



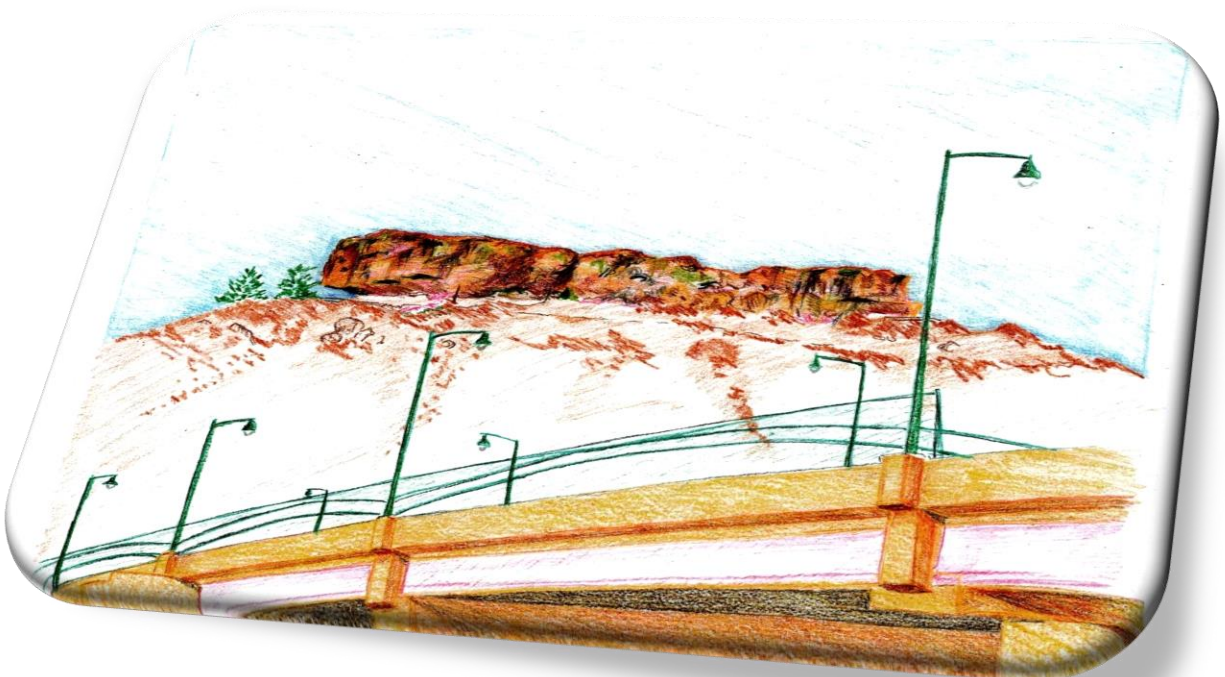
The Public Works Department operates under the CAN DO philosophy  
- We are committed to doing the job right with a positive attitude  
while staying dedicated to meeting the needs of our Town values  
and continually searching for opportunities to improve.

# PUBLIC WORKS DEPARTMENT

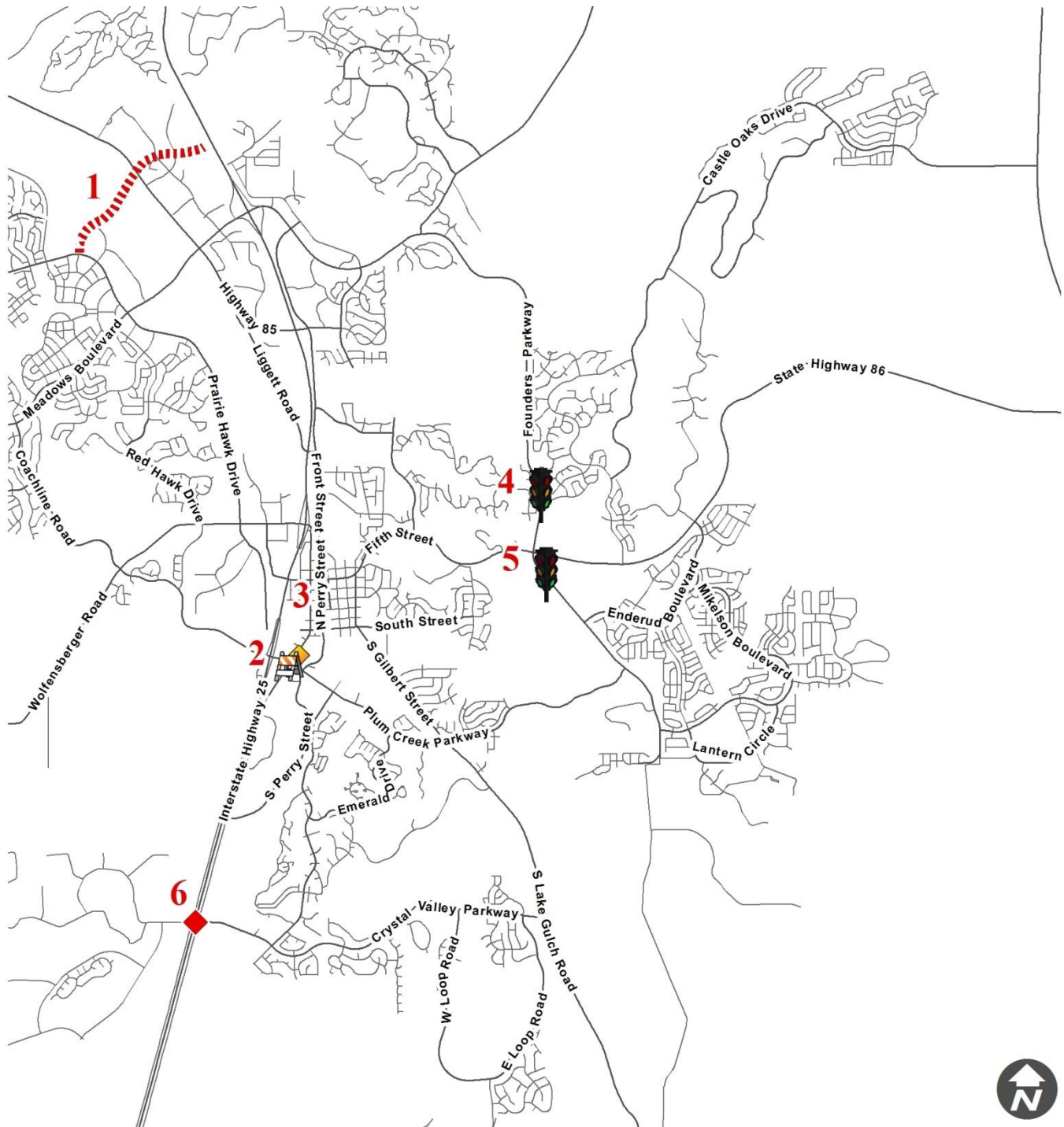


***Our Mission: To provide  
outstanding service, safety  
and support for  
transportation infrastructure  
and maintenance.***

## ***MONTHLY REPORT – JULY 2016***



# CAPITAL PROJECTS



1. North Meadows Drive Extension Project
2. Plum Creek Pkwy Intersection Improvements
3. Downtown Alley Rehabilitation
4. Traffic Signal at Black Pine Drive/Copper Cloud Drive
5. Traffic Signal at Ridge Road/King Soopers Entrance
6. Crystal Valley Parkway/Dawson Ridge/I-25 Interchange

**1. North Meadows Drive Extension Project** - The Town's transportation project!! The following is a summary of the construction activities that took place during this month:

- I-25 east side of bridges, continuing roadway paving on the northbound off ramp, I-25 northbound on ramps have been completed
- US 85 bridge and ramps structure coating completed
- Completed the installation of the right- of-way fence US 85
- Completed concrete barrier I-25
- Completed the installation of the curb and gutter between US 85 and I-25
- Paving roadway between US 85 and I-25 continuing
- Completed the installation of light foundation between US 85 and I-25
- Completed the installation of rip rap for drainage channels
- Installing underground electric between US 85 and I-25
- Roadway striping has started

**Traffic impacts to the traveling public:**

- Castlegate Drive North from US 85 to Castlegate Drive West is closed and will remain closed until the project is open later this summer.
- The new Phase 2 traffic configuration on I-25 has no shoulders and narrower lanes; please use caution and follow the posted speed limits.

**Phase: Construction: Budget: 2016 - \$9.5M Construction Completion Date: Summer 2016.**



*I-25 Interchange Roundabout*

**2. Plum Creek Parkway Intersection Improvements at Wilcox & Perry to I-25** – This improvement project will consist of the following components:

- Remove the dip at the intersection of Wilcox Street and Plum Creek Parkway (located on the east side of Wilcox Street).
- Reconfigure the above intersection to have two northbound left turn lanes from Wilcox Street to Plum Creek Parkway. In addition, the eastbound approach will have a free right turn lane onto southbound Wilcox and the westbound approach will have a dedicated right turn lane onto northbound Wilcox.
- Add a southbound free right turn lane from Perry Street to Plum Creek Parkway.
- Add a westbound right turn lane from Plum Creek Parkway to northbound I-25.



- Through the Pavement Maintenance Program, concrete restoration will occur on Plum Creek Parkway from Wilcox Street to the Douglas County Fairgrounds entrance.

**Phase:** Construction - PLM has completed the roadwork associated with the Wilcox intersection and it has been opened for use. The panel replacement work between Wilcox and the railroad bridge and the work in the I-25 right-of-way will commence on the week of August 8<sup>th</sup>. **Budget:** Capital Fund: \$3,050,000; Pavement Maintenance Fund: \$553,850; Utilities Department: \$59,000 **Projected Construction Completion:** Summer 2016



*Intersection of Plum Creek Parkway/Wilcox*

**Downtown Alley Rehabilitation** – The Town has been awarded two grants to improve accessibility in certain public alleys within the downtown area. Public Works and Development Services have received direction from Town Council and will plan for the reconstruction of four alley segments. Three of the alleys are located from 1<sup>st</sup> Street to Briscoe Street between Wilcox & East Plum Creek; one alley is located north of 7<sup>th</sup> Street between Wilcox & Perry. **Phase:** Construction – Technology Constructors, Inc. (TCI) is substantially complete on all the alleys.

**Budget:** Grants: \$202,000; Public Works: \$115,000; Utilities Department: \$71,835 - Total: \$389,442  
**Projected Construction Completion:** Summer 2016



*7<sup>th</sup> Street Alley*



*Briscoe/Fair Alley*

**4& 5. Intersection Signalization Projects** - This project will complete the installation of two new traffic signals; one at the intersection of Black Pine Drive/Copper Cloud Drive/Founders Parkway; and one at Ridge Road/King Soopers Entrance. **Phase:** Construction – WL Public Works has been working resourcefully with Muller Engineering and IREA to come up with a solution in order to keep the signal construction at Founders Parkway and Black Pine/ Copper Cloud moving. The issue is that the signal pole location for the northeast corner is not meeting the clearance requirement standards needed for IREA’s existing overhead electric. The Town and Muller Engineering may have to look at alternative designs in order to construct the signal. We are trying to minimize impact to both the project schedule and cost. There was also a potential clearance issue at Ridge Road and King Soopers, but the issue has been resolved, and the signal construction at this location is progressing forward. Both signals were slated to be completed by early August per the contract. However, an addendum will be made to the contract based on a revised schedule due to these unforeseen circumstances. **Budget:** \$480,000 **Projected Construction Completion:** Late Summer 2016.



**6. Crystal Valley Parkway/Dawson Ridge/I-25 (CVDR) Interchange – Environmental Assessment Update** - An update of the CVDR Interchange Environmental Assessment (EA) will be necessary as part of the approval process to construct the interchange. The present EA was completed in 2004. Based on discussions with CDOT, all sections of the 2004 EA must be updated as necessary to meet current Federal requirements. **Phase:** Planning - The EA update for a phased interchange is presently on hold. FHWA representatives stated interchange phasing is not consistent with AASHTO policy and is not receptive to phasing the construction of the interchange. The Town may advance the project with acquisitions of right-of-way needed for the project. Public Works is also analyzing other improvement concepts that would provide alternate routes for the Heckendorf/Crystal Valley Ranch community. Public Works has received information from CDOT and the Public Utilities Commission to assist in planning the improvement projects for the interchange area. **Budget:** \$250,000 (Development Escrow Account); Capital Fund: \$1,500,000

#### **Traffic Signal System Upgrades**

**Phase 1** – This project is the first step in implementing the system improvements that were initially identified as part of the October 2013 Signal System Evaluation study. The three main components of the Phase 1 project are a central communications upgrade, a central software upgrade that manages the signal system, and individual intersection traffic signal controller upgrades.

**Phase:** Construction – Centrac has been performing well on the workstations it was installed on. As a beta site, staff has been testing the latest version and had found errors within the program. The vendor was made aware of the issues and released a newer version at the end of the month which has resolved the bugs that were found. Since the punch list has been corrected, staff has accepted the project making this phase complete. **Phase 1 Budget:** \$700,000 **Construction Completion:** Complete



**Phase 2** - The remaining piggyback battery back-up systems (UPS systems) along with five 332 cabinets and pads have been ordered. This phase of the project will be installing UPS systems on the remaining 22 cabinets without battery back-up as well as upgrade five of our existing 336 cabinets to 332's to allow for more storage space within the cabinets. Staff is looking to have our on call contractor complete this work due to their familiarity with our system. Staff has also contacted our current vehicle detection vendors about bringing video back to our traffic operations center. The video from detection will help to better troubleshoot problems occurring in the field as well as provide better diagnostics. **Phase 2 Budget:** \$400,000 **Construction Completion:** Winter 2016

## ENGINEERING DIVISION

**6<sup>th</sup> Street Alley Retaining Wall and Pavement Failure** - In June 2015, the retaining wall supporting the alley (north of 6<sup>th</sup> Street and between Wilcox and Jerry streets) failed. With the alley further deteriorating in the past 13 months; the Town has escalated the efforts to repair the failed wall section. Solid Earth Construction, Inc. provided an acceptable proposal to construct the wall and will commence with construction on August 1<sup>st</sup>. The wall is anticipated to require three weeks to construct. **Budget:** Design and Construction Contract: \$198,325 (Emergency Funds will be used for the project).

**2016 Pavement Maintenance Program (PMP)** - The 2016 Curb, Gutter, and Sidewalk Project, the Asphalt Patching, Overlay and Reconstruction Project, the Slurry Seal Project and the Mikelson Boulevard Reconstruction Project are all substantially complete. Staff is in the process of documenting punch list items for the contractors to address and complete prior to accepting the projects into the one year warranty period along.



Public notification planning and website updates are continuing with assistance from the Community Relations team.

**2017 Pavement Maintenance Program (PMP)** - Staff is working on developing the proposed 2017 PMP budget for the south PMP area and scheduled primary streets. Determining which streets will receive surface treatments, overlays or reconstructs to maintain the programs Overall Condition Index (OCI) average goal of 70 on secondary streets and 75 on primary streets.

The PMP team continues to work on condition rating of streets within the east PMP area and the primary street network. Staff is anticipating this to be completed by mid-August. Condition rating is the evaluation of asphalt or concrete pavement; this applies a score which is utilized by the Town's pavement management software to help determine the proper pavement treatment along with staff recommendations.

**2016 Facilities Parking Lot Improvement Program** – The construction contract with PLM Asphalt & Concrete, Inc. has been approved and staff is working with the contractor to develop the project schedule. This contract will see needed improvements to eight (8) Town facility parking lots and is scheduled to begin August 22<sup>nd</sup> as follows:



- Founders Village Fire Station will receive asphalt patching, a full asphalt seal coat, and concrete pavement joint sealing.
- Crowfoot Valley Fire Station will receive asphalt patching, a full asphalt seal coat, concrete repairs, and concrete pavement joint sealing.
- Butterfield Park will receive asphalt patching, a full asphalt seal coat, concrete repair, and concrete pavement joint sealing.
- Coachline Trail Head Parking lot will receive a full asphalt seal coat.
- Matney Park Parking lot will receive asphalt patching, and a full asphalt seal coat.
- Meadows Water Treatment Plant will receive concrete repairs, asphalt patching, and a full asphalt overlay.
- Diamond Ridge Pump Station will receive a full asphalt seal coat.
- Police Station Parking lot will receive a full asphalt seal coat.

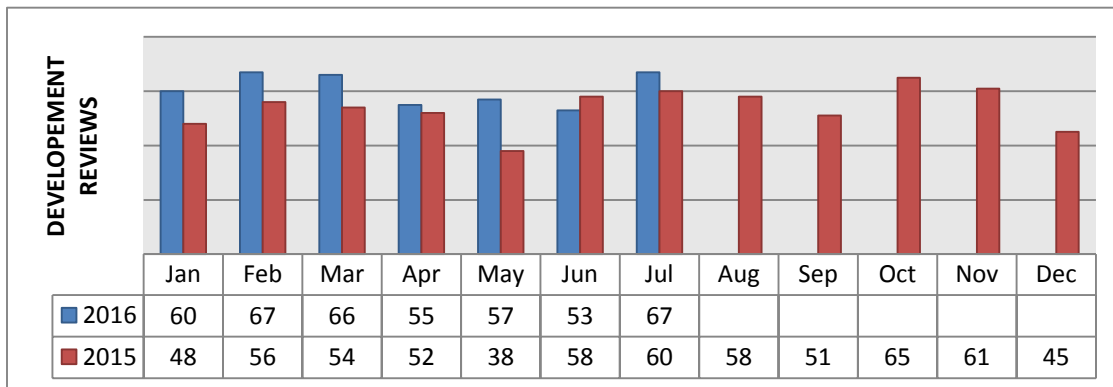
**2016 Bridge Maintenance Program** – The contract for the Castle Oaks Drive Bridge over Cherry Creek - Approach Slab Leveling Project has been approved and is tentatively scheduled to start in August.

Street Operations & Maintenance Division began painting the following bridges:

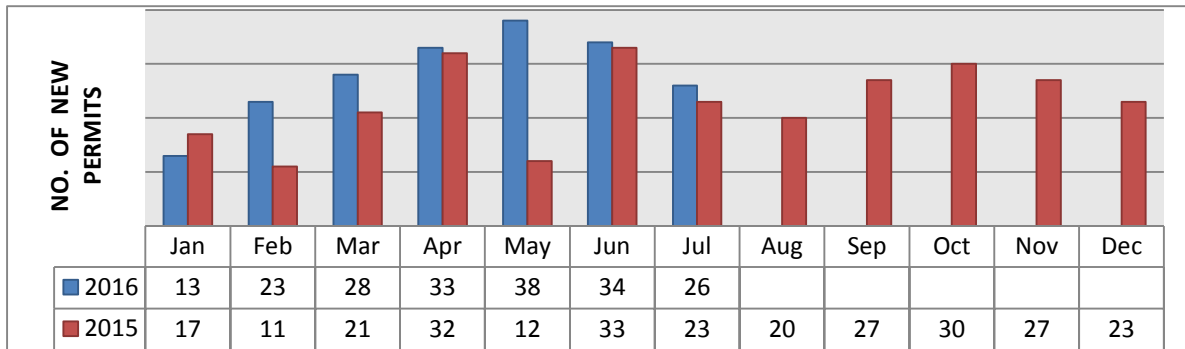
- Wilcox Bridge over Sellers Gulch
- Perry Street Bridge over Sellers Gulch
- Plum Creek Parkway Bridge over BNSF Railroad

### ***Development Review and Permitting***

**Development Review** - Included in the 673 submittals are 16 first time applications with two pre-applications. All reviews were completed on or before the due date assigned by the Development Services Project Manager.

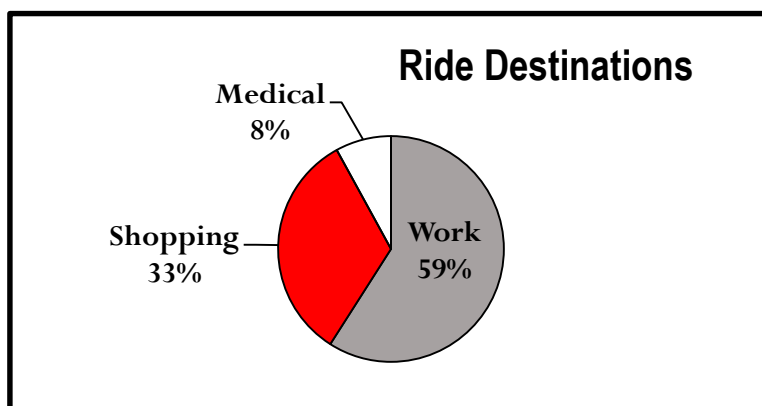
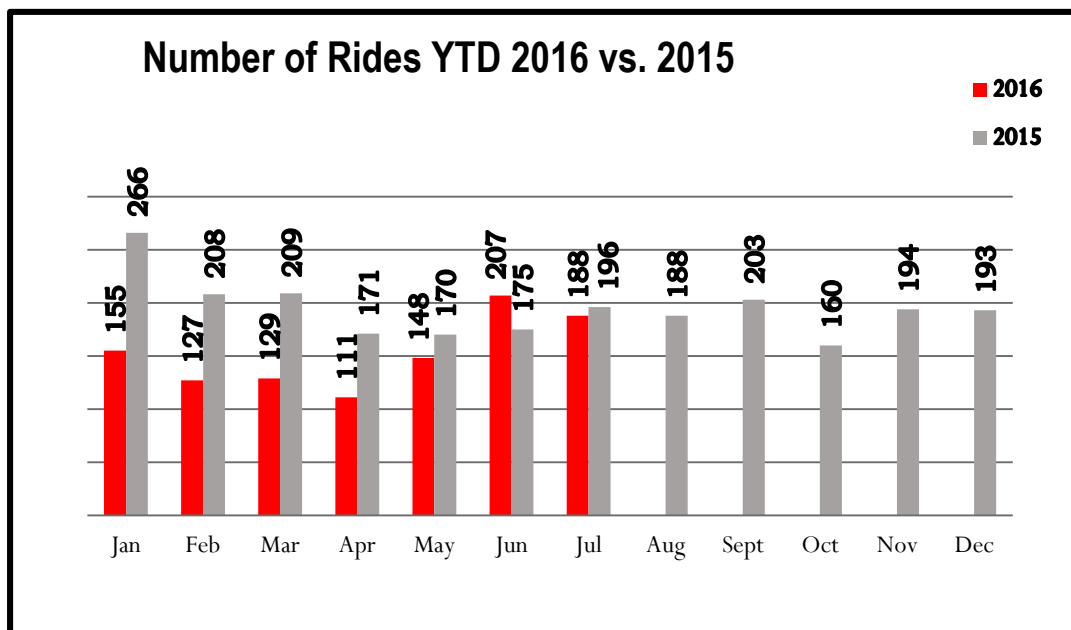


**Permitting** - Included in the 26 permits are: 2 - Commercial Developments (4775 Front Street – First Bank Expansion; Burt Lot 3 - iMotion on S. Perry Street); 1 - Residential Developments (Crystal Valley Ranch Filing 12, Phase 1); 3 - Town project; and 20 permits for work within the public right-of-way, four of which were necessary due to current development, and six were pavement cuts.



## TRANSPORTATION SERVICES

**Taxi Voucher** – For the month of July the Taxi Voucher Program funded 188 rides, this was about a 4% decrease over last July’s total of 196 rides. The rides have decreased since last month due to the nice weather and some of the riders choosing to use walk or ride bikes to their destinations.



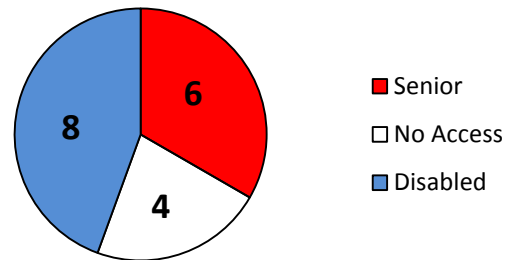
Rides are available for work, shopping or medical trips. Transportation services are provided for Castle Rock residents who are senior citizens, have a disability that prevents them from driving, or do not have access to a vehicle.



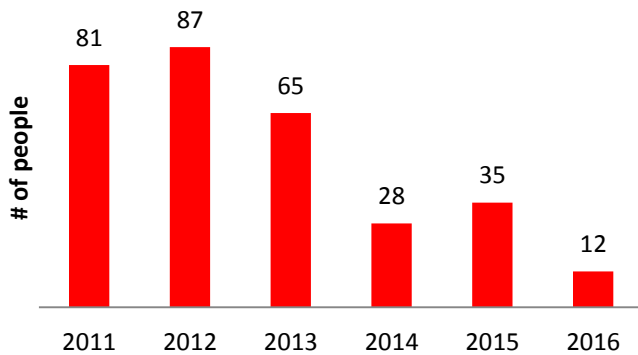
### Percentage of the Total Rides (188) in June by Each Rider Type



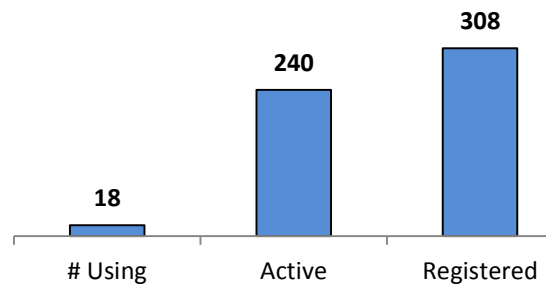
### Types of Riders



### Number of People Registering



### Number of Riders Using the Service vs. Registered



There was one new registrant for the Taxi program this month. Since its inception, a total of 308 people have registered for this program. Currently, 68 of these past registrants are inactive or have dropped out of the program. There were 18 individuals who used the Town's Taxi Service this month.

**Senior Center Shuttle** - The Senior Center provided 663 rides in the month of July which was a decrease of 4% from last month's rides of 690. The volunteer driver program provides service Monday through Friday from 9 am to 3 pm.



### Town Trolley

The Trolley provided rides for six different events for the month of July, which included a wedding, Slide the City, two Music in the Meadows events, WineFest and the Monthly Managers Meeting BBQ.

# Traffic Engineering & Operations

**Traffic Signal Operations and Maintenance** - For the month of July there were a total of thirteen non-routine traffic signal maintenance visits completed by either Town staff or the Town's signal maintenance contractor. These varied from construction to performing diagnostic checks for detection within our new signal system. The diagnostic parameters used in the new signal system will help staff to better troubleshoot both vehicle and pedestrian detection malfunctions so we can take corrective action to resolve the issue more quickly than with the previous system.



Our equipment suffered from a lightning strike in June and within three weeks of that occurrence an additional electrical surge occurred at the same location. The repair of the lightning damage was a significant cost to the program's maintenance budget. However, staff is working with our contractor to find ways to reduce the impact of that invoice on the maintenance budget.

**Street Signs and Pavement Marking Maintenance** During the month of July, the Town paint crews began the painting of crosswalks and stop bars in the downtown area on both Wilcox and Perry. This work was done at night when traffic volumes are the lowest in the downtown area.

In addition, the crews continued to provide support and traffic control devices for special events. They also assisted with the change out of the school beacon clocks to the new clocks that can be remotely programmed from the Service Center. This will help to reduce the labor hours needed to program the clocks on an annual basis

## Transportation Planning

**Neighborhood Traffic Calming Program (NTCP)** - NTCP inquiry updates:

- Elk Run Drive: The re-test for the street will be conducted later this month depending on the status of the nearby home construction and related traffic.
- Saddleback Drive: Town staff held a 2<sup>nd</sup> Working Group meeting to finalize the traffic calming plan developed by the group. The plan is proposed to be a 3-year phased plan consisting of the previously identified improvements of speed cushions, center pedestrian medians, and the center median with mailbox pullout area. The next step will be to present the plan to the homeowners along Saddleback, Ridgetrail and Black Pine to vote and approve the plan. Should the plan be approved, the first year (2016) will include a speed cushion on Saddleback and Black Pine and a center pedestrian median on Ridgetrail. Year two (2017) will include two speed cushions on Saddleback and two on Ridgetrail. The final year of phasing (2018) would include one speed cushion on Saddleback and a center pedestrian median on Black Pine. The center median mailbox pullout area would require an additional funding request through the budget process for this phase due to the cost and constructability exceeding the annual \$25,000 budget. If the plan is not approved by the homeowners, the project is closed and the streets are eligible for the program in one year.
- Heritage Avenue: a speed/volume study was conducted on Heritage Avenue. According to the data collected the 85<sup>th</sup> percentile speeds were recorded at 27.5 mph and 28 mph, thus did not meet the minimum Program's threshold of 30 mph to qualify.
- Kimberly Drive: A follow-up speed/volume study has been set up for Kimberly Drive in the area that received speed cushions in the past. A homeowner along the street requested the study to



see what the speed conditions are on the street. The speed results of the Kimberly Drive study showed an 85<sup>th</sup> percentile speed of 23.23 mph for northbound traffic and 23.93 for southbound traffic. This information as shared with the homeowner on the street.

## Transportation Master Plan

**Transportation Master Plan (TMP) Update** - Town staff has provided the consultant, Felsburg, Holt, and Ullevig, with the existing land use data to run the current year transportation model. Also staff is currently updating the 2040 land use data for the model.

### Development Review

- The Canyons South development project resubmitted their transportation impact analysis (TIA). Staff will review the submittal and provide comments by August 17<sup>th</sup>.
- Staff has also received the resubmittal of the Pine Canyon TIA. Comments will be provided by August 3<sup>rd</sup>. A follow up meeting with the Pine Canyon development team is expected to occur the following week.
- Four additional TIAs were received in July, with one report completed on July 22. All other reports are due in August.

### DRCOG Transportation Improvement Program (TIP) / CDOT FASTER Projects

Public Works staff met with various CDOT divisions to discuss the kick off meeting for the Meadows Parkway Reconstruction project. Staff is awaiting information from CDOT regarding water quality and MS4 permit requirements before the final scope of work and contract can be signed with the design consultant. The contract and design work is expected to begin in August. Staff has also sent the CDOT Local Agency Representative information so that the IGA can be written for the Founders (SH86) and Allen Way project can begin later this year. Staff is expecting the IGA from CDOT in August. The Request for Proposal (RFP) for design of the Founders (SH86) and Crowfoot Valley has been sent to four consultants. RFP's are due at the end of August.



## Fleet Services

*"Keeping Castle Rock on the Move"*



Advanced technician training was the main achievement for the month of July for the Fleet Services Division. Chad Bednar and Chris Selheim went to Advanced Diagnostic School in Winter Park, Florida to learn advanced techniques when working on Wheeled Coach ambulances. Staff would like to **thank** the Fire Department who helped to make this training possible!



In addition Mac McKelvy and Eric Dena went to (EVT) Emergency Vehicle Technician training at North Metro Fire training center in Greeley. They learned new ways to use the Ford IDS scan tool.



**OBSOLETE**

In the Parts Division, Angie Williams, Fleet Services Technician, has been organizing and returning obsolete parts to free up inventory dollars. Last month alone she was able to return over \$500.00 of unused parts.

Chris Selheim did great in leading the Public Works Department safety efforts and our department was 100% compliant on all safety items after the CIRSA audit.



Fleet Services also had a very strong month of repair and maintenance with the Town's vehicles and equipment. The Fleet Services team produced over \$62,000 of parts and labor and worked on over 100 of the Town's vehicles. The Fleet Services team has also been providing support to the Parks Department while they look for a new small equipment technician for their department

The Fleet Services Division was also able to put into service several new Ford F150 trucks, one for Public Works and one for the Utilities Department Stormwater Division. The Fleet Services Division is continuing work on receiving and putting into service new vehicles for the Town's departments and keeping Castle Rock **"ON THE MOVE"!**



**Objective/Benchmark:** Complete at least 75% of our work orders within 24-hours of coming to shop.

**Outcome:** Fleet Services team completed 78.8% of the work orders within 24-hours of opening repair requests or service requests. This number is slightly below our benchmark but still a good result.

**Objective/Benchmark:** Town vehicles and equipment available for use 95% of time.

**Outcome:** Town vehicles and equipment were available 97.5% of the time. This demonstrates a very low percentage of downtime for our Town vehicles.

**Objective/Benchmark:** Technician productivity percentage of 70% (APWA standard)

**Outcome:** Technician productivity was 75.1% which is above our benchmark.

## **Street Operations & Maintenance Division**

In the month of **July** the Streets Division performed work in the following operations:

- Asphalt and Concrete Pothole Patching
- Full Depth Asphalt Repairs
- Bridge Maintenance
- Street Sweeping
- Miscellaneous Operations
- Road Shoulder Maintenance
- Equipment Maintenance

### **Asphalt and Concrete Pothole Patching -**

During the month of July the crew performed pothole patching on the following asphalt roadways; Cantril Street (alley), Wolfensberger Road, Second Street, Sixth Street, Mikelson Boulevard, and various residential streets. For concrete roadways, the crew repaired potholes on Meadows Parkway, Meadows Boulevard, Atchison Way, and Topeka Way. Additionally





the crew responded to an emergency repair on East Plum Creek Parkway, where the July heat had caused the concrete roadway to expand to the point of heaving and disintegrating at one spot. This emergency repair was completed within 6 hours after being notified, minimizing the impact to the traveling public. In all the 2556 pothole repairs were made this month. This huge increase in pothole repairs, compared to last month's total of 895 potholes, is partially due to the unexpected repairs associated with Atchison and Topeka in the Citadel area. There was 1096 pothole repairs on asphalt roadways and 1468 pothole repairs on concrete roadways.

### **Full Depth Asphalt Repairs-**

Staff was able to complete six full depth asphalt repairs on the following roadways and areas; Fire Station 153, Sixth Street alleyway, Fernleaf Court, and Mikelson Boulevard.



### **Bridge Maintenance –**

Staff continued working on our annual bridge maintenance activities painting the Wilcox and Perry streets bridges over Seller's Gulch. The bridges look a lot better and they were done just in time for the annual Douglas County Fair & Rodeo, and parade activities.

### **Street Sweeping Operations -**

Staff completed our annual Spring Sweeping operations, performed one of our scheduled AM sweeping operations, cleaned up after a major hail storm, and assisted the Parks Department with event preparations at the Phillip S. Miller Park. In total, the crew removed 96 yards of materials from our roadways, helping to keep our storm systems and environment a little cleaner.

### **Miscellaneous Operations -**

During the month of July the staff responded to a couple special operation requests. Out in the Meadows an almost constant flow of groundwater was present. Staff removed the algae using a pressure washer, and is happy to report the sidewalk is now a little safer for the traveling public. On another occasion staff removed some graffiti from a sidewalk in the Woodlands area.



### **Road Shoulder Maintenance -**

Staff continued our annual mowing and trimming operations by completing the first round of operations on the following roadways; Wolfensberger Road, West Plum Creek Parkway, Coachline Drive, Allen Street, Crowfoot Valley Road, Black Feather Trail, Front Street, Fifth Street, Ridge Road, East Plum Creek Parkway, Crystal Valley Parkway, Loop Road, South Frontage Road, Perry Street, and Prairie Hawk drive. In all, staff was able to complete these operations on 65 of edge line miles of our 80.4 edge line mowing network. This is a good start towards our annual service goal of trash removal, mowing and trimming the Town's right-of-ways twice a year. To put this number into perspective, we are at 40% of our annual service goal.

### **Equipment Maintenance -**

During the month of July the staff performed a lot of equipment maintenance to keep our operations going smoothly, and to prepare for the winter months ahead. The crews performed extensive repairs to our tractor mounted mowing deck, and changed the wear parts on the loaders, milling machine, street sweepers, and chain saws.



### **Looking Ahead -**

During the month of August, the Streets Operation & Maintenance Division crew will continue the asphalt and pothole repair operations, road shoulder maintenance, trash pick-up and mowing and trimming operations, and the bridge maintenance operations. Once a few of those operations are completed, the crew will shift gears a little and perform some gravel road maintenance and begin our another round of our annual crack sealing maintenance operations.