The number of customers who have enrolled in online bill pay and have also chosen to go paperless has remained constant at 51%. We will be looking at a campaign this year to expand the customers using paperless billing.



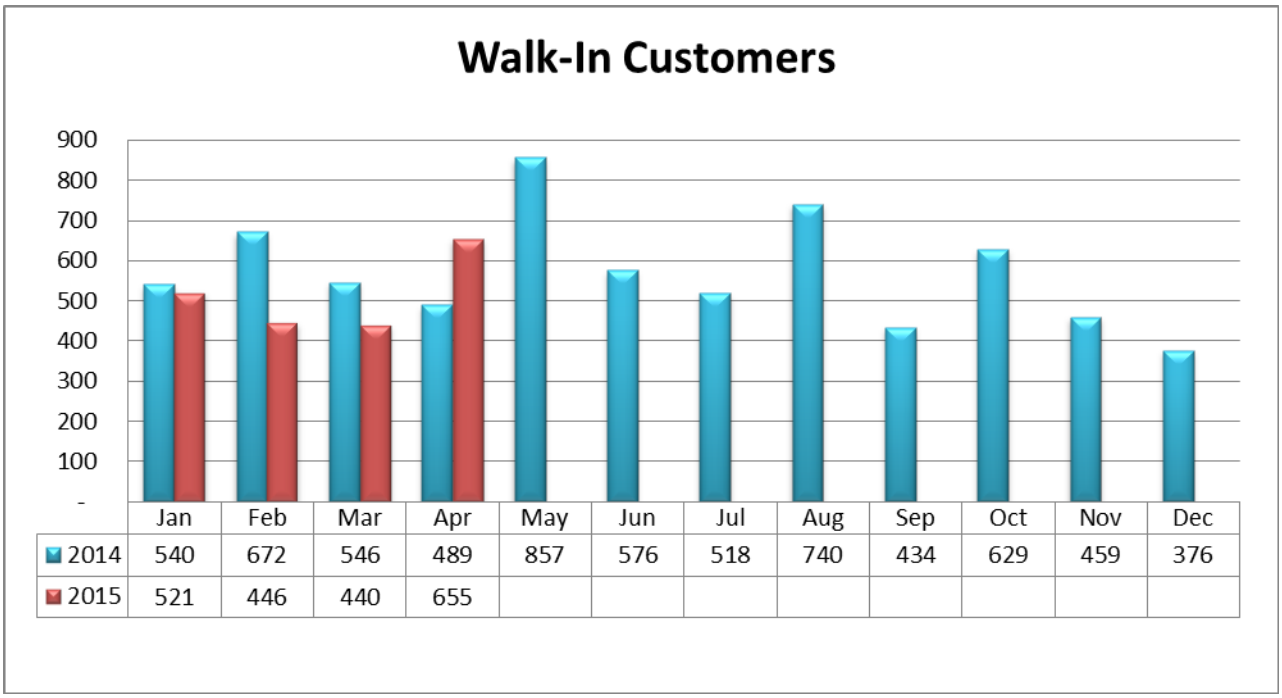
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	16,407	16,455	16,471	16,528	16,603	16,679	17,071	17,172	17,163	17,237	17,338	17,341
2014	17,434	17,466	17,618	17,679	17,778	17,878	17,984	17,990	18,048	18,144	18,064	18,040
2015	18,183	18,266	18,366	18,456								

The number of accounts billed continues to be steady month-to-month mostly due to new residential growth.



	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								

Customer phone calls in April 2015 were higher than the month before due mostly to the start-up of seasonal programs.



	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								

Walk-in customers in April 2015 were higher than the month before due mostly to the start-up of seasonal programs.