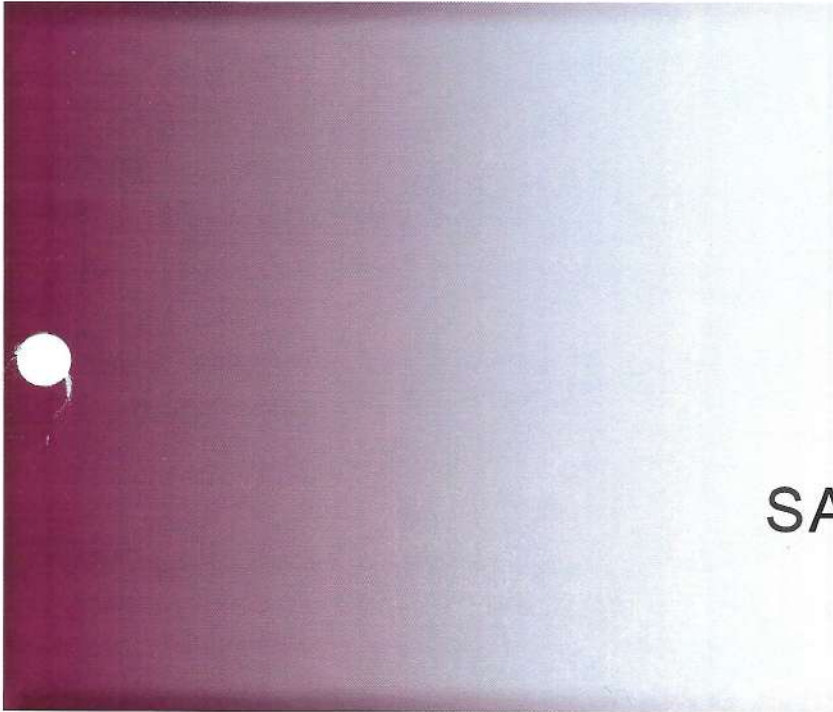




2025

**MOORE COUNTY
TRANSPORTATION
SAFETY ACTION PLAN**

SAFETY COMMITTEE MEMBER

The 2025 Moore County Transportation Safety Action Plan reflects over a year of collaboration, data collection and analysis, and community engagement involving hundreds of individuals from across the county. The following key contributors have committed to strengthening transportation safety throughout the county:

X _____

Sloan Stewart
Metro Lynchburg / Moore County Mayor

X _____

Shane Taylor
Metro Lynchburg / Moore County Deputy Sherriff

X _____

Jason Deal
Metro Lynchburg / Moore County EMA Director

X _____

Shannon Cauble
Road Superintendent Metro Lynchburg / Moore County Highway Department

X _____

Charles Clark
Office Manager Metro Lynchburg / Moore County Highway Department

**Moore
County's
Vision**



**Eliminate deaths on
roadways**



**Eliminate serious
injuries on roadways**

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RESOLUTION LETTER

Date:

Resolution:

The Moore County Commission of the State of Tennessee hereby unanimously resolves to adopt the Transportation Safety Action Plan and to actively pursue the elimination of all traffic fatalities and serious injuries on the county's roadways by the year 2045. Upon full consideration and review of the Transportation Safety Action Plan, the following findings are established:

WHEREAS, Vision Zero is a federally supported strategy intended to eliminate all traffic-related fatalities and serious injuries while advancing safe, healthy, and equitable mobility for all roadway users; and

WHEREAS, the Moore County Commission has developed a Transportation Safety Action Plan to address safety needs for all users within the unincorporated areas of Moore County, Tennessee; and

WHEREAS, the Transportation Safety Action Plan is founded on the Safe Systems Approach, which recognizes human error and vulnerability, affirms that fatalities and serious injuries are unacceptable, promotes shared and proactive responsibility for preventing crashes, and emphasizes the role of redundant safety features within transportation infrastructure; and

WHEREAS, the Transportation Safety Action Plan incorporates analysis of historical crash data and input from the public, stakeholders, and a steering committee to identify a High Injury Network representing the roadway segments and intersections with the greatest incidence of severe crashes in unincorporated Moore County; and

WHEREAS, the Transportation Safety Action Plan outlines a comprehensive, multi-pronged strategy to improve roadway safety, including the identification of three (3) High Injury Network locations, with the ultimate objective of eliminating fatalities and serious injuries.

NOW, THEREFORE, BE IT RESOLVED by the Moore County Commission, Tennessee, that the County formally adopts the goal of eliminating traffic fatalities and serious injuries by the year 2045 and endorses Vision Zero as the guiding framework for achieving this objective.

BE IT FURTHER RESOLVED that the Transportation Safety Action Plan, as set forth in Exhibit A, is hereby approved.

BE IT FINALLY RESOLVED that this resolution shall take effect immediately upon its passage, the public welfare requiring it.

X _____

INTRODUCTION

Located in the southern central portion of Tennessee, Moore County has a population of approximately 6,558 according to a 2022 census. Moore County has developed this Transportation Safety Action Plan (TSAP) to commit to improving transportation safety throughout the county through community-guided and data-driven approaches.



Figure 1 Moore County Study Area

Fundamental to the creation of this TSAP is a Vision Zero approach, which aims to eliminate all traffic fatalities and serious injuries on roadways. The Vision Zero effort is in line with the United States Department of Transportation's Safe Streets and Roads for All (SS4A) grant program, which focuses on funding regional, local, and tribal initiatives in preventing roadway deaths and serious injuries. The SS4A framework is rooted in the National Roadway Safety Strategy (NRSS), which implements the Safe System Approach to roadway safety.

THE COMPONENTS OF A TRANSPORTATION SAFETY ACTION PLAN



THE SAFE STUDY APPROACH

The Safe System Approach focuses on creating redundancies on roadways to mitigate inevitable human error and served as a guiding framework by the Moore County Safety Committee in developing this TSAP. The Safe System Approach incorporates the following six principles:

1. Death and Serious Injuries are Unacceptable	Crashes that result in serious injuries must be eliminated.
2. Humans Make Mistakes	Transportation systems should be designed and operated to anticipate inevitable human mistakes.
3. Humans are Vulnerable	Transportation systems should be designed to prioritize human safety and account for inherent physical limitations.
4. Responsibility is Shared	Transportation safety requires a shared responsibility among those who plan, design, manage and use the road network.
5. Safety is Proactive	Rather than responding only after crashes have take place, proactive tools should be used to identify and address existing safety issues.
6. Redundancy is Crucial	Reducing risks requires that all parts of the transportation system be strengthened, so tat if one part fails, the other parts still protect people.

Figure 2 Principles of the Safe System Approach

These principles are carried out through the five corresponding objectives of the Safe System Approach:



Figure 3 Objectives of the Safe System Approach

Guided by the elements of the Safe Systems Approach, this TSAP presents a detailed analysis of roadway safety data throughout Moore County from 2020-2024 and identifies a High Injury Network (HIN) of locations of concern throughout the county, specifically focusing on those locations in unincorporated areas. Throughout the 5-year analysis period, there were 593 crashes throughout the county. However, for the purposes of this safety analysis, crashes involving alcohol and/or drug impairment and animal-related collisions were excluded from the dataset to ensure the results focused on roadway and traffic-related risk factors, leaving 490 crashes in the safety analysis.

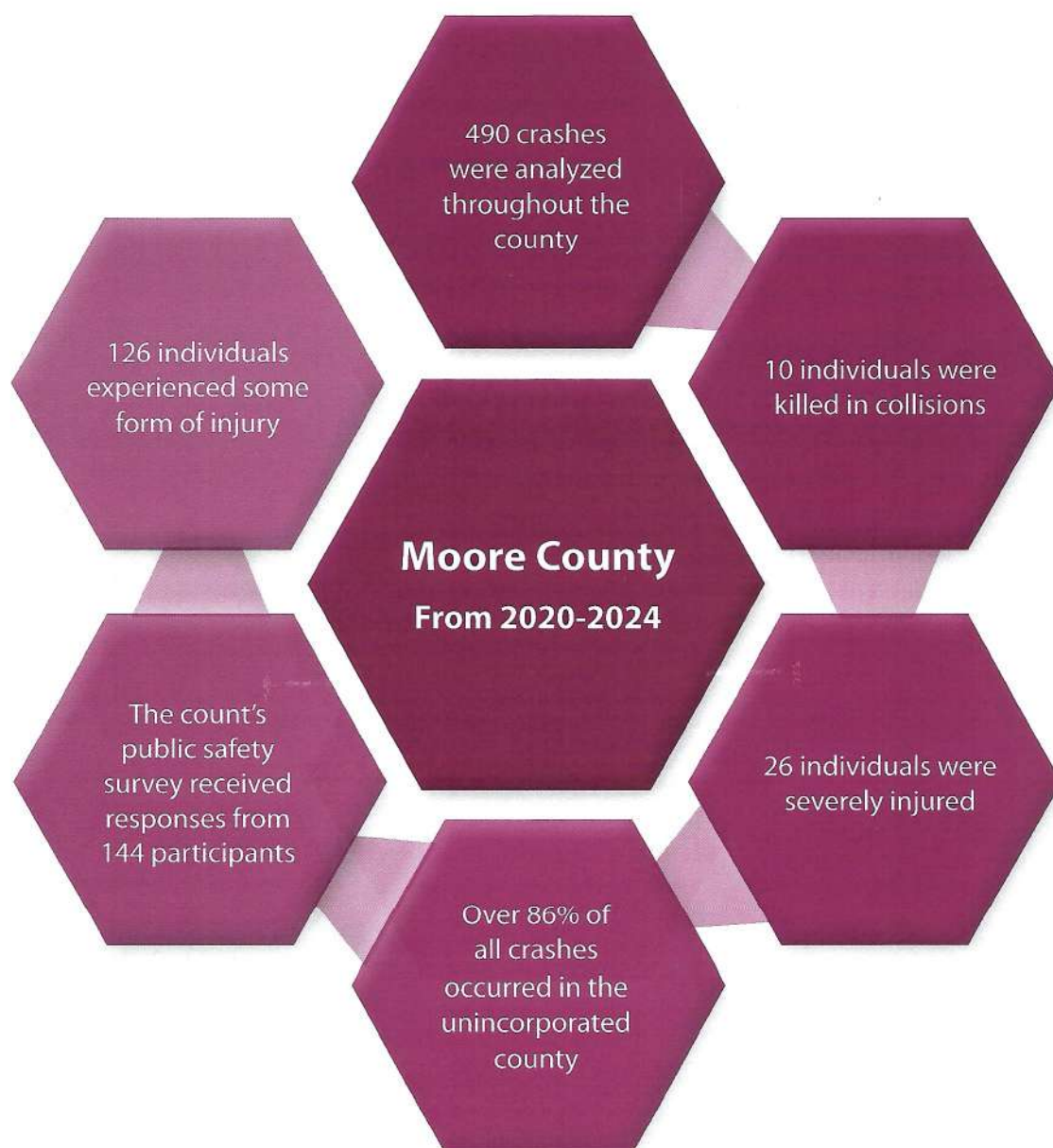


Figure 4 Moore County Data Summary

ENGAGEMENT AND COLLABORATION

Moore County envisions a community where residents and visitors are actively engaged in shaping and strengthening safety initiatives throughout the county. Through the development of this TSAP, the Moore County Safety Committee held regular meetings to discuss safety issues presented by both historical data and by input from the county's residents and visitors. The committee developed an easily accessible survey from July through August of 2025. The survey drew 144 participants and helped identify the community's needs. Approximately 49% of the respondents live in Moore County's unincorporated areas while 42% live in the incorporated area of Lynchburg.

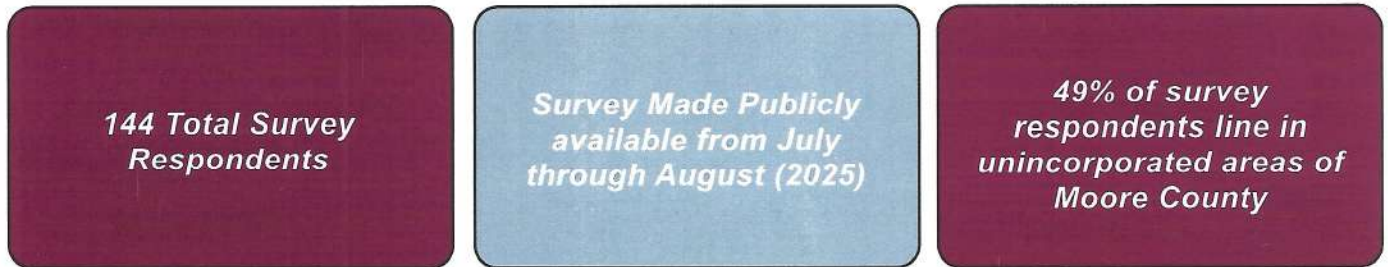


Figure 5 Moore County public survey summary

The Moore County Safety Committee prioritizes active community and stakeholder engagement, especially concerning transportation safety. Recognizing that input from residents and visitors is crucial, the committee thanks all those who participated in the survey and aims to develop an action plan that authentically reflects the community's needs.

Demographic information from survey participants was collected and is demonstrated in Figures 6 and 7.

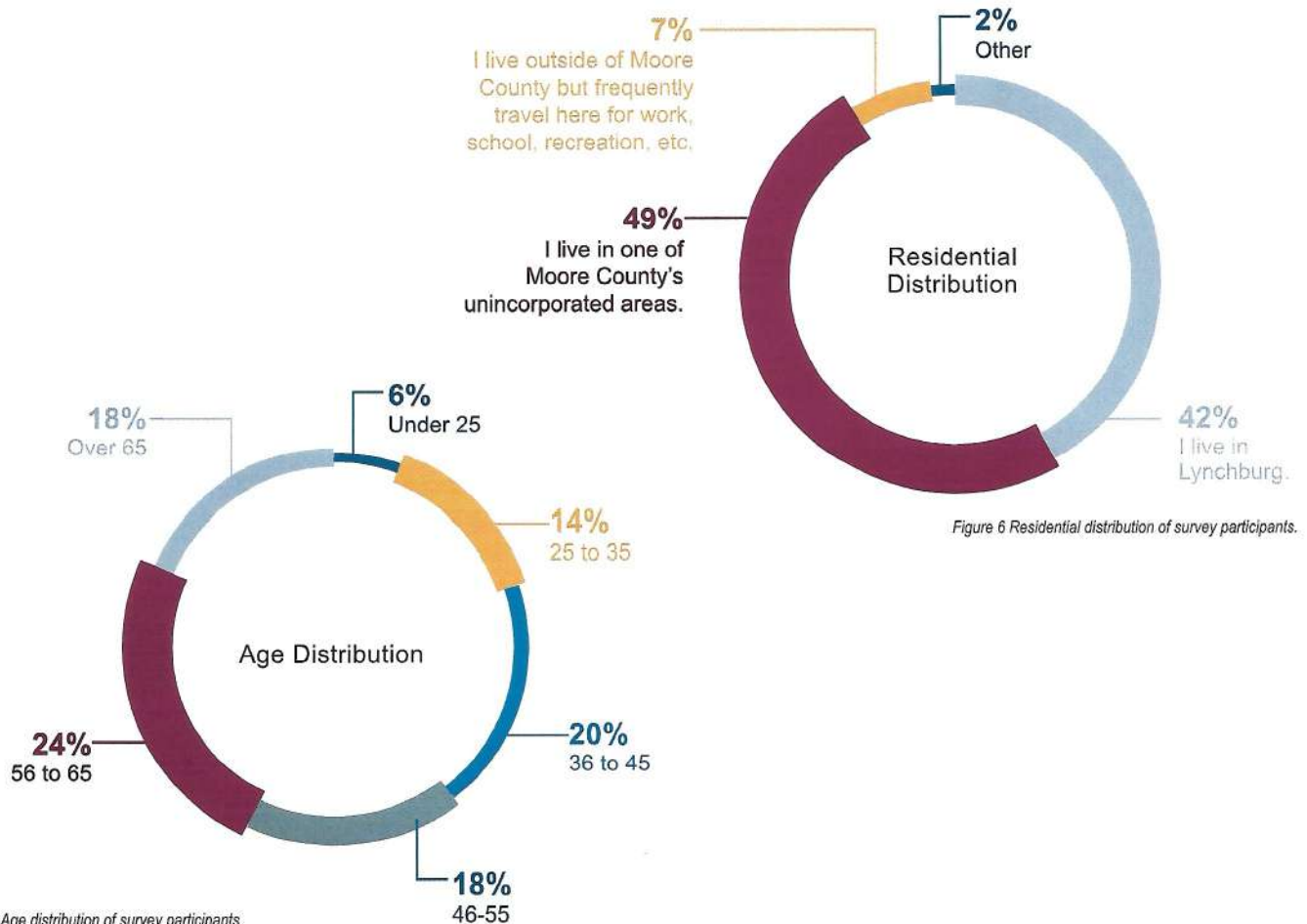


Figure 6 Residential distribution of survey participants.

Figure 7 Age distribution of survey participants

Understanding where survey participants live provides important insight into the demographic distribution of the sample, as shown in Figures 8 and 9.

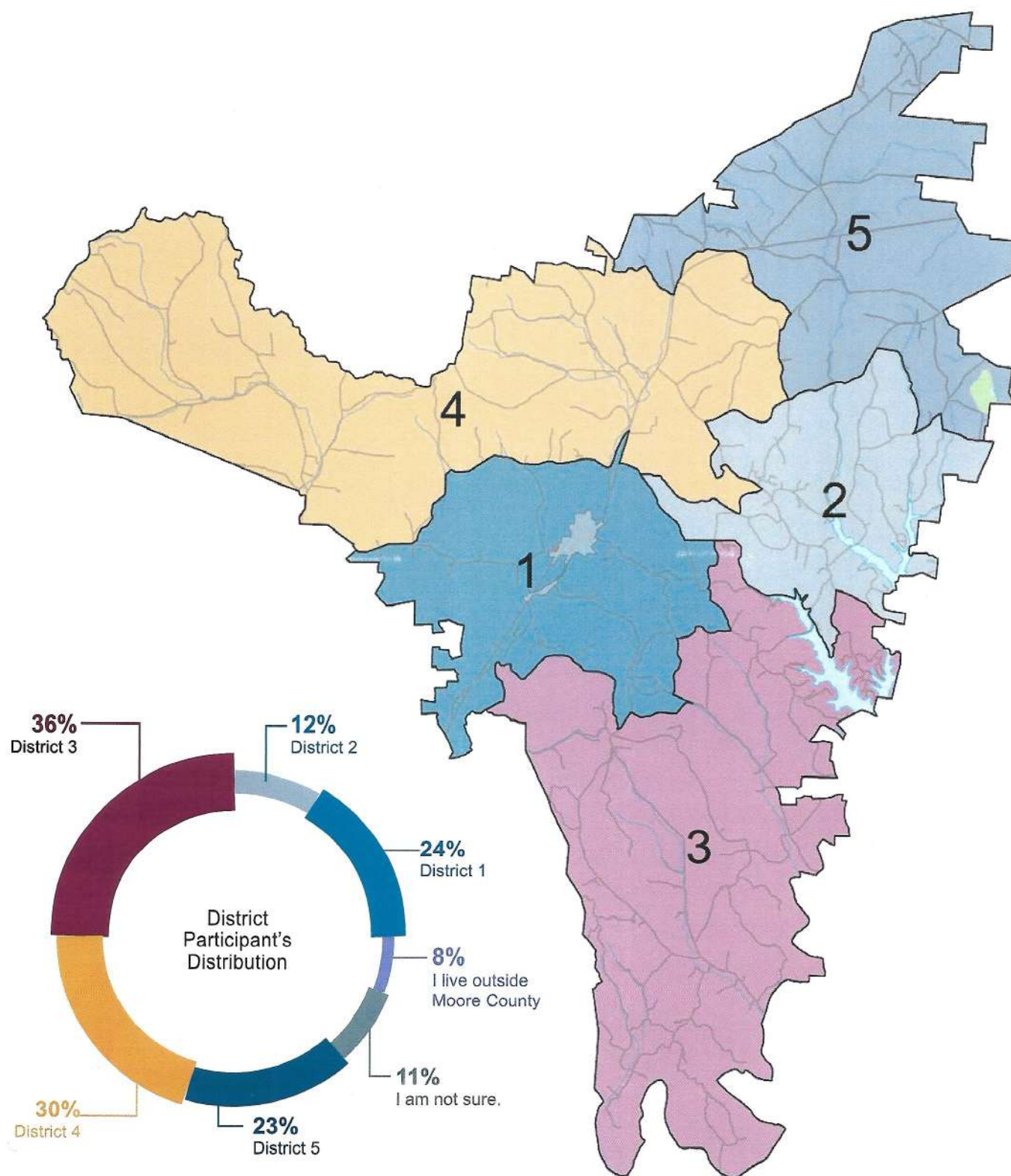


Figure 9 Distribution of Survey participants by district.

Figure 8 Moore County District Map

Survey participants were asked to select up to 5 safety projects that they thought were most needed on Moore County's roads. The results from the survey are shown below. The transportation safety options given in the survey included:

- Reconfigure Intersections
- Add Warning Signs and Pavement Markings
- Add or Widen Shoulders
- Add Guardrails
- Widen Travel Lanes
- Reduce Speed Limits
- Install Turn Lanes at Intersections
- Roadway Improvements for Pedestrians
- Roadway improvements for Cyclists
- Roadside Vegetation Removal

Figure 10 Transportation safety improvements presented in Moore County's public survey.



67% of survey respondents support the addition of or widening of roadway shoulders.



47% of respondents conveyed a need for more guardrails.



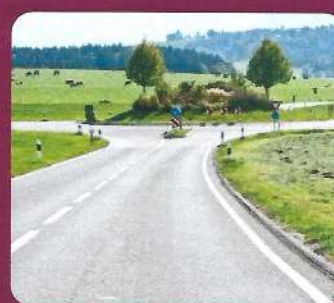
Excessive roadside vegetation was identified as a major safety issue by 71% of respondents.



45% of survey respondents expressed a need for more warning signs and pavement markings on the roads.



46% of survey respondents support the widening of roadway travel lanes.



38% of survey respondents supported the reconfiguration of problem intersections.

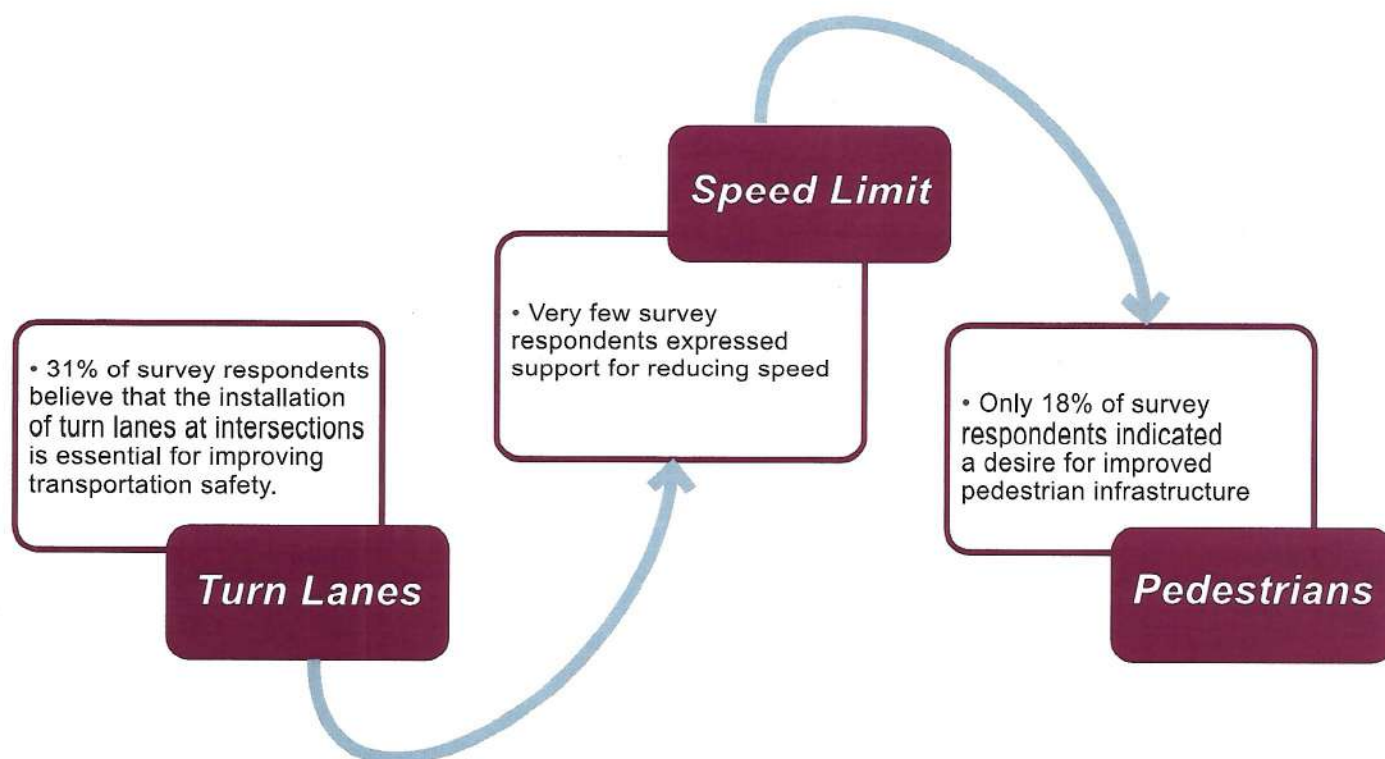


Figure 11 Safety countermeasures selected by survey respondents.

Survey participants were also asked to rank various criteria (Not Important to Very Important) in determining how the county should prioritize safety projects. The results are shown in Figure 12.

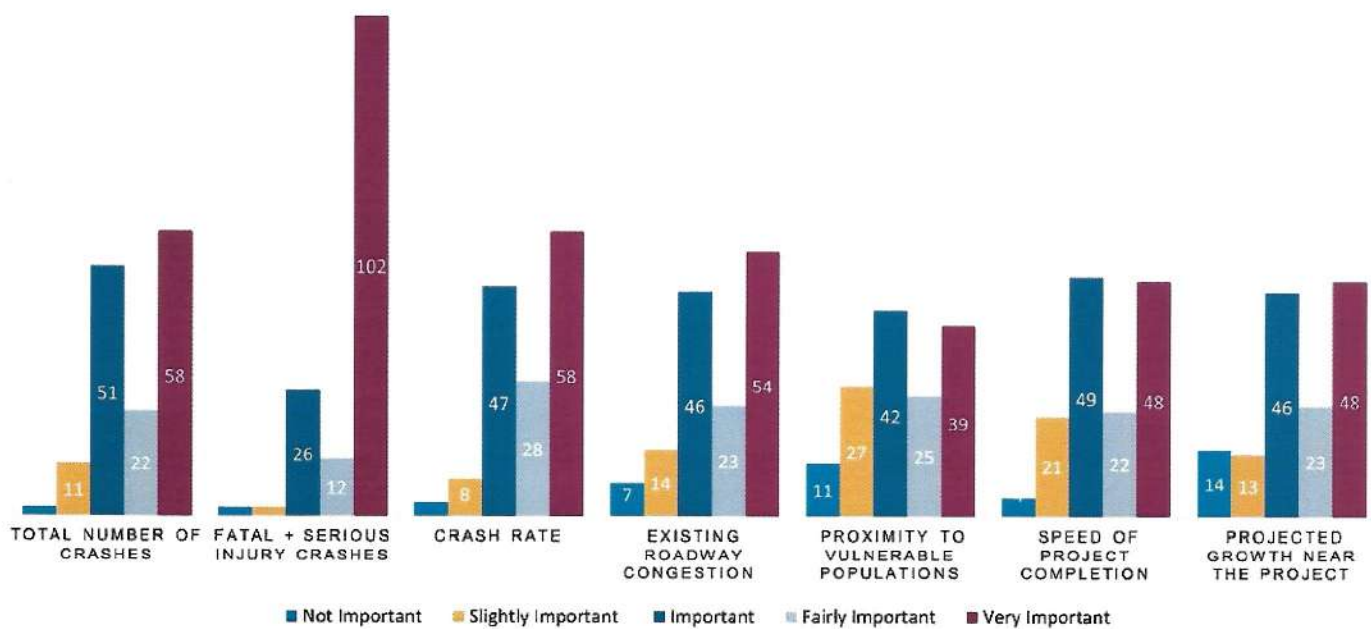


Figure 12 Importance of criteria for project selection among survey participants

KEY TAKEAWAYS

FATAL + SERIOUS INJURY CRASHES, TOTAL CRASHES, AND CRASH RATE ARE VIEWED AS THE MOST CRITICAL CONSIDERATIONS IN PROJECT PRIORITIZATION.

GROWTH NEAR THE PROJECT AND SPEED OF COMPLETION ARE VALUED, BUT LESS CONSISTENTLY ACROSS RESPONDENTS COMPARED TO SAFETY FACTORS.

RESPONDENTS PRIORITIZE SAFETY ABOVE ALL, WHILE STILL RECOGNIZING THE IMPORTANCE OF EQUITY, CONGESTION, AND TIMELY PROJECT COMPLETION.

SAFETY ANALYSIS

Moore County's traffic safety analysis is informed by historical crash data gathered from the Tennessee Department of Transportation's (TDOT) Enhanced Tennessee Roadway Information Management System (E-TRIMS), a comprehensive database containing traffic safety data collected by law enforcement agencies statewide. The data used in this analysis is from the five-year period between 2020-2024. This historical trend analysis explores the conditions and patterns that have influenced transportation safety in Moore County over time, along with factors that may contribute to serious or fatal crashes in the future. The results identify the

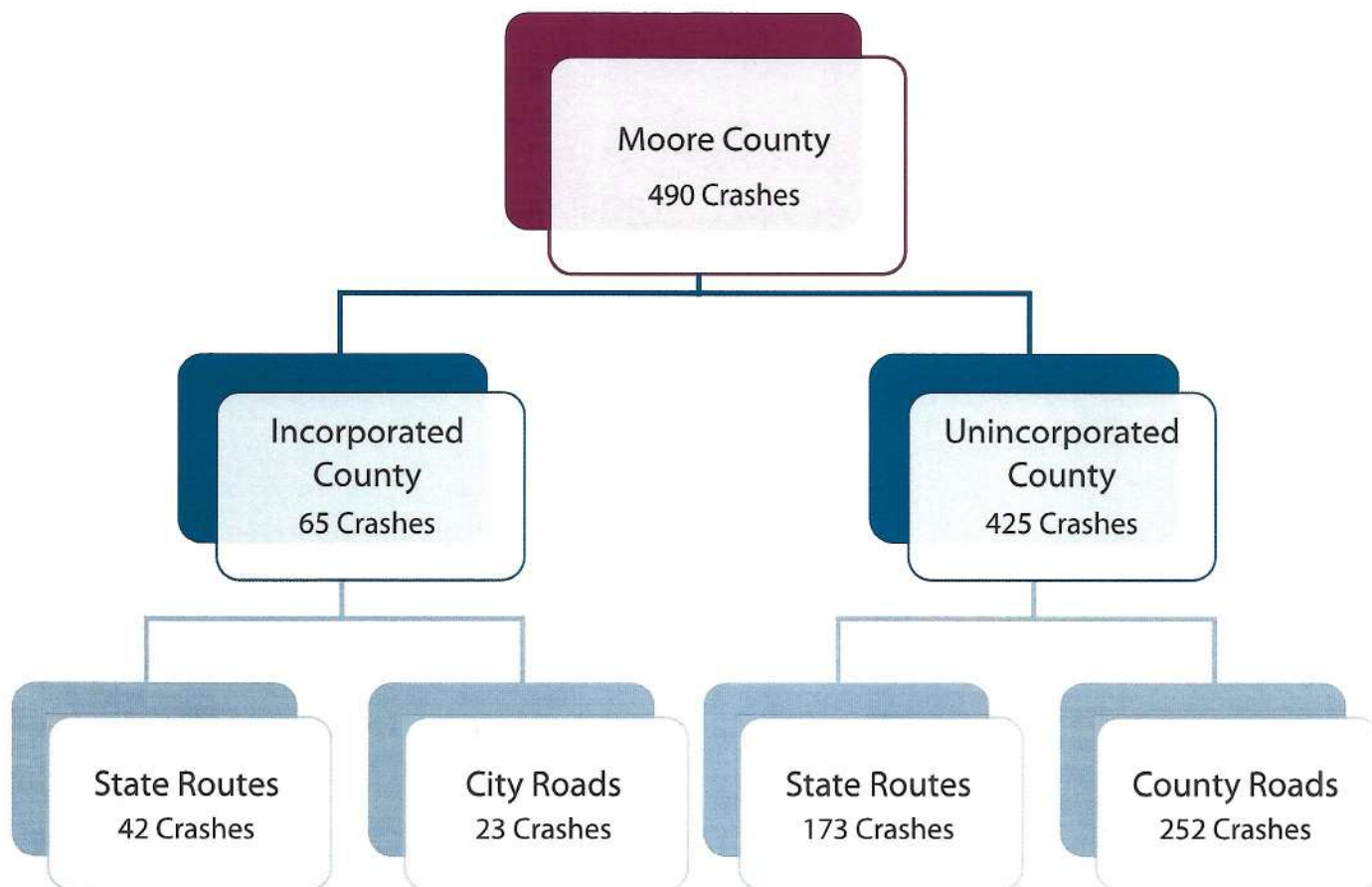


Figure 13 Moore County crashes from 2020-2024

most frequent and concentrated crash types and contributing factors across the county, and they help guide the strategies and recommendations included in HIN. While the primary focus of this document is improving safety within unincorporated communities, it is essential to consider countywide trends. Notably, most crashes in Moore County took place in unincorporated areas, meaning that the county-wide data follows very similar trends to the data from the unincorporated areas.

Crashes involving animals and/ or alcohol or drug impairment were removed from the dataset to ensure the safety analysis focused on roadway and infrastructure-related factors.

The data analysis for this action plan examines crashes by the most severe injury outcomes according to the KABCO scale. The KABCO Scale was developed by the Federal Highway Administration (FHWA) and is used by law enforcement agencies to classify crash severity.

K - Fatal Injury

A - Suspected Serious Injury

B - Suspected Minor Injury

C - Possible Injury

O (PDO) - Property Damage Only

Figure 14 The KABCO scale

Between 2020 and 2024, there were a total of 490 crashes in Moore County. Tragically, 10 individuals lost their lives in fatal (K) collisions, while 26 sustained serious (A) injuries. Additionally, 126 people suffered injuries that were classified as either minor (B) or possible (C) injury.

MOORE COUNTY CRASHES (2020-2024)

K	Fatal crashes	28
A	Suspected Serious Injury Crashes	101
B	Suspected Minor Injury Crashes	306
C	Possible Injury Crashes	83
O	Property Damage Crashes	2342
	Total Crashes	2860

Figure 15 Crashes in Moore County Classified by KABCO Scale (2020-2024)

It is important to note that the total number of injured people and the total number of injury crashes represent two different counts. One crash can involve multiple injured individuals.



Figure 16 Fatal & serious injury crash count + person count

The KABCO scale can be utilized to apply economic costs towards each crash category. There is no nationally recommended set of crash unit costs and the process of applying a cost can be complicated as the true costs of a crash is often intangible. States have the autonomy to select, modify, and update crash unit costs from various sources for their highway safety analyses. However, the FHWA has compiled a literature review that discusses the current practices used by states, the key factors in adjusting crash unit costs, and the practicality of creating recommended national unit cost values. As highlighted by the FHWA, some of the advantages and disadvantages of using uniform national unit costs are:

Advantages	National crash costs would promote consistency in analysis, decision-making, and research.
	National crash costs could remove the burden from states to individually establish and update their own set of crash cost values.
	National crash costs could reduce confusion between, or incorrect application of, person-injury unit costs and crash unit costs.
Disadvantages	National crash costs may not account for differences in economic analysis methodologies between states.
	National crash costs may require states to change how they currently conduct economic analysis, potentially requiring development and implementation of new tools or revisions to existing tools.
	National crash costs may reduce the appearance of flexibility in states' preferences.

As an illustrative example, The Moore County Safety Committee has drawn on the FHWA's published recommended national comprehensive crash unit cost estimates (2024 dollars) to provide insight into potential cost magnitude. While these values do not reflect Tennessee's actual crash costs as that would require a much more nuanced approach, they do provide insight into the societal losses incurred through various crash types. Figure 17 shows the FHWA's recommended comprehensive crash unit costs alongside the estimated totals for Moore County crashes from 2020-2024

Severity	Comprehensive Crash Unit Costs (2024 Dollars)	Crash Type	Total Number of Crashes	Total Crash costs over 5 years (2020-2024)
K	\$15,988,000	Fatal	10	\$159,880,000
A	\$1,705,100	Suspected Serious Injury	23	\$39,217,300
B	\$384,000	Suspected Minor Injury	65	\$24,960,000
C	\$204,600	Possible Injury	33	\$6,751,800
O	\$18,100	Property Damage	359	\$6,497,900

Figure 17 Crash unit costs in Moore County classified by KABCO scale (2020-2024)

Figure 18 illustrates the crash types reported by year for Moore County.

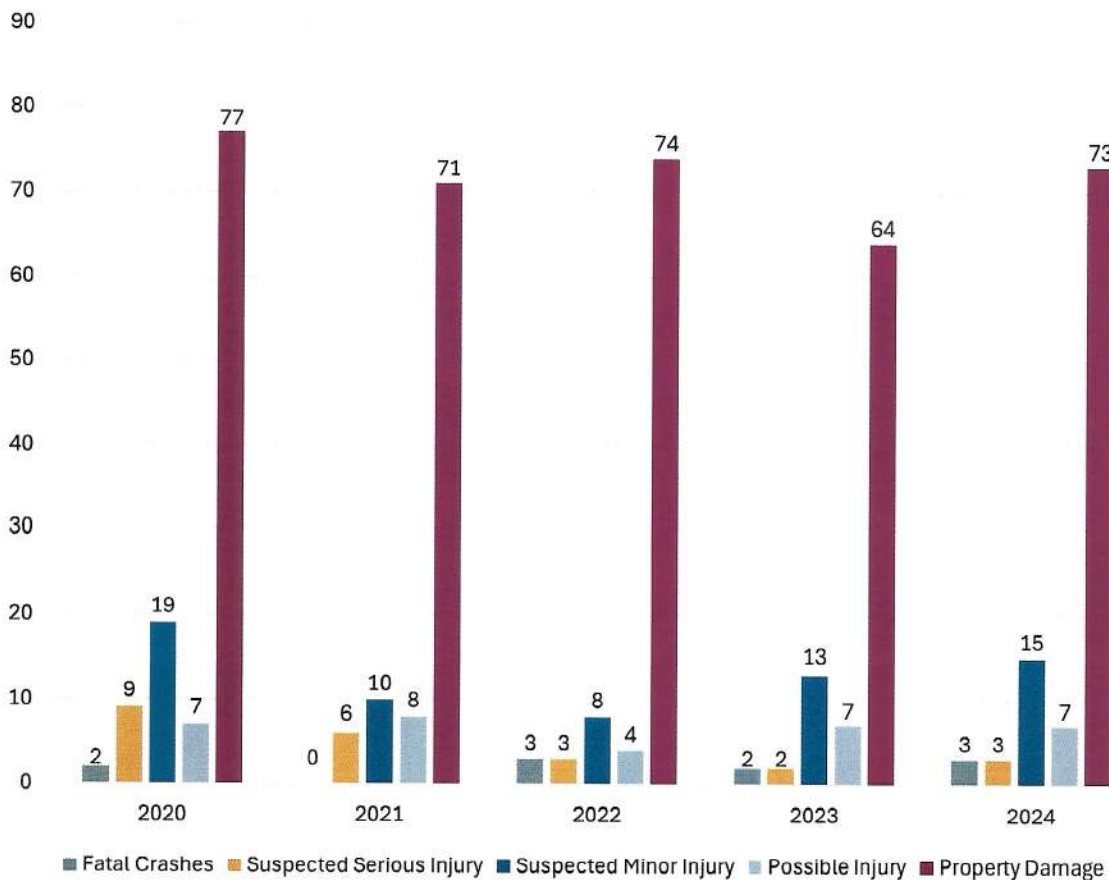


Figure 18 Crash severity by year (2020-2024)

Understanding the full spectrum of traffic crashes throughout the county can reveal underlying issues such as driver behavior, road conditions, or weather patterns. By analyzing all crash types, the Moore County Safety Committee was able to identify contributing factors and behaviors, allowing for more comprehensive safety measures. Although the primary objective of this TSAP is to focus on preventing fatalities (K) and serious injuries (A), studying crashes that involve minor injury (B), possible injury (C), and property damage (O) can also provide detailed patterns and allow for proactive rather than reactive safety measures.

A significant 81% of all crashes occurred directly on the roadway (Figure 19), approximately 18% occurred at intersections (Figure 20), and less than 1% occurred on ramps.

Crash Locations

Identifying where crashes occur is critical for effective safety strategies. Roadway and intersection crashes have different characteristics and require targeted solutions.



ROADWAY CRASHES

- Often involve single vehicle crashes
- Run-off-road incidents
- Collisions with fixed objects



INTERSECTION CRASHES

- Usually involve multiple vehicles
- Angle (T-bone) crashes
- Rear-end collisions

TARGETED SAFETY SOLUTIONS

- Improved roadway and intersection signage
- Add or upgrade traffic signals
- Redesign intersections to reduce conflict points

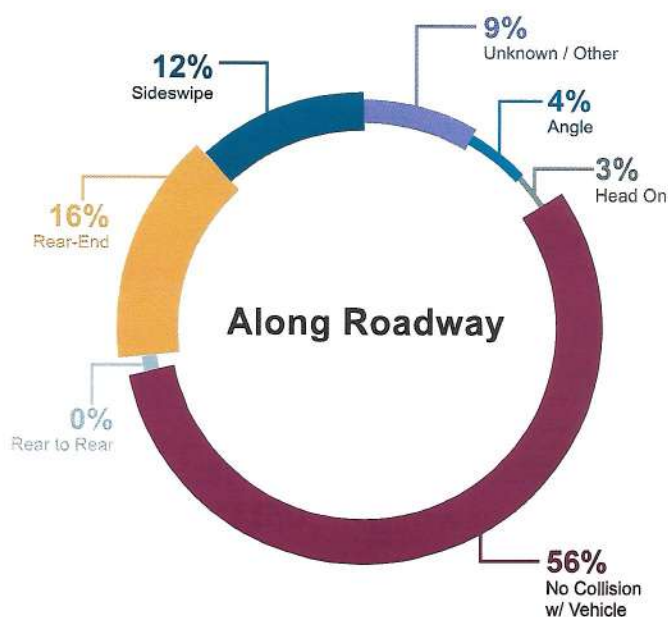


Figure 19 Crash type distribution along roadways (2020-2024)

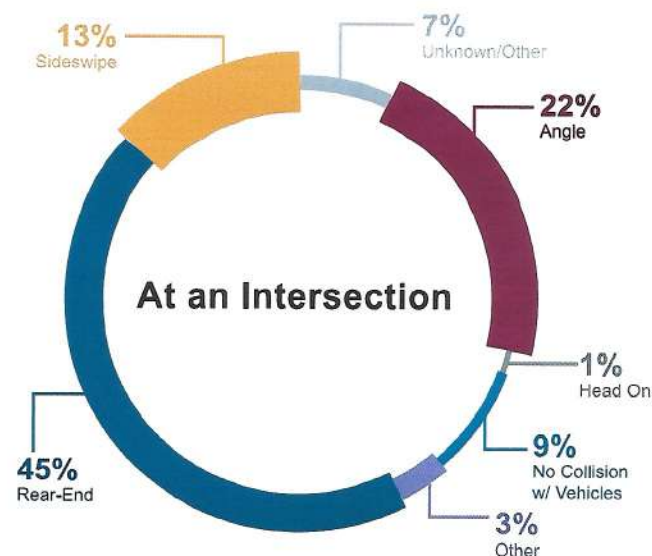


Figure 20 Crash type distribution at intersections (2020-2024)

VULNERABLE ROAD USERS

According to the National Road Safety Strategy, vulnerable road users (VRU) are road users not in a car, bus or truck. They are generally considered to include pedestrians, motorcycle riders, cyclists, children 7-years-and under, the elderly and users of mobility devices. In the event of a crash, VRUs have little to no protection from crash forces.

Pedestrians were involved in 2 total crashes throughout Moore County during the study period. One of those crashes involved a serious injury.

Traffic comes with unpredictability, but patterns can be detected to alleviate potential crashes. Faster driving speeds contribute to longer stopping distances, smaller fields of vision, and increased pedestrian injuries and fatalities. Larger vehicles also require more stopping distance, have higher impact forces, and inflict increased pedestrian injuries and fatalities. The Governor's Highway Safety Association (GHSA) has reported that from 2008 to 2019, pedestrian fatalities increased by 53%, while other traffic fatalities increased by 2%. The GHSA data also revealed that 81% of pedestrian fatalities occurred from dusk to dawn, highlighting potential visibility concerns. To mitigate these factors and other roadway hazards, it is crucial to Moore County to prioritize the safety of vulnerable users through countermeasures such as improved crosswalk visibility, efficient traffic calming strategies, and strict enforcement of speed limits to reduce and eliminate the risks of deaths and serious injuries.

<i>Primary Pedestrian Crash Type</i>	<i>Primary Vehicular Maneuver</i>	<i>Primary Driver Behavior</i>
<i>Suspected Serious Injury (A)</i>	Turning Left 	<i>Failure to yield Right of Way</i>
<i>Suspected Minor Injury (B)</i>	Going Straight 	<i>Failure to yield Right of Way</i>

Figure 21 Pedestrian crashes in Moore County (2020-2024)

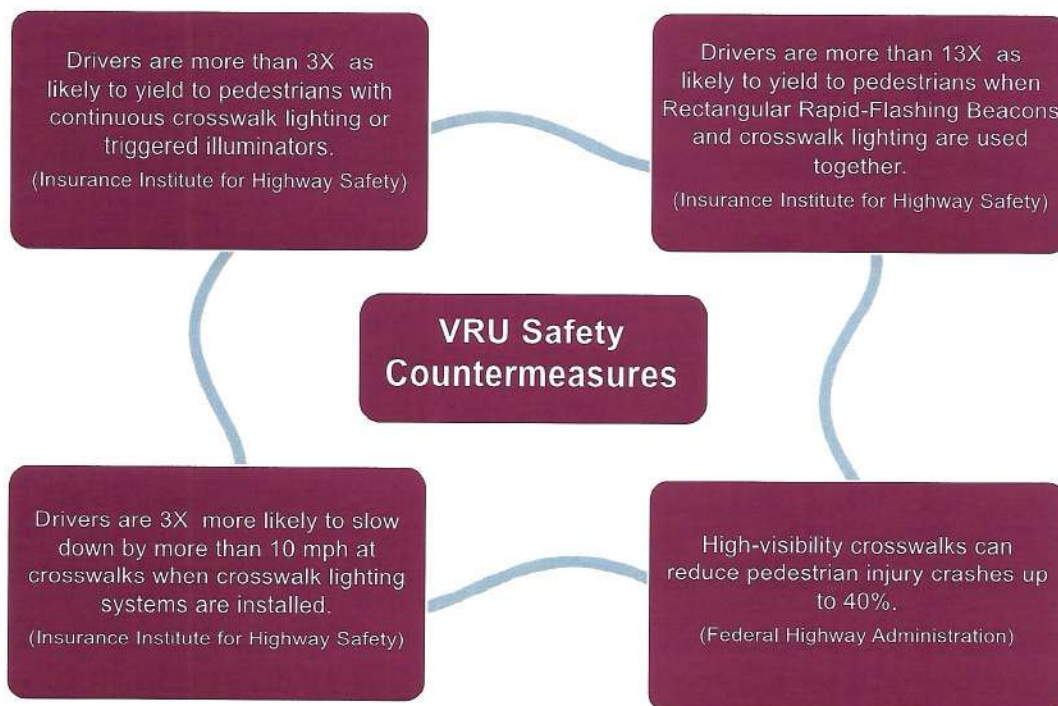


Figure 22 Countermeasure information for vulnerable road users

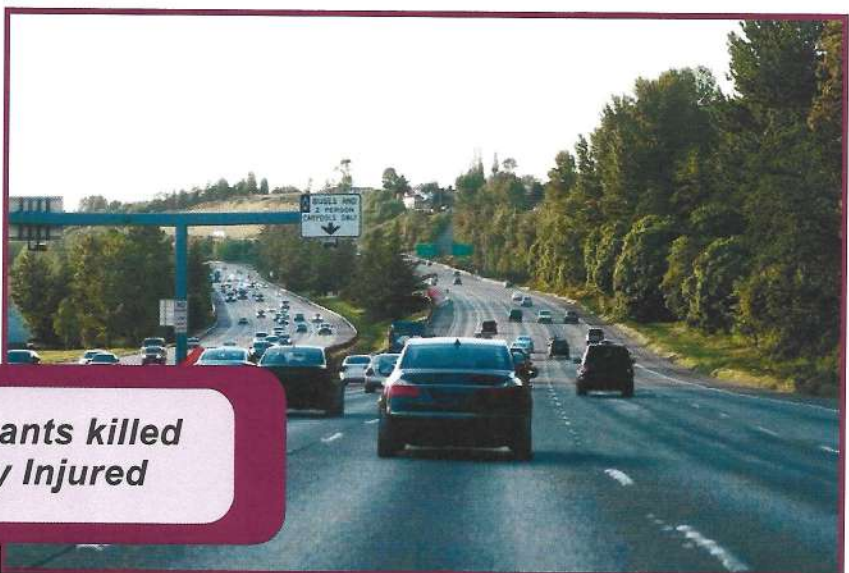
FATAL & SERIOUS (K&A) INJURY CRASHES

Fatal (K) and Serious (A) Injury crashes are unacceptable and must be prevented. The minor injury (B), possible injury (C), and property damage (O) crashes show that preventative measures must be taken to improve road safety, reduce economic losses, and prevent further damage and loss. Moore County is committed to eliminating deaths and injuries on its roadways and that begins with ensuring that property damage (O) and minor/possible (BC) injury crashes do not escalate into fatal (K) and serious (A) injury crashes.

10 fatal (K) crashes and 23 serious injury (A) crashes lead to 10 deaths and 26 serious injuries. To fully understand these crashes, it is crucial to investigate the underlying factors. Identifying the root causes of these crashes is required for developing targeted solutions that address the safety challenges on Moore County's roadways.



***1 Pedestrian
Severely Injured***



***10 vehicle occupants killed
and 25 severely Injured***

Figure 23 Impacts of fatal & serious injury crashes throughout Moore County (2020-2024)

CRASH TRENDS

Of the 28 fatal (K) and 101 serious injury (A) car crashes throughout the county, approximately 67% were non-collision incidents, involving drivers striking non-vehicular objects. The other crash types are illustrated in Figure 13. The high percentage of non-collision crashes underscores the importance of addressing potential contributing factors such as roadway conditions, driver behaviors, and environmental factors. This data also provides insight into potential solutions that can be beneficial to eradicating these types of crashes.

The analysis of harmful events in fatal (K) and serious (A) injury crashes provides insight into what is leading to injury/death in these crashes. Most crashes were attributed to vehicles in transport (Figure 14). While vehicle to vehicle crashes account for 41 of the K & A crashes in Smith County, this data also shows the safety risks posed by fixed object collisions and roadway departures, which contribute to the overall safety issues throughout the county.

Manner of Collisions	Frequency	
No Collision w/ Vehicle	21	64%
Angle	5	15%
Rear-End	4	12%
Head-On	3	9%
Total K+A Crashes	33	100%

Figure 24 Fatal (K) & serious injury (A) crashes reported by crash type (2020-2024)

First Harmful Event	Frequency	
Vehicle in Transport	11	33%
Standing Tree	8	24%
Earth Embankment	7	21%
Building	1	3%
Ditch	1	3%
Guardrail End	1	3%
Immersion	1	3%
Overturn	1	3%
Parked Moto Vehicle	1	3%
Pedestrian	1	3%
Total K+A Crashes	33	100%

Figure 25 First harmful event impacting fatal (K) & Serious (A) injury crashes (2020-2024)

Vehicle collisions (33%), trees (24%), and embankments (21%) account for 78% of all harmful events

Run-off-road crashes are a major issue, indicated by impacts with trees and embankments

DRIVER BEHAVIORS

Driver behavior has an impact on the severity of crashes. Factors such as impaired reaction times, distraction, and fatigue not only increase the likelihood of collisions but also amplify their consequences. According to research from the National Highway Traffic Safety Administration, 90% of motor vehicle crashes are caused by driver-related factors. Understanding these behaviors allows for the identification of patterns and risk factors, enabling the development of targeted interventions to improve road safety. By focusing on driver vulnerability, safety measures can be tailored to address specific issues, such as promoting attentiveness, reducing distractions, and encouraging adherence to traffic laws.

Driver Action	Frequency	
Lane Departure	11	33%
No Contributing Actions	8	24%
Failure to Yield Right of Way	4	12%
Improper Passing	2	6%
Reckless Negligent Driving	2	6%
Unknown Action	2	6%
Careless Erratic Driving	1	3%
Exceeding Posted Speed Limit	1	3%
Other (Narrative)	1	3%
Speed too Fast for Conditions	1	3%
Total K+A Crashes	33	100%

Figure 26 Driver behaviors exhibited in fatal (K) & serious (A) injury crashes (2020-2024)

Figure 26 lists the driver actions that contributed to the fatal and serious injuries throughout the county. The data shows that around 33% of K & A injury crashes occurred when drivers veered off the roadway, deviating from their designated travel lane (Lane Departure). Figure 27 lists the condition the driver exhibited during reports filed by law enforcement. Approximately 70% of K & A injury crashes occurred when drivers appeared to be in normal condition.

Driver Condition	Frequency	
Appeared Normal	23	70%
Unknown Condition	8	24%
Apparently Asleep	1	3%
Reaction to Drugs/Medication	1	3%
Total K+A Crashes	33	100%

Figure 27 Driver conditions in fatal (K) & serious (A) injury crashes (2020-2024)

ENVIRONMENTAL FACTORS

Environmental conditions can contribute to crashes and examining patterns within these conditions can provide insight into where and how roadway conditions can be improved. Factors such as weather, lighting, and roadway surface conditions were evaluated for the 90 fatal (K) and serious (A) injury crashes throughout Smith County from 2020-2024. Figure 28 summarizes the environmental factors reported during the analysis period.

Weather Conditions	Year					Total (K&A Crashes)
	2020	2021	2022	2023	2024	
Clear	7	6	5	4	5	27
Cloudy	4	0	1	0	0	5
Rain	0	0	0	0	1	1
Total (K+A Crashes)	11	6	6	4	6	33

Light Conditions	Year					Total (K&A Crashes)
	2020	2021	2022	2023	2024	
Dark-Not Lighted	3	2	2	0	0	7
Daylight	8	4	4	4	5	25
Dusk	0	0	0	0	1	1
Total (K+A Crashes)	11	6	6	4	6	33

Roadway Surface Conditions	Year					Total (K&A Crashes)
	2020	2021	2022	2023	2024	
Dry	10	6	6	4	5	31
Water-Standing/Moving	1	0	0	0	0	1
Wet	0	0	0	0	1	1
Total (K+A Crashes)	11	6	6	4	6	33

Figure 28 fatal (K) & serious (A) injury crashes by environmental factors (2020-2024)

The data indicates that most K & A crashes occurred under favorable conditions. The majority happened during clear weather. Similarly, crashes were most common in daylight, while fewer occurred in dark, unlit conditions and only 1 at dusk. In terms of roadway surface, nearly all crashes took place on dry roads. Overall, this suggests that severe crashes were more frequent during normal driving conditions rather. This suggests that K & A crashes may be attributed to human and behavioral factors.

VEHICLE TYPES

Analysis of fatal (K) and serious (A) injury crashes revealed that passenger vehicles are the most prominent vehicle types involved in K & A crashes throughout Moore County from 2020-2024. Motorcycles appear to be overrepresented in the data, accounting for 7 of the 33 K & A crashes despite making up a much smaller share of vehicles on the roadway compared to passenger cars.



10 Four-door Sedans



7 Motorcycles



7 Standard Pickups



3 Large Utility Vehicles



3 Compact Utility Vehicles



1 Four-wheel ATV



1 Truck-Tractor



1 Three-wheel Motorcycle/Moped



Figure 29 Vehicle types involved in fatal (K) & serious (A) injury crashes

UNINCORPORATED MOORE COUNTY

This section of the TSAP looks at crashes in unincorporated Moore County specifically, but the countywide analysis presented previously still applies. Since crashes in the unincorporated areas make up over 86% of crashes in the whole county, the overall crash patterns are mostly driven by what happens in these areas.

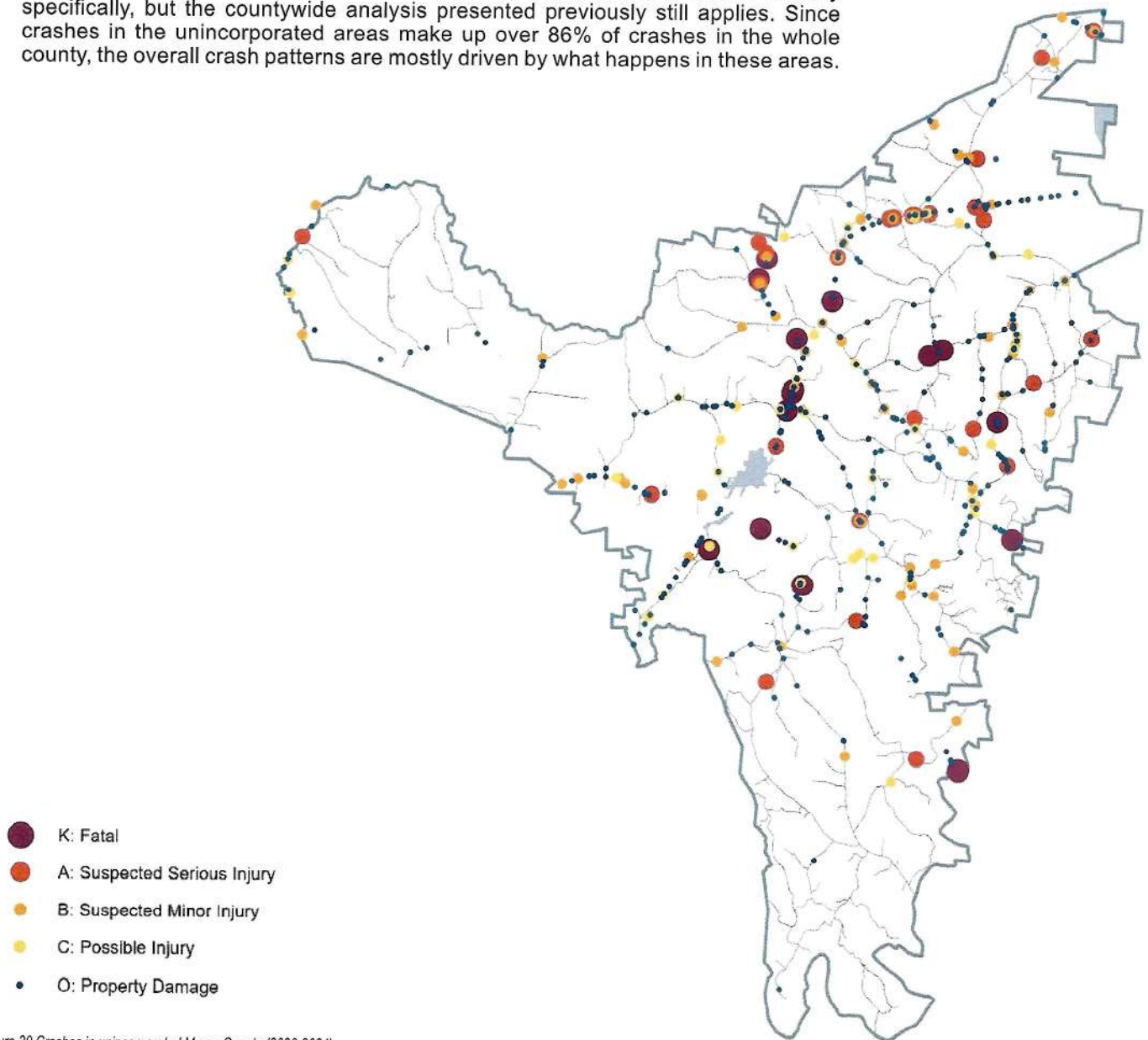


Figure 30 Crashes in unincorporated Moore County (2020-2024)

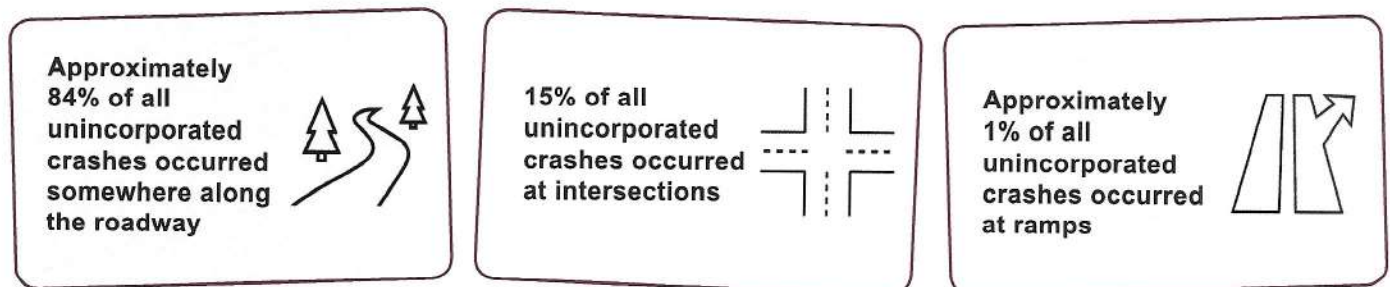


Figure 32 Locations of crashes on unincorporated roads

During analysis of crash trends throughout all unincorporated areas of Moore County, the following key findings were determined:

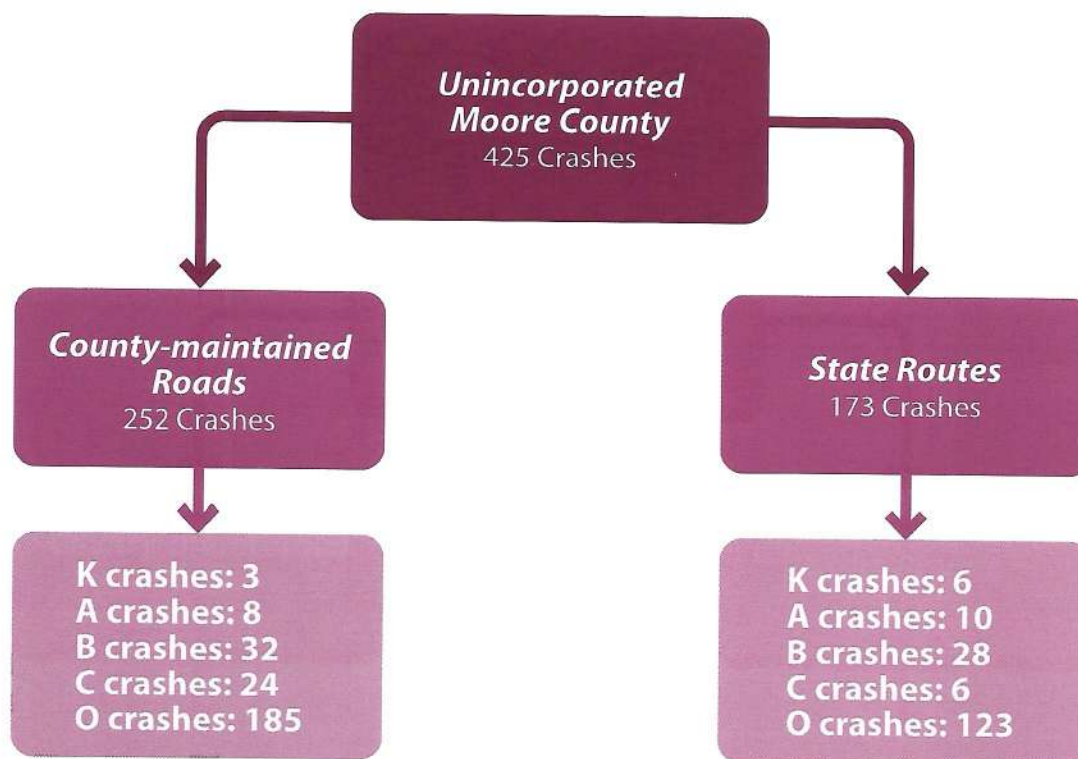


Figure 31 Unincorporated Moore County crashes from 2020-2024

Though this TSAP is primarily focused on roads maintained by Moore County, it is also crucial to prioritize road safety across all roads within the county, regardless of jurisdiction. Moore County crash data indicates that crashes on state-maintained routes (state routes and interstates) in unincorporated areas occur at disproportionately high rates compared to their share of the road network. These routes, which make up only approximately 14% of the total centerline miles, account for 41% of all reported crashes and 59% of all fatal (K) and serious (A) injury crashes in unincorporated areas of the county (Figure 33).

Unincorporated Facility Type	Unincorporated Centerline Miles	Unincorporated Total Crashes	Unincorporated Fatalities (K) + Serious Injuries (A)
State-maintained routes	40.218	173	16
County-maintained roads	256.035	252	11
Total	286.253	425	27

Figure 33 Unincorporated crashes between state-maintained and county-maintained routes (2020-2024)

STATE-MAINTAINED ROUTES

As shown, state-maintained routes within the county experience high crash frequencies and pose significant safety concerns. These routes often serve as connector roads for residents, meaning crashes along them directly impact county communities. Although the county does not have direct jurisdiction over state-maintained routes, documenting these patterns provides an opportunity for multi-jurisdictional collaboration with TDOT. Coordinated planning and investment between the county and the state can help align safety priorities and ensure enhancements across the entire roadway network. Figure 34 presents a summary of all state route crashes throughout unincorporated Moore County.

Map Label	State Route	Local Name	Total Crashes	Total Fatalities	Total Serious Injuries	Total Minor Injuries
SR-1	SR055	Lynchburg Hwy.	98	3	10	12
SR-2	SR050	Fayetteville Hwy. & Winchester Hwy.	30	1	0	8
SR-3	SR129	Booneville Hwy. & Charity Rd.	15	0	1	6
SR-4	SR082	Flat Creek Hwy.	10	2	2	6
SR-5	SR130	Old Shelbyville Hwy.	9	0	0	2
SR-6	SR010	US-231	6	0	0	6
SR-7	SR016	Metro 41A Hwy.	5	0	0	2

Figure 34 State Route Crashes throughout unincorporated Moore County

THE HIGH INJURY NETWORK

As part of the data analysis for this TSAP, a High Injury Network (HIN) was created. The HIN is a tool that identifies roadway locations with the highest amount of fatal and serious injury crashes throughout the county.

The HIN was developed using a data-driven approach to identify roadway segments and intersections with the greatest safety risk. All roads within the study area were evaluated using available crash data. Locations were selected for inclusion in the HIN if they met one or more of the following criteria (see Figure 35).

The Moore County Safety Committee believes that these locations have the greatest potential for safety improvements and investments. The HIN for Moore County is mapped below. Moore County's HIN consists of 3 roadway segments as shown in Figure 36. Further information on the HIN is shown in Appendix A. Specific countermeasures are listed in Appendix B.

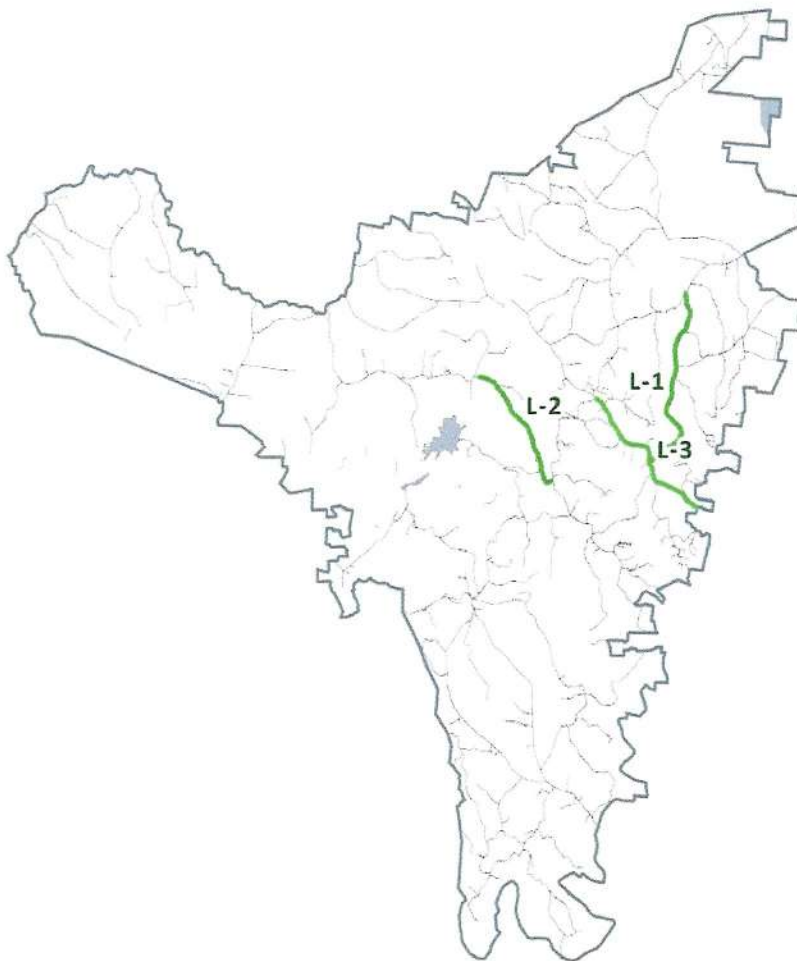


Figure 36 Moore County HIN (2020-2024)

Criteria Type	Description
Preliminary Analysis	All roads and intersections on county-maintained roads in the unincorporated parts of the county were evaluated
Serious Injury/Fatality	Locations with ≥ 1 crash involving a serious injury or fatality in the 5-year analysis period were included
Crash Frequency	Locations with a high number of total crashes were included
Data-Driven Approach	Crash data was used to ensure objective and consistent selection. Crashes involving alcohol impairment and animals were removed from the analysis.
Focus of HIN	Prioritizes locations with highest safety risk and greatest need for action

Figure 35 HIN selection criteria

Map Label	Road Name	Total Crashes	Total Fatalities	Total Serious Injuries	Total Minor Injuries	Length (Miles)	Crash Rate (Crashes per mile)
L-1	Ridgeville Rd.	25	0	1	6	4.2	1.190
L-2	Good Branch Rd.	22	0	1	9	2.943	1.495
L-3	Chestnut Ridge Rd.	15	1	0	5	3.382	0.887

Figure 37 Moore County's High Injury Network- Roadway Segments (2020-2024)

OTHER AREAS OF RISK

While the HIN prioritizes locations with a history of fatal and serious injury crashes, there are additional areas of concern that warrant attention. These locations may not meet HIN criteria due to lower crash frequencies or the absence of severe outcomes, however, they can present safety risks related to roadway design and driver behavior. Acknowledging these areas allows for a more proactive and comprehensive approach to safety by addressing emerging issues before they result in more serious consequences. Incorporating these locations into the broader safety strategy supports continuous improvement and helps ensure that all users benefit from safer travel conditions. Roadways and intersections of risk identified by the Moore County Safety Committee are shown in Figure 38 and Figure 39, respectively. Further information on these areas of risk is shown in Appendix A.

Road Names	Total Crashes	Total Fatalities	Total Serious Injuries	Total Minor Injuries	Length (Miles)	Crash Rate (Crashes per mile)
Cobb Hollow Rd.	20	0	0	4	6.27	0.638
Pleasant Hill Rd.	19	0	0	4	2.298	1.654
Tanyard Hill Rd.	17	0	0	13	7.18	0.474
Cumberland Springs Rd.	11	0	0	7	3.628	0.606
Cashion Rd.	8	0	0	3	1.576	1.015
Griffin Rd.	8	0	0	1	2.598	0.616
Buckeye Loop	7	0	0	1	4.578	0.306
Hurricane Creek Rd.	5	0	1	1	3.86	0.259
Ledford Mill Rd.	5	0	0	2	4.539	0.220
Lost Creek Rd.	5	0	0	1	2.115	0.473
Louse Creek Rd.	5	0	0	2	1.82	0.549
Goose Branch Rd.	4	1	0	0	2.939	0.272

Figure 38 Roadways of risk throughout Moore County (2020-2024)

Intersection	Total Crashes	Total Fatalities	Total Incapacitating Injuries	Total Minor Injuries
Goodbranch Rd. and SR-55	6	0	0	0
Five Points Rd. and SR-55	4	0	0	1

Figure 39 Intersections of risk throughout Moore County (2020-2024)

COUNTY-WIDE COUNTERMEASURES

The following 28 countermeasures proven to improve roadway safety are listed as general benefits that can be applied to all areas of concern throughout the county:

	Countermeasure	Safety Benefit
Speed Managements	Speed Safety Cameras	Deters speeding, reducing crash frequency.
	Variable Speed Limits	Adjusts speeds for safety during variable conditions.
	Appropriate Speed Limits for All Road Users	Aligns speed limits with road characteristics and conditions.
Pedestrian & Bicyclist	Bicycle Lanes	Provides dedicated space for cyclists, reducing conflicts with vehicles.
	Crosswalk Visibility Enhancements	Increases driver awareness of pedestrians, reducing crossing crashes.
Roadway Departure	Leading Pedestrian Interval	Gives pedestrians a head start, lowering turning conflicts with vehicles.
	Medians and Pedestrian Refuge Islands in Urban and Suburban Areas	Offers safe mid-crossing refuge, reducing pedestrian injury risk.
	Pedestrian Hybrid Beacons	Alerts drivers to pedestrian crossings, improving safety at mid-block locations.
	Rectangular Rapid Flashing Beacons (RRFB)	Enhances driver awareness of crosswalks, reducing pedestrian crashes.
	Road Diets (Roadway Reconfiguration)	Slows traffic and creates space for non-motorized users, reducing crash frequency.
	Walkways	Provides a safe path for pedestrians, separating them from vehicles.
	Wider Edge Lines	Enhances lane visibility, reducing run-off-road crashes.
	Enhanced Delineation for Horizontal Curves	Improves curve visibility, decreasing curve-related crashes.
	Longitudinal Rumble Strips and Stripes on Two-Lane Roads	Alerts drivers to lane departures, preventing crashes.
	SafetyEdge	Ensures a safe return to the roadway from the shoulder.
	Roadside Design Improvements at Curves	Provides clear guidance and recovery areas on curves.
	Median Barriers	Prevents crossover crashes by separating opposing traffic.

Figure 40 FHWA's county-wide countermeasures (Continued on Page 31)

	Countermeasure	Safety Benefit
Intersections	Backplates with Retroreflective Borders	Improves signal visibility, reducing intersection crashes.
	Corridor Access Management	Reduces conflict points and improves traffic flow, lowering crash risk.
	Dedicated Left- and Right-Turn Lanes at Intersections	Separates turning traffic, reducing angle and rear-end crashes.
	Reduced Left-Turn Conflict Intersections	Minimizes left-turn collisions by separating turning movements.
	Roundabouts	Slows traffic and eliminates angle crashes, reducing severe crashes.
	Systemic Application of Multiple Low-Cost Countermeasures at Stop-Controlled Intersections	Improves safety at multiple intersections efficiently with low-cost treatments.
	Yellow Change Intervals	Gives drivers adequate warning before signals change, reducing red-light running crashes.
Crosscutting	Pavement Friction Management	Maintains skid resistance, enhancing vehicle control.
	Lighting	Improves visibility, reducing nighttime crashes.
	Local Road Safety Plans	Identifies and addresses local safety issues systematically.
	Road Safety Audit	Provides an independent safety review of road projects.

Figure 40 FHWA's county-wide countermeasures (Continued on Page 30)

CRASH MODIFICATION FACTORS

Crash Modification Factors (CMFs) are defined as a multiplicative factor used to estimate the expected change in crash frequency after implementing a specific treatment or countermeasure.

CMF < 1 → reduces crashes

CMF = 1 → no change

CMF > 1 → increases crashes

For this safety action plan, CMFs were obtained from the Federal Highway Administration's CMF Clearinghouse, which serves as a comprehensive, searchable database of research-based safety effectiveness measures. The Clearinghouse provides CMFs developed from empirical studies, along with supporting documentation and quality ratings to assess their reliability and applicability.

Emphasis was placed on identifying CMF values that best reflect the rural roadways and crash types in Moore County. Priority was given to CMFs associated with roadway departure crashes, intersection-related conflicts, and speed management strategies, as these align with observed safety concerns throughout the county. Additionally, preference was given to CMFs with higher star ratings and those derived from studies conducted on similar facility types. This approach ensures that the selected CMFs are both relevant and supported by reliable research.

As an example, appropriate and applicable safety countermeasures were applied to the HIN roadways to show there is a potential for reducing crashes.

Road Names	Total Crashes	Type of Crash	Recommended Countermeasures	Applicable CMF ID(s)	CMF(s) Applied	Expected Crashes After	Estimated Reduction
Ridgeville Rd.	25	18-Property Damage 3-Possible Injury 3-Suspected Minor Injury 1-Suspected Serious Injury	Edgeline Rumble Strips	3394	0.67	16.75 (~17)	↓ 8 crashes (32%)
Good Branch Rd.	22	16-Property Damage 4-Suspected Minor Injury 1-Possible Injury 1-Suspected Serious Injury	Edgeline Rumble Strips	3394	0.67	14.74 (~15)	↓ 7 crashes (~32%)
Chestnut Ridge Rd.	15	10-Property Damage 2-Possible Injury 2-Suspected Minor Injury 1-Fatal	Chevrons Signs (**Applies only to crashes besides property damage)	2431	0.82	4.1 (~5)	↓ 0.9 crashes (~0%)

Figure 41 CMFs applied to the HIN

CMFs must be applied within the context of their specific applicability criteria, including traffic volume, facility type, and prior conditions. Many CMFs require minimum or maximum volume thresholds and certain roadway features to be present or absent. Using CMFs outside these parameters can compromise accuracy and lead to unreliable safety benefit estimates. Careful evaluation of each CMF's documented requirements and alignment with local conditions is essential to ensure valid and effective countermeasure selection. Further information on CMFs are listed in Appendix C.

GUARDRAIL SAFETY ISSUES

Designed to prevent vehicles from leaving the roadway and encountering dangerous obstacles like cliffs, steep embankments, or fixed objects (such as trees, poles, or bridge supports), guardrails are critical components of roadside safety. However, guardrails themselves can become significant hazards if they are outdated, improperly maintained, or incorrectly installed. Guardrail standards have evolved over the years. It is possible that when the existing guardrail was installed, it met the standards in place at that time. Moore County aspires to ensure that guardrails do not become hazards themselves and can continue to provide safer roads for all. Through consistent attention and investment in roadside infrastructure, the county can significantly reduce the risks of roadway departures and make sure guardrails fulfill their intended role of saving lives.

Inadequate Guardrail Height and Structure

A key issue that can turn a guardrail into a hazard is its height or structural condition. Guardrails that do not meet current Federal Highway Administration (FHWA) standards, such as those less than 24 inches in height, are classified as non-functional. These low barriers are no longer capable of safely redirecting vehicles back onto the road. Particularly for larger or taller vehicles, low guardrails may cause the vehicle to vault over the top or slide beneath the rail, leading to rollovers, serious crashes, or even falls into dangerous off-road areas.

Outdated Guardrail Designs

Beyond height issues, outdated guardrail designs pose significant risks. Some outdated designs are less effective at absorbing or dissipating the energy from vehicle collisions compared to newer models. For instance, some guardrail end treatments designed decades ago have been linked to fatal crashes. A widely used guardrail end terminal, the ET-Plus, has sparked controversy for its role in crashes where the rail failed to crumble properly on impact. Instead of absorbing crash energy, it could impale vehicles, leading to life-threatening injuries.

Improper Guardrail Placement

Another issue arises when guardrails are installed in inappropriate locations or too close to the road's edge. Improper placement can increase risks for drivers, such as when guardrails are positioned along road sections with minimal chances of vehicle departure. In such cases, the guardrail may become a more dangerous obstacle than the natural surroundings. If a driver swerves to avoid an obstacle but instead strikes an improperly placed guardrail, the collision could cause more damage than if no guardrail were present.

Damaged or Deteriorating Guardrails

Guardrails that have sustained damage can also become hazards. Bent, broken, or misaligned rails may lack the structural integrity to stop or redirect a vehicle in a collision effectively. According to FHWA guidelines, if a guardrail is pushed more than 18 inches out of alignment or if three or more posts are damaged or detached from the rail, it is no longer functional. In such cases, the guardrail may collapse upon impact, allowing the vehicle to break through and collide with the obstacles it was designed to protect against.

Defective Guardrail End Treatments

Guardrail end treatments are another area where guardrails can become hazardous. These end sections soften the impact of a vehicle hitting the end of the guardrail, preventing a collision with a rigid, immovable object. However, when these treatments are outdated, poorly installed, or damaged, they may fail to function correctly. Some outdated models have been known to "spear" vehicles upon impact, drastically increasing the risk of fatalities or severe injuries. Ensuring that all end treatments meet safety standards and are correctly installed is vital to reducing harm. Priority should be given to replacing end treatments that no longer meet safety standards, especially in high-traffic or high-risk areas.

Inconsistent Guardrail Coverage and Gaps

Inconsistent guardrail coverage or gaps in guardrail systems can also pose serious hazards. Large gaps in guardrail coverage can leave sections of the road unprotected, allowing drivers to swerve into these unguarded areas and encounter dangerous roadside hazards. Additionally, inconsistent coverage can confuse drivers, undermining their sense of protection. A continuous, well-maintained guardrail system is essential for ensuring that drivers remain shielded from off-road dangers.

POLICY AND PROCESS CHANGES

The county's current and future policies, plans, guidelines, and standards play a key role in developing and committing to a comprehensive safety culture. The Moore County Safety Committee evaluated the existing safety policies and practices both county-wide and state-wide to help influence the future of road safety throughout the county.

In addition to Moore County's safety policies and enforcement, the committee also conducted a comprehensive review of transportation safety documents on the state level.

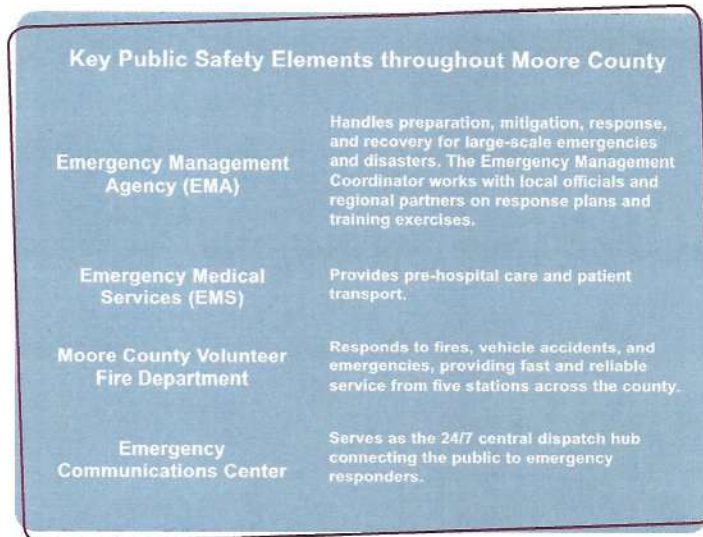


Figure 42 Safety programs throughout Moore County

State of Tennessee Transportation Safety Plans

TDOT Strategic Highway Safety Plan (SHSP)	A statewide, data-driven safety plan that sets priorities for reducing traffic fatalities and serious injuries on all public roads. It coordinates multiple agencies and focuses on emphasis areas like impaired driving, lane departures, and vulnerable road users.
TDOT Highway Safety Improvement Program (HSIP)	A federally required program administered by TDOT that funds infrastructure safety improvements such as guardrails, striping, intersection upgrades. Projects must be data-driven and aligned with SHSP priorities.
Tennessee Highway Safety Office (THSO) Annual Highway Safety Plan (HSP)	An annual plan focused on behavioral safety (seatbelt use, impaired driving, speeding). It distributes federal funds to local agencies for enforcement, education, and outreach programs.
TDOT Multimodal / Safety & Access Plans	Plans and initiatives addressing safety for all transportation users, especially vulnerable road users, through infrastructure improvements and targeted safety programs.

Figure 43 A review of transportation safety plans and policies in Tennessee

The current efforts throughout Moore County indicate a strong capacity for public safety and incident response, however there are few existing plans to address proactive roadway safety and serious injury and fatality prevention on roadways. This TSAP serves as a major step towards evaluating transportation safety and educating and encouraging Vision Zero policies throughout the county.

The following recommendations are designed to align Moore County's existing capabilities with the principles and priorities of the Safe Systems Approach:

1. Continue to track crash data to identify the HIN and encourage Vision Zero initiatives throughout the county
2. Implement public education programs to encourage safe driving and promote adherence to traffic safety laws and regulations
3. Promote coordination and partnerships between Moore County, TDOT, and local municipalities to advance shared roadway safety goals and improve system-wide outcomes
4. Update the community on Vision Zero progress in Moore County using web-pages and other communication tools
5. Develop community-based demonstration projects and enhance public engagement

PROGRESS AND TRANSPARENCY

This TSAP is designed to be a living document and will evolve over time as transportation safety is vital to Moore County. To maintain transparency in the progress of this TSAP, Moore County will publish this document along with any amendments for the public to access. This information will allow the public to explore safety trends and project data, providing a clear view of our progress toward achieving Vision Zero goals by 2045.

APPENDIX A

HIGH INJURY NETWORK & OTHER
AREAS OF RISK DETAILED

MOORE COUNTY HIN

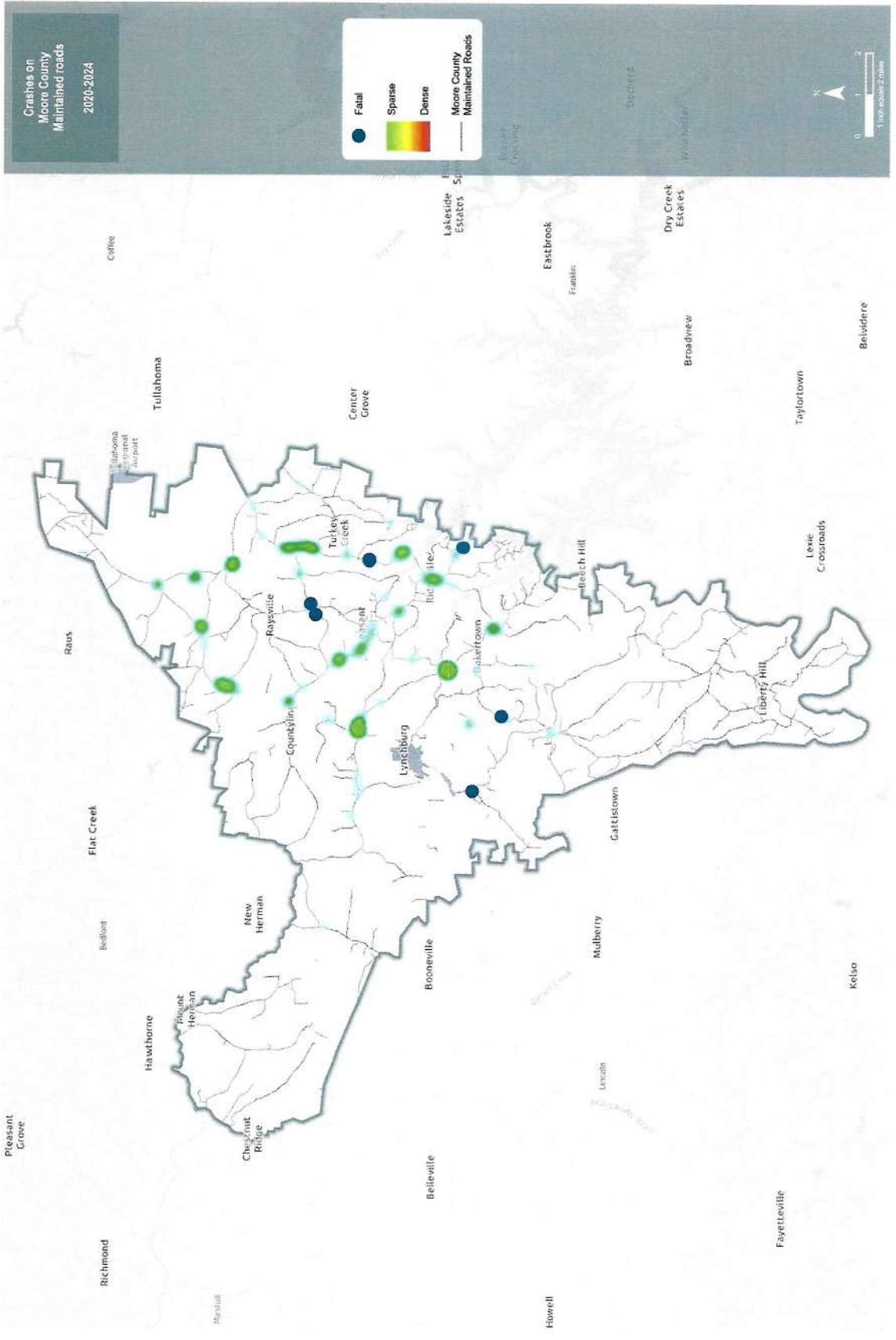
Map Label	Road Names	Total Crashes	Total Fatalities	Total Incapacitating Injuries	Total Minor Injuries	Type of Crash	Manner of Crash	Weather Conditions	Light Conditions	Vehicle Maneuver	Roadway Surface Conditions	Most Harmful Event	Driver Actions
L-1	Ridgeville Road	25	0	1	6	18-Property Damage 3-Possible Injury 3-Suspected Minor Injury 1-Suspected Serious Injury	18-No Collision W/ Vehicle 5-Sideswipe 2-Unknown	19-Clear 2-Unknown 2-Cloudy 2-Rain	14-Daylight 5-Dark-Not Lighted 3-Dusk 1-Unknown 1-Dark-Lighted 1-Dawn	11-Negotiating A Curve 8-Going Straight 3-Turning Left 3-Unknown	20-Dry 3-Wet 2-Unknown	6-Vehicle In Transport 5-Standing Tree 4-Ditch 2-Unknown 2-Earth Embankment 2-Overturn 1-Culvert 1-Fence 1-Guardrail Face 1-Mail Box	12-No Contributing Actions 5-Lane Departure 5-Unknown Action 1-Driver Distracted 1-Failure To Yield Right Of Way 1-Speed Too Fast For Conditions
L-2	Good Branch Road	22	0	1	9	16-Property Damage 4-Suspected Minor Injury 1-Possible Injury 1-Suspected Serious Injury	15-No Collision W/ Vehicle 3-Sideswipe 1-Unknown 1-Angle 1-Head-On 1-Rear-End	7-Cloudy 7-Rain 6-Clear 1-Unknown 1-Snow	16-Daylight 4-Dark-Not Lighted 1-Unknown 1-Dark-Lighted	16-Negotiating A Curve 3-Unknown 1-Going Straight 1-Passing Or Overtaking Another Vehicle 1-Turning Left	15-Wet 4-Dry 1-Snow Or Slush 1-Water- Standing/ Moving 1-Turning Left	6-Vehicle In Transport 5-Overturn 4-Ditch 4-Standing Tree 1-Unknown 1-Earth Embankment 1-Shrubbery	11-No Contributing Actions 3-Lane Departure 2-Reckless Negligent Driving 2-Unknown Action 1-Careless Erratic Driving 1-Failure To Yield Right Of Way 1-Speed Too Fast For Conditions
L-3	Chestnut Ridge Road	15	1	0	5	10-Property Damage 2-Possible Injury 2-Suspected Minor Injury 1-Fatal	11-No Collision W/ Vehicle 2-Sideswipe 1-Angle 1-Rear-End	12-Clear 2-Unknown 1-Rain	9-Daylight 6-Dark-Not Lighted	8-Going Straight 4-Negotiating A Curve 1-Backing Up Other Than Parking 1-Turning Left 1-Turning Right-RTOR Permitted Not Known	10-Dry 5-Wet	4-Vehicle In Transport 3-Earth Embankment 3-Overturn 2-Standing Tree 1-Ditch 1-Fence 1-Mail Box	5-No Contributing Actions 3-Lane Departure 2-Unknown Action 1-Exceeding Posted Speed Limit 1-Failure To Yield Right Of Way 1-Improper Backing 1-Operator Inexperience 1-Swerved Or Avoided

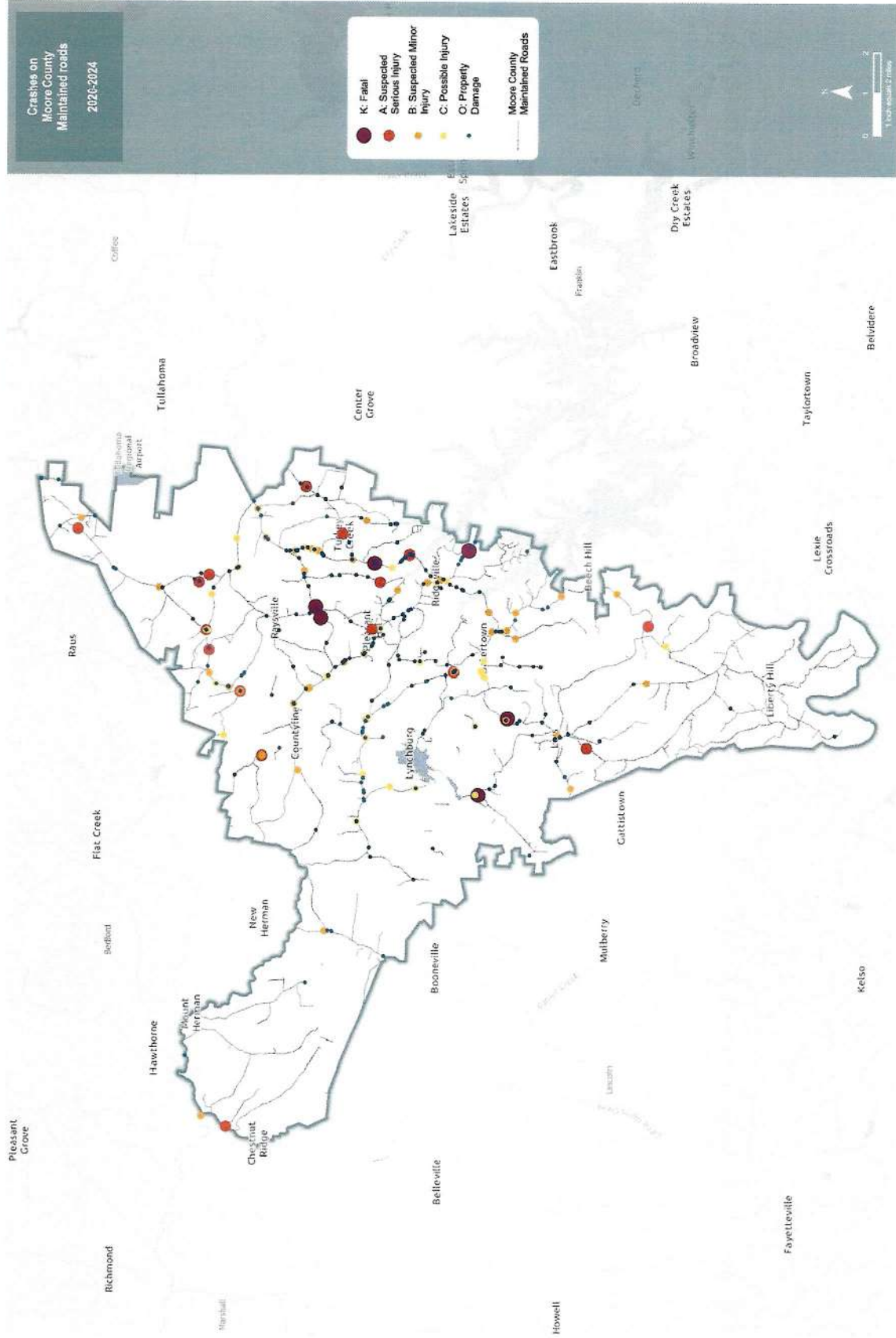
MOORE COUNTY HIN - OTHER AREAS OF CONCERN

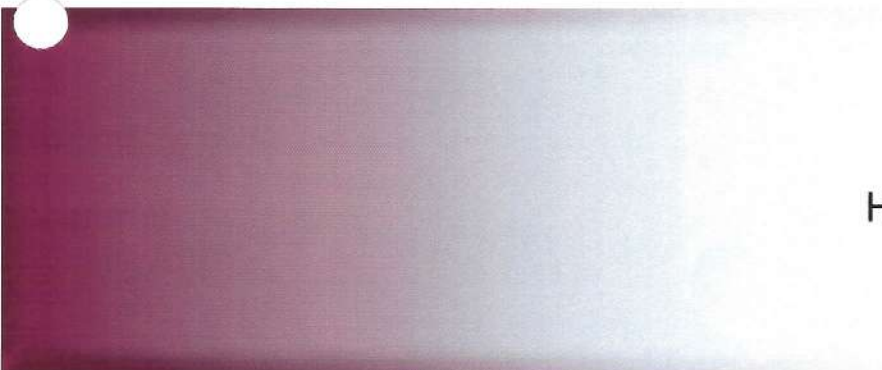
Road Names	Total Crashes	Total Fatalities	Total Incapacitating Injuries	Total Minor Injuries	Type of Crash	Manner of Crash	Weather Conditions	Light Conditions	Vehicle Maneuver	Roadway Surface Conditions	Most Harmful Event	Driver Actions
Cobb Hollow Rd.	20	0	0	4	16-Property Damage 4-Suspected Minor Injury	10-No Collision W/ Vehicle 4-Unknown 2-Angle 2-Rear-End 2-Sideswipe	11-Clear 4-Rain 3-Unknown 2-Cloudy	14-Daylight 3-Unknown 2-Dark-Not Lighted 1-Dusk	5-Going Straight 5-Unknown 3-Controlled Maneuver 3-Negotiating A Curve 3-Turning Left 1-Starting In Traffic Lane	11-Dry 5-Wet 4-Unknown	7-Vehicle in Transport 4-Overturn 3-Unknown 1-Culvert 1-Curb 1-Ditch 1-Fence 1-Guardrail Face 1-Standing Tree	12-No Contributing Actions 3-Unknown Action 2-Lane Departure 1-Failure to Yield Right of Way 1-Operator Inexperience 1-Over Correcting
Pleasant Hill Rd.	19	0	0	4	16-Property Damage 3-Suspected Minor Injury	13-No Collision W/ Vehicle 2-Unknown 3-Sideswipe 1-Angle	8-Clear 5-Cloudy 4-Rain 2-Unknown	10-Daylight 4-Dark-Not Lighted 2-Unknown 1-Dark-Light 1-Dark-Unknown Lighting 1-Dusk	9-Negotiating A Curve 4-Going Straight 3-Not Applicable 2-Unknown 1-Passing Or Overtaking Another Vehicle	11-Dry 6-Wet 2-Unknown	6-Ditch 4-Vehicle in Transport 3-Earth Embankment 2-Overturn 1-Mail Box 1-Other Fixed Object	8-No Contributing Actions 2-Speed too Fast for Conditions 2-Swerved or Avoided 2-Unknown Action 1-Driver Distracted 1-Failure to Obey Traffic Controls 1-Improper Turn 1-Lane Departure 1-Over Correcting
Tanyard Hill Rd.	17	0	0	13	10-Property Damage 4-Possible Injury 3-Suspected Minor Injury	6-No Collision W/ Vehicle 4-Sideswipe 2-Angle 2-Head-On 2-Rear-End 1-Unknown	10-Clear 3-Cloudy 3-Rain 1-Unknown	15-Daylight 1-Unknown 1-Dark-Not Lighted	10-Negotiating A Curve 2-Unknown 1- Stopped In Traffic Lane 1-Changing Lanes Or Merging 1-Passing Or Overtaking Another Vehicle 1-Starting In Traffic Lane 1-Turning Right-RTOR Permitted Not Known	11-Dry 5-Wet 1-Unknown	10-Vehicle in Transport 1-Unknown 1-Ditch 1-Jackknife 1-Mail Box 1-Overturn 1-Standing Tree 1-Utility Pole	8-No Contributing Actions 2-Failure to Yield Right of Way 1-Driving Left of Center 1-Failure to Obey Traffic Controls 1-Following Improperly 1-Improper Passing 1-Lane Departure 1-Operator Inexperience 1-Unknown Action
Cumberland Springs Rd.	11	0	0	7	5-Possible Injury 5-Property Damage 1-Suspected Minor Injury	9-No Collision W/ Vehicle 1-Unknown 1-Sideswipe	8-Clear 1-Unknown 1-Cloudy 1-Rain	6-Daylight 4-Dark-Not Lighted 1-Unknown	6-Negotiating A Curve 3-Going Straight 2-Unknown	9-Dry 1-Unknown 1-Wet	4-Standing Tree 2-Ditch 1-Unknown 1-Earth Embankment 1-Guardrail Face 1-Overturn 1-Vehicle in Transport	6-Unknown Action 3-No Contributing Actions 1-Operator Inexperience 1-Speed too Fast for Conditions

MOORE COUNTY HIN - OTHER AREAS OF CONCERN CONTINUED

Road Names	Total Crashes	Total Fatalities	Total Incapacitating Injuries	Total Minor Injuries	Type of Crash	Manner of Crash	Weather Conditions	Light Conditions	Vehicle Maneuver	Roadway Surface Conditions	Most Harmful Event	Driver Actions
Cashion Rd.	8	0	0	3	6-Property Damage 2-Possible Injury	6-No Collision W/ Vehicle 2-Unknown	4-Clear 2-Unknown 2-Rain	3-Dark-Not Lighted 2-Unknown 1-Dark-Unknown Lighting 1-Dawn 1-Daylight	3-Going Straight 3-Negotiating A Curve 2-Unknown	4-Dry 2-Unknown 2-Wet	3-Overturn 2-Unknown 1-Bridge Pier/ Abutment 1-Mail Box 1-Other Object (not fixed)	5-No Contributing Actions 1-Lane Departure 1-Unknown Action 1-Vision Obstructed
Griffin Rd.	8	0	0	1	7-Property Damage 1-Possible Injury	7-No Collision W/ Vehicle 1-Sideswipe	3-Clear 3-Rain 1-Cloudy 1-Unknown	4-Dark-Not Lighted 3-Daylight 1-Unknown	5-Negotiating A Curve 1-Backing Up Other Than Parking 1-Going Straight 1-Unknown	4-Wet 3-Dry 1-Unknown	3-Standing Tree 1-Ditch 1-Earth Embankment 1-Fire Hydrant 1-Motor Vehicle- In-Motion Outside Traffic way 1-Vehicle In Transport	3-Lane Departure 1-Unknown 1-Improper Backing 1-No Contributing Actions 1-Over Correcting 1-Swerved or Avoided
Buckeye Loop	7	0	0	1	6-Property Damage 1-Possible Injury	6-No Collision W/ Vehicle 1-Sideswipe	4-Clear 2-Rain 1-Cloudy	4-Daylight 3-Dark-Not Lighted	5-Negotiating A Curve 2-Going Straight	4-Wet 3-Dry	3-Ditch 2-Other Object (not fixed) 1-Overturn 1-Vehicle in Transport	4-No Contributing Actions 1-Operator Inexperience 1-Speed too Fast for Conditions 1-Unknown Action
Hurricane Creek Rd.	5	0	1	1	3-Property Damage 1-Suspected Minor Injury 1-Suspected Serious Injury	5-No Collision W/ Vehicle	3-Clear 1-Cloudy 1-Rain	4-Daylight 1-Dark-Not Lighted	3-Going Straight 1-Negotiating A Curve 1-Unknown	3-Wet 2-Dry	3-Standing Tree 1-Earth Embankment 1-Overturn	2-Lane Departure 1-No Contributing Actions 1-Reckless Negligent Driving 1-Speed too Fast for Conditions
Ledford Mill Rd.	5	0	0	2	3-Property Damage 2-Suspected Minor Injury	5-No Collision W/ Vehicle	5-Clear	3-Daylight 2-Dark-Not Lighted	3-Going Straight 1-Negotiating A Curve 1-Unknown	5-Dry	2-Overturn 1-Ditch 1-Fire/Explosion 1-Utility Pole	1-GPS Distractions 1-Lane Departure 1-No Contributing Actions 1-Over Correcting 1-Unknown Action
Lost Creek Rd.	5	0	0	1	4-Property Damage 1-Possible Injury	4-No Collision W/ Vehicle 1-Sideswipe	5-Clear	3-Daylight 2-Dark-Not Lighted	3-Going Straight 2-Negotiating A Curve	5-Dry	2-Ditch 1-Earth Embankment 1-Overturn 1-Vehicle in Transport	2-Operator Inexperience 2-Unknown Action 1-No Contributing Actions
Louse Creek Rd.	5	0	0	2	3-Property Damage 2-Suspected Minor Injury	5-No Collision W/ Vehicle	5-Clear	3-Dark-Not Lighted 2-Daylight	4-Going Straight 1-Negotiating A Curve	5-Dry	2-Overturn 1-Earth Embankment 1-Guardrail End 1-Standing Tree	2-Lane Departure 2-No Contributing Actions 1-Unknown Action
Goose Branch Rd.	4	1	0	0	3-Property Damage 1-Fatal	3-No Collision W/ Vehicle 1-Unknown	2-Clear 1-Unknown 1-Rain*	3-Daylight 1-Unknown	2-Going Straight 1-Unknown 1-Negotiating A Curve	2-Dry 1-Unknown 1-Wet	1-Unknown 1-Guardrail Face 1-Immersion 1-Standing Tree	2-Unknown Action 1-Lane Departure 1-No Contributing Actions







APPENDIX B

HIGH INJURY NETWORK COUNTERMEASURE RECOMMENDATIONS

Map Label	Road Names	Total Crashes	Total Fatalities	Total Incapacitating Injuries	Total Minor Injuries	Speed Limit	AADT	Main Priorities	Safety Recommendations (FHWA)
L-1	Ridgeville Rd.	25	0	1	6	None Posted	1518	Reduce Lane Departure Crashes On Curves Improve Driver Guidance And Recovery Minimize Fixed-Object Crashes"	Enhanced Delineation For Horizontal Curves (Chevron Signs, Curve Warnings, Delineators) Rumble Strips / Stripes (Centerline And Shoulder) Wider Edge Lines (Improves Lane Visibility, Especially On Curves) Roadside Design Improvements At Curves (Remove Excess And Intruding Vegetation, Upgrade Guardrails) Safetyedge (Safer Recovery When Vehicles Leave The Roadway)
L-2	Good Branch Rd.	22	0	1	9	45 Mph (15 Mph At School Zone)	2283	Reduce Lane Departure And Overturn Crashes Improve Traction In Wet/Snow Conditions Minimize Fixed-Object Crashes	Rumble Strips / Stripes (Targets Lane Departure, Careless Driving, And Run-Off-Road Crashes) Pavement Friction Management (Important Due To Wet/ Snow Conditions) Roadside Design Improvements At Curves (Address Ditches, Trees, Embankments (Reduces Crash Severity) Safetyedge (Safer Recovery When Vehicles Leave The Roadway)
L-3	Chestnut Ridge Rd.	15	1	0	5	45 Mph	1015	Reduce Lane Departure And Cross-Over Crashes Address Fatal Crash Risk Minimize Fixed-Object Crashes	Rumble Strips / Stripes (Addresses Lane Departure + Head-On/Sideswipe Risk) Enhanced Delineation For Horizontal Curves (Supports Drivers On Curves) Roadside Design Improvements At Curves (Reduce Severity From Trees, Ditches, Embankments) Safetyedge (Safer Recovery When Vehicles Leave The Roadway)

APPENDIX C

CRASH MODIFICATION FACTORS

MOORE COUNTY CFM

Safety Countermeasure	Location	CMF	CMF ID	CMF Description	Applicability	Prior Condition Requirement	Volume Requirements
Rumble Strips and stripes	Centerline	0.56	3358	Install centerline rumble strips	All crashes besides property damage	No centerline rumble strips	Not Specified
Rumble Strips and stripes	Edgeline	0.67	3394	Install edgeline rumble strips	Run off road crashes. Applies to K (fatal), A (serious injury), B (minor injury), C (possible injury)	No Prior Condition(s)	Minimum of 180 to Maximum of 12776 Average Daily Traffic (ADT)
Chevron Signs at curves	Horizontal curves	0.82	2431	Install chevron signs on horizontal curves	All crashes besides property damage	No existing sign or sign without fluorescent sheeting	Minimum of 895 to Maximum of 20479 Annual Average Daily Traffic (AADT)
Chevron Signs at curves	Horizontal curves	0.84	2438	Install chevron signs on horizontal curves	All crashes besides property damage	No existing signs	Minimum of 261 to Maximum of 14790 Annual Average Daily Traffic (AADT)
Flatten side-slope from 1V:3H to 1V:4H	Roadside	0.92	4627	Flatten side-slope from 1V:3H to 1V:4H	Single Vehicle Crashes	No Prior Condition(s)	Not Specified
Flatten side-slope from 1V:4H to 1V:6H	Roadside	0.88	4632	Flatten side-slope from 1V:4H to 1V:6H	Single Vehicle Crashes	No Prior Condition(s)	Not Specified
Speed Safety Cameras	Urban Locations	0.632	7718	Installation of automated speed enforcement system. Determines average speed of vehicle over a long distance.	All crashes besides property damage	No Point-to-Point Automated Section Speed Enforcement System	Not Specified
Provide intersection illumination	Intersection	0.58	436	Provide intersection illumination	Nighttime, Vehicle/pedestrian. Applies to A (serious injury), B (minor injury), C (possible injury) crashes	No Prior Condition(s)	Not Specified
Provide intersection illumination	Intersection	0.62	433	Provide intersection illumination	Nighttime crashes, Applies to A (serious injury), B (minor injury), C (possible injury) crashes	No Prior Condition(s)	Not Specified
Provide highway lighting	Intersection	0.72	192	Provide highway lighting	Nighttime crashes, Applies to A (serious injury), B (minor injury), C (possible injury) crashes	No Prior Condition(s)	Not Specified
Provide intersection illumination	Intersection	0.67	2376	Provide intersection illumination	Angled Crashes	Rural 2-lane intersection with no lighting.	Major Road Traffic Volume: Minimum of 420 to Maximum of 15200 Minor Road Traffic Volume: Minimum of 80 to Maximum of 10400
Install safety edge treatment	Shoulder	0.892	9205	The safety edge is a low-cost treatment that is implemented in conjunction with pavement resurfacing and is intended to help minimize drop-off-related crashes.	K (fatal), A (serious injury), B (minor injury) crashes	Drop-off pavement edge	Minimum of 10 to Maximum of 18600 Annual Average Daily Traffic (AADT)
Install safety edge treatment	Shoulder	0.79	9211	The safety edge is a low-cost treatment that is implemented in conjunction with pavement resurfacing and is intended to help minimize drop-off-related crashes.	Run off road crashes	Drop-off pavement edge	Minimum of 10 to Maximum of 18600 Annual Average Daily Traffic (AADT)
Install safety edge treatment	Shoulder	0.813	9217	The safety edge is a low-cost treatment that is implemented in conjunction with pavement resurfacing and is intended to help minimize drop-off-related crashes.	Head on crashes. Excludes intersection-related crashes and animal-related crashes.	Drop-off pavement edge	Minimum of 10 to Maximum of 18600 Annual Average Daily Traffic (AADT)

MOORE COUNTY CFM CONCERN CONTINUED

Safety Countermeasure	Location	CMF	CMF ID	CMF Description	Applicability	Prior Condition Requirement	Volume Requirements
Introduce TWLTL (two-way left turn lanes) on rural two lane roads	Roadway	0.64	583	Introduce TWLTL (two-way left turn lanes) on rural two lane roads	All crashes	No Prior Condition(s)	Not Specified
Set posted speed limit 5 mph below engineering recommendations	Roadway	0.43	10250	Set posted speed limit 5 mph below engineering recommendations	Property Damage crashes only	Posted speed limit set equal to engineering recommendations	Not Specified
Installation of fixed speed cameras	Roadside	0.78	8183	Installation of fixed speed cameras on arterials limited access freeways	All crashes besides property damage	No speed camera present	8419 Annual Average Daily Traffic (AADT)
Install dynamic speed feedback sign	Roadside	0.78	10265	System consisting of a speed measuring device and a message sign that displays feedback to those drivers who exceed a predetermined threshold. It may be the actual speed, a message such as SLOW DOWN, or activation of a warning device, such as beacons or a curve warning sign	Crash Type: Other	No dynamic speed feedback sign present	Not Specified
Install a traffic signal	Intersection	0.56	325	Install a traffic signal	All crashes	Stop controlled intersection	Major Road Traffic Volume: Minimum of 3261 to Maximum of 29926 Annual Average Daily Traffic (AADT) Minor Road Traffic Volume: Minimum of 101 to Maximum of 10300 Annual Average Daily Traffic (AADT)
Install a traffic signal	Intersection	0.23	326	Install a traffic signal	Angled Crashes	No Prior Condition(s)	Major Road Traffic Volume: Minimum of 3261 to Maximum of 29926 Annual Average Daily Traffic (AADT) Minor Road Traffic Volume: Minimum of 101 to Maximum of 10300 Annual Average Daily Traffic (AADT)
Install a traffic signal	Intersection	0.4	327	Install a traffic signal	Left-turn crashes	No Prior Condition(s)	Major Road Traffic Volume: Minimum of 3261 to Maximum of 29926 Annual Average Daily Traffic (AADT) Minor Road Traffic Volume: Minimum of 101 to Maximum of 10300 Annual Average Daily Traffic (AADT)
Install lighting	Roadway	0.46	2870	Install lighting	All night-time crashes with severity levels: A (serious injury), B (minor injury), C (possible injury)	Unlit roads	Not Specified
Provide 2-ft paved shoulders (both sides)	Shoulder	0.88	10398	Provide 2-ft paved shoulders on both sides of 2-lane rural roads	All run off road crashes	No Prior Condition(s)	Minimum of 30 to Maximum of 15900 Annual Average Daily Traffic (AADT)

