

Food Drive Benefits Task Force

By Jeanne Stevens, Employee Appreciation Team

The Employee Appreciation Team sponsored a summer food/personal care items drive to benefit the Douglas/Elbert Task Force. The Task Force's mission is to meet the immediate needs of residents of Douglas and Elbert Counties who are in financial distress and at risk, and to help clients work through troublesome times with dignity. With school out of session, kids and their families that rely on school breakfast/lunch programs have one less option to turn to.

Food drive boxes were installed in each "building" and the competition was on! Monetary donations were accepted also in case people didn't have time to shop or raid their own pantries. The employee appreciation team timed the event to coincide with the summer employee appreciation barbeque. The winning team, Field Services/Operations, had their name added to the highly coveted Golden Throne. Competition was fierce, right down to the last hour, with great participation from each building.

Overall, staff donated over 533 pounds of food/personal care items, and over \$120 in cash - filling the tailgate on one big truck, and having a great time giving back to the community.



Staff enjoying the BBQ



Grillmasters-Tim Lambert, Dale Anderson and Casey Devol.

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.

OCPO's New President

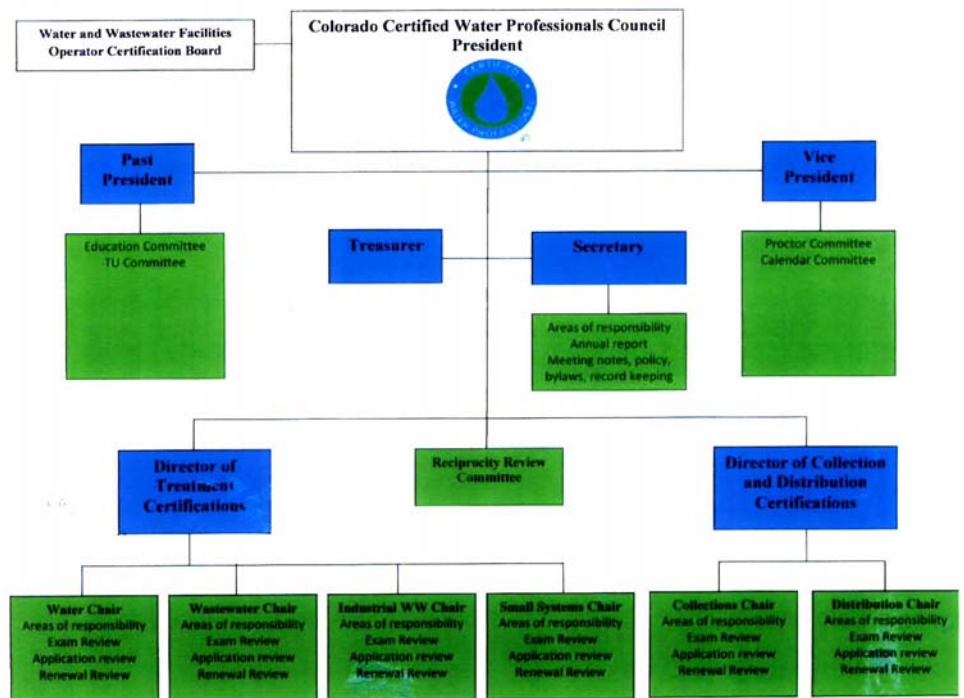
By Jamie McCracken, Field Services Superintendent

Rich Platt has officially taken on a promotion in his volunteer role with Colorado's Operator Certification Program Office (OCPO) as their new Council President. This role oversees several different operator certification related functions for the state including examinations, applications, renewals, and reciprocity requests (see structure below).

Rich also serves as the Town's Utilities Maintenance Supervisor and Operator in Responsible Charge for our Collections system. The Town is highly supportive of Rich's work with OCPO, and is proud to have representation in this critical role that has such a large impact on the Utilities field in not only Colorado, but throughout the nation.



Congratulations Rich (Mr. President), and good luck in your new role!



Mitchell Creek Lift Station Mixer

By Matthew Hayes, Project Manager

The Mitchell Creek Lift Station is located in the Founders Village subdivision and is responsible for pumping the wastewater generated in Founders Village and Castlewood Ranch subdivisions into the gravity sanitary collection system located in the Woodlands subdivision. This facility has had an ongoing issue with fats, oil and grease (FOG) and solids accumulation within the wetwell. The solids material is able to separate from solution and float to the surface between pumping cycles where it conglomerates into a solids sludge mat.

Once this material separates from solution and forms a mat, it cannot be pumped out of the wetwell. This material has to be manually broken up, worked back into solution, and the wetwell continually pumped down in manual mode until the blanket is gone. This requires a crew of three, a fire hose, and a vacuum truck for approximately 4-hours each time. With labor and equipment,

Continued on next page

Mitchell Creek, continued

the cost for each cleaning is approximately \$1,000. The estimated annual cost to remove this material is approximately \$24,000. Installing a mixing system eliminated this labor-intensive process and will pay for itself in less than two years.

Several mixing technologies were evaluated for this project. A course air mixing technology was selected for this project, since they have no moving parts can be located within the wetwell. This minimizes the required maintenance to the mixers. All of the mechanical equipment for these mixers (compressor or blower) is located outside of the wetwell, which eliminates the need for a confined space entry to perform routine maintenance on the mixer. It also utilizes a violent mixing action that has the ability to break up, mix and recirculate any accumulated solids on the surface.

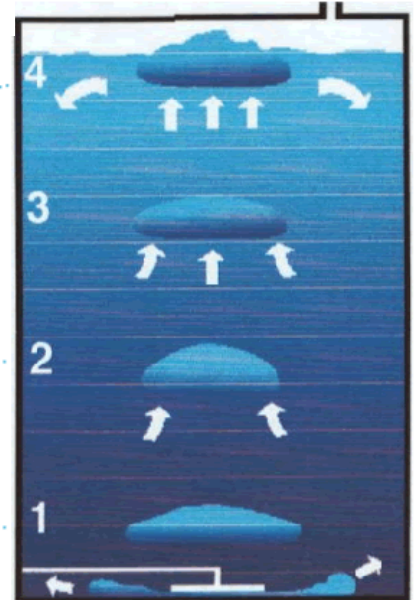
Course bubble mixing

As bubbles break the surface, they push liquids across the top of the tank and down the sides to the bottom, completing the circulation.

Bubbles continue to rise upward, forcing heavier particles to the surface and creating a vertical mixing action that quickly involves the entire tank contents.

Large, flat bubbles are formed immediately above the plates and begin rising toward the surface.

Pulses of air (or gas) are released beneath round, flat accumulator plates fastened 1/4 in. above tank bottom.



NOTE: Larger diameter tanks will require additional accumulator plates.

This project began in December of 2014 with the purchase of the Phi Mixing System and compressor. Town staff performed the installation of the mixer system. The installation was completed July 9th. Operations will be spending the next few months tuning the programming of the mixer system to maximize its operational efficiency. The total cost for this project including labor, equipment, and materials was \$48,365.



Mixing plate within wetwell and compressor



Before start-up



1 hour after start-up



24 hours after start-up

Land Lease Fosters Relationship and Boosts Water Availability

By Matt Benak, Water Resources Manager

About one year ago, the Town purchased 770 acre-feet of water rights in Weld County, Colorado, near the Town of Orchard. Along with this water, came a 640 acre parcel of land. Since the Town has taken ownership of this land, our plan has been to maximize the quantity of water we would have available to potentially lease to other parties in the short-term and to use this water for augmentation of our future northern water supplies (the Box Elder Project) in the long-term. We believe we have accomplished the first part of this goal with a surface use lease that was approved by Town Council on August 4, 2015.



The adjacent landowner, Sublette Inc., had enjoyed a land use arrangement with the previous land owner whereby they were able to grow crops, use the land for hunting and graze livestock. They had expressed their interest in continuing this type of arrangement with the Town. As part of the new arrangement, the Town asked that any crops Sublette would grow would be covered by their water supplies and that Sublette act as caretaker of the land, which is about a 90 minute drive from Castle Rock. Additionally, the Town also worked with Sublette to act as general contractor to revegetate the majority of the land back to native grasses. Sublette is using their water to help establish this grass stand.

During Matt Benak's visit to the property on July 7, 2015, he observed that the native seed mixture had been planted, as well as a 120 acre plot of sorghum. The manager of Sublette's operations, Mr. Sheldon Skovgaard indicated that the wet weather of May and June was certainly a help in getting the native seed a jump-start. All in all, the partnership with Sublette is helping the Town save money and staff time while allowing us to have more of our water available sooner for possible leases. Leasing this water to other parties will help offset the long-term investment costs for our Alternative Source of Supply project.

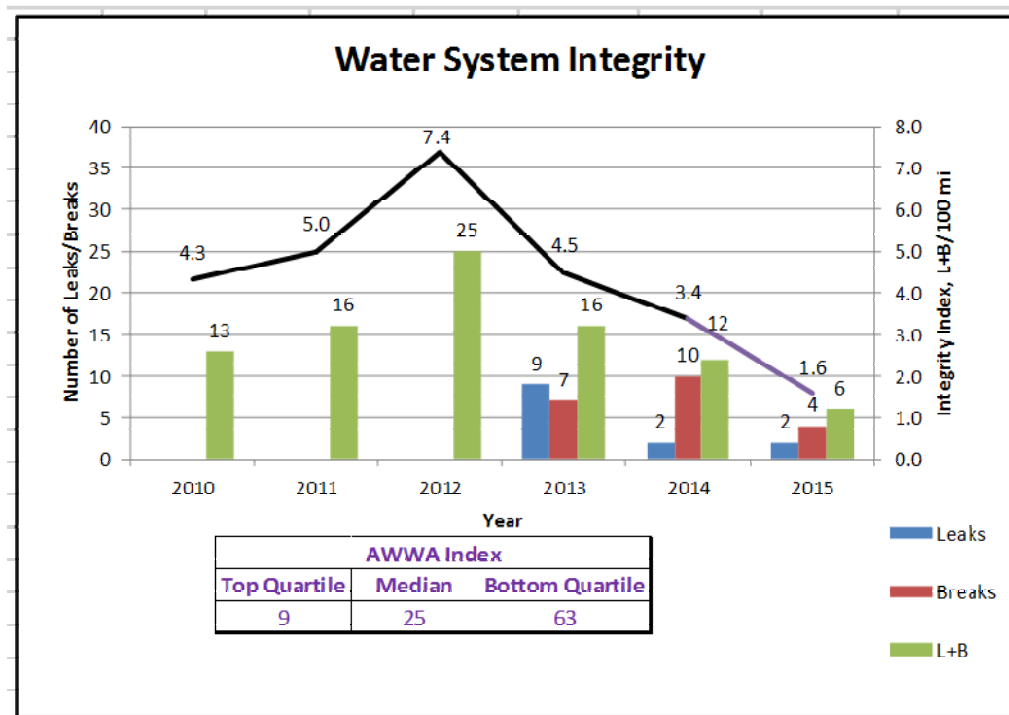


Welcome to our Team!



Sandra Aguilar
Customer Relations Program Manager

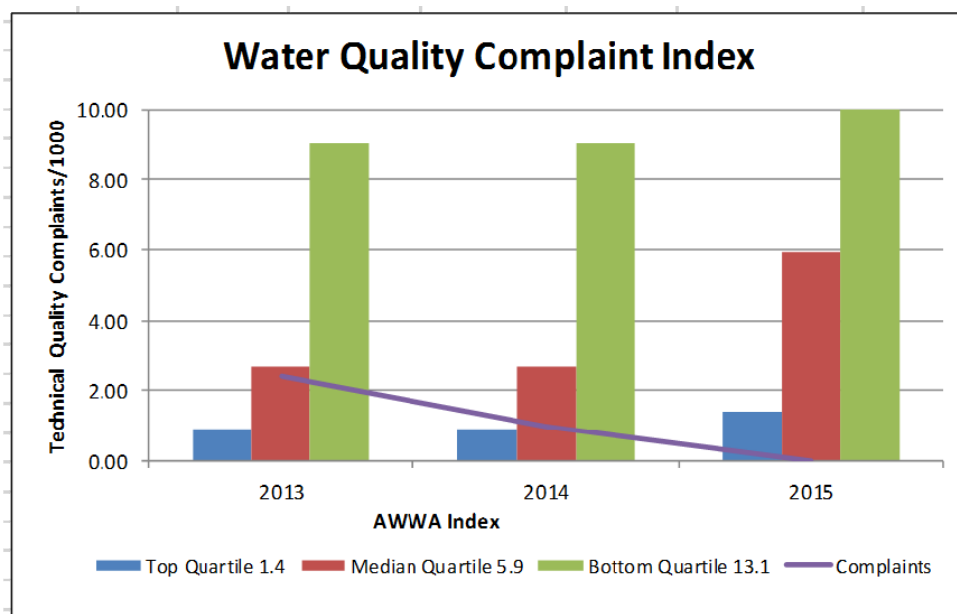
Water System Integrity



There was one service line break reported in July 2015. An overall rating of 1.6 breaks per 100 miles kept us in the top quartile as compared to national standards for 2014. We are on-track to be in the top quartile again in 2015 based on performance year-to-date.

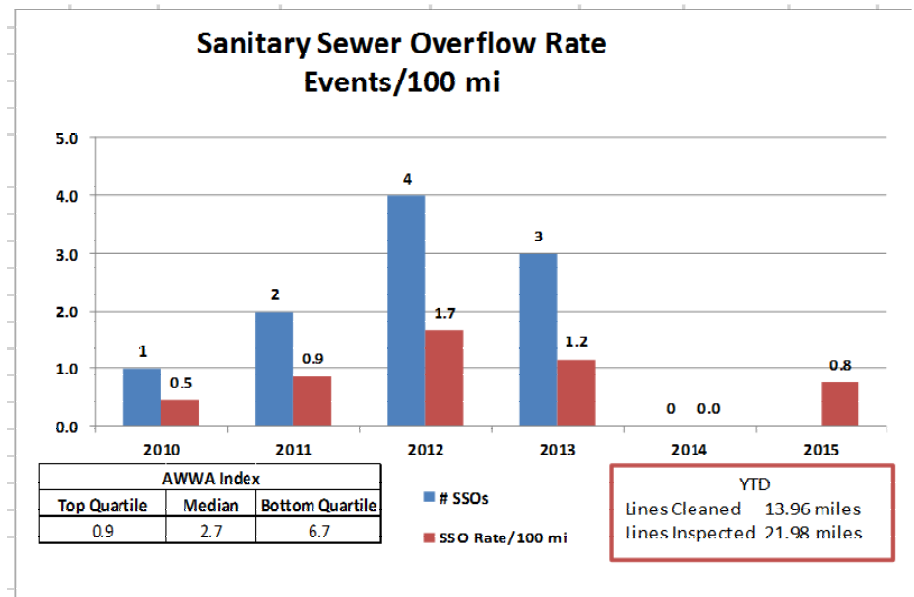
Water Quality Complaints

There were no water quality complaints in July 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 two sanitary sewer overflows in July 2015, bringing the total for the year to three. Our 5-year average is 0.38 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!*

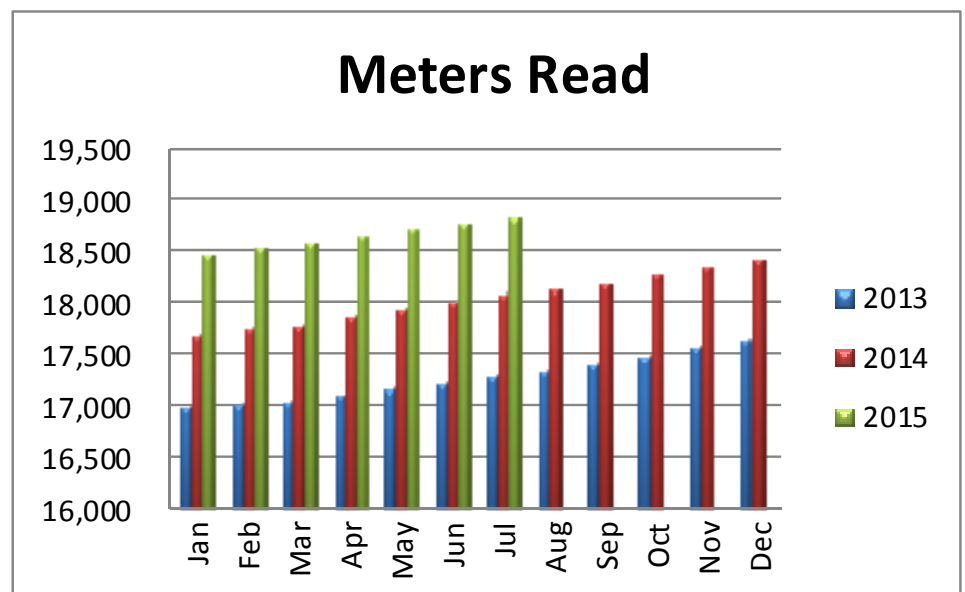


How do we avoid overflows?

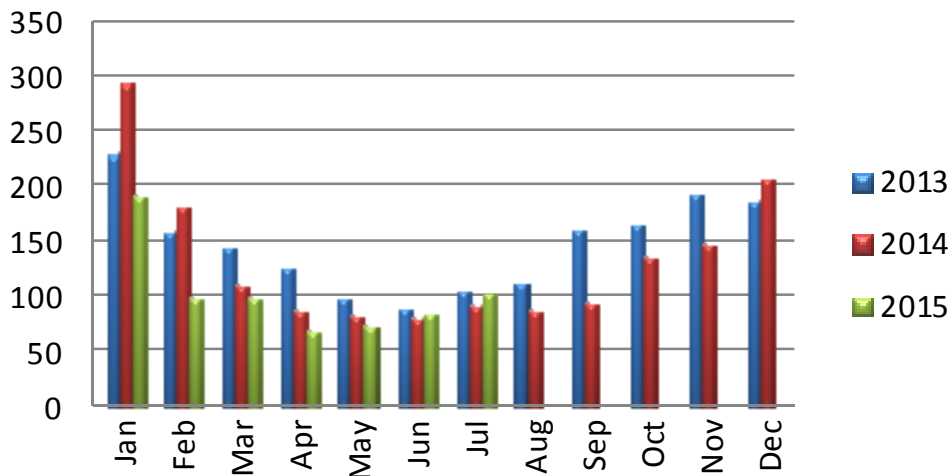
Our team runs a camera through the sewer mains to look for problems. When problems are identified they are cleared with a high pressure water jet. In 2014, the camera was run through 21.4 miles of pipe, and we cleaned 18.7 miles. So far in 2015, we have inspected 22 miles of pipe, and cleaned 14 miles.

Meters

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



Skipped Reads



Skipped reads in July 2015 are consistent with 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 0.55% we still continue to stay well below the industry average.

Skipped reads of 68 in April 2015 set a record for the lowest amount of skipped reads since Utilities has been tracking this metric

Why is this important?

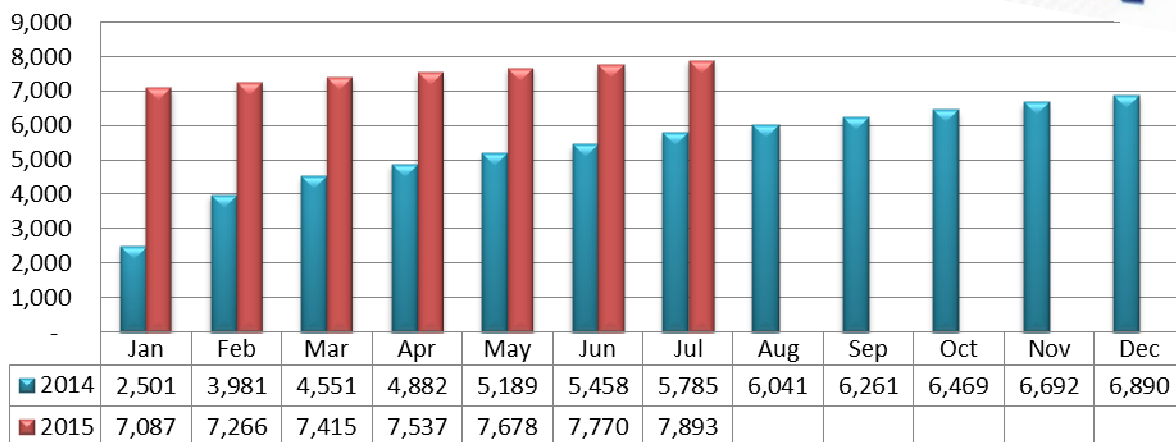
It is a strong indication of the level of preventative maintenance being done by our team. A skipped read is indicative of a problem with the meter. Less skipped reads means more properly working meters, which is good for all our customers.

Customer Statistics

By: Anne Glassman, Business Solutions Manager

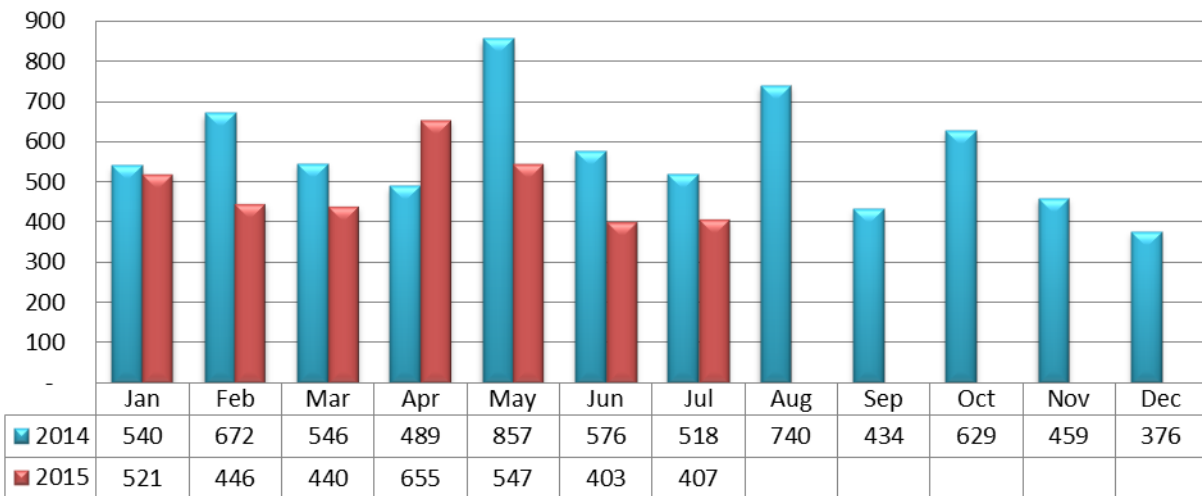
Our Business Solutions Team continues to track a host of statistics and data as we continue to evaluate our levels of service and look for efficient ways to improve on these levels.

H₂O Access Online Billing Solution Customer Enrollments



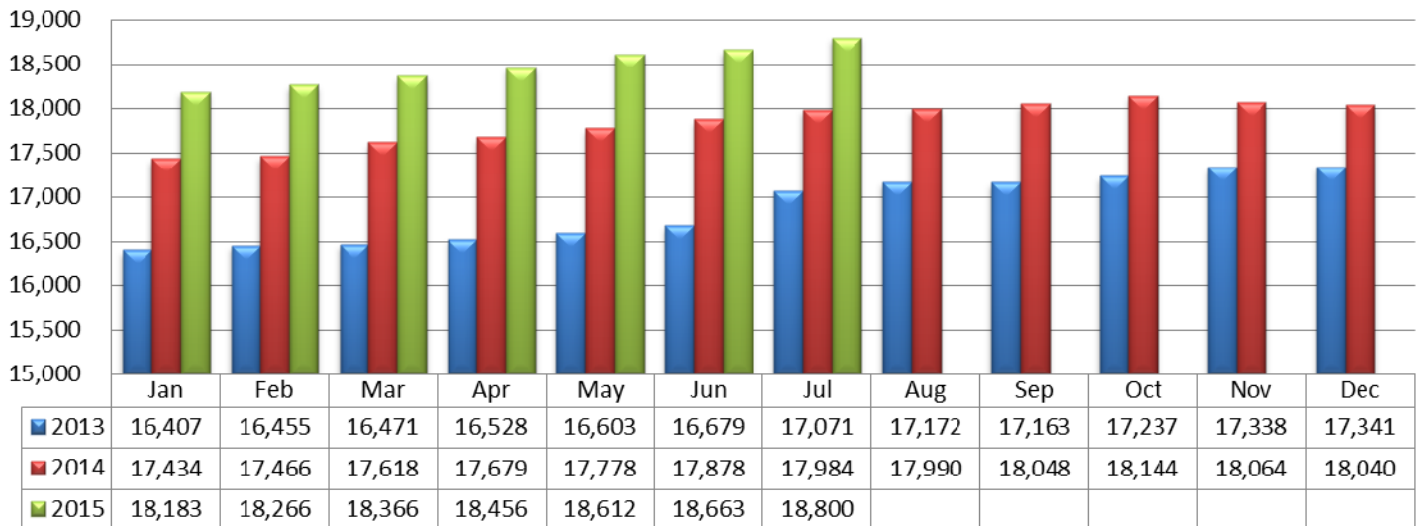
The H₂OAccess online billing solution was launched in January 2014. The number of customers who have enrolled in online bill pay and have also chosen to go paperless remains steady at 51%.

Walk-In Customers

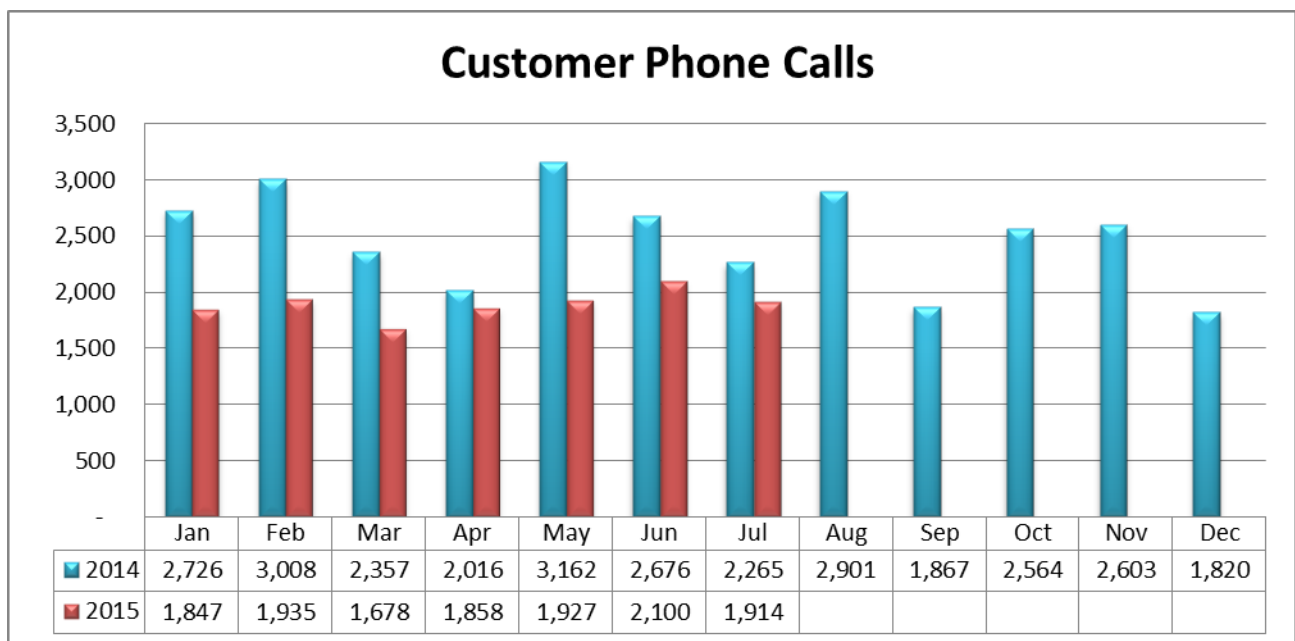


Walk-in customers in July 2015 were consistent with June 2015.

of Accounts Billed



The number of accounts billed continues to steadily increase month-to-month mostly due to new residential growth.



Customer phone calls in July 2015 were consistent with the prior month.

New Operations & Maintenance Building on Schedule

By Josh Hansen, Project Manager

Installation of concrete masonry units for the O&M Building continued throughout July and should be completed in August. Mechanical, electrical, and plumbing rough-ins are being installed concurrently with the masonry work. The contractor also began pouring portions of interior slab-on-grade concrete in July. Interior slab for approximately half of the building was completed this month. Steel erection is anticipated to begin in early August.

In the stormwater detention pond, the contractor poured concrete forebays for all three pond inlets. These forebays will help trap and settle out sediment before it reaches the main pond which should facilitate easier pond maintenance in the future. The contractor also poured the majority of concrete trickle channel along the bottom of the pond. Final improvements to the pond should be completed in August and include a new pond outlet structure, emergency spillway, and maintenance access trail.

Some other additional work in July included the beginning of installation of door and window frames and construction of the electrical service line to the building. Construction of the project remains within the established budget (approximately \$4.5 million) and is continuing on schedule for substantial completion in December 2015.



Recently poured concrete forebays and trickle channel



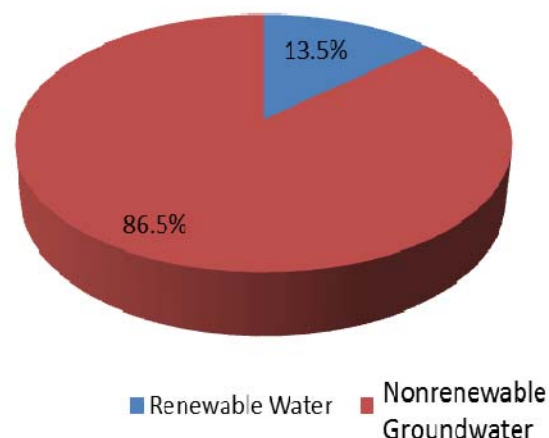
Crew pouring concrete slab-on-grade in the building

2015 Water Demands

By: Heather Justus, Water Resources Program Analyst

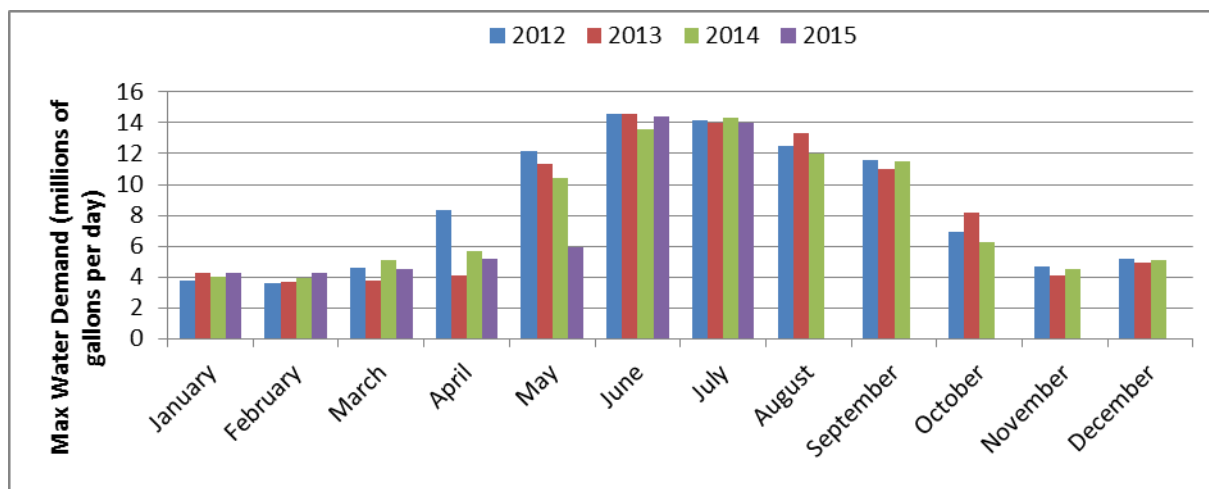
The maximum daily water demands are plotted by month from 2012 to the current month. As observed, the maximum demand of 14.0 million gallons per day (MGD) for July is about the same as the June maximum of 14.4 MGD. Summer time maximum demands inform us of the size of the infrastructure necessary to provide 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 July was 329.2 million gallons (MG), which was a 27% increase from the June 2015 total of 239 MG, and a slight increase (4%) from July 2014 demand of 316 MG.

Water Supply Sources YTD



The Town's nine alluvial wells produced a total of 23.7 MG of renewable water during July, which represents 6.9% of the total water supply for the month and 13.5% (161 MG or 496 acre-feet) of the water supply year to date. The total renewable water produced since the opening of the PCWPF has surpassed 634 MG, which represents 11.9% 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.

Maximum Daily Water Demands

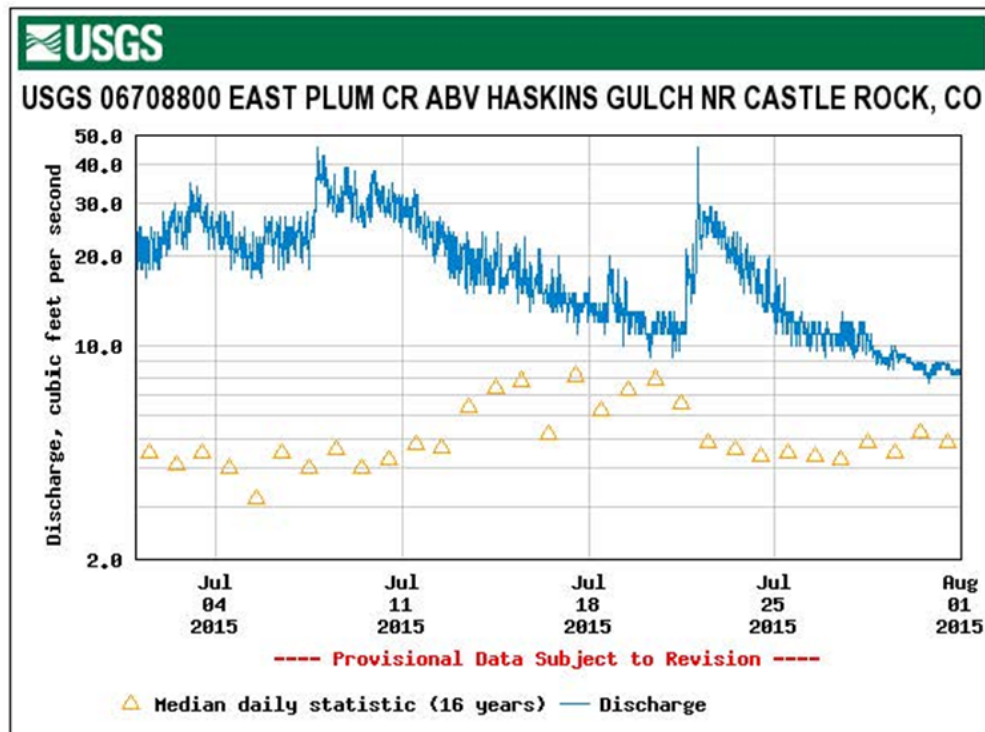


The flow hydrograph represents stream flows in East Plum Creek taken from the stream gauge located at Haskins Gulch. The hydrograph shows that the Plum Creek basin experienced stream flows between 8 to 40 cubic feet per second (cfs). On July 29, the call was changed on the main Stem of the South Platte River from free-river to an 1909 active call. The 1909 call has a higher adjudication date than our Meadows Alluvial Wells which is our Central Well Field. This means that those wells are now out-of-priority, so the depletions from those wells will now be covered by our nontributary return flows and/or our Douglas Park water rights. This also

Continued on next page

2015 Water Demands, *continued from previous page*

means that the Town will now have slightly less reusable water going down Plum Creek. 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.



JUNE 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. Sixty routine samples were completed. All samples were within the parameters set forth by the 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 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. Less than 5 percent of customer experienced an outage but Utilities did have one event (see below):

- Planned service line repair at Bagpipe St. Two customers were out of service for four hours.

Sewer System Effectiveness

<1% of our customers will experience a sewer backup caused by the utility's sewer system per year. While we continue to meet this service level, there was one sewer back-up reported.

Hydrant Meter Permits

Twenty-six (26) open meter permits.

Backflow Prevention Devices

Mailed approximately 62 backflow test letters for devices due in July.

Town Recognized for Being “Water Smart”

Connecting Land Use to Water Use

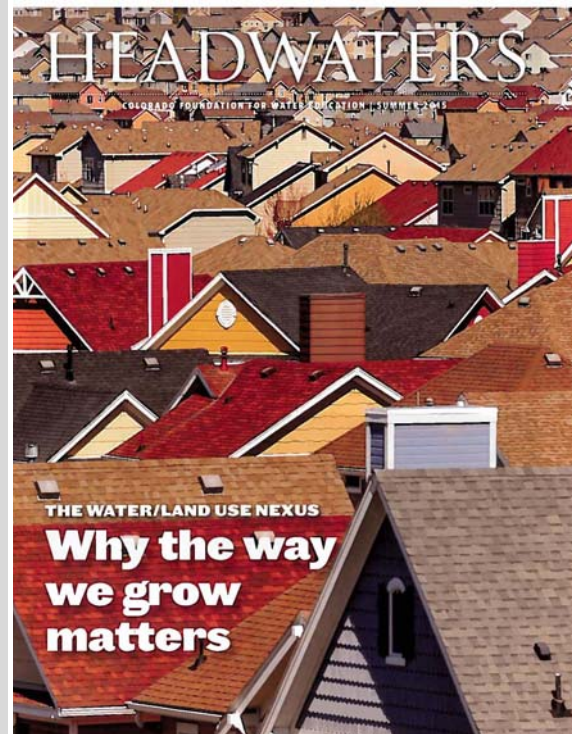
The Town, was recognized in “*Headwaters*” Summer Issue for adopting “among the most innovative [regulations] in Colorado” with respect to how land is developed. Castle Rock’s incentive for developments to create development-wide water efficiency master plans is getting a lot of attention state-wide (see excerpt from the article below).

In some places. The water-land connection is clearly being made. Consider Castle Rock, population 55,000 and expecting to someday reach 100,000. Most water comes from pumping aquifers that, even decades ago, had begun to reveal limits. In subdivisions of three-car garages you will still find expansive lawns. But Castle Rock has tightened the faucet: no outdoor watering after 8 a.m. or before 8 p.m. Also, a rate structure based on lot size charges \$16 per 1,000 gallons when a pre-determined water budget is exceeded. And like Las Vegas and Los Angeles, Castle Rock now pays water customers to remove turf.

Castle Rock earlier this year also adopted regulations that may be among the most innovative in Colorado. As of April, one project had snatched at the bait of reduced water system development, also called tap fees. The Lanterns is to have 1,200 single-family homes on current grazing lands interspersed with oak brush. To qualify for the discounted fees, the Lanterns developed a city-approved water-efficiency plan where a maximum of between 19 and 32 percent of lot size will be devoted to turf, none of it Kentucky bluegrass. Those species of grasses allowed must be able to survive on 19 inches or less of supplemental irrigation per year in addition to the 17 inches of annual precipitation. Kentucky bluegrass needs 24 to 26 inches of supplemental irrigation along Colorado’s Front Range. Inside, only high-efficiency faucets, showerheads and toilets will be installed.

“It’s not over the top or Draconian,” says Scott Carlson, a member of the family developing the property. “We try to make, small reasonable concessions across the entire water use spectrum.” The developer gets lower tap fees, giving the homeowners correspondingly lower-priced homes—and, forever more, lower water bills.

Mark Marlowe, Castle Rock’s utilities director, says the water-efficiency plans are expected to result in new town lots consuming anywhere from 26 to 47 percent less water than those developed in the late 1990s.



This same edition of the magazine also lauds Castle Rock for its innovative water savings “water budget” rate structure.

The Town has embraced this growth with the newly adopted Water Efficiency Master Plan, community focus groups, and state-recognized conservation efforts including the Smartscape renovation rebate program. The Smartscape program, considered to be cutting edge in the State, was featured during the Colorado Foundation for Water Education water efficiency tour in June.

In future issues, *Headwaters* will examine water through a wider lens, and help decision makers discover and explore how its management and protection is influenced by all other issues facing Colorado.



Plan Review Update

*By Kurtis Cotton
Plan Review Engineer*

The applications reviewed consisted of:

31 1st Submittals
34 2nd Submittals
36 Special reviews

Utilities reviewed 101 applications this month which compares to 37 during the same time period in 2014. The average assigned due date by Development Services was 1.7 weeks, and Utilities completed the reviews in 1.5 weeks. Utilities completed all reviews on-time as scheduled. These applications included:

4 Agreements
8 Plats
31 Construction Drawings
13 Site Development Plans
12 Technical Criteria Variances
12 Field Change Orders
19 Grading, Erosion and Sediment Control (GESCC) Plans
2 Grading, Erosion and Sediment Control (GESCC) Permit

In addition to completing the above listed applications on-time, Utilities completed 90 single family utility reviews and associated system development fees.