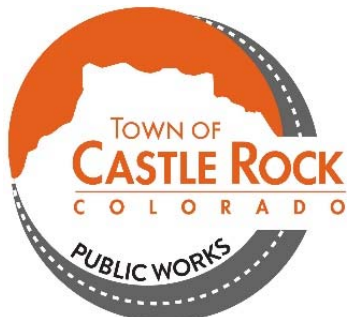
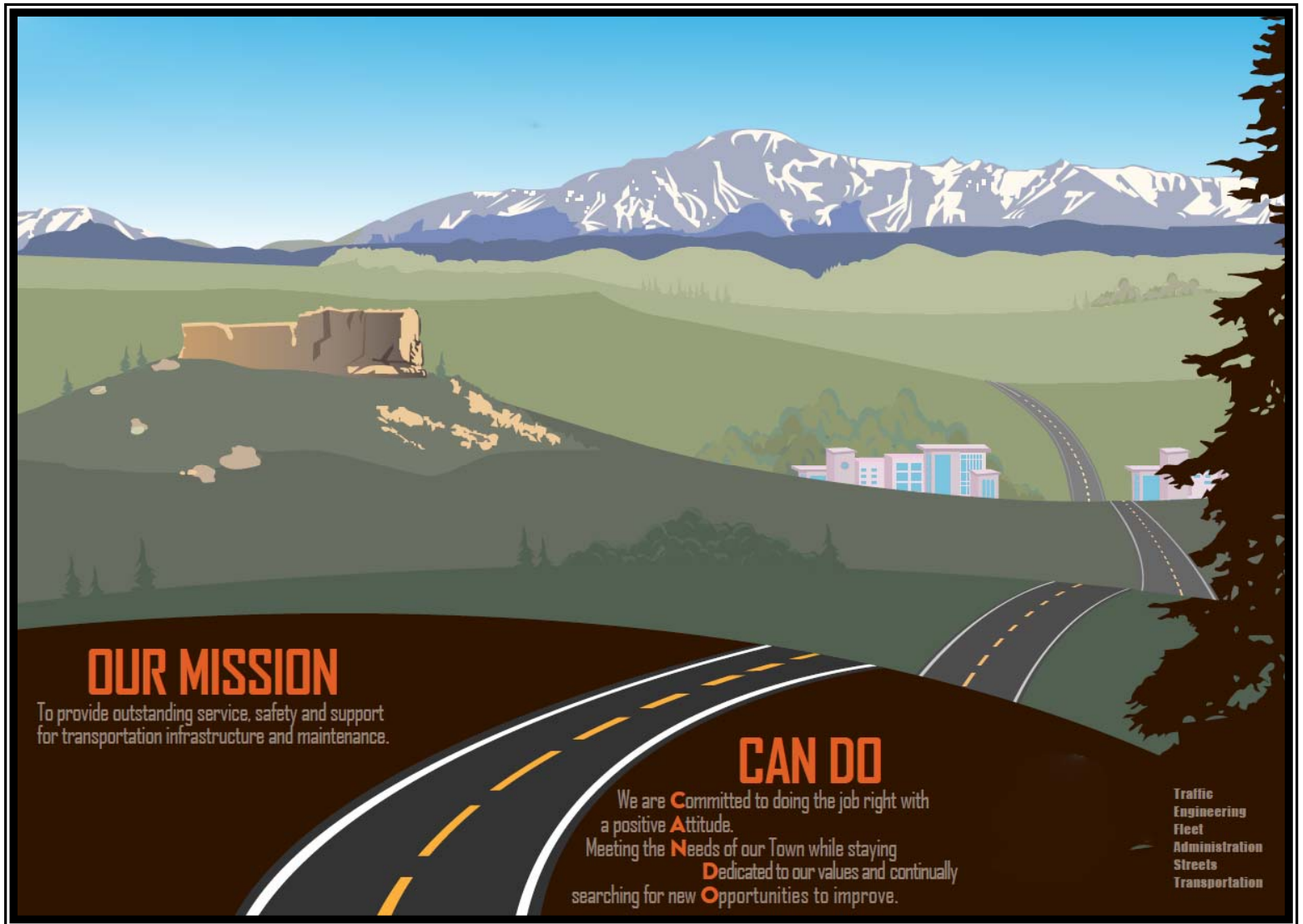


# 2020 TOWN OF CASTLE ROCK MOTOR VEHICLE CRASH FACTS



**ACCREDITED  
AGENCY**

# **PREPARED BY THE PUBLIC WORKS DEPARTMENT**

## **ACKNOWLEDGEMENTS**

This report was assembled from data provided by the Castle Rock Police Department and Colorado State Patrol crash report data on public roads for the years from July 2015 through June 2020. Each crash record, whether completed by a local police officer or a member of the Colorado State Patrol, was collected in a statewide database and entered into a centralized database maintained by DiExSys software company that the Public Works Department is a subscriber. The Town also maintains its own database for data collected by the Castle Rock Police Department and sent to Castle Rock Public Works Department.

The report itself was created by personnel in the Public Works Department.

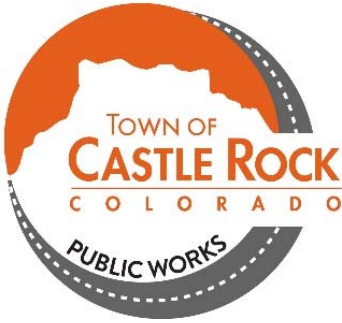
For more information, please contact:

Transportation Engineering Division  
Town of Castle Rock  
4175 N. Castleton Ct.  
Castle Rock, CO 80104  
303-814-6415



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## **Public Works Department**

*"Our mission is to provide outstanding service, safety and support for transportation infrastructure and maintenance."*

September, 2021

It is our pleasure to provide you with the 16th Castle Rock Motor Vehicle Crash Facts Report. The statistics provided will enable emergency services and design engineers alike gain a greater insight into the factors contributing to traffic crashes. This will then help both the Town and the Colorado Department of Transportation identify improvements that may help reduce crashes in a high-hazard areas or intersections.

We will continue to dedicate our time and efforts toward the improvement of safety on our street system.

Sincerely,

Dan Sailer, PE  
Public Works Director

Jacob J. Vargish, PE  
Transportation Planning and Traffic Engineering  
Manager

## **EXECUTIVE SUMMARY**

The mission of the Public Works Department is “To provide outstanding service, safety and support for transportation infrastructure and maintenance”. We believe that by analyzing our crash data on a regular basis we can help identify locations where the roadway environment may be a contributing factor to crashes. This information helps us to develop options for improvements and to schedule projects for correction. Since 2004, when Public Works first reported crash statistics, the number of persons injured have generally been declining. The Town’s focus on encouraging intersection treatments such as the use of roundabouts, which have demonstrated an ability to reduce personal injury type such as high speed “broadside” crashes, is just one example of improvements that have assisted in this area. The number of crashes in 2019 and 2020 is less when compared to 2018. This is a good trend as traffic continues to grow in the Town, as the tendency with growth is for the crash totals to typically increase. 2020 saw fewer vehicle trips and therefore fewer crashes than previous years due to the pandemic and stay at home orders from the State.

This report has been provided annually up until 2018 when it was determined that reviewing this report Town wide every two years provided similar information that met our level of service for understanding the safety needs of the traveling public. Segments and intersections are still reviewed on an as needed basis and evaluated for safety improvements outside of this comprehensive report.

Crashes are the result of many factors. These factors can generally be classified into three main categories: 1) human factors, 2) vehicle factors, and 3) roadway environment. By far, the largest percentage of crashes can be attributed to human factors. These are the factors that drivers can control and are usually the simplest to correct. Basic driver awareness and respect for all users of the Town’s roadways will go the farthest towards reducing the number of crashes. Education, Enforcement and Engineering, the three “E’s”, all play an important role in improving safety. However it will take conscious decisions by drivers to change their behavior in order to make our roadway system safer.

Addressing vehicle factors is the responsibility of everyone who owns and operates a motor vehicle. Regular vehicle inspections along with preventative maintenance procedures will help reduce the chances of a crash occurring as a result of a vehicle malfunction.

The roadway environment is something that is out of the driver’s control, but it is within the control of the Town, and the Colorado Department of Transportation (CDOT) in the case of the State system. We work to identify locations where roadways themselves could be a contributing factor in a crash and implement treatments to correct these. Public Works uses statistical modeling to identify the locations where corrections to the roadway environment may improve safety. This helps direct limited resources to the locations where the most benefit can be obtained and avoids directing these resources toward locations where problems may not exist.

The information and crash trends that become evident during the preparation of the annual crash report help staff identify needed intersection improvements. For example, in order to help reduce the number of crashes involving left turning vehicles, the left turn signal operations have been changed in the past at locations with a higher than expected total of crashes. The Town has also installed all-way stop control at several un-signalized intersections in recent years where a traffic signal was not needed based on traffic volumes but a broadside collision pattern existed.

The 2020 data does show a few locations with higher numbers of crashes than would be expected to occur at intersections having similar characteristics. Several projects have been identified that will be completed that are expected to help to reduce the number of collisions at the highest crash locations. All of the information gathered by staff will be forwarded along to CDOT for their use at intersections along the State Highway system in Castle Rock.

## **SECTION 1: 2020 Raw Data Summaries**

This section summarizes the raw crash data for 2020 by various categories and compares to the last five years. The crash data for each year is from July of the previous year to June of that year. The totals include all forms of transportation and include pedestrian, bicycle and motorcycle crashes. The purpose of this is for general public interest as well as for use by other staff departments that may use this information to assist with improving their operations.

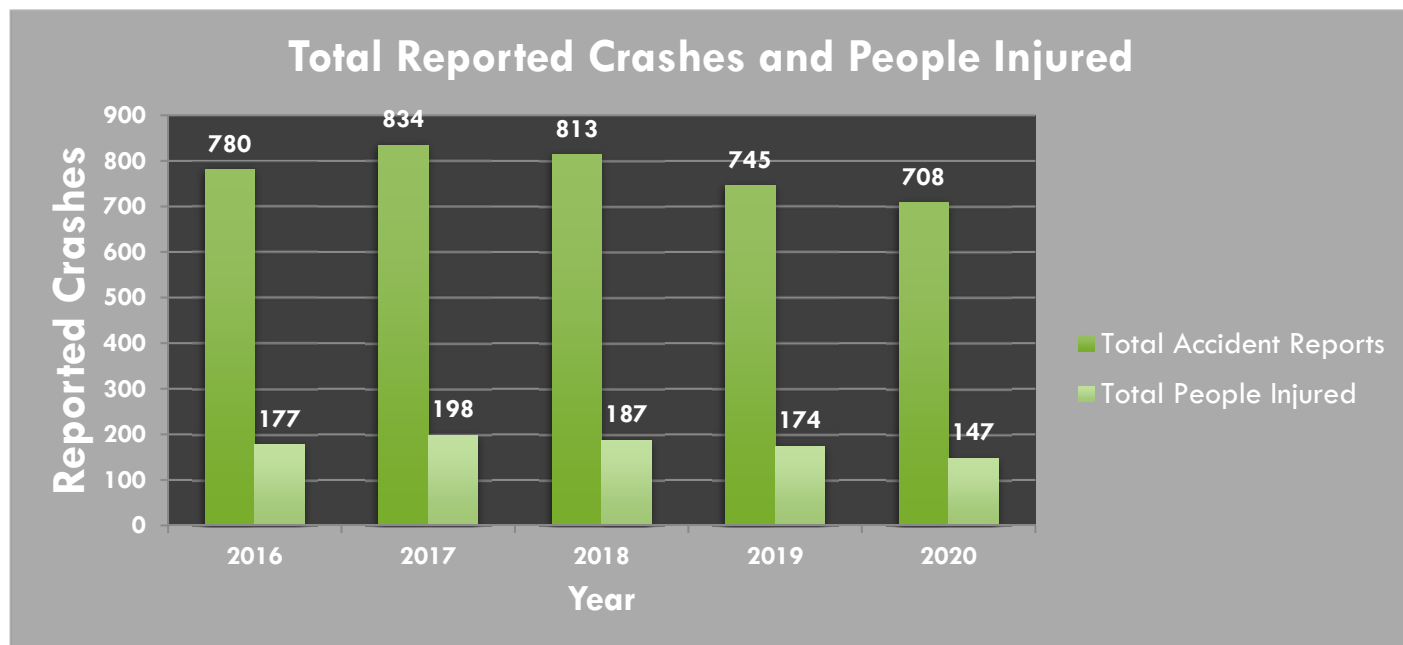
### **Quick Facts**

	<b>2020</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>
<b>Total Reported Crashes</b>	708	745	813	834	780
<b>Fatalities</b>	0	0	2	2	1
<b>Total Persons Injured</b>	147	174	187	198	177
<b>Total Injury Incident Crashes</b>	114	139	134	138	121

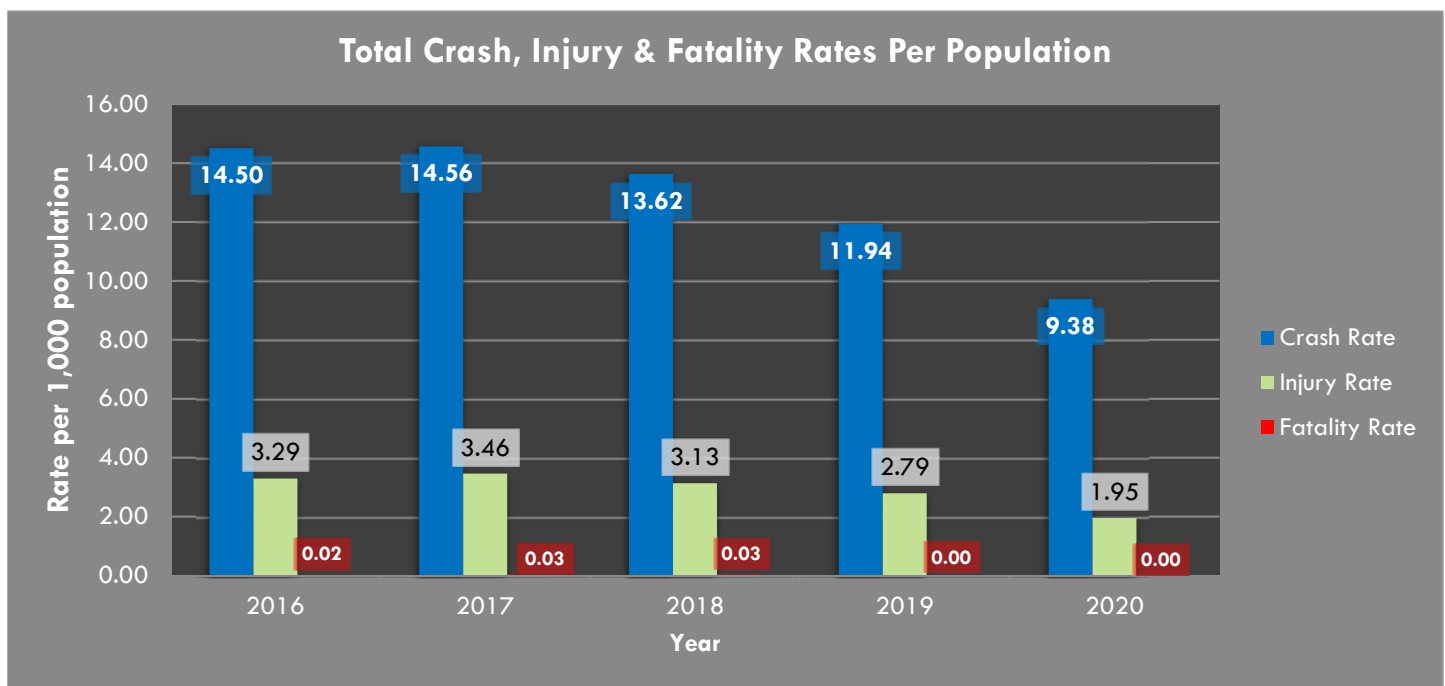
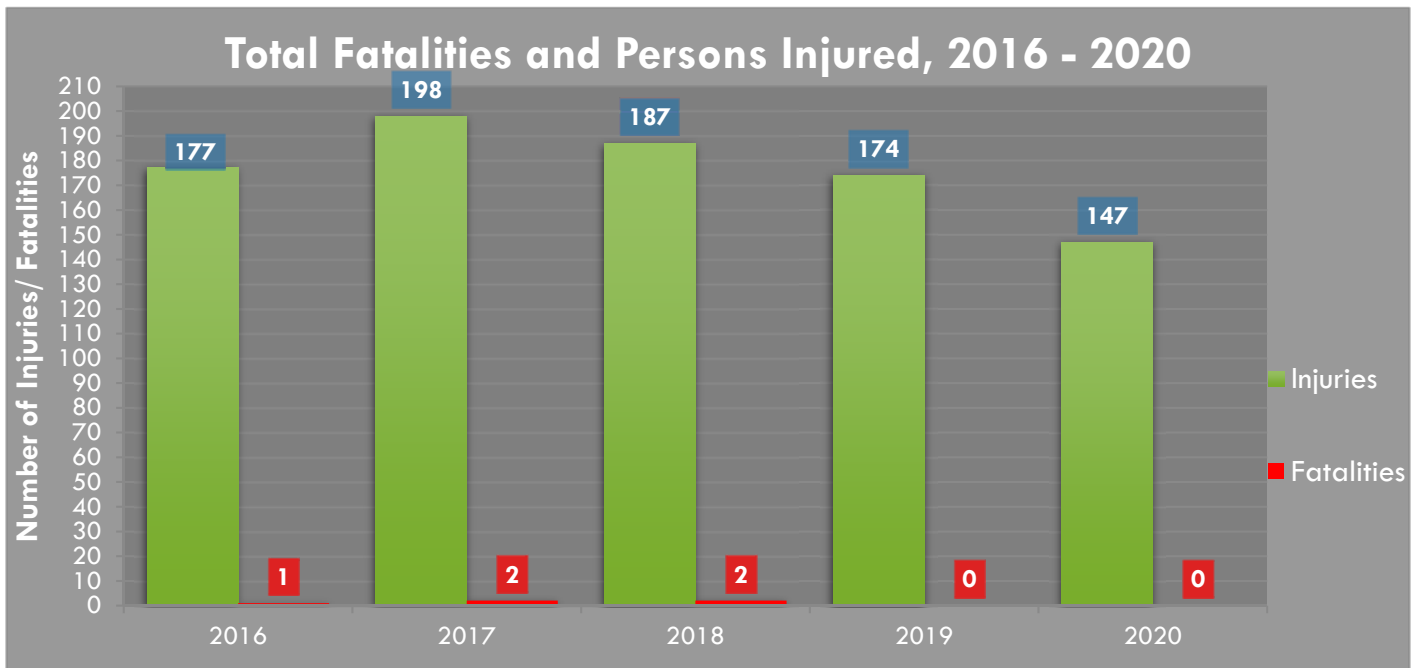
- ❖ On average, 1 traffic crash was reported every 12 hours.
- ❖ Of all the crashes, the most frequent crash types were rear end collisions at 33% of the total, 13% were with fixed objects, 12% were turning movement collisions, 12% were broadsides, and 13% were for both side swipes.

## ANNUAL TRENDS

Over the past five years, the Town has averaged 776 reported crashes per year. In 2020 the number of crashes was 5% lower than in 2019, and 13% lower than 2018. Although the Town had a few construction zones in 2020, they did not contribute to any increase with crashes as what was seen in the past. In 2020, vehicle travel in general was reduced due to statewide stay at home orders for the pandemic and likely contributed to a lower number of crashes. The following charts provide a summary of the annual trends in recent years.



The number of people injured in 2019 and 2020 crashes decreased by 7% and 16% respectively over the previous year's total of people injured. There were no reported fatal collisions recorded in 2019 or 2020 within the Town of Castle Rock.

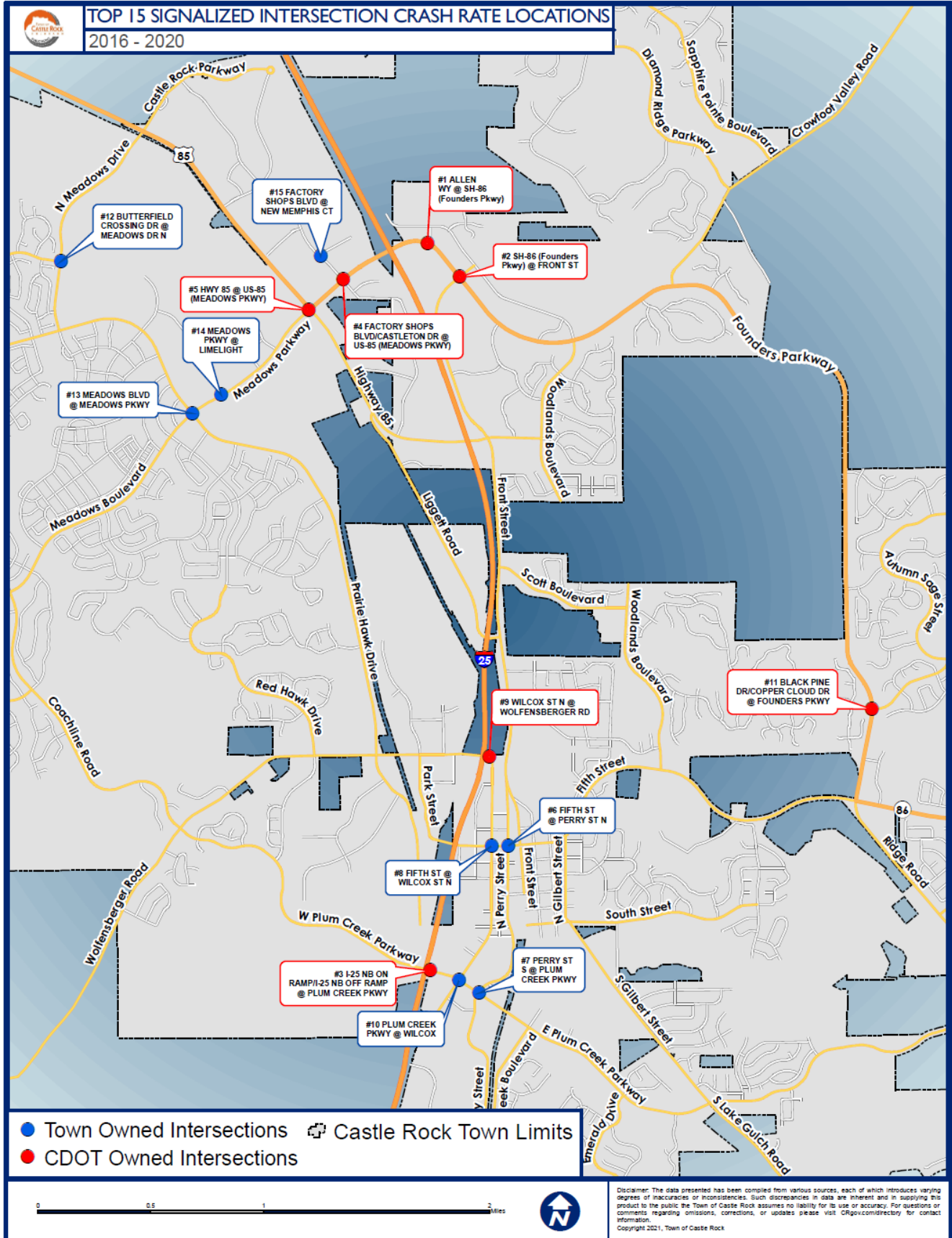


Since the number of crashes depends on the volume of traffic throughout the community, reviewing crash rates, crashes per population, is a way to compare the crash history over time with the growth in population and traffic in general. As can be seen in the chart above, over time the Town's crash and injury rates have been decreasing. Traffic crash fatalities have been few, although do happen, and are evaluated closely for appropriate mitigations.



## HIGHEST CRASH RATES BY LOCATION (SIGNALIZED INTERSECTIONS)

Intersection	5-year Crash Tot	Average Traffic Volume through Intersection	Crash Rate (MEV)	Rank (2020/2018)
ALLEN WY @ SH-86 (Founders Pkwy)	150	49960	1.65	1/1
SH-86 (Founders Pkwy) @ FRONT ST	114	43077	1.45	2/5
I-25 NB ON RAMP/I-25 NB OFF RAMP @ PLUM CREEK PKWY	73	29522	1.35	3/19
FACTORY SHOPS BLVD/CASTLETON DR @ US-85 (MEADOWS PKWY)	131	60216	1.19	4/2
HWY 85 @ US-85 (MEADOWS PKWY)	84	47140	0.98	5/3
FIFTH ST @ PERRY ST N	32	18873	0.93	6/12
PERRY ST S @ PLUM CREEK PKWY	49	30850	0.87	7/8
FIFTH ST @ WILCOX ST N	32	20900	0.84	8/9
WILCOX ST N @ WOLFENSBERGER RD	33	22220	0.81	9/6
PLUM CREEK PKWY @ WILCOX	50	34850	0.79	10/-
BLACK PINE DR/COPPER CLOUD DR @ FOUNDERS PKWY	27	19290	0.77	11/10
BUTTERFIELD CROSSING DR @ MEADOWS DR N	25	19154	0.72	12/-
MEADOWS BLVD @ MEADOWS PKWY	40	31146	0.70	13/7
MEADOWS PKWY @ LIMELIGHT	42	34373	0.67	14/14
FACTORY SHOPS BLVD @ NEW MEMPHIS CT	39	34056	0.63	15/10



## **SECTION 2: Public Works Statistical Analysis**

This section of the report summarizes the statistical review of the 2020 raw data. The purpose of this is to provide an initial “screen” to identify the intersections that are producing crash numbers that exceed the number that may be expected to occur when compared to similar intersections sharing similar characteristics in Colorado. Since crashes are “expected” to occur, it’s important to determine which locations are experiencing crashes at a higher rate than should be expected.

### **ROAD & INTERSECTION SAFETY**

One important goal from this crash data is to identify locations where the road environment may be a contributing factor to crashes. This is possible through statistical analysis. The goal in this regard is to identify locations where roadways or traffic control devices could be a contributing factor and implement treatments to correct these.

The definition of the safety of a road section or intersection used by the Transportation Planning and Traffic Engineering Division is the number of crashes expected to occur at these locations during a specified period as compared to what actually has occurred. Because there are factors that are not related to the physical roadway environment that contribute to crashes, road sections and intersections are expected to have crashes occur. Since what is ‘expected’ is not certain, safety can only be estimated, and estimation is in degrees of precision. The precision of an estimate is usually expressed by its standard deviation.

For practical reasons Traffic Engineering is interested in the safety of a road section or intersection that seems to have too many crashes. If the estimation of safety is based only on crash counts or crash rates, the estimate would be biased. The existence of this ‘regression-to-mean’ bias has been long recognized given that crash rates at a given location tend to fluctuate from one year to the next due to multiple variables. If not accounted for, regression-to-mean bias is known to produce inflated estimates of countermeasure effectiveness so it is important to review several years’ worth of data to account for statistical anomalies.

In light of this, the magnitude of safety problems at intersections can be assessed through the use of Safety Performance Functions (SPF). The SPF reflects the complex relationship between exposure (measured in daily traffic) and the crash count for an intersection measured in crashes per year. The SPF models provide an estimate of the normal or expected crash frequency and severity for a range of ADT among similar facilities. The Colorado Department of Transportation (CDOT) has calibrated several different Safety Performance Functions based on actual crash data collected at intersections throughout the State.

All of the dataset preparation was performed using the Town’s DiExSys crash database. Crash history for each intersection was prepared using the most recent five years of

available crash data. Average Daily Traffic (ADT) for each intersection approach (major street and minor street) over the five years was entered into the same dataset.

Development of the SPF lends itself well to the conceptual formulation of the Levels of Service of Safety (LOSS). The concept of level of service uses quantitative measures that characterize safety of an intersection in reference to its expected performance. If the level of safety predicted by the SPF will represent a normal or expected number of crashes at a specific level of ADT, then the degree of deviation from the norm can be stratified to represent specific levels of safety.

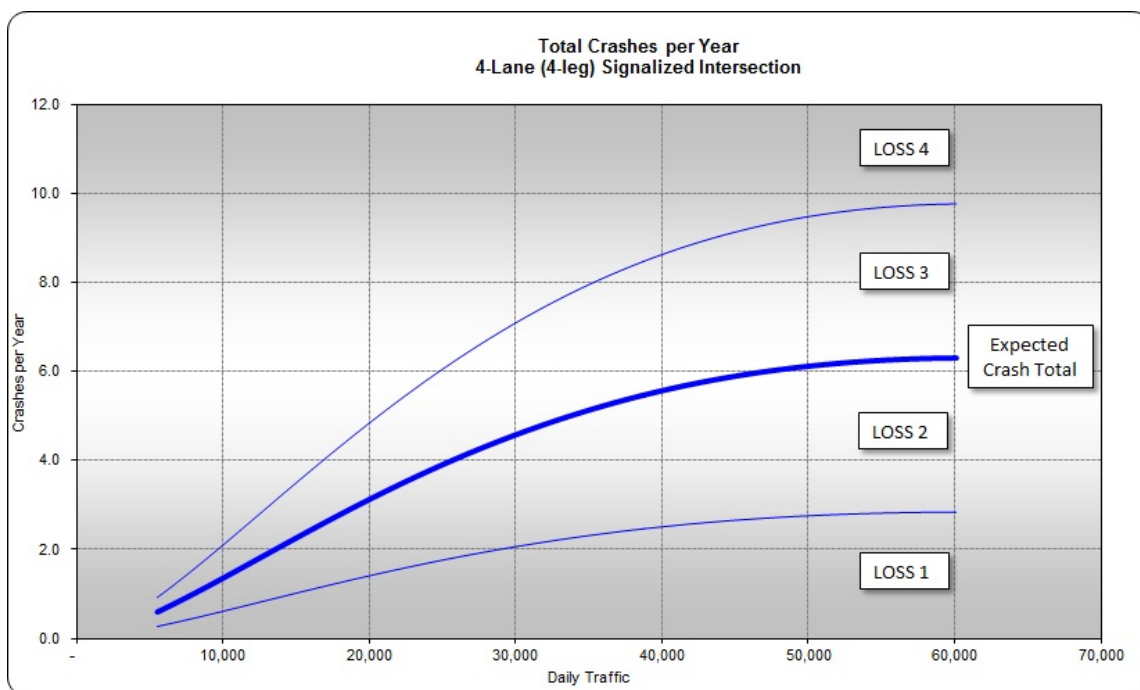
LOSS-I – Indicates low potential for crash reduction

LOSS-II – Indicates better than expected safety performance

LOSS-III – Indicates less than expected safety performance

LOSS-IV – Indicates high potential for crash reduction

Gradual change in the degree of deviation of the LOSS boundary line from the fitted model mean reflects the observed increase of variability in crashes as ADT increases. LOSS reflects how the intersection is performing in regard to its expected crash frequency at a specific level of ADT (major street and minor street). It only provides a crash frequency comparison with the expected norm. It does not, however, provide any information related to the nature of the safety problem itself. If a safety problem is present, LOSS will only describe its magnitude from the frequency standpoint. The nature of the problem is determined through diagnostic analysis using direct diagnostics and pattern recognition techniques and will be discussed later in this report. The following provides an example of a SPF for a 4-lane signalized intersection as well as the corresponding LOSS categories.



## SIGNALIZED INTERSECTIONS WITH THE HIGHEST CRASH RATES

The following tables summarize the 2020 highest crash rate locations. This table provides the actual crash total, the statistically expected crash total as well as the Level of Service of Safety and corresponding safety performance. This table is sorted by LOSS and the observed average crash totals per year. It is slightly different than the one based on crash rate, and helps to identify the locations where mitigation measures have the greatest opportunity to reduce the observed crash experience.

Rank (2020/2018)	Intersection	Expected Crash History (Crashes / Year)	Observed Crash History (Crashes / Year)	Level of Service of Safety	LOSS Category since year	Safety Performance
1/1	ALLEN WY @ SH-86 (Founders Pkwy)	14.55	29.1	4	2014	High potential for reduction
2/2	FACTORY SHOPS BLVD/CASTLETON DR @ US-85 (MEADOWS PKWY)	18.67	26.2	4	2014	High potential for reduction
3/5	SH-86 (Founders Pkwy) @ FRONT ST	12.2	22.8	4	2014	High potential for reduction
4/3	HWY 85 @ US-85 (MEADOWS PKWY)	11.78	20.6	4	2015	High potential for reduction
5/5	PERRY ST S @ PLUM CREEK PKWY	8.9	14.8	4	2020	High potential for reduction
6/-	PLUM CREEK PKWY @ WILCOX	9.99	14.2	4	2020	High potential for reduction
7/10	FACTORY SHOPS BLVD @ NEW MEMPHIS CT	9.45	12.9	4	2020	High potential for reduction
8/7	MEADOWS BLVD @ MEADOWS PKWY	8.9	11.8	4	2020	High potential for reduction
9/14	MEADOWS PKWY @ LIMELIGHT	8.01	11.6	4	2020	High potential for reduction
10/-	CROWFOOT VALLEY RD @ FOUNDERS PKWY	4.8	10.9	4	2020	High potential for reduction
11/19	I-25 NB ON RAMP/I-25 NB OFF RAMP @ PLUM CREEK PKWY	15.74	8.9	4	2020	High potential for reduction
12/9	FIFTH ST @ WILCOX ST N	4.99	7.9	4	2017	High potential for reduction
13/12	FIFTH ST @ PERRY ST N	4.39	7.0	4	2020	High potential for reduction

14/-	BLACK PINE DR/COPPER CLOUD DR @ FOUNDERS PKWY	4.16	5.6	4	2020	High potential for reduction
15/7	WILCOX ST N @ WOLFENSBERGER RD	5.34	8.4	3/4	2014	High potential for reduction
16/11	FOUNDERS PKWY @ TRAIL BOSS DR	8.76	9.2	3	2017	Worse than expected
17/-	BUTTERFIELD CROSSING DR @ MEADOWS DR N	5.07	5.3	3	2020	Worse than expected

As can be seen in this table there are a total of seventeen intersections that have an observed crash total that is higher than what would be expected at other similar intersections in Colorado. The next section provides a summary of the crash types to focus on potential areas for improvement to the roadway environment.

## PLANNED MITIGATION MEASURES (SIGNALIZED INTERSECTIONS)

The crash history from July 2015 to June 2020 was reviewed for each of the 14 intersections with a LOSS rating of 3 or higher. The following tables summarize the crash type(s) at each intersection that was higher than would be expected for a similar four or six lane signalized intersection in Colorado.

Mitigations		
Intersections	Crash Type(s) in Need of Correction	Mitigation Measures
ALLEN WY @ SH-86 (Founders Pkwy)	Broadside, Sideswipe	New turn lanes were constructed in 2019 and crashes have decreased since then, but still LOSS 4. Traffic signal timing should be reviewed as part of a CDOT technology improvement project on the corridor in 2021, which should relieve congestion and improve safety.
FACTORY SHOPS BLVD/CASTLETON DR @ SH-86 (MEADOWS PKWY)	Sideswipe, Rear end	Review use of durable markings for multi-lane left turn skips. Review signal head visibility, and clearance times. Traffic signal timing should be reviewed as part of a CDOT technology improvement project on the corridor in 2021, which should relieve congestion and improve safety.
SH-86 (Founders Pkwy) @ FRONT ST	Rear End, Approach turn	Review the red / yellow clearance intervals at the intersection. Review use of durable markings for intersection multi-lane left turn skips. Review protected left signal operation by time of day.
HWY 85 @ US-85 (MEADOWS PKWY)	Rear end, Sideswipe (opposite)	Review the red / yellow clearance intervals at the intersection. Review use of durable markings for multi-lane left turn skips. Traffic signal timing should be reviewed as part of a CDOT technology improvement project on the corridor in 2021, which should relieve congestion and improve safety.
PERRY ST S @ PLUM CREEK PKWY	Broadside, Rear End	Review visibility of traffic signal heads on EB and WB approaches. Review the red / yellow clearance intervals at the intersection.
PLUM CREEK PKWY @ WILCOX	Sideswipe (same), Rear End	Review the red / yellow clearance intervals at the intersection. Review use of durable markings for intersection multi-lane left turn skips. Review protected left signal operation by time of day, and improving signal phase timing.



<b>FACTORY SHOPS BLVD @ NEW MEMPHIS CT</b>	Broadside, sideswipe, Overtaking Turn, Approach Turn	Review protected signal operation by time of day. Review use of durable markings for intersection double left turn skips. Traffic signal timing should be reviewed as part of a CDOT technology improvement project on the corridor in 2021, which should relieve congestion and improve safety.
<b>MEADOWS BLVD @ MEADOWS PKWY</b>	Approach Turn, Sideswipe (same)	Review protected signal operation by time of day. Review use of durable markings for intersection multi-lane left turn skips.
<b>MEADOWS PKWY @ LIMELIGHT</b>	Rear End, Sideswipe (same)	Review visibility of traffic signal heads on east, west, and north approaches. Review the red / yellow clearance intervals at the intersection. Review protected left signal operation by time of day.
<b>CROWFOOT VALLEY RD @ FOUNDERS PKWY</b>	Rear End	Review the red / yellow clearance intervals at the intersection. Traffic signal timing should be reviewed as part of a CDOT technology improvement project on the corridor in 2021, which should relieve congestion and improve safety.
<b>I-25 NB ON RAMP/I-25 NB OFF RAMP @ PLUM CREEK PKWY</b>	Sideswipe, Overtaking turn	Review use of adjustable lane use signage. See more detail in text below.
<b>FIFTH ST @ WILCOX ST N</b>	Rear End, Sideswipe (same)	Review the red / yellow clearance intervals at the intersection. Review protected left signal operation by time of day, and improving signal phase timing.
<b>FIFTH ST @ PERRY ST N</b>	Broadside, Sideswipe (same)	Review visibility of traffic signal heads on east, west, and north approaches. Review the red / yellow clearance intervals at the intersection. Review protected left signal operation by time of day.
<b>BLACK PINE DR/COPPER CLOUD DR @ FOUNDERS PKWY</b>	Sideswipe (same), Wildlife	Review the red / yellow clearance intervals at the intersection. Review wildlife crossing and advanced intersection signage for the area.
<b>WILCOX ST N @ WOLFENSBERGER RD</b>	Approach Turn, Sideswipe (same)	CDOT change eastbound left to protected only by time of day. Approach turn crash pattern continues to be an issue even with the protected phase. Review signal timing and visibility of signal heads. Propose roundabout to CDOT again.
<b>FOUNDERS PKWY @ TRAIL BOSS DR</b>	Approach Turn, Sideswipe (same)	Review the red / yellow clearance intervals at the intersection. Review protected left signal operation by time of day.



<b>BUTTERFIELD CROSSING DR @ MEADOWS DR N</b>	Approach Turn, Sideswipe (opposite)	Review protected left signal operation by time of day. Review the red / yellow clearance intervals at the intersection. Review use of durable markings for intersection skips.
<b>PARK ST @ WOLFENSBERGER RD</b>	Sideswipe (same)	Review signal head visibility and lane use signage. Review other lane crowding and receiving lane width for turning vehicles.
<b>FIFTH ST @ RIDGE RD</b>		Intersection will have improved traffic control with intersection improvement project.
<b>ALLEN ST/WOODLANDS @ FOUNDERS PKWY</b>	Sideswipe (same), Rear End	Review signal lane use signage and visibility for westbound approach. Review the red / yellow clearance intervals at the intersection. Traffic signal timing should be reviewed as part of a CDOT technology improvement project on the corridor in 2021, which should relieve congestion and improve safety.

The highest crash type frequency is rear end crashes, which is expected with signalized intersections. When crash type frequency is compared to the state wide norm of similar intersections, primarily sideswipe collisions, rear end collisions, and approach turn collisions (a crash where a left turning vehicle turns out in front of an opposing through vehicle) are the crash types that are occurring at a rate that is more frequent than expected. By nature, traffic signals tend to cause an increase in rear end collisions so they cannot be eliminated entirely. However, certain measures such as improved signal timing can help to reduce the number of rear end collisions by reducing congestion. Reviewing lane use signage and signal head visibility, improving markings at multi-lane left turns, as well as adding measures that encourage reduced speed would help reduce these crash type patterns.

One pattern of concern that has carried from 2017, and increased through 2020 is a continued increase in collisions at the Plum Creek Pkwy and northbound I-25 on-ramp. The crash pattern is associated with the active traffic management system (ATM) that went into operation January 2017. A project was completed in August 2018 that reduced the crash pattern. Since then, the rate of crashes has increased with greater daily use of the system through the PM peak hour which is not unexpected. There remains a higher than expected crash rate, and right turning vehicles is the predominant movement. Additional safety improvements will be made with further evaluation underway to either remove the double right, or make it a permanent right lane must turn right at all times. In the long term, staff will collaborate with CDOT to add an additional right turn lane, which will be necessary as traffic patterns change with more through traffic.

Town staff will work to implement the other measures not yet complete in the table above over the remainder of 2021 and early 2022.

## REVIEW OF CRASH HISTORY AT UNSIGNALIZED INTERSECTIONS

While fewer crashes occur at the stop controlled and other un-signalized intersections in Town (i.e. roundabouts) it is still important to review the crash patterns at these locations. The crash frequency and type history from July 2015 to June 2020 was reviewed for each of the top 13 un-signalized intersections in Town. The following table summarize the crash type(s) at each intersection that was higher than would be expected for a similar stop or yield controlled intersection in Colorado. If a correctable crash pattern was identified, a potential mitigation measure has also been included.

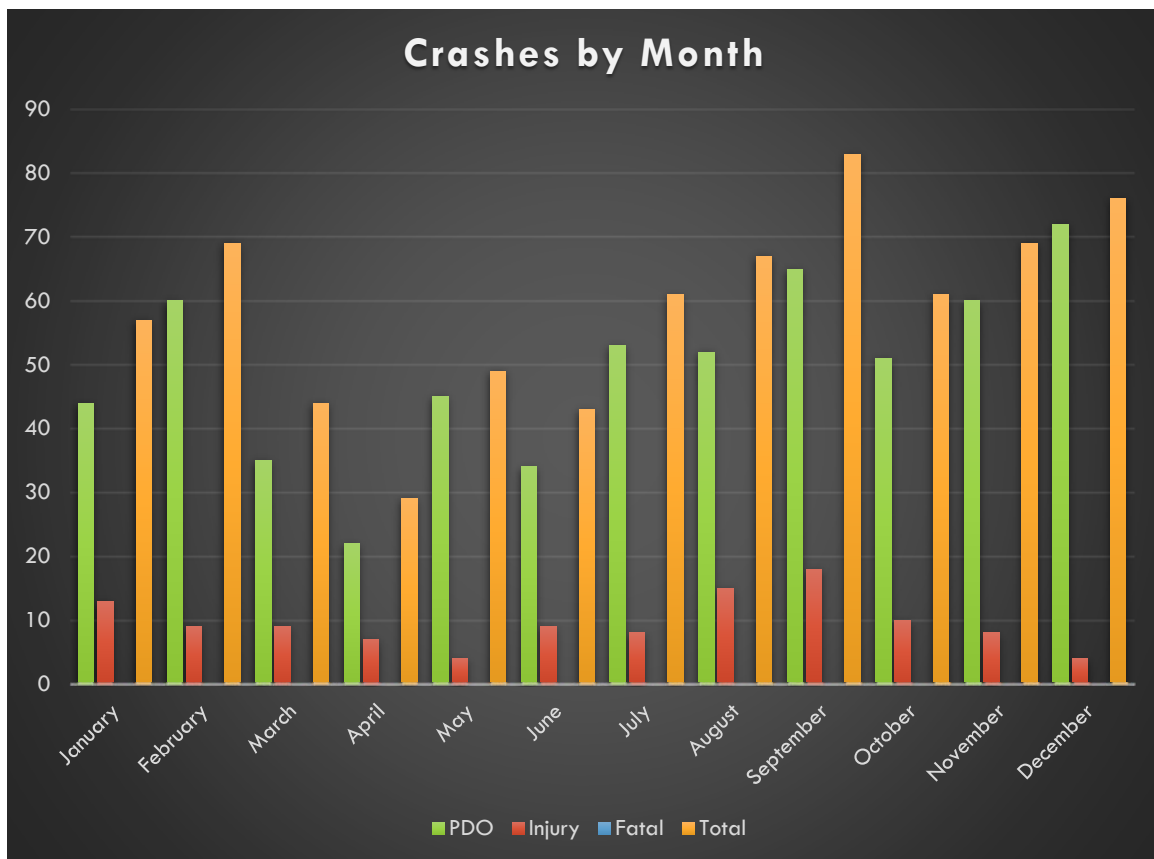
Intersections	All Crashes	PDO	INJ	Crash Type for correction	Mitigation Measures
<b>CASTLE ROCK PKWY @ PROMENADE PKWY</b>	27	25	2	4 Rear end, 17 Sideswipe, 1 Approach turn	Restripe with more durable markings, add additional signage
<b>CASTLETON RD/GENOA @ CASTLETON DR</b>	23	16	4	14 Broadside, 4 Rear end, 2 Sideswipe	Review intersection for traffic control or geometric change
<b>FRONT ST @ MILESTONE LN</b>	23	19	4	10 Broadside, 4 Sideswipe, 1 Approach turn	Adjust access to 3/4 movement, prohibiting lefts out
<b>FOUNDERS PKWY @ METZLER WY</b>	17	13	4	9 Broadside, 6 Approach turn	Review intersection for traffic control change
<b>FIFTH ST @ FRONT ST</b>	15	0	0	7 Broadside, 4 Sideswipe	Review sight distance at intersection for southbound to eastbound left turn
<b>FRONT ST @ OAKWOOD DR</b>	14	9	5	6 Broadside, 1 Approach turn	Review intersection for traffic control change, and sight distance
<b>ENDERUD BLVD @ RIDGE RD</b>	13	12	1	8 Sideswipe	Restripe with more durable markings
<b>WOLFENSBERGER RD @ KINNER ST</b>	11	11	0	6 Broadside, 1 Approach turn	Improve signage and markings for controlled access
<b>FIFTH ST @ JERRY ST</b>	11	10	1	8 Broadside	Review sight distance at intersection
<b>MEADOWS BLVD @ CHEROKEE DR</b>	9	6	3	8 Broadside	Intersection was signalized in 2020

<b>PERRY ST @ SIXTH ST</b>	9	6	3	4 Broadside, 1 Approach turn	Review sight distance at intersection for eastbound to northbound left turn
<b>GILBERT ST @ THIRD ST</b>	9	7	2	8 Broadside	Review sight distance at intersection
<b>FIFTH ST @ VALLEY DR</b>	9	8	1	4 Broadside, 2 Approach turn	Intersection will have improved traffic control with 5 <sup>th</sup> St widening project

As can be seen in this table, broadside collisions is the crash type in need of correction at most of these intersections. These crashes typically occurred when the driver on the side street misjudged the available gap in traffic and was struck by a vehicle on the main street. To address this pattern, sight lines, intersection control, restriping with durable markings, and signalized improvements are being considered. Town staff will work to implement the other measures not yet complete in the table above over the remainder of 2021 and beginning of 2022.

## 2020 CRASH DATA TRENDS & METRICS

Months	PDO	PDO %	Injury	Injury %	Fatal	Fatal %	Total	Total %
January	44	7%	13	11%	0	0%	57	8%
February	60	10%	9	8%	0	0%	69	10%
March	35	5%	9	8%	0	0%	44	6%
April	22	4%	7	6%	0	0%	29	4%
May	45	8%	4	4%	0	0%	49	7%
June	34	6%	9	8%	0	0%	43	6%
July	53	9%	8	7%	0	0%	61	8%
August	52	9%	15	13%	0	0%	67	9%
September	65	11%	18	16%	0	0%	83	12%
October	51	8%	10	9%	0	0%	61	9%
November	60	10%	8	7%	0	0%	69	10%
December	72	12%	4	3%	0	0%	76	11%
Total	593	100%	114	100%	0	0%	708	100%



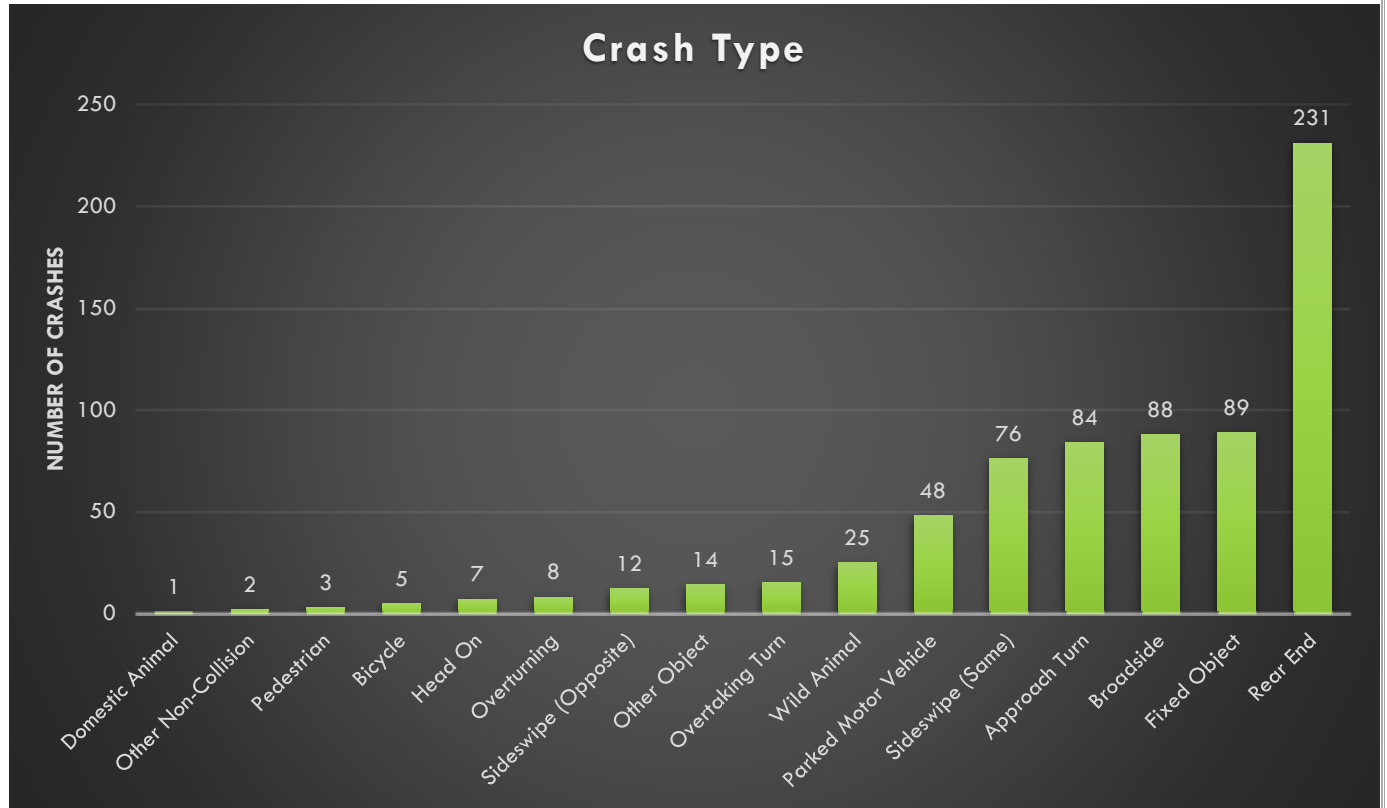
## CRASH BREAKDOWN BY WEEKDAY & TIME IN 2020

Day of Week	PDO	PDO %	Injury	Injury %	Fatal	Fatal %	Total	Total %
<b>Sunday</b>	50	8%	6	5%	0	0%	56	8%
<b>Monday</b>	104	18%	25	22%	0	0%	129	18%
<b>Tuesday</b>	89	15%	19	17%	0	0%	108	15%
<b>Wednesday</b>	95	16%	17	15%	0	0%	112	16%
<b>Thursday</b>	82	14%	10	9%	0	0%	92	13%
<b>Friday</b>	105	18%	21	18%	0	0%	127	18%
<b>Saturday</b>	68	11%	16	14%	0	0%	84	12%
<b>Total</b>	<b>593</b>	<b>100%</b>	<b>114</b>	<b>100%</b>	<b>0</b>	<b>0</b>	<b>708</b>	<b>100%</b>

## TIMES OF CRASHES

Time of Day	PDO	PDO %	Injury	Injury %	Fatal	Fatal %	Total	Total %
0:00	5	1%	0	0%	0	0%	5	1%
1:00	7	1%	0	0%	0	0%	7	1%
2:00	4	0%	0	0%	0	0%	4	1%
3:00	3	0%	0	0%	0	0%	3	0%
4:00	3	0%	1	1%	0	0%	4	1%
5:00	2	0%	1	1%	0	0%	3	0%
6:00	11	2%	4	3%	0	0%	15	2%
7:00	31	5%	7	6%	0	0%	38	5%
8:00	39	7%	6	5%	0	0%	45	6%
9:00	23	4%	8	7%	0	0%	31	5%
10:00	32	5%	4	3%	0	0%	36	5%
11:00	39	7%	6	5%	0	0%	45	6%
12:00	44	7%	7	6%	0	0%	51	7%
13:00	39	7%	7	6%	0	0%	46	6%
14:00	51	9%	3	3%	0	0%	54	8%
15:00	51	9%	9	8%	0	0%	60	8%
16:00	57	10%	11	10%	0	0%	68	10%
17:00	39	6%	13	11%	0	0%	52	7%
18:00	38	6%	12	11%	0	0%	50	7%
19:00	27	5%	8	7%	0	0%	35	5%
20:00	19	3%	3	3%	0	0%	23	3%
21:00	10	2%	3	3%	0	0%	13	2%
22:00	14	2%	0	0%	0	0%	14	2%
23:00	5	1%	1	1%	0	0%	6	1%
<b>Total</b>	<b>593</b>	<b>100%</b>	<b>114</b>	<b>100%</b>	<b>0</b>	<b>0%</b>	<b>708</b>	<b>100%</b>

## TYPES OF CRASHES



Vehicle Type	Vehicles Involved in Crashes	% of Vehicles
Auto	476	36%
SUV	498	38%
Pick-up	230	18%
Auto/SUV/ Truck w/ Trailer	0	0%
Truck (over 10,000 lbs.)	30	2%
Motorcycle/Moped	12	1%
Bicycle	5	0%
School Bus/ Bus	2	0%
Hit & Run	46	4%
Other	15	1%
Total	1314	100.00%

## CRASH LOCATION

5 -year Intersections By Classification	# of Crashes	# of Fatalities	# of Injuries
Arterial/Arterial	889	1	126
Arterial/Collector	362	0	56
Arterial/Local	192	0	33
Collector/Collector	48	0	10
Collector/Local	73	1	12
Local/Local	40	0	0
Total	<b>1604</b>	<b>2</b>	<b>237</b>

Roadway Description		
In Alley	2	0%
Parking Lot	2	0%
At Driveway Access	18	3%
Roundabout	19	3%
Intersection Related	86	12%
Non Intersection	245	35%
At Intersection	336	47%
Total	708	100%

## CRASH ENVIRONMENT

Weather Conditions		
Fog	1	0%
Unknown	1	0%
Wind	2	0%
Rain	14	2%
Snow/Sleet/Hail	59	8%
None	631	89%
Total	708	100%

### Lighting Conditions

Dawn/Dusk	36	5%
Dark-Unlighted	47	7%
Dark-Lighted	93	13%
Daylight	532	75%
<b>Total</b>	<b>708</b>	<b>100%</b>

### Driver Conditions

Condition of Drivers	Driver 1	Driver 2	% of Condition of Drivers D.1 & D.2 (1,652)
No Apparent Factor	276	587	39%
Asleep at Wheel	3	1	0%
Illness	6	0	1%
Distracted by Passenger	8	0	1%
Diver Inexperienced	79	5	11%
Driver Fatigue	10	0	1%
Driver Distracted	50	0	7%
Driver Unfamiliar with Area	39	4	6%
Driver Emotionally Upset	5	0	1%
Unknown	232	20	33%



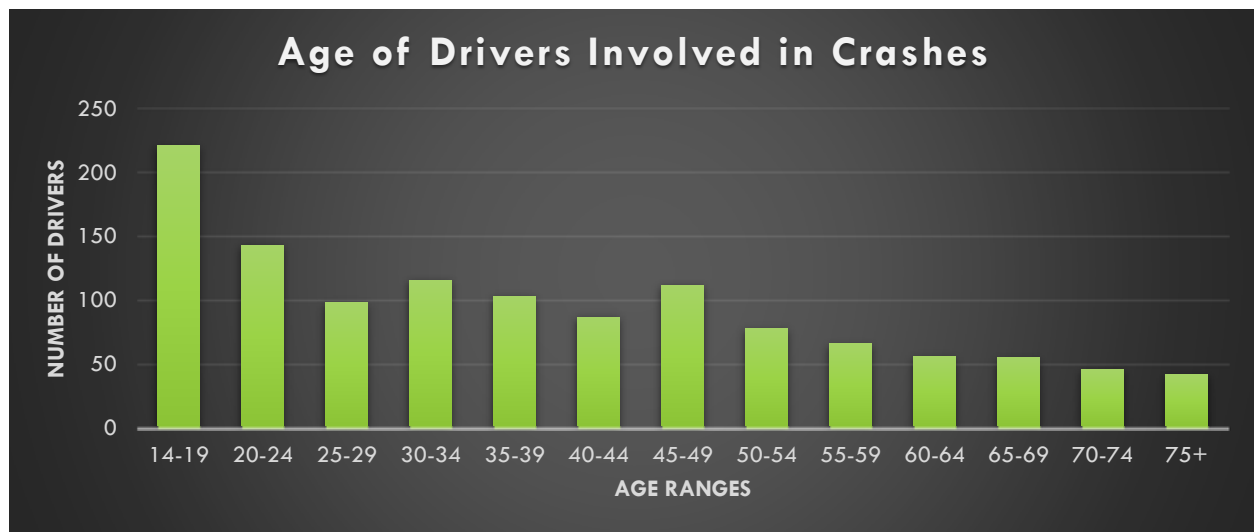
## ALCOHOL & DRUG INVOLVEMENT

\*Number of Crashes Involving Drivers Influenced by Alcohol or Drugs

Impairment of Driver	Driver 1	Driver 2	% of Condition of Drivers D.1 & D.2
No Impairment	685	617	96.4%
Alcohol Involved	19	0	3%
RX Drugs or Med	2	0	0.3%
Alcohol and Drugs Involved	2	0	0.3%

3.6% of the total crashes reported in 2020 involved alcohol or drugs.

## AGES OF DRIVERS/PEDESTRIANS INVOLVED IN CRASHES OVERALL



## DEFINITIONS

The following special terms are used throughout this report, and are provided to clarify the meaning of the data.

1. **Crash (or traffic crash):** An unintended event involving a motor vehicle that causes death, injury, or property damage.
2. **Alcohol Involvement Crash:** Any motor vehicle crash in which a driver, pedestrian, or bicyclist had consumed alcohol.
3. **Fatal Crash:** A traffic crash which involving the death of one or more persons.
4. **Hit-Other-Vehicle:** A type of collision in which the first harmful event involves a collision between two or more vehicles.
5. **Injury Crash:** An crash involving injuries to one or more persons which may or may not require transportation to a medical facility.
6. **Motor Vehicle:** Any motorized (mechanically or electrically powered) vehicle not operated on rails.
7. **Other Non-collision:** An event during an crash sequence which does not involve a collision with another vehicle or object.
8. **Property Damage Crash:** An crash not involving either a fatality of an injury to any party but which does include damage to one or more vehicles.
9. **Rollover:** An crash in which the overturning of a vehicle was the first harmful event.
10. **Type of Crash:** The category which best describes the general type of collision which was the first event.