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



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### 1.0 Introduction

In April 2023, CDOT initiated this study to assess safety improvement and mobility needs along US 287 north of Ted's Place. Study limits are US 287 MP 355 (Ted's Place) to MP 385 (WY Border), approximately 30 miles in length. Currently, some segments of the US 287 corridor have a higher-than-average crash rate compared to other similar rural highways, making it a good candidate for safety improvement. Crash types being investigated include those occurring at intersections, involving passing maneuvers or along curves, and crashes involving wildlife.

From January 1, 2017 to December 31, 2021, a total of 309 crashes were reported along the corridor. Of these, 223 were property-damage only crashes, 78 crashes resulted in injury and there were 8 fatal crashes. In addition, based upon preliminary data for 2022, 2023, and 2024 there were two (3) additional fatal crashes during this period resulting in six additional deaths and 4 injuries.

US 287 is also a prominent freight corridor and experiences nearly 900 trucks per day traveling along its length.

The scope of the study was as follows:

- Assess the magnitude and nature of the safety problem within the study limits.
- Relate crash causality to roadway geometrics, roadside features, traffic control devices, traffic operations, driver behavior, wildlife, and vehicle type.
- Recommend cost effective safety and mobility projects to address identified problems.
- Prioritize recommendations based upon factors such as level of improvement and benefit-cost, and
- Inform the public about the study and take comments regarding existing safety and mobility concerns

Recognizing the importance of the US 287 corridor, CDOT's 10-year plan already identifies the potential for passing lanes as well as other safety improvements to be constructed in the relatively near future. Once future design and construction funding is identified, the recommendations from this study may be used to identify those improvements most urgently needed.

### 2.0 Existing Conditions

### 2.1 Site Locations and Conditions

This study addresses US 287 from milepost 355 (Ted's Place) to 385.2 (Wyoming Border). In the study area, US 287 is a rural flat and rolling two-lane undivided United States (US) highway with occasional passing lane sections in both directions. Lane widths are 12 feet and outside shoulder widths range from 1 to 15 feet. The terrain for this corridor is classified as rural flat and rolling. The average daily traffic (ADT) ranges from 4,300 to 9,500 vehicles per day (VPD) with approximately $11.3 \%$ to $21.1 \%$ truck traffic. The posted speed limit for the corridor is 65 MPH .

### 2.2 Crash History

Crash history for the study period, January 1, 2017 to December 31, 2021, was examined to locate crash patterns and identify crash causes along US 287. A general summary of the crash history for the corridor is presented in Table 1.

In the study period, 309 crashes were reported along US 287. The total includes crashes located at or related to intersections, at driveway accesses, as well as those that are not at intersections. Of the 309 crashes, there were 223 incidents that were property damage only (PDO), 78 incidents that causes injury ( 109 injured overall) and 8 fatal crashes ( 12 killed). In addition, based upon preliminary data for 2022, 2023, and 2024 there were two (3) additional fatal crashes during this period resulting in six additional deaths.

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

| Year | PDO Crashes | Injury <br> Crashes | Injuries | Fatal <br> 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 | $\mathbf{2 2 3}$ | $\mathbf{7 8}$ | $\mathbf{1 0 9}$ | $\mathbf{8}$ | $\mathbf{1 2}$ | $\mathbf{3 0 9}$ |
| Average/Yr | $\mathbf{4 4 . 6}$ | $\mathbf{1 5 . 6}$ | $\mathbf{2 1 . 8}$ | $\mathbf{1 . 6}$ | $\mathbf{2 . 4}$ | $\mathbf{6 1 . 8}$ |

Figure 1 shows the crash distribution by severity. Seventy-two percent (72\%) of the crashes resulted in property damage only (PDO), while $25 \%$ resulted in injury, and $3 \%$ in fatality.

Figure 1: Crash Distribution by Severity


Figure 2 displays the crash distribution by type for the corridor. Wild animal crashes were the most common crash type observed accounting for 33 percent of all crashes. Despite being a frequent crash type, wildlife crashes also often go unreported and therefore may actually be underrepresented in the data. Other common crash types along this corridor include overturning and rear-end collisions, accounting for 10 percent and 8 percent, respectively.

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Figure 2: Crash Distribution by Type


Figure 3 displays the crash distribution by access type. Non-intersection crashes were the most common crash type observed accounting for 89 percent of all crashes. Eight (8) percent were intersection related and 3 percent were at driveway accesses. All wildlife crashes are non-intersection related.

Figure 3 Crash Distribution by Access Type


### 2.3 Intersection Safety Analysis

Intersections within the study limit were examined and reviewed using Highway Safety Manual Level-of-Service of Safety (LOSS) techniques. Table 2 provides the crash history and LOSS by location for intersections that experienced crashes. The LOSS reflects how the intersection is performing by comparing actual crash experience at the intersection with the expected frequency and severity of crashes for similar Colorado intersections under similar traffic volume and geometric conditions. Those intersections that did not experience crashes within the study period are not included in the tables. Because they have a higher-than-average crash history, locations experiencing LOSS III and LOSS IV conditions may be considered good candidates for safety improvement. The LOSS results in the table are related to the severity (injuries) and total (ALL crashes) at each intersection.

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Table 2: Intersection Crashes and LOSS

| MP | Description | Number of Crashes |  |  |  | $\begin{array}{\|c\|} \hline \text { LOSS } \\ \text { INJ } \\ \hline \end{array}$ | $\begin{gathered} \text { LOSS } \\ \text { ALL } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | PD0 | Injury Crashes | Fatal Crashes | Total |  |  |
| 355 | W County Rd 54E | 1 | 0 | 0 | 1 | 11 | 11 |
| 355.96 | Ted's Place | 1 | 0 | 0 | 1 | 11 | 11 |
| 362.23 | RD W (BONNER SPRINGS RANCH RD) | 2 | 0 | 0 | 2 | 11 | 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 | 11 | II |
| 367.01 | RD W (CO RD 74E) (RED FEATHER LAKES RD) | 3 | 0 | 0 | 3 | 11 | III |
| 368.43 | RD W (CO RD 76H) | 0 | 1 | 0 | 1 | 11 | 11 |
| 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 | 11 | III |
| 380.86 | RD NE (CO RD 43F) | 0 | 1 | 0 | 1 | 11 | III |
| 381.06 | BENEDICTINE WAY | 1 | 0 | 0 | 1 | 11 | 11 |
| 381.3 | RD NW (CO RD 45E) | 1 | 0 | 0 | 1 | 11 | 11 |
| Total |  | 11 | 10 | 1 | 22 |  |  |
| Average/Year |  | 2.2 | 2 | 0.2 | 4.4 |  |  |

### 2.4 Corridor Safety Analysis

### 2.4.1 Level of Service of Safety

As with the intersection safety analysis, the assessment of the magnitude of safety problems on US 287 highway segments was determined using LOSS techniques. For corridor segments, the LOSS is determined by comparing actual non-intersection crash frequencies and severities with expected norms for similar Colorado highways. Whether the corridor's actual crash experience is above or below the expected norm and by how much determines its LOSS:

- LOSS I - Indicates a low potential for crash reduction (below 20th percentile)
- LOSS II - Indicates a low to moderate potential for crash reduction (20th percentile to mean)
- LOSS III - Indicates a moderate to high potential for crash reduction (mean to 80th percentile)
- LOSS IV - Indicates a high potential for crash reduction (above 80th percentile)

LOSS reflects how the roadway segment is performing in regard to its expected crash frequency and severity at a specific level of ADT. It does not, however, provide any information related to the nature of the safety problem itself. If the safety problem is present, LOSS will only describe its magnitude from the frequency and severity standpoint. Crash patterns that exist where the Total or Severity LOSS exhibit similar spikes and/or are classified as LOSS III or LOSS IV are of particular concern.

Figures 4 and 5 display the safety performance of US 287 by milepost for two-lane and three-lane rural flat and rolling undivided highways. As can be seen, there are multiple corridor locations where the total and severity of crashes is LOSS III and a few locations experiencing LOSS IV.

Figure 4: SPF for 2-Lane

CDOT
DiExSys ${ }^{\text {TM }}$ Vision Zero Suite SPF Corridor Analysis Report

| us287 spf corridor | Begin: 355 End: 385.223 From: 1/1/2017 To: 12/31/2021 |
| :--- | :---: | :---: |




Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways (2016)
Any intentional or inadvertent release of this data or any data derived from
its use shall not constitute a waiver of privilege pursuant to 23 USC 409.
Figure 5: SPF for 3-Lane


Highway Class: CO - Rural Flat and Rolling 3-Lane UnDivided Highways (2016)
Any intentional or inadvertent release of this data or any data derived from
its use shall not constitute a waiver of privilege pursuant to 23 USC 409.

### 2.4.2 Pattern recognition

US 287, within the project limits, was tested for the presence of corridor patterns related to crash type, severity, direction of travel, weather and road conditions, spatial distribution of crashes, time of day and behavioral attributes. Pattern recognition analysis was performed using normative percentages for diagnostics of safety problems for state highways of similar characteristics. For a pattern to be recognized, there must be over 95 percent confidence that the deviation from the normative percentages is statistically significant. The specific patterns found through the corridor are provided in the appendix.

There are multiple locations where patterns are identified. However, of particular concern are the crash patterns that exist where the Total or Severity Level of Service Safety (LOSS) exhibit spikes and/or are classified as LOSS III or LOSS IV.

### 2.4.3 Pattern Segments

Corridor subsegments were identified based upon observed crash patterns and elevated LOSS. The following subsegments are stretches with crash patterns and based upon elevated LOSS, present good opportunity for safety improvement.

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## Pattern Segment 1 MP 363 to 364

Figure 6: Pattern Segment 1 Location


In Pattern Segment 1 (Figure 6) there were 32 total crashes in five years in this approximately 1.0 -mile long subsegment of US 287 (primarily LOSS IV for severe and total crashes). There was one crash that resulted in a fatality, 7 crashes that resulted in injury ( 16 injured overall), and 24 PDO crashes. Table 3 shows the crash types in this stretch.

Table 3: Pattern Segment 1 Crash Types


## Potential safety improvements for this subsegment include:

- Additional wildllife signage
- Owl Canyon (CR 72) Intersection improvements
- Advanced turning movement warning signs
- Enhanced pavement markings

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## Pattern Segment 2 MP 365.5 to 367

Figure 7: Pattern Segment 2 Location


In Pattern Segment 2 (Figure 7) there were 21 total crashes in five years in this approximately 1.5 -mile long subsegment of US 287 (primarily LOSS III for injury and total crashes). There were no crashes that resulted in fatality, 3 crashes that resulted in injury ( 3 injured overall), and 18 PDO crashes. Table 4 shows the crash types in this stretch.

Table 4: Pattern Segment 2 Crash Types


## Potential safety improvements for this subsegment include:

- Additional wildlife signage
- CO 74 E Intersection improvements
- Additional passing lane
- Curve warning signs
- Increased outside shoulder width within horizontal curve


## Pattern Segment 3 MP 378.5 to 383.5

Figure 8: Pattern Segment 3 Location


In Pattern Segment 3 (Figure 8) there were 85 total crashes in five years in this approximately 5 -mile long subsegment of US 287 (primarily LOSS III- IV for severe and total crashes). There was 1 crash that resulted in 2 fatalities, 26 crashes that resulted in injury ( 37 injured overall), and 58 PDO crashes. Table 5 shows the crash types in this stretch.

Table 5: Pattern Segment 3 Crash Types


## Potential safety improvements for this subsegment include:

- Wildlife crossing, fencing, and additional signage
- Advanced turning movement warning signs
- Additional passing lane
- Curve warning signs
- Increased outside shoulder widths
- Intersection improvements


### 2.5 Corridor Operations

2.5.1 Passing Lanes

US 287 from milepost 355 to 385.2 has twelve areas with an auxiliary passing lane. Eight (8) of the 12 locations are in the northbound direction. Figure 9 shows the existing locations.

Figure 9: Existing Passing Lane Locations


### 2.5.2 Two-Lane Highway Level of Service

The quality of traffic operations along the US 287 corridor was evaluated for five different highway segments. The segments were selected based on characteristics such as traffic volume, percent trucks, and existing terrain. Segments are organized from south to north and include an assessment of whether the segment presents a good opportunity for a southbound passing lane. In the northbound direction there are a number of existing passing lanes and based on the operational analysis the northbound direction of travel functions at a good operational level-of-service.

The following factors were considered to determine each segment's operational Level of Service (LOS).

## Traffic Volumes

The Design Hourly Volumes (DH)will determine if an unusually slow-moving vehicle is likely to have a large effect on other vehicles. The DHVs are per CDOT's Online Transportation Information System (OTIS) website. Existing and future (Year 2041) traffic conditions were considered.

## Average Speed

This measures the average speed of following vehicles through the segment. The lower the speed vs the posted speed limit, the lower the level of service the segment receives. Table 6 describes the level of service ranging from $A$ to $F$.

## Table 6: Average Speed LOS

| Level of Service | Speed <br> Distribution |
| :--- | :---: |
| A | Speed $>60$ |
| B | $50<$ Speed $<=60$ |
| C | $40<$ Speed $<=50$ |
| D | $30<$ Speed $<=40$ |
| E | $20<$ Speed $<=30$ |
| F | Speed $<=20$ |

## Follower Density

Follower density indicates how vehicles are clustered together in the area where passing is not allowed. The range of follower density is from zero to one hundred. This is considered when the overall level of service is calculated. Table 7 describes the level of service ranging from $A$ to $E$.

Table 7: Percent Vehicle Following LOS

| Level of <br> Service | Follower <br> Density |
| :--- | :---: |
| A | $<=2$ |
| B | $>2-4$ |
| C | $>4-8$ |
| D | $>8-12$ |
| E | $>12$ |

Based on existing conditions US 287 is functioning at a level of service (LOS) of B for a two-lane highway.
The following segment summaries are broken up into two scenarios, 2041 no build and 2041 proposed.

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### 2.5.2.1 2041 No Build

Figure 10 shows the 2041-year projections with existing conditions following Table 8 describing the results.
Figure 10: 2041 No Build Conditions LOS


Table 8: 2041 No Build LOS Results

| Segment <br> Begin | Starting Mile <br> Post | Ending Mile <br> Post | Length <br> (Miles) | Level of <br> Service |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1}$ | 355.96 | 363.28 | 7.42 | C |  |  |
| $\mathbf{2}$ | 363.28 | 363.8 | 0.52 | C |  |  |
| $\mathbf{3}$ | 363.8 | 367.01 | 3.21 | D |  |  |
| $\mathbf{4}$ | 367.01 | 367.84 | 0.83 | B |  |  |
| $\mathbf{5}$ | 367.84 | 385.22 | 17.38 | B |  |  |
| Overall Corridor LOS |  |  |  |  |  | C |

## Passing Lane Segment Conditions

## Passing Lane Segment 1 MP 355.96 to 363.28

Starting from Ted's Place (MP 355.96), the conditions remain consistent north for 7.42 miles with no passing lanes. Segment 1 is a rural flat plan two-lane highway with a speed limit of 65 mph . The Average Annual Daily Traffic (AADT) for this section is 9,600, with a truck percentage of 14.6 percent. The existing LOS for this section is C. This segment is affected by the Northern Integrated Supply Project (NISP) U.S. Highway 287 Realignment. As a result, this segment overall is a good candidate for an additional passing lane.

## Passing Lane Segment 2 MP 363.28 to 363.8

Segment 2 starts near Owl Cayon Rd (LCR 72) and ends .52 miles north of Owl Cayon Rd (LCR 72). This segment has no existing passing lanes. This segment is a rural mountainous two-lane highway with a speed limit of 65 mph . The Average Annual Daily Traffic (AADT) for this section ranges from 8,200 to 9,600 vehicles per day, with a truck percentage of 14.8 percent. The existing LOS for this section is $C$. As a result of geographic conditions, this segment is not good a candidate for an additional southbound passing lane.

## Passing Lane Segment 3 MP 363.8 to 367.01

Segment 3 starts .52 miles north of Owl Cayon Rd (LCR 72) and ends 4 miles north near RD W (CO RD 74E) (Red Feather Lakes Rd). This segment has an existing 3 mile long northbound passing lane (MP 363 to 366 ) and a 1 mile long southbound passing lane (MP 365 to 366 ). This segment is a rural, flat, two-lane highway with a speed limit of 65 mph . The Average Annual Daily Traffic (AADT) for this section is 8,200 vehicles per day, with a truck percentage of 14.8 percent. The existing LOS for this section is $C$. As a result of geographic and LOS conditions, this segment is an overall good candidate for an additional southbound passing lane.

## Passing Lane Segment 4 MP 367.01 to 367.84

Segment 4 starts around Red Feather Lakes Rd (Larimer County Rd74E) and ends 83 mile north near milepost 368 . This segment has an existing 0.4 mile long north bound passing lane (MP 367.4 to 367.5 ) and a 1 mile long southbound passing lane (MP 367.5 to 368 ) within this segment. This segment is a rural, flat, two-lane highway with a speed limit of 65 mph . The Average Annual Daily Traffic (AADT) for this section is 5,700 , with a truck percentage of 18.1 percent. The existing LOS for this section is $B$. Since this segment already has passing lanes, it isn't a good candidate for a passing lane adjustment.

## Passing Lane Segment 5 MP 367.84 to $\mathbf{3 8 5 . 2 2}$

Segment 5 starts north of W CR 80 and ends at the Colorado and Wyoming border. This segment has 6 existing north bound passing lanes and 2 southbound passing lanes. This segment is a rural flat plan two-lane highway with a speed limit of 65 mph. The Average Annual Daily Traffic (AADT) for this section is 4,300 with a truck percentage of 21 percent. The existing LOS for this section is B . As a result of the geographic location, this segment is an overall good candidate for an additional southbound passing lane. The Southbound section between milepost 368 and 378 is relatively flat.

Table 9 summarizes each segment's opportunity for a passing lane adjustment.
Table 9: Summary of Passing Area Segments

| Segment <br> Begin | Starting <br> Mile <br> Post | Ending <br> Mile <br> Post | Length <br> (Miles) | Existing <br> Southbound <br> Passing <br> Lane | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1}$ | 355.86 | 363.28 | 7.42 | No | Room for improvement since <br> this is within NISP project <br> limits |
| $\mathbf{2}$ | 363.28 | 363.8 | 0.52 | NO | No room for improvement <br> due to terrain. |
| $\mathbf{3}$ | 363.8 | 367.01 | 3.21 | Yes | There's an opportunity to <br> extend the southbound <br> passing lane. |
| $\mathbf{4}$ | 367.01 | 367.84 | 0.83 | Yes | Already has southbound <br> passing lane. |
| $\mathbf{5}$ | 367.84 | 385.22 | 17.38 | Yes | Existing northbound and <br> southbound passing lanes. <br> Good candidate for <br> additional southbound <br> passing lane. |

2.5.2.2 2041 Proposed

Figure 11 shows the 2041-year projections with proposed conditions following with Table 10 describing the results.

Figure 11: 2041 Proposed Conditions LOS


Table 10: 2041 Proposed Passing Conditions LOS

| Segment <br> Begin | Starting <br> Mile <br> Post | Ending <br> Mile <br> Post | Length <br> (Miles) | Level of <br> Service | Comments |
| :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{1}$ | 355.86 | 363.28 | 7.42 | A | Add 1.2-mile southbound <br> passing lane 3 miles north of LCR <br> 14 |
| $\mathbf{2}$ | 363.28 | 363.8 | 0.52 | C | No room for improvement due <br> to terrain. |
| $\mathbf{3}$ | 363.8 | 367.01 | 3.21 | A | Extending southbound passing <br> lane to MP 365.6. |
| $\mathbf{4}$ | 367.01 | 367.84 | 0.83 | B | Acceptable LOS. |
| $\mathbf{5}$ | 367.84 | 385.22 | 17.38 | B | Acceptable LOS. There is an <br> opportunity to improve this <br> section due to terrain. |
| Overall Corridor LOS |  |  |  |  |  |

Overall, the LOS will improve from C to A after making the proposed improvements.

### 3.0 Corridor Safety Improvement Projects

The safety improvement projects are determined using the crash data (Appendix A), pattern recognition (Appendix D), level of service safety, public involvement, and stake holder involvement. The public involvement matrix can be found in Appendix E. The projects are grouped as corridor passing lanes, general maintenance, intersection improvements, and non-intersection improvements.

### 3.1 Corridor Passing Lanes

The southbound passing lane projects are described in the segments from the 2041 proposed scenario. The project exhibits are located in Appendix B. Implementing these projects will result in a LOS of A for 2041.

### 3.1.1 NISP Area Passing Lane:

Adding a 1.2-mile southbound passing lane north of the intersection of US 287 and LCR 14 would improve the level of service from C to A. It is recommended to add this passing lane.

### 3.1.2 MP 363.5-365.6:

Extending the southbound passing lane to milepost 363.8 would improve the level of service from $D$ to A. It is recommended to extend the southbound passing lane.

### 3.1.3 MP 374.3 - 376.1:

There is an opportunity to add a passing lane to this area due to the terrain. It is recommended to add a southbound passing lane milepost 374.3 to milepost 376.1 .

### 3.2 General Maintenance

These projects can be accomplished through CDOT's Division of Maintenance and Operations.

### 3.2.1 Snow Fencing

MP 370 to 373 on the west side of US 287. CDOT maintenance reports this area gets a high snow accumulation due to the terrain. This measure would help reduce weather related crashes in this segment. Snow fencing has been shown to reduce property damage crashes by 23 percent within segments experiencing weather-related crashes.

### 3.2.2 Resurfacing and Crack Sealing

CDOT Online Transportation Information System (OTIS) gives roadway pavement conditions. This is the classification of the pavement condition and acceptable driving condition based on an assessment of smoothness, pavement distress, and safety, in the primary direction of travel. For this corridor, the overall pavement condition is moderate to low level. It is recommended that roadway resurfacing, and crack sealing is completed. Resurfacing poor pavements may reduce crashes by as much as 20 percent.

### 3.3 Intersection Improvements

The following sections discuss intersections with high crash frequency and / or moderate to potential for crash reduction. Concepts and Opinions of Probable Cost for these projects are provided in Appendix B \& C.

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### 3.3.1 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.

### 3.3.2 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.

### 3.3.3 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.

### 3.3.4 Red Mountain Road

US 287 MP 373.82
Classification: Undivided Unsignalized 3-leg Intersection
AADT: 4,300
Total Crashes: 2 (2 injury crashes, 1 fatal crash*)
LOSS: III (all collisions)
Crash Pattern: None detected. However, occuring to public feedback, this location experiences "near misses" when traffic is turning onto the highway.
Recommendation: Southbound left turn deceleration lane.
*Fatal crash occurred outside of the analysis timeframe but is considered in the benefit-cost and prioritization calculations

### 3.3.5 Bonner Springs Ranch Rd

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
3.3.6 Rest Area Entrance

US 287 MP 383.5
Classification: Undivided Unsignalized 3-leg Intersection
AADT: 4,300
Total Crashes: 2 (1 PDO crash, 1 fatal crash*)
LOSS: III (all collisions)
Crash Pattern: Approach turn
Recommendation: intersection realignment with High Lonesome Rd and southbound right turn deceleration lane.
*Fatal crash occurred outside of the analysis timeframe but is considered in the benefit-cost and prioritization calculations

### 3.3.7 CO 72 (Owl Canyon Rd)

US 287 MP 363.23
Classification: Undivided Unsignalized 3-leg Intersection
AADT: 8,200
Total Crashes: 6 ( 4 injury crashes, 1 fatal crash)
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.

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### 3.4 Non-Intersection Improvements

The following sections discuss non-intersections improvements with high crash frequency and / or moderate potential for crash reduction.

### 3.4.1 Cross Slope Correction

A flat spot analysis was performed along US 287 within the project limits. The CDOT design guide requires a minimum of 2 percent cross slope for proper drainage. An area is considered a flat spot when the cross slope along the roadway is less than 2 percent. Flat spots can cause weather related crashes due to improper drainage.

Current Conditions: There are 9 areas totaling 6.56 miles that have flat spots and weather-related crashes.
Recommendations: Improve each area 's cross slope. Ranging from 1.5 percent to 2.0 percent to match areas existing cross slope.

### 3.4.1.2 High Friction Surface Treatment

High Friction Surface Treatment (HFST) is a safety and pavement surface treatment that increases pavement friction to reduce crashes related to weather.. This is an alternative treatment to the Cross Slope Correction. Table 11 lists the pavement condition considerations from the High Friction Surface Treatment Site Selection and Installation Guide from the Federal Highway Administration.

Table 11: HFST Guidelines on Asphalt Pavements

| Existing Concrete Pavement Condition | HFST Allowable Usage |
| :---: | :---: |
| Project Length $\leq \mathbf{1 , 5 0 0}$ feet | YES |
| Project Length > 1,500 feet | MAYBE |
| Permanent Concrete Patching | YES |
| Non-permanent Concrete Patching | NO |
| Low Severity Cracking (hairline or smaller) | YES |
| Low Severity Joint Spalling (1 inch or less) | YES |
| Joint Spalling | NO |
| Broken Slabs | NO |
| Faulted Joints | NO |

Applying the guidance provided in Table 9, the roadway surface design life (DL) from CDOT OTIS was evaluated. In order to be considered a candidate for HFST, the current pavement condition needs to be moderate to high, which translates to a DL of 6 to 10 years.

Of the segments identified previously for cross slope correction, the segment of US 287 from milepost 376.5 to 378.25 (southbound) is a candidate for HFST since the DL falls in the 6 to 10 years of DL.

Recommendations: Use HFST for this section if field verification confirms that the pavement condition along this stretch makes it a good candidate.

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### 3.4.2 Wildlife Areas

Within the US 287 corridor, there are 3 areas with a crash pattern related to wildlife. Figure 12 shows those area based on milepost. It also shows current wildlife crossing locations.

Figure 12: Wildlife Exhibit


## Milepost 363 to 367 (Priority 3 )

Current Conditions: This section has a combination of rolling hills and flat terrain. There are no wildlife fencing or crossings in this section. There is only cattle fencing
Recommendations: Construct a wildlife crossing and wildlife fencing in this section. Low priority for this effort. This should be treated as a stand along project with support of Colorado Parks \& Wildlife, Larimer County and private landowners. Work with landowner to modify current fencing/install wildlife permeable/friendly fencing.

## Milepost 369 to 372 (Priority 2)

Current Conditions: This section has mostly flat terrain but includes roadway rock cuts on both the southern reaches near MP 369 and northern reaches near MP 372. There is a fenced and gated bridge and a minor structure used for stock underpass in this section. Both structures are open underneath, but fenced off where ROW and private land meet. Fencing along roadway is cattle fencing.
Recommendations: Fencing needs to be improved to facilitate wildlife movement. Add wildlife-exclusion fencing from the edge of the structure and continue to approximately MP 369 to the south and to approximately MP 372 to the north. Deer jump-outs should be constructed at $1 / 2$ mile intervals for the entire reach between MP 369 to 372 . Deer guards should be placed at each access point onto US 287 . Work with landowner to modify current fencing/install wildlife permeable/friendly fencing.

## Milepost 371 to 375

Based on conversation with Colorado Parks and Wildlife (CPW). Pronghorns are the most common species that occur within this area. Given pronghorn's reluctance to utilize underpasses, including under bridge structures, this area lends itself to an overpass and should be treated as a stand-alone project with support of CPW, Larimer County and private landowners.

## Milepost 378 to 383 (Priority 1 )

Current Conditions: This section has a combination of rolling hills and flat terrain. There are two open bridge wildlife structures in this section. The structures are open underneath. The open structure at milepost 379.2 is fenced of where ROW and private land meet. The open structure at milepost 381.5 is a deep ravine. Fencing along roadway is cattle fencing at both locations.
Recommendations: Install wildlife-exclusion fencing from the south edge of structure at 379.2 and continue south for a half a mile. From the north edge of structure 379.2 install wildlife exclusions fencing north to the structure a 381.5 and continue to half a mile north of the structure. Deer jump-outs should be constructed at $1 / 2$ mile intervals for the entire reach between 379.2 and 381.5. Deer guards should be placed at each access point onto US 287. Work with landowner to modify current fencing/install wildlife permeable/friendly fencing.

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### 3.4.3 Shoulder widening

Outside paved shoulders need to accommodate for vehicle breakdowns and emergency services. Bringing the outside paved shoulders up to design standard has shown to reduce crashes in that area. The CDOT Design guide recommends a minimum of 6 ft outside paved shoulder for this corridor. Figure 13 shows the areas where the paved shoulder is less than 6 feet.

Figure 12: Existing Shoulder Width Areas


Current Conditions: There are 10 areas totaling 7.47 miles that have outside paved shoulders less than 6 feet wide.
Recommendations: Improve each area's shoulder to a 6-foot minimum.

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### 4.0 Corridor Projects Cost Benefit Analysis

Each recommendation's benefit-cost ratio (BCR) was determined in accordance with CDOT procedures (see Appendix F for conceptual opinion of probable cost and summary of the BCR procedure)

Table 12: Project Benefit-Cost Ratios

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

In order to be eligible for FASTER safety program funding, a project must have a minimum benefit-cost ratio ( $B C R$ ) of 0.25 . Ideally, projects have benefits that are equal to or exceed their costs ( $B C R>=1.0$ ). Four of the projects have BCR above 0.25 and one project has a BCR above 1.0. These projects qualified for additional points during the project prioritization step.

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### 5.0 Project Prioritization

A prioritization process was developed to determine the relative implementation priority of the projects. The prioritization is not intended to be followed literally, only to provide insight into overall project development and implementation process. The amount and type of available project funding, for example, will influence which projects will occur and when.

The prioritization was based on several factors, including:

- The magnitude of the safety problem
- Countermeasure effectiveness
- Systemic safety improvement
- Public and agency feedback
- Other factors
- Project benefit-cost

Each project was evaluated against the above criteria using a point scale of 0 to 5 . The maximum number of points available was 27 . A summary of each prioritization criteria follows:

Criterion 1: Magnitude of the Safety Problem. The purpose of this criterion is to identify whether the project is located along a segment of highway or at an intersection that is currently experiencing a safety problem. Level-of-Service of Safety (LOSS) was used to determine whether a safety problem currently exists. LOSS III or LOSS IV locations were assigned points. Both severity and frequency of crashes was considered in this criterion.

Criterion 2: Countermeasure effectiveness. This criterion measures the ability of the project to address an identifiable crash pattern. For example, a segment of the corridor may have a higher-than-expected off-road right crash pattern. Projects within this segment that reduce the likelihood of these crashes (as measured by a documented Crash Modification Factor) receive points based on the project's ability to mitigate the crash pattern. If a project receives points for Criterion 2 Countermeasure Effectiveness it is not eligible for points under Criterion 3 Systemic Safety Improvement.

Criterion 3: Systemic Safety Improvement. This measures the ability of the project to preventatively address factors known to contribute to increased crash risk. A documented crash problem or pattern is not required to receive points under this criterion. For example, substandard highway shoulders are typically considered a contributing factor to off-road crashes. Projects that widen substandard shoulders would receive points under this criterion regardless of whether there is a pattern of crashes today.

Criterion 4: Public and Agency Feedback. Throughout the study process, locations of safety concern were identified by agency staff as well as the public. Projects located within areas of safety concern were awarded points if the project was identified as a problem by staff, the public, or both.

Criterion 5: Other Factors. This criterion allows for the scoring of additional points if there are significant other factors that aren't otherwise measured by other criteria. For example, projects within areas having recently experienced a severe or fatal crash not otherwise captured in Criterion 1 could score points in this category.

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Criterion 6: Project Benefit-Cost. The purpose of this criterion is to award points to projects that have a favorable benefit-cost.

Table 13: Project Prioritization summary

| Project | Criterion Score |  |  |  |  | Prioritization <br> Score |  |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 8 |
| 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 (OwI 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 |

### 6.0 Summary and Recommendations

In April 2023, CDOT initiated this study to assess safety improvement and mobility needs along US287 North of Ted's Place. Currently, some segments of the US 287 corridor have a higher-than-average crash rate compared to other similar rural highways, making it a good candidate for safety improvement.

Several potential safety improvement projects were identified and subjected to a prioritization process that considered a range of criteria including public feedback. These projects generally ranged from maintenance projects to construction of auxiliary lanes at intersections to highway widening to provide passing lanes.

CDOT's 10-year plan already identifies the potential for passing lanes as well as other safety improvements to be constructed in the relatively near future. Once future design and construction funding is identified, the recommendations from this study can be used to identify those improvements most urgently needed.

## Appendices

A. Crash Data
B. Geometric Concepts
C. Cost Data
D. Corridor Patterns
E. Public Comments Matrix
F. Benefit Cost Calculations
G. Prioritization Matrix

# Appendix A: <br> Crash Data 

\begin{tabular}{|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|c|}
\hline \multicolumn{21}{|c|}{CRASH LISTING} \\
\hline \multirow[t]{2}{*}{\#} \& Hwy \& MP \& Date \& Time \& Sever-ity \& Location \& Road Description \& \[
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\& \text { \#of of } \\
\& \text { ver }
\end{aligned}
\] \& Road Contour \& Road Condition \& Lighting \& Weather \& Ramp \& Accident Type \& Dir \& Vehicle Type \& Drugs/Alcohol \& Human Factor \& Speed \& Vehicle Moveme \\
\hline \& 287 \& 355 \& \({ }^{726212018}\) \& 3.55 PM \& No Iniuy (PDO) \& On Road \& Non-ntersection \& 2 \& Stright On Level \& Dy \& Dayight \& None \& N \& Sidessipe Same Direction \& North \& Passenger Carvan \& No Impaiment Suspected \& Aggressive Diving \& \({ }^{60}\) \& Passing \\
\hline \multirow[t]{2}{*}{\(\stackrel{1}{2}\)} \& 287 C \& 355 \& 9182018 \& 3.00 PM \& No Injur (PDO) \& On Road \& Intersection Related \& 2 \& Straigh On Level \& Dr \& Dayilight \& None \& N \& Overaking Tum \& North \& suv \& No Impaiment Suspected \& No Apparent Contributing Factor \& \({ }^{20}\) \& Making Lett Tum \\
\hline \& 287 C \& 355 \& 810012021 \& 12.00 AM \& No Injur (PDO) \& On Road \& Non-MTersection \& 1 \& Straght On Grade \& Dr \& Dark Un-Lighted \& None \& N \& WIid Animal \& South \& suv \& No Impaiment Suspected \& No Apparent Contributing Factor \& 50 \& Going Straight \\
\hline \begin{tabular}{l}
3 \\
4 \\
4 \\
\hline
\end{tabular} \& 287 \& 355 \& 111112021 \& 10.33 AM \& No Injur (PDO) \& Off Road Left \& Non-Mntersection \& 1 \& Cure On Grade \& Wet \& Daylight \& SnowSsleethail \& N \& Delineator Post \& North \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Contributing Factor \& \({ }_{5} 5\) \& Going straight \\
\hline \multirow[t]{2}{*}{5
6
6} \& \({ }^{287 \%}\) \& 355 \& \({ }^{1127272021}\) \& \({ }^{12,009 \mathrm{M}}\) \& No Iniuy (PDO) \& On Road \& Non-MInersection \& 1 \& Straight on Grade \& Dr \& Dark Un-Lighed \& None \& N \& Wild Animal \& South \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Contributing Factor \& 60 \& Going straigh \\
\hline \& 287 \& 355.1 \& 52681220 \& 10:15 PM \& No Injur (PDO) \& On Road \& Intersection Realated \& 2 \& Straight On Grade \& Dry \& Dak Lighted \& None \& N \& Sideswipe opposite Direction \& North \& Hitand Run - Unkrown \& No Impaiment Suspected \& No Aparaent Contributing Factor \& 0 \& Other \\
\hline \multirow[t]{2}{*}{28} \& \({ }^{2877}\) \& 355.1
3511 \& \({ }^{111512018}\) \& 9.45 AM \& No Injur (PDO) \& Off Road Left \& Non-ntersection \& 1 \& Staight On Level \& ley \& Daylight \& SnowSlieitralil
SnowSieetrail \& N \& Embankmentor Ditch \& South
West \& Passenger Carvan \& No Impaiments Suspected \& Dinver Inexereience \& 45
65 \& Going Stright \\
\hline \& \({ }^{2877}\) \& 355.1 \& \({ }_{1218132017}^{12017}\) \& 6:00 PM \& Evident Non-ITCapacaliaing (B) \& Off Road Right
On Road \& Non-Intersection \& 1 \& Curve On Grade \& Slushy \& Daylight
Dayight \& \(\frac{\text { SnowSileillal }}{\text { None }}\) \& \[
\frac{N}{N}
\] \& Overturning \& West \&  \& No Impaiment Suspected \& No Apparent Contributing Factor No Apparent Contributing Factor \& \[
\begin{aligned}
\& 65 \\
\& 60 \\
\& \hline 60
\end{aligned}
\] \& Drove Wrong Way Going Straight \\
\hline \(\stackrel{8}{9}\) \& \({ }^{287 \mathrm{c}}\) \& \begin{tabular}{|l|}
355.1 \\
355.2
\end{tabular} \&  \& \({ }_{6}^{8.55 \mathrm{AM}}\) \& No Injury (PDO) \& \({ }_{\text {On Road }}^{\text {On }}\) \& \begin{tabular}{l}
Non-Intersection \\
Non-Intersection
\end{tabular} \& \[
1
\] \& Straight On Level \& \(\frac{\mathrm{Dr}}{\mathrm{Dr}}\) \& Daylight
Dayjoght \& \begin{tabular}{l}
None \\
None
\end{tabular} \& \[
\frac{N}{N}
\] \& Wild Animal Wild Animal \& South \& Passenger Car/Van Passenger Car/Nan \& No Impairment Suspected No Impairment Suspected \& No Apparent Contributing Factor No Apparent Contributing Factor \& \[
\frac{60}{65}
\] \& Going Straight Going Straight \\
\hline \(1 \begin{aligned} \& 10 \\ \& 11 \\ \& 11\end{aligned}\) \& 287 \& 355.21 \& \(11 / 2112021\) \& 9:10 PM \& No nijur (PDO) \& On Road \& Non-Intersection \& 1 \& Straigh on Grade \& Dr \& Dark Un-Lighted \& None \& N \& Wild Animal \& South \& Pickup Tuckuvulity Van \& No Impaiment Suspected \& No Apparent Contributug Factor \& 65 \& Going Straight \\
\hline 12 \& 287 C \& 355.3 \& 6442017 \& 1:30 PM \& No Injur (PDO) \& Off Road Left \& Intersection \& 1 \& Curve On Level \& Dr \& Dayight \& None \& N \& Overuming \& South \& Pickup Tuckevulilit Van \& No Impaiment Suspected \& Driver Unfamiliar with Area \& 55 \& Making Right Tum \\
\hline \multirow[t]{2}{*}{13} \& 287 C \& \({ }^{355.36}\) \& 71312017 \& 8.52 PM \& No Injur (PDO) \& Off Road Left \& Non-MTeressection \& 1 \& Cune On Orade \& Dry \& Dark Un-Lighed \& None \& N \& Overuming \& North \& suv \& No Impaiment Suspected \& No Apparent Contributing Factor \& 65 \& Drove Wrong Way \\
\hline \& 287 C \& 355.4 \& 51312017 \& 3.00 PM \& No ITiuy (PDO) \& Off Road Left \& Non-Mnersection \& 1 \& Curve On Grade \& Dr \& Daylight \& None \& N \& Fence of Fence Part \& North \& suv \& No Impaiment Suspected \& No Apparent Contributing Factor \& 0 \& Diove Wrong Way \\
\hline \multirow[t]{2}{*}{15} \& \({ }^{2877}\) \& 355.5 \& 9/132018 \& \({ }^{5.04 \mathrm{AM}}\) \& No İiur (PDO) \& On Road \& Non-1ntersection \& 1 \& Striaght on Level \& Dr \& Dark Un-Lighed \& None \& N \& Wili Arimal \& Noth \& Pickup Tuckevulility Van \& No Impaiment Suspected \& No Apparent Contributing Factor \& \({ }_{55}^{65}\) \& Going Straigh \\
\hline \& 287 C \& 355.7 \& 711512020 \& 7.25 AM \& Possiblecoomplaintof thiur (C) \& Off Road Left \& Non-Mnersection \& 1 \& Cure On Grade \& Dr \& Dawn or Dusk \& Fog/smogismoke \& N \& Overuming \& North \& Pickup Tuckekulility Van \& No Impaiment Suspected \& No Apparent Contributing Factor \& 75 \& Drove Wrong Way \\
\hline \& 287 C \& 355.7 \& 111002018 \& 9.55 AM \& Evident Noor-1.apapaitaing (B) \& Off Road Left \& Non-nteresection \& 1 \& Stright On Level \& Dry \& Daylight \& None \& N \& Overuming \& Noth \& suv \& No Impaiment Suspected \& Other Factor(Desscribe in Narative) \& 65 \& Going Striagh \\
\hline 18 \& \({ }^{287}\) \& 355.8 \& 61212018 \& 3.03 PM \& No Iniuy (PDO) \& On Road \& Non-1.1tersection \& 1 \& Curre On Level \& Dr \& Daylight \& None \& N \& Widid Animal \& South \& Pickup Tuckekutility Van \& No Impaiment Suspected \& No Apparent Contributing Factor \& \({ }^{65}\) \& Noiding objececteneicicl in Ro \\
\hline 19
20 \& \({ }_{\text {287c }}^{287}\) \& \({ }_{\substack{355.85 \\ 355.9}}\) \& \({ }_{7}^{5129292212}\) \& \(\frac{12.00 \mathrm{AM}}{11: 00 \mathrm{AM}}\) \& Evident Non-ruverapapaltaing (B) \& Off Road Right
Of Road Right \& \({ }_{\text {In }}^{\text {Intersection }}\) \& 1 \& Curve On Level Straight On Leve \& \[
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\& \text { Rain } \\
\& \hline \text { None }
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\] \& N \&  \& South
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Passenger carvan \& No Impairment Suspected No Impairment Suspected \& Driver Unfamiliar with Area Driver Unfamiliar with Area \& 60
65 \& \begin{tabular}{l}
Going Straight \\
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\end{tabular} \\
\hline 21 \& 287 \& 355.96 \& 1111822019 \& 6:00 PM \& No injur (PDO) \& On Road \& Non-Ineresection \& 1 \& Cure O O G Grade \& Dr \& Dark Un-Lighted \& None \& N \& Wild Arimal \& North \& Passenger CarNan \& No Impaiment Suspected \& No Apparent Conntibuting Factor \& \({ }_{60}\) \& Going Straight \\
\hline 22 \& 287 C \& 355.98 \& 111772018 \& 9.00 AM \& No Injur (PDO) \& Off Road Right \& Non-Mnersection \& 1 \& Cure O O G Grade \& ley \& Daylight \& SnowSİeetral \& N \& Fence of Fence Part \& South \& Pickup Tuckekvility Van \& No Impaiment Suspected \& No Apparent Contributung Factor \& \({ }^{60}\) \& Drove Wrong Way \\
\hline \multirow[t]{2}{*}{23} \& 287 C \& 355.99 \& 51122018 \& 11:05 AM \& No Injur (PDO) \& On Road \& At Diveway Access \& 2 \& Straight on Level \& Dr \& Dayiligh \& None \& N \& Rear End \& North \& suv \& No Impaiment Suspected \& Diver Preocupied \& 5 \& Backing \\
\hline \& 287 C \& 356 \& 107712019 \& 3.32 AM \& No Injur (PDO) \& On Road \& Non-Mntersection \& 1 \& Straight on Level \& dry \& Dakk Lighted \& None \& N \& Wid Animal \& Noth \& Pickup Tuckekulity Van \& No Impaiment Suspected \& No Apparent Contributing Factor \& 65 \& Going straight \\
\hline 25 \& 287 C \& 356 \& 61122018 \& 9:45 AM \& No Iniuy (PDO) \& On Road \& Non-1ntersection \& 2 \& Curve On Level \& Dr \& Dayligh \& None \& N \& Sideswipe Opposite Direction \& North \& Passenger Carvan \& No Impaiment Suspected \& Astep at the Wheel \& 65 \& Going Straight \\
\hline 26 \& 287 C \& 356 \& 212412021 \& 9.45 PM \& No Injur (PDO) \& Off Road Right \& Non-Mteresection \& 1 \& Cure On Grade \& Snowy \& Dark Un-Lighted \& Snowsileetral \& N \& Traffic Sign or Post of Ovenead Sign Stucture \& South \& Trucks ouer 10 k (ous \& No Impaiment Suspected \& No Apparent Contributing Factor \& \({ }_{5}\) \& Going Striagt \\
\hline 27 \& 287 C \& 356.01 \& \(11 / 242017\) \& 10.45 AM \& No Iniur (PDO) \& Off Road Right \& Non-MTersection \& 1 \& Cune On Grade \& Dr \& Dayight \& None \& N \& Trees or Shrubs \& South \& Passenger Carvan \& No Impaiment Suspected \& Diver Inexperience \& 60 \& Drove Wrong Way \\
\hline 28 \& 287 C \& 356.2 \& 103002220 \& 3.10 PM \& No Iniur (PDO) \& On Road \& Non-MTressection \& 2 \& Curve On Grade \& Dry \& Dayight \& None \& N \& deswipe Same Direction \& North \& Truck over Ook iousses \& No Impaiment Suspected \& No Apparent Contributing Factor \& \({ }^{65}\) \& Weaving \\
\hline 29 \& 287 C \& 356.2 \& 42712017 \& 9:40 AM \& No Iniuy (PDO) \& On Road \& Non-1ntersection \& 1 \& Curve On Level \& Dr \& Dayight \& None \& N \& Wild Animal \& North \& suv \& No Impaiment Suspected \& No Apparent Contributun Factor \& 65 \& Going Striagt \\
\hline \begin{tabular}{l}
30 \\
31 \\
\hline 1
\end{tabular} \& 2876 \& \({ }_{3}^{356.2}\) \& \({ }^{6 / 1312017}\) \& \({ }^{11: 355 \mathrm{P}}\) \& No İiur (PDO) \& On Road \& Non-nhersececion \& 1 \& Curve On Grade \& Dry \& Dark Un-Lighted \& None \& N \& Wideswid A Ampal \& North \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Conntibuting Factor \& 55
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356.2 \\
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\end{tabular} \& \[
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a \& Non-hiersection \& ${ }_{1}$ \& ${ }_{\text {Cune On Crade }}^{\text {Straigt On Level }}$ \& loy
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65 \& Drove Wrong Way Going Straight <br>
\hline \& 287 C \& 356.3 \& 92922018 \& ${ }^{7} 7.45 \mathrm{PM}$ \& Possible/Complaint of fiuy (C) \& On Road \& Non-Mnersection \& 1 \& Straigh On Level \& Dr \& Dark Un-Lighted \& None \& N \& Wid Animal \& North \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Contributing Fador \& 60 \& Going Straight <br>
\hline - 34 \& 287 \& 356.5 \& 21992018 \& 4:11 PM \& No Injuy (PDO) \& Off Road Right \& Non-1ntersection \& 1 \& Curve On Level \& cy \& Dayight \& SnowSİeethal \& N \& Embankment or Ditch \& South \& Pickup Tuckevulility Van \& No Impaiment Suspected \& No Apparent Contributung Factor \& 55 \& Going Striagh <br>
\hline \& 287 C \& 356.5 \& 101/320018 \& 6.47 PM \& No Injur (PDO) \& On Road \& Non-Mnersection \& 1 \& Curve On Grade \& Wet \& Dark Un-Lighted \& Rain \& N \& Widi Animal \& Noth \& Pickup Tuckululity Van \& No Impaiment Suspected \& No Apparent Contributing Factor \& 65 \& Going Straight <br>
\hline \multirow[t]{2}{*}{-} \& 287 C \& 356.6 \& 61222019 \& 10.45 PM \& No Iniuy (PDO) \& On Road \& Non-MThersection \& 1 \& Curve On Crade \& Dr \& Dark Un-Lighted \& None \& N \& Wid Animal \& North \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Contributung Factor \& ${ }^{65}$ \& Going straight <br>
\hline \& ${ }^{2877}$ \& 356.9

359 \& 21702019 \& 7:00 PM \& No ITiuy (PDO) \& On Road \& Non-1ntersection \& 1 \& Curve On Level \& Dry \& Dark Un-Lighted \& None \& N \& Large Boulder \& North \& suv \& No Impaiment Suspected \& No Apparent Contributing Factor \& | 40 |
| :--- |
| 45 | \& Going Straight <br>

\hline \multirow[t]{2}{*}{38} \& \& 356.9 \& 21012019 \& 7:00 PM \& No Injuy (PDO) \& On Road \& Non-Mntersection \& 1 \& Curre On Level \& Dry \& Dark Un-Lighed \& None \& N \& Large Bulder \& Noth \& Passenger CarNan \& No Impaiment Suspected \& No Apparent Contributug Factor \& ${ }_{5} 5$ \& Going Striagh <br>
\hline \& 287 C \& 356.9 \& 11122019 \& 9:00 AM \& No Injur (PDO) \& On Road \& Non-Mnersection \& , \& Curve On Level \& Dr \& Dayight \& None \& N \& Widid Animal \& South \& suv \& No Impaiment Suspected \& No Apparent Contributing Factor \& 60 \& Going Straight <br>
\hline 40 \& 287 \& 356.9 \& 6661220 \& 5.30 AM \& No Injur (PDO) \& On Road \& Non-ntersection \& 1 \& Curve On Crade \& Dr \& Dayight \& None \& N \& Wild Animal \& South \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Contributing Factor \& 60 \& Going Straight <br>
\hline 41 \& 287 C \& 357 \& 82242019 \& 10:40 AM \& No Injuy (PDO) \& On Road \& Non-Mnersection \& 1 \& Curve On Grade \& Dry \& Dayight \& None \& N \& Wid Animal \& South \& wTraier \& No Impaiment Suspected \& No Apparent Contribuing Factor \& ${ }^{65}$ \& Going Striagt <br>
\hline \multirow[t]{2}{*}{42} \& 287 C \& 357 \& 10/3120019 \& 1:15 PM \& No Injuy (PDO) \& On Road \& Non-MTeressecioon \& 2 \& Straght On Level \& Dry \& Dayight \& None \& N \& Sideswipe Opposite Direction \& South \& Hitand Run - Unkrown \& No Impaiment Suspected \& No Apparent Contributug Factor \& 0 \& Weaving <br>
\hline \& 287 C \& 357 \& 111222019 \& 6:10 PM \& No Injur (PDO) \& On Road \& Non-Mnersection \& 2 \& Straigh On Level \& Dr \& Dark Un-Lighted \& None \& N \& Sideswipe Opposite Direction \& South \& Hitand Run - Unkrown \& No Impaiment Suspected \& No Apparent Contributing Factor \& 0 \& Weaving <br>
\hline 44 \& 287 \& 357 \& 414212018 \& 10.57 AM \& No Injur (PDO) \& On Road \& Non-1ntersection \& 2 \& Straight On Grade \& Dr \& Dayight \& Wind \& N \& Venicle Cargo or Debis \& Noth \& Hitand Run - Unkrown \& No Impaiment Suspected \& No Aparent Contributing Factor \& 0 \& Going Straight <br>
\hline \multirow[t]{3}{*}{} \& 287 C \& 357 \& 51812021 \& 12:00 AM \& No Injur (PDO) \& On Road \& Intersection \& 1 \& Straigh On Level \& Dr \& Dawn or Dusk \& None \& N \& Wilid Animal \& North \& Piokup Tuckuculity Van \& No Impaiment Suspected \& No Apparent Contributun Factor \& 45 \& Going Straight <br>
\hline \& 287 C \& 357 \& $111 / 22021$ \& 6.30 PM \& No Iniur (PDO) \& On Road \& Non-Mneresection \& 1 \& Straght On Level \& Dr \& Dark Un-Lighted \& None \& N \& Wild Animal \& North \& Passenger Carvan \& No Impaiment Suspected \& No Aparaent Contributing Factor \& 75 \& Going straight <br>
\hline \& 287 C \& 337.01 \& 72321220 \& 9.00 PM \& No Iniuy (PDO) \& On Road \& Non-1neressection \& 1 \& Curve On Level \& Dry \& Dark Un-Lighted \& None \& N \& Wild Arimal \& North \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Contributurg Factor \& ${ }_{60} 5$ \& Going Straight <br>
\hline 48 \& 2876 \& 357.2 \& 2112018 \& 9:48 AM \& No Injur (PDO) \& Off Road Left \& Non-Intersection \& 1 \& Straght On Level \& Sussy \& Dayight \& None \& N \& Large Buluer \& Noth \& Trucks over 10k/Busses
over 15 Passengers \& No Impaiment Suspected \& No Apparent Contributing Factor \& ${ }^{50}$ \& Weaving <br>
\hline 49 \& 287 \& 357.4 \& 711512018 \& 4:30 PM \& No Itiur (PDO) \& Off Road Left \& Non-TMeresection \& 1 \& Straight On Grade \& Wet \& Daylight \& Rain \& N \& Embankment or Ditch \& North \& \& No Impaiment Suspected \& No Apparent Contributing Factor \& ${ }_{60}$ \& Going Straight <br>
\hline 50 \& 287 \& 357.4 \& 51312017 \& 8.55 AM \& No Iniuy (PDO) \& On Road \& Non-Mnersection \& 2 \& Curve On Grade \& Dr \& Daylight \& None \& N \& Sideswipe Opposite Direction \& South \& suv \& No Impaiment Suspected \& Asseep at the Wheel \& 67 \& Soing Striagh <br>
\hline 51 \& 287 C \& 357.5 \& 5/132019 \& 7:40 AM \& Evident Non-ITcapacitaing (B) \& On Road \& Non-Mntersection \& 4 \& Straigh On Grade \& Dr \& Dayight \& None \& N \& Rear End \& South \& Truck over Ookbusses \& No Impaiment Suspected \& No Apparent Contribuing Factor \& 50 \& Going Straigh <br>
\hline \multirow[t]{3}{*}{} \& ${ }^{2877}$ \& ${ }^{355.04}$ \& ${ }^{8,3121220}$ \& ${ }_{\text {c }}^{\text {5.5.5 AM }}$ \& No Iniuy ( PDO ) \& Offroad Left \& Non-1tersection \& 1 \& Striaht on Level \& $\mathrm{Dr}_{\mathrm{or}}$ \& Daylight \& None \& N \& Wild Arimal \& Noth \& Passenger Carv \& Noilmpaiments Suspected \& No Apparent Contributity fa \& ${ }_{65}^{65}$ \& Going Striagh <br>
\hline \& 288 \& 358.213 \& ${ }^{1048282021}$ \& ${ }_{1} \mathbf{1 2 . 0 0 9 \mathrm { Am }}$ \& No Inury (PDO) \& On Road \& Non-Intersection \& 1 \& Straight on Grade \& Dry \& Darkunalighted \& None \& N \& Wild Aninal \& South \& Pasasegyer alvan
Passenger Coarvan \& Noimpaiment Suspececed \& No Apparenent Constribulung Factor \& ${ }_{65}^{65}$ \& Going stright <br>
\hline \& 287 C \& 35.5 \& 8912020 \& 4:17 AM \& No Ijuy (PDO) \& On Road \& Non-1ntersection \& 1 \& Straight on Level \& Dry \& Dark Un-Lighed \& None \& N \& Wild Anim \& South \& Trucks over Ookeluses \& No Impaiment Suspected \& No Apparent Contributing Factor \& ${ }_{5}$ \& Going Straight <br>
\hline 56 \& 287 C \& 359.5 \& 21881221 \& 12:00 AM \& Evident Non-ITcapacitiaing (B) \& On Road \& At diveway Accoss \& 2 \& Straight on Level \& Dry \& Daylight \& None \& N \& Overaking Tur \& North \& Thucks over 10kekusses \& No Impaiment Suspected \& No Apparent Contributing Factor \& 40 \& Passing <br>
\hline \multirow[t]{4}{*}{} \& 287 \& 359.8 \& 21612018 \& ${ }^{6.59 P M}$ \& Evident Non-ITcapapataing (8) \& On Road \& Non-MTeresection \& 2 \& Straight on Grade \& Dry \& Dark Un-Lighled \& None \& N \& Other Mon-COllision \& North \& Pickup T Tuckutulity van \& Noimpaimmen Suspected \& No Apparent Contributug Facior \& 65 \& Going Striaht <br>

\hline \& ${ }^{287 \%}$ \& ${ }_{\substack{359.9 \\ 360}}$ \& 101262020 \& ${ }^{11,32 \mathrm{AM}}$ \& No iniur (PDO) \& Off Road Right \& Non-ntersection \& 1 \&  \& Snowy \& Dayligh \& ${ }_{\text {None }}^{\text {None }}$ \& n \&  \& | South |
| :--- |
| North | \& Passenger carvan \& Noimpaiment Suspected \& No Apparent Contriuting factor \& 65

65 \& (iore Wrong Way <br>
\hline \& 287 \& 360 \& 618722021 \& $11: 35 \mathrm{AM}$ \& No Inury (PDO) \& On Road \& Non-ITHersececion \& 1 \& ${ }_{\text {Staigh O }}$ \& Dry \& \& None \& N \& Other Obiect \& North \& Pickup Tuckekulity Van \& No Impaiment Suspected \& No Apparent Contributing facaor \& ${ }^{65}$ \& Going straight <br>
\hline \& 287c \& 360.1
360.4 \& ${ }_{\text {l/3212017 }}^{4 / 217}$ \&  \& No Iniuy (PDO) \& On Road \& Non-1tersection \& \& Straight on Level
Straigt On Level \& Wet \& Dark Un-Lighled \& None
None \& n \& Wlid Animal \& ${ }_{\text {South }}^{\text {South }}$ \& Passenger carvan
Passenger carvan \& No Impairment Suspected \& No Apparent Contributin Facior \& 60
65 \& Soding Soing Straight <br>
\hline \multirow[t]{2}{*}{} \& 287 \& 360.8 \& 101992018 \& ${ }^{9.35 \mathrm{PM}}$ \& Possiblecomplain of tiury ${ }^{\text {c }}$ \& On Road \& Non-M.tersesection \& 1 \& Straight on Grade \& Dry \& Dark Un-Lighed \& None \& N \& Domestic Animal \& North \& Pickup Tuck \& No Impaimment Suspected \& No Apparent Contributing Factor \& 65 \& Soing striagt <br>
\hline \& 2876 \& 361 \& 41882017 \& ${ }^{6} .47 \mathrm{AM}$ \& No Injur (PDO) \& On Road \& Non-1ntersection \& 1 \& Straght On Level \& Dr \& Daylight \& None \& N \& Widid Animal \& North \& Motor Ho \& No Impaiment Suspecte \& No Apparent Conntibuting Factor \& ${ }_{65}$ \& rright <br>
\hline \multirow[t]{2}{*}{} \& ${ }^{837}$ \& 361.03 \& \& 1:44AM \& Possiblecomplaint ofn \& Offroad Left \& Noon-1neressection \& 1 \& Striaght on Level \& Dry \& Dayligh \& None \& N \& Trees or Shrubs \& South \& \& Noimpaiment Suspectied \& Assep a the Wheel \& ${ }^{65}$ \& straight <br>
\hline \& 88C \& 361.1 \& 3612019 \& 11:08 ${ }^{\text {am }}$ \& Fala (K) \& On Road \& Non-1ntersection \& 2 \& Straght on Grade \& Dr \& Dayligh \& None \& N \& Head on \& South \& suv \& Noimpaiment Suspected \& No Apparent Contributing facor \& \& Drove Wrong Way <br>
\hline ${ }_{\substack{68 \\ 68 \\ 68}}$ \& ${ }^{2877}$ \& ${ }^{3661.1}$ \& ${ }^{212232019} 1$ \& ${ }_{6} 9.52 \mathrm{Pam}$ \&  \& Off Roas Right \& Non-n-10ersecsection \& 1 \& ${ }_{\text {Sta }}$ Straight on ol crade \& $\stackrel{\text { ly }}{\text { by }}$ \& Darkunumitioled \& None \& $\stackrel{\text { N }}{ }$ \& Fence orverinence Part \& North \& $\xrightarrow{\text { Piokup Tuckevtity Van }}$ Passenge Carvan \& Noimpairment Suspecied \& No Apparenen Continibuting \& ${ }_{75}^{45}$ \& Passing <br>
\hline 69 \& 2820 \& 361.7 \& 71122017 \& ${ }^{5.40 \mathrm{AM}}$ \& No Iniur (PDO) \& On Road \& Non-n新section \& 1 \& Straight on Grade \& Dr \& Damn or ousk \& None \& N \& Wid Animal \& South \& Pickup Tuck vuility \& No Impairment Suspected \& No Apparent Constributing Faid \& ${ }_{65}^{65}$ \& oing straght <br>
\hline ${ }_{71} 7$ \& ${ }^{2877}$ \& ${ }_{362}^{3617}$ \& $\frac{9802017}{10132019}$ \& ${ }_{\text {chem }}^{11: 49 \mathrm{PM}}$ \& No niury (PDO) \& OnRoad \&  \& $\frac{1}{2}$ \& ${ }_{\text {Straight }}$ Grade \& $\frac{\mathrm{Dr}}{\mathrm{Dr}}$ \& Dark Un-Lighted \& None \& N \& Wilid Animal \& Noth \& Pickup Truckutilly van
Pickup Tuckutuly
an \& No Impaimment Suseed \& No Apparant Contributing factor \& 65
15
15 \& (oing Straigh Sowint <br>
\hline 72 \& 287 \& 362.1 \& 52282018 \& ${ }^{\text {9.20 PM }}$ \& No lijur ( PDO ) \& On Road \& Non-MTersection \& \& Straight on Level \& Dry \& Dark Un-Lighed \& None \& N \& Widid Animal \& North \& suv \& No Impaiment Susped \& No Apparent Contributurg Factor \& 60 \& Going Straight <br>
\hline 73 \& 287 \& 362.15 \& 82242020 \& 7:30 PM \& No Inuy (PDO) \& On Road \& Non-MInersection \& 2 \& Straight on Level \& Dr \& Daylight \& None \& N \& Rear End \& North \& Passenger Carvan \& No Impaiment Suspected \& No Apparent Contributurg Factor \& 55 \& Going Straight <br>
\hline 74 \& 287 C \& 332.55 \& 114/2019 \& 11:10 AM \& No Injuy (PDO) \& On Road \& Intersection Related \& 1 \& Striaght on Level \& Dry \& Dayligh \& None \& N \& Overuming \& South \&  \& No Impaiment Suspected \& Diver inexperience \& ${ }^{65}$ \& Drove Wrong Way <br>
\hline 75 \& 287 C \& 362.6 \& 82682019 \& ${ }^{12: 00 ~ P M ~}$ \& No Injur (PDO) \& On Road \& At Diveway Access \& 2 \& Straight on Level \& Dry \& Dayight \& None \& N \& Rear End \& Noth \& Trucs over 10kekusses \& No Impaiment Suspected \& No Apparent Conntibuting Factor \& ${ }^{60}$ \& Going Stright <br>
\hline ${ }_{77}^{76}$ \& ${ }^{288 \mathrm{C}}$ \& ${ }_{362.75}^{3628}$ \& $\frac{91 / 512200}{2112017}$ \& ${ }_{\text {c }}^{6.30 \mathrm{AM}}$ \& $\xrightarrow{\text { No iniul (PDO) }}$ \&  \&  \& $\stackrel{1}{2}$ \& Striaht On Grade \& ${ }_{\text {dry }}^{\text {coy }}$ \& Dawn or Dusk \& None \& N \& Wild Arimal \& North
South \& Piockup Tuuckutuitr van
Passenger carvan \& Nolmpiiments Suspected \& No Apparent Contibibitf Factor \& 60
55 \& $\frac{\text { Soing striagh }}{\text { Coing Straigt }}$ <br>
\hline ${ }_{78}$ \& 2887 \& 362.9 \& ${ }^{21122612020}$ \& ${ }_{3}$ 3.07 PM \& Evident Non-Incapacilitaing (B) \& Off Road Right \& Non-mpersection \& 1 \& Cure On Grade \& Wet \& Daylight \& Rain \& N \& Other Non-Collision \& North \& Trucss over 10 OkBusese \& No Impaiment Suspecied \& Diviver Unlamiliar with Area \& ${ }^{65}$ \& Drove Wrong Way <br>
\hline \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& \& <br>
\hline
\end{tabular}



Crash Listing, Page 2


Geometric
















# Appendix C: <br> Cost Data 


















# Appendix D: 

Corridor

## Patterns

Location - Route: 287 MP: 355 to 355.89 :: From: 1/1/2017 to 12/31/2021

Patterns
Vehicles: Single Vehicle Accidents[14]
Location:Off Road Left[6]

Location - Route: 287 MP: 355.1 to 356.09 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 14 INJ: 4 FAT: 0

## Patterns

Vehicles: Single Vehicle Accidents[17]
Location:Off Road[10]
Location - Route: 287 MP: 355.2 to 356.21 :: From: 1/1/2017 to 12/31/2021
PDO: 14 |NJ: 4 FAT: 0

## Patterns

Location - Route: 287 MP: 355.3 to 356.32 :: From: 1/1/2017 to 12/31/2021
PDO: 13 INJ: 6 FAT: 0
$\square$ Patterns_

Location - Route: 287 MP: 355.4 to 356.45 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 11 INJ: 6 FAT: 0

## Patterns

Location - Route: 287 MP: 355.5 to 356.59 :: From: 1/1/2017 to 12/31/2021
PDO: 12 INJ: 6 FAT: 0


Location - Route: 287 MP: 355.6 to 356.71 :: From: 1/1/2017 to 12/31/2021
PDO: 13 |NJ: 6 FAT: 0

## Patterns

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 355.7 to 356.82 :: From: 1/1/2017 to 12/31/2021
PDO: 13 INJ: 4 FAT: 0


Location - Route: 287 MP: 355.8 to 356.94 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 16 INJ: 4 FAT: 0

## Patterns

Location - Route: 287 MP: 355.9 to 356.97 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 16 INJ: 3 FAT: 0


Location - Route: 287 MP: 356 to 357.08 :: From: 1/1/2017 to 12/31/2021
PDO: 17 INJ: 3 FAT: 0
Patterns
Location: On Road[18]
Crash Type:Wild Animal[11]

Location - Route: 287 MP: 356.1 to 357.17 :: From: 1/1/2017 to 12/31/2021
PDO: 16 |NJ: 3 FAT: 0
$\quad$ Patterns
Location: On Road[18]
Crash Type:Wild Animal[11]

Location - Route: 287 MP: 356.2 to 357.17 :: From: 1/1/2017 to 12/31/2021
PDO: 13 INJ: 2 FAT: 0
Patterns
Location: On Road[14]
Crash Type:Wild Animal[9]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 356.3 to 357.25 :: From: 1/1/2017 to 12/31/2021
PDO: 14 |NJ: 0 FAT: 0


Location - Route: 287 MP: 356.4 to 357.34 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 14 INJ: 0 FAT: 0

|  | Patterns |
| :--- | :--- |
| Location:On $\operatorname{Road}[12]$ |  |

Location - Route: 287 MP: 356.5 to 357.46 :: From: 1/1/2017 to 12/31/2021


## Patterns

Location:On Road[12]
Location - Route: 287 MP: 356.6 to 357.57 :: From: 1/1/2017 to 12/31/2021
PDO: 13 |NJ: 1 FAT: 0

## Patterns

Location: On Road[12]
Location - Route: 287 MP: 356.7 to 357.65 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 13 INJ: 1 FAT: 0


Location - Route: 287 MP: 356.8 to 357.77 :: From: 1/1/2017 to 12/31/2021
PDO: 13 INJ: 1 FAT: 0


Location - Route: 287 MP: 356.9 to 357.88 :: From: 1/1/2017 to 12/31/2021
PDO: 9 INJ: 1 FAT: 0
Patterns

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 359.8 to 360.81 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 5 INJ: 1 FAT: 0


Location - Route: 287 MP: 359.9 to 360.91 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ 1 FAT: 0


Location - Route: 287 MP: 360 to 361.01 :: From: 1/1/2017 to 12/31/2021

## PDO: 3 INJ: 1 FAT: 0



Location - Route: 287 MP: 360.1 to 361.11 :: From: 1/1/2017 to 12/31/2021
PDO: 2 |NJ: 2 FAT: 1


Location - Route: 287 MP: 360.2 to 361.21 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 2 FAT: 1


Location - Route: 287 MP: 360.3 to 361.3 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 2 FAT: 1


Location - Route: 287 MP: 360.4 to 361.4 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ: 2 FAT: 1


Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 360.5 to 361.5 :: From: 1/1/2017 to 12/31/2021
PDO: 2 |NJ: 2 FAT: 1


Location - Route: 287 MP: 360.6 to 361.6 :: From: 1/1/2017 to 12/31/2021
PDO: 2 |NJ: 3 FAT: 1


Location - Route: 287 MP: 360.8 to 361.8 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 1


Location - Route: 287 MP: 360.9 to 361.9 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 1


Location - Route: 287 MP: 361 to 362 :: From: 1/1/2017 to 12/31/2021
PDO: 3 |NJ: 2 FAT: 1
Patterns

Location - Route: 287 MP: 361.1 to 362.1 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0


Location - Route: 287 MP: 362.6 to 363.58 :: From: 1/1/2017 to 12/31/2021
PDO: 16 INJ: 3 FAT: 1


Location - Route: 287 MP: 362.7 to 363.68 :: From: 1/1/2017 to 12/31/2021


## Patterns

Lighting: Dawn or Dusk[5]
Road Condition: Wet Road[5]
Location - Route: 287 MP: 362.8 to 363.78 :: From: 1/1/2017 to 12/31/2021
PDO: 19 |NJ: 4 FAT: 0
Patterns
Road Condition:Wet Road[6]
Location - Route: 287 MP: 362.9 to 363.89 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 19 INJ: 3 FAT: 0


Location - Route: 287 MP: 363 to 364.01 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 17 INJ: 4 FAT: 0


Location - Route: 287 MP: 363.1 to 364.14 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 13 [NJ: 5 FAT: 0

## Patterns

Crash Type:Total Fixed Objects[7]
Location - Route: 287 MP: 363.2 to 364.25 :: From: 1/1/2017 to 12/31/2021
PDO: 15 INJ: 5 FAT: 0
Patterns

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 363.3 to 364.34 :: From: 1/1/2017 to 12/31/2021
PDO: 12 |NJ: 3 FAT: 0


Location - Route: 287 MP: 363.4 to 364.44 :: From: 1/1/2017 to 12/31/2021
PDO: 11 INJ: 3 FAT: 0


Location - Route: 287 MP: 363.5 to 364.53 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 11 INJ; 3 FAT: 0


Location - Route: 287 MP: 363.6 to 364.62 :: From: 1/1/2017 to 12/31/2021
PDO: 11 INJ: 2 FAT: 0
$\square$ Patterns

Location - Route: 287 MP: 363.7 to 364.72 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 9 INJ: 2 FAT: 0

## Patterns

Location:On Road[9]
Location - Route: 287 MP: 363.8 to 364.82 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 INJ: 2 FAT: 0

## Patterns

Location: On Road[10]
Crash Type:Wild Animal[7]
Location - Route: 287 MP: 363.9 to 364.91 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 INJ: 3 FAT: 0

## Patterns

Location: On Road[11]
Crash Type:Wild Animal[8]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 364 to 365 :: From: 1/1/2017 to 12/31/2021
PDO: 9 INJ: 3 FAT: 0

|  | Patterns |
| :--- | :--- |
| Location: On Road[11] <br> Crash Type:Wild Animal[8] |  |

Location - Route: 287 MP: 364.1 to 365.1 :: From: 1/1/2017 to 12/31/2021
PDO: 9 INJ: 3 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Location: On Road[11] <br> Crash Type:Wild Animal[8] |

Location - Route: 287 MP: 364.2 to 365.2 :: From: 1/1/2017 to 12/31/2021
PDO: 10 |NJ: 2 FAT: 0

## Patterns

Location: On Road[10]
Crash Type:Wild Animal[7]
Location - Route: 287 MP: 364.3 to 365.3 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 2 FAT: 0


Location - Route: 287 MP: 364.4 to 365.39 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 2 FAT: 0


Location - Route: 287 MP: 364.5 to 365.48 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 2 FAT: 0

## Patterns

Lighting:Dark - Unlighted[7]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 364.6 to 365.58 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 2 FAT: 0


Location - Route: 287 MP: 364.7 to 365.68 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 2 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Lighting:Dark - Unlighted[6] |

Location - Route: 287 MP: 364.8 to 365.78 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 2 FAT: 0

## Patterns

Lighting:Dark - Unlighted[5]
Location - Route: 287 MP: 364.9 to 365.9 :: From: 1/1/2017 to 12/31/2021

## PDO: 6 INJ: 2 FAT: 0



Location - Route: 287 MP: 365.1 to 366.12 :: From: 1/1/2017 to 12/31/2021
PDO: 12 INJ: 2 FAT: 0

## Patterns

Location:Off Road Right[6]
Location - Route: 287 MP: 365.2 to 366.23 :: From: 1/1/2017 to 12/31/2021
PDO: 11 INJ: 3 FAT: 0

Patterns

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 365.3 to 366.33 :: From: 1/1/2017 to 12/31/2021
PDO: 11 INJ: 3 FAT: 0


Location - Route: 287 MP: 365.4 to 366.44 :: From: 1/1/2017 to 12/31/2021
PDO: 12 |NJ: 3 FAT: 0


Location - Route: 287 MP: 365.5 to 366.55 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 11 INJ: 3 FAT: 0


Location - Route: 287 MP: 365.6 to 366.65 :: From: 1/1/2017 to 12/31/2021
PDO: 13 |NJ: 3 FAT: 0

|  | Patterns |
| :--- | :--- |
| Lighting:Dark - Unlighted[10] |  |

Location - Route: 287 MP: 365.7 to 366.74 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 13 INJ: 3 FAT: 0
Patterns
Lighting:Dark - Unlighted[10]
Location - Route: 287 MP: 365.8 to 366.85 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 12 INJ: 2 FAT: 0
Patterns
Lighting:Dark - Unlighted[9]
Location - Route: 287 MP: 365.9 to 366.95 :: From: 1/1/2017 to 12/31/2021
PDO: 12 INJ: 2 FAT: 0
Patterms
Lighting:Dark - Unlighted[9]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 366 to 367.04 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 1 FAT: 0


Location - Route: 287 MP: 366.1 to 367.15 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 6 INJ: 1 FAT: 0


Location - Route: 287 MP: 366.2 to 367.25 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 0 FAT: 0


Location - Route: 287 MP: 366.3 to 367.35 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 0 FAT: 0

|  | Patterns |
| :--- | :--- |
| (Vhicles:Single Vehicle Accidents[5] |  |

Location - Route: 287 MP: 366.4 to 367.46 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 0 FAT: 0

|  | Patterns |
| :--- | :--- |
| Vehicles:Single Vehicle Accidents[5] |  |

Location - Route: 287 MP: 366.5 to 367.55 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 5 INJ: 0 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles:Single Vehicle Accidents[5] |

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 366.6 to 367.65 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 0 FAT: 0


Location - Route: 287 MP: 366.7 to 367.77 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0


Location - Route: 287 MP: 366.8 to 367.87 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 4 INJ: 1 FAT: 0


Location - Route: 287 MP: 366.9 to 367.92 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0


Location - Route: 287 MP: 367 to 367.98 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles: Single Vehicle Accidents[5] <br> Location:Off Road[5], Off Road Right[5] |

Location - Route: 287 MP: 367.1 to 368.03 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 6 INJ: 1 FAT: 0

|  | Location:Off Road[5], Off Road Right[5] |
| :--- | :--- |

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 367.2 to 368.12 :: From: 1/1/2017 to 12/31/2021
PDO: 7 IN: 1 FAT: 0


Location - Route: 287 MP: 367.3 to 368.22 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Location:Off Road Right[5] |

Location - Route: 287 MP: 367.4 to 368.31 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 7 INJ: 2 FAT: 0

## Patterns

Lighting:Dark - Unlighted[7]
Location - Route: 287 MP: 367.5 to 368.39 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ 2 FAT: 0


Location - Route: 287 MP: 367.6 to 368.49 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 7 INJ: 2 FAT: 0


Location - Route: 287 MP: 367.8 to 368.68 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 1 FAT: 0

## Patterns

Location:On Road[7]
Lighting: Dark - Unlighted[6]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)
Any intentional or inadvertent release of this data or any data derived from
its use shall not constitute a waiver of privilege pursuant to 23 USC 409.

Location - Route: 287 MP: 367.9 to 368.86 :: From: 1/1/2017 to 12/31/2021

## PDO: 7 INJ: 1 FAT: 1



Location - Route: 287 MP: 368 to 368.99 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 3 FAT: 1


Location - Route: 287 MP: 368.1 to 369.1 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 3 FAT: 1


Location - Route: 287 MP: 368.2 to 369.21 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 2 INJ: 3 FAT: 1


Location - Route: 287 MP: 368.3 to 369.31 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 1 INJ: 2 FAT: 1


Location - Route: 287 MP: 368.4 to 369.42 :: From: 1/1/2017 to 12/31/2021
PDO: 0 INJ: 2 FAT: 1


Location - Route: 287 MP: 368.5 to 369.53 :: From: 1/1/2017 to 12/31/2021
PDO: 0 INJ: 2 FAT: 1


Location - Route: 287 MP: 370 to 371 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 1 FAT: 0


Location - Route: 287 MP: 370.1 to 371.1 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0

## Patterns

Vehicles:Single Vehicle Accidents[5]
Location - Route: 287 MP: 370.2 to 371.2 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 1 FAT: 0


Location - Route: 287 MP: 370.3 to 371.3 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 1 FAT: 0


Location - Route: 287 MP: 370.4 to 371.4 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 1 FAT: 0


Location - Route: 287 MP: 370.5 to 371.5 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 1 FAT: 0

## Patterns

Vehicles:Single Vehicle Accidents[6]
Location - Route: 287 MP: 370.6 to 371.61 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 1 FAT: 0

## Patterns

Vehicles:Single Vehicle Accidents[6]

Location - Route: 287 MP: 370.7 to 371.71 :: From: 1/1/2017 to 12/31/2021

## PDO: 5 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
| Vehicles:Single Vehicle Accidents[6] |  |

Location - Route: 287 MP: 370.8 to 371.81 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
| Vehicles:Single Vehicle Accidents[5] |  |

Location - Route: 287 MP: 370.9 to 371.91 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0

## Patterns

Vehicles:Single Vehicle Accidents[5]
Location - Route: 287 MP: 371 to 372.01 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 0 FAT: 0


Location - Route: 287 MP: 371.1 to 372.1 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ: 0 FAT: 0


Location - Route: 287 MP: 371.2 to 372.18 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 1 INJ: 0 FAT: 0


Location - Route: 287 MP: 371.3 to 372.28 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ: 1 FAT: 0


Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 371.4 to 372.38 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 2 FAT: 0


Location - Route: 287 MP: 371.5 to 372.48 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 0

|  | Patterns |
| :--- | :--- |
| Vehicles:Single Vehicle Accidents[6] |  |

Location - Route: 287 MP: 371.6 to 372.54 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 2 FAT: 0

## Patterns

Vehicles: Single Vehicle Accidents[7]
Location: On Road[6]
Lighting: Dark - Unlighted[5]
Location - Route: 287 MP: 371.7 to 372.63 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ 2 FAT: 0


Location - Route: 287 MP: 371.8 to 372.72 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 6 INJ: 2 FAT: 0

| Patterss |
| :---: |
| Vehicles: Single Vehicle Accidents[8] <br> Location: On Road[7] <br> Crash Type:Wild Animal[5] |

Location - Route: 287 MP: 371.9 to 372.81 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 2 FAT: 0

## Patterns

Vehicles: Single Vehicle Accidents[8]
Location: On Road[7]
Crash Type:Wild Animal[5]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 372 to 372.97 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ 3 FAT: 0


Location - Route: 287 MP: 372.1 to 373.09 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 INJ: 3 FAT: 0

|  | Patterns |
| :--- | :--- |
|  |  |

Location - Route: 287 MP: 372.2 to 373.23 :: From: 1/1/2017 to 12/31/2021
PDO: 11 INJ: 3 FAT: 0

## Patterns

Location:On Road[13]
Location - Route: 287 MP: 372.3 to 373.33 :: From: 1/1/2017 to 12/31/2021
PDO: 10 |NJ: 1 FAT: 0

## Patterns

Location: On Road[11]
Location - Route: 287 MP: 372.4 to 373.43 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 INJ: 1 FAT: 0


Location - Route: 287 MP: 372.5 to 373.53 :: From: 1/1/2017 to 12/31/2021
PDO: 9 INJ: 1 FAT: 0


Location - Route: 287 MP: 372.6 to 373.64 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 1 FAT: 0

## Patterns

Location:On Road[8]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 372.7 to 373.75 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 1 FAT: 0


Location - Route: 287 MP: 372.8 to 373.86 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 8 INJ: 2 FAT: 0

|  |  |
| :--- | :--- |

Location - Route: 287 MP: 372.9 to 373.91 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 1 FAT: 0

## Patterns

Location:On Road[6]
Location - Route: 287 MP: 373 to 374.04 :: From: 1/1/2017 to 12/31/2021

## PDO: 5 INJ: 1 FAT: 0



Location - Route: 287 MP: 373.1 to 374.14 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 1 FAT: 0


Location - Route: 287 MP: 373.2 to 374.24 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 4 INJ: 1 FAT: 0


Location - Route: 287 MP: 373.3 to 374.34 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 1 FAT: 0


Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 374.1 to 375.1 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ 3 FAT: 0


Location - Route: 287 MP: 374.2 to 375.2 :: From: 1/1/2017 to 12/31/2021
PDO: 1 INJ: 3 FAT: 0


Location - Route: 287 MP: 374.3 to 375.3 :: From: 1/1/2017 to 12/31/2021

## PDO: 1 INJ: 3 FAT: 0



Location - Route: 287 MP: 374.4 to 375.4 :: From: 1/1/2017 to 12/31/2021
PDO: 1 INJ: 3 FAT: 0


Location - Route: 287 MP: 374.5 to 375.5 :: From: 1/1/2017 to 12/31/2021
PDO: 1 INJ: 2 FAT: 0


Location - Route: 287 MP: 374.7 to 375.7 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ: 1 FAT: 0
$\square$ Patterns

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 374.8 to 375.8 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ 1 FAT: 0


Location - Route: 287 MP: 374.9 to 375.9 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ: 1 FAT: 0


Location - Route: 287 MP: 375 to 376 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 1 FAT: 0


Location - Route: 287 MP: 375.1 to 376.1 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 1 FAT: 0


Location - Route: 287 MP: 375.2 to 376.2 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ 1 FAT: 0


Location - Route: 287 MP: 375.3 to 376.3 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 2 FAT: 0


Location - Route: 287 MP: 375.4 to 376.4 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 2 FAT: 0


Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 375.5 to 376.5 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 2 FAT: 1


Location - Route: 287 MP: 375.6 to 376.6 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 4 INJ: 2 FAT: 1

|  | Patterns |
| :--- | :--- |
|  | Location:Off Road[6], Off Road Right[5] <br> Lighting: Dark - Unlighted[5] |

Location - Route: 287 MP: 375.7 to 376.7 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 1


Location - Route: 287 MP: 375.8 to 376.8 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 1


Location - Route: 287 MP: 375.9 to 376.9 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 1


Location - Route: 287 MP: 376 to 377 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 1

## Patterns

Location:Off Road[6], Off Road Right[5]

Location - Route: 287 MP: 376.1 to 377.1 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 1


Location - Route: 287 MP: 376.2 to 377.2 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 2 FAT: 1

|  | Patterns |
| :--- | :--- |
| Location: Off Road[8], Off Road Right[5] |  |
| Crash Type:Overturning[5] |  |

Location - Route: 287 MP: 376.3 to 377.3 :: From: 1/1/2017 to 12/31/2021
PDO: 4 |NJ: 1 FAT: 1


Location - Route: 287 MP: 376.4 to 377.4 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 2


Location - Route: 287 MP: 376.5 to 377.5 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 1


Location - Route: 287 MP: 376.6 to 377.59 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 1


Location - Route: 287 MP: 376.7 to 377.68 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 1

## Patterns

Location:Off Road[5]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)
Any intentional or inadvertent release of this data or any data derived from
its use shall not constitute a waiver of privilege pursuant to 23 USC 409.

Location - Route: 287 MP: 376.8 to 377.78 :: From: $1 / 1 / 2017$ to 12/31/2021
PDO: 4 INJ: 1 FAT: 1


Location - Route: 287 MP: 376.9 to 377.88 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 4 INJ: 1 FAT: 1


Location - Route: 287 MP: 377 to 377.98 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 3 INJ: 1 FAT: 1


Location - Route: 287 MP: 377.1 to 378.08 :: From: $1 / 1 / 2017$ to 12/31/2021
PDO: 3 INJ: 1 FAT: 1


Location - Route: 287 MP: 377.2 to 378.19 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 1 INJ: 1 FAT: 1


Location - Route: 287 MP: 377.3 to 378.29 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$

## PDO: 1 INJ: 1 FAT: 1



Location - Route: 287 MP: 377.4 to 378.39 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 1 INJ: 1 FAT: 0


Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 377.5 to 378.5 :: From: 1/1/2017 to 12/31/2021

## PDO: 2 |NJ: 1 FAT: 0



Location - Route: 287 MP: 377.6 to 378.6 :: From: 1/1/2017 to 12/31/2021
PDO: 2 INJ: 1 FAT: 0


Location - Route: 287 MP: 377.7 to 378.7 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 1 FAT: 0


Location - Route: 287 MP: 377.8 to 378.8 :: From: 1/1/2017 to 12/31/2021
PDO: 5 INJ: 1 FAT: 0


Location - Route: 287 MP: 377.9 to 378.9 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ 1 FAT: 0

|  | Patterns |
| :--- | :--- |
| Vehicles: $\quad$ Single Vehicle Accidents[7] <br> Crash Type:Wild Animal[5] |  |

Location - Route: 287 MP: 378 to 379 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 1 FAT: 0
Patterns
Vehicles: Single Vehicle Accidents[8]
Crash Type:Wild Animal[5]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 378.1 to 379.09 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
|  |  |
|  | Vehicles: <br> Crash Type:Wild Animal[ $[5]$ |

Location - Route: 287 MP: 378.2 to 379.18 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 8 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles:Single Vehicle Accidents[9] |

Location - Route: 287 MP: 378.3 to 379.28 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 8 INJ: 2 FAT: 0

## Patterns

Vehicles:Single Vehicle Accidents[10]
Location - Route: 287 MP: 378.4 to 379.38 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 2 FAT: 0


Location - Route: 287 MP: 378.5 to 379.49 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 2 FAT: 0


Location - Route: 287 MP: 378.6 to 379.59 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 2 FAT: 0

|  | Patterns |
| :--- | :--- |
| Vehicles:Single Vehicle Accidents[9] |  |

Location - Route: 287 MP: 378.7 to 379.69 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 0

## Patterns

Vehicles:Single Vehicle Accidents[6]

Location - Route: 287 MP: 378.8 to 379.79 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 0


Location - Route: 287 MP: 378.9 to 379.9 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 3 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles: Single Vehicle Accidents[7] <br> Location:Off Road[5] |

Location - Route: 287 MP: 379 to 380.01 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 4 FAT: 0


Location - Route: 287 MP: 379.1 to 380.13 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 INJ: 4 FAT: 0


Location - Route: 287 MP: 379.2 to 380.23 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 11 INJ: 3 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Crash Type:Total Fixed Objects[6] |

Location - Route: 287 MP: 379.3 to 380.32 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 12 INJ: 6 FAT: 0
Patterns
Vehicles: Single Vehicle Accidents[17]
Location: Off Road[10], Off Road Right[8]
Crash Type:Cable Rail[5], Total Fixed Objects[10]

Location - Route: 287 MP: 379.4 to 380.43 :: From: 1/1/2017 to 12/31/2021
PDO: 12 INJ: 6 FAT: 0

| - Patterns |
| :---: |
| Vehicles: Single Vehicle Accidents[17] <br> Location: Off Road[10], Off Road Right[8] <br> Crash Type:Cable Rail[5], Total Fixed Objects[10] |

Location - Route: 287 MP: 379.5 to 380.52 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 13 INJ: 6 FAT: 0

## Patterns

Location: Off Road Right[9]
Crash Type:Cable Rail[6], Total Fixed Objects[10]
Location - Route: 287 MP: 379.6 to 380.63 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 13 INJ: 6 FAT: 0

## Patterns

Location: Off Road Right[9]
Crash Type:Cable Rail[6], Total Fixed Objects[10]
Location - Route: 287 MP: 379.7 to 380.73 :: From: 1/1/2017 to 12/31/2021
PDO: 13 INJ: 6 FAT: 0


Location - Route: 287 MP: 379.8 to 380.83 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 14 INJ: 7 FAT: 0

| Patterns |
| :---: |
| Location: Off Road[12], Off Road Right[11] Crash Type:Cable Rail[8], Total Fixed Objects[12] |

Location - Route: 287 MP: 379.9 to 380.92 :: From: 1/1/2017 to 12/31/2021
PDO: 13 INJ: 8 FAT: 0

## Patterns

Severity: Injury (INJ)[8]
Location: Off Road Right[10]
Crash Type:Cable Rail[8], Total Fixed Objects[11]
Weather: Snow or Sleet or Hail[7]
Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 380 to 381 :: From: 1/1/2017 to 12/31/2021
PDO: 14 INJ: 6 FAT: 0

|  | Patterns |
| :--- | :--- |
| Location: $\quad$ Off Road[11], Off Road Right[9] <br> Crash Type:Cable Rai[8], Total Fixed Objects[11] <br> Weather: $\quad$ Snow or Sleet or Hail[5] |  |

Location - Route: 287 MP: 380.1 to 381.1 :: From: 1/1/2017 to 12/31/2021
PDO: 12 INJ: 6 FAT: 0

## Patterns

Location: Off Road[10], Off Road Right[9]
Crash Type:Cable Rail[8], Total Fixed Objects[10]
Weather: Snow or Sleet or Hail[5]
Location - Route: 287 MP: 380.2 to 381.2 :: From: 1/1/2017 to 12/31/2021
PDO: 10 INJ: 7 FAT: 0


Location - Route: 287 MP: 380.3 to 381.33 :: From: 1/1/2017 to 12/31/2021
PDO: 11 INJ: 4 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles: $\quad$ Two Vehicle Accidents[5] <br> Crash Type:Total Fixed Objects[6] <br> Weather: $\quad$ Snow or Sleet or Hail[5] |
|  |  |

Location - Route: 287 MP: 380.4 to 381.42 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 11 INJ: 4 FAT: 0

## Patterns

Vehicles: Two Vehicle Accidents[5]
Crash Type:Total Fixed Objects[6]
Weather: Snow or Sleet or Hail[5]

Location - Route: 287 MP: 380.5 to 381.47 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 9 INJ: 4 FAT: 0


Location - Route: 287 MP: 380.6 to 381.5 :: From: 1/1/2017 to 12/31/2021
PDO: 9 INJ: 4 FAT: 0


Location - Route: 287 MP: 380.7 to 381.61 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 11 INJ: 4 FAT: 0


Location - Route: 287 MP: 380.8 to 381.75 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 INJ: 5 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles: Two Vehicle Accidents[5] <br> Crash Type:Rear End[5] |

Location - Route: 287 MP: 380.9 to 381.85 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 |NJ: 3 FAT: 0


Location - Route: 287 MP: 381 to 382.05 :: From: 1/1/2017 to 12/31/2021
PDO: 10 INJ: 5 FAT: 0
Patterns

| Location: Off Road Right[6] |
| :--- |
| Crash Type:Total Fixed Objects[6] |

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 381.1 to 382.13 :: From: 1/1/2017 to 12/31/2021

Pocation: Offrins-
Craad Right[6] Type:Total Fixed Objects[6]

Location - Route: 287 MP: 381.2 to 382.23 :: From: 1/1/2017 to 12/31/2021
PDO: 11 INJ 4 FAT: 0


Location - Route: 287 MP: 381.3 to 382.32 :: From: 1/1/2017 to 12/31/2021
PDO: 10 INJ: 6 FAT: 0


Location - Route: 287 MP: 381.4 to 382.49 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 12 INJ: 6 FAT: 0


Location - Route: 287 MP: 381.5 to 382.6 :: From: 1/1/2017 to 12/31/2021
PDO: 15 |NJ: 7 FAT: 0

|  | Patterns |  |
| :--- | :--- | :--- |
|  | Location: | Off Road[12] |
|  | Crash Type: | Total Fixed Objects $[9]$ |
|  | Weather: | Rain[5], Snow or Sleet or Hail[6] |
| Road Condition: Wet Road[5] |  |  |

Location - Route: 287 MP: 381.6 to 382.66 :: From: $1 / 1 / 2017$ to $12 / 31 / 2021$
PDO: 13 INJ: 7 FAT: 0
Patterns
Location: Off Road[11], Off Road Right[7]
Crash Type: Total Fixed Objects[9]
Weather: $\quad$ Rain[5], Snow or Sleet or Hail[6]
Road Condition:Wet Road[5]

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 381.7 to 382.68 :: From: 1/1/2017 to 12/31/2021
PDO: 13 INJ: 6 FAT: 0

| Patternss |  |  |
| :--- | :--- | :--- |
|  | Location: | OffRoad[11], Off Road Right[7] |
| Crash Type: | Total Fixed Objects[9] |  |
|  | Weather: | Rain[5], Snow or Sleet or Hai[5] |
| Road Condition: Wet Road[5] |  |  |

Location - Route: 287 MP: 381.8 to 382.78 :: From: 1/1/2017 to 12/31/2021


## Patterns

Location: Off Road[10]
Crash Type: Total Fixed Objects[8]
Weather: Rain[5], Snow or Sleet or Hail[5]
Road Condition:Wet Road[5]
Location - Route: 287 MP: 381.9 to 382.87 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 |NJ: 5 FAT: 1
Patterns

Location - Route: 287 MP: 382 to 382.98 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 8 INJ: 4 FAT: 1


Location - Route: 287 MP: 382.1 to 383.11 :: From: 1/1/2017 to 12/31/2021
PDO: 11 |NJ: 7 FAT: 1
Patterns

Location - Route: 287 MP: 382.2 to 383.21 :: From: 1/1/2017 to 12/31/2021
PDO: 10 |NJ: 7 FAT: 1


Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 382.3 to 383.31 :: From: 1/1/2017 to 12/31/2021
PDO: 9 INJ: 5 FAT: 1


Location - Route: 287 MP: 382.4 to 383.42 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 10 INJ: 6 FAT: 1

|  | Patterns |
| :--- | :--- |
|  | Crash Type:Total Fixed Objects[7] |

Location - Route: 287 MP: 382.5 to 383.52 :: From: 1/1/2017 to 12/31/2021
PDO: 8 INJ: 6 FAT: 1


Location - Route: 287 MP: 382.6 to 383.63 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 5 FAT: 1


Location - Route: 287 MP: 382.7 to 383.73 :: From: 1/1/2017 to 12/31/2021
PDO: 7 INJ: 5 FAT: 1


Location - Route: 287 MP: 382.8 to 383.84 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 7 INJ: 4 FAT: 1


Location - Route: 287 MP: 382.9 to 383.92 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 4 FAT: 0
Patterns

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

Location - Route: 287 MP: 383 to 384 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles: $\quad$ Single Vehicle Accidents[7] <br> Crash Type:Wild Animal[5] |

Location - Route: 287 MP: 383.1 to 384.1 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 2 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles: Single Vehicle Accidents[8] <br> Crash Type:Wild Animal[5] |

Location - Route: 287 MP: 383.2 to 384.21 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 2 FAT: 0


Location - Route: 287 MP: 383.3 to 384.31 :: From: 1/1/2017 to 12/31/2021
PDO: 6 INJ: 2 FAT: 0


Location - Route: 287 MP: 383.4 to 384.42 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 1 FAT: 0

|  | Patterns |
| :--- | :--- |
|  | Vehicles:Single Vehicle Accidents[5] |

Location - Route: 287 MP: 383.5 to 384.53 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 2 FAT: 0

|  | Patterns |
| :--- | :--- |
| $:$ Vehicles:Single Vehicle Accidents[5] |  |

Location - Route: 287 MP: 383.6 to 384.63 :: From: 1/1/2017 to 12/31/2021
PDO: 3 INJ: 2 FAT: 0

|  | Patterns |
| :--- | :--- |
| Vehicles:Single Vehicle Accidents[5] |  |

Location - Route: 287 MP: 383.7 to 384.74 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 2 FAT: 0

|  | Patterns |
| :--- | :--- |
| $:$ Vingle Vehicle Accidents[6] |  |

Location - Route: 287 MP: 383.8 to 384.84 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 4 INJ: 2 FAT: 0


Location - Route: 287 MP: 383.9 to 384.95 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 5 INJ: 3 FAT: 0


Location - Route: 287 MP: 384 to 385.05 :: From: 1/1/2017 to 12/31/2021
PDO: 4 INJ: 3 FAT: 0


Location - Route: 287 MP: 384.1 to 385.16 :: From: 1/1/2017 to $12 / 31 / 2021$
PDO: 2 INJ 2 FAT: 0

$\square$ Patterns $\quad$| $\square$ |
| :--- |

Highway Class: CO - Rural Flat and Rolling 2-Lane UnDivided Highways - AADT 3000-8000 ADT (2016)

# Appendix E: 

## Public

## Comments

Matrix

| Public Comment | Striping | Passing Lanes | Signage | Turn Lanes at Residential Areas | Owl Canyon Intersection Adjustments | Rumble Strips | Wider Shoulders | Speed | Wildlife Crossing | In NISP Area | Increase CSP Presence | Bridges | Weather | 4 Lane Divided Highway/Medi an or Concrete Barrier | Guardra <br> il | Roundabou t | Lighted <br> Chain Up <br> Station/Rest <br> Stop | Walls |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 |  | x- Increase PL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 2 |  | $x$ - Increase PL | $x$-Distance to next passing lane | $\times$ | x - Wider and longer SB Left Turn lane |  | x | x-Reduce |  |  |  |  |  |  |  |  |  |  |
| 3 | x-Double yellow |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |  |  |  | X-54G |  |  |  |  |  |  |  |  |
| 5 |  |  |  | $x$ - Bonners Peak | $\begin{array}{\|c\|} \hline x \text {-Overpass, } \\ \text { for SB to EB } \\ \text { turn } \\ \hline \end{array}$ |  |  |  | x-Between Bonner Peak and Hwy 14 |  |  |  |  |  |  |  |  |  |
| 6 |  | $\begin{array}{\|c\|} \hline \text { x- Need SB } \\ \text { Passing Lanes } \\ \text { near CR } 37 \\ \hline \end{array}$ | x-Distracted driving |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 7 |  | x - Increase PL |  |  |  |  |  | x-Reduce |  |  | $\begin{array}{\|l\|} \hline x \text {-and add } \\ \text { ems station } \\ \hline \end{array}$ |  |  |  |  |  |  |  |
| 8 |  | $\begin{array}{\|c\|} \hline x \text { - Increase PL } \\ \text { SB } \end{array}$ |  | x | $\begin{aligned} & \text { x-SB287 to } \\ & \text { EB Owl } \\ & \text { Canyon turn } \\ & \text { improvement } \end{aligned}$ |  | $\times$ |  |  |  |  | $x-$ One way bridges near CR76h CR80c | x -Snow fence near Virginia Dale |  |  |  |  |  |
| 9 |  |  |  |  |  |  |  |  |  |  |  |  |  | $\times$ |  |  |  |  |
| 10 |  |  |  |  |  |  |  | x-Reduce |  |  |  |  |  |  |  | x |  |  |
| 11 |  |  | $\begin{aligned} & \text { x- Upcoming } \\ & \text { turns } \end{aligned}$ |  |  |  |  | x-Increase Speed |  |  | $\times$ |  |  | x |  |  |  |  |
| 12 |  |  |  |  |  |  |  |  |  |  | $\times$ |  |  |  |  |  |  |  |
| 13 |  |  |  | x-Bonners Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 14 |  |  |  |  |  |  |  |  |  |  |  |  |  | x-divided w/ median |  |  |  |  |
| 15 |  |  |  |  |  | Intersections |  | x-Reduce |  |  | $\begin{array}{\|c\|} \hline x-\text { and add a } \\ \text { POE } \\ \hline \end{array}$ |  |  |  |  |  |  |  |
| 16 |  |  |  | x-Bonner Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 17 |  | x- Increase PL SB, eliminate shared PL | $x$ - VMB |  |  |  |  |  |  | $x-54 \mathrm{G}$ |  |  |  | $\times$ |  |  |  |  |
| 18 |  |  |  |  |  |  |  |  |  |  |  |  |  | $\times$ |  |  |  |  |
| 19 |  |  |  | x-Bonners Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 20 |  |  |  | x- Bonners Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 21 |  | x- Increase PL <br> SB, eliminate shared PL |  |  |  |  |  |  |  |  | - |  |  | x |  |  |  |  |
| 22 |  |  |  |  |  |  |  | x-Reduce |  |  | $\times$ |  |  |  |  |  |  |  |
| 23 |  |  |  |  |  |  |  |  |  |  |  |  |  | $\times$ |  |  |  |  |
| 24 |  |  |  |  |  |  |  |  |  | x-546 | $x$ |  |  |  |  |  |  |  |
| 25 |  |  |  | $x$-Bonners Peak |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 26 |  |  |  | x-Bonners Peak |  |  | $\times$ |  |  |  |  |  |  |  |  |  |  |  |
| 27 |  |  | x-blind turns |  |  | Intersections |  | $x$-Reduce in areas | $\times$ |  |  |  |  | x-Concrete barrier |  |  |  |  |




| 70 |  | X - Bonners Peak - NB LT, NB Accel, SB RT, SB Accel |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 71 |  | x-Bonners Peak NB LT, SB RT |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 72 |  | x-Bonners Peak NB LT, SB RT |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 73 |  | $\begin{gathered} \hline x \text { - Bonners Peak } \\ \text { NB LT } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 74 |  | $\begin{array}{c\|} \hline x \text { - Bonners Peak } \\ \text { NB LT } \\ \hline \end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 75 |  | $\begin{array}{\|c\|} \hline x \text { - Bonners Peak } \\ \text { NB LT } \end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 76 |  | x-Bonners Peak NB LT, SB RT |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 77 |  | x- Bonners Peak NB LT, SB RT |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 78 |  | $\begin{array}{c\|} \hline x \text { - Bonners Peak } \\ \text { NB LT } \\ \hline \end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 79 |  | x-Bonners Peak NB LT, SB RT |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 80 |  | x-Bonners Peak NB LT, SB RT |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 81 |  | x-Bonners Peak NB LT, SB RT |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 82 |  | $\begin{gathered} \hline x \text { - Bonners Peak } \\ \text { NB LT } \\ \hline \end{gathered}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 83 |  | $\begin{array}{\|c\|} \hline x \text { - Bonners Peak } \\ \text { NB LT } \end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 84 |  |  | x - mill and fill, <br> restripe, <br> realign WB <br> OwI Canyon <br> to NB 287 <br> turn |  |  |  |  |  |  |  |  |  |  |  |  |
| 85 | $x$ - Have PL merge right instead of left | $\begin{array}{\|c\|} \hline \text { x- SB LT MM } \\ 365 \text { Lien } \\ \text { Quarry,SB accel, } \\ \text { NB LT, NB accel } \\ \hline \end{array}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 86 | x-Increase PL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 87 | $x$ - Eliminate shared PL |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 88 |  |  |  |  |  |  |  | $\begin{array}{\|c\|} \hline x \text {-Fort Collins } \\ \text { area } \\ \hline \end{array}$ |  |  |  |  |  |  |  |
| 89 |  |  | restriping/ne w pavement |  |  |  |  |  | x |  |  |  |  |  |  |
| 90 |  |  | $x-$ <br> restriping/ne <br> $w$ <br> $w$ <br> pavement/wi <br> der SB 287 o <br> EB Owl <br> canyon turn <br> lane |  |  |  |  |  |  |  |  |  |  |  |  |


| 91 |  |  |  |  |  |  |  | x- Reduce <br> near intersections |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 92 |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |
| 93 |  |  | $\qquad$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 94 |  | x-Increase PL |  |  |  |  |  |  |  |  | x |  |  | $\times$ |  |  |  |  |
| 95 |  | $x$-Increase PL | x-PL Signage, Headlight signage, VMB |  |  |  |  | x-Post Min <br> Speed Limit | $\times$ |  |  |  |  |  |  |  |  |  |
| 96 |  |  |  |  |  |  |  | x-Reduce |  |  | x |  |  |  |  |  |  |  |
| 97 |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |
| 98 |  |  |  |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  |
| 99 |  |  |  |  |  |  |  | x-Reduce |  |  | x |  |  |  |  |  |  |  |
| 100 |  |  | $x$-Signage at intersections/hi gh speeds/caution |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 101 |  | $x$-Increase PL, eliminate shared PL | $\begin{gathered} \mathrm{x} \text {-Signage at } \\ \text { intersections } / \mathrm{hi} \\ \text { gh } \\ \text { speeds/caution } \end{gathered}$ | $x$-All <br> intersections <br> need turn lanes. <br> Specifically NB <br> RT and SB LT <br> turn lanes at <br> Red Mountain <br> Rd(CR37) | $x$ - NB merge lane/better striping or signage |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 102 |  |  |  |  |  |  |  |  |  |  |  |  |  | $x$ |  |  |  |  |
| 103 |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |
| 104 |  |  | x-Flashing signage indicating private drives ahead. Ped signs near the border for people taking pics at sign |  |  |  |  |  |  |  |  |  |  |  |  |  |  | $x$ - Would like retaining wall NB right hand side at WY border to protect his home/family from road |
| 105 |  |  | x - Signage at intersections/ca ution | $x$-turn lanes at intersections |  |  |  |  |  | $\times$ |  |  |  |  |  | intersections |  |  |
| 106 |  |  |  |  |  |  |  |  |  |  | x |  |  |  |  |  |  |  |
| 107 |  |  |  |  |  |  | $x$-expecially at bridges between forks and cherokee park road |  |  |  |  |  |  |  |  |  |  |  |
| 108 |  |  | x-Dark Segment, add signage for upcoming intersections |  |  |  |  | $x$-Reduce in areas |  |  | x |  |  |  |  |  |  |  |
| Total | 5 | 25 | 18 | 47 | 8 | 2 | 14 | 15 | 4 | 6 | 23 | 2 | 2 | 26 | 1 | 2 | 2 | 1 |




Calculations

## Project Benefit Cost Calculations

| Project Number: |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | N LCR 43 F |  |  |
| Milepost: | 380.86 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 2,490,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ | 10,700 |
| Injury |  | \$ | 98,900 |
| Fatal |  | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | 0 |  |  |
| Injury | 1 Injuries |  | 1 |
| Fatal | 0 Fatalities |  | 0 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 20\% |
| Injury |  |  | 20\% |
| Fatal |  |  | 20\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 0 |
| Injury |  |  | 0.149 |
| Fatal |  |  | 0 |
| Step 6: Calculate Be | nefit-to-Cost Ratio (B/C) |  | 0.01 |

## Project Benefit Cost Calculations

| Project Number: |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | Red Feathers Lakes Rd LCR74E |  |  |
| Milepost: | 367.01 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 2,100,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ | 10,700 |
| Injury |  | \$ | 98,900 |
| Fatal |  | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | 3 |  |  |
| Injury | 0 Injuries |  | 0 |
| Fatal | 0 Fatalities |  | 0 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 25\% |
| Injury |  |  | 25\% |
| Fatal |  |  | 25\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 0.446 |
| Injury |  |  | 0.000 |
| Fatal |  |  | 0.000 |
| Step 6: Calculate Be | nefit-to-Cost Ratio (B/C) |  | 0.01 |

## Project Benefit Cost Calculations



## Project Benefit Cost Calculations

\left.| Project Number: | 4 |
| :--- | ---: | :--- |
| Project Title: | Red Mountain Rd |
| Milepost: |  |
| Interest Rate: | 378.91 |$\right)$

Step 1: Crash Data
Start Date: $\quad 1 / 1 / 2017$

End Date: 2/22/2024
Property Damage Only 0
Injury 2 Injuries 8
$\begin{array}{llll}\text { Fatal } & 1 & \text { Fatalities } & 3\end{array}$

Step 2: Determine Crash Reduction Factors (CRF)

| Property Damage Only | $20 \%$ |
| :--- | :--- |
| Injury | $20 \%$ |
| Fatal | $20 \%$ |

Step 3: Calculate Year Factor
7.140
0.080

Step 5: Calculate Reduced Annual Crashes

| Property Damage Only | 0.000 |
| :--- | :--- |
| Injury | 0.832 |
| Fatal | 0.312 |

## Project Benefit Cost Calculations



## Project Benefit Cost Calculations

| Project Number: |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | Rest Area/High Lonesome Rd |  |  |
| Milepost: | 383.5 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 1,490,0 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ |  |
| Injury |  | \$ | 9 |
| Fatal |  | \$ | 1,76 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 7/31/2023 |  |  |
| Property Damage Only | $y \quad 1$ |  |  |
| Injury | 0 Injuries |  | 1 |
| Fatal | 1 Fatalities |  | 1 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 20\% |
| Injury |  |  | 20\% |
| Fatal |  |  | 20\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 6.578 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 0.113 |
| Injury |  |  | 0.113 |
| Fatal |  |  | 0.113 |
| Step 6: Calculate Be | enefit-to-Cost Ratio (B/C) |  | 0.35 |

## Project Benefit Cost Calculations

| Project Number: 7 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: S | Southbound Passing Lane |  |  |
| Milepost: 37 | 374.3-376.1 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 10,720,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
|  | Crash Costs |  |  |
|  | Property Damage Only | \$ | 10,700 |
|  | Injury | \$ | 98,900 |
|  | Fatal | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | $y \quad 9$ |  |  |
| Injury | 6 Injuries |  | 12 |
| Fatal | 1 Fatalities |  | 3 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 32\% |
| Injury |  |  | 32\% |
| Fatal |  |  | 32\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 1.338 |
| Injury |  |  | 1.784 |
| Fatal |  |  | 0.446 |
| Step 6: Calculate Ben | enefit-to-Cost Ratio (B/C) |  | 0.36 |

## Project Benefit Cost Calculations

| Project Number: 8 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | W LCR 72 (Owl Canyon) |  |  |
| Milepost: | 363.23 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 3,200,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ | 10,700 |
| Injury |  | \$ | 98,900 |
| Fatal |  | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | ly 2 |  |  |
| Injury | 3 Injuries |  | 9 |
| Fatal | 1 Fatalities |  | 1 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 25\% |
| Injury |  |  | 25\% |
| Fatal |  |  | 25\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 0.297 |
| Injury |  |  | 1.338 |
| Fatal |  |  | 0.149 |
| Step 6: Calculate Ben | enefit-to-Cost Ratio (B/C) |  | 0.39 |

## Project Benefit Cost Calculations

| Project Number: 9 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | Southbound Passing Lane |  |  |
| Milepost: | 363.5-365.6 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 13,300,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
|  | Property Damage Only | \$ | 10,700 |
|  | Injury | \$ | 98,900 |
|  | Fatal | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | $y \quad 41$ |  |  |
| Injury | 9 Injuries |  | 12 |
| Fatal | 0 Fatalities |  | 0 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 32\% |
| Injury |  |  | 32\% |
| Fatal |  |  | 32\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 6.096 |
| Injury |  |  | 1.784 |
| Fatal |  |  | 0.000 |
| Step 6: Calculate Be | enefit-to-Cost Ratio (B/C) |  | 0.07 |

## Project Benefit Cost Calculations

| Project Number: 10 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: C | Crown Improvement |  |  |
| Milepost: N/A | N/A |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 4,730,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
|  | Crash Costs |  |  |
|  | Property Damage Only | \$ | 10,700 |
|  | Injury | \$ | 98,900 |
|  | Fatal | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | 18 |  |  |
| Injury | 7 Injuries |  | 11 |
| Fatal | 2 Fatalities |  | 4 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
|  | Property Damage Only |  | 7\% |
|  | Injury |  | 7\% |
|  | Fatal |  | 7\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
|  | Property Damage Only |  | 2.676 |
|  | Injury |  | 1.041 |
|  | Fatal |  | 0.297 |
| Step 6: Calculate Benefit-to-Cost Ratio (B/C) |  |  | 0.12 |

## Project Benefit Cost Calculations

| Project Number: 11 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | Shoulder Width Improvements |  |  |
| Milepost: | N/A |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 4,190,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ | 10,700 |
| Injury |  | \$ | 98,900 |
| Fatal |  | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | ) 19 |  |  |
| Injury | 8 Injuries |  | 13 |
| Fatal | 1 Fatalities |  | 2 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 7\% |
| Injury |  |  | 7\% |
| Fatal |  |  | 7\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 2.825 |
| Injury |  |  | 1.189 |
| Fatal |  |  | 0.149 |
| Step 6: Calculate Ben | nefit-to-Cost Ratio (B/C) |  | 0.09 |

## Project Benefit Cost Calculations

| Project Number: 12 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | Wildlife Under Pass |  |  |
| Milepost: | 363-367 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 2,090,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ | 10,700 |
| Injury |  | \$ | 98,900 |
| Fatal |  | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | - 46 |  |  |
| Injury | 12 Injuries |  | 13 |
| Fatal | 0 Fatalities |  | 0 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 45\% |
| Injury |  |  | 45\% |
| Fatal |  |  | 45\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 6.839 |
| Injury |  |  | 1.933 |
| Fatal |  |  | 0.000 |
| Step 6: Calculate Ben | nefit-to-Cost Ratio (B/C) |  | 0.71 |

## Project Benefit Cost Calculations

| Project Number: 13 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | Wildlife Fencing |  |  |
| Milepost: | 369-372.5 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 1,760,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ | 10,700 |
| Injury |  | \$ | 98,900 |
| Fatal |  | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | - 21 |  |  |
| Injury | 7 Injuries |  | 12 |
| Fatal | 0 Fatalities |  | 0 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 45\% |
| Injury |  |  | 45\% |
| Fatal |  |  | 45\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 3.122 |
| Injury |  |  | 1.784 |
| Fatal |  |  | 0.000 |
| Step 6: Calculate Ben | nefit-to-Cost Ratio (B/C) |  | 0.67 |

## Project Benefit Cost Calculations

| Project Number: 14 |  |  |  |
| :---: | :---: | :---: | :---: |
| Project Title: | Wildlife Fencing |  |  |
| Milepost: | 379-382 |  |  |
| Interest Rate: |  |  | 5\% |
| Project Service Life: |  |  | 20 |
| Project Cost: |  | \$ | 1,150,000.00 |
| Average Daily Traffic Growth Rate: |  |  | 2\% |
| Crash Costs |  |  |  |
| Property Damage Only |  | \$ | 10,700 |
| Injury |  | \$ | 98,900 |
| Fatal |  | \$ | 1,766,400 |
| Step 1: Crash Data |  |  |  |
| Start Date: | 1/1/2017 |  |  |
| End Date: | 12/31/2021 |  |  |
| Property Damage Only | $y \quad 48$ |  |  |
| Injury | 24 Injuries |  | 36 |
| Fatal | 1 Fatalities |  | 2 |
| Step 2: Determine Crash Reduction Factors (CRF) |  |  |  |
| Property Damage Only |  |  | 45\% |
| Injury |  |  | 45\% |
| Fatal |  |  | 45\% |
| Step 3: Calculate Year Factor |  |  |  |
|  |  |  | 4.997 |
| Step 4: Calculate Capital Recovery Factor |  |  |  |
|  |  |  | 0.080 |
| Step 5: Calculate Reduced Annual Crashes |  |  |  |
| Property Damage Only |  |  | 7.136 |
| Injury |  |  | 5.352 |
| Fatal |  |  | 0.297 |
| Step 6: Calculate Be | enefit-to-Cost Ratio (B/C) |  | 5.52 |

## Project Benefit Cost Calculations



# Appendix G: Prioritization 

Matrix

## US 287 Safety Study Prioritization

Project Number: Project Title:

1
N LCR 43 F

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | $\mathbf{1}$ |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | $\mathbf{2}$ |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF $<1.0$ | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback ( 5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | 2 |
| No specific factors | $\mathbf{0}$ |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

Total

## US 287 Safety Study Prioritization

Project Number:
Project Title:

2
Red Feathers Lakes Rd LCR74E

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF $<1.0$ | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)

Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback (5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | 3 |
| No | 0 |

## Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

## US 287 Safety Study Prioritization

Project Number: Project Title:

3
Old Ranch Rd

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF $<1.0$ | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback ( 5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 5: Other Factors ( 5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | 2 |
| No specific factors | $\mathbf{0}$ |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

Total
6

## US 287 Safety Study Prioritization

Project Number: Project Title:

4
Red Mountain Rd

Criteria 1: Magnitude of the Safety Problem (5 pts) Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts) Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF $<1.0$ | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback (5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | $\mathbf{3}$ |
| No | 0 |

Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | $\mathbf{2}$ |
| $0.25>\mathrm{b} / \mathrm{c}$ | 0 |

Total $\quad 15$

## US 287 Safety Study Prioritization <br> 5

Project Number: Project Title:

Bonner Springs Ranch Rd
Criteria 1: Magnitude of the Safety Problem ( 5 pts )
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF $<1.0$ | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback (5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

## Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | 2 |
| No specific factors | $\mathbf{0}$ |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

## US 287 Safety Study Prioritization

Project Number: Project Title:

6
Rest Area/High Lonesome Rd

Criteria 1: Magnitude of the Safety Problem (5 pts) Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts) Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF $<1.0$ | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback (5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | $\mathbf{2}$ |
| $0.25>\mathrm{b} / \mathrm{c}$ | 0 |

Total 9

## US 287 Safety Study Prioritization

Project Number: Project Title:

7
Southbound Passing Lane MP 374.3-376.1

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF $<1.0$ | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF $<1.0$ | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback ( 5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

## Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | $\mathbf{2}$ |
| $0.25>\mathrm{b} / \mathrm{c}$ | 0 |

## US 287 Safety Study Prioritization

Project Number: Project Title:

8
W County Rd 72 (Owl Canyon)

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | $\mathbf{2}$ |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | 0 |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | $\mathbf{5}$ |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | 5 |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback ( 5 pts )
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

## Criteria 5: Other Factors ( 5 pts )

Measure: Subjective points given tor items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | 2 |
| No specific factors | $\mathbf{0}$ |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | $\mathbf{2}$ |
| $0.25>\mathrm{b} / \mathrm{c}$ | 0 |

Total 17

## US 287 Safety Study Prioritization

Project Number: Project Title:

9
Southbound passing lane 363.5-365.6

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF $<1.0$ | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF $<1.0$ | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback ( 5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

## US 287 Safety Study Prioritization

Project Number: Project Title:

10
Crown Improvement

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | $\mathbf{2}$ |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | 0 |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF $<1.0$ | $\mathbf{5}$ |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 4. Public and Agency Feedback ( 5 pts )
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | 2 |
| No specific factors | $\mathbf{0}$ |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

## US 287 Safety Study Prioritization

Project Number: Project Title:

11
Shoulder Improvement

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | $\mathbf{2}$ |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | 0 |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | $\mathbf{5}$ |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 4. Public and Agency Feedback ( 5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 5: Other Factors ( 5 pts )
Measure: Subjective points given tor items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | 2 |
| No specific factors | $\mathbf{0}$ |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

## US 287 Safety Study Prioritization

Project Number:
Project Title:

12
Wildlife Crossing MP 363-367

Criteria 1: Magnitude of the Safety Problem ( 5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | 0 |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF $<1.0$ | $\mathbf{5}$ |

## Criteria 3: Systemic Safety Improvement (5 pts)

Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF $<1.0$ | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 4. Public and Agency Feedback ( 5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | $\mathbf{3}$ |
| No | 0 |

## Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | $\mathbf{2}$ |
| $0.25>\mathrm{b} / \mathrm{c}$ | 0 |

## US 287 Safety Study Prioritization

Project Number: Project Title:

13
Wildlife Fencing MP 371-375

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | $\mathbf{2}$ |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | 0 |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | $\mathbf{5}$ |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 4. Public and Agency Feedback ( 5 pts)
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | $\mathbf{3}$ |
| No | 0 |

Criteria 5: Other Factors (5 pts)
Measure: Subjective points given tor items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

Total

## US 287 Safety Study Prioritization

Project Number: Project Title:

14
Wildlife Fencing MP 379-382

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 1 |
| IV | $\mathbf{2}$ |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | 0 |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | 0 |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF <1.0 | $\mathbf{5}$ |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | 5 |
| Yes | 3 |
| No | $\mathbf{0}$ |

Criteria 4. Public and Agency Feedback ( 5 pts )
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | 3 |
| No | 0 |

## Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | $\mathbf{5}$ |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | 0 |

## US 287 Safety Study Prioritization

Project Number: Project Title:

15
Passing Lane (NISP Area)

Criteria 1: Magnitude of the Safety Problem (5 pts)
Measure: Level-of-Service of Safety (Total)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 1 |
| IV | 2 |

Measure: Level-of-Service of Safety (Severe)

| LOSS (Total) | Points |
| :---: | :---: |
| I or II | $\mathbf{0}$ |
| III | 2 |
| IV | 3 |

Criteria 2: Countermeasure Effectiveness (5 pts)
Measure: Mitigates Existing Crash Pattern

| Status | Points |
| :--- | :---: |
| No Pattern Exists | $\mathbf{0}$ |
| Pattern Exists and CMF >=1.0 or unknown | 3 |
| Pattern Exists and CMF $<1.0$ | 5 |

Criteria 3: Systemic Safety Improvement (5 pts)
Measure: Preventatively Addresses Known Contributing Factors

| Status | Points |
| :---: | :---: |
| Yes, CMF <1.0 | $\mathbf{5}$ |
| Yes | 3 |
| No | 0 |

Criteria 4. Public and Agency Feedback ( 5 pts )
Measure: Addresses a Location of Concern as Expressed by Project Stakeholders

| Project is a Location of Concern | Points |
| :---: | :---: |
| Yes, multiple sources | 5 |
| Yes | $\mathbf{3}$ |
| No | 0 |

Criteria 5: Other Factors (5 pts)

Measure: Subjective points given for items such as recent crashes not yet in the state record system or traffic operations improvement

| Status | Points |
| :---: | :---: |
| Significant other factors exist | 5 |
| Some specific factors exist | $\mathbf{2}$ |
| No specific factors | 0 |

Criteria 6: Project Benefit-Cost (5 pts)

| B/C Ratio | Points |
| :---: | :---: |
| $>=1.0$ | 5 |
| $1.0>\mathrm{b} / \mathrm{c}>0.25$ | 2 |
| $0.25>\mathrm{b} / \mathrm{c}$ | $\mathbf{0}$ |

