



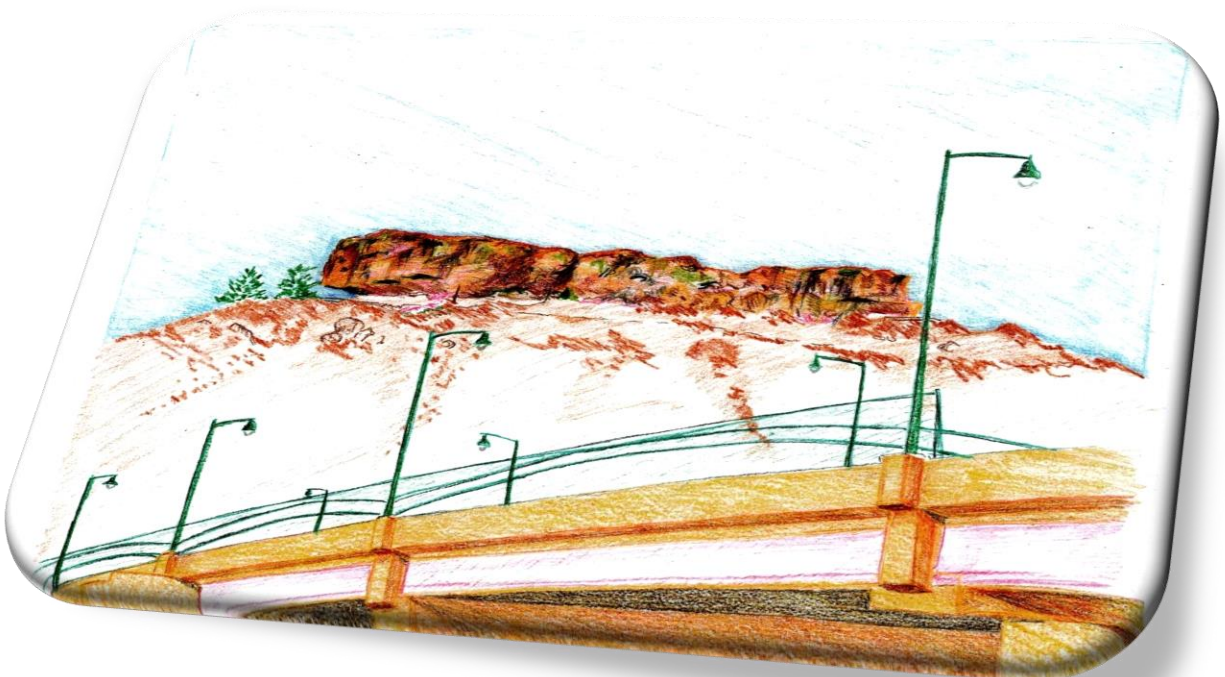
The Public Works Department operates under the CAN DO philosophy
- We are committed to doing the job right with a positive attitude
while staying dedicated to meeting the needs of our Town values
and continually searching for opportunities to improve.

PUBLIC WORKS DEPARTMENT

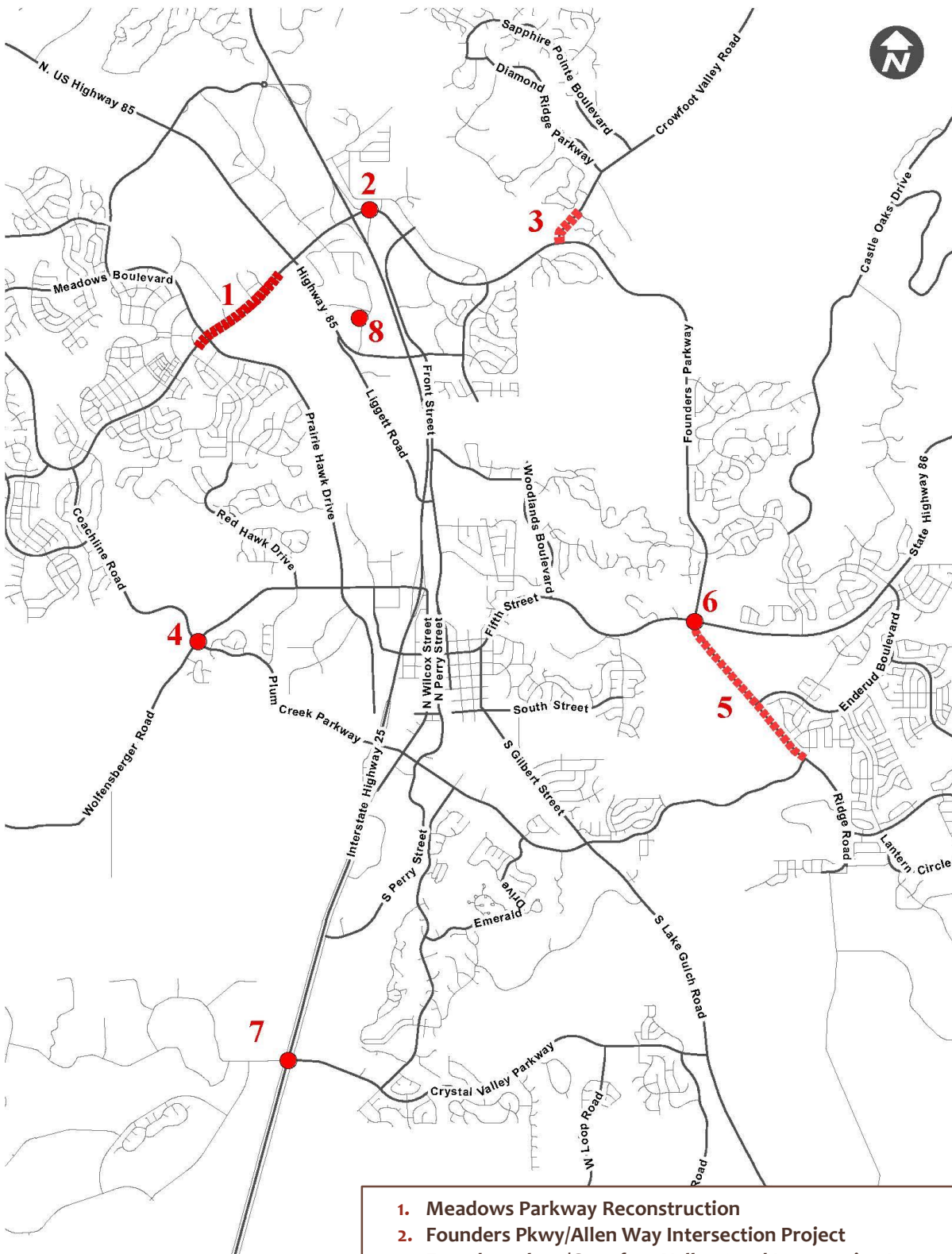


*Our Mission: To provide
outstanding service, safety
and support for
transportation infrastructure
and maintenance.*

MONTHLY REPORT – NOVEMBER 2017



CAPITAL PROJECTS



1. Meadows Parkway Reconstruction
2. Founders Pkwy/Allen Way Intersection Project
3. Founders Pkwy/Crowfoot Valley Road Intersection Improvements
4. Roundabout at Wolfensberger Road/Plum Creek Pkwy
5. Ridge Road Widening (SH86 to Plum Creek Pkwy)
6. SH86/Fifth Street Intersection Improvements
7. Crystal Valley Interchange (Right-of-Way Acquisition)
8. Public Works Facility Expansion

1. **Meadows Parkway Reconstruction** - This improvement project will consist of the reconstruction of the existing 4-lane roadway of Meadows Parkway from the intersection of Meadows Parkway and Prairie Hawk Drive to the railroad overpass over Plum Creek near US 85. This reconstruction will also replace any broken curb/gutter, sidewalk, and add on-street bike lanes. **Phase: Design** – Felsburg, Holt and Ullevig is the design consultant for this project. Final submission has been submitted to CDOT. Project will be advertised in December and constructed in summer of 2018. **Budget: \$112,385** **Projected Design Completion: Fall 2017** **Construction: 2018**

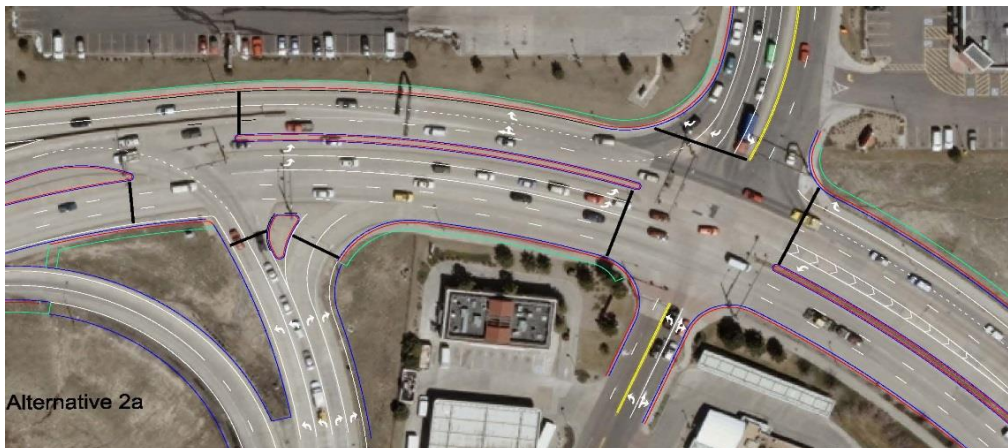
2. **Founders Pkwy/Allen Way Intersection Improvement Project** – This project will address the need for the following improvements:

- An additional eastbound left turn lane from Founders Parkway to Allen Way
- A dedicated right turn lane from Founders Parkway to Allen Way
- An additional southbound right turn lane from Allen Way to westbound Founders Parkway
- An additional I-25 northbound on-ramp lane
- A second through lane at Allen Way and Allen Street

Phase: Design & ROW Acquisition – Felsburg, Holt & Ullevig is the design consultant for this project. The following is a summary of the design activities that took place during this month:

- Right-of-Way Plan Review (ROWPR) was conducted on 11/13. Review comments have been received and revisions are underway. Anticipate resubmittal of final package by end of November.
- Initiate negotiation/acquisition process upon resubmittal.

Budget: \$760,000 **Projected Design & ROW Completion: Winter 2017**



Founders Parkway/Allen Way Proposed Intersection Layout

3. **Founders Pkwy (SH86)/Crowfoot Valley Road Intersection Improvement Project and Crowfoot Valley Road Widening Project** – This project will address the need for the following improvements:

- An additional eastbound left turn lane from Founders Parkway to Crowfoot Valley Road
- An additional northbound lane on Crowfoot Valley Road between Founders Parkway and Knobcone Drive
- A southbound free right turn lane from Crowfoot Valley Road to westbound Founders Parkway
- Widen Founders Parkway both eastbound and westbound between the Crowfoot Valley Road and Woodlands Boulevard
- Widen Crowfoot Valley Road from Founders Parkway to Knobcone Drive

Phase: Design and ROW Acquisition – Kimley-Horn is the design consultant for this project. The following is a summary of the design activities performed this month:

- ROWPR meeting held with CDOT on November 7th.
- Final Office Review (FOR) for 90% plans held on November 17th.
- Kimley-Horn is finalizing the design plans and will resubmit to CDOT in December for final approval.
- Staff has entered into a contract with Western States to assist in ROW acquisition.

Budget: \$650,000 (2016-17) Projected Design & ROW Completion: Winter 2017

4. Wolfensberger Road/Plum Creek Parkway Roundabout Project – This project will accomplish the design and construction of a roundabout at this intersection to improve operations and minimize potential accidents. Phase: Design – Short Elliott Hendrickson Inc. (SEH) is the consultant for design of this project. The following is a summary of the design activities performed this month:

- Finishing work on the 100% plans.
- Staff is reviewing right-of-way needs

Budget: \$150,000 Projected Design Completion: Winter 2017 Construction: 2018



5. Ridge Road Widening – Ridge Road will be widened from two to four lanes between the Founders Parkway (SH86)/Fifth Street/Ridge Road intersection and Plum Creek Parkway. The goal is to reduce traffic congestion on the Ridge Road corridor. Phase: Design: Stanley Consultants, Inc., has been awarded the design contract for this project. The following is a summary of the design activities performed this month:

- Survey work has been completed.
- Design work will be completed in 2018, however, construction has tentatively been moved to 2021.

Budget: \$400,000 Projected Design Completion: 2018 Construction: 2021 (Tentative)

6. Founders Parkway (SH86)/Fifth Street Intersection Improvements – The consultant will investigate multiple alternatives to address safety concerns and capacity issues at the intersection and it was determined that a roundabout will be constructed at this location. Phase: Design – Short Elliott Hendrickson, Inc. (SEH) is the design consultant for this project. SEH will be providing the Town with a revised scope, fee, and schedule for the design of a roundabout at the intersection. Design is to be completed in 2018, however, construction has been tentatively moved to 2021. **Budget: \$340,000 Project Design Completion: 2018 Construction: 2021 (Tentative)**

7. Crystal Valley Interchange – Right-of-Way Acquisition – The purpose of this project is to achieve acquisition of remaining right-of-way and set aside future project funding allowing potential funding partnerships to assist with advancing construction. Phase: Town of Castle Rock entered into a service agreement with Woolpert, Inc. to provide land surveying services for the Crystal Valley

Interchange east and west side Right-of-Way Plan Review (ROWPR). The following is a summary of the activities performed this month:

- East side ROWPR:
 - ✓ Continuing with on-line work review
- West side ROWPR:
 - ✓ Reviewing title commitments

Budget: Development Escrow

8. Public Works Facility Expansion – This project will complete design plans for the Service Center building expansion. Phase: Design - The following is a summary of the design activities that the firm D2C performed during this month:

- Continue to work on 90% design

Budget: \$220,000 Project Design Completion: Winter 2017

Traffic Signal System Upgrades - Phase 2 - In November we added the remaining signalized intersections that were a part of the Phase 2 system upgrade to the central software system. We can now remotely access the cabinet controller and make adjustments and review the active coordination and timing events at all these intersections. To date, this project has completed the installation of battery back-up units at all Town intersections, video detection equipment that sends live feeds back to the Service Center and radios to bring all of the Town's traffic signals onto the communication network. To date, this project has completed the installation of battery back-up units at all Town intersections, video detection equipment that sends live feeds back to the Service Center and radios to bring all of the Town's traffic signals onto the communication network. Budget: \$400,000 Construction Completion: Fall 2017

TABOR Flashing Yellow Arrow Intersection Conversion Project – In November, the Town's contractor, Sturgeon Electric, began installing and converting existing signalized intersections to operate with flashing yellow arrows (FYA) for left turn movements. To date, two intersections Fifth and Wilcox and Fifth and Perry Street have been complete and the work accepted by Town staff. Intersections that have FYA installed, that are in full operation but not yet accepted include, Plum Creek Parkway and Gilbert Street, Plum Creek Parkway and Plum Creek Boulevard, Fifth Street and Woodlands Boulevard. It is anticipated that these intersections will be completed and accepted by the staff in early December. Town is supplying materials and equipment necessary for the project, including signs, and the new controller settings to run the new configurations. This project will continue until the conversion of 19 existing signalized intersections in Town operate with flashing yellow arrows for left turn movements.

National research has shown that these flashing yellow turn arrows can improve safety at an intersection due to the arrows reminding drivers to watch for oncoming cars before making a left turn at a signalized intersection which reduces the number of broadside collisions at an intersection. This project is one of the TABOR funded projects and is on track to be completed in early January. Budget: \$228,000

Construction Completion: Winter 2017 / 2018



Solid Red Arrow

Drivers intending to turn left must stop and wait. Do not enter an intersection to turn when a solid red arrow is being displayed.



Solid Yellow Arrow

The left-turn signal is about to change to red and drivers should prepare to stop or prepare to complete a left turn if they are legally within the intersection and there is no conflicting traffic present.



Flashing Yellow Arrow

Drivers are allowed to turn left after yielding to all oncoming traffic and to any pedestrians in the crosswalk. Oncoming traffic has a green light. Drivers must wait for a safe gap in oncoming traffic before turning.



Solid Green Arrow

Left turns have the right of way. Oncoming traffic has a red light.

TABOR Rectangular Rapid Flashing Beacon Project – In November, the Town's contractor, Sturgeon Electric, began assembling the rectangular rapid flashing beacon (RRFB) lights, solar panel, and push buttons. Town staff made signs, and completed the installations at Meadows Boulevard/Spring Meadow, Third/Jerry streets, Perry/Sixth streets, and Mikelson Boulevard/Mitchell Trail crossing. Staff also completed an order for six single-sided and 15 double-sided RRFB assemblies to complete all the project installations at seven priority intersections.



In April this year, Town Council approved a project to add seven locations for a total of 21 RRFB to be installed around Town. RRFBs consist of a pedestrian activated yellow strobe light which notifies drivers that a pedestrian is at crosswalk or with in the crosswalk. The lights are solar powered and cost approximately \$10,000 per location for the hardware and installation. They have proven to be an effective means of enhancing pedestrian safety. This project is one of the TABOR funded projects and is on track to be completed in early January. **Budget: \$70,000 Construction Completion: Winter 2017 / 2018**

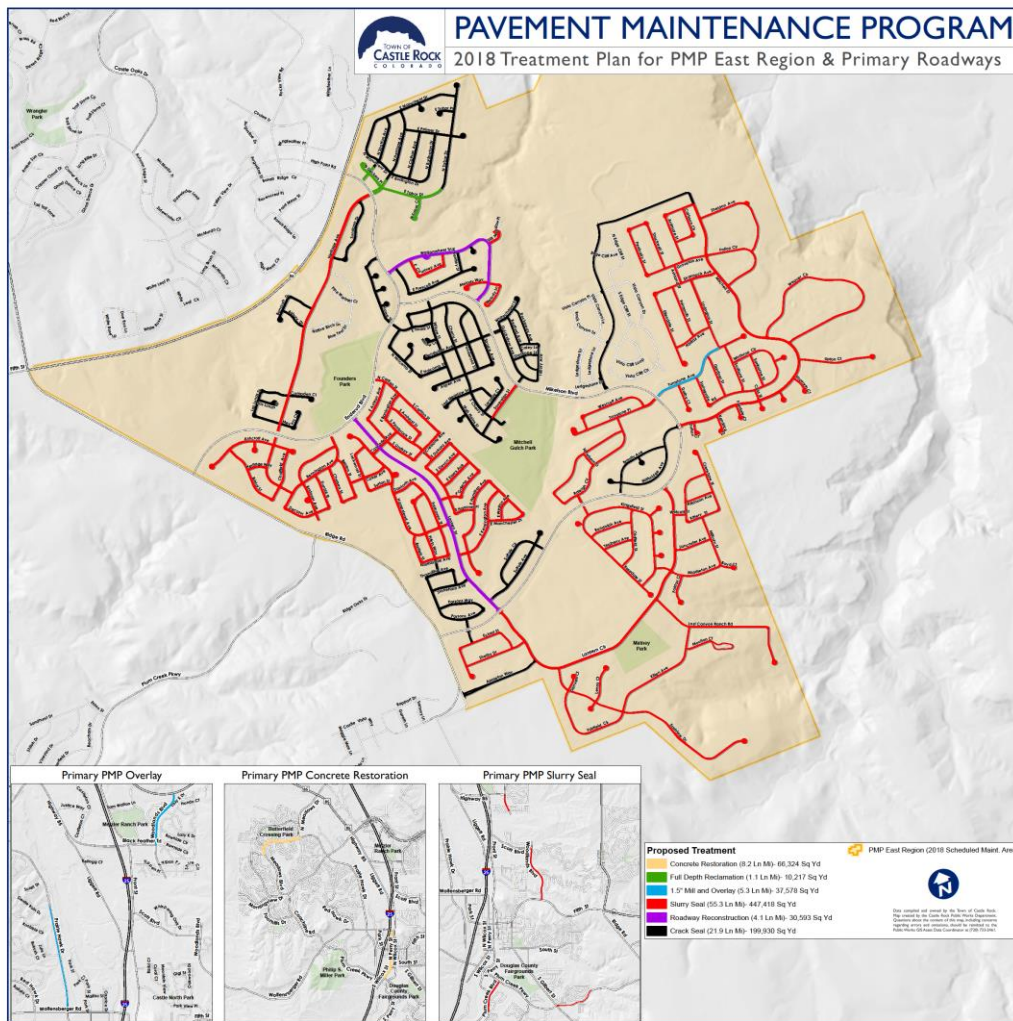
2018 Intersection Signalization Design Projects – In November, Town staff had a design kickoff meeting with the Town's consultant, Muller Engineering, for the design of three new signalized intersections that are planned for construction in 2018. These intersections to include, Meadows Parkway and Low Meadows Boulevard., Fifth Street and Valley Drive, Plum Creek Parkway and Emerald Drive. Utility locates were called in and marked on design plans, pothole locations for drilling caissons were also reviewed. Due to a signal pole at Valley Drive being located on the steep embankment on the north side of Fifth Street, staff has directed Muller Engineering to look at alternatives to signalization, including restriping of Fifth Street to accommodate a westbound acceleration lane. 90% plans are expected in December, with design completion in January after staff review. **Budget: \$35,000 Design Completion: Winter 2018**

Engineering Division

2017 Pavement Maintenance Program (PMP) – All scheduled work is complete. Staff is working with the contractors to put all completed contracts into warranty. Staff continues to work with the Miscellaneous Concrete Replacement contractor to schedule concrete repairs on issues called in by residents or found by Town staff. Public notification planning and web site updates are continuing with assistance from the Community Relations team.

2018 Pavement Maintenance Program (PMP) - The PMP team is 95% complete with the field reconnaissance for the 2018 PMP. This consists of the East PMP area, and scheduled primary streets, which include; Woodlands Boulevard, Plum Creek Boulevard between Ebony Drive and Plum Creek Parkway, Wilcox Street from Wolfensberger to Plum Creek Parkway, and Meadows Boulevard from N. Meadows Drive to Cherokee. The purpose of the field reconnaissance is to quantify curb, gutter, and sidewalk as well as pavement areas which are in need of repair prior to the application of the final maintenance surface treatments such as slurry seal, asphalt overlay, or pavement reconstruction.

The PMP map (shown below) indicates the proposed scheduled treatments for street within the South PMP area and Primary Streets. This map may change based on maintenance treatments and resources available.



2018 Facilities Parking Lot Improvements Program - The PMP team has completed the field reconnaissance for the 2018 Facilities Parking Lot Improvements Program. This consists of the parking lots at the Metzler Park, Castle North Park, Rock Park, the parking lot at 4th and Jerry streets, and the parking lot at the Train Museum. Changes in the proposed facilities may occur due to current evaluation taking place and/or actual bid pricing received that may require some modifications.

2018 Bridge Maintenance Program (BMP) - Staff has identified the following locations for the 2018 BMP:

Bridge Repair

- Castle Oaks Bridge at Rocky View Road
 - ✓ Girder repairs
- Fifth Street Bridge over I-25
 - ✓ Place riprap at column and repair spalled areas
- Perry Street Bridge over Sellers Gulch
 - ✓ Repair girder and girder bearing and upgrade approach rail

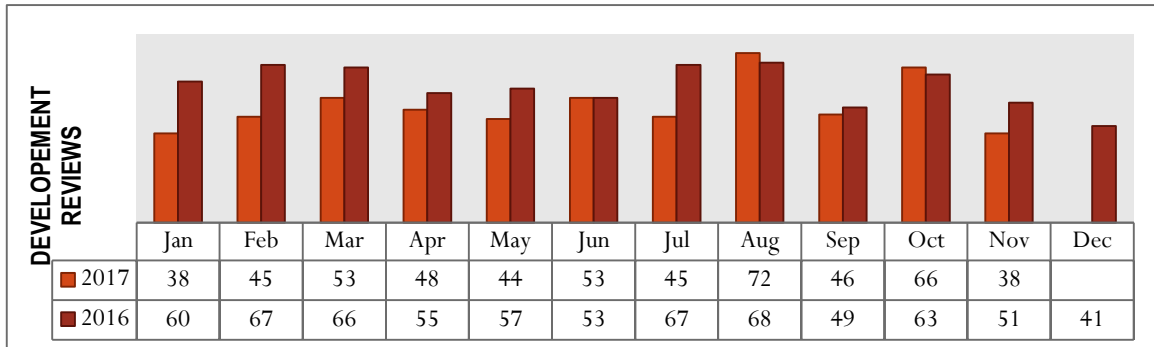
Bridge Surface Treatment

- Front Street Flyover
 - ✓ Mill and overlay wearing surface

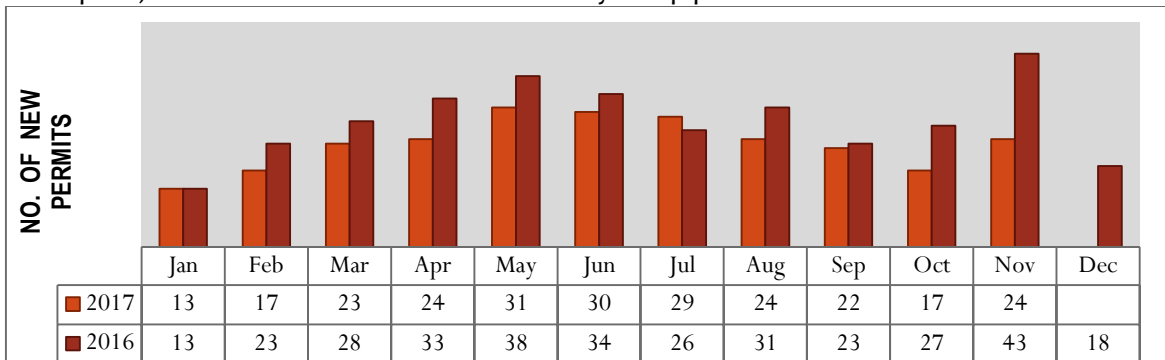
Treatments and locations may change pending current evaluation taking place and/or actual bid pricing received that may require some modifications.

Development Review and Permitting

Development Review - Included in the 38 submittals are 17 first time applications with five pre-applications. All reviews were completed on or before the due date assigned by the Development Services Project Manager.

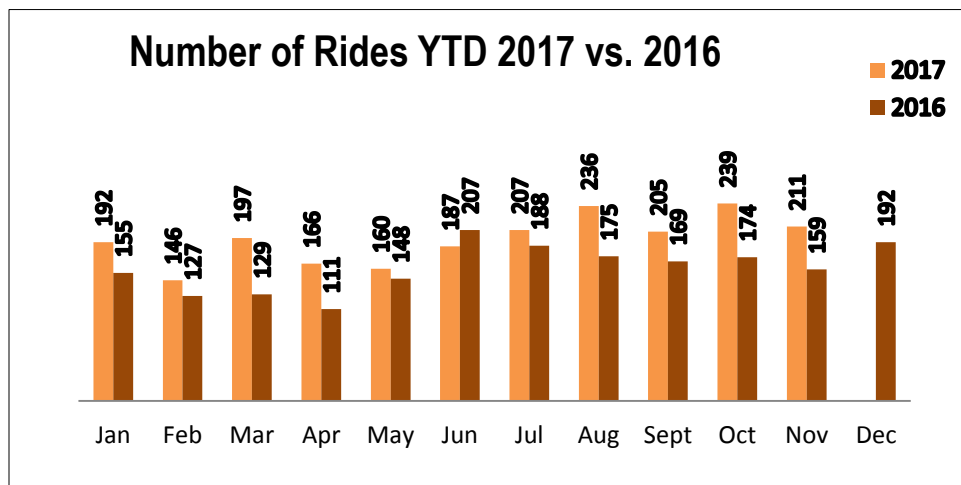


Permitting - Included in the 24 permits are: one commercial (Meadows Filing 20, Sherwin Williams Paint Store); and 23 permits for work within the public right-of-way, two of which were for sanitary service repairs, and one for the Founders well facility and pipeline.

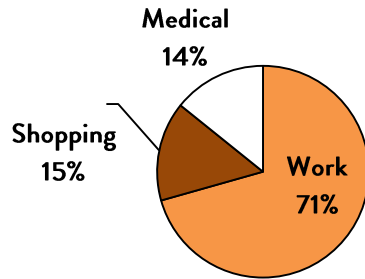


Transportation Division

Taxi Voucher – For the month of November the Taxi Voucher Program funded 211 rides, this was a 33% increase from last November's total of 159 rides. The increase in rides is a result of three new registrants this month along with more riders needing assistance to get to work on a daily basis.



Ride Destinations

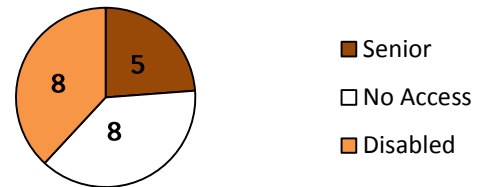


Rides are available for work, shopping or medical trips. Transportation services are provided for Castle Rock residents who are senior citizens, have a disability that prevents them from driving, or do not have access to a vehicle.

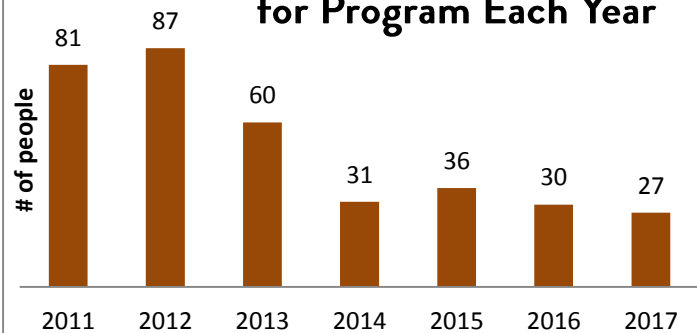
Percentage of the Total Rides (211) by Each Rider Type



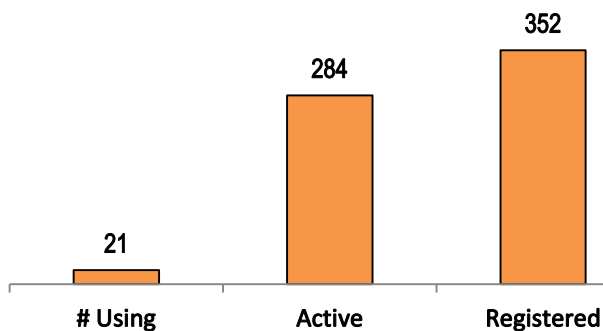
Types of Riders Using the Service



Number of People Registering for Program Each Year



Number of Riders Using the Service vs. Registered



There was three new registrants for the Taxi program this month. Since its inception, a total of 352 people have registered for the Town of Castle Rock Taxi Voucher Program. Currently 68 of these past registrants are inactive or have dropped out of the program.



Town Trolley - The Trolley drove for one event in November being the Annual Town of Castle Rock Starlighting Event. The Trolley provided transportation for hundreds of participants to get to the event and as a ride for those wanting to catch an extra glimpse of the holiday light displays downtown.



Senior Center Shuttle - The Senior Center provided 612 rides in the month of November which was a decrease of 20% from last month's rides of 753. The volunteer driver program provides service Monday through Friday from 9 am to 3 pm.

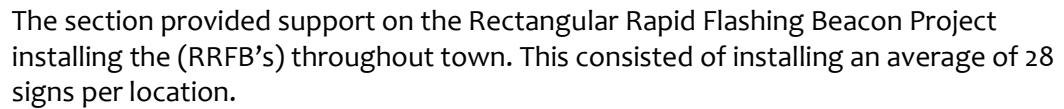
Traffic Engineering & Operations

Traffic Signal Operations and Maintenance - In the month of November staff addressed 10 requests from the public related to traffic signal and intersection operations and maintenance. A total of 30 non-routine traffic signal maintenance visits were completed by either Town staff or the Town's signal maintenance contractor. These visits related to vehicle detection problems, identifying future equipment needs or changes, troubleshooting cameras, observing timing and intersection movements, adjusting preemption eyes, adjusting timing for the holiday weekend, thawing pedestrian buttons, and assisting development construct traffic control by adjusting signal timing.



In addition, the fourth quarter preventative maintenance work visits were concluded at each of the signalized intersections. These checks are important to assure that each signal is in good working condition. The second half of the 36 Town signals were visited in November with the others done in October. There are follow-up items identified in the preventative maintenance checks that will be addressed in December.

Street Signs and Pavement Marking Maintenance - The month of November was a very productive month for the Signs & Markings Section completing 231 tasks about 297 hours equaling about 1.3 hours per task on average.



During the month the crew also spent 6.50 hours in the snow and ice removal and pretreatment.

Finally, painted five new symbols giving us a total of 5,768 painted symbols and long lines in the Town of Castle Rock.

Neighborhood Traffic Calming Program (NTCP)

There have been several new inquiries for the traffic calming program. One on Low Meadow Boulevard and the other on North Meadows Drive (south of Meadows Boulevard). Both individuals have been contacted and provided information on the program.

Transportation Master Plan (TMP) Update - The final deliverables of the Transportation Master Plan have been provided by the consultant have been verified, including 10 hard copies. The hard copies have been distributed to other departments and Public Works management. In addition, the TMP web page has been updated with the new plan for public viewing

- Staff reviewed and commented on two transportation impact studies during the month. All reports were completed by the due date.
- Follow-up on Apex Charter School proposal: Staff continues to work with the school design team to resolve several traffic and circulation concerns. The applicant has amended their plans to reflect the new circulation pattern. The traffic impact study still needs to be revised based on the new plan and circulation routes. The applicant still has not submitted the revised plan set for review.
- Final TIA comments regarding the World Compass school expansion were provided to Development Services. Accordingly, the school is being required to install a school zone with flashing beacons on the East Frontage Road.
- The Meadows Pkwy progression study was submitted by CRDC regarding the traffic signal request at Lombard Street. According to the analysis, the traffic signal will have a detrimental impact to traffic progression along Meadows Pkwy and is currently not being supported by staff.
- Staff met with the applicant for the Festival Park mixed use development to scope the transportation impact analysis. It is uncertain when the applicant will submit the TIA for Town review.

PUBLIC WORKS DEPARTMENT

DRCOG Active Transportation Plan - DRCOG staff kicked off the regional active transportation plan update in November. Upon review of the existing regional bike map, the Town will be requesting several changes to the map that include new and proposed regional trails.



Future CDOT Bustang Stop - Staff met with CDOT and Douglas County staff to discuss the future Bustang stop in Castle Rock. The group discussed possible short term locations (2-3 year horizon), and long term locations. The long term locations also explored the future possibility of commuter rail stops in town. There are several possible stop locations identified that range from the north side of Town to the south side of Town, including downtown. Additional work and analysis needs to be conducted before any location can be identified as a preferred spot.



Fleet Services

"Keeping Castle Rock on the Move"



As we drive around this Town of ours and see how busy all the different departments are with all the growth, from the Fire and Police departments along with Parks, Public Works, Water and Development Services relying on their Town issued vehicles to keep up with the first class service that we provide to the citizens of Castle Rock here at the Fleet Services Division, we take great pride in knowing that those vehicles are reliable and safe to operate.

In the month of November, our Fleet Technicians worked on 93 Town vehicles and equipment and billed out over \$60,000 worth of parts and labor on 102 separate work orders.



Fleet Services Division reached a milestone in our upgrade of our Fleet Management software. The new FASTER program is installed and are now working on data cleanup before we can migrate all of the Town's data into the new system!

Fleet Technicians completed a total of 20 hours of advanced training on Ford 6.7L Powerstroke diesels and Chevrolet 6.6L Duramax diesels.



Fleet Support Technician, Angie Williams, completed the three **FEMA** certifications required.

The Fleet Services Division also completed a successful auction selling four obsolete Town vehicles for a total of \$27,000.





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

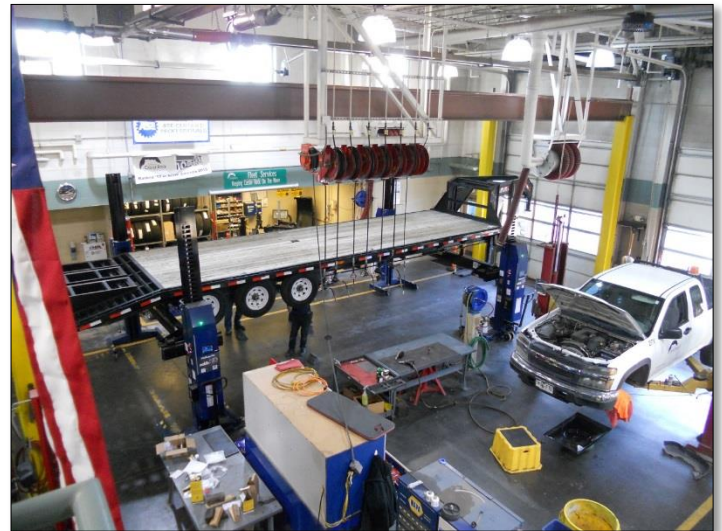
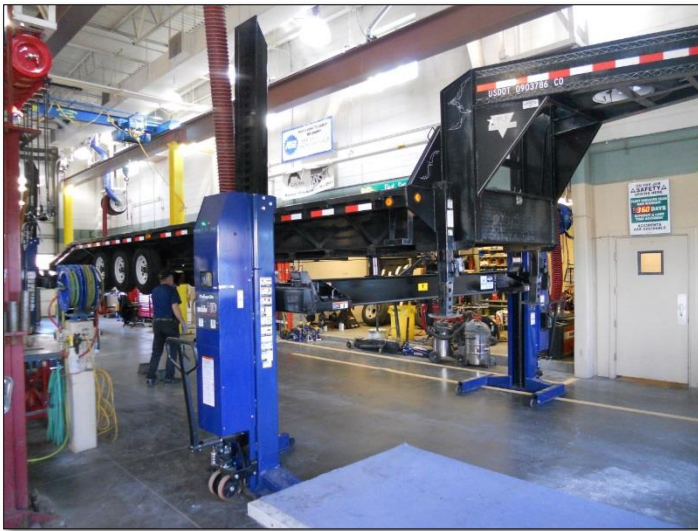
Outcome: Fleet team completed 84.6% of the work orders within 24-hours of opening repair requests or service requests. This benchmark was very good this month and shows how quickly the Fleet Services Division is completing work orders.

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

Outcome: Town vehicles and equipment were available 98.5% of the time. This was the highest number we have achieved in 2017 which means that Town vehicles and equipment are ready when they are called upon to perform.

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

Outcome: Technician productivity was 75.2%. This was well above our benchmark of 70%!



Fleet Services Technician using new lift adaptor to work on a trailer in the air rather than crawling on the ground!!



Police 4-Wheeler in for service.

Street Operations & Maintenance Division

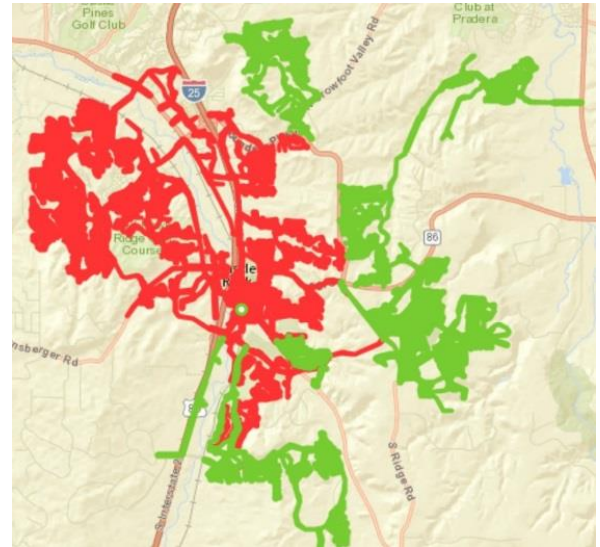
During the month of **November**, the Street Operations & Maintenance Division (SO&MD) performed work in seven (7) maintenance operations:

- Street Sweeping
- Road Shoulder Maintenance
- Pothole Patching
- Snow & Ice Control
- Equipment Maintenance
- Special Operations
- Training



Street Sweeping

Staff continued working on our annual Town Fall Sweeping Program that has a goal of sweeping all 663 lane miles of roadway. Staff completed the final **399 lane miles** to meet the goal. However, due to a few high wind days, staff went back to several areas and performed touch-up sweeping operations as needed. Additionally, staff was able to sweep all of the business areas once and on another night was able to thoroughly clean the downtown area in preparation for the Star Lighting event. In total, staff swept **515 lane miles** removing **67 tons** of materials. In the photo on the right all the roadways in red were completed this month. These operations not only help to keep our Town vibrant and beautiful, they also help to keep our waterways and the air we breathe a little cleaner.



Road Shoulder Maintenance

Staff continued and completed our annual fall road shoulder mowing and trimming operations. During the month the staff completed these operations on the final **61 edge line miles** of roadway to meet our **93 edge line mile goal**. These operations were completed in the following areas; Founders, Plum Creek, Crystal Valley, Downtown, Craig & Gould, Woodlands, Citadel and the Wolfensberger corridor. Additionally, staff continued trimming tree branches that have grown into the roadway along the main roads in the following areas; Castle Oaks, Meadows, Red Hawk, Downtown, and Craig & Gould. Tree trimming operations are essential at protecting vehicles from receiving damages from branches that become weighted down with

snow over the winter season. During these operations the staff removed **124 yards** of materials. Staff also picked up **45 bags of trash** from various roadways all over town.

Pothole Patching

SO&MD received a few requests for pothole repairs during the month and completed the repairs ahead of our 10 day service level. In total, staff proactively repaired **93 potholes** during the month. The potholes were repaired in the following areas; Liberty Village, Castle Oaks, Founders, Memmen Ridge, Crystal Valley, Meadows, and the Factory Shops.

Snow & Ice Control

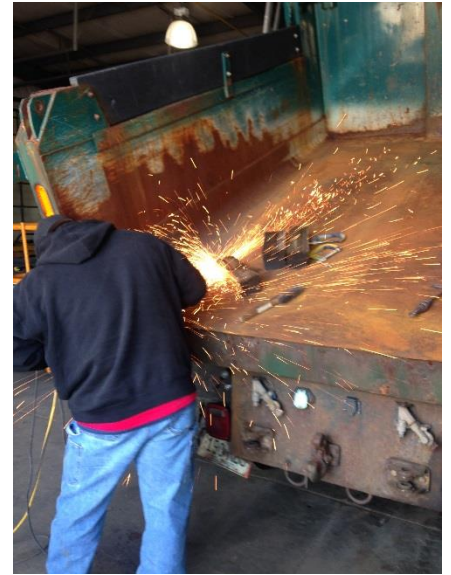
November once again reminded us that winter is coming by threatening us with **two (2) snowfall events**. Staff geared up for each event and was prepared to plow snow. During one event the staff responded to the poor road conditions and bitter cold temperatures. During the second event, the snow never arrived. In total the Town received approximately **one and a half inches (1.5")** of snow during the month.

Equipment Maintenance

In this line of work, equipment maintenance is a necessity in order to keep things ready to go at a moment's notice. Staff worked on snow plow mounts, liquid de-icing flow meters, and street sweepers, just to name a few. In total the staff completed **74 work orders** helping to ensure the equipment is working at optimum performance and reliability.

Special Operations

Staff responded to **12 requests** for special operations over the last month. One request was to clean-up after an oil spill on Meadows Parkway & Meadows Boulevard. Two more requests were to clean-up after concrete spills, one on Fifth Street, and another on Wilcox Street. Staff responded to eight (8) requests to remove road kill during the month, most of these were deer. Lastly, staff assisted the Parks Department and our Traffic Division before and after the Annual Star Lighting event.



Training

Six staff members completed some L-Tap training titled **“Proper Paving Operations”**. Additionally, ten employees attended **“Guardrail Identification and Repair”** training that was conducted by CDOT. Both of these courses helped our employees and our operations continue to be the best they can be!



Looking Ahead

During the month of **December**, the SO&MD staff will be working with our partners in the Water and Parks departments, as well as the Douglas County Public Works Department, to improve the Town's lot at the north end of Caprice Street. The lot was previously used by the Public Works SO&MD as a wintertime snow storage facility for the snow that is removed from the downtown areas, as well as some of the ice that gets removed from roadways around Town during our ice mitigation operations. Then in the summer, it was used by the Parks Department and Douglas County's Public Works Department as a **“Slash and Mulch Recycling Center”**. This lot will soon be converted into the new Parks & Facilities departments Service Center, however, before construction can begin, approximately 15,000 cubic yards of materials needs to be hauled in and distributed around the site. This work is expected to take the better part of the month to complete, and may be delayed until next spring if the weather conditions start calling for snow in the forecast.