

APPENDIX A3

SAFETY ASSESSMENT REPORT

FOR THE

State Highway 9 Iron Springs Alignment Environmental Assessment

Prepared for

COLORADO DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

Prepared by

COLORADO DEPARTMENT OF TRANSPORTATION

SAFETY ENGINEERING AND ANALYSIS GROUP

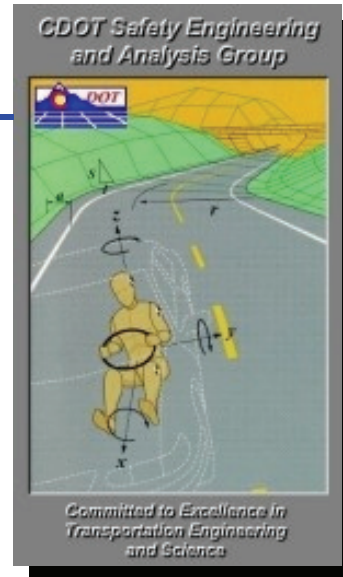
November 2012

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION

HQ Traffic Engineering Branch
Safety Engineering and Analysis Group
4201 East Arkansas Avenue
Denver, Colorado 80222-3400
303.512.5100 Voice
303.757.9219 Fax

DATE: November 8, 2012
TO: Tom Scheuermann
FROM: Shane Chevalier, HQ Traffic Engineering
SUBJECT: **Safety Assessment Report
Resurfacing Project
SH 9C MP 93.10 to MP 97.20**



Attached for your review is a copy of the Safety Assessment Report for the above referenced resurfacing project. The observations and recommendations in this report are based on the analysis of five years of accident history, and a review of the 2010 VisiData. The Region is advised to verify through field survey, the observations made in this report regarding physical features, roadside characteristics, and traffic control devices in the study area.

If you have any comments on the content or format of this report, please provide them to us by November 28, 2012. If we do not hear from you by this date, we will assume that the report has met with your approval.

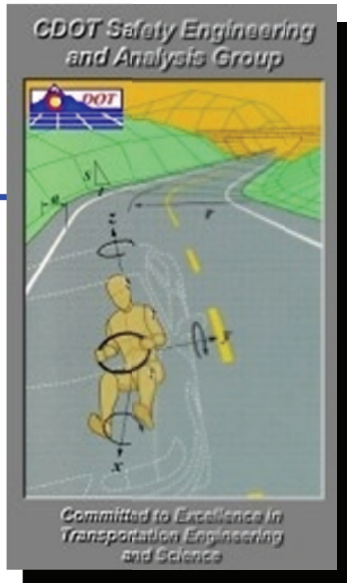
Should any questions arise concerning this report, or if further assistance is needed, please do not hesitate to contact me at 303.512.5109.

This report may be accessed on the web site using the following link:

["internal.dot.state.co.us/stafftraffic/safety_engineering_group/safety_assessment_reports.html"](http://internal.dot.state.co.us/stafftraffic/safety_engineering_group/safety_assessment_reports.html)

attachment

cc: Charles Meyer, Branch Manager
Clark Roberts, Region 1 Traffic
Saeed Sobhi, Region 1 Traffic
File



SAFETY ASSESSMENT REPORT

SH 9C: MP 93.10 - MP 97.20
Region 1
Resurfacing

November 7, 2012



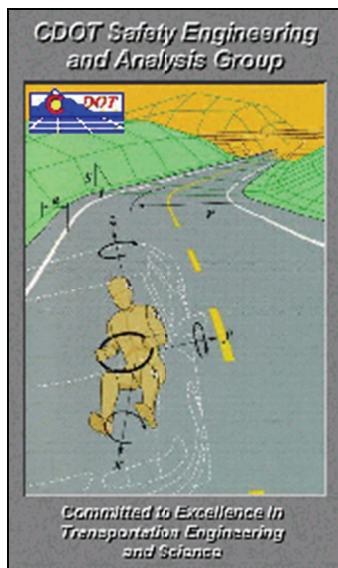
Prepared by: **The Colorado Department of Transportation**
HQ Traffic Engineering Branch
Safety Engineering and Analysis Group
4201 E. Arkansas Ave., 3rd Floor
Denver, CO 80222

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Authority from the CDOT Safety Engineering and Analysis Group*

This report is prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads. It is subject to the provisions of 23 U.S.C.A. 409, and therefore is not subject to discovery and is excluded from evidence. Applicable provisions of 23 U.S.C.A. 409 are cited below:

Notwithstanding any other provision of law, reports, surveys, schedules, lists, or data compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential accident sites, hazardous roadway conditions, or railway-highway crossings, pursuant to sections 130, 144, and 152 of this title or for the purpose of developing any highway safety construction improvement project which may be implemented utilizing Federal-aid highway funds shall not be subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists or data.

Any intentional or inadvertent release of this report, or any data derived from its use shall not constitute a waiver of privilege pursuant to 23 U.S.C.A. 409.



A Statement of Philosophy

The efficient and responsible investment of resources in addressing safety problems is a difficult task. Since crashes occur on all highways in use, it is inappropriate to say of any highway that it is safe. However, it is correct to say that highways can be built to be safer or less safe. Road safety is a matter of degree. When making decisions effecting road safety it is critical to understand that expenditure of limited available funds on improvements in places where it prevents few injuries and saves few lives can mean that injuries will occur and lives will be lost by not spending them in places where more accidents could have been prevented¹. It is the CDOT's objective to maximize accident reduction within the limitations of available budgets by making road safety improvements at locations where it does the most good or prevents the most accidents.

INTRODUCTION

The primary intent of this project is to maintain the pavement condition and drive-ability of State Highway 9 (Main St) from milepost (MP) 93.10 to 97.20. In conjunction with the resurfacing project, an opportunity exists for the detection of safety problems and the implementation of selected improvements at locations where it is justified by accident experience.

The scope of this report is as follows:

- Assess the magnitude and nature of the safety problem within the project limits.
- Relate accident causality to roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, and vehicle type.
- Suggest counter measures to address identified problems.
- Provide guidance on how to maximize accident reduction within the scope of a resurfacing project.

This report is based on the comprehensive analysis of five years of accident history, video log review, and field visit. The Region is advised to verify through field survey, the information included in this report regarding physical features and roadside characteristics in the study area.

¹ Hauer, E., (1999) *Safety Review of Highway 407: Confronting Two Myths*. TRB

Site Location and Conditions

This study addresses SH 9C (Main St) located in the city of Frisco located in Summit County. The study segment starts at mile point 93.10 and ends at mile point 97.20. The included distance is 4.10 miles.

SH 9 is classified as an "Urban arterial" in a mountainous environment throughout the study section. The highway is a 2-lane to 4-lane divided facility with a raised median in various sections. The average annual daily traffic (AADT) for 2010 was about 19,210 Vehicles Per Day (VPD) with truck traffic comprising about 3.5% of the total traffic. The posted speed limit is 35 and 50 MPH.

Accident History and Problem Analysis

The accident history for the period of January 1, 2007 through December 31, 2011 (a total of five years) was examined to locate accident clusters and identify accident causes. In the five year period, 256 accidents were reported along SH 9. Within this total there were 14 collisions that caused injuries and 1 fatality. There were also 145 intersection related accidents and 4 driveway related accidents within the study segment.

Table 1 summarizes the accident rates for SH 9 over the five year period.

Table 1 - Accidents per Year for SH9C MP 93.10 to 97.20

Period	AADT	Accident Data			
		PDO	Injury	Fatal	Total
Jan. 2007 – Dec. 2007	19,096	62	1	0	63
Jan. 2008 – Dec. 2008	18,258	62	3	0	65
Jan. 2009 – Dec. 2009	17,070	41	6	0	47
Jan. 2010 – Dec. 2010	19,128	39	3	1	43
Jan. 2011 – Dec. 2011	19,127	37	1	0	38
		241	14	1	256

Intersection Analysis

Accidents that can be attributed to intersections (accidents located at intersections or that are intersection related) accounted for 57 percent of the total accidents (145 out of 256). **Table 2** lists all the intersections in this study segment.

MP	Intersection	Legs	Signalized	Accidents			
				Property Damage Only	Injury	Fatal	Total
94.88	Peak One Dr/Recreation Way	4	Yes	5	0	0	5
95.23	Peak One Blvd/Recreation Way	4	No	1	0	0	1
95.45	Waterdance Dr/CR 1004	4	Yes	8	1	0	9
95.57	Bayview Dr	3	No	2	0	0	2
95.92	Teller St	4	No	6	0	0	6
95.97	Granite St	3	No	4	1	0	5
96.02	Main St / Marina Dr	4	Yes	28	0	0	28
96.36	Summit School Rd	4	Yes	9	0	0	9
96.48	Ten Mile Dr (Loop)	4	Yes	6	0	0	6
96.55	Ten Mile Dr (Loop)	3	No	11	0	0	11
96.65	Hawn Dr	3	No	20	1	0	21
96.70	Ten Mile Dr (Safeway)	4	Yes	7	0	0	7
96.83	Lakepoint Dr	3	No	1	0	0	1
96.89	Lusher Court Loop	4	Yes	25	0	0	25
97.09	I-70 WB On/Off Ramps	3	No	2	0	0	2
Non-Specific Location (more than 100 ft away from nearest intersection)				7	0	0	7
Intersection Totals				142	3	0	145

MP 94.88 Peak One Dr/Recreation Way (4-leg divided signalized)

There were four accidents in the five year study period. There are no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

MP 95.23 Peak One Blvd/Recreation Way (4-leg divided un-signalized)

There was one accident in the five year study period. There are no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

MP 95.45 Waterdance Dr/CR 1004 (4-leg divided signalized)

There were nine accidents in the five year study period. 8 of the 9 accidents were rear end accidents. This is a congestion related issue. The region can review the signal progression to aid with this issue. Also, the resurfacing project will provide additional skid resistance.

MP 95.57 Bayview Dr (3-leg divided un-signalized)

There were two accidents in the five year study period. There are no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

MP 95.92 Teller St (4-leg divided un-signalized)

There were six accidents in the five year study period. There are no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

MP 95.97 Granite St (3-leg divided un-signalized)

There were five accidents in the five year study period. There are no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

MP 96.02 Main St/Marina Dr (4-leg divided signalized)

Figure 1a shows an aerial of the intersection of SH 9C with Main St.

Figure 1a



Figure 1b shows the frequency of total accidents over the five year study period performing as expected (LOSS II/III) for a 4-lane divided signalized 4-leg intersection.

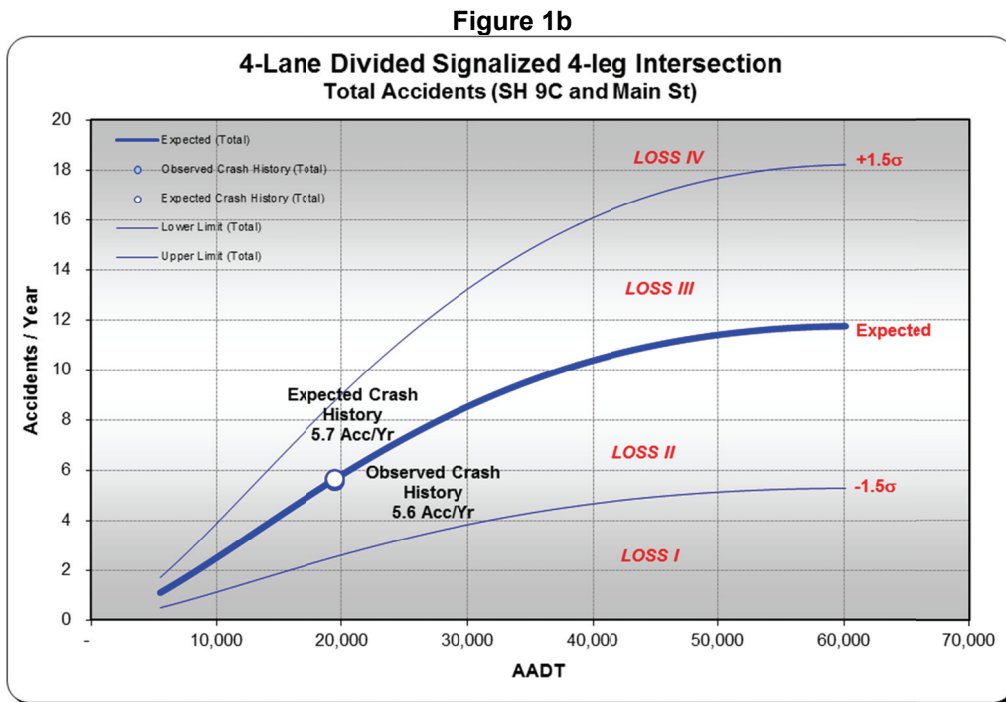
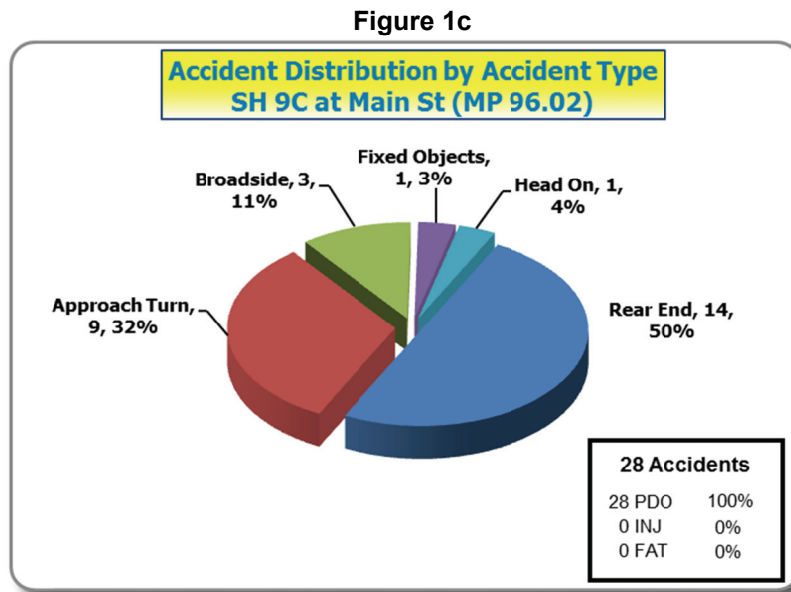


Figure 1c shows the accident type distribution for this intersection. There were 28 accidents over the five year study period related to this intersection.



Approach Turn

Approach Turn collisions accounted for 32 percent of the total accidents at this intersection (9 of 28). Direct diagnostics show this percentage to be higher than expected for this type of intersection. All 9 approach turn accidents occurred in the northbound direction. The region should consider upgrading the northbound left turn signal from protective-permissive to a “ Time of Day” fully-protected (flashing yellow) left turn arrow between the hours of 10am and 3pm in order to help with this accident pattern. This signal is detailed in the 2009 MUTCD section 4D.20.

Rear End

Rear End collisions accounted for 50 percent of the total accidents at this intersection (14 of 28). Direct diagnostics show this percentage to be higher than expected for this type of intersection. They are broken down by the following: 10 eastbound, 3 northbound, and 1 southbound. These accidents are happening throughout the day. This is a weather and congestion related issue. The region should consider installing countdown pedestrian signals to help with this issue. Countdown signals could help increase driver awareness of the signal changes and could help them prepare for the yellow/red light. Also, the region should extend the pavement marking of the right turn lane to be even with the left lane to provide drivers better delineation of the designated lanes and reduce possible confusion.

MP 96.36 Summit School Rd (4-leg divided signalized)

There were nine accidents in the five year study period. 7 of the 9 accidents were rear end accidents. This is a congestion related issue. The region can review the signal progression to aid with this issue. Also, the resurfacing project will provide additional skid resistance.

MP 96.48 Ten Mile Dr (Loop) (4-leg divided signalized)

There were six accidents in the five year study period. 5 of the 6 accidents were rear end accidents. This is a congestion related issue. The region can review the signal progression to aid with this issue. Also, the resurfacing project will provide additional skid resistance.

MP 96.55 Ten Mile Dr (Loop) (3-leg divided un-signalized)

There were 11 accidents in the five year study period. 6 of the 11 accidents were rear end accidents. This is a congestion related issue. The region can review the signal progression to aid with this issue. There are no accident patterns susceptible to correction.

MP 96.65 Hawn Dr (4-leg divided signalized)

Figure 2a shows an aerial of the intersection of SH 9C with Hawn Dr.

Figure 2a

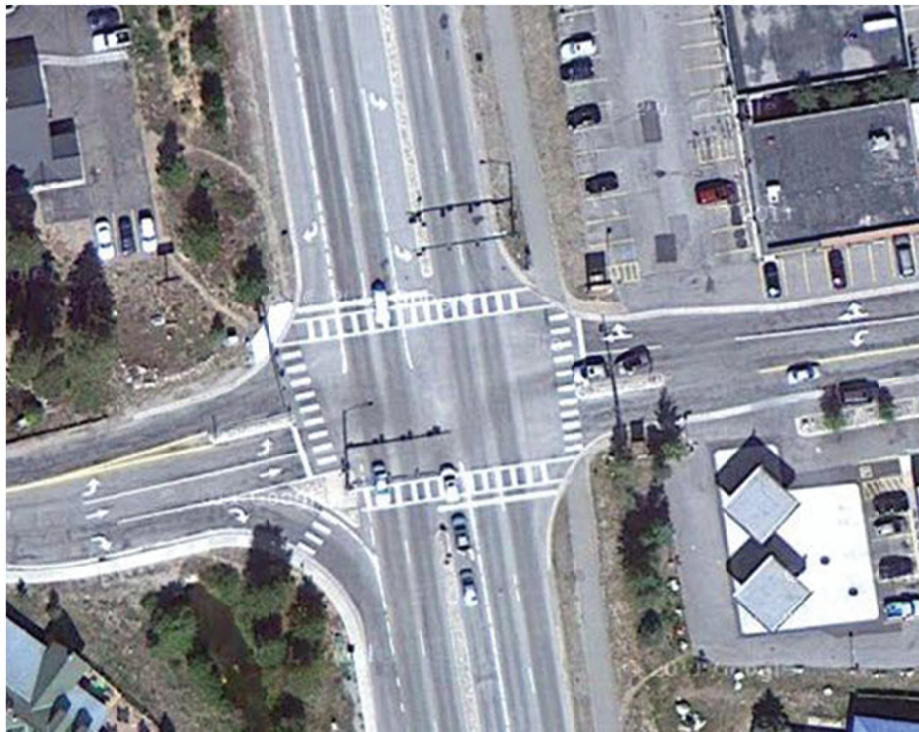


Figure 2b shows the accident type distribution for this intersection. There were 21 accidents over the five year study period related to this intersection.

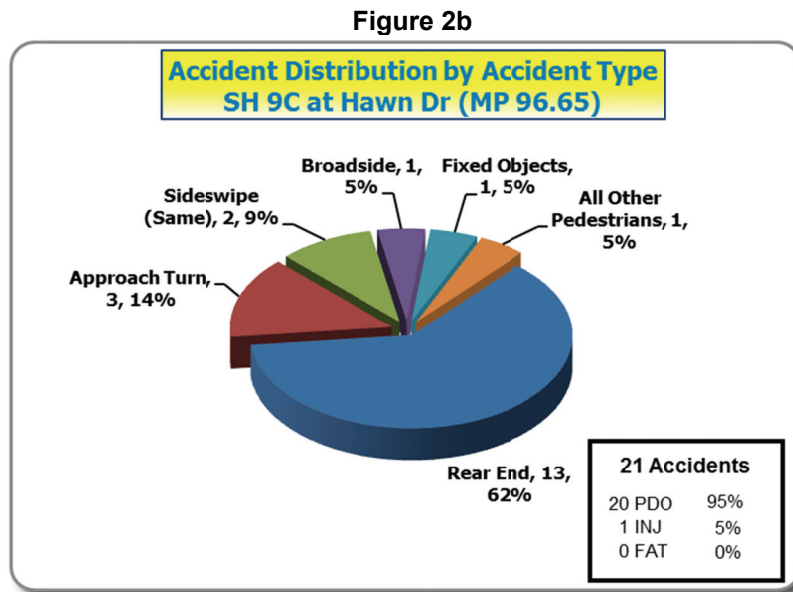
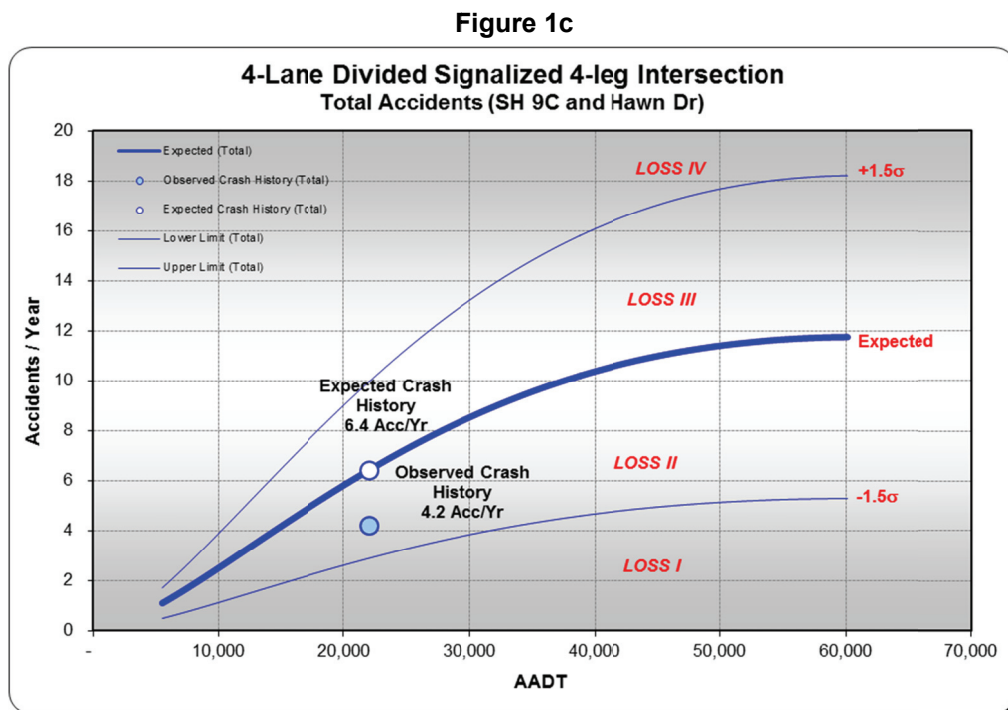


Figure 2c shows the frequency of total accidents over the five year study period was below expected for a 4-lane divided signalized 4-leg intersection which indicates a better than expected performance (LOSS II).



Rear End

Rear End collisions accounted for 62 percent of the total accidents at this intersection (13 of 21). Direct diagnostics show this percentage to be higher than expected for this type of intersection, but this is a weather and congestion related issue. They occurred in the following directions: 7 southbound, 3 northbound, and 3 eastbound. These accidents are happening throughout the day and 9 of 13 happened with inclement road conditions. The region can check the signal progression and install countdown pedestrian signals to help with this issue. Countdown signals could help increase driver awareness of the signal changes and could help them prepare for the yellow/red light.

MP 96.70 Ten Mile Drive (Safeway) (4-leg divided signalized)

There were seven accidents in the five year study period. There were no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

MP 96.83 Lakepoint Dr (3-leg divided un-signalized)

There was one accident in the five year study period. There are no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

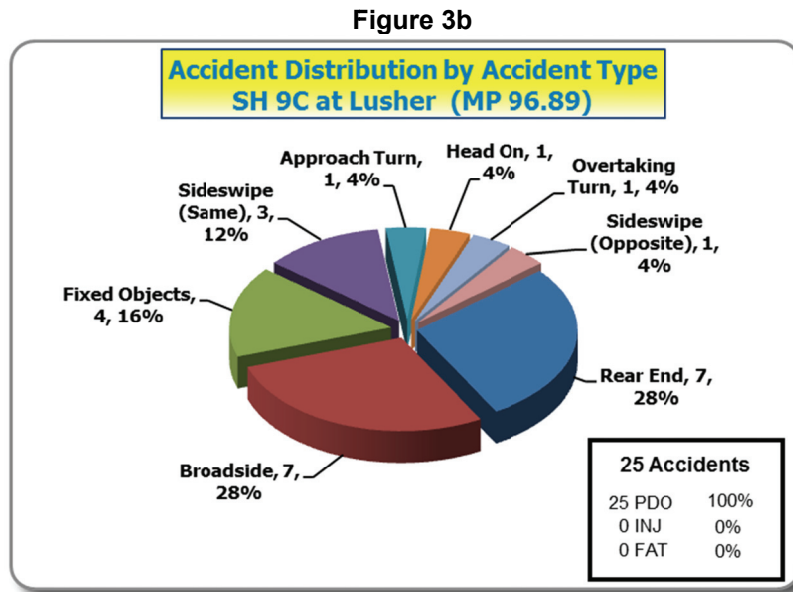
MP 96.89 Lusher Court Loop (4-leg divided signalized)

Figure 3a shows an aerial of the intersection of SH 9C with Lusher Court Loop.

Figure 3a



Figure 3b shows the accident type distribution for this intersection. There were 25 accidents over the five year study period related to this intersection.



Broadside

Broadside collisions accounted for 28 percent of the total accidents at this intersection (7 of 25). Direct diagnostics shows this percentage to be higher than expected for this type of intersection. The yellow and all red intervals appear to be adequate. They occurred in the following directions: 3 northbound, 2 southbound, and 2 eastbound. These accidents are happening throughout the day and 5 of 7 happened with inclement road conditions. The region can check the signal progression and install countdown pedestrian signals to help with this issue. Countdown signals could help increase driver awareness of the signal changes and could help them prepare for the yellow/red light.

MP 97.09 I-70 WB On/Off Ramps (3-leg divided un-signalized)

There were two accidents in the five year study period. There are no accident patterns susceptible to correction. No suggestions for improvement are recommended for this intersection at this time.

Non-Intersection Analysis

Accidents that are non-intersection related accounted for 44 percent of the total accidents (111 of 255). **Figure 4a** lists the accident type distribution for non-intersection related accidents. 67 of the 111 accidents (including the fatal accident) occurred with adverse road conditions.

Figure 4a

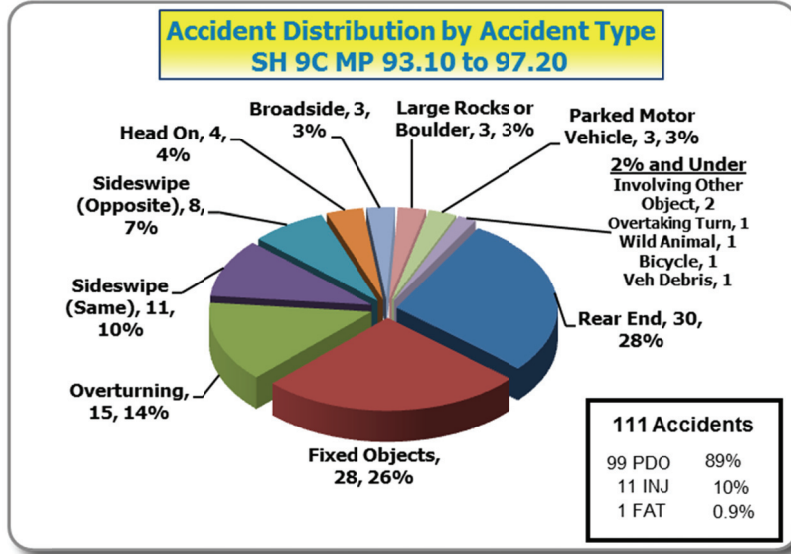
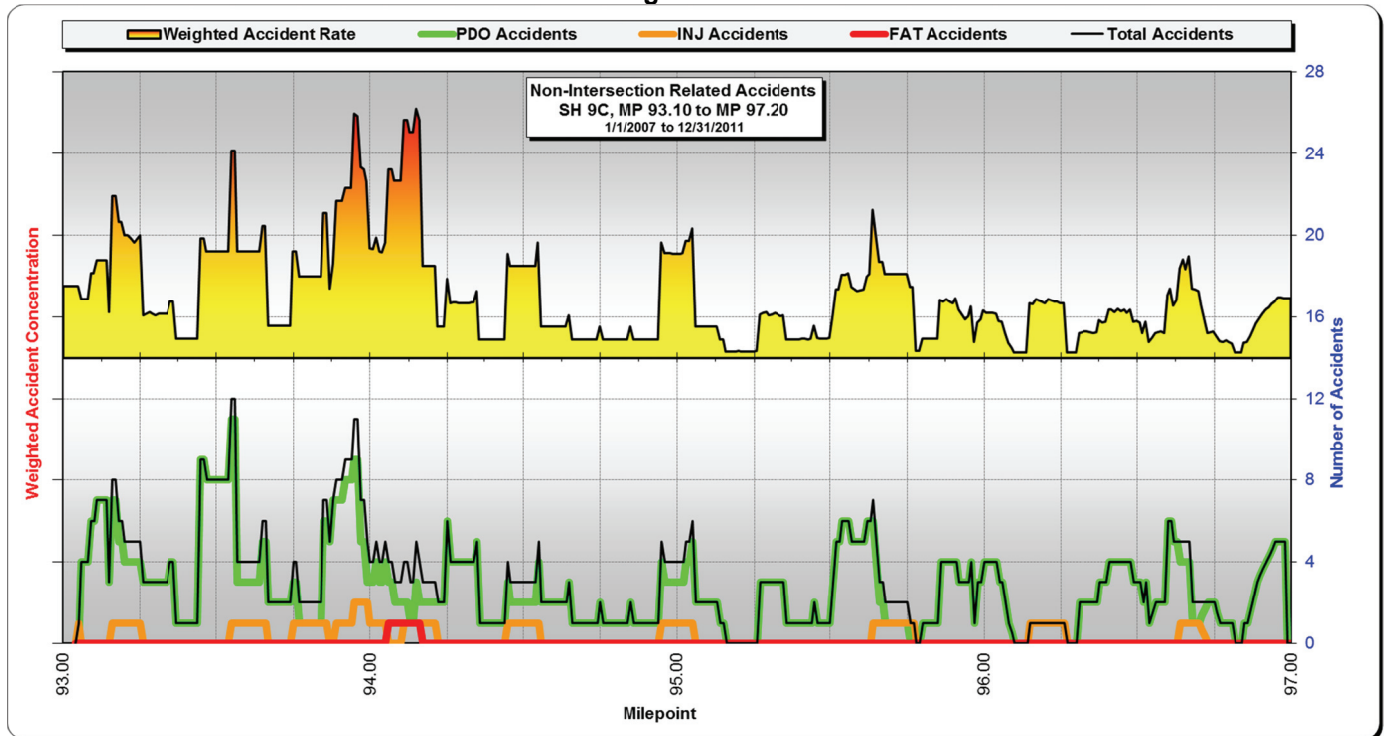


Figure 4b shows a weighted accident diagram concentration of non-intersection related accidents. There was one notable concentration within the project limits from MP 93.10 to 95.00. 67 total accidents including 8 injuries and 1 fatality occurred within this 2 mile section. 43 of these 67 accidents occurred with adverse road conditions. 12 of the 15 overturning accidents occurred between MP 93.90 and 94.80. The Region should consider extending the existing guardrail through this section to help reduce the off-road related accidents.

Figure 4b



Conclusions and Recommendations

These conclusions and recommendations are based on the analysis of five years of accident history, review of video log, and a field visit. The Region is advised to verify through field survey, the observations made in this report regarding physical features, roadside characteristics and traffic control devices.

Detailed accident analysis indicated locations susceptible to crash mitigation. The following conclusions and recommendations are offered to help reduce the number of accidents at these locations:

Recommendations for the entire study section

- Countdown pedestrian signals to increase driver awareness of the signal change.
- Review signal progression within the SH 9 corridor in order to optimize throughput of traffic.
- Review Yellow/Red interval times.
- Delineation for turn movements.
- Good skid resistance and drainage of the roadway surface.
- Adjustment, repair, and upgrade of existing guardrail to meet current standards.
- Appropriate pavement markings, signing, and delineation.
- Replace all button reflectors and guardrail reflectors to insure good nighttime and inclement weather (fog, snow, rain, etc.) delineation.

MP 96.02 Main St/Marina Dr (4-leg divided signalized)

Approach Turn

Approach Turn collisions accounted for 32 percent of the total accidents at this intersection (9 of 28). Direct diagnostics show this percentage to be higher than expected for this type of intersection. All 9 approach turn accidents occurred in the northbound direction. The region should consider upgrading the northbound left turn signal from protective-permissive to a “ Time of Day” fully-protected (flashing yellow) left turn arrow between the hours of 10am and 3pm in order to help with this accident pattern. This signal is detailed in the 2009 MUTCD section 4D.20.

MP 96.89 Lusher Court Loop (4-leg divided signalized)

Broadside

Direct diagnostics shows this percentage to be higher than expected for this type of intersection. They are in the following directions: 3 northbound, 2 southbound, and 2 eastbound. These accidents are happening throughout the day and 5 of 7 happened in inclement road conditions. The region can check the yellow and red light intervals and install countdown pedestrian signals to help with this issue. Countdown signals could help increase driver awareness of the signal changes and could help them prepare for the yellow/red light.

Non-Intersection Analysis

There was one notable concentration of accidents within the project limits from MP 93.10 to 95.00. 67 total accidents including 8 injuries and 1 fatality occurred within this 2 mile section. 43 of these 67 accidents occurred with adverse road conditions. 12 of the 15 overturning accidents occurred between MP 93.90 and 94.80. The Region should consider extending the existing guardrail through this section to help reduce the off-road related accidents.

Appendix

Detailed Summary of Accident History

Overall Summary January 2007 to December 2011

Individual Years:

January 2007 – December 2007

January 2008 – December 2008

January 2009 – December 2009

January 2010 – December 2010

January 2011 – December 2011

Accident Listing for January 2007 to December 2011



**Colorado Department of Transportation
Safety and Traffic Engineering
Detailed Accident Summary Report**

Job #: 20121109130152

Highway: 9C **Begin:** 93.10 **End:** 97.20 **From:** 01/01/2007 **To:** 12/31/2011

Severity	Multi-Vehicle	Location
PDO: 241	One Vehicle: 59	On Road: 190 Off in Median: 1
INJ: 14 19 :Injured	Two Vehicles: 175	Off Road Left: 20 Private Property: 1
FAT: 1 1 :Killed	Three or More: 22	Off Road Right: 44 Unknown: 0
Total: 256	Unknown: 0	Off Road at Tee: 0 Total: 256

Accident Type			
Overturning: 16	Road Maintenance Equipment: 0	Fence: 2	
Other Non Collision: 1	Domestic Animal: 0	Tree: 3	
School Age Peds: 0	Wild Animal: 1	Large Rocks or Boulder: 3	
Ped on Toy Motorized Vehicle: 0	Light/Utility Pole: 4	Railroad Crossing Equipment: 0	
Other Pedestrians: 1	Traffic Signal Pole: 2	Barricade: 0	
Head On: 7	Sign: 11	Wall/Building: 0	
Rear End: 108	Guard Rail: 8	Crash Cushion/Traffic Barrel: 0	
Broadside: 19	Cable Rail: 0	Mailbox: 0	
Approach Turn: 18	Concrete Highway Barrier: 2	Other Fixed Object: 0	
Overtaking Turn: 3	Bridge Structure: 0	Involving Other Object: 2	
Sideswipe (Same): 21	Vehicle Debris/Cargo: 1	Unknown: 0	
Sideswipe (Opposite): 9	Culvert/Headwall: 0	Total: 256	
Parked Motor Vehicle: 3	Embankment: 9	Total Fixed Objects: 42	
Railway Vehicle: 0	Curb: 0	Total Other Objects: 6	
Bicycle: 1	Delineator Post: 1		

Lighting Conditions	
Daylight: 193	
Dawn or Dusk: 13	
Dark - Lighted: 24	
Dark - Unlighted: 26	
Unknown: 0	
Total: 256	

Weather Conditions		
None: 165	Dust: 0	
Rain: 9	Wind: 0	
Snow/Sleet/Hail: 80	Unknown: 0	
Fog: 2		
Total: 256		

Road Description	
At Intersection: 121	
At Driveway Access: 4	
Intersection Related: 24	
Non Intersection: 107	
Alley Related: 0	
Roundabout: 0	
Ramp: 0	
Parking Lot: 0	
Unknown: 0	
Total: 256	

Road Conditions	
Dry: 109	
Wet: 23	
Muddy: 0	
Snowy: 60	
Icy: 55	
Slushy: 4	
Foreign Material: 0	
Dry w/Icy Road Treatment: 0	
Wet w/Icy Road Treatment: 1	
Snowy w/Icy Road Treatment: 2	
Icy w/Icy Road Treatment: 2	
Slushy w/Icy Road Treatment: 0	
Unknown: 0	
Total: 256	

Mainline/Ramps/Frontage Rds	
Mainline: 256	
Crossroad (Ramp A): 0	
Frontage Rd: 0	
Ramps	
B: 0	H: 0
C: 0	I: 0
D: 0	J: 0
E: 0	K: 0
F: 0	T: 0
G: 0	
Intsrx Frontage/Ramps	
M: 0	N: 0
O: 0	P: 0
HOV Lanes: 0	
Uknwn: 0	
Total: 256	

Accident Rates	
PDO: 1.69	MVMT Total: 1.79
Injury: 0.10	MVMT
Fatal: 0.70	100 MVMT



**Colorado Department of Transportation
Safety and Traffic Engineering
Detailed Accident Summary Report**

Job #: 20121109130152

Highway: 9C **Begin:** 93.10 **End:** 97.20 **From:** 01/01/2007 **To:** 12/31/2011

Vehicle Types	Veh 1	Veh 2	Veh 3	Direction	Veh 1	Veh 2	Veh 3
Vehicle/Vehicle Combo (> 10k Lbs):	7	3	0	North:	96	58	8
School Bus (All School Busses):	0	1	0	Northeast:	0	0	0
Non-School Bus (> 8) in Commerce:	1	0	0	East:	42	43	2
Transit Bus:	1	1	0	Southeast:	0	0	0
Passenger Car/Van:	97	70	13	South:	93	74	7
Passenger Car/Van w/Trailer:	1	4	1	Southwest:	0	0	0
Pickup Truck/Utility Van:	48	30	4	West:	25	21	5
Pickup Truck/Utility Van w/Trailer:	7	3	0	Northwest:	0	1	0
SUV:	87	78	4	Unknown:	0	0	0
SUV w/Trailer:	3	0	0	Total:	256	197	22
Motor Home:	1	0	0				
Motorcycle:	0	3	0				
Bicycle:	0	1	0				
Motorized Bicycle:	1	0	0				
Farm Equipment:	0	0	0				
Hit and Run - Unknown:	1	0	0				
Light Rail:	0	0	0				
Other:	1	1	0				
Unknown:	0	2	0				
Commercial Vehicle	Total:	256	197	22			

Contributing Factor	Veh 1	Veh 2	Veh 3	Vehicle Movement	Veh 1	Veh 2	Veh 3
No Apparent Contributing Factor:	127	192	20	Going Straight:	106	85	8
Asleep at the Wheel:	6	2	0	Slowing:	27	15	3
Driver Fatigue:	1	0	0	Stopped in Traffic:	4	75	11
Illness/Medical:	2	0	0	Making Right Turn:	13	2	0
Driver Inexperience:	33	0	1	Making Left Turn:	39	12	0
Agressive Driving:	13	0	0	Making U-Turn:	5	0	0
Driver Unfamiliar with Area:	14	0	0	Passing:	1	0	0
Driver Emotionally Upset:	0	0	0	Backing:	5	0	0
Evading Law Enforcement Officer:	0	0	0	Enter/Leave Parked Pos:	1	0	0
Physical Disability:	0	0	0	Parked:	0	3	0
DUI, DWAI, DUID:	9	0	0	Changing Lanes:	7	0	0
Distracted/Passenger:	1	0	0	Avoiding Object in Road:	4	3	0
Distracted/Cell Phone:	5	0	0	Weaving:	5	0	0
Distracted/Radio:	1	0	0	Spun Out of Control:	33	0	0
Distracted/Other:	18	0	0	Drove Wrong Way:	1	0	0
Other Factor:	26	3	1	Other:	5	2	0
Unknown:	0	0	0	Unknown:	0	0	0
Total:	256	197	22	Total:	256	197	22

Driver Condition (Alcohol)	Veh 1	Veh 2	Veh 3	Driver Condition (Drugs)	Veh 1	Veh 2	Veh 3
No Alcohol Suspected:	240	197	22	No Drugs Suspected:	245	197	18
Alcohol Suspected:	11	0	0	Drugs Suspected:	3	0	0
Unknown Alcohol:	5	0	0	Unknown Drugs:	8	0	4
Alcohol Sub-Total:	256	197	22	Drugs Sub-Total:	256	197	22

ADT: 19,211 **Length:** 4.06 **Coris File:** tcoris2010.dbf



**Colorado Department of Transportation
Safety and Traffic Engineering
General Accident Summary Report**

Job #: 20121109151943

Highway: 9C **Begin:** 93.10 **End:** 97.20 **From:** 01/01/2007 **To:** 12/31/2007

Severity	
PDO:	62
INJ:	1 1:Injured
FAT:	0 0:Killed
Total:	63

Number of Vehicles	
One Vehicle:	11
Two Vehicles:	49
Three or More:	3
Unknown:	0
Total:	63

Location	
On Road:	54
Off Road:	9
Unknown:	0
Total:	63

Accident Type			
Overtuning:	0	Sideswipe (Same):	6
Other Non Collision:	0	Sideswipe (Opposite):	2
Pedestrians:	0	Approach Turn:	12
Broadside:	1	Overtaking Turn:	2
Head On:	0	Parked Motor Vehicle:	0
Rear End:	28	Railway Vehicle:	0
Bicycles:	0	Domestic Animal:	0
Wild Animal:	1	Fixed Objects:	8
Other Objects:	3	Unknown:	0
Total:	63		

Lighting Conditions	
Daylight:	50
Dawn or Dusk:	3
Dark - Lighted:	7
Dark - Unlighted:	3
Unknown:	0
Total:	63

Mainline/Ramps/Frontage Rds	
Mainline:	63
Ramps:	0
Frontage Roads:	0
Intsx Frontage/Ramps:	0
HOV Lanes:	0
Unknown:	0
Total:	63

Weather Conditions	
None:	47
Rain:	0
Snow/Sleet/Hail:	16
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
Total:	63

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Vehicle/Vehicle Combo (> 10k Lbs):	1	0	0
School Bus (All School Busses):	0	0	0
Non-School Bus (> 8) in Commerce:	0	0	0
Transit Bus:	0	1	0
Passenger Car/Van:	26	25	2
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	11	8	0
Pickup Truck/Utility Van w/Trailer:	2	2	0
SUV:	22	16	1
SUV w/Trailer:	1	0	0
Motor Home:	0	0	0
Motorcycle:	0	0	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Light Rail:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
Commercial Vehicle	Total: 63	52	3

Road Conditions	
Dry:	35
Wet:	4
Muddy:	0
Snowy:	12
Icy:	7
Slushy:	2
Foreign Material:	0
With Road Treatment:	3
Unknown:	0
Total:	63

Accident Rates		
PDO:	2.21 *	* MVMT
INJ:	0.04 *	** 100 MVMT
FAT:	0.00 **	Total: 2.25 *



**Colorado Department of Transportation
Safety and Traffic Engineering
General Accident Summary Report**

Job #: 20121109151042

Highway: 9C **Begin:** 93.10 **End:** 97.20 **From:** 01/01/2008 **To:** 12/31/2008

Severity	
PDO:	62
INJ:	3 3:Injured
FAT:	0 0:Killed
Total:	65

Number of Vehicles	
One Vehicle:	18
Two Vehicles:	43
Three or More:	4
Unknown:	0
Total:	65

Location	
On Road:	44
Off Road:	21
Unknown:	0
Total:	65

Accident Type			
Overtuning:	7	Sideswipe (Same):	6
Other Non Collision:	1	Sideswipe (Opposite):	2
Pedestrians:	0	Approach Turn:	2
Broadside:	3	Overtaking Turn:	0
Head On:	3	Parked Motor Vehicle:	1
Rear End:	28	Railway Vehicle:	0
Bicycles:	0	Domestic Animal:	0
Wild Animal:	0	Fixed Objects:	11
Other Objects:	1	Unknown:	0
Total:	65		

Lighting Conditions	
Daylight:	45
Dawn or Dusk:	3
Dark - Lighted:	9
Dark - Unlighted:	8
Unknown:	0
Total:	65

Mainline/Ramps/Frontage Rds	
Mainline:	65
Ramps:	0
Frontage Roads:	0
Intsx Frontage/Ramps:	0
HOV Lanes:	0
Unknown:	0
Total:	65

Weather Conditions	
None:	39
Rain:	3
Snow/Sleet/Hail:	23
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
Total:	65

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Vehicle/Vehicle Combo (> 10k Lbs):	3	2	0
School Bus (All School Busses):	0	1	0
Non-School Bus (> 8) in Commerce:	0	0	0
Transit Bus:	1	0	0
Passenger Car/Van:	26	20	4
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	4	7	0
Pickup Truck/Utility Van w/Trailer:	4	0	0
SUV:	23	14	0
SUV w/Trailer:	2	0	0
Motor Home:	0	0	0
Motorcycle:	0	1	0
Bicycle:	0	0	0
Motorized Bicycle:	1	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Light Rail:	0	0	0
Other:	1	0	0
Unknown:	0	2	0
Total:	65	47	4

Road Conditions	
Dry:	28
Wet:	6
Muddy:	0
Snowy:	13
Icy:	18
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
Total:	65

Accident Rates		
PDO:	2.21 *	* MVMT
INJ:	0.11 *	** 100 MVMT
FAT:	0.00 **	Total: 2.32 *

ADT: 18,499 **Length:** 4.14 **Coris File:** tcoris2008.dbf



**Colorado Department of Transportation
Safety and Traffic Engineering
General Accident Summary Report**

Job #: 20121109130726

Highway: 9C **Begin:** 93.10 **End:** 97.00 **From:** 01/01/2009 **To:** 12/31/2009

Severity	
PDO:	41
INJ:	6 7:Injured
FAT:	0 0:Killed
Total:	47

Number of Vehicles	
One Vehicle:	10
Two Vehicles:	32
Three or More:	5
Unknown:	0
Total:	47

Location	
On Road:	34
Off Road:	13
Unknown:	0
Total:	47

Accident Type			
Overtuning:	2	Sideswipe (Same):	2
Other Non Collision:	0	Sideswipe (Opposite):	2
Pedestrians:	1	Approach Turn:	1
Broadside:	5	Overtaking Turn:	1
Head On:	2	Parked Motor Vehicle:	1
Rear End:	20	Railway Vehicle:	0
		Bicycles:	1
		Domestic Animal:	0
		Wild Animal:	0
		Fixed Objects:	9
		Other Objects:	0
		Unknown:	0
		Total:	47

Lighting Conditions	
Daylight:	39
Dawn or Dusk:	3
Dark - Lighted:	2
Dark - Unlighted:	3
Unknown:	0
Total:	47

Mainline/Ramps/Frontage Rds	
Mainline:	47
Ramps:	0
Frontage Roads:	0
Intsx Frontage/Ramps:	0
HOV Lanes:	0
Unknown:	0
Total:	47

Weather Conditions	
None:	28
Rain:	4
Snow/Sleet/Hail:	13
Fog:	2
Dust:	0
Wind:	0
Unknown:	0
Total:	47

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Vehicle/Vehicle Combo (> 10k Lbs):	0	1	0
School Bus (All School Busses):	0	0	0
Non-School Bus (> 8) in Commerce:	0	0	0
Transit Bus:	0	0	0
Passenger Car/Van:	16	13	1
Passenger Car/Van w/Trailer:	1	2	1
Pickup Truck/Utility Van:	13	2	2
Pickup Truck/Utility Van w/Trailer:	1	0	0
SUV:	15	17	1
SUV w/Trailer:	0	0	0
Motor Home:	1	0	0
Motorcycle:	0	0	0
Bicycle:	0	1	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Light Rail:	0	0	0
Other:	0	1	0
Unknown:	0	0	0
Commercial Vehicle	Total: 47	37	5

Road Conditions	
Dry:	21
Wet:	3
Muddy:	0
Snowy:	9
Icy:	11
Slushy:	1
Foreign Material:	0
With Road Treatment:	2
Unknown:	0
Total:	47

Accident Rates	
PDO:	1.69 * * MVMT
INJ:	0.25 * ** 100 MVMT
FAT:	0.00 **
Total:	1.94 *

ADT: 17,070 **Length:** 3.88 **Coris File:** tcoris2009.dbf



**Colorado Department of Transportation
Safety and Traffic Engineering
General Accident Summary Report**

Job #: 20121109151144

Highway: 9C **Begin:** 93.10 **End:** 97.20 **From:** 01/01/2010 **To:** 12/31/2010

Severity	
PDO:	39
INJ:	3 7:Injured
FAT:	1 1:Killed
Total:	43

Number of Vehicles	
One Vehicle:	9
Two Vehicles:	31
Three or More:	3
Unknown:	0
Total:	43

Location	
On Road:	31
Off Road:	12
Unknown:	0
Total:	43

Accident Type		
Overtuning:	5	Sideswipe (Same): 2
Other Non Collision:	0	Sideswipe (Opposite): 1
Pedestrians:	0	Approach Turn: 3
Broadside:	6	Overtaking Turn: 0
Head On:	1	Parked Motor Vehicle: 1
Rear End:	18	Railway Vehicle: 0
		Bicycles: 0
		Domestic Animal: 0
		Wild Animal: 0
		Fixed Objects: 5
		Other Objects: 1
		Unknown: 0
		Total: 43

Lighting Conditions	
Daylight:	32
Dawn or Dusk:	2
Dark - Lighted:	2
Dark - Unlighted:	7
Unknown:	0
Total:	43

Mainline/Ramps/Frontage Rds	
Mainline:	43
Ramps:	0
Frontage Roads:	0
Intsx Frontage/Ramps:	0
HOV Lanes:	0
Unknown:	0
Total:	43

Weather Conditions	
None:	29
Rain:	0
Snow/Sleet/Hail:	14
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
Total:	43

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Vehicle/Vehicle Combo (> 10k Lbs):	0	0	0
School Bus (All School Busses):	0	0	0
Non-School Bus (> 8) in Commerce:	0	0	0
Transit Bus:	0	0	0
Passenger Car/Van:	13	6	2
Passenger Car/Van w/Trailer:	0	2	0
Pickup Truck/Utility Van:	12	8	0
Pickup Truck/Utility Van w/Trailer:	0	1	0
SUV:	17	16	1
SUV w/Trailer:	0	0	0
Motor Home:	0	0	0
Motorcycle:	0	1	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	1	0	0
Light Rail:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
Commercial Vehicle	Total: 43	34	3

Road Conditions	
Dry:	14
Wet:	3
Muddy:	0
Snowy:	12
Icy:	13
Slushy:	1
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
Total:	43

Accident Rates	
PDO:	1.37 * * MVMT
INJ:	0.11 * ** 100 MVMT
FAT:	3.50 **
Total:	1.51 *

ADT: 19,211 **Length:** 4.06 **Coris File:** tcoris2010.dbf



**Colorado Department of Transportation
Safety and Traffic Engineering
General Accident Summary Report**

Job #: 20121114143737

Highway: 9C **Begin:** 93.10 **End:** 97.20 **From:** 01/01/2011 **To:** 12/31/2011

Severity	
PDO:	37
INJ:	1 1:Injured
FAT:	0 0:Killed
Total:	38

Number of Vehicles	
One Vehicle:	11
Two Vehicles:	20
Three or More:	7
Unknown:	0
Total:	38

Location	
On Road:	27
Off Road:	11
Unknown:	0
Total:	38

Accident Type			
Overtuning:	2	Sideswipe (Same):	5
Other Non Collision:	0	Sideswipe (Opposite):	2
Pedestrians:	0	Approach Turn:	0
Broadside:	4	Overtaking Turn:	0
Head On:	1	Parked Motor Vehicle:	0
Rear End:	14	Railway Vehicle:	0
Bicycles:	0	Domestic Animal:	0
Wild Animal:	0	Fixed Objects:	9
Other Objects:	1	Unknown:	0
Total:	38		

Lighting Conditions	
Daylight:	27
Dawn or Dusk:	2
Dark - Lighted:	4
Dark - Unlighted:	5
Unknown:	0
Total:	38

Mainline/Ramps/Frontage Rds	
Mainline:	38
Ramps:	0
Frontage Roads:	0
Intsx Frontage/Ramps:	0
HOV Lanes:	0
Unknown:	0
Total:	38

Weather Conditions	
None:	22
Rain:	2
Snow/Sleet/Hail:	14
Fog:	0
Dust:	0
Wind:	0
Unknown:	0
Total:	38

Vehicle Types	Vehicle 1	Vehicle 2	Vehicle 3
Vehicle/Vehicle Combo (> 10k Lbs):	3	0	0
School Bus (All School Busses):	0	0	0
Non-School Bus (> 8) in Commerce:	1	0	0
Transit Bus:	0	0	0
Passenger Car/Van:	16	6	4
Passenger Car/Van w/Trailer:	0	0	0
Pickup Truck/Utility Van:	8	5	2
Pickup Truck/Utility Van w/Trailer:	0	0	0
SUV:	10	15	1
SUV w/Trailer:	0	0	0
Motor Home:	0	0	0
Motorcycle:	0	1	0
Bicycle:	0	0	0
Motorized Bicycle:	0	0	0
Farm Equipment:	0	0	0
Hit and Run - Unknown:	0	0	0
Light Rail:	0	0	0
Other:	0	0	0
Unknown:	0	0	0
Commercial Vehicle	Total: 38	27	7

Road Conditions	
Dry:	11
Wet:	7
Muddy:	0
Snowy:	14
Icy:	6
Slushy:	0
Foreign Material:	0
With Road Treatment:	0
Unknown:	0
Total:	38

Accident Rates	
PDO:	1.30 * * MVMT
INJ:	0.04 * ** 100 MVMT
FAT:	0.00 **
Total:	1.33 *

ADT: 19,211 **Length:** 4.06 **Coris File:** tcoris2010.dbf