
2021 Larimer County

TRAFFIC SAFETY

Report

Owl Canyon Rd Project

LARIMER COUNTY ENGINEERING DEPARTMENT

200 W. Oak St, Suite 3000 • Fort Collins, CO 80521 • 970.498.5700 • Larimer.org



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Introduction

This report covers the unincorporated roadways in Larimer County which the County has responsibility to maintain. Unincorporated Larimer County has 874 miles of roadways—103 miles in subdivisions, 79 in urban areas surrounding communities, and 692 in rural portions of the county.

Larimer County strives to make roadways as safe as possible. The Traffic Safety Program Goal is to **reduce the number and severity of crashes on our roadways.**



Colorado Health Information Dataset Mortality Statistics — Larimer County (2020)

Cause of Death:

Cardiovascular Disease¹
678

Cancer
516

Influenza & Pneumonia¹
32

COVID-19¹
116

Drug Overdose
57

**All Larimer County Roadway
Fatalities¹**
32

**Unincorporated Larimer County
Roadway Fatalities, 2021**
4

Source: ¹www.colorado.gov/pacific/coepbt/death-data-statistics

Crashes are categorized into three classes by severity: Property Damage Only (PDO), Injury, and Fatal. A property damage only crash indicates that no one was injured or killed in the crash. In an injury crash at least one person was injured in the crash but no one was killed. In a fatal crash at least one person lost their life although there may also have been injuries sustained by other persons.

Property damage only crashes were up over 8% from 2020. Injury crashes were up nearly 11% in 2021 compared to 2020. Larimer County saw 4 fatal crashes resulting in 4 fatalities in 2021, a decrease of 2 from 2020.

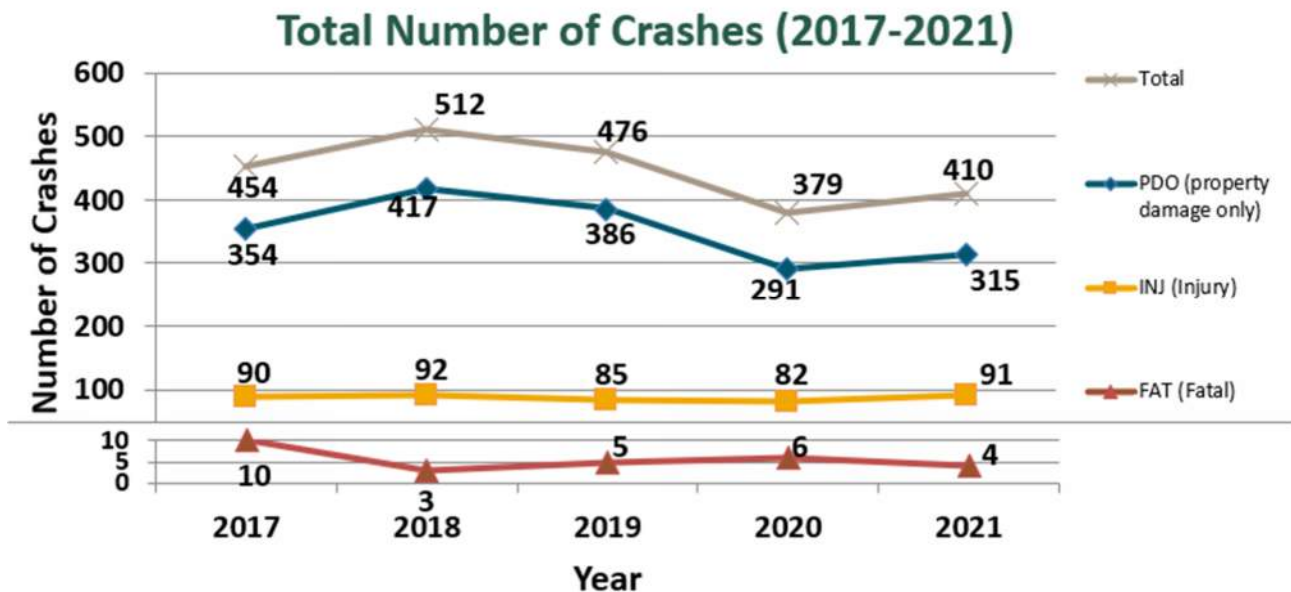
Crashes and crash severity are often influenced by the choices people make. Examples of these choices include speeding, distracted driving, driving under the influence of alcohol or drugs, and seat belt or helmet use.

This report summarizes crashes in unincorporated Larimer County. Crash data were analyzed for a variety of factors that focused on areas of interest and identification of trends to be addressed through safety improvements and education.

2021 Crash Trends

In 2021, there were 410 crashes on unincorporated roads in Larimer County which is an increase of 8% from 2020 at 379 crashes. This is a significant reduction from the 5 year average (2017 to 2021) of 446 crashes.

There were 4 fatal crashes in 2021 which is a drop from the 6 deaths of 2020 and slightly below the 5 year average of 5.6 deaths per year.



Fatal crashes: 4 crashes (4 fatalities) **Decreased 33%** from 2020

Injury crashes: **Increased 11%**

Property Damage Only: **Increased 8%**

There is generally a correlation between an increase in Vehicle Miles Traveled (VMT) and the number of crashes. Approximately 350 million miles were traveled on Larimer County roads in 2021; no significant change compared to 2020.

Overall Crashes

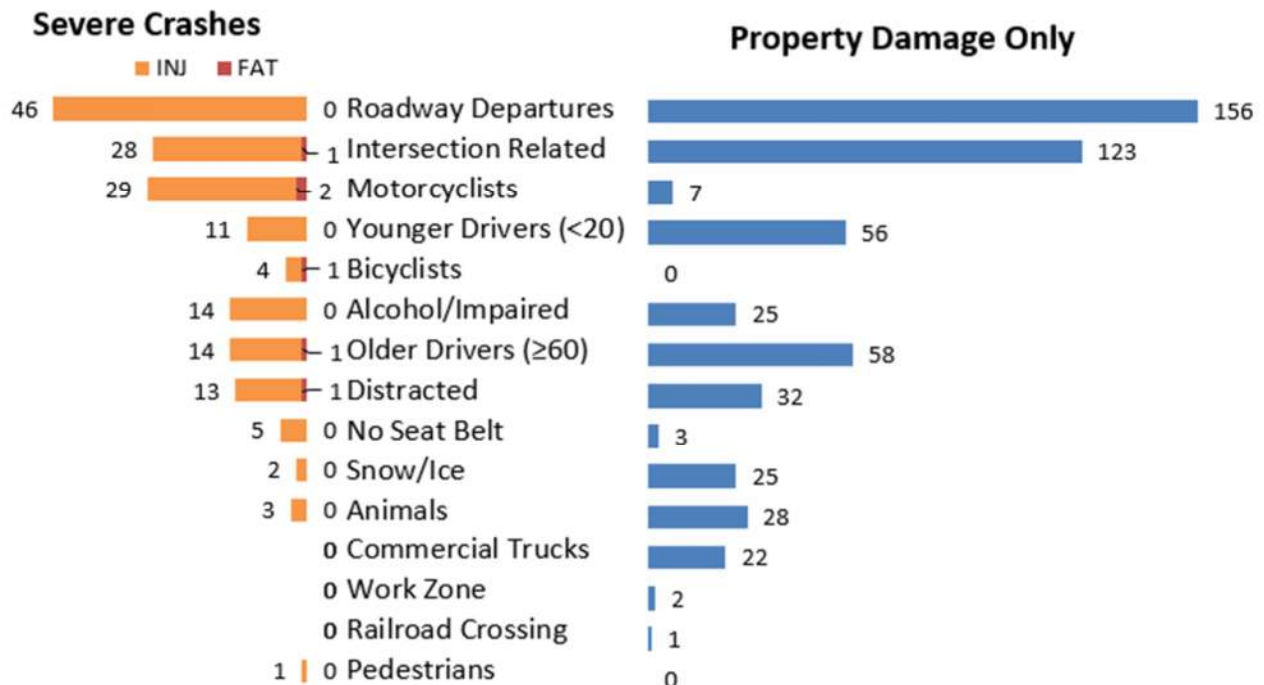
The Traffic Safety Annual Report summarizes the general trends in roadway safety, analyzes specific areas of interest, and monitors ongoing traffic safety efforts in the County. Crash data are obtained directly from Colorado State Patrol crash reports and other law enforcement entities as needed.

Charts below show the number of crashes in 2021 relative to a variety of factors. Crashes may be listed in more than one category.

Crash Characteristics	% Change between 2020	5 Year Trend*
Roadway Departures	6%	-9%
Intersection Related	25%	-5%
Motorcyclists	-14%	-7%
Younger Drivers (<20)	26%	-7%
Bicyclists	25%	-22%
Alcohol/Impaired	-9%	-17%
Older Drivers (≥60)	-5%	-1%
Distracted	-16%	-25%
No Seat Belt	-53%	-55%
Snow/Ice	-40%	-43%
Animals	63%	-8%
Commercial Trucks	38%	33%
Work Zone	-80%	-52%
Railroad Crossing	-50%	25%
Pedestrians	-50%	-17%

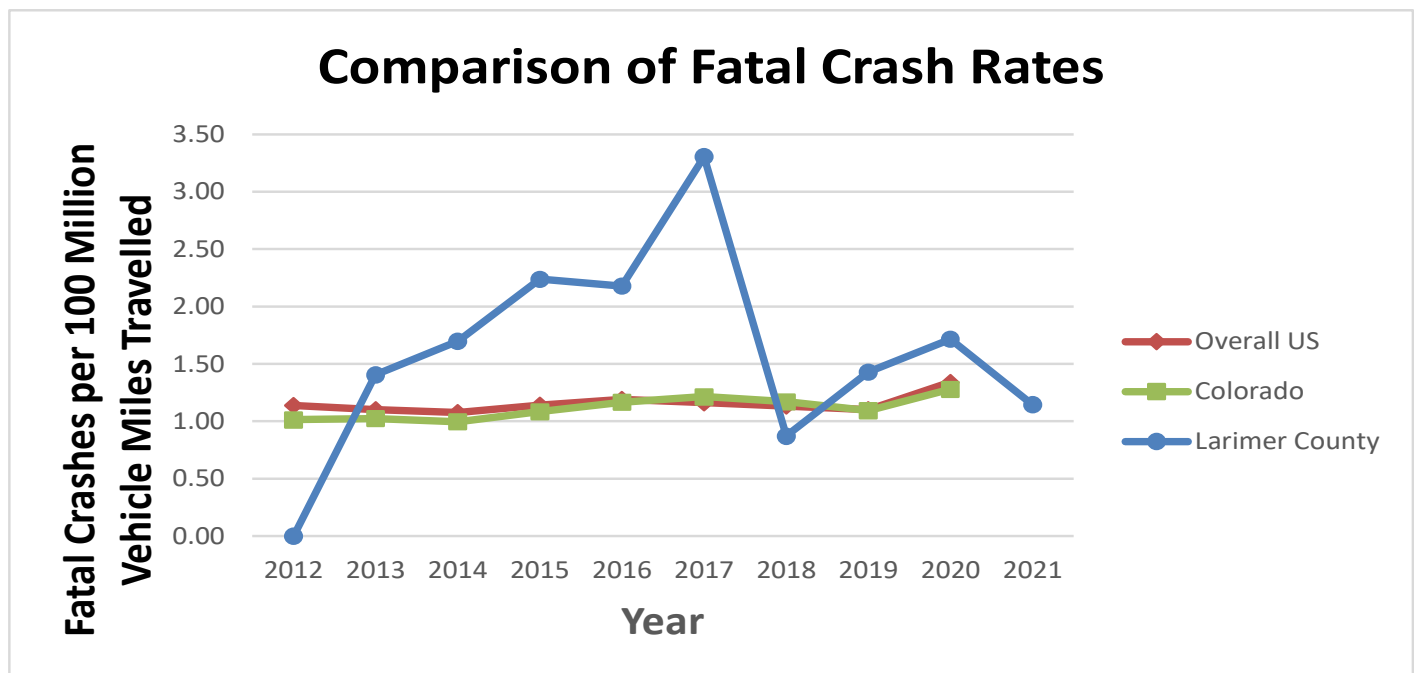
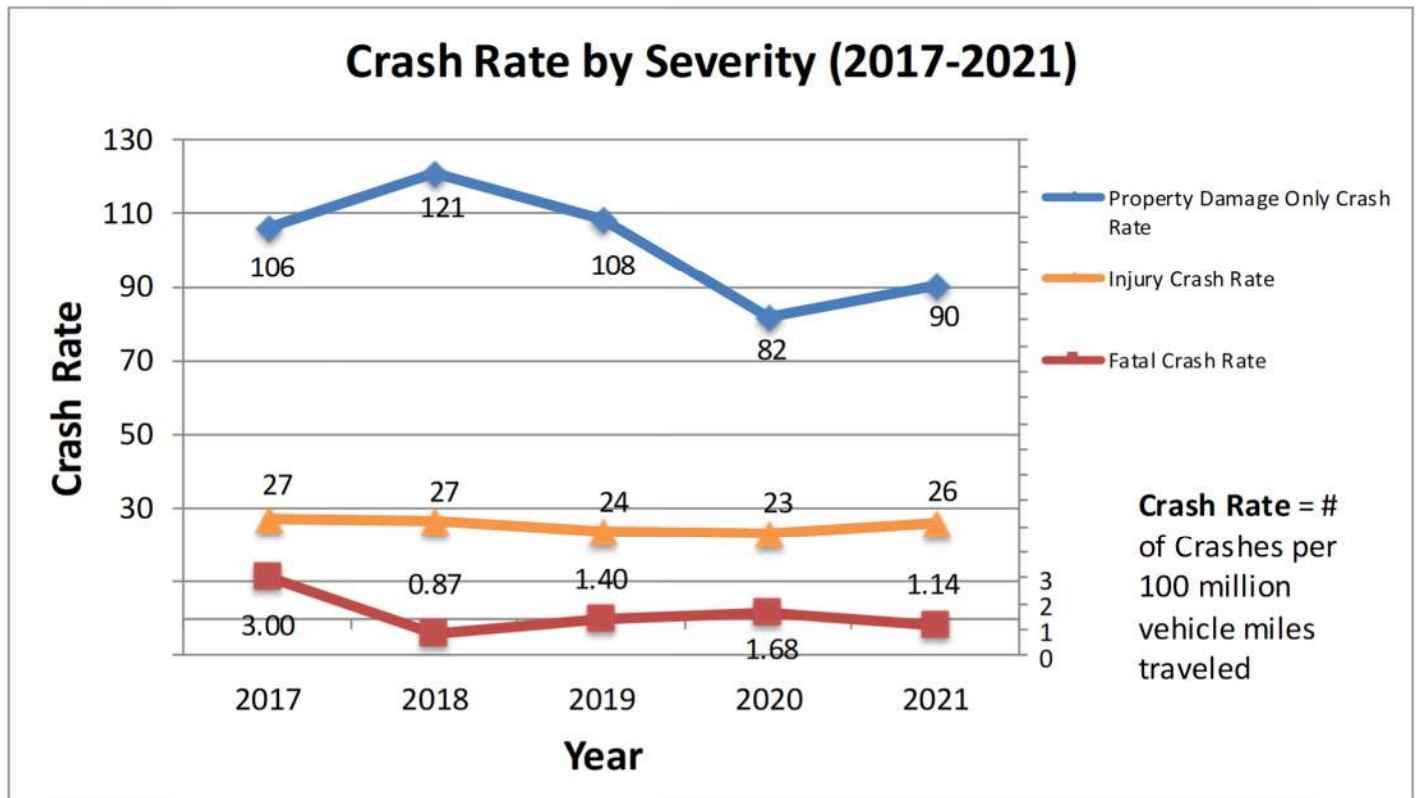
* % Change is based on # of crashes not % of yearly crashes

Unincorporated Larimer County Crashes - 2021



Crash Rates

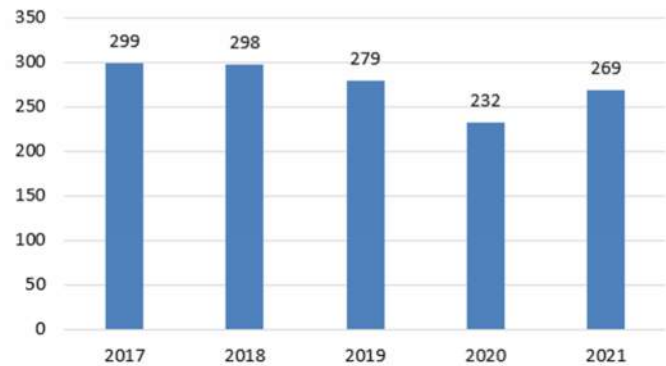
To account for varying amounts of traffic, a measure of crash *RATE* is used in addition to crash *NUMBERS*. The crash rate is expressed in the number of crashes per 100 million vehicles miles traveled. Larimer County rates are typically higher than US and Colorado rates due to its largely rural nature with higher speeds and narrower roadways. Small changes in the number of crashes may result in significant changes in crash rates.



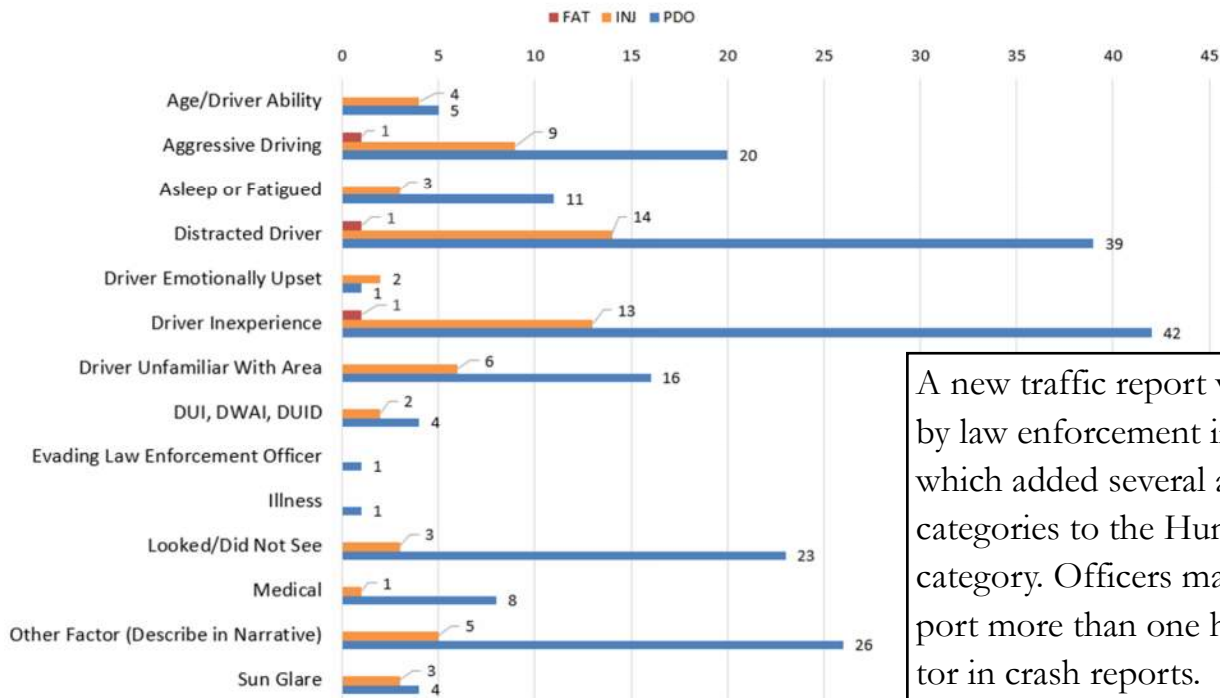
Human Contributing Factor

Driving is about human interaction with the vehicle, the natural elements and other drivers on the roads. In 2021, there were 269 crashes on roads in unincorporated Larimer County that had a Human Factor listed on the Traffic Report as the cause of the crash.

2017 - 2021 - Number of Crashes caused by a Human Factor

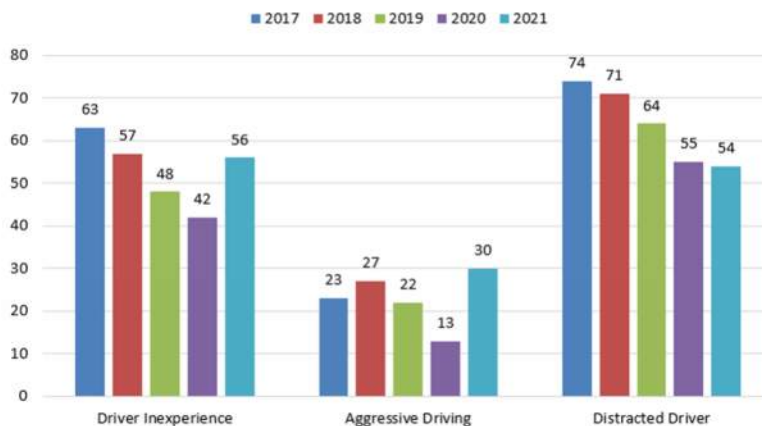


2021 - Crashes by Human Factor



A new traffic report was used by law enforcement in 2021 which added several additional categories to the Human Factor category. Officers may now report more than one human factor in crash reports.

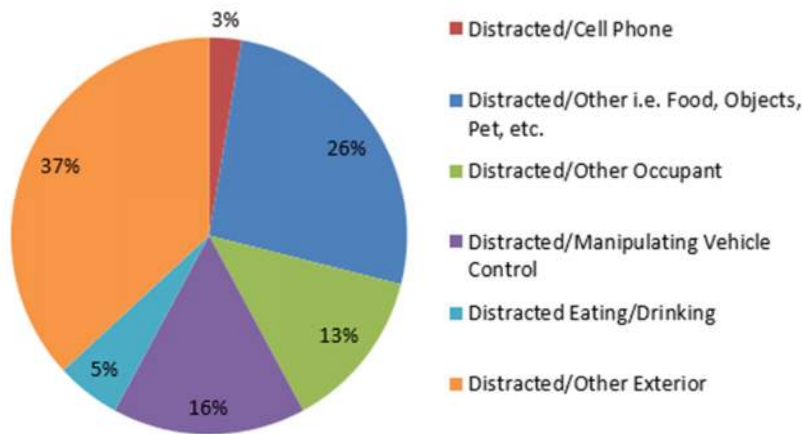
2017 - 2021 - Top Causes of Human Factors



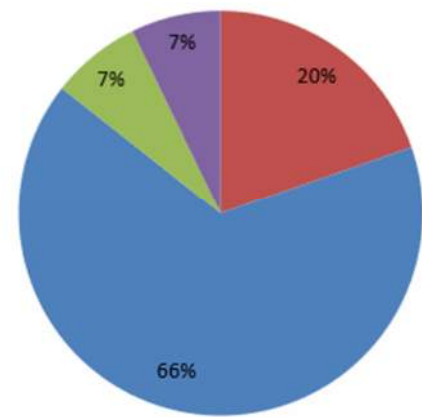
Distracted Drivers

In 2021, Distracted Drivers accounted for 46 crashes (10% of total crashes) which is a decrease from the 5 year average of 62 crashes (12% of total crashes). In 2021, a new version of the traffic report used by law enforcement was introduced. This new version revised the “Distracted/Other i.e. food, objects, pet, etc.” category into multiple items: Distracted Eating/Drinking, Distracted/Manipulating Vehicle Control, Distracted/Other Exterior, Distracted/Other Interior.

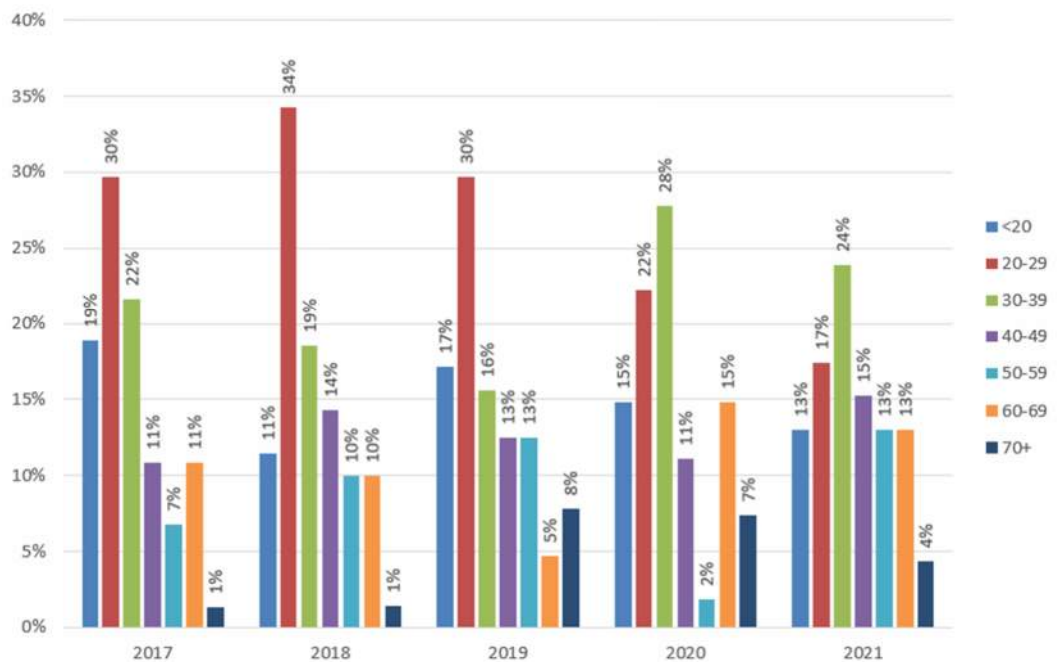
2021 Distracted Driver Cause



2017-2020 Distracted Driver Cause



2017 - 2021 Distracted crashes by age

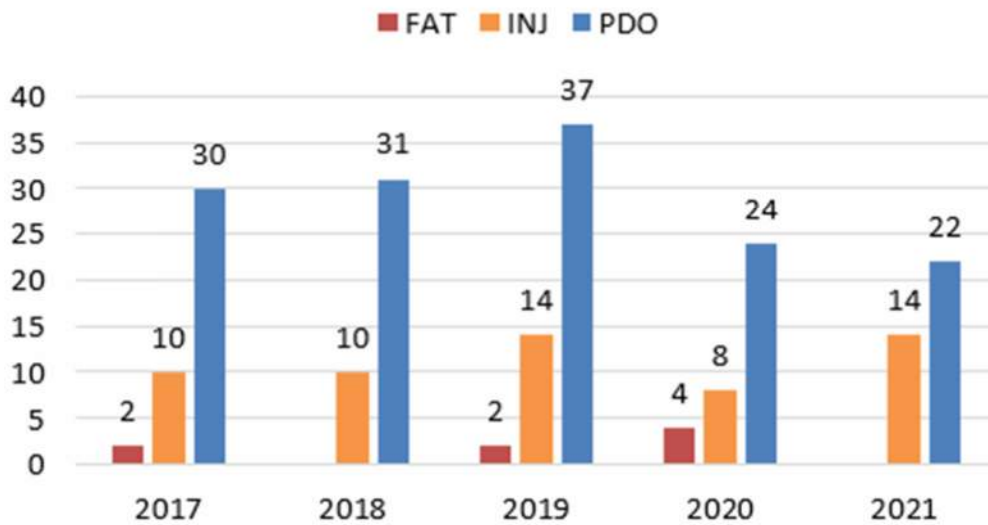


Age group 20-29 has shown a steady decrease in last few years

Impaired Drivers

In 2021, 36 crashes or 8.0% of all crashes on the unincorporated Larimer County road system were caused by Impaired Drivers, which is down from the five year average of 46 crashes (9.3% of total crashes).

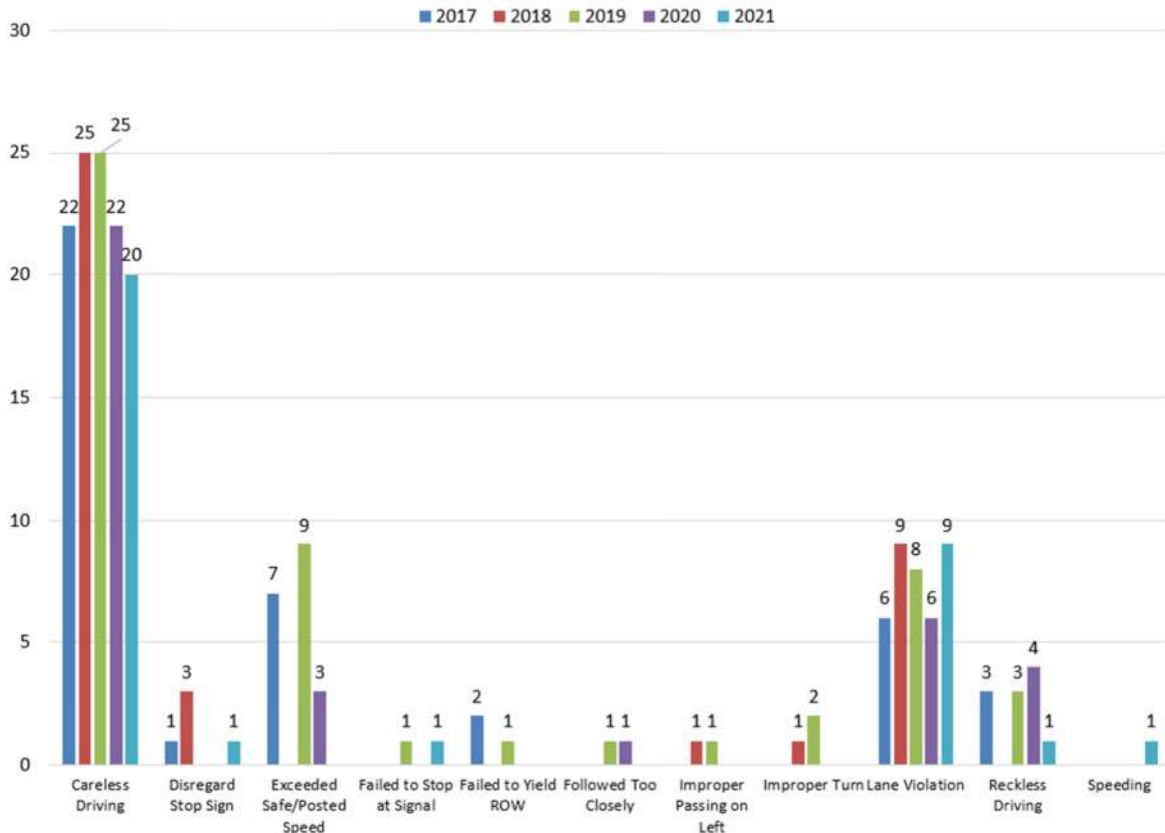
2017-2021 Driving while Impaired



According to the CDOT Fatal Crash Report* of 2021 there were 10 people killed on all Larimer County roads in an Impaired Related Crash, there were 0 on unincorporated Larimer County roads.

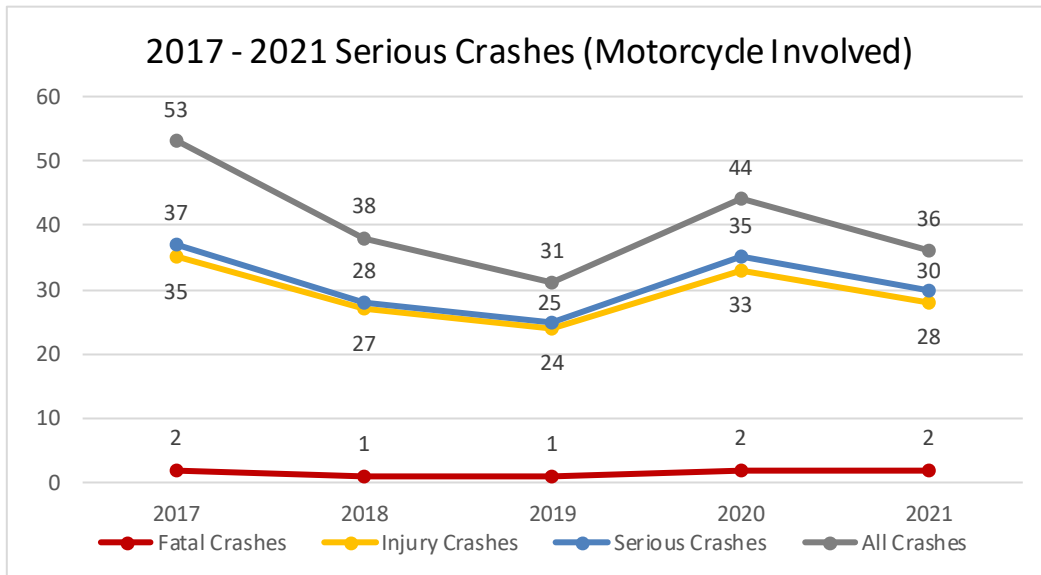
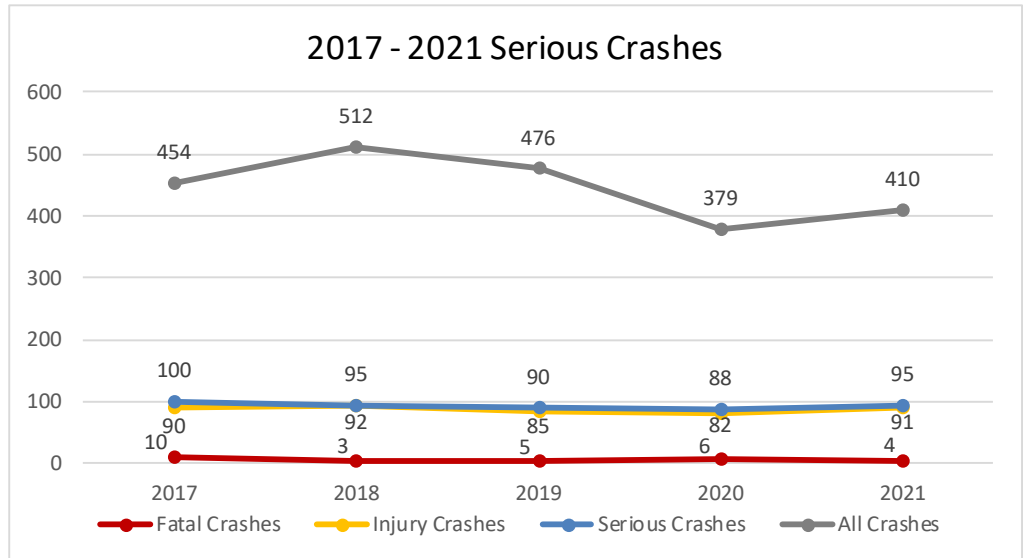
*https://codot.gov/safety/traffic-safety/assets/fatal-crash-data-city-county/city-and-county-county_fatal_2021_20210106.pdf

2017 - 2021 Most Common Actions of Impaired Drivers

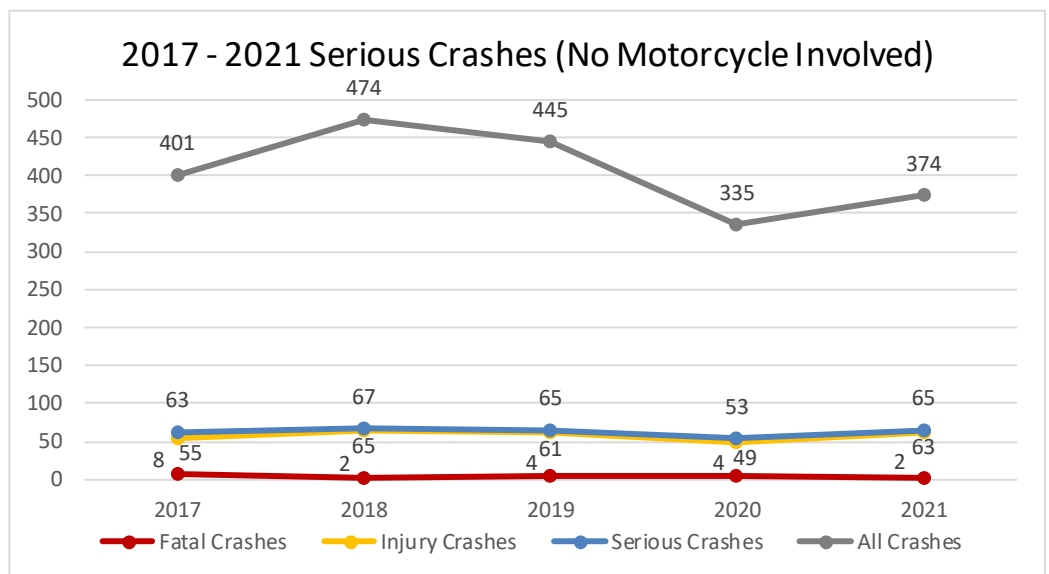


Serious Crash Review

A serious crash is defined as a crash resulting in evident injury or death. There were 98 serious crashes in 2021 resulting in 4 lives lost and 115 injuries or 23% of all crashes on the unincorporated road system.



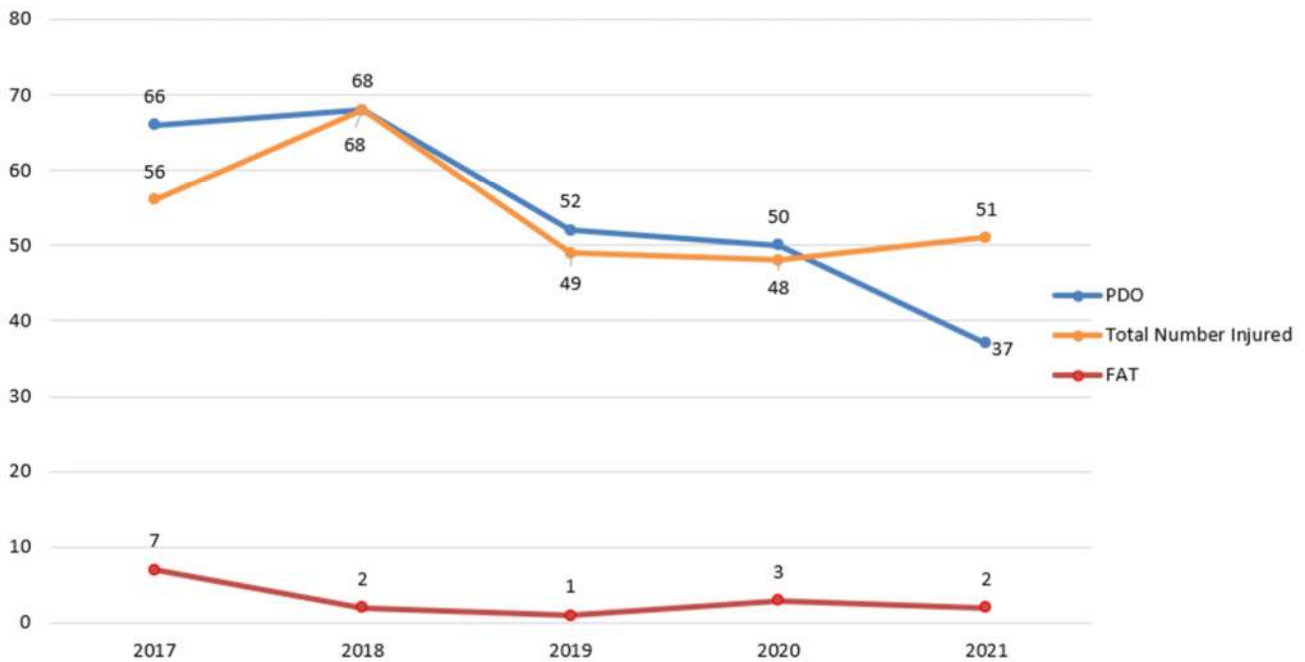
Serious crashes occurred 83% of the time when a motorcycle is involved compared to 17% when no motorcycle is involved.



Serious Crash Review (continued)

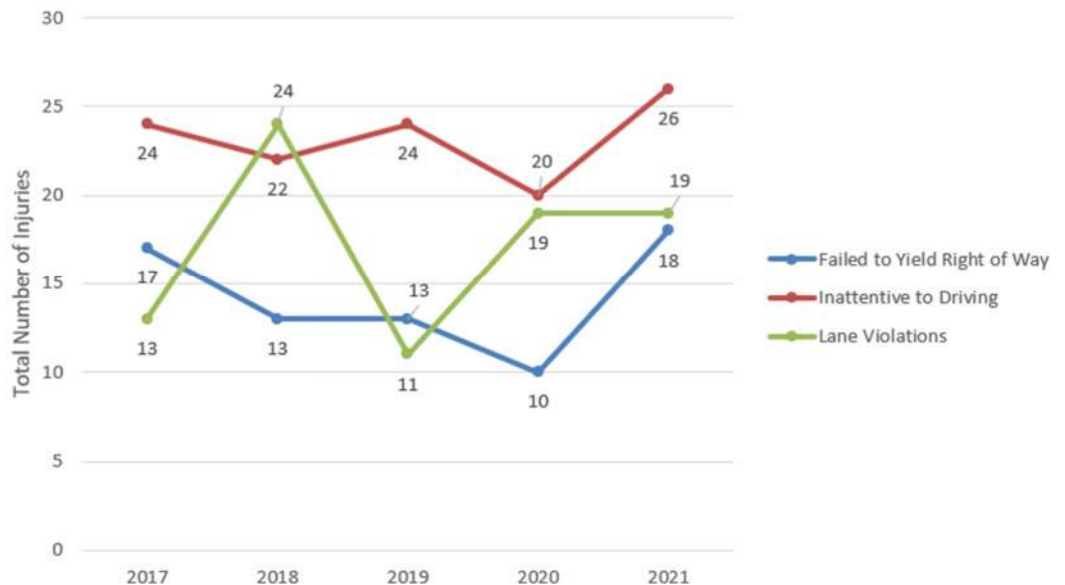
The most common cause of severe crashes for the last 5 years has been overturning/rollover. For the first time in 5 years the number of individuals injured exceeded the number of individuals not injured.

2017 - 2021 Overturning/Rollover by Severity



111 injuries in 2021 were the direct result of illegal actions taken by the driver; the top 3 are shown in the graph.

2017 - 2021 Crash Severity by Agency Code (Top 3)



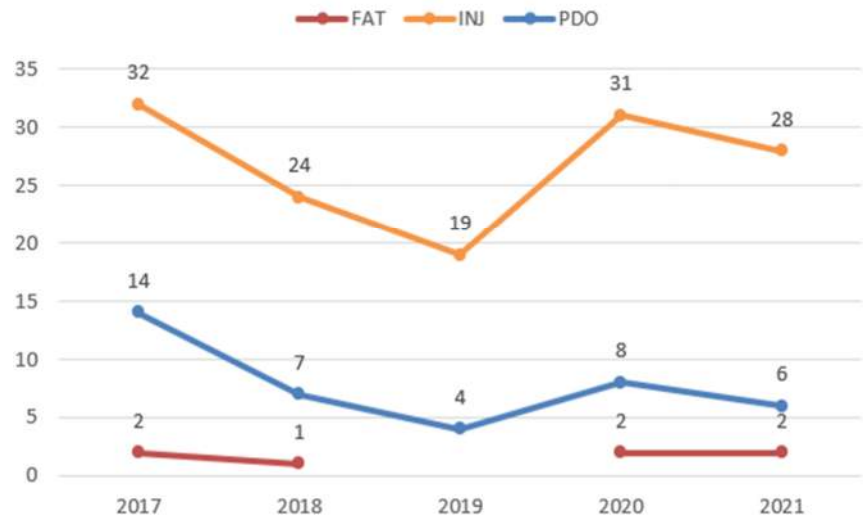
Motorcycle Crashes

In 2021, there were 36 motorcycle crashes which is slightly down from 41 in 2020 but consistent with the 5 year average of 36 crashes.

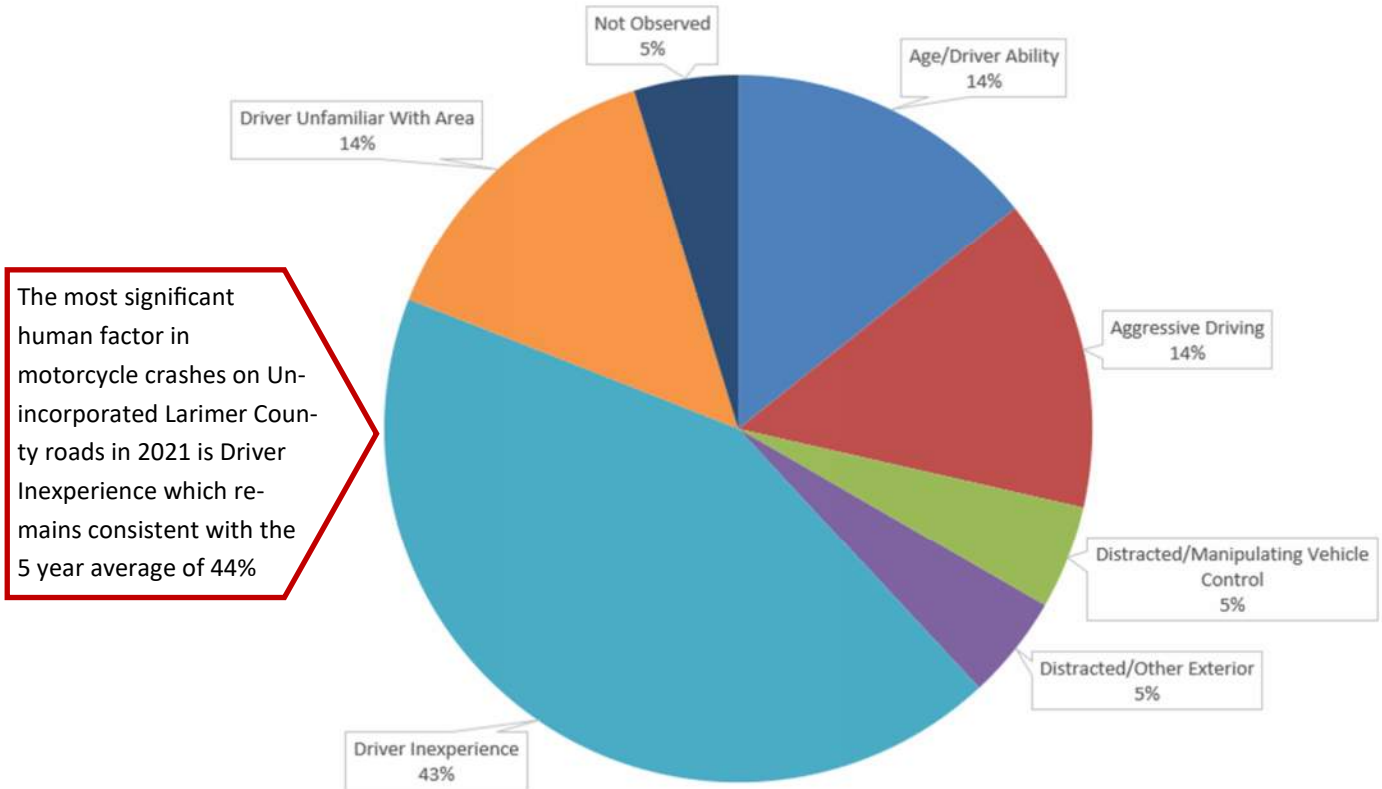
2 Motorcycle **Fatalities** in 2021:

- 1st crash involved 2 motorcycles traveling in opposite directions on CR 27. An inexperienced driver on the first motorcycle, exceeding the curve advisory speed by 25 mph, drifted into the opposing lane and collided with the second motorcycle.
- 2nd crash involved 1 motorcyclist exceeding the speed limit of 45 mph by going 80 mph on CR 12. The driver failed to negotiate a curve and crashed off the side of the road.

2017 - 2021 Motorcycle Crashes by Severity



2021 - Motorcycle by Human Factor

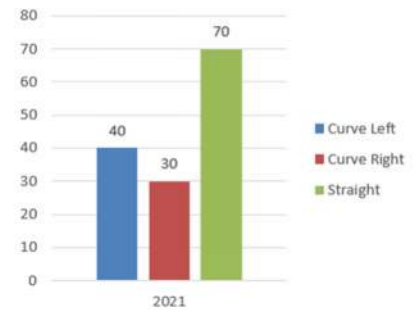


Roadway Departure Crashes

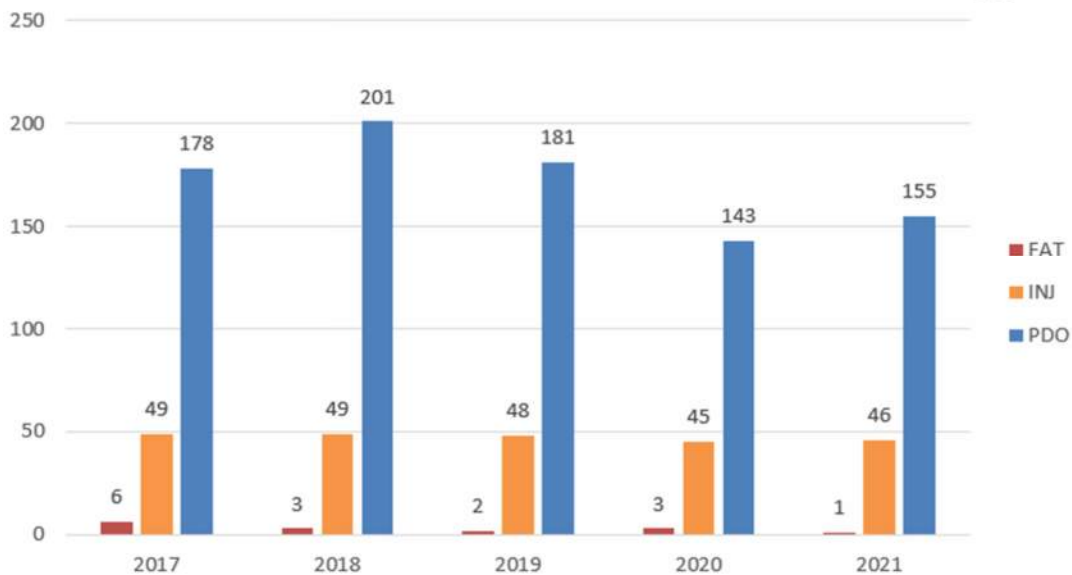
In 2021, 45% of all crashes (202 crashes) involved a vehicle leaving the roadway – down from the 5 yr. average of 222 crashes. There were 47 severe crashes related to roadway departures.

Larimer County is continuing to review all horizontal curves and turns on the Larimer County road system. Safe advisory speeds are being reviewed and adjusted. Locations that would benefit from additional signing are being upgraded with additional chevrons or large arrow warning signs at those locations.

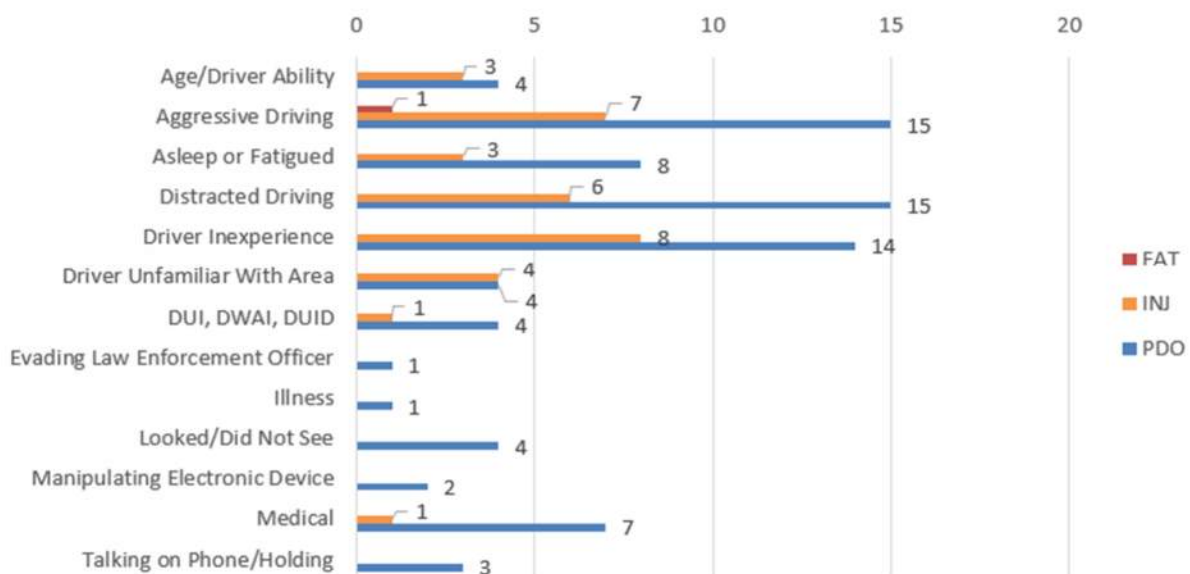
2021 Road Departure by Road Contour Curves



2017 - 2021 - Roadway Departures



2021 Road Departure by Human Factor

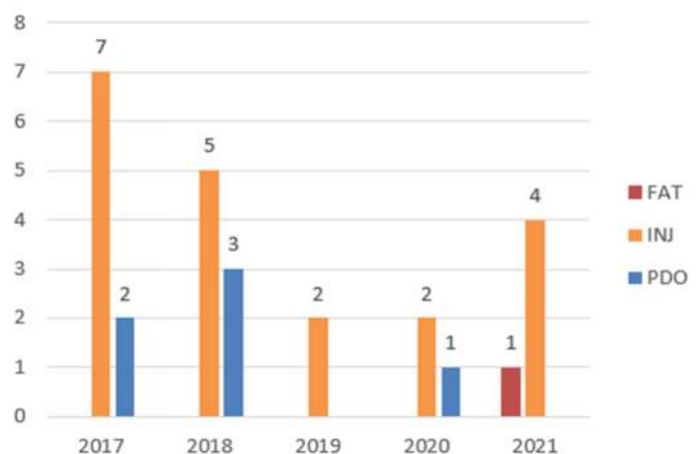


Bicycle Crashes

There were 5 bicycle related crashes in 2021 on unincorporated Larimer County roadways. Details of these crashes are as follows:

- Injury, 2 bicyclists were riding northbound on Overland Trail immediately north of Dean Dr on the right shoulder. An unknown pickup truck pulling a trailer hit the left most bicyclist into other bicyclist, causing both bicyclists to run off the road and crash. The truck left the scene so no driver information was collected. The 1st cyclist was sustained minor injuries and the 2nd cyclist was classified as a possible injury.
- Injury, vehicle was stopped in the southbound lane on Timberline attempting to turn right onto westbound Lincoln Ave. The bicyclist was riding southbound in designated bicycle lane. Vehicle made a right hand turn in front of bicyclist. Driver of the vehicle was cited with failing to yield right of away. Cyclist sustained minor injuries.
- Injury, vehicle and bicyclist were traveling west on CR 42C . Vehicle collided with bicycle's rear tire. Driver of the vehicle was cited with inattentive driving with human factor as sun glare. Cyclist sustained minor injury.
- Injury, vehicle was stopped facing east at stop sign on International Blvd at the intersection with Timberline Rd. Bicyclist was northbound on southbound lane of Timberline Rd. Vehicle turned right onto Timberline Rd striking the bicycle. Cyclist was cited with traveling on the wrong side of the road. Cyclist sustained minor injury.
- **Fatality**, vehicle and cyclist were traveling northbound on Shields St north of Willox Ln. Vehicle struck the rear tire of the bicycle. Vehicle the left crash scene and the cyclist died at

2017 - 2021 Crashes with Bicycles



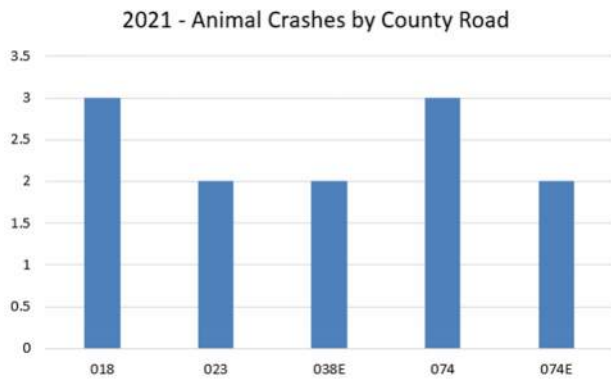
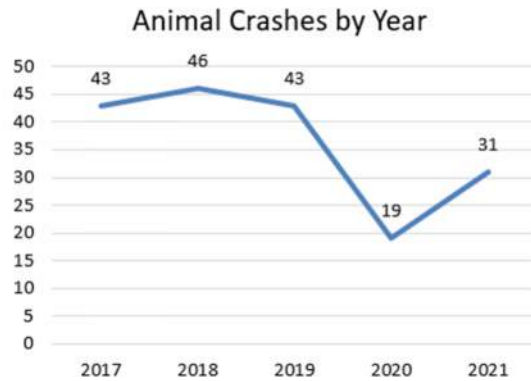
Bicycle Sign Project

The Colorado Department of Transportation approved new bicycle signing for placement along public roadways. The county, working with the bicycle community, identified locations to place these signs on the Larimer County road system. The county installed new bicycle signs on southern and central county roads during 2021. Northern sections will be installed in the spring of 2022.



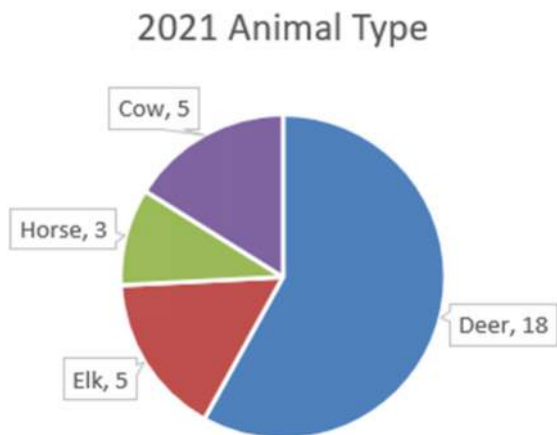
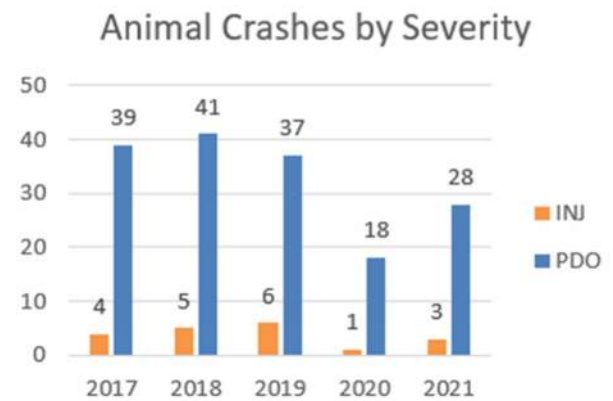
Animal Related Crashes

There were 31 Animal Related Crashes in 2021, up from 19 in 2020 - these numbers include crashes where an animal was not hit but may have caused the crash.



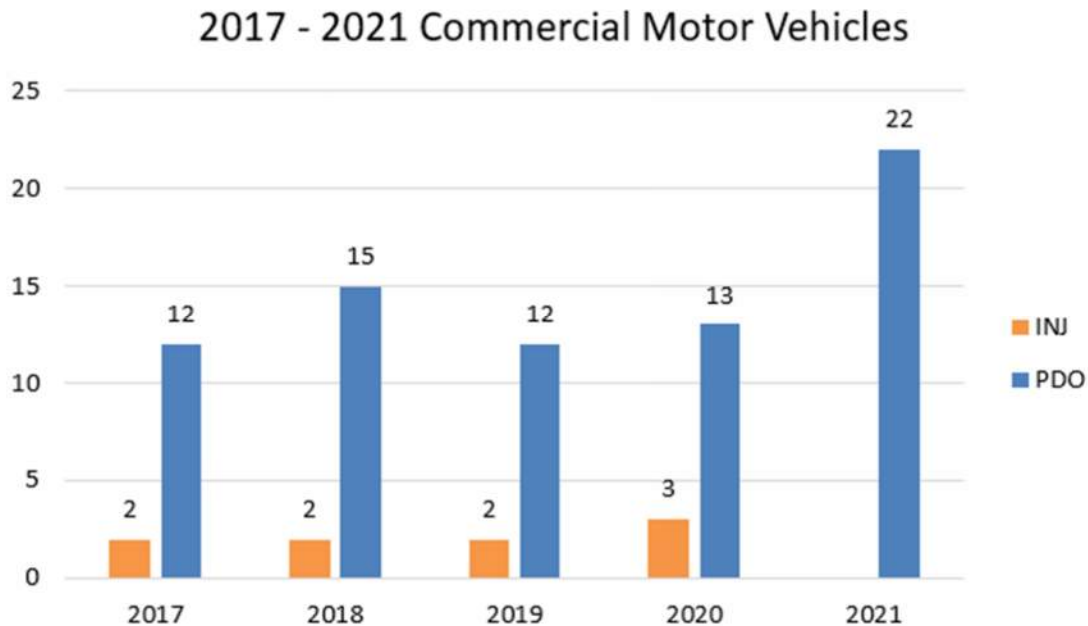
39% of animal related crashes occurred on 5 county roads.

Of the 3 crashes that caused injuries, 2 involved motorcycles hitting deer on CR 23 and CR 38E - both motorcyclists were wearing helmets. The other injury crash was a passenger vehicle colliding with an elk on CR 18.



Commercial Motor Vehicles

In 2021, the number of crashes caused by Commercial Motor Vehicles (CMV) were up from the previous years. A CMV is any vehicle listed on the State of Colorado Crash Report as “Medium/Heavy Truck, GVWR/GCWR” over 10,001 lbs. They may also include school buses, non-school buses (9 occupants or more including driver) in commerce and transit buses.



4 CMV crashes in 2021 were related to School Buses, details of each:

- PDO, school bus backed into a boulder, driver action listed on report was “Improper Backing”, conditions were listed as muddy, daylight, and no adverse weather conditions.
- PDO, school bus backed into a utility box and a tree, driver action listed on report was “Improper Backing”, conditions were listed as dry, daylight, and no adverse weather conditions.
- PDO, school bus backed into an emergency call box, driver action listed on report was “Improper Backing”, conditions were listed as dry, daylight, and no adverse weather conditions.
- PDO, school bus backed into a utility box and a tree, driver action listed on report was “Improper Backing”, conditions were listed as dry, daylight, and no adverse weather conditions.

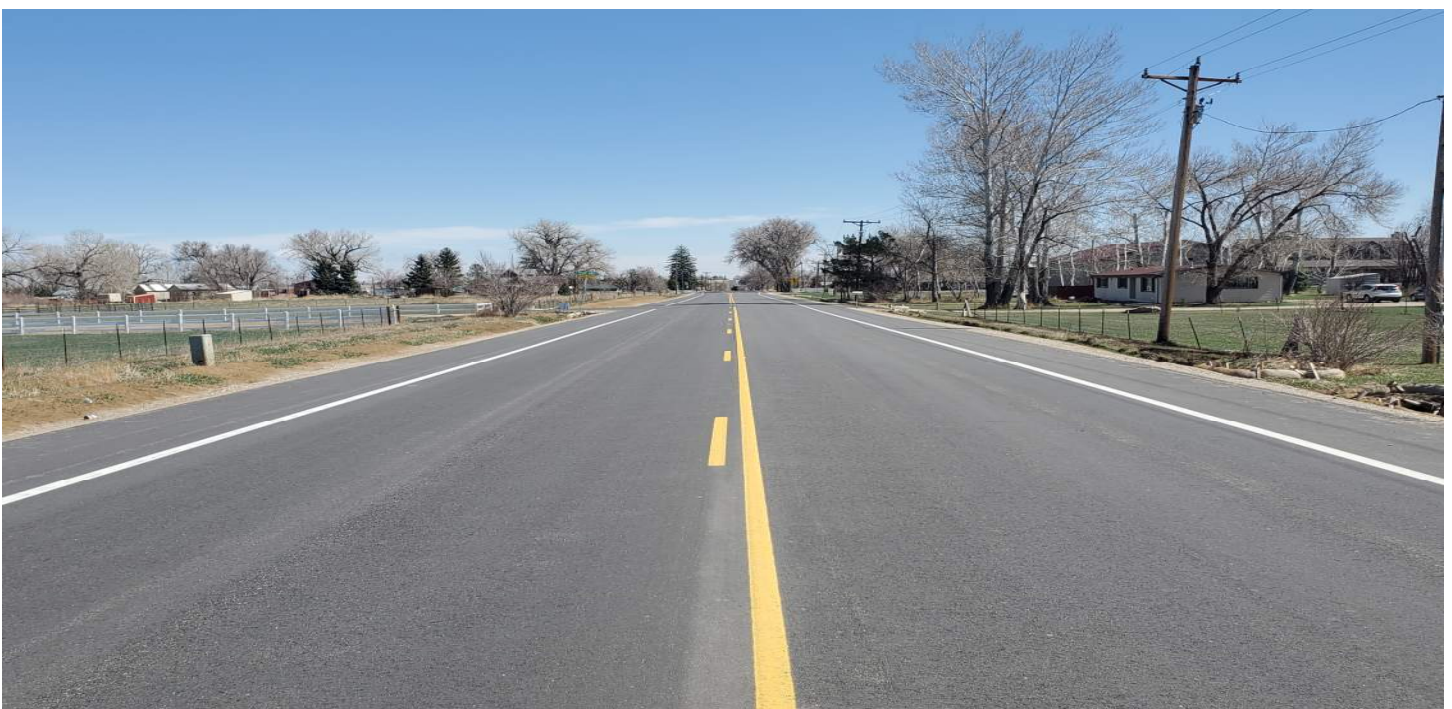
Traffic Safety Mitigation

Safety improvements completed on the County Road system during 2021

CR 72—Owl Canyon Rd—Reconstruction and Paving: A heavily travelled section of non-paved roadway on CR 72 east of US 287 was reconstructed, with alignment improvements, paved and widened with 8 foot paved shoulders/bike lanes.



CR 14—Widening and Overlay: Project No. 332: CR 14 between CR 23 and CR 21 was widened and overlaid creating a roadway with 4 –5 feet bike lanes. Close to a mile of roadway that did not have bike lanes, now provides a connections to bike lanes on CR 21 and CR 23, eliminating a gap in this popular bicycle route.



Traffic Safety Mitigation (continued)

Safe Advisory Speeds



The Engineering Dept has been re-evaluating safe advisory speeds on significant horizontal curves and turns on the county road system. The curves and turns are driven at several different speeds using an electronic ball-bank indicator. The readings from the ball-bank indicator are compared against new federal guidelines for determining safe advisory speeds. Adjustments to advisory speeds on some of the turns and curves in the county are made. The remaining curves needing re-evaluation should be completed during 2022.

PN 303 — CR 19 (Taft Hill Rd) and CR 54G Intersection

This project replaced an aging span wire traffic signal with a new mast arm traffic signal and added a northbound right turn lane at the intersection.



Completion of Traffic Signal at SH 1 and CR 54 (Douglas Rd)

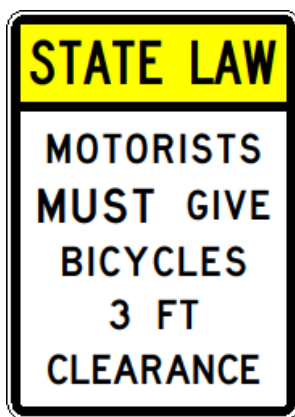
A cooperative project between the Colorado Department of Transportation, City of Fort Collins and Larimer County to install a traffic signal at the SH 1 and CR 54 (Douglas Rd) intersection, was completed during 2021.



Traffic Safety Mitigation (continued)

Planned 2022 Low Cost Safety Work:

The Engineering Department will begin deploying portable radar speed feedback signs mounted on trailers on county roads during 2022. The signs let drivers know how fast they are going as they pass by. The speed limit is also posted to remind the driver of the current posted speed limit in relation to their speed. Arterial and collector roadways with lower speed limits in residential areas will be the first priority. The new radar feedback signs will be placed on a temporary basis of 1-2 weeks and then moved to other similar roadways.



New Bicycle Signage:

The Colorado Department of Transportation recently approved new bicycle signing for placement along public roadways. The county worked with the bicycle community regarding additional signing for bicycles on the Larimer County road system. The first two phases of 52 sign installations in the southern and central areas of the county were completed during 2021. The third and final phase of 22 installations in the northern part of the county will be completed during April of 2022.

2022 Capital Projects:

CR 72 (Owl Canyon Rd) and CR 9—Project No. 339: This project involves reconstruction and widening of CR 70, the Owl Canyon Rd, from CR 9 to I-25, and CR 9 from CR 70 north to the location of the new Larimer County Landfill. The roadwork will include widening of the roadways to accommodate bike lanes, the addition of auxiliary turning lane improvements at the CR 7 intersection and reconstruction of the CR 9 and CR 70 intersection into a roundabout. Work is expected to start on the project in the late 2022.

CR 17 (Shields St) from CR 50 (Wilcox Ln) to US 287 - Project No. 327: The north end of the project will have a continuous two-way center turn lane in an area that has several residences and accesses. The project will also add 6 foot paved shoulders in each direction. This project will eliminate a gap in paved shoulders on Shields St. This project was delayed from 2021 and construction work should begin in 2022.

Safety Grant Funding

Larimer County actively pursues safety grant funds to leverage needed safety improvements. Safety grants for recently completed capital projects provided nearly \$2.4M to aid in safety improvements. Approximately \$3.7M in safety grants have been awarded over the next four years.



Project	Funding	Grant Source	Year
CR 17 from US 287 to CR 16 widening and shoulder improvement	\$1,865,855	STP Metro and TAP	Completed
SH 1 and Douglas Road (CR 54) signalization	\$495,000	HSIP	Completed
Shields Street (CR 17) from Willox (CR 50) to US 287 widening and shoulder improvement	\$760,000	TAP and STBG	2022
57 th Street (CR 28) and US 287 pedestrian improvements	\$1,090,000	TAP	2022
US 34 and Glade Road (CR 23H) signalization	\$550,800	HSIP	2023
CR 38E west of South Bay guardrail	\$217,800	HSIP	2023
CR 73C at Munsee Road guardrail	\$22,500	HSIP	2023
CR 56 NW of Travis Road/CR 17 guardrail	\$138,600	HSIP	2024
Red Feather Lakes Road (CR 74E) at North Fork Poudre River bridge guardrail	\$79,200	HSIP	2024
CR 38E west of Horsetooth Mountain Park guardrail	\$117,000	HSIP	2024
Centennial Road (CR 23) curve 0.2 miles north of CR 42C high friction treatment	\$21,600	HSIP	2024
CR 69 and CR 74E Guardrail (3 locations)	\$288,000	HSIP	2025
CR 50E (Bingham Hill) Shoulder Widening	\$384,000	HSIP	2025

Grant Sources include the Highway Safety Improvement Program (HSIP), Transportation Alternatives Program (TAP), Surface Transportation Program (STP Metro), and Surface Transportation Block Grant Program (STBG)

Appendix A

2021 Fatal Crash Descriptions/Locations

Four Fatal Crashes

County Rd 12: The crash occurred on County Rd 12 approx. 528 feet west of Homer Rd on March 15, 2021 at 12:24 PM. A westbound motorcycle failed to negotiate a left turn in the roadway. The motorcycle ran off the north side of the roadway and traveled into a narrow, grassy ditch. The vehicle collided its left side with a drainage pipe in the ditch., which launched its front end. The vehicle went airborne and then travelled southwest back towards CR 12. The driver was ejected from the motorcycle and the motorcycle landed near the centerline of CR 12. The vehicle then went off the south side of the roadway, through a barb wire fence, and came to rest on its left side. The driver of the motorcycle landed near the edge line of the westbound lane of CR 12. Driver Action was listed as speeding, with the most apparent contributing factor being aggressive driving. Estimated vehicle speed was 80 MPH with a posted speed limit of 45 MPH on CR 12. The road surface was a dry paved asphalt surface. No alcohol or drug impairment was suspected. The deceased driver was a 51 year old female.

County Rd 18 at CR 1: The crash occurred on County Rd 18 (Weld CR 54) at County Rd 1 (Weld CR 13), a split jurisdiction intersection on the Larimer/Weld county line. The crash occurred on June 6, 2021 at 12:29 PM. The crash was a broadside crash at the intersection. Vehicle No 1, a Jeep Wrangler SUV was stopped at the stop sign northbound on CR 1. Vehicle No. 2, a semi-tractor trailer was westbound on Weld CR 54 approaching the intersection. Vehicle No. 1 accelerated into the intersection and Vehicle No. 2 collided its front end into the passenger side of Vehicle No. 1. After impact, Vehicle 1 rotated clockwise 1/4 time, travelling westbound and rolling 1/4 time to final rest on passenger side on the north side of Larimer CR 18. Vehicle 2 continued westbound and travelled off the north side of CR 18 and collided with a utility pole, coming to rest on its wheels facing west near the utility pole. Estimated speeds for Vehicle No. 1 was 15 MPH and Vehicle No. 2 was 55 MPH with a posted speed limit on Weld CR 54 of 55 Miles Per Hour. A violation of careless driving resulting in death was issued to driver No. 1. Driver No. 1 action listed as failure to yield right-of-way and most apparent contributing factor was distracted/other exterior. The asphalt surface was dry on a clear day. Driver of Vehicle No. 1 was a 34 year old female who was injured in the crash. The fatality was a 5 year old female that was in the right rear seat of the Jeep.

2021 Fatal Crash Descriptions—continued

County Rd 17 (N. Shields St): The crash occurred on County Rd 17—Shields St, approximately 2,280 feet north of CR 50 (Wilcox Ln) on October 7, 2021 at 7:11 AM. Vehicle No. 1 was northbound on CR 17 and struck the rear tire of a northbound bicycle. The bicyclist came off of the bicycle and came to rest in the east borrow ditch. Vehicle No. 1 did not stop and left the crash scene (hit and run). The bicyclist died from his injuries on scene. There are no descriptions of the driver or vehicle No. 1 on the crash report. The bicyclist killed in the crash was a 21 year old male. The crash occurred on a dry asphalt roadway without paved shoulders or bike lanes. The officer suspected alcohol use by the bicyclist. The bicycle was equipped with reflectors, but not active front or rear lights. The lighting condition was listed as dark, unlighted. No information for driver or vehicle for Vehicle No. 1 on the report due to it being a hit and run crash.

County Rd 27 (Buckhorn Rd): The crash occurred on County Rd 27 approx. 0.60 miles west of Big Bear Rd (west of milepost 13) on November 7, 2021 at 11:03 AM. Vehicle 1, a motorcycle was travelling westbound on CR 27, Vehicle 2 was travelling eastbound on CR 27. Vehicle 1 failed to negotiate a right curve and entered into the eastbound lane travelling in a northwest direction. Vehicle 1 then entered the path of travel of Vehicle 2. Vehicle 1 then struck the front/right side of vehicle 2 causing both driver 1 and driver 2 to be ejected. After the crash, vehicle 1 continued in a northwest direction leaving the roadway and tumbling down an embankment and landing in thick brush. Vehicle 2 fell onto it's left side and pinned driver 2 underneath it. Estimated vehicle speed for vehicle 1 was 40 Miles Per Hour. Estimated speed for vehicle 2 was 25 MPH with a posted speed limit of 35 Miles Per Hour on CR 27. Driver action for the driver of vehicle 1 was listed as a lane violation with most apparent human contributing factor of driver inexperience. The road surface was a dry, paved asphalt roadway, weather conditions were clear. The driver of vehicle 1, a 66 year old male, was killed in the crash. The driver of vehicle 2, a 22 year old male, was seriously injured in the crash.

Appendix B

Monitoring of recently installed Low Cost Safety Improvements at Run off the Road Locations

Segment	Time Frame	Number Crashes Per Year						Date Improved	Notes
		PDO	INJ	FAT	Total Avg	Minor	Severe		
CR 54G at Curve west of Indigo Hills Ln	Type of Improvement	Relocations and upgrade of advance warning signs and placement of 7 – 24” x 30” Chevrons in both directions through the curve						12/10/2018	Average of 4 years before improvements and 3 years after
	Before Improvements	0.25	0.75	0.25	1.25	0.25	1.00		
	After Improvements	0.00	0.00	0.00	0.00	0.00	0.00		
	Change	-100%	-100%	-100%	-100%	-100%	-100%		
CR 38E at Horseshoe Curve south of Westridge Dr	Type of Improvement	Addition of 18” x 24” chevrons in both directions through the curve						3/8/219	Average of 7 years before improvements and 3 years after
	Before Improvements	0.57	0.29	0.14	1.00	0.57	0.43		
	After Improvements	0.66	0.00	0.00	0.00	0.66	0.00		
	Change	16%	-100%	-100%	-100%	16%	-100%		
CR 43 at Turn near Bridge - 0.2 mi SW of Milepost 9	Type of Improvement	Placement of 3 pairs of 24” x 30” chevrons through the curve just east of the bridge						8/5/2019	Average of 2 years before improvements and 2 years after
	Before Improvements	0.00	1.00	0.00	1.00	0.00	1.00		
	After Improvements	0.50	0.50	0.00	1.00	0.50	0.50		
	Change	100%	-50%	0	0	100%	-50%		

Chevron signs installed on CR 54G west of Indigo Hills Ln



Contact Us

Larimer County Engineering Department

Address

200 West Oak Street, Suite 3000
Fort Collins, CO 80521

Mailing Address

PO Box 1190
Fort Collins, CO 80522-1190

Email

Eng-Traffic@larimer.org

Phone

(970) 498-5700
(970) 498-7986 (Fax)

Office Hours

8:00 a.m. - 4:30 p.m.
Monday - Friday

On The Web At:

www.larimer.org/engineering

