



COLORADO
Department of Transportation

US 287 Safety Study

Stephanie Gramberg, PE (CDOT)
Matt Brown, PE, PTOE, RSP (Stolfus)



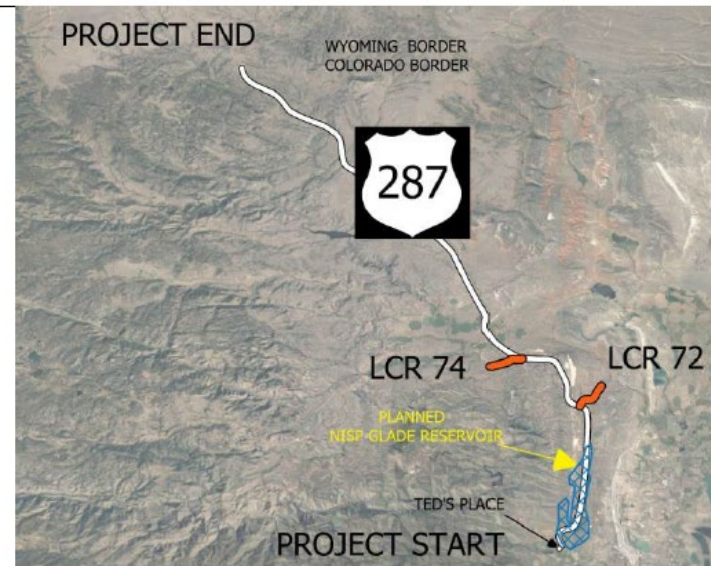
Agenda

Colorado Department of Transportation
Region 4
10601 W. 10th St.
Greeley, CO 80634



COLORADO
Department of Transportation

US 287 From Ted's Place to Wyoming Border Safety Assessment Report



PREPARED BY:
Stolfus & Associates, Inc.
5690 DTC Boulevard, Suite 330W
Greenwood Village, CO 80111
phone: 303-221-2330 • fax: 303-221-2331
www.stolfusandassociates.com
Contact:
Matthew J. Brown, PE, PTOE, RSP1
Traffic Safety, Systems & Operations Director

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- About the study
- Existing conditions
- Safety improvement projects
- Benefit-cost analysis
- Project prioritization
- Conclusions and next steps



About the Study



Initiated April 2023



US 287 from Ted's Place to CO-WY state line



Analysis based on 5 years (2017-2021) of crash data



Also applied LIDAR technology and analysis



Hosted a project web site and received public comments



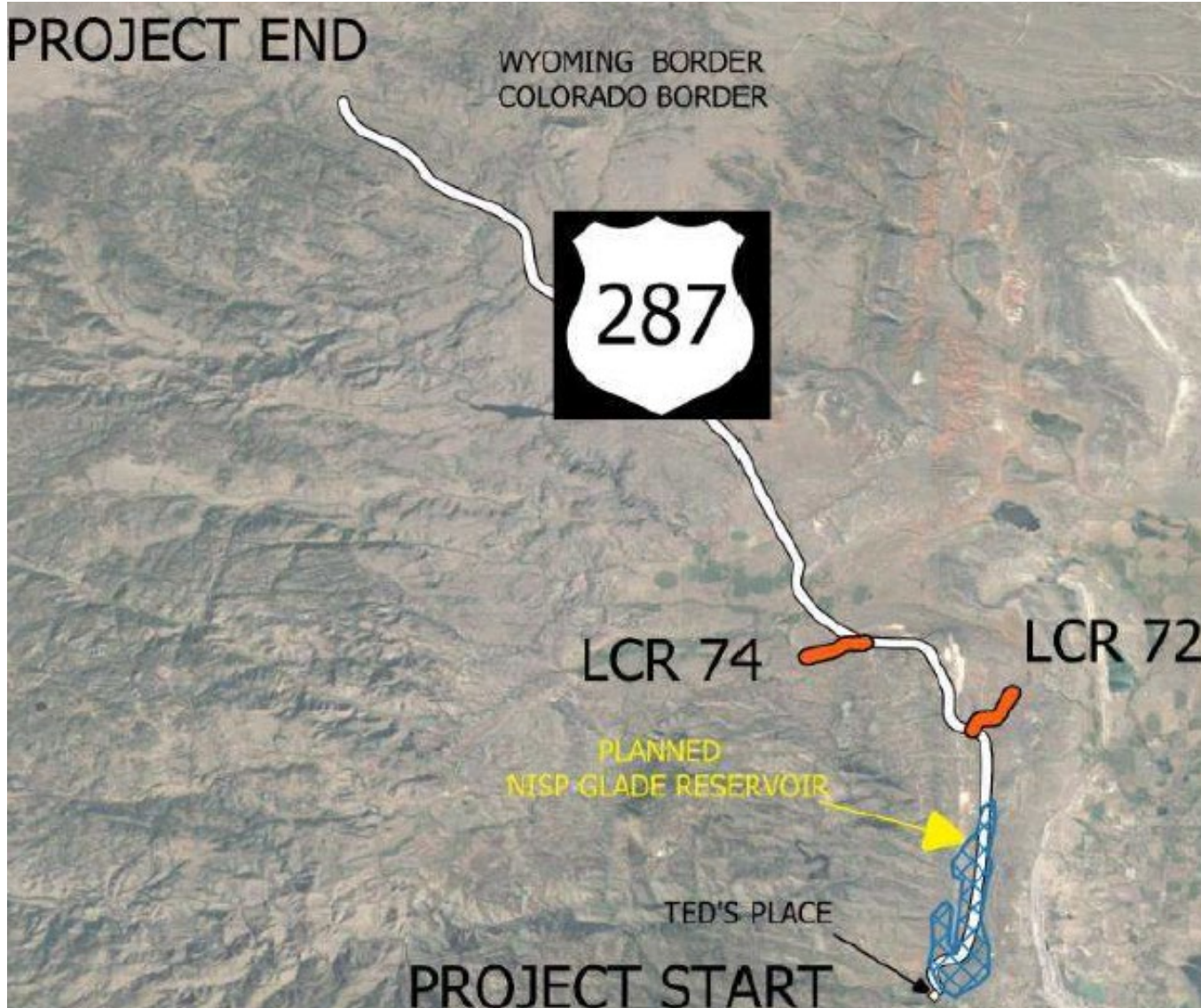
Identified and prioritized safety improvement projects



Received stakeholder feedback



About the Study



- 30 Mile Stretch
- ADT: 4,300 – 9,500 Vehicles Per Day
- 11.3% - 21.1% Truck Traffic
- 65 MPH Posted Speed Limit



Existing Conditions

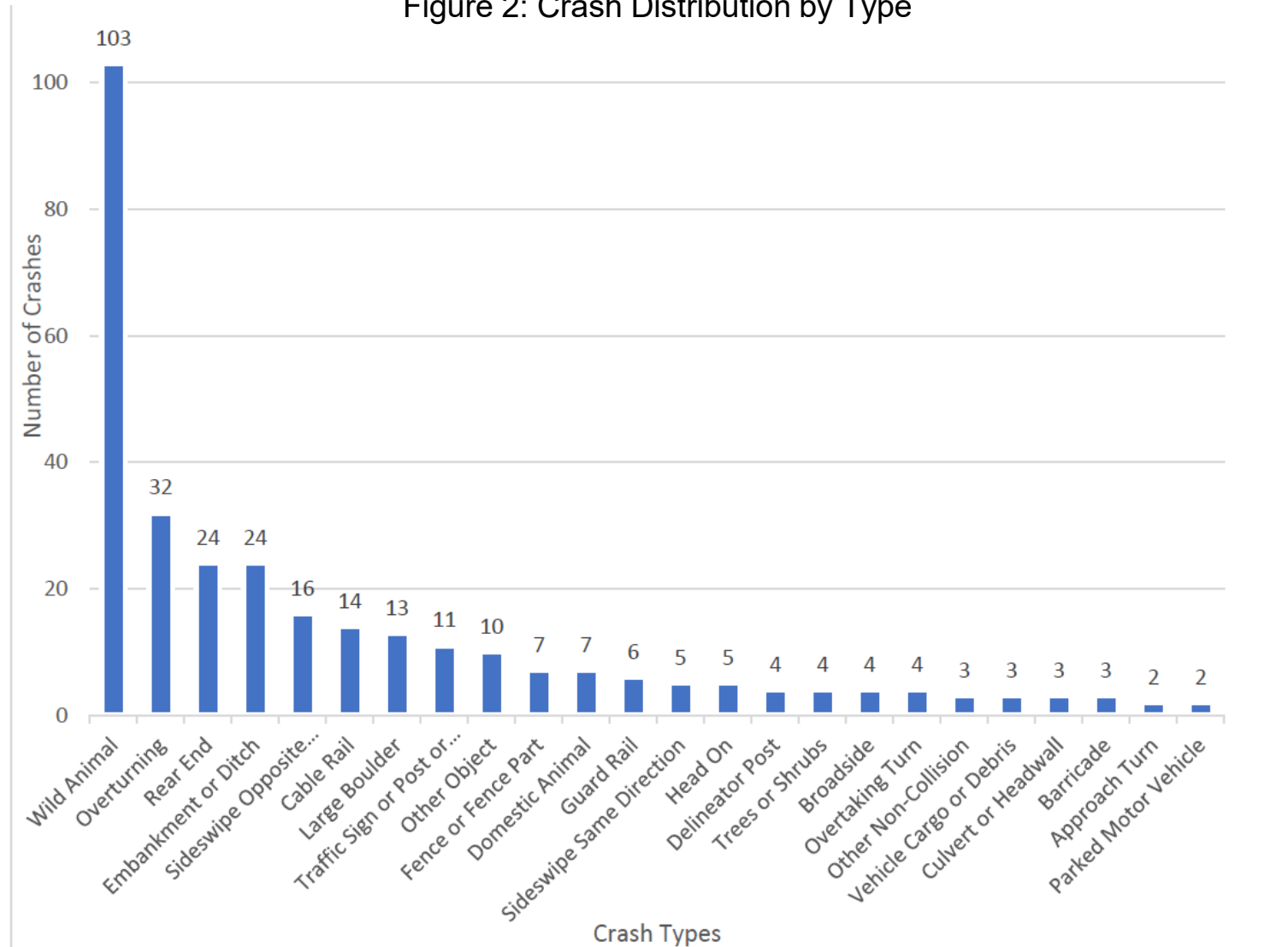
Table 1: Crash History of US287 from MP 355 to Wyoming Border

Year	PDO Crashes	Injury Crashes	Injuries	Fatal Crashes	Fatalities	Total Crashes
2017	42	9	9	1	1	52
2018	49	21	33	1	1	71
2019	43	17	22	2	3	62
2020	44	19	32	2	2	65
2021	45	12	13	2	5	59
Total	223	78	109	8	12	309
Average/Yr	44.6	15.6	21.8	1.6	2.4	61.8



Existing Conditions

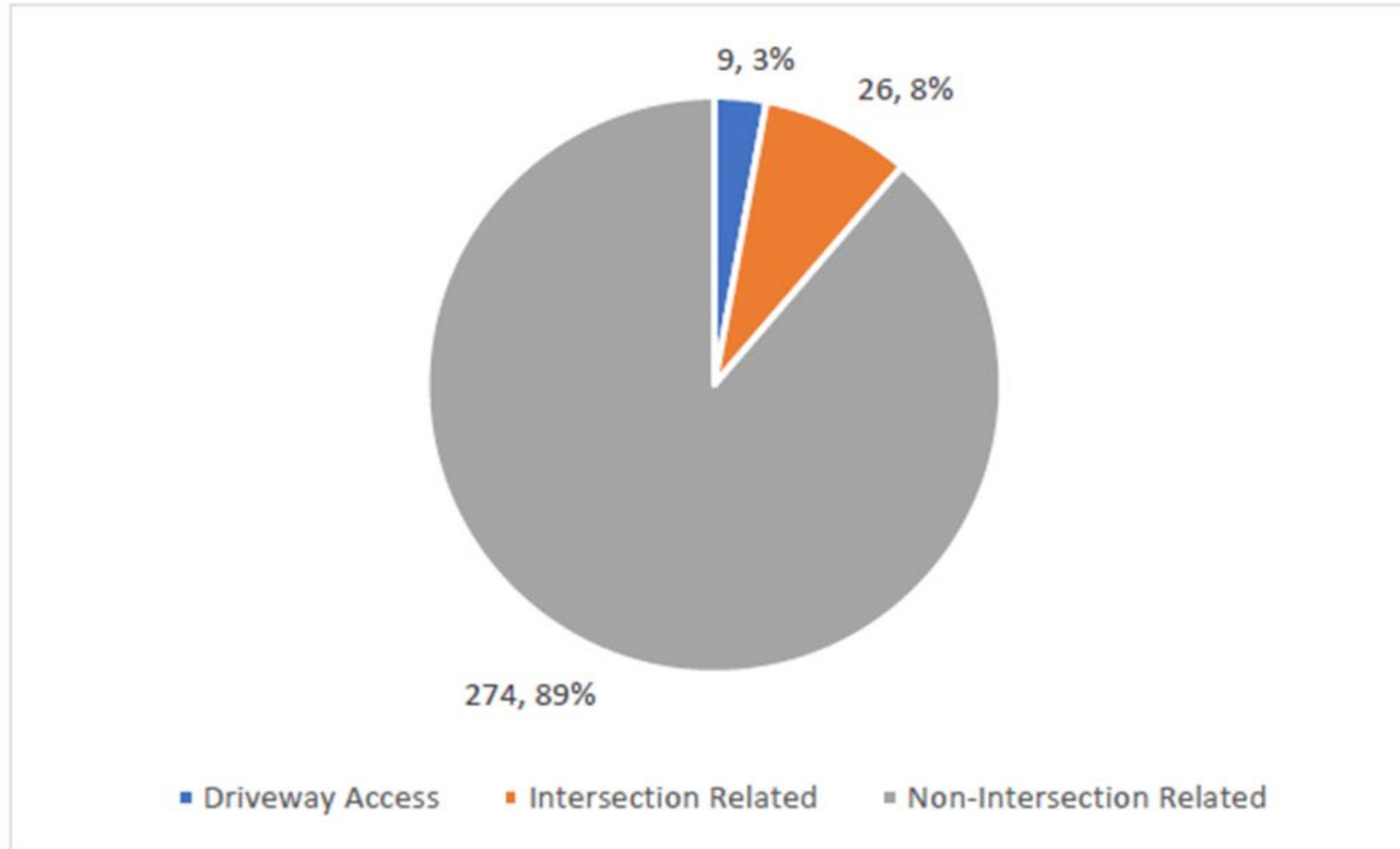
Figure 2: Crash Distribution by Type





Existing Conditions

Figure 3 Crash Distribution by Access Type





Intersection Safety Analysis

Table 2: Intersection Crashes and LOSS

MP	Description	Number of Crashes				LOSS	LOSS
		PDO	Injury Crashes	Fatal Crashes	Total	INJ	ALL
355	W County Rd 54E	1	0	0	1	II	II
355.96	Ted's Place	1	0	0	1	II	II
362.23	RD W (BONNER SPRINGS RANCH RD)	2	0	0	2	II	II
363.23	Owl Canyon Rd (CO RD 72)	1	4	1	6	IV	IV
364.15	RD W (SOARING EAGLE DR/RANCH SPRINGS RD)	1	0	0	1	II	II
367.01	RD W (CO RD 74E) (RED FEATHER LAKES RD)	3	0	0	3	II	III
368.43	RD W (CO RD 76H)	0	1	0	1	II	II
369.95	RD W (CO RD 80C) (CHEROKEE RD)	0	1	0	1	II	III
373.82	RD NE (CO RD 37) Red Mountain Rd	0	2	0	2	III	III
378.91	OLD RANCH RD	0	1	0	1	II	III
380.86	RD NE (CO RD 43F)	0	1	0	1	II	III
381.06	BENEDICTINE WAY	1	0	0	1	II	II
381.3	RD NW (CO RD 45E)	1	0	0	1	II	II
Total		11	10	1	22		
Average/Year		2.2	2	0.2	4.4		



Safety Improvement Projects

Intersection Improvements

1. LCR 43F

US 287 MP 380.86

Classification: Undivided Unsignalized 3-leg Intersection

AADT: 4,300

Total Crashes: 1 injury crash

LOSS: II (injury), III (all collisions)

Crash Pattern: None

Recommendation: Northbound right turn deceleration lane, southbound left turn deceleration lane.

2. LCR 74E Red Feather Lakes

US 287 MP 367.01

Classification: Undivided Unsignalized 3-leg Intersection

AADT: 8,200

Total Crashes: 3 (0 injury crashes)

LOSS: II (injury), III (all collisions)

Crash Pattern: Fixed object, Off road

Recommendation: Intersection restriping raised curb and gutter at intersection, southbound right turn striping realignment. northbound left turn deceleration lane restripe.

3. Old Ranch Road

US 287 MP 378.91

Classification: Undivided Unsignalized 3-leg Intersection

AADT: 4,300

Total Crashes: 1 injury crash

LOSS: II (injury), III (all collisions)

Crash Pattern: None

Recommendation: Northbound right turn deceleration lane.

4. Red Mountain Road

US 287 MP 373.82

Classification: Undivided Unsignalized 3-leg Intersection

AADT: 4,300

Total Crashes: 2 (2 injury crash)

LOSS: III (all collisions)

Crash Pattern: None detected. However, occurring to public feedback, this location experiences “near misses” when traffic is turning onto the highway.

Recommendation: Southbound left turn deceleration lane.

5. Bonner Springs Ranch Road

US 287 MP 362.23

Classification: Undivided Unsignalized 3-leg Intersection

AADT: 7100

Total Crashes: 2 (0 injury crashes)

LOSS: II (all collisions)

Crash Pattern: None detected. However, according to public feedback, this location experiences “near misses” when traffic is turning onto the highway.

Recommendation: A northbound left turn deceleration lane, southbound right turn deceleration lane

6. Rest Area Entrance

US 287 MP 383.5

Classification: Undivided Unsignalized 3-leg Intersection

AADT: 4,300

Total Crashes: 2 (1 injury crash, 1 fatality)

LOSS: III (all collisions)

Crash Pattern: Approach turn

Recommendation: intersection realignment with High Lonesome Rd and southbound right turn deceleration lane.

7. LCR 72 Owl Canyon Road

US 287 MP 363.23

Classification: Undivided Unsignalized 3-leg Intersection

AADT: 8,200

Total Crashes: 6 (4 injury crashes, 1 Fatality)

LOSS: IV (all collisions)

Crash Pattern: Sideswipe same direction, broadside, approach turn, and overturning.

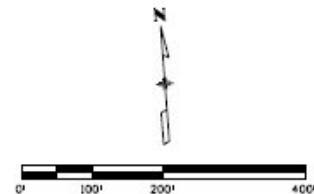
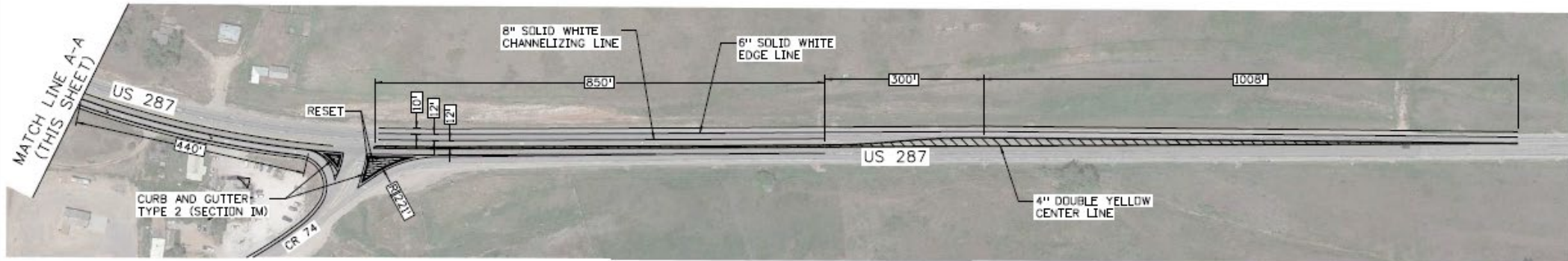
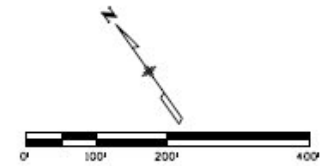
Recommendation: Pavement resurfacing, intersection restriping, advanced southbound turn movement warning signs, advanced intersection warning signs, and no passing warning signs.



Geometric Concept

Red Feather Lakes Rd

Know what's below.
Call before you dig.





Safety Improvement Projects

Non-Intersection Improvements

Passing Lanes (South Bound)

- NISP Area
- MP 363.5-365.5
- MP 374.3-376.1

Wildlife (fencing, game ramps, deer guards)

- MP 378-383
- MP 369-372

Wildlife (fencing, game ramps, deer guards, crossing)

- MP 363-367



Safety Improvement Projects

Non-Intersection Improvements

- Cross slope correction / high friction surface treatment - 6.5 miles
- Snow fencing (MP 370 to 373)
- Resurfacing and crack sealing
- Shoulder widening





Benefit-Cost Analysis

Table 12: Project Benefit-Cost Ratios

Project	Cost (\$)	Crash Reduction Factor	BCR
1. N CO RD 43F	2,490,000	20%	B/C < 0.25
2. Red Feather Lakes CR74	2,100,000	25%	B/C < 0.25
3. Old Ranch Road	1,040,000	20%	B/C < 0.25
4. Red Mountain Road	3,360,000	20%	0.25 < B/C < 1.0
5. Bonner Springs Ranch Road	3,950,000	20%	B/C < 0.25
6. Rest Area High Lonesome Road	1,490,000	20%	0.25 < B/C < 1.0
7. Passing Lane (MP 374.3 - 376.1)	10,720,000	32%	0.25 < B/C < 1.0
8. W CO Rd 72 (Owl Canyon Road)	3,200,000	25%	0.25 < B/C < 1.0
9. Passing Lane (MP 363.5 – 365.6)	13,300,000	32%	B/C < 0.25
10. Crown Improvement	4,730,000	7%	B/C < 0.25
11. Shoulder Width Improvements	4,190,000	7%	B/C < 0.25
12. Wildlife crossing (MP 363–367)	2,090,000	45%	0.25 < B/C < 1.0
13. Wildlife fencing (MP 369-372.5)	2,600,000	45%	0.25 < B/C < 1.0
14. Wildlife fencing (MP 379- 382)	1,500,000	45%	B/C > 1.0
15. Passing Lane (1.2 Miles in NISP)	4,670,000	32%	B/C < 0.25



Project Prioritization

Table 13: Project Prioritization summary

Project	Criterion Score						Prioritization Score
	1	2	3	4	5	6	
1. N CO RD 43F	3	0	5	0	0	0	8
2. Red Feather Lakes CR74	1	0	5	3	2	0	11
3. Old Ranch Road	1	0	5	0	0	0	6
4. Red Mountain Road	3	0	5	3	2	2	15
5. Bonner Springs Ranch Road	0	0	5	5	2	0	12
6. Rest Area High Lonesome Road	0	0	5	0	2	2	9
7. Passing Lane (MP 374.3 - 376.1)	0	0	5	5	2	2	14
8. W CO Rd 72 (Owl Canyon Road)	5	5	0	5	0	2	17
9. Passing Lane (MP 363.5 – 365.6)	0	0	5	5	2	0	12
10. Crown Improvement	3	5	0	0	0	0	8
11. Shoulder Width Improvements	3	5	0	0	0	0	8
12. Wildlife crossing (MP 363–367)	0	5	0	3	2	2	12
13. Wildlife fencing (MP 369 – 372)	2	5	0	3	2	0	12
14. Wildlife fencing (MP 379- 382)	5	5	0	3	2	5	20
15. Passing Lane (1.2 Miles in NISP)	0	0	5	3	2	0	10

Prioritization Based on Several Factors:

1. Magnitude of the safety problem
2. Countermeasure effectiveness
3. Systemic safety improvement
4. Public and agency feedback
5. Other factors
6. Project benefit-cost



Summary and Next Steps

- Weather related incidents lower than anticipated
- Addition of SB passing lanes, wildlife Fencing/crossings and intersection improvements would be great safety improvements for corridor
- Next Steps: CDOT analyzing recommended projects along with available funding and other funding opportunities to develop delivery and future funding strategy





Questions?

US 287 Safety Report posted on project website:

<https://www.codot.gov/projects/studies/us287tedstowyoing>