

SAFETY ACTION PLAN

Purchase ADD



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INTRODUCTION

This Safety Action Plan, funded in part by the USDOT Safe Streets and Roads for All (SS4A) discretionary grant program, summarizes the background, methodology and recommendations of crash analyses conducted for the development of a Safety Action Plan for the Purchase Area Development District (PADD), which includes Ballard, Calloway, Carlisle, Fulton, Graves, Hickman, Marshall, and McCracken counties in Kentucky. This study evaluated crash data on county roads from 2020-2024 to determine overrepresented crash types and identify high crash areas on the roadway network.

Recommendations for safety-related improvements to the local transportation network focus on low-cost systemic improvements that may be completed through county forces one road at a time, or through larger capital projects to implement county-wide or regional improvements.

This report provides a region wide analysis of crash patterns within PADD and an overview of data sources and methodologies used in identifying high crash roadways, public involvement input, and an overview of crash countermeasures recommended within the region. The Appendices to this report, evaluate each individual county within PADD and present crash analysis, Road Safety Assessments (RSAs) summaries and recommended improvements for all reviewed roadways within the region.

OVERVIEW OF SS4A PROGRAM

The Bipartisan Infrastructure Law (BIL) established the Safe Streets and Roads for All (SS4A) discretionary program with \$5 billion in appropriated funds over 5 years between 2022-2026. The SS4A program funds regional, local, and Tribal initiatives through grants to prevent roadway deaths and serious injuries in support of the U.S. Department of Transportation's (USDOT) National Roadway Safety Strategy goal of zero roadway deaths using a Safe System Approach. PADD was awarded an Action Plan Grant in FY 22 to develop a Safety Action Plan for its 8-county region.

A Safety Action Plan is a strategic document aimed at identifying and addressing safety issues related to transportation infrastructure. Based on SS4A criteria a Safety Action Plan must include items 1, 2 and 3 below and at least four of items 4 through 9.

1. **Safety Analysis.** Collecting and analyzing crash data to pinpoint high-risk areas and crash types.
2. **Strategy and Process Selections.** Developing specific interventions, such as roadway improvements, policy changes, and educational initiatives, to enhance safety.
3. **Action Plan Date.** Be completed using data compiled during the last 5 years.
4. **Leadership Commitment and Goals Setting.** An official commitment by the governing body to an eventual goal of zero roadway fatalities and serious injuries.
5. **Planning Structure.** A task force charged with oversight of the Action Plan development, implementation, and monitoring.

6. **Engagement and Collaboration.** Involving local stakeholders, including residents, advocacy groups, and underserved communities to gather insights and prioritize concerns.
7. **Equity Considerations.** Underserved communities are identified through data and other analyses in collaboration with appropriate partners including both population characteristics and impact assessments of the proposed projects and strategies on equity.
8. **Policy and Process Changes.** Assessment of current policies, plans, guidelines, and/or standards to identify opportunities to improve how processes prioritize transportation safety.
9. **Implementation and Evaluation Metrics.** Setting up methods to implement and assess the effectiveness of the actions taken.

The goal of the Safety Action Plan is to create safer streets and reduce fatalities and serious injuries for all road users, including pedestrians, cyclists, and motorists by providing a strategic plan that an agency can follow towards reaching the goal of zero deaths and serious injuries.

SAP TASK FORCE

This Safety Action Plan is cooperative effort between the Purchase Area Development District, ADD member counties, the Kentucky Transportation Cabinet and the Technology Transfer Program at the University of Kentucky, Kentucky Transportation Center. Direction, focus and review of plan documents and efforts have been provided by the standing PADD Regional Transportation Committee (RTC). The RTC plays a critical role in developing the Regional Transportation Program for the PADD area. As new projects are developed, and existing ones are evaluated and prioritized using criteria of regional significance. The Regional Transportation Committee is composed of interested stakeholders in the region who meet quarterly at the Purchase ADD office. In addition to its prioritization and evaluation duties, the Committee is a forum to work together in solving regional transportation problems, act as an advocacy body on transportation issues, provide input for the Statewide Transportation Plan, Six Year Road Plan and Unscheduled Needs List, as well as provide assistance to the ADD in its Annual Work Program. Direction provided by the RTC will allow the projects identified within the Safety Action Plan to be directly integrated into the regional transportation planning process.

STUDY AREA

This Safety Action Plan covers the Purchase ADD region which includes Ballard, Calloway, Carlisle, Fulton, Graves, Hickman, Marshall, and McCracken counties. The plan focused on county roadways to provide direction and resources to county road departments to address local road crashes. Exhibit 1 shows the study area.

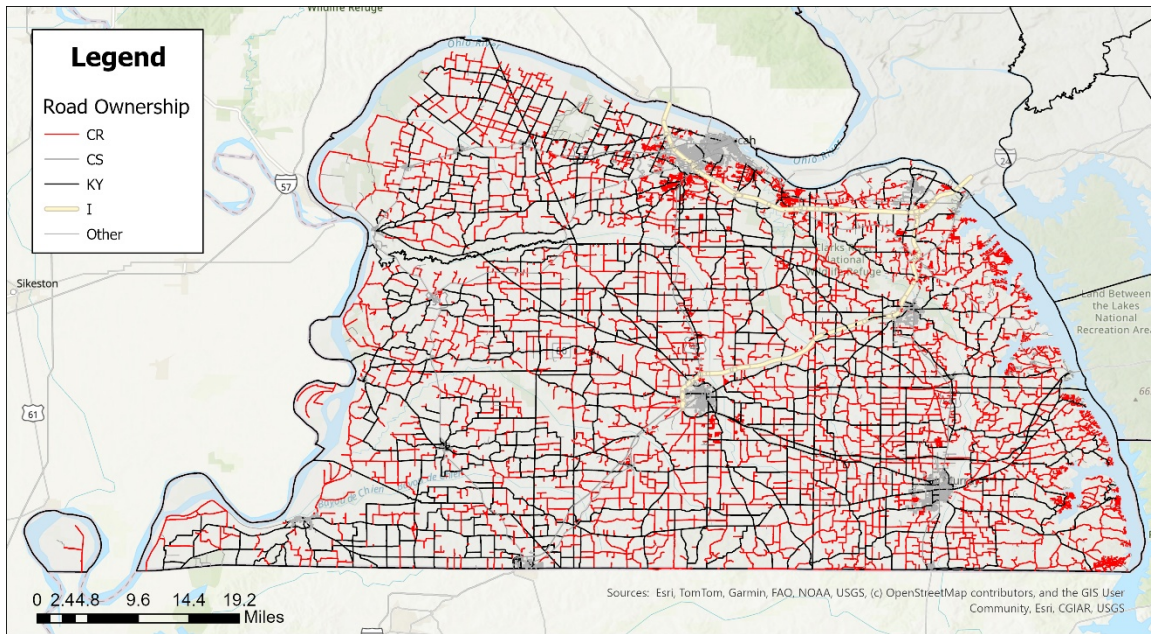


Exhibit 1: Study Area

CRASH ANALYSIS

A crash analysis was conducted to identify common crash types and identify priority locations within the city limits. Crash data for the study area was obtained from the Kentucky State Police Crash database available at crashinformationky.gov. Data was obtained for the five-year period of January 1, 2020, to December 31, 2024. During this period 2,555 crashes were recorded, resulting in 9 fatalities and 976 injuries. **Exhibit 2** shows all crashes recorded in the study area during the 5-year period.

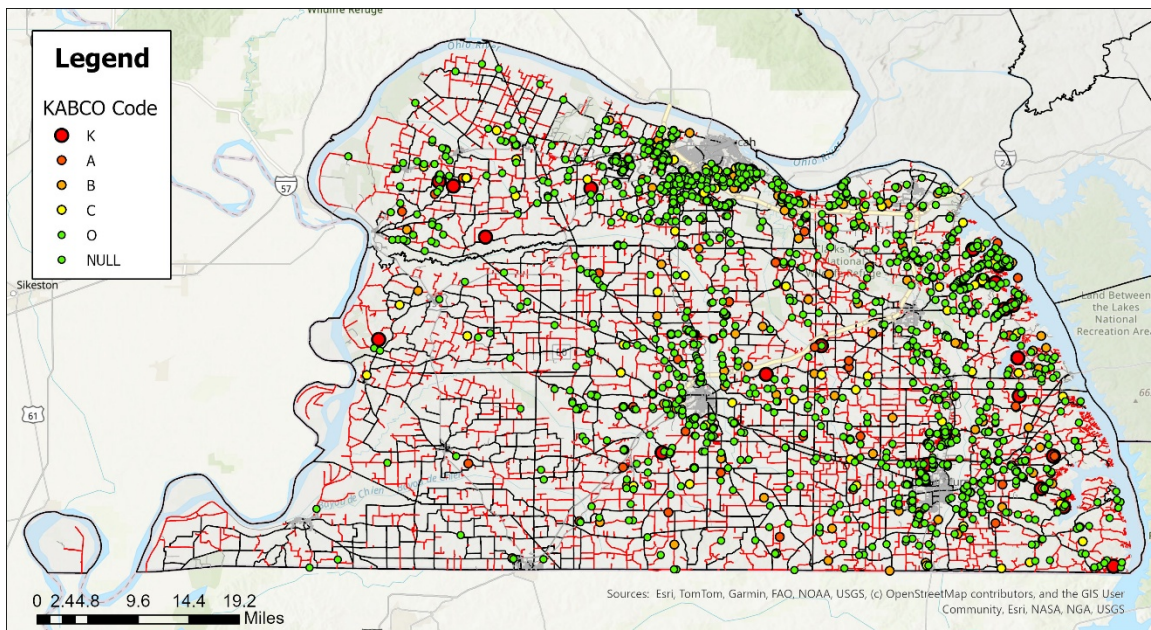


Exhibit 2: Crash Distribution

Crash data was provided in a database format with latitude and longitude provided for each crash, and crash characteristics such as crash severity, manner of collision, and human, vehicular and environmental contributing factors. Crash data was spatially joined to the city roadway network available from the Kentucky Transportation Cabinet (KYTC) website (transportation.ky.gov). Crashes were assigned to the nearest roadway in order to determine if the crash occurred on a city or state roadway.

Prior to the identification of high crash locations, area wide crash analyses were completed to determine emphasis areas within the city roadways that may be the focus of safety efforts.



Exhibit 3: Crash Severity by Year (County Routes)

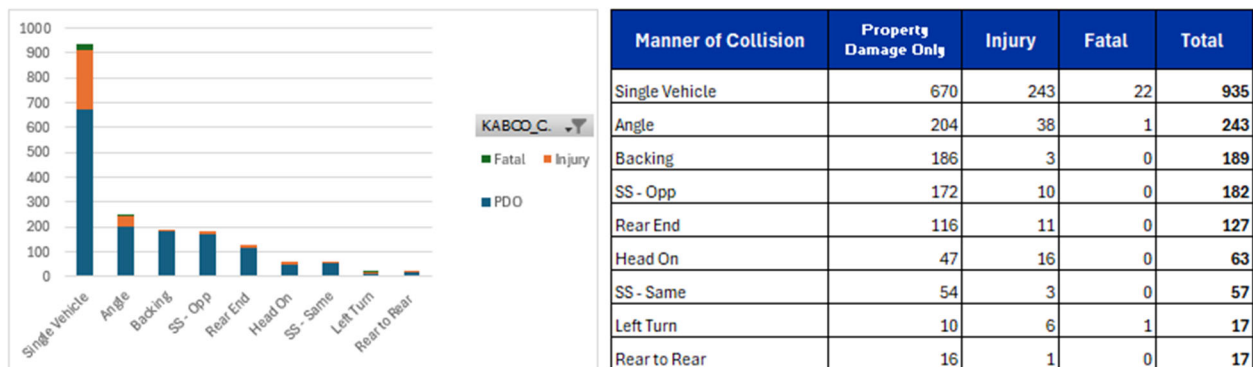


Exhibit 4: Crash Type by Severity (County Routes)

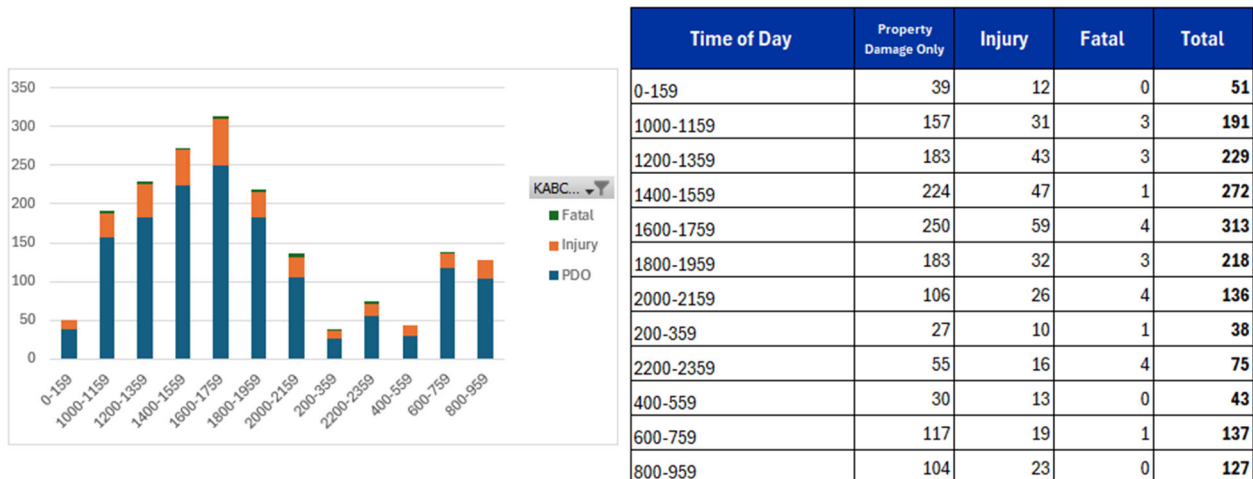


Exhibit 5: Crash Distribution (County Road Crashes) (County Routes)

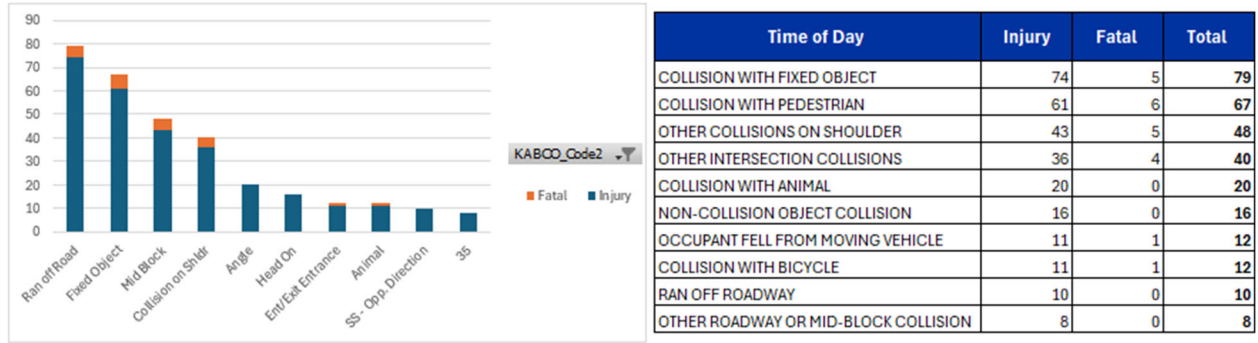


Exhibit 6: Directional Analysis (Top 10 Injury/Fatal Crash Types) (County Routes)

FOCUS ROADWAYS

While the goal of the Safety Action Plan is to improve safety on all roadways, for all users, the primary focus is to reduce fatal and injury crashes. A systemic analysis approach was taken to identify roadways which have the highest probability of future injury or fatal crashes. These roadways, designated “Focus Roadways” are identified based on 1) Injury and fatal crashes and 2) Role in the county road network.

Roadways were ranked based on the previous crash history and severity, as well as anticipated roadway use. Additionally, the Task Force assembled for this Action Plan reviewed the initial focus roadway list and provided community input to identify community- sensitive areas, such as schools and other service areas that required increased attention to traffic and safety.

- Crash History Score was based on three factors listed below:
- *Equivalent Property Damage Only (EPDO) crashes.* A weighted rating technique based on crash severity. The EPDO formula used in this analysis assigned a weight of 10 to crashes resulting in a fatality or incapacitating injury, 5 for crashes resulting in a minor or possible injury (B or C Injury), and 1 to crashes resulting in property damage only (PDO).
- *Total Fatal and Injury Crashes.* The frequency of all injury and fatal crashes.
- *Vulnerable Road User (VRU) Crashes.* The frequency of pedestrian, bicyclist or other non- motorized crashes with a motorized vehicle.
- Network, or Use, Score was based on two factors:
- *HERE Traffic Analytics.* This location and technology company provides a record of traffic volume and speed observations on roads from GPS probe data points. The number of observations recorded on each road segment was used as a surrogate for roadway use in the absence of Average Daily Traffic volumes.
- *Road Network Connectivity Analysis.* Spatial analysis was conducted in ArcGIS to quantify the role each road segment plays in the roadway network. Connectivity analysis identifies the percentage of times a roadway segment is part of the shortest path between any two origin-destination points within the state-wide roadway network.

All the evaluation factors were normalized on a scale of 1-10, with 1 representing the minimum value observed within each county and 10 representing the highest value in county. All other values were rated proportionally between the highest and lowest values. A total Crash Score was then developed as the sum of the EPDO, Injury and Fatal Crashes, and VRU data and a Use Score was developed based on HERE Data and Connectivity Scores. A final score was determined based on the sum of the Crash and Use scores. Roadways were then ranked by total score. Focus Roadways for each county were identified as the top ranked roadways which accounted for 95 percent of all injury and fatal crashes in a county. These roadways represent the top 12 percent of roadways with injury and fatal crashes in the ADD and from 6-17 percent of each county’s total mileage as shown in Exhibit 6. The top five ranked five focus roadways for each county are shown in

Exhibit 7 and listed in Exhibit 8. Mapping and a listing of all identified Focus Roads is provided in the Appendices of this report which provides detailed recommendations for each county within the PADD region.

County	Total Mileage	Focus Rd Mileage	Focus Rd Percent
Ballard	225.5	35.1	16%
Calloway	687.8	132.7	19%
Carlisle	176.8	17.1	10%
Fulton	119.8	7.0	6%
Graves	657.6	147.9	22%
Hickman	196.3	5.6	3%
Marshall	452.3	115.1	25%
McCracken	332.9	65.9	20%
Total	2849.1	526.4	18%

Exhibit 7: Focus Road Mileage

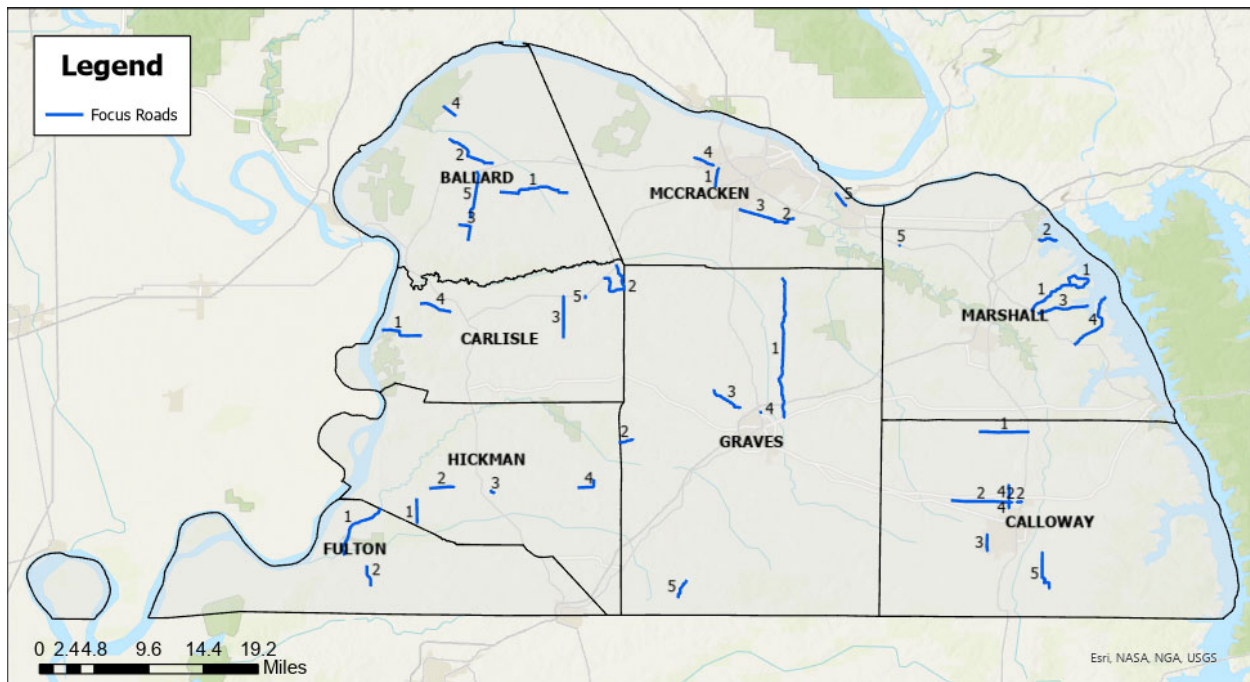


Exhibit 8: Top 5 Focus Roads by County

RT_UNIQUE	Length	County	Road Name	Injury Crashes	Fatal Crashes	Total	Score	Rank
Ballard								
004-CR-1102 -000	5.15	Ballard	CEREDO RD	2	1	4	2.44	1
004-CR-1302 -000	4.04	Ballard	HAZELWOOD RD	2	0	3	2.25	2
004-CR-1209 -000	1.95	Ballard	N BALLARD CHURCH RD	1	1	3	1.86	3
004-CR-1311 -000	1.09	Ballard	TURNER LANDING RD	1	0	1	1.40	4
004-CR-1201 -000	4.12	Ballard	WAYSIDE INN RD	1	0	5	1.29	5
Calloway								
018-CR-1438 -000	3.42	Calloway	CHARLEY MILLER RD	4	0	9	1.91	1
018-CR-1403 -000	4.55	Calloway	POOR FARM RD	2	3	8	1.86	2
018-CR-1363 -000	1.45	Calloway	ROBERTSON RD S	0	2	15	1.80	3
018-CR-1401 -000	1.84	Calloway	BRINN RD	1	1	20	1.78	4
018-CR-1217 -000	3.68	Calloway	LOCUST GROVE RD	0	1	6	1.73	5
Carlisle								
020-CR-1310 -000	3.08	Carlisle	LAKETON RD	1	1	2	2.42	1
020-CR-1024 -000	5.02	Carlisle	PALESTINE	1	0	3	2.25	2
020-CR-1015 -000	3.56	Carlisle	SAINT CHARLES RD	1	0	1	2.02	3
020-CR-1314 -000	2.20	Carlisle	IDA IRELAND RD	1	0	1	1.72	4
020-CR-1057 -000	0.20	Carlisle	SHELBY RD	0	0	0	1.65	5
Fulton								
038-CR-1304 -000	5.37	Fulton	UPPER BOTTOM RD	1	0	2	2.57	1
038-CR-1200 -000	1.67	Fulton	SAUNDERS LN	1	0	1	2.00	2
Graves								
042-CR-1011 -000	12.50	Graves	HOPEWELL RD	3	1	21	3.60	1
042-CR-1347 -000	0.95	Graves	DUBLIN HILL RD	0	1	2	1.56	2
042-CR-1473 -000	2.65	Graves	JIMTOWN RD	2	0	11	1.46	3
042-CR-1001N -000	0.08	Graves	TURNER LN	0	1	1	1.44	4
042-CR-1295 -000	1.65	Graves	JOHNS RD	0	1	1	1.39	5
Hickman								
053-CR-1216 -000	2.02	Hickman	BOSTICK RD	0	1	1	1.33	1
053-CR-1226 -000	1.68	Hickman	POOLERD	0	0	0	1.19	2
053-CR-1200B -000	0.34	Hickman	PIPER DR	0	1	2	1.17	3
053-CR-1104 -000	1.56	Hickman	HICKERSON RD	0	1	1	1.08	4
Marshall								
079-CR-1009 -000	7.87	Marshall	MOORS CAMP HWY	12	12	67	3.32	1
079-CR-1077 -000	1.52	Marshall	SLEDD CREEK RD	0	1	4	1.44	2
079-CR-1061 -000	3.62	Marshall	BIG BEAR HWY	2	1	9	1.29	3
079-CR-1613 -000	5.41	Marshall	BARGE ISLAND RD	3	4	27	1.18	4
079-CR-1457 -000	0.05	Marshall	HILL CREEK CT	0	0	0	0.84	5
McCracken								
073-CR-1019 -000	1.64	McCracken	NEW HOLT RD	2	3	38	2.70	1
073-CR-1167 -000	1.53	McCracken	CLARKUNERD E	2	3	16	1.89	2
073-CR-1174 -000	2.64	McCracken	CLARK LINERD W	5	0	10	1.83	3
073-CR-1005 -000	1.52	McCracken	J HARRIS RD	0	1	15	1.75	4
073-CR-1022D -000	1.30	McCracken	I.C. AVE	1	1	2	1.58	5

Exhibit 9: List of Top 5 Focus Roads by County

DATA COLLECTION

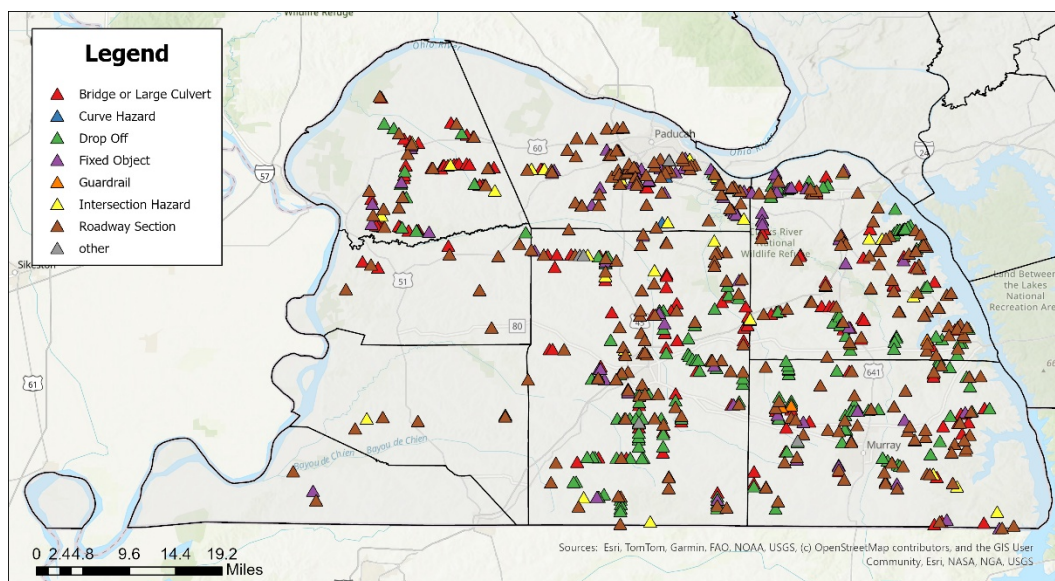
Road Safety Assessments (RSAs) were conducted on the Focus Roadways by PADD Staff. The purpose of this review was to collect basic roadway information such as road width, pavement condition and roadside conditions, as well as identify potential hazards along the roadway. The review focused on hazards related to single vehicle and lane departure crashes, as these represented the highest injury and fatality rates within the region based on the crash analysis presented above. The roadway review included the following items.

- General Roadway Information such as condition and width
- Road Signs
- Fixed Objects within 5 feet of the roadway
- Curve Hazards
- Intersection Hazards
- Guardrail
- Bridge / Culvert locations
- Edge Drop Offs
- Other hazards

This data was collected through a Survey123 mobile application and custom survey to capture hazard information, location and associated photos.

In addition to the hazard information, ball bank data was collected on each roadway using the “Ballbank” app developed for the Apple app store by Christopher Dry. This data was used to set preliminary advisory speeds for all curves on reviewed roadways.

Appendix A contains a guide detailing all data collected on the roadways. Exhibit 8 shows all 821 collected data points within the region.



County	Bridge or Culvert	Curve Hazard	Drop Off	Fixed Object	Guardrail	Int. Hazard	Other	Roadway Section
Ballard	39	0	11	11	0	5	0	14
Calloway	36	0	41	14	2	5	1	52
Carlisle	6	0	1	1	0	0	0	8
Fulton	1	0	0	1	0	0	0	2
Graves	58	2	85	17	0	8	3	62
Hickman	0	0	2	0	0	2	0	5
Marshall	41	0	55	23	3	6	0	67
McCracken	18	2	5	29	0	7	1	61

Exhibit 11: Road Safety Assessment Data by Type and County

One of the items collected in the review was the roadway width on county roads. Based on the American Association of State Highway Officials Guidelines for Geometric Design of Low Volume Roads, the recommended minimum roadway width for new construction is 18 feet. Reviewing roadway width data collected on the Focus Roads, 34 percent of roadways equal to or greater than 18 feet. Fourteen percent of roadways are under 14 feet, the minimum width requirements to accommodate two seven-foot wide passenger vehicles. AASHTO Guidance states that existing roads “need not be modified except in those cases where there is evidence of a site specific crash pattern.” These narrow widths are consistent with the high degree of run off the road, head-on and opposite direction sideswipe crashes identified in the crash review.

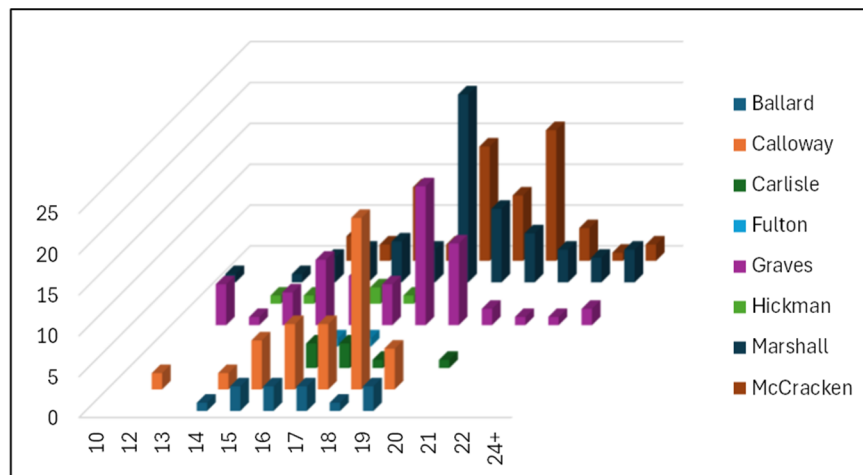


Exhibit 12: Roadway Width by County

County	Pavement Serviceability Rating				
	1	2	3	4	5
Ballard	0%	0%	14%	86%	0%
Calloway	2%	12%	35%	50%	2%
Carlisle	0%	0%	38%	63%	0%
Fulton	0%	0%	50%	50%	0%
Graves	2%	10%	39%	50%	0%
Hickman	0%	0%	0%	100%	0%
Marshall	1%	4%	19%	67%	7%
McCracken	0%	2%	10%	77%	11%
Total	1%	6%	25%	63%	5%

Exhibit 13: Roadway Condition by County

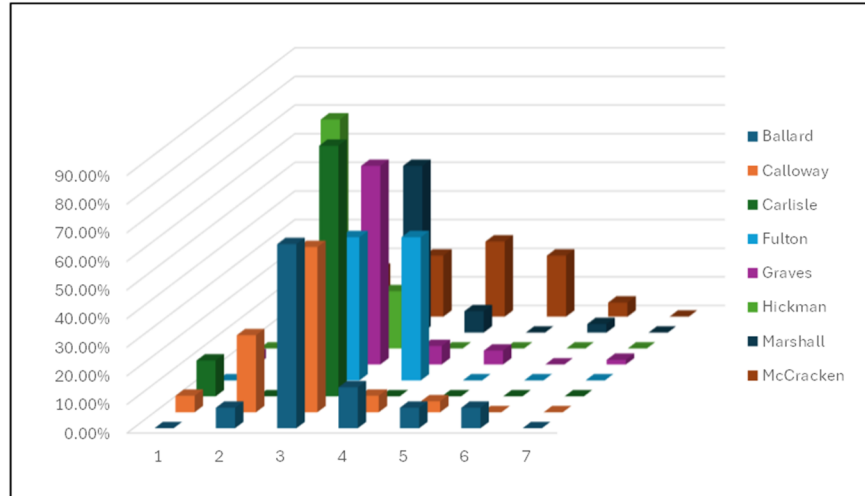


Exhibit 14: Roadside Hazard Rating by County

PUBLIC INVOLVEMENT

As part of the Safety Action Plan, a public survey was conducted to understand how the traveling public perceived roadway safety within PADD. The survey asked general demographic questions as well as what were the major concerns and priority issues of the public. Finally, an interactive map was provided to allow respondents to identify specific concerns or issues within their area. 15 unique responses were collected for the survey. The results of this survey are summarized below, and Appendix C contains the full survey questionnaire.

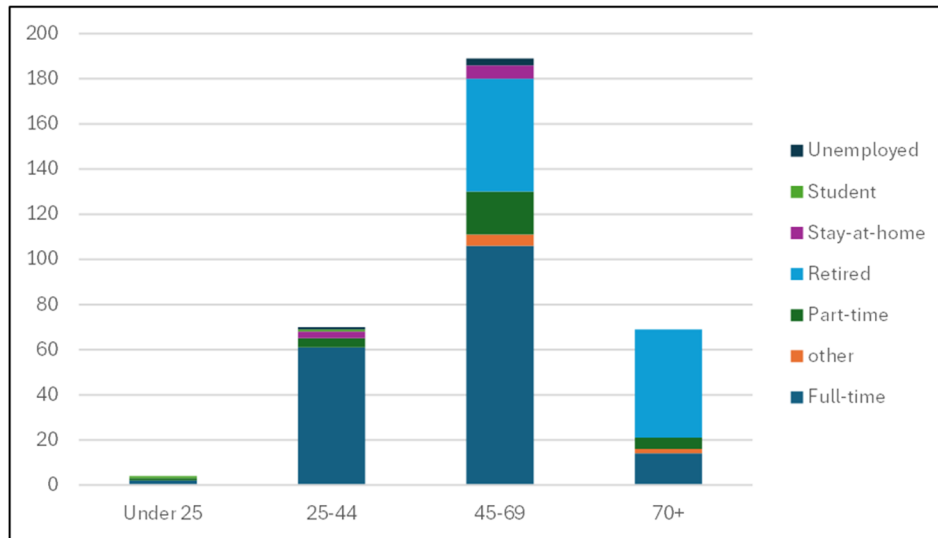


Exhibit 15: Public Survey Demographic Information

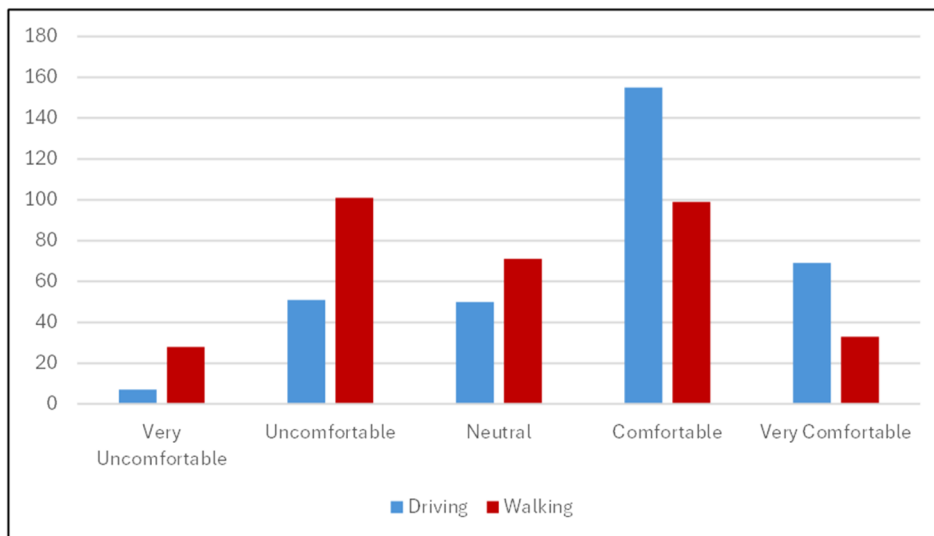


Exhibit 16: Public Survey Driving/Walking Comfort Level

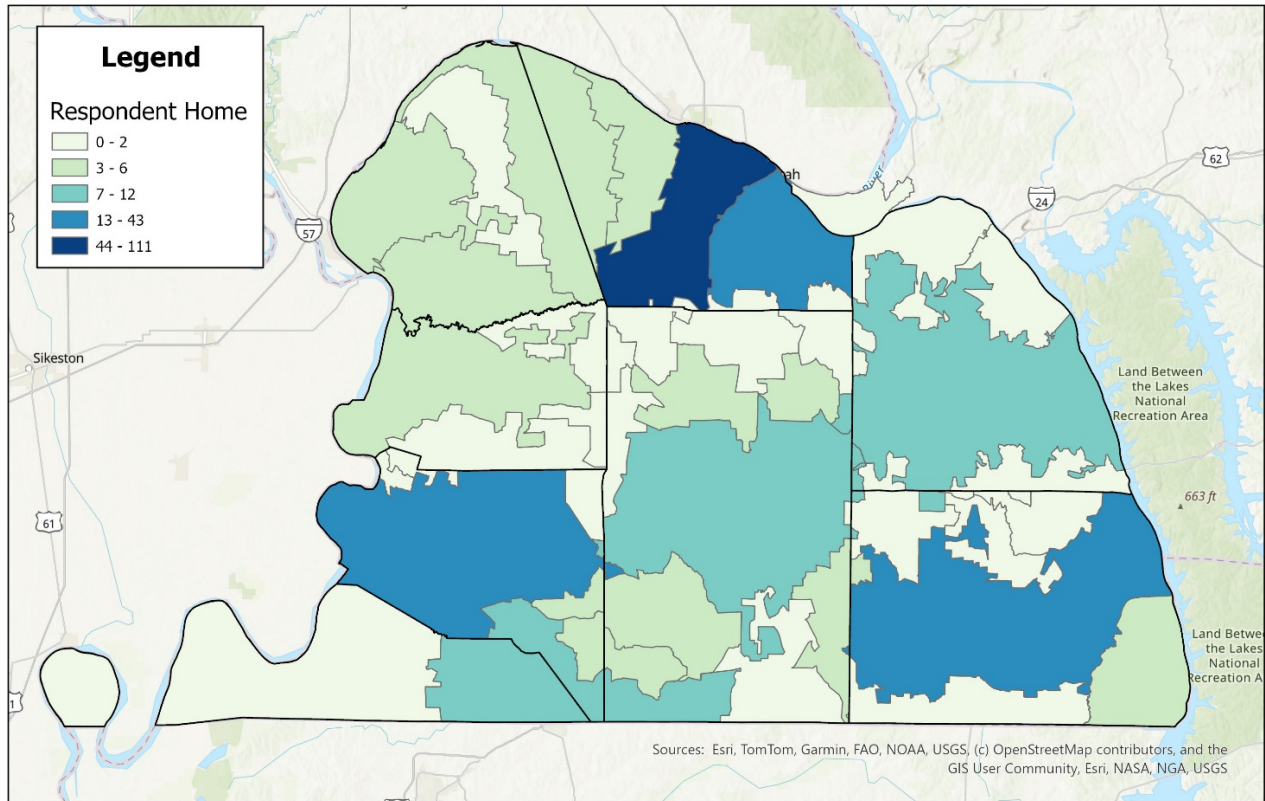


Exhibit 17: Public Survey Residency by Zip Code

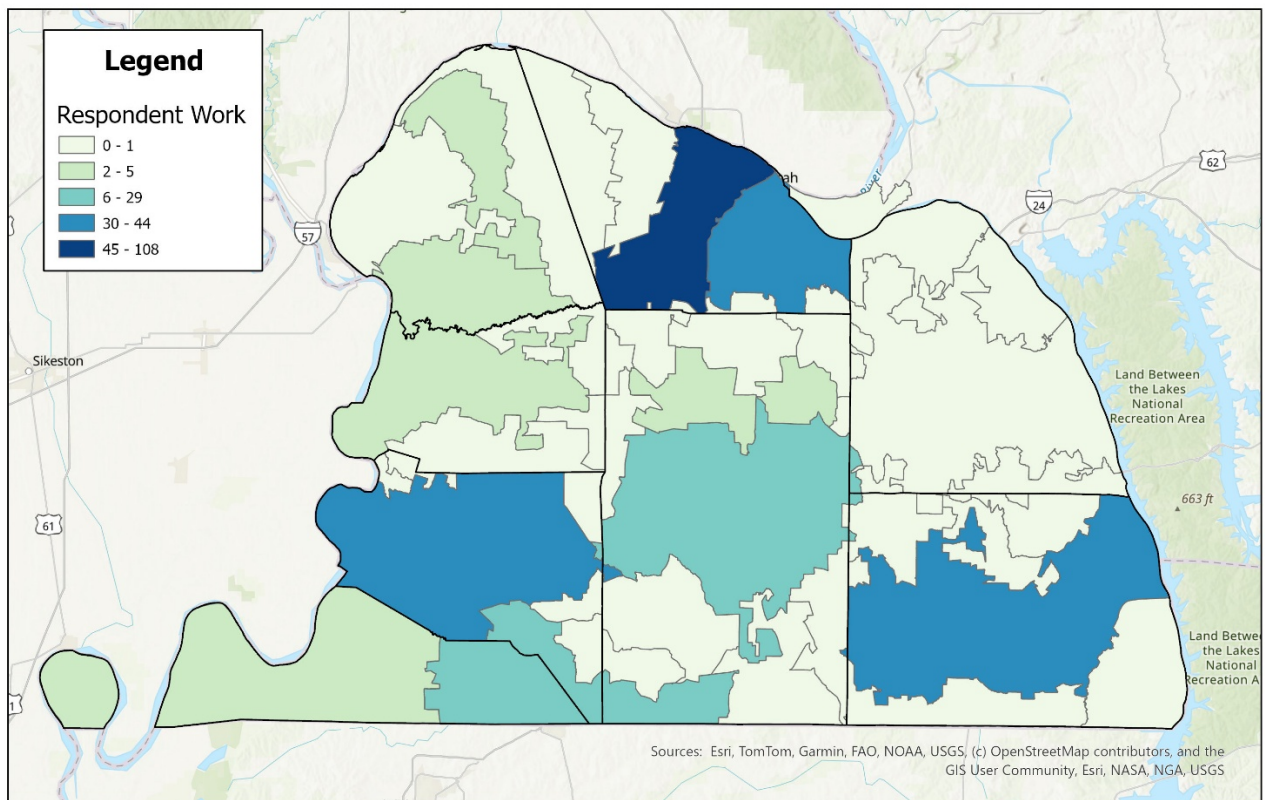
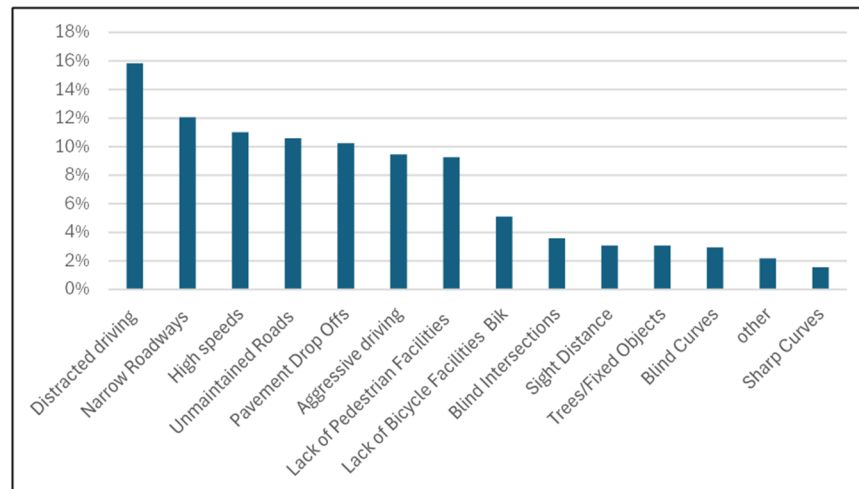


Exhibit 18: Public Survey Work Location by Zip Code

**Exhibit 19: Public Survey Top Safety Issues**

Finally, survey respondents were asked, “What is something that you would like this plan to focus on to make roadways safer in your area?” Responses reveal several consistent concerns that point to both infrastructure deficiencies and behavioral safety issues across the region.

The most prominent is the need for improved roadway maintenance. Respondents frequently cited potholes, uneven pavement, and deteriorating road surfaces, often worsened by inadequate drainage and repeated patchwork repairs. Many indicated that current maintenance practices are reactive and short-lived—specifically pointing to failing “chip and seal” applications and severe pothole clusters on major corridors like I-69 and US-45—underscoring the need for more proactive, systematic approaches to pavement preservation and drainage management.

Closely related to maintenance concerns are issues with roadway geometry and roadside conditions. Many participants noted that narrow roads, limited or nonexistent shoulders, and significant pavement edge drop-offs—sometimes exceeding six inches—create hazardous driving conditions, particularly on rural routes. These concerns are compounded in areas with higher traffic volumes, including heavy truck traffic on narrow corridors like KY-286 and shared use with farm equipment and Amish buggies. Improving shoulder width, reducing severe drop-offs, addressing roadside erosion on routes like KY-58, and widening travel lanes were commonly suggested strategies to reduce run-off-road and head-on crash risks.

Visibility and delineation also emerged as a major concern. Respondents highlighted faded or missing pavement markings, lack of reflective striping, insufficient signage, and poor lighting at intersections and along roadways. These issues are especially problematic during nighttime driving and adverse weather conditions, where limited visibility increases the likelihood of lane departure and intersection-related crashes. Additionally, obstructed sight lines due to overgrown vegetation or poorly placed business signs—such as at the intersection of New Liberty Church Road and US-60—were frequently mentioned, indicating a need for improved vegetation management, clear stop lines, and targeted intersection designs at high-injury locations like KY-80 and KY-299.

Behavioral factors, particularly speeding and distracted driving, were another recurring theme. Many respondents expressed deep concern about excessive speeds in residential areas, rural routes, and school zones, as well as widespread, dangerous cellphone use while driving. There was

also a perceived lack of traffic law enforcement, with many suggesting an increased law enforcement presence, speed management strategies, and traffic calming measures to address these issues. However, community consensus on these interventions remains divided, with some residents supporting lane reductions and roundabouts, while others vehemently oppose them or object to center-line rumble strips due to localized noise disruption.

Finally, there is a clear and growing demand for improved pedestrian and bicycle accommodation. Numerous respondents identified a lack of sidewalks, poor sidewalk conditions, and limited opportunities for safe walking and biking. This need is evident in both urban and rural contexts—ranging from downtown centers and rural towns like Symsonia and Barlow to high-volume commuter hubs like Murray—where pedestrians often share narrow roadways with vehicles. Expanding and maintaining sidewalks, adding bike lanes, improving ADA-accessible curb ramps, and creating separated walking paths were frequently recommended to improve safety and accessibility for all users, particularly vulnerable elderly, disabled, and low-income populations.

Overall, the findings suggest that meaningful safety improvements can be achieved through a combination of low-cost, systemic treatments—such as enhanced pavement markings, signage, and routine maintenance—alongside targeted investments in roadway geometry, drainage, and multimodal infrastructure.

Site Specific Issues

Site specific issues were identified within the interactive mapping. These issues were identified on both state, county and city roadways. Issues are summarized in Appendix C.

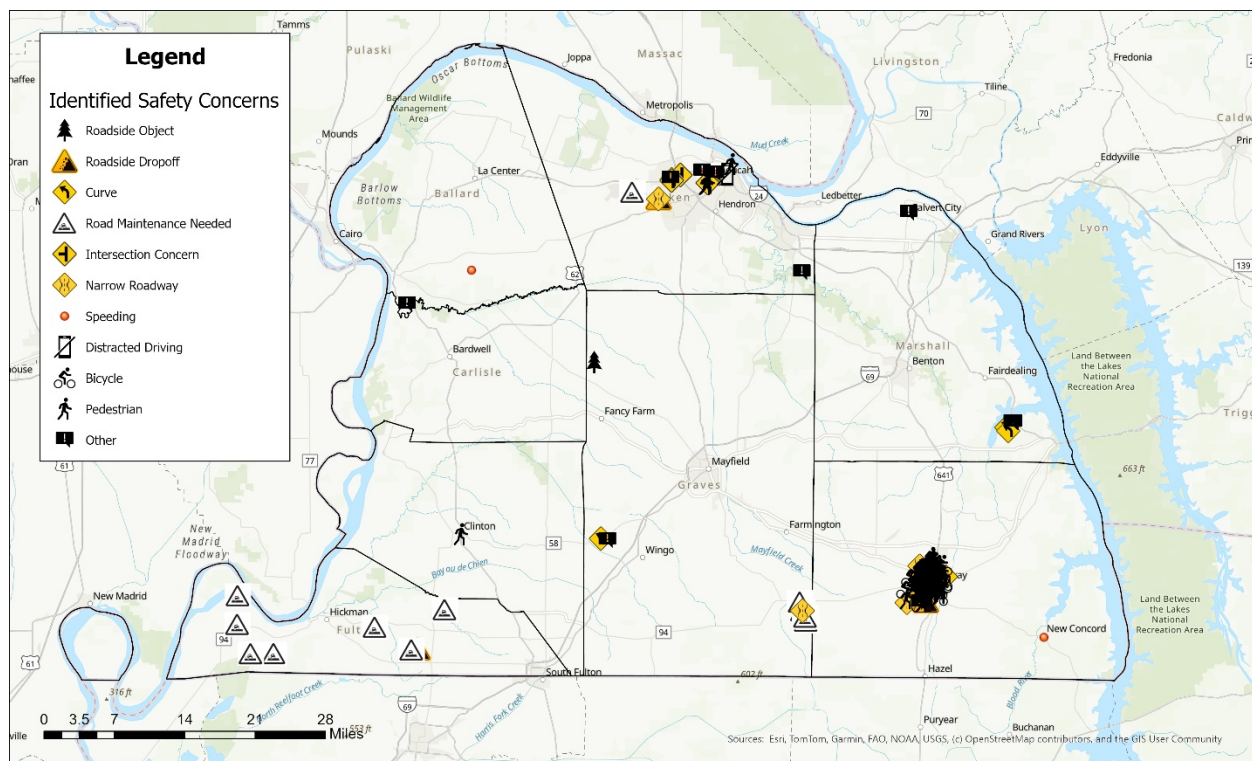


Exhibit 20: Public Survey Identified Site Specific Issues

RECOMMENDED IMPROVEMENTS

Recommended countermeasures to address identify potential hazards were developed from state specific and national guidance including the Federal Highway Administration provide Safety Countermeasures, <https://highways.dot.gov/safety/proven-safety-countermeasures>, Crash Modification Factor (CMF) Clearinghouse, and common low cost safety measures implemented by the Kentucky Safety Circuit Rider Program. Typical with rural crash patterns, most crashes are scattered throughout the roadway network, with no definitive high crash “hot spot.” Therefore, low-cost measures that could be widely applied in a systemic manner were the focus of safety improvements for this Safety Action Plan. These improvements may be implemented through county forces one project or road at a time, or through larger capital projects to implement county-wide or region wide improvements. Potential improvements include:

- Edgeline Striping
- Shouldering / Shoulder Improvements
- Horizontal Alignment Signing
- Object Markers
- Advanced Intersection Warning Signs
- Wet Weather Countermeasures
- Vegetation Management
- Fixed Objects
- Guardrail

It is noted that much guidance for low volume rural roads do not specify guidance or recommend such as roadway width, clear zone width, pavement striping etc. However, the focus roads which represent 12 percent of the total county road mileage within PADD, may require an increased level of maintenance and mitigation to minimize injury and fatal crashes on local roadways. Therefore, the following guidance was used in determining countermeasures to recommend.

Edgeline Striping. Edgeline striping has been shown to have a 15-22 percent crash reduction factor for single vehicle and head-on crashes, due to the ability to provide additional guidance during low visibility. Edgeline striping is recommended on all paved roadways, in which the pavement condition is sufficient to support striping (Present Serviceability Rating (PSR) of 4-5. Roadways with a PSR of 3 should be manually reviewed to determine if shoulder conditions can support striping, while pavement poor and very poor conditions (PSR 1 or 2) should not be striped until the roadway is resurfaced.

Horizontal Alignment Signing is recommended on all Focus Roadways, due to the cost effectiveness and project crash reduction of 13-29 percent. Preliminary advisory speeds are provided for all reviewed roadways.

Roadside Design. It is desirable to maintain an appropriate width clear zone on all roadways. Clear zones are the portion of the roadside that is free of obstructions and sufficiently flat to allow errant vehicles to recover control. The desirable clear zone for low volume rural roads is 6 ft, though AASHTO Guidance recognizes rural roadway constraints make this impractical and indicates that

designs with zero (0) ft clear zones may be used. The following guidance was used in establishing clear zones on Focus Roadways.

- Remove Fixed objects if practical within 2 ft of the roadway on tangent roadway sections and within 5 ft of roadway on the outside of curves, due to the increased probability of vehicles running off the roadway. If multiple fixed objects, such as a tree line or fence line, are within this distance, only objects closer than the object line should be cleared.
- Install object markers on hazards that cannot be removed, (i.e. utility poles, drop offs etc.) within 5 feet of the road edge, unless the hazards are consistent and typical of the continuous roadside, then object markers are not recommended.
- Provide shouldering where practical to minimize pavement edge drop-off on narrow roads.
- Guardrail has been shown to not be generally cost effective on low volume roadways and serves as an additional fixed object on roadways.
 - Where guardrail appears warranted and currently exists and is in acceptable condition, maintain existing guardrail.
 - Improve existing guardrail that appears to be warranted through the installation of appropriate end treatments and/or object markers.
 - Remove poor condition guardrail and unwarranted guardrail installations.

Bridges and Culverts should be maintained in accordance with state and national best practices and guidance. All structures over 20 feet are inspected every two years as part of the National Bridge Inspection Report and condition/load ratings and provided to local agencies. Bridges should have guardrail installations with appropriate end treatments to protect errant vehicles. In the absence of guardrail, object markers should be installed. A critical safety component of bridges is that they should provide the same width as the approaching roadway. If bridges are more narrow than the roadway approach, consideration should be given to widening the structure during replacement.

Additional guidance for improvements is provided in Appendix B, which contains one-page “TAP-It” sheets for improvements developed by T2. These sheets provide general guidance and identify additional resources for each of the countermeasures.

Recommended improvements have been identified for each focus road reviewed and each issue identified within the RSA. These improvements are listed and identified in the Appendices C-J for each county.

POLICY RECOMMENDATIONS

The following policy recommendations are made to assist agencies in addressing roadways safety on local roadways based on the Crash Analysis, Road Safety Assessments and Public outreach activities outlined above.

1. **Adopt and Implement Safety Action Plan.** Local agencies should adopt and maintain a comprehensive Safety Action Plan that is regularly updated to reflect evolving roadway conditions and crash trends. The plan should serve as a strategic guidance tool for counties and cities to prioritize and implement roadway safety improvements, ensuring resources are directed where they will have the greatest impact. To maintain its effectiveness, the plan should be reviewed annually with updates to recommended improvements, while a full crash analysis and roadway review should be conducted at least every three years to identify changing crash patterns and emerging safety concerns. This ongoing process will allow local agencies to make data-driven decisions, improve roadway safety outcomes, and advance toward long-term safety goals.
2. **Vision Zero Statement.** As part of this plan, it is recommended that each community adopt a Vision Zero Statement with a goal to eliminate fatalities and severe injuries on agency roadways. Adopting a Vision Zero statement shows an agency's clear commitment to prioritizing the safety of all roadway users and reducing serious injuries and fatalities to zero. By adopting Vision Zero, local governments demonstrate leadership, accountability, and a proactive approach to creating safer, healthier, and more livable communities. A sample vision zero statement that was adopted by the Kentucky River Area Development District is provided in Appendix K.
3. **Minimum Road Standards.** As identified in the roadway reviews, a majority of county roadways provide minimum width and present roadside hazards. While these roadways perform with minimal crashes, it is primarily due to the low volume and familiar local traffic which uses these roadways. As urbanization reaches into increasingly rural areas, it is recommended that Local agencies consider adopting minimum roadway standards to ensure rural roads can safely accommodate future traffic demands associated with development. These standards should establish baseline roadway width and sight distance standards that support safe two-way travel, and adequate space for emergency vehicles, while accounting for surrounding land use. When evaluating development proposals, agencies should look to require roadway widening or other improvements if existing conditions fall below the minimum standard, ensuring safety is not compromised by increased traffic volumes. In doing so, local agencies can guide responsible growth, reduce crash risk, and maintain the long-term safety and functionality of rural roadways.
4. **Right of Way Encroachment.** It is recommended that agencies consider a ROW encroachment policy to ensure that all new driveway access points to public roadways be designed and constructed in accordance with established safety and drainage standards. The policy should ensure that driveway culverts and drainage features are properly sized and installed to prevent roadway flooding or erosion, and

that no fixed objects such as brick mailboxes, stone walls, or decorative structures are placed within the clear zone where they could pose a hazard to motorists.

Driveway permits should be reviewed and approved by the agency prior to construction, with inspections conducted to verify compliance. This policy will help protect roadway integrity, maintain proper drainage, and enhance safety for all roadway users.

5. **Public Education Campaigns.** Consider partnering with the Kentucky Office of Highway Safety and the National Highway Traffic Safety Administration (NHTSA) to implement public education campaigns to address concerns over aggressive and distracted driving. NHTSA campaigns such as “*U Drive. U Text. U Pay.*” and “*Drive Sober or Get Pulled Over*” raise awareness and change driver behavior through media outreach and enforcement partnerships. NHTSA also provides grant funding opportunities under Section 402 and Section 405 programs that support state and local initiatives for distracted driving prevention, speed management, and high-visibility enforcement campaigns. The High-Five Rural Safety Program led by KOHS through NHTSA pairs enforcement, education and engineering improvements to address driver behavior and reduce crashes. By leveraging these programs, local agencies can enhance enforcement, promote safer driving behaviors, and reduce crashes linked to distraction and aggression on their roadways

APPENDIX A: ROAD SAFETY ASSESSMENT DATA COLLECTION GUIDE

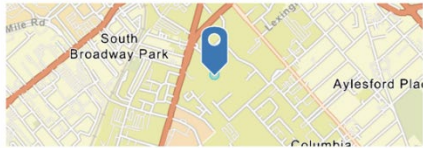
5:38 29

SS4A Roadway Survey

Road Name *

Where is the roadway feature located? *

38°2'N 84°30'W ± 31.0 m



What is the feature? *

☐ Roadway Section

☐ Sign

☐ Fixed Object

☐ Curve Hazard

☐ Intersection Hazard

☐ Guardrail

☐ Bridge or Large Culvert

☐ Drop Off

☐ Other

Image *

KY Area Development District SS4A Data Collection Procedures



GUIDE OVERVIEW

The purpose of this guide is to provide direction and supplemental reference materials for the data collection procedures in support of the development of a Safety Action Plan for locally maintained roadways. This guide is intended to be used in combination with a mobile device and the Ballbank and ArcGIS Survey123 data collections apps from the Apple App Store.



ArcGIS Survey123



Ballbank

If you have any questions regarding the data collection procedures you may contact your Area Development District (ADD) Transportation Planner at the information on the back of this document.

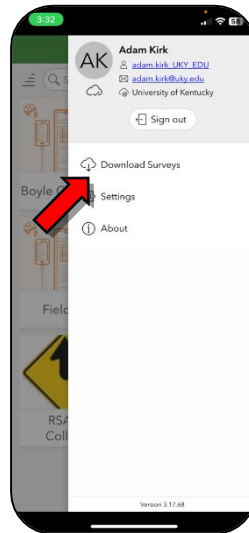
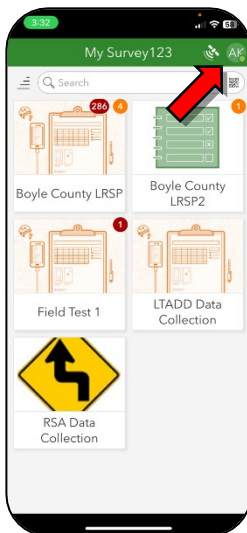
For each of the focus roadways you will need to

1. Drive the roadway in each direction using the Ballbank app to record horizontal curves, and:
2. Drive the roadway a second time to log potential roadway hazards, and key roadway information using the Survey123 app.

IOS MOBILE DEVICE SETUP

Follow these steps to set up your device.

1. Turn on and log into the iPad.
2. Ensure Wi-Fi is connected.
3. Download the **ArcGIS Survey123** app and **Ballbank** app from the Apple App Store. (You will need the **appleID** and **password** associated with your mobile device to download the apps).
4. Open and Sign into the ArcGIS Survey123 app. Survey123 licenses are managed by the ADD. If there are issues signing in please contact your local ADD for further assistance.
5. Click your user initials in the upper right corner of the screen and select download surveys from the dropdown. Locate the survey titled “*XXADD Data Collection*” and click the cloud with a down arrow to download the survey to your device.
6. Hit the back button in the upper left corner to return to the main screen.

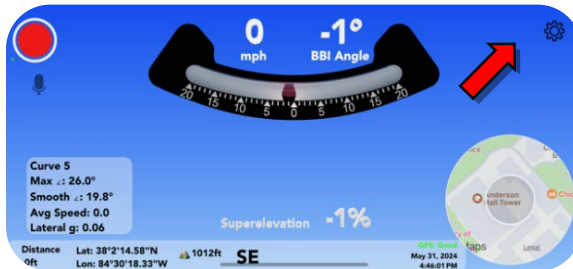


BALLBANK APP

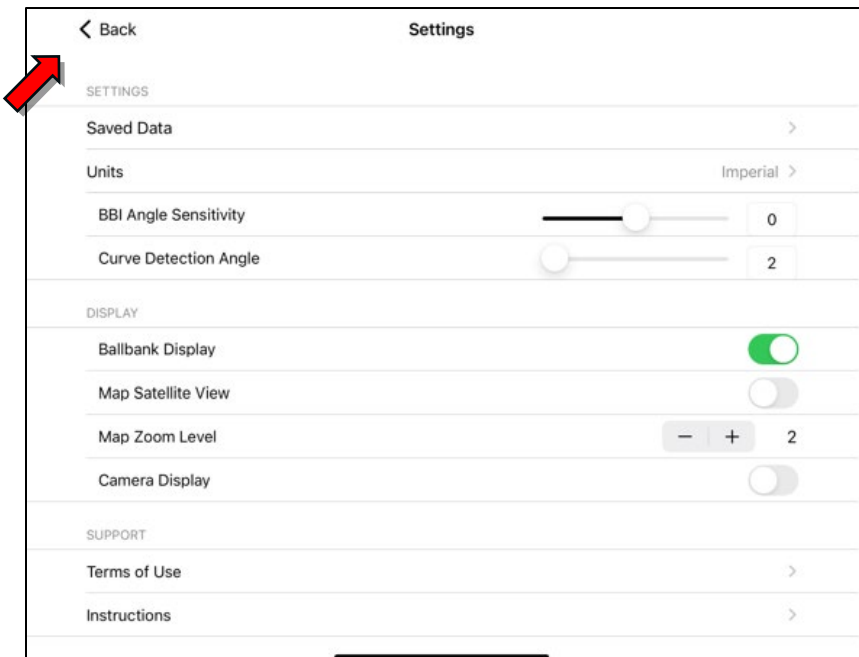


The Ballbank app is used to assist in determining where horizontal alignment (curve) signs are needed and to set advisory speeds at horizontal curves.

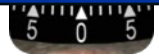
1. To set up the app click on the settings (gear) button in the top right of the screen.



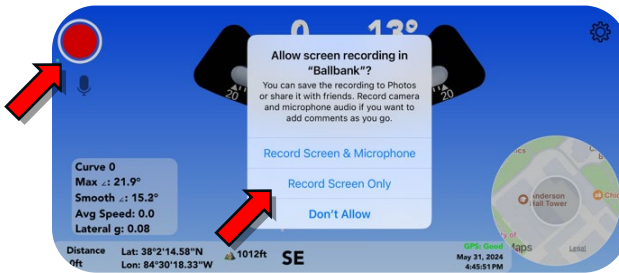
2. Configure the settings to match those shown in the figure below. Once completed, hit the back button.



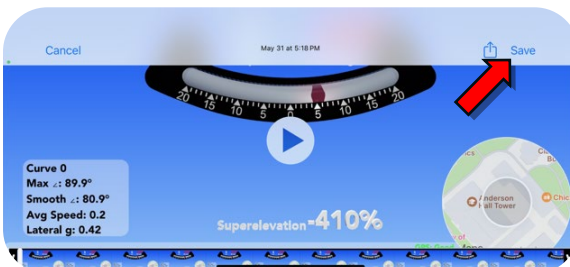
BALLBANK APP



- The mobile device should be mounted horizontally in the vehicle, **level with the vehicles chassis**. Check level by placing the device with the ballbank app running on a level surface in the vehicle, such as the dashboard. The BBI Angle displayed should match the BBI Angle when mounted.
- Drive to safe spot near the beginning of the roadway where you can stop the vehicle and begin recording. To begin data collection hit the “Record” button in the top left corner of the app. Then select “Record Screen Only.”



- Drive the roadway in **BOTH DIRECTIONS** at a comfortable speed, maintaining your lane as much as possible, i.e., do not straighten out the curves or cross a centerline.
- Once completed hit the "Stop Recording"  button in the top left corner of the screen.
- When presented with the option, hit “Save.”



- Curve data for this roadway has been completed and you can move to the next data collection element or roadway.



Data Collection

The Survey123 app is used to collect general roadway information as well as potential safety hazards along the roadway. Data collection items are summarized below.

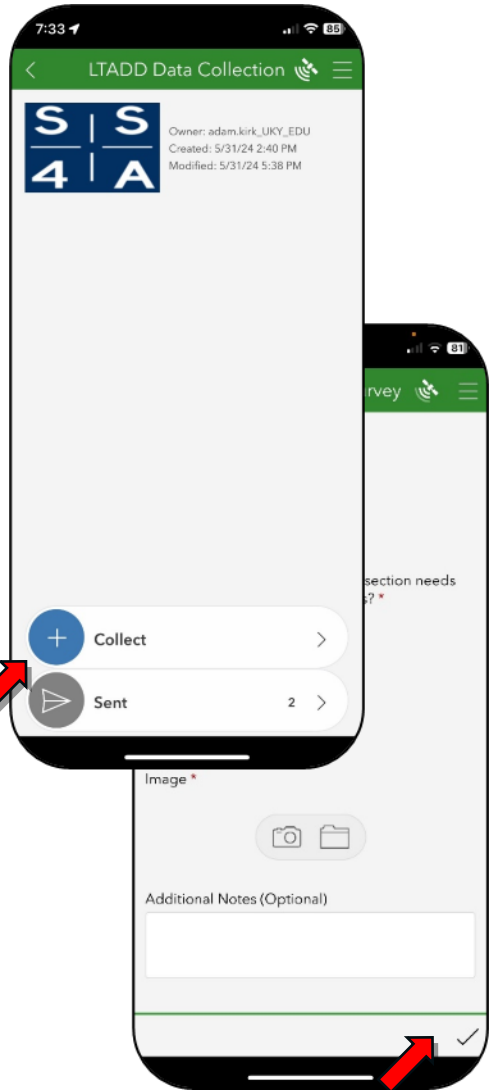
The screenshot shows the Survey123 app interface on a smartphone. The title bar is green with a white 'X' on the left, the text 'SS4A Roadway Survey' in the center, and a white signal icon and a white menu icon on the right. The status bar at the top shows the time '5:38', signal strength, Wi-Fi, and battery level '29'. The form has a light gray background. The first section is 'Road Name *' with a white text input field. The second section is 'Where is the roadway feature located? *' with a map view showing a location in South Broadway Park, Lexington, KY. The map includes a blue location pin and a red location pin. The coordinates '38°2'N 84°30'W ± 31.0 m' are displayed above the map. The third section is 'What is the feature? *' with a list of radio button options: Roadway Section, Sign, Fixed Object, Curve Hazard, Intersection Hazard, Guardrail, Bridge or Large Culvert, Drop Off, and Other. The fourth section is 'Image *' with a white image input field. A white checkmark is visible in the bottom right corner of the form.

1. General Roadway Information such as condition and width
2. Road Signs
3. Fixed Objects within 5 feet of the roadway
4. Curve Hazards
5. Intersection Hazards
6. Guardrail
7. Bridge / Culvert locations
8. Edge Drop Offs
9. Other hazards noted by the survey team.

Additional information on each survey item can be found in their respective sections in this guide.



1. Once the Survey is downloaded, it should display on your Survey 123 home screen. Select the survey to begin data collection.
2. To collect a data point, select “Collect” at the bottom of the screen. The survey page will appear as shown to the left.
3. Log the information about the feature based on guidance in the following sections.
4. Note that “feature location” information is automatically updated from the GPS of the mobile device.
5. Once completed, hit the checkmark in the lower right corner of the screen, then select save in outbox.





8:43

SS4A Roadway Survey

Road Name *

Main Street

Where is the roadway feature located? *

38°2'N 84°30'W ± 16.1 m

What is the feature? *

☒ Roadway Section

What is the pavement width (feet)? *

What is the pavement condition? *

What roadside hazard rating is most representative of the roadway? *

☐ 1

☐ 2

☐ 3

☐ 4

☐ 5

☐ 6

☐ 7

What percentage of the roadway section needs shoulder and ditch improvements? *

☐ 0-20%

☐ 20-40%

☐ 40-60%

☐ 60-80%

☐ 80-100%

Roadway Section features collect general roadway characteristic information including 1) pavement condition, 2) pavement width, 3) Roadside condition and 4) shoulder condition. Roadway section data should be recorded periodically along the roadway whenever there is a significant change in one of these elements.

Pavement Width should be measured with a measuring wheel and recorded to the nearest foot.

The following sections provide detailed information on the remaining roadway section data information.

Once finished, take a picture showing the entire roadway cross section including pavement, shoulders and roadside.



Pavement Condition is rated based on the AASHTO Present Serviceability Rating Scale (PSR) based on rideability and visual inspection of the pavement.

Verbal	Description	PSR
Very Good	Only new, superior (or nearly new) pavements are likely to be smooth enough and distress free (sufficiently free of cracks and patches) to qualify for this category. Most pavements constructed or resurfaced during the data year would normally be rated very good.	5.0
		4.0
Good	Pavements in this category, although not quite as smooth as those described above, give a first class ride and exhibit few, if any, visible signs of surface deterioration. Flexible pavements may be beginning to show evidence of rutting and fine random cracks. Rigid pavements may be beginning to show evidence of slight surface deterioration, such as minor cracks and spalling.	3.9
		3.0
Fair	The riding qualities of pavements in this category are noticeably inferior to those of new pavements, and may be barely tolerable for high speed traffic. Surface defects of flexible pavements may include rutting, map cracking and extensive patching. Rigid pavements in this group may have a few joint failures, faulting and cracking, and some pumping.	2.9
		2.0
Poor	Pavements in this category have deteriorated to such an extent that they affect the speed of free-flow traffic. Flexible pavement may have large potholes and deep cracks. Distress includes raveling, cracking, rutting, and occurs over 50 percent, or more, of the surface. Rigid pavement distress includes joint spalling, faulting, patching, cracking, scaling, and may include pumping and faulting.	1.9
		1.0
Very Poor	Pavements in this category are in an extremely deteriorated condition. The facility is passable only at reduced speeds, and with considerable ride discomfort. Large potholes and deep cracks exist. Distress occurs over 75 percent or more of the surface.	0.9
		0.0



Roadside Hazard Rating. Roadside Rating evaluates the presence of fixed objects such as trees and embankments near the roadway and the steepness of the roadside slope. Roadside hazards are rated on a scale from 1 being the best and 7 being unrecoverable.

RHR = 1 & 2

- Clear zone > 20 ft
- Sideslope $\geq 4:1$.
- Recoverable.



RHR = 3

- Clear zone ~10 ft
- Sideslope 3:1 to 4:1.
- Rough roadside surface.
- Marginally recoverable.



RHR = 4

- Clear zone 5 to 10 ft
- Sideslope 3:1 to 4:1.
- May have guardrail (5 to 6.5 ft from road).
- Exposed trees, poles, or other objects (~10 ft from road).
- Marginally forgiving, but increased chance of a roadside collision.





RHR = 5

- Clear zone 5 to 10 ft
- Sideslope 3:1
- May have guardrail (0 to 5 ft from pavement edgeline).
- Fixed Objects within 6.5 to 10 ft of road
- Virtually non-recoverable.



RHR = 6

- Clear zone <5 ft
- Sideslope 2:1
- No Guardrail
- Fixed Object 0 to 5 ft
- Non-recoverable.



RHR = 7

- Clear zone <5 ft
- Sideslope 2:1 or steeper
- No Guardrail
- Fixed Object 0 to 5 ft
- Non-recoverable. High Likelihood of injuries or rollover





Shoulder and Ditch

Improvements. For the roadway section being evaluating, indicate how much of the section needing improvements.

Proper shoulders and ditches should be have the following characteristics.

1. Edge drop off from pavement surface to roadside less than 3 inches.
2. Slope flatter than a 3:1 slope from road edge to ditch.
3. Adequate ditch width and depth to carry surface water. Not significantly impeded by debris and/or sediment.



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SURVEY123-Signs

SPEED
LIMIT
45

11:14

SS4A Roadway Survey

Road Name *

Main Street

Where is the roadway feature located? *

38°2'N 84°30'W ± 16.1 m

What is the feature? *

☐ Roadway Section

☒ Sign

What type of sign is it? *

☐ Horizontal Curve

☐ Object Marker

☐ Speed Limit

☐ Stop

☐ Other

Is vegetation blocking the sign? *

☐ Yes

☐ No

Rate the following:

	Good	Fair	Poor
Sign Condition *	☐	☐	☐
Sign Placement *	☐	☐	☐

Image *

Camera icon, Gallery icon

Log all highway signs along the roadway being surveyed. Any non-highway signs should be excluded.

Note: Object markers at bridges and large culverts should be logged with the bridge/culvert feature.

What type of sign is it?

Select the type of sign from the drop-down menu. If the type is not shown on the drop-down list, select other and describe in the notes section.

Rate the Sign Placement

Good. Near edge of sign is at least 2 feet from the edge of the roadway, plumb, and easy visible from the roadway.

Fair. Sign may be leaning, or 1-2 feet from pavement edge. Some minor vegetation may limit visibility of the sign.

Poor. Sign is less than 1 foot from edge or road, blocked by vegetation, or post is leaning and not secure in the ground and/or not oriented towards traffic limited visibility.

Rate the sign condition

Good. Appear to be in new or like new condition and show little, if any, signs of deterioration and easy to read.



Fair. Some visible deterioration, not impacting legibility of the sign. Some common forms of sign deterioration are minor bending, cracking, fading, peeling, rusting, or vandalism.



Poor. Showing significant deterioration or sign is non-standard. The deterioration is impacting the legibility of the sign. Signs in this category need to be replaced.



SURVEY123-Fixed Objects



11:38

SS4A Roadway Survey

Road Name *

Main Street

Where is the roadway feature located? *

38°2'N 84°30'W ± 16.1 m

What is the feature? *

☐ Roadway Section

☐ Sign

☒ Fixed Object

What is the object? *

☐ Tree

☐ Utility Pole

☐ Culvert Headwall

☐ Other

Roughly how far from the pavement edge is the fixed object (feet)? *

☐ 0-1

☐ 1-3

☐ 3-5

☐ >5

Is it a single fixed object or part of a series? *

☐ Single

☐ Series

Image *

Additional Notes (Optional)

Log fixed objects that meet one or more of the following criteria:

- On straight sections, within 3 ft. of the pavement edge or within the ditch line.
- On the outside of curves, within 5 ft. of the pavement edge.
- Doesn't meet the above criteria but appears to be a significant hazard.

What is the object?

Select the type of fixed object from the list. If the object is not listed select other and describe in the notes.

Roughly how far from the pavement edge is the fixed object in feet?

Estimate the distance from the pavement edge to the nearest edge of the fixed object.

SURVEY123-Fixed Objects



Is it a single fixed object or part of a series?

If there is just one object on the side of the road you are evaluating, select single. If there are a series of the same fixed object, select series. For example: A row of trees

within 2 ft. of the pavement edge would be a series, a single tree within 2 ft. of the pavement edge would be a single fixed object.

Note: If a roadway has the same fixed object hazard for a significant portion of its length, log the object once and estimate the percentage of the roadway length which the hazard is present. Then, enter that estimate into the additional notes section. An example of this would be if a roadway has trees within 2 ft. of the pavement edge for approximately 15% of its length.



SURVEY123-Curve Hazards



1:17

SS4A Roadway Survey

Road Name *

Main Street

Where is the roadway feature located? *

38°2'N 84°30'W ± 16.1 m

Map showing location near South Broadway Park, Aylesford Plaz, and Columbia.

What is the feature? *

☐ Roadway Section

☐ Sign

☐ Fixed Object

☒ Curve Hazard

What is causing the curve hazard? *

Select all that apply.

☐ Intersection in Curve

☐ Entrance in Curve

☐ Curve Obscured by Alignment/Embankment

☐ Curve Obscured by Vegetation

☐ Other

Is vegetation blocking the view of the curve? *

☐ Yes

☐ No

Image *

Additional Notes (Optional)

✓

Identify hazards at all significant horizontal curves. Hazards include sight distance restrictions, intersections and/or entrances within the curve or other hazards identified during the review. A sharp turn and/or curve itself is not considered a hazard and will be identified during the advisory speed runs.

SURVEY123-Curve Hazards



Intersection in Curve



Curve Obscured by Embankment

SURVEY123-Intersections



1:46

SS4A Roadway Survey

Road Name *

Main Street

Where is the roadway feature located? *

38°2'N 84°30'W ± 16.1 m

Map showing location near South Broadway Park, Aylesford Place, and Columbia.

What is the feature? *

☐ Roadway Section

☐ Sign

☐ Fixed Object

☐ Curve Hazard

☒ Intersection Hazard

What is causing the intersection hazard? *

Select all that apply.

☐ Intersection Obscured on Approach

☐ Intersection Skew

☐ Insufficient Sight Distance at Intersection

☐ Other

Is vegetation blocking sight distance? *

☐ Yes

☐ No

Image *

Additional Notes (Optional)

✓

Log all significant intersections. Intersections where traffic on the focus roadway must stop or yield are considered significant.

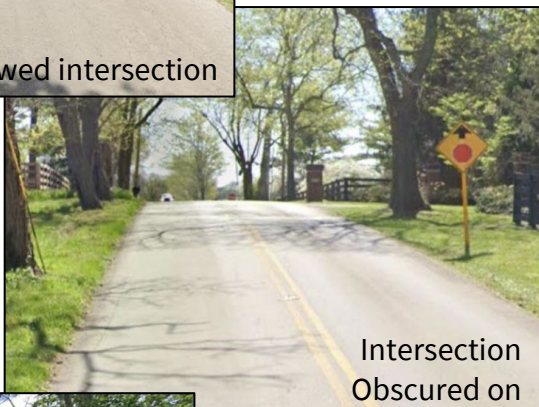
Is there any intersection hazards?

Log any hazards identified on the next page. If there is something about the intersection that appears hazardous but not listed, log it as other and provide a description of the issue.

SURVEY123-Intersections



Skewed intersection



Intersection
Obscured on
Approach

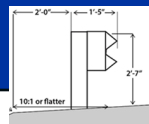


Restricted Sight
Distance



Restricted Sight
Distance

SURVEY123-Guardrail



1:59

SS4A Roadway Survey

Road Name *

Main Street

Where is the roadway feature located? *

38°2'N 84°30'W ± 16.1 m

What is the feature? *

☐ Roadway Section

☐ Sign

☐ Fixed Object

☐ Curve Hazard

☐ Intersection Hazard

☒ Guardrail

What is the condition? *

☐ Good

☐ Fair

☐ Poor

Does it appear to meet warrants? *

☐ Yes

☐ No

☐ Maybe

Do the end treatments meet guidelines? *

☐ All

☐ None

☐ Some

Image *

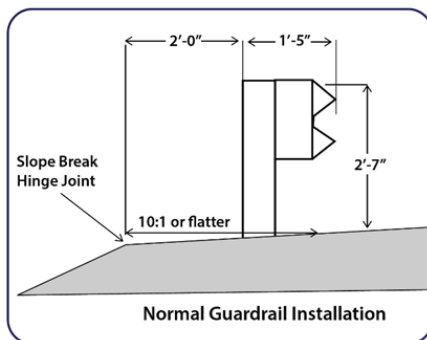
Additional Notes (Optional)

Log each guardrail segment along the roadway.

Note: Guardrail at bridges and large culverts should be logged with the bridge/culvert feature.

Condition Rating

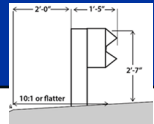
Visually rate the guardrail to determine if it is in good repair and properly installed per the figure below.



Good. Meets height requirements and no noticeable damage.

Fair. Minor visible damage, may or may not meet height requirements, but still serves as effective barrier.

SURVEY123-Guardrail



Poor. Significant damage, does not meet height requirements, limiting utility.

Guardrail Warrants

Guardrail is typically warranted when the drop is greater than 10 feet and the backslope is steeper than 3:1. If you are unable to determine if a section meets warrants but it appears as if it may, indicate "maybe."

End Treatments

Indicate whether all, some, or none of the end treatments meet current guidelines. The three types of end treatments that meet current guidelines from the AASHTO Manual for Assessing Safety Hardware are shown below.





2:20

SS4A Roadway Survey

Road Name *

Main Street

Where is the roadway feature located? *

38°2'N 84°30'W ± 16.1 m

What is the feature? *

☒ Bridge or Large Culvert

What is the width of the bridge/culvert in feet? *

How many corners of the bridge/culvert have guardrail? *

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4

☐ other

how many corners of the bridge/culvert have object markers? *

☐ 0

☐ 1

☐ 2

☐ 3

☐ 4

☐ other

Image *

Log all bridges and large culverts along the roadway being surveyed. Large culverts are sometimes indistinguishable from a bridge from the roadway, they are generally made of concrete, square, and have openings that are 5+ feet diagonally. Figure X shows an example of a large culvert that would need to be logged.

What is the width of the bridge/culvert in feet?

Estimate the width between the inside face of both sides of the bridge/culvert. The yellow line on figure X shows an example measurement.

How many corners of the bridge/culvert have guardrail / Object Markers

Indicate how many corners of the bridge or culvert guardrail is attached to or protecting and/or marked with Object Markers.



Large Box Culvert



Bridge Width Measurement

SURVEY123-Drop Offs

A screenshot of a mobile application interface for logging drop-offs. The app has a green header with the title "SS4A Roadway Survey". Below the header, there are several input fields and a map. The first field is "Road Name *" with the text "Main Street" entered. The second field is "Where is the roadway feature located? *" with a location pin icon and the coordinates "38°2'N 84°30'W ± 16.1 m". Below this is a map showing a street grid with a blue location pin. The third field is "What is the feature? *" with two radio button options: "Drop Off" (selected) and "Other". The fourth field is "How many feet from the pavement edge is the drop off? *" with five radio button options: "0-1", "1-3", "3-5", ">5". The fifth field is "How many feet is the drop? *" with five radio button options: "<2", "2-5", "5-10", ">10". The sixth field is "Image *" with a camera icon and a folder icon. At the bottom right of the form is a checkmark icon.

Log all significant drop offs along the roadway. Significant drop-offs are those that may injure a motorist if their vehicle departs the roadway where the drop off is located.

How many feet from the pavement edge is the drop off?

Estimate the offset from the nearest edge of the pavement to the beginning of the drop off.

How many feet is the drop?

Estimate the depth of the drop off from the pavement surface to its deepest point.



Drop Off Examples



Significant edge drop off due to driveway culvert/creek. Depth and offset measurements shown in yellow.

Significant edge drop off due to steep slope. Creek at bottom of slope is greater than 10 ft. below road surface.



Insignificant edge drop off due to small culvert pipe. Do not log.

APPENDIX B: ROADWAY IMPROVEMENT GUIDES

TAP IT!

Technical Assistance Program, Information Transfer
KY Local Technical Assistance Program

Low-Cost Safety Measures

Low-Cost Safety Measures

Both urban and rural areas are challenged with high crash rates. However, they face unique challenges when trying to resolve roadway issues. Often, rural areas struggle with funding, availability of engineering staff, and available resources. These limitations adversely affect rural roads.

The Federal Highway Administration (FHWA) recommends a few actions to mitigate this problem. Deemed Low-Cost Safety Enhancements¹ and Proven Safety Countermeasures,² these established methods lead to a 15-50% reduction in crashes. Low-cost and high-crash-reduction measures provide a significant benefit-to-cost ratio. Utilizing low-cost safety measures to reduce roadway departures helps to resolve a rampant problem without overrunning the budget.

The two main collision types on rural roads are collisions with other motor vehicles and collisions with fixed objects. Keeping a vehicle in its lane significantly reduces the risk of collision. There are many methods to ensure that a vehicle does not depart from the roadway. Striping, rumble strips, center line, edgeline, and signage are a few ways to minimize lane departure. Vegetation control can also play an important factor in preventing collisions and roadway departures.

Curve Signing

Inadequate or improper signage is the leading reason for payouts related to collision or departure claims. Curve signing is used to advise motorists of changes in the roadway alignment. Advance warning signs, guidance through curves, and advisory speed plaques make up curve signing. For more information on curve signing and how to set appropriate advisory speeds for curves, see the TapIT! Sheets on Horizontal Alignment Signing and Setting Curve Advisory Speeds.

# of curves	Less than or equal to 30 mph	Greater than 30 mph
1	 W 1-1	 W 1-2
2	 W 1-3	 W 1-4
3 or more	 W 1-5	 W 1-5

Roadway Width	Edgelines	Centerlines
<16 ft	Permitted	Prohibited
≥ 16 ft < 20 ft	Either EL or CL NOT both	
≥ 20ft	Required ADT > 1000	Required

Pavement Markings

Pavement markings are also effective in providing guidance for vehicles to negotiate a roadway. Even on narrow roadways, edgelines have proven to be effective in reducing both single vehicle and head-on crashes by providing demarcation of the road edge for drivers at night. Edgeline only striping is recommended for roadways with crash potential or experience for roadways under 16 feet and may be used on roadways between 16-20 ft in width. For low-volume roads under 400

vpd, edgeline striping may be more beneficial than centerline striping due to the low exposure for multi-vehicle crashes.

Clear Zones

Maintain an unobstructed, relatively flat area beyond the edge of the traveled way that allows drivers to stop safely or regain control of a vehicle that leaves the traveled way. Factors include roadway design speed, traffic volume, and embankment slope. As a general rule, get as much clear zone as you can, and keep what you get.

Recoverable Slope	Non-Recoverable Slope	Critical Slope
A slope on which a motorist may retain or regain control of the vehicle	A slope that is considered traversable but on which the bottom errant vehicle will continue to the bottom	A slope on which the vehicle is likely to overturn
Slopes 4:1 and flatter	Slopes between 3:1 and 4:1	Slopes steeper than 3:1

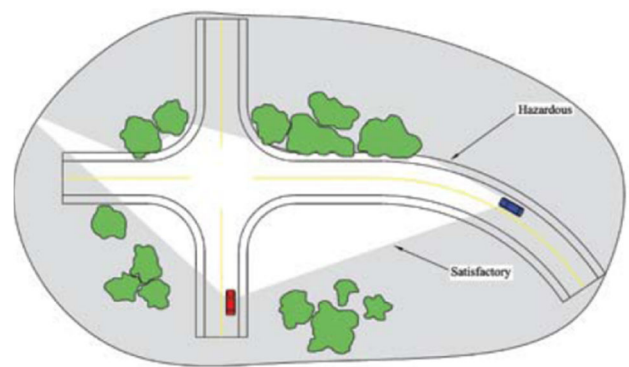
Fixed objects in the clear zone include trees, utility poles, headwalls, signs, guardrails, etc. These fixed objects often result in fatal crashes.

To address clear zone impediments, the following priority of mitigation measures should be followed:

Remove obstacle → Relocate obstacle → Make traversable →
Reduce impact severity → Shield obstacle → Delineate obstacle

Vegetation Management

Clearing vegetation around signs and intersections is one of the most cost-effective safety measures you can take. It will also help with snow and ice removal by allowing more sunlight to reach the roads. Consider sight triangles as guidance as to how much vegetation should be cleared.



Roadway Maintenance

Consider drainage, pavement edge dropoff/shouldering, and superelevation as additional low-cost safety measures. Drive your roads during poor weather conditions to look for potential hazards. Use the Safety Edge or other dropoff countermeasures to ensure recoverability.

1. Low-Cost Safety Enhancements for Stop-Controlled and Signalized Intersections, Federal Highway Administration. 2020. https://safety.fhwa.dot.gov/provencountermeasures/syst_stop_control.cfm
2. Proven Safety Countermeasures, Federal Highway Administration. <https://highways.dot.gov/safety/proven-safety-countermeasures>

Horizontal Alignment Signing

Implementing low-cost safety measures for rural roads is vital to reduce roadway crashes and deaths. One of the largest proven countermeasures for reducing fatal crashes is to address single vehicle crashes near horizontal curves. Twenty percent of all crashes occur at curves, and these crashes account for 40 percent of all fatal crashes. Furthermore, inadequate or improper signage is the leading reason for payouts related to collision or departure claims.

Horizontal alignment signing is used to advise motorists of changes in the roadway alignment consisting of advance warning signs, guidance through curve, and advisory speed plaques.

# of curves	Less than or equal to 30 mph	Greater than 30 mph
1	  W 1-1	  W 1-2
2	  W 1-3	  W 1-4
3 or more	  W 1-5	  W 1-5

MUTCD Chapter 2C provides guidance on the use of Horizontal Alignment signing and establishes standards for roadways having an Average Daily Traffic (ADT) of over 1,000 vehicles. While not required on roadways with lesser traffic volumes, improved signing can address high crash locations or be used to proactively reduce crashes on horizontal curves. MUTCD guidance is summarized below.

Advanced warning signs, such as the W1-1, W1-3 and W1-5, and advisory speed plaques (W13-1) are recommended on curves where the posted or 85th percentile speed is 5 mph or greater than the advisory speed and required when 10 mph or greater than the advisory speed. The specific type of advanced warning sign to be used is shown in the figure to the right. Advanced warning signs should be placed far enough in advance of the hazard to allow the sign to be seen and for a driver to decelerate to the appropriate speed. The table summarizes how far in advance signs should be placed before a horizontal curve based on the approach speed and advisory speed.

Speed	Advisory Speed (mph)				
	10	20	30	40	50
20 mph	100 ft	—	—	—	—
25 mph	100 ft	100 ft	—	—	—
30 mph	100 ft	100 ft	—	—	—
35 mph	100 ft	100 ft	100 ft	—	—
40 mph	100 ft	100 ft	100 ft	—	—
45 mph	125 ft	100 ft	100 ft	100 ft	—
50 mph	200 ft	175 ft	125 ft	100 ft	—
55 mph	275 ft	225 ft	200 ft	125 ft	100 ft
60 mph	350 ft	325 ft	275 ft	200 ft	100 ft
65 mph	450 ft	400 ft	350 ft	275 ft	200 ft
70 mph	525 ft	500 ft	450 ft	375 ft	275 ft
75 mph	625 ft	600 ft	550 ft	475 ft	375 ft



Guidance signing, including chevrons (W1-8) and/or One-Direction Large Arrows (W1-6), are recommended when the posted speed limit is 10 mph or greater than the advisory speed and required when 15 mph or greater. Guide signs should be oriented toward approaching traffic and spaced consistently so that two or more chevrons can be seen at one time. The table on the next page provides a summary of chevron spacing requirements, based on the posted advisory speed.

Advisory Speed	Chevron Spacing
15 mph or less	40 feet
20 to 30 mph	80 feet
35 to 45 mph	120 feet
50 to 60 mph	160 feet
More than 60 mph	200 feet

The first figure below shows a standard signing layout for a roadway with a posted speed of 55 mph and a curve advisory speed of 35 mph. In this example, advanced warning signs (W1-2) are placed 200 feet in advance of the horizontal curve. Chevrons are then used to provide additional guidance through the curve and are placed with a spacing of 120 feet apart. The second figure shows enhanced signing, which provides dual mounted advanced warning signs and adds dual-mounted supplemented signs at the point of curvature. Note that the supplemental signs (W1-2a) which show alignment and posted advisory speed can only be used at the point of curvature and NOT as an advanced warning sign.



For more information on setting advisory speeds for horizontal curves, see the “Setting Advisory Speeds” TapIT! Sheet.

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Setting Curve Advisory Speeds

Setting Advisory Speeds



When a roadway has a curve and/or turn that requires motorists to slow down to safely negotiate it, advanced warning signs are used to identify the hazard to the roadway users. Central to proper signing is identifying the “safe” speed that a driver can negotiate the curve. This is called the “advisory speed.” When the posted or 85th percentile speed of the roadway is greater than 10 mph over the advisory speed, the MUTCD requires that an Advisory Speed Plaque is installed with the advanced warning sign. Several methods exist to set advisory speeds including 1) accelerometer, 2) design speed equations, and 3) a traditional ball-bank indicator. The ball bank indicator is the most common and quickest method to determine advisory speeds for a small number of curves.

Ball Bank Indicator

The ball bank indicator (BBI), shown to the right, measures the horizontal forces as a vehicle maneuvers through a curve. These forces are dependent upon the speed of the vehicle and the superelevation (or bank) of the roadway. Measurements are expressed in terms of degree of deflection with which the “ball” travels through the curve. Manual BBIs have been replaced by the digital Ball Bank Indicator which provide measurement based on the same principal.



Using a Ball Bank Indicator:

1. Mount the ball bank indicator in the vehicle when the vehicle is stopped on a level surface so that the BBI reads 0.
2. Drive through the curve at a consistent speed (e.g. 35, 30, 25, 20 mph). Perform test in each direction, and in each lane, multiple times, due to variations in path, pavement condition, etc.



Speed (mph)	Degrees of Bank
≤20 mph	16°
25 - 30 mph	14°
≥35 mph	12°

Tests should be performed at 5 mph decreasing increments starting at the posted speed until the ball bank deflection remains within limits set in the table at left. When a run can be successfully completed without exceeding these values, this speed is chosen as the advisory speed.

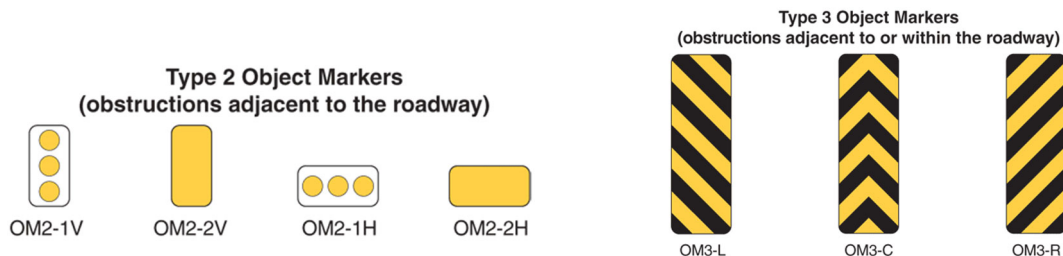
Learn more in the Horizontal Alignment TapIT! Sheet.

Object Markers

On low-volume roadways, it may not be cost effective to remove or relocate fixed objects within the clear zone due to their prevalence and the lower speeds associated with the local road system. In those cases, object markers are recommended by the MUTCD to demarcate roadside obstacles.

The MUTCD provides standards for Type 2 and Type 3 markers as shown in Figure 1. It is recommended that Type 3 object markers be used to mark significant obstacles directly adjacent to the roadside, such as culvert headwalls, while Type 2 markers may be used to delineate frequent occurrences such as utility pole locations.¹

Figure 1: MUTCD Object Marker



The recommended minimum height for object markers is lower than standard signing, with a minimum height of 4 ft above the edge of the roadway. This lowered height allows for the object markers to be within the direct eye line of the driver and indicate the obstacle position relative to the vehicle. Additionally, when placing Type 2 and Type 3 object markers, the near edge of the object marker should be placed in-line with the near edge of the obstacle to provide further guidance to the driver. Figure 2 delineates the application of object markers on a roadway.

Figure 2: Object Marker Application



1. Manual on Uniform Traffic Control Devices, Federal Highway Administration. 2009. <https://mutcd.fhwa.dot.gov/>

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Guardrail

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Guardrail

Guardrail may be used to protect against critical slopes and/or fixed objects. Guardrail is in and of itself a fixed object, so it should be placed with consideration. Guardrail should meet crashworthy standards in all placements. Guardrail should be considered on slopes steeper than 3:1 with a fill height over 10 feet. To give vehicles sufficient opportunity to recover without impacting an obstacle, guardrail should be placed as far away from the traveled way as is practical. Additional guidance on guardrail should be sought from the AASHTO Roadside Design Guide.

Barrier Installation

To protect against rollover crashes, guardrail should be 31" (± 1 ") above the road surface and should have a minimum of 2' soil backing at a slope of 10:1 or flatter. If placing 2' of fill material behind the barrier is not practical, longer post lengths may be used.

Barrier End Treatments

If the end of the barrier system/guardrail is located within the clear zone, it must be anchored and shielded with end treatments. Guardrail end treatments are frequently used to minimize the severity of impacts with fixed objects by gradually decelerating an impacting vehicle to a stop or redirecting it around the object of concern. Barrier end treatments should comply with MASH guidelines.

The preferred end treatment for guardrail sections is to anchor the guardrail in a backslope terminal, known as a Type 3 end treatment, at appropriate height. If the guardrail can be anchored out of the clear zone, an anchored end treatment Type 2A may be used, which installs a terminal Section No. 1. When these types of end treatments are not feasible, a Type 1 (Energy Absorbing Straight-Line Terminal) is preferred.



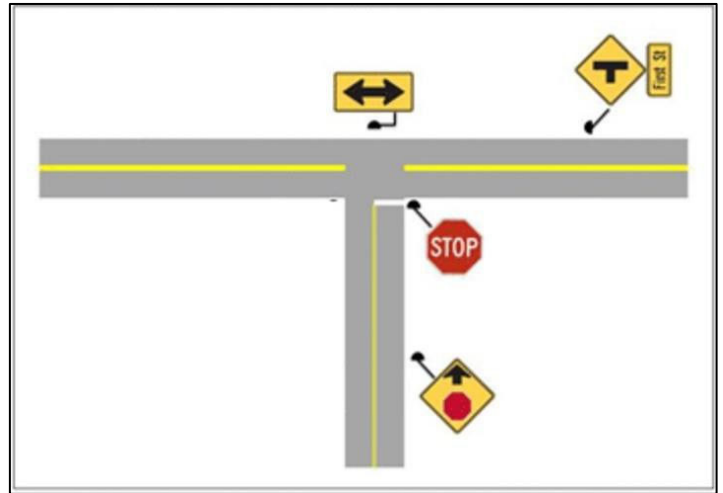
A Type 7, commonly known as a turn down end treatment, does not meet MASH crash guidelines and is only permitted on low speed / low volume roadways. These should be used only when adequate recovery zones are unavailable for other preferred end treatment types.

Stop-Controlled Intersections

Stop-controlled intersections are the most prevalent form of intersection traffic control on Kentucky's roadway. Additionally, common intersection crash types, such as angle and left turn crashes, have a high severity rate due to the speeds involved in the crash. Often, stop-controlled intersections have minimally-placed traffic control, particularly at 'T' intersections.

At 'T' intersections, especially in unlit areas, the presence of the intersection may be even more difficult to discern for some drivers. In addition to the risk associated with entering the intersection, fixed object crashes if a driver proceeds through a 'T' intersection are common. A Two Direction Large Arrow sign (W1-7) is a low-cost method to reinforce stop control at 'T' intersections.¹

In cases where vegetation partially or fully blocks existing signs, vegetation should be trimmed back. In cases where other sight distance limitations exist, such as horizontal or vertical curves, advance traffic control signs like stop ahead signing (W3-1) should be used. For intersections with persistent crash history or demonstrated high frequency/high severity of crashes, dual mounted signing may be utilized.



Pavement Markings

In addition to signing, pavement markings, specifically painted stop bars, can be effective in delineating the intended stopping point of vehicles at intersections and indicating the presence of the intersection. While pavement markings can present additional maintenance requirements, they are recommended for installation at:

- 1) Wide or skewed access points and intersections with curves which increase driver uncertainty as to the intended stop location
- 2) Intersections or on corridors with a documented intersection crash history
- 3) Intersections with high exposure for severe crashes, such as high volume/high speed uncontrolled cross streets (e.g., state highways or low-volume county roadways)

1. Manual on Uniform Traffic Control Devices (MUTCD), Federal Highway Administration. 2009. <https://mutcd.fhwa.dot.gov/>

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Wet Weather Crashes

Wet Weather Crashes

Wet or icy pavement conditions are a frequent contributing factor to crashes in Kentucky. When wet conditions are shown to contribute to a high incidence of crashes (wet pavement in over 50 percent of crashes) mitigation measures are often warranted. Determining the incidence rate of wet weather crashes can be done by examining crash data statistics for your area. Potential treatments for wet weather crashes include the following:

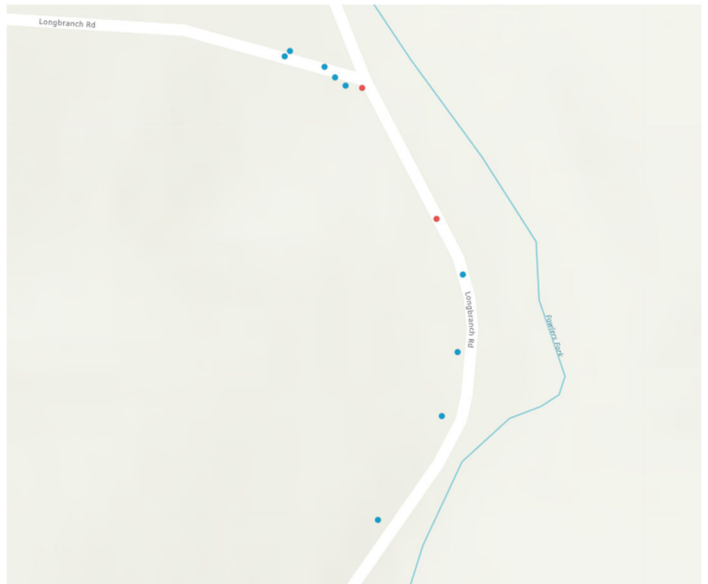
Improved Drainage

Improving drainage may impact roadway conditions during wet weather events. Clogged or absent drainage culverts and/or vegetation growth preventing water from reaching the ditch can both impact roadway conditions. Superelevation and rutting may also impact roadway conditions during heavy rain.

High Friction Surface Treatment (HFST)

Installing High Friction Surface Treatment (HFST) can increase surface friction during wet weather events, where worn or polished pavement has been identified as being a significant contributor to the crash.¹

Areas identified as having a higher concentration of wet weather crashes should be observed during significant rain events to identify areas of ponding and/or excessive sheet flow. If no drainage issues are identified, friction testing is recommended to determine if HFST would be a suitable mitigation measure.



At left, superelevation on the roadway and rutting on the shoulder contribute significantly to ponding water on the inside of the curve.

1. High Friction Surface Treatments (HFST), Federal Highway Administration. 2022.
https://safety.fhwa.dot.gov/roadway_dept/pavement_friction/high_friction/

APPENDIX C: PUBLIC SURVEY

Purchase Area Development District

The Purchase Area Development District is currently developing a Safety Action Plan for Ballard, Calloway, Carlisle, Fulton, Graves, Hickman, Marshall, and McCracken counties. This survey will be combined with crash analysis and local agency review of roadways to identify potential safety issues on county roadways. Once identified, the ADD and local counties will work to identify countermeasures to improve safety. The Safety Action Plan will then be used to direct local forces and funds and pursue additional funding available from the Kentucky Transportation Cabinet and USDOT.



SAFETY SURVEY

This survey collects general demographic information and seeks information about overall safety trends within your area. Please answer the questions below and click SUBMIT at the end of the survey. In the next section, you will be able to identify specific areas of concern on the roadway system.

PADD Safety Survey

How old are you?

☐ Under 25

☐ 25-44

☐ 45-69

☐ 70+

What is your employment status?*

☐ Full-time

☐ Part-time

☐ Student

☐ Stay-at-home

☐ Retired

☐ Unemployed

☐ Other

What are your top five safety concerns in your area.*

☐ Distracted driving

☐ Aggressive driving

☐ High speeds

☐ Limited Sight Distance

☐ Unmaintained Roads

☐ Narrow Roadways

☐ Roadside Objects (Trees)

☐ Blind Curves

☐ Sharp Curves

☐ Blind Intersections

☐ Pavement Drop Offs

☐ Lack of Pedestrian Facilities (Sidewalks)

☐ Lack of Bicycle Facilities (Bike Lanes)

☐ Other

What is something that you would like this plan to focus on to make roadways safer in your area?

255

Submit

IDENTIFY A SAFETY CONCERN

On the map below you can identify areas of concern or propose solutions for areas viewed as safety hazards on local roadways. This project is primarily looking for issues on county and/or city maintained roadways; however, concerns on other agency roads will be shared with those agencies. Follow the steps below to report a safety concern:

1. Click "Report a Concern" at the bottom of the map,
2. Select the type of concern (Speeding, Roadside Drop off, etc.)
3. Zoom into the map and locate the roadway / concern.
4. Click on the map where you suspect the issue to be.

To watch an instructional video on how to use the interactive map, [click here](#).

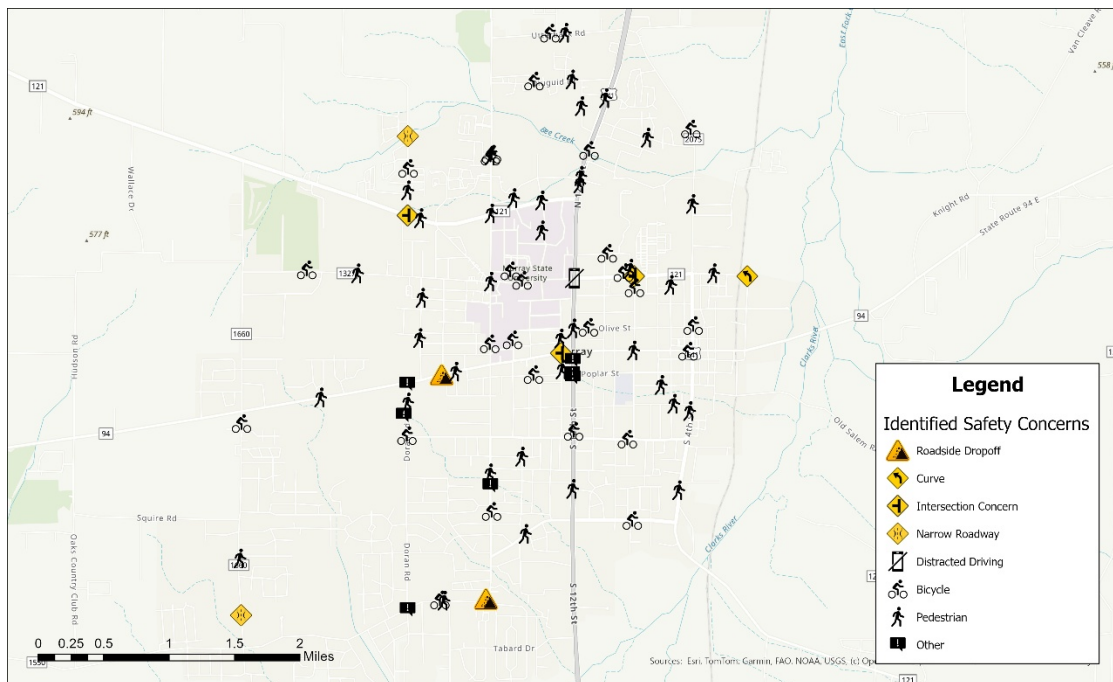
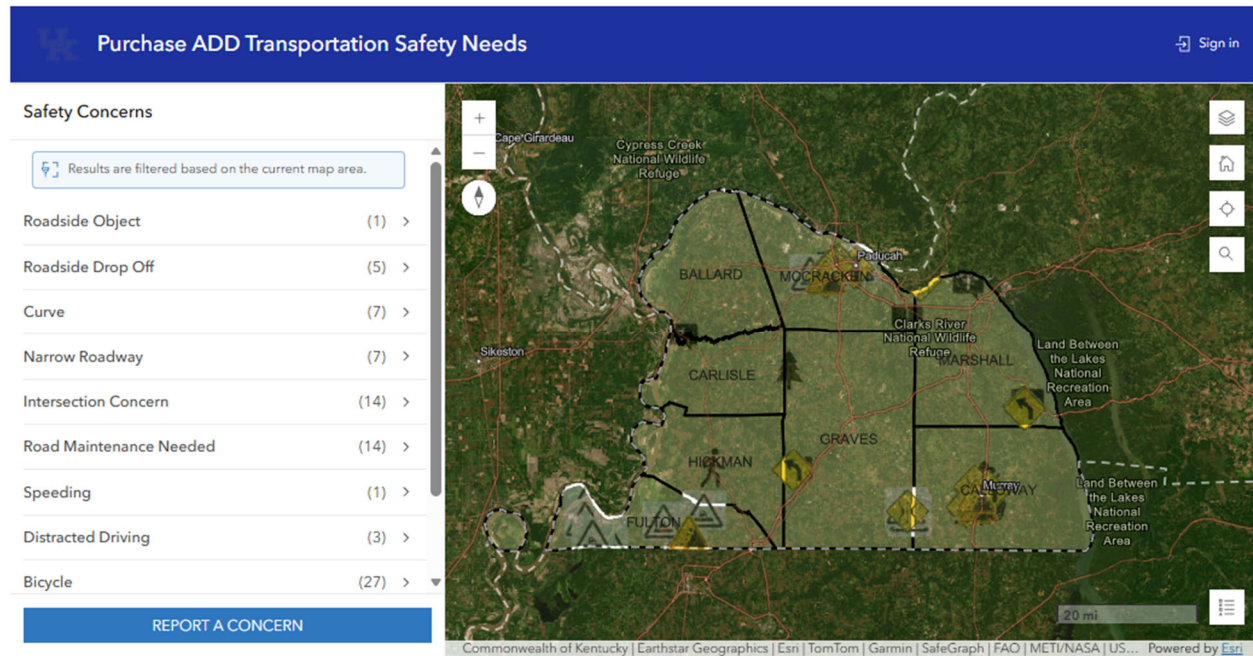


Exhibit 21: Identified Safety Concerns – Murray

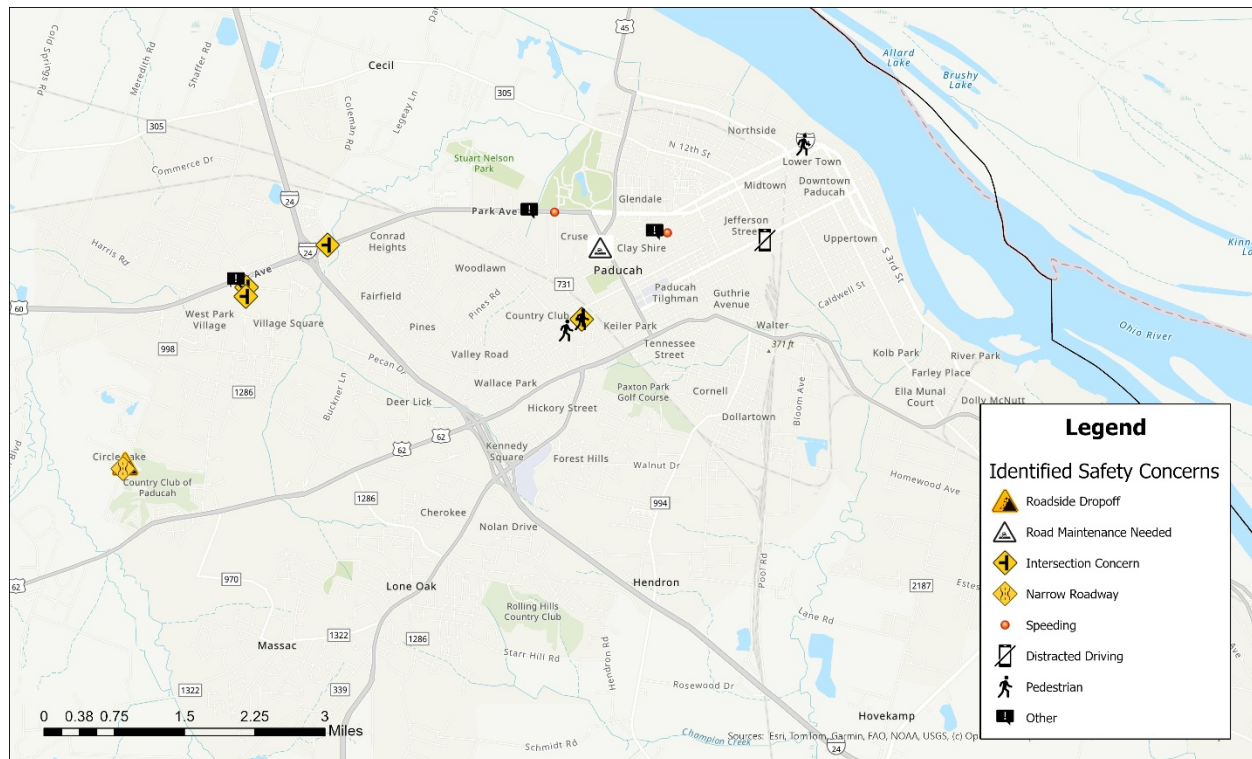


Exhibit 22: Identified Safety Concerns - Paducah

Safety Concerns Identified by Purchase Area Residents

As part of the Safety Action Plan development process, residents throughout the Purchase Area District provided location-specific feedback regarding transportation safety concerns. Public comments revealed several recurring themes related to roadway conditions, pedestrian and bicycle accommodations, traffic operations, and driver behavior.

Active Transportation Safety

The most frequently identified concern involved pedestrian infrastructure deficiencies, particularly within the City of Murray and surrounding areas of Calloway County. Residents reported numerous locations lacking sidewalks, curb ramps, crosswalks, and other pedestrian accommodations. Several comments described pedestrians regularly walking along roadway shoulders or within drainage ditches due to the absence of sidewalks.

Similarly, residents identified a substantial need for bicycle infrastructure throughout Murray. Numerous comments requested bicycle lanes, shared-use paths, and improved connectivity between residential neighborhoods, schools, downtown destinations, and Murray State University. Several locations were also identified where bicycle- and pedestrian-involved crashes have occurred in recent years, highlighting ongoing safety concerns for vulnerable roadway users.

Roadway Infrastructure and Maintenance

Road maintenance concerns were concentrated primarily in Fulton and Graves Counties. Residents reported deteriorated pavement, large potholes, roadway edge failures, washed-out

sections, and multiple bridge closures. Several comments specifically cited roadway damage associated with heavy truck traffic, particularly gravel hauling operations.

Narrow roadway conditions were also identified throughout the district. Residents expressed concerns regarding limited lane widths, insufficient shoulders, and conflicts between passenger vehicles, commercial trucks, agricultural equipment, and Amish horse-drawn buggies.

Traffic Operations and Intersection Safety

Intersection-related concerns were common in both Murray and Paducah. Residents cited poor visibility, confusing lane assignments, high traffic volumes, intersection misalignment, and difficulties accessing major roadways. Several locations were identified where residents believe traffic signals, turn lanes, or other operational improvements may be warranted.

Additional comments highlighted roadway segments where speeding contributes to safety concerns. Residents noted excessive vehicle speeds near residential areas, schools, intersections, and along corridors with limited sight distance.

Driver Behavior

Residents identified distracted driving and speeding as recurring concerns throughout the district. Several comments referenced frequent cellphone use by drivers, while others described excessive speeds that create unsafe conditions for turning vehicles, pedestrians, and bicyclists.

Serious Crash Concerns

Public comments also identified several locations associated with severe crashes, including pedestrian injury crashes, bicycle-related crashes, and fatal crashes. These locations were frequently cited as needing safety improvements and may warrant additional analysis during the development of project recommendations.

Geographic Trends

Public input revealed several notable geographic patterns:

- **Calloway County (Murray):** Strong emphasis on pedestrian and bicycle infrastructure needs, pedestrian safety, and connectivity improvements.
- **McCracken County (Paducah):** Concentration of concerns related to intersection operations, speeding, pedestrian accessibility, and roadway maintenance.
- **Fulton County:** Significant concerns regarding bridge conditions, roadway deterioration, and maintenance needs.
- **Graves County:** Concerns focused on narrow roads, roadway condition, curve safety, and interactions between freight traffic and Amish buggies.
- **Marshall County:** Comments emphasized curve safety, bridge limitations, and school bus stop visibility.
- **Hickman County (Clinton):** Concerns centered on missing sidewalks, pedestrian accommodations, and crossing opportunities.

Key Takeaway

Public feedback indicates that residents view vulnerable road user safety as a priority throughout the Purchase Area District. The most commonly identified needs involve sidewalks, bicycle facilities, safer crossings, roadway maintenance, and operational improvements at high-volume intersections. These concerns align closely with the goals of the Safety Action Plan and will help inform the identification and prioritization of future safety improvement projects.

APPENDIX D: BALLARD COUNTY

Ballard County Overview

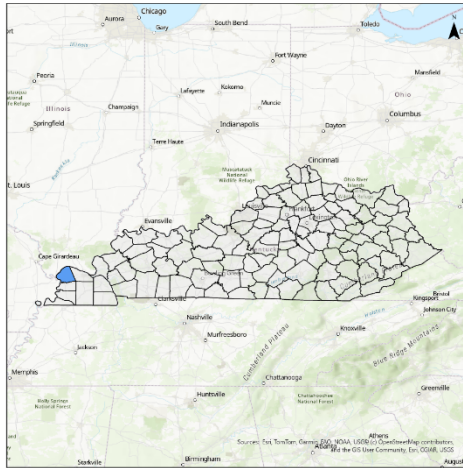


Exhibit Ballard-1: Location Map

Key Information Table	
Ballard County	
Population	7,582
Population in Persistent Poverty	18%
Underserved Community	No
Fatalities (All Roads)	18
Fatalities (County Roads)	3
Fatality Rate per 100,000 persons	2,374
County Road Mileage	224
State Road Mileage	164
Total Mileage	388

Exhibit Ballard-2: Key Information

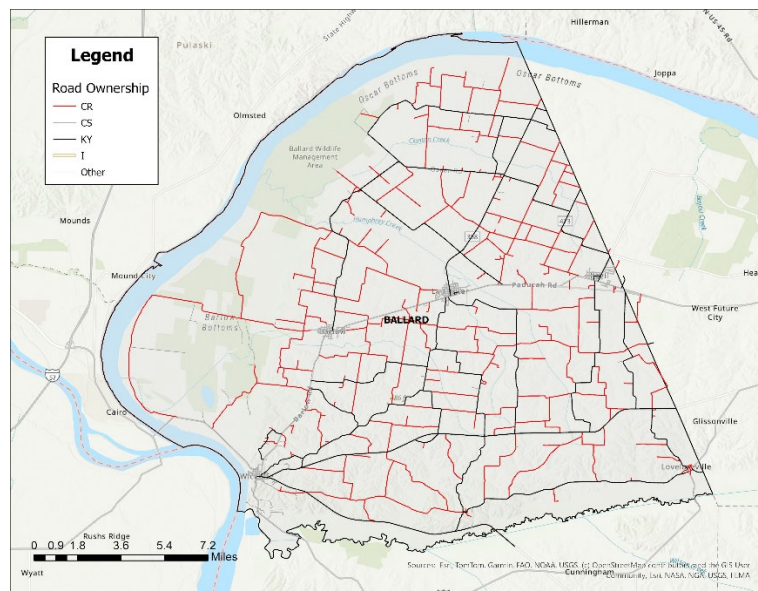


Exhibit Ballard-3: Map of County Roadways

Crash Analysis

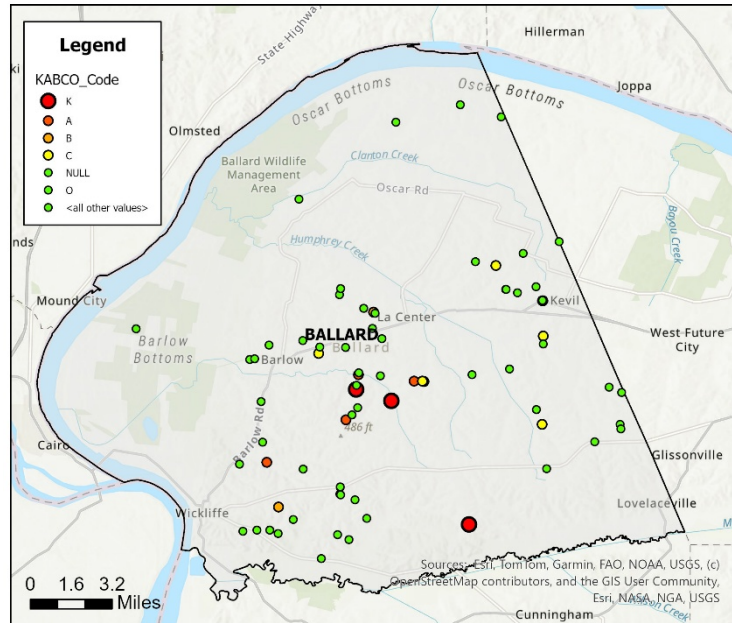


Exhibit Ballard-4: Map of County Road Crashes



Exhibit Ballard-5: Crash Distribution by Year

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	39	13	3	55
SS - Opp	13	0	0	13
Backing	4	0	0	4
Angle	2	1	0	3
Head On	2	0	0	2
Rear End	2	0	0	2
Rear to Rear	0	0	0	0
Left Turn	0	0	0	0
SS - Same	0	0	0	0

Exhibit Ballard-6: Crash Frequency and Severity by Manner of Collision

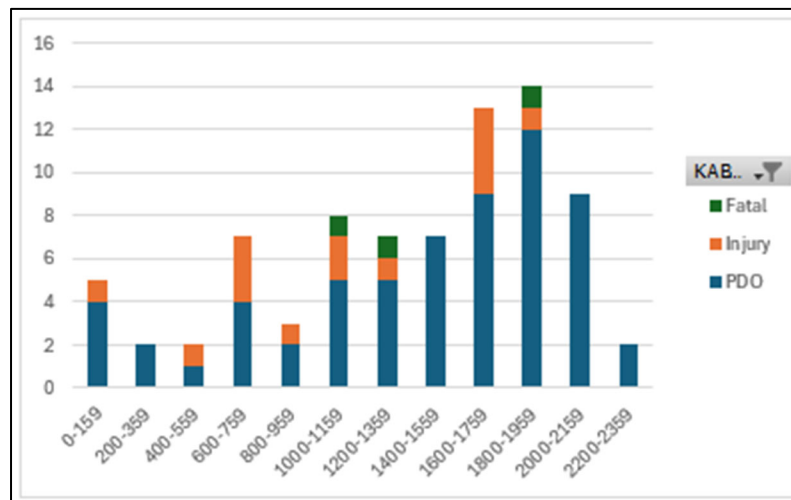


Exhibit Ballard-7: Crashes and Severity by Time of Day

Focus Roadways

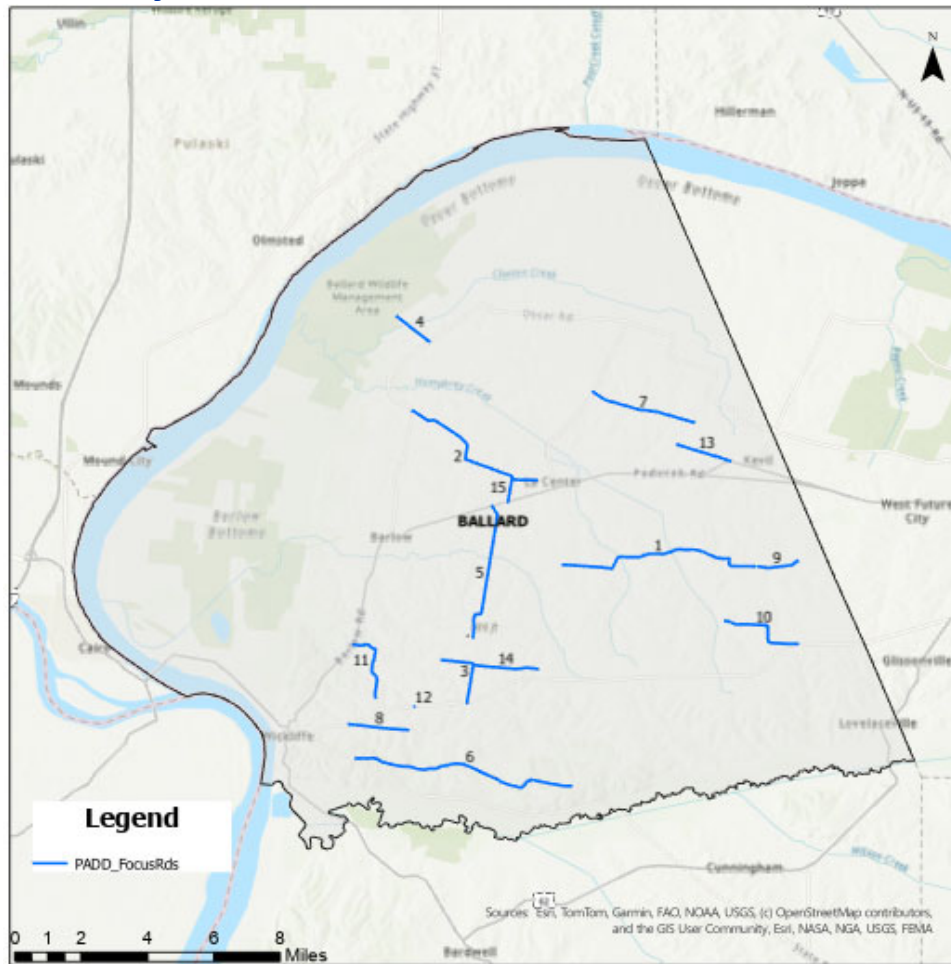


Exhibit Ballard-8: Focus Roads

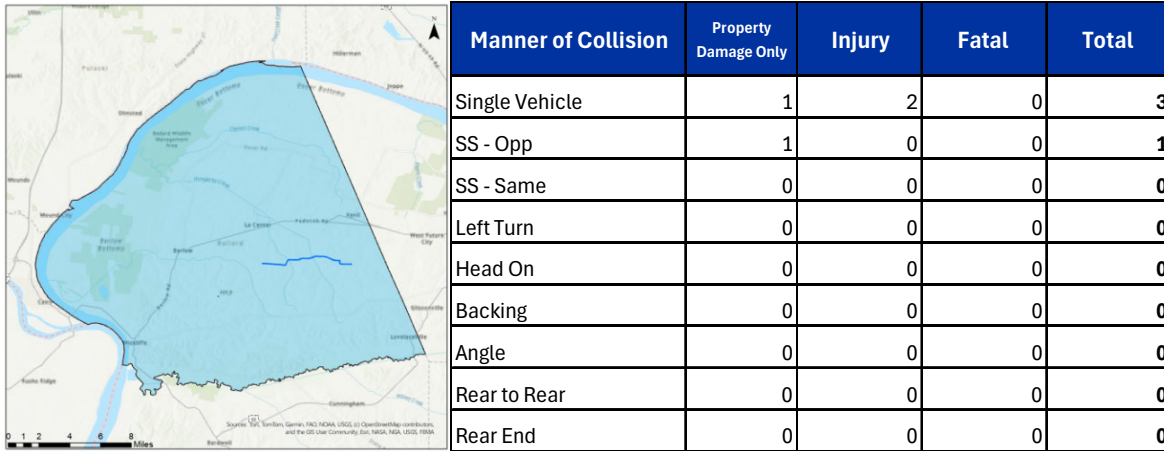
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Ballard											
004-CR-1102 -000	5.15	Ballard	Purchase	CEREDO RD	2	1	1	3.33	0.62	2.44	1
004-CR-1302 -000	4.04	Ballard	Purchase	HAZELWOOD RD	2	0	1	2.54	1.66	2.25	2
004-CR-1209 -000	1.95	Ballard	Purchase	N BALLARD CHURCH RD	1	1	1	2.10	1.38	1.86	3
004-CR-1311 -000	1.09	Ballard	Purchase	TURNER LANDING RD	1	0	0	1.23	1.75	1.40	4
004-CR-1201 -000	4.12	Ballard	Purchase	WAYSIDE INN RD	1	0	3	1.47	0.93	1.29	5
004-CR-1213 -000	5.59	Ballard	Purchase	BETHLEHEM CHURCH RD	1	0	6	1.71	0.35	1.26	6
004-CR-1007 -000	2.61	Ballard	Purchase	MT PLEASANT RD	1	0	2	1.39	0.86	1.21	7
004-CR-1215 -000	1.43	Ballard	Purchase	CURTIS RD	1	0	2	1.39	0.24	1.01	8
004-CR-1138 -000	1.03	Ballard	Purchase	ROBEY RD	0	0	1	0.08	2.89	1.01	9
004-CR-1107 -000	2.26	Ballard	Purchase	BUCHANAN RD	0	1	0	0.79	1.27	0.95	10
004-CR-1207 -000	2.14	Ballard	Purchase	BORDEN RD	1	0	0	1.23	0.29	0.92	11
004-CR-1217 -020	0.01	Ballard	Purchase	SHEPPARD RD Y	0	0	0	0.00	2.50	0.83	12
004-CR-1055 -000	1.37	Ballard	Purchase	E CLARKLINE RD	0	0	4	0.32	1.82	0.81	13
004-CR-1208 -000	1.57	Ballard	Purchase	BATTS RD	0	0	1	0.08	2.10	0.75	14
004-CR-1301 -000	0.74	Ballard	Purchase	MOORE RD	0	0	0	0.00	2.23	0.74	15

Exhibit Ballard-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

CEREDO RD (004-CR-1102 -000)

Road Location Map and Crash History



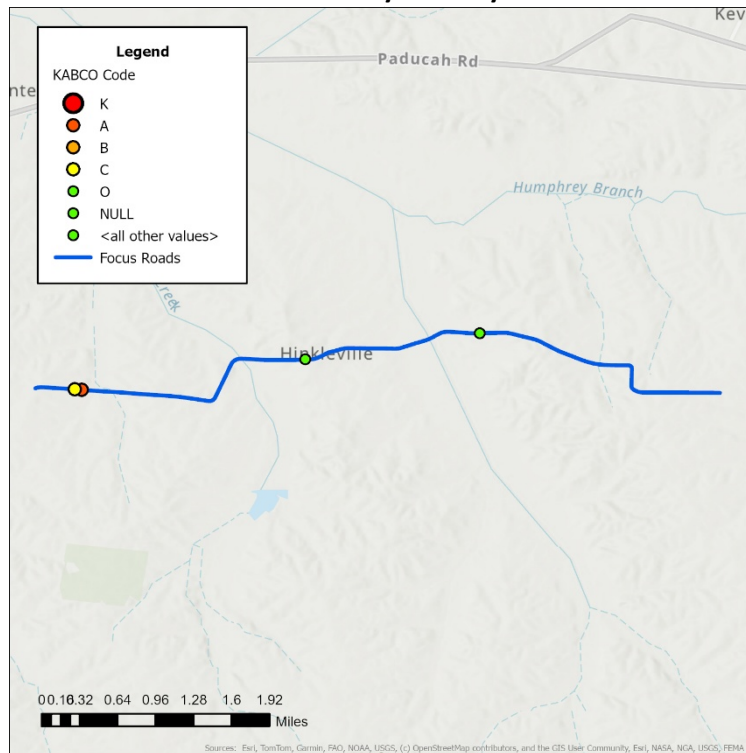
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
740	004-CR-1102 -000	CEREDO RD	16	4	3	0-20

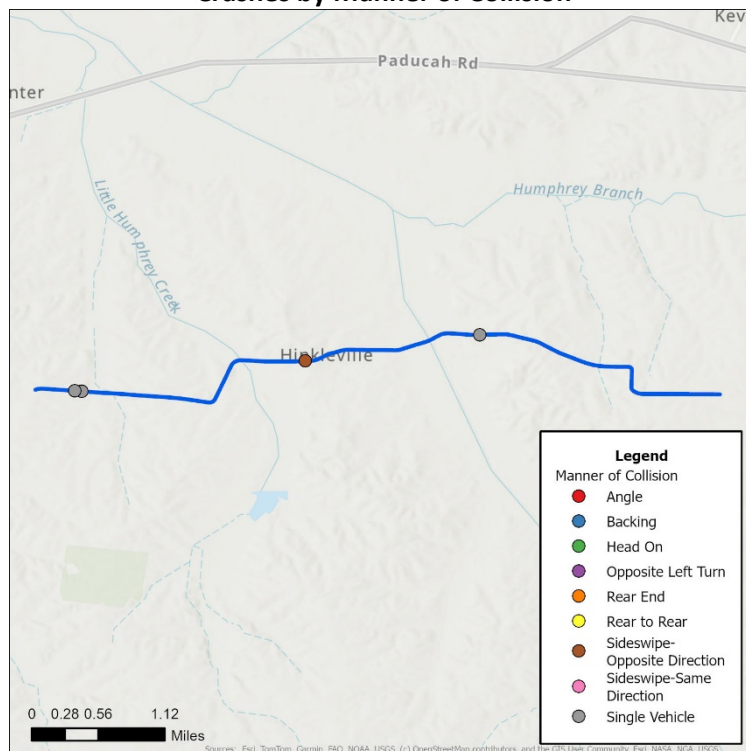
Roadway Typical Section



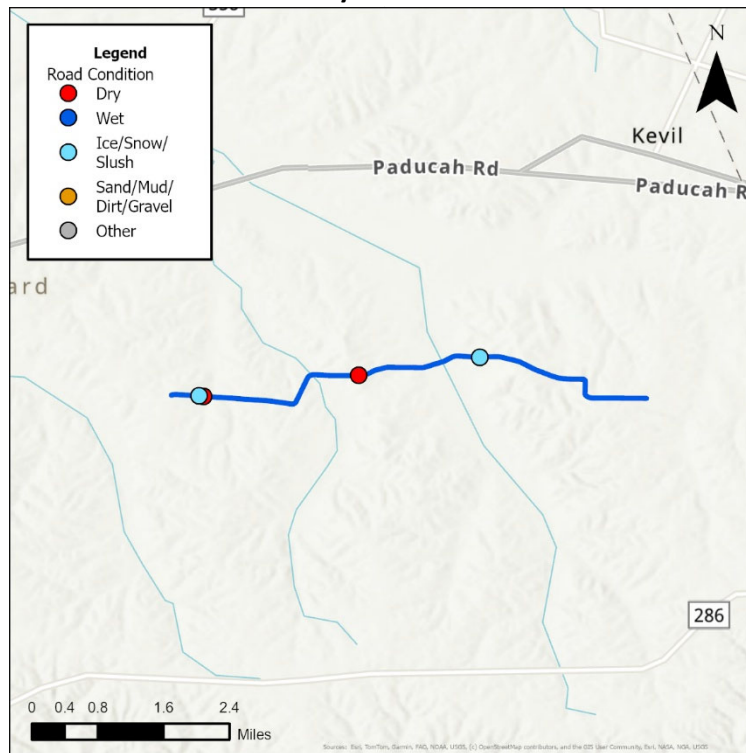
Crashes by Severity



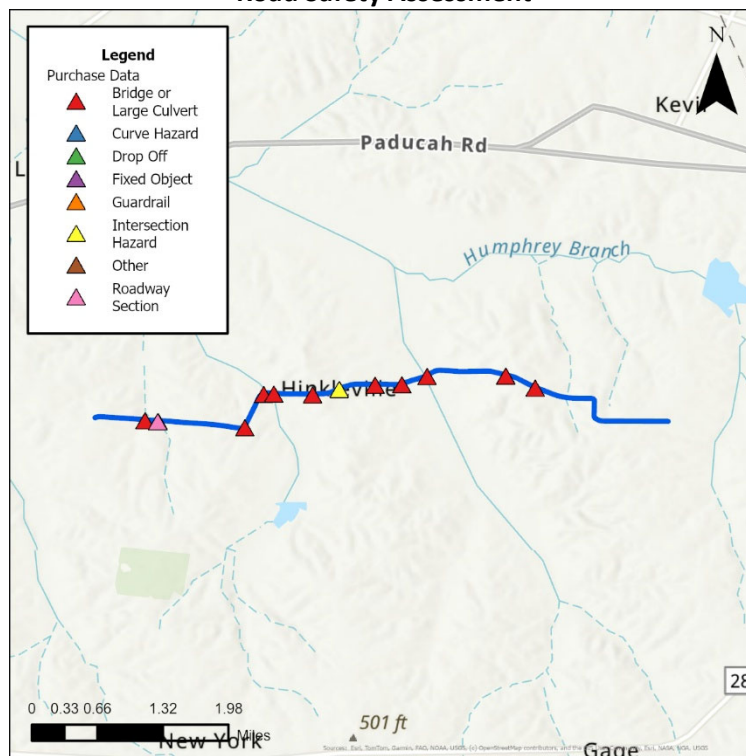
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

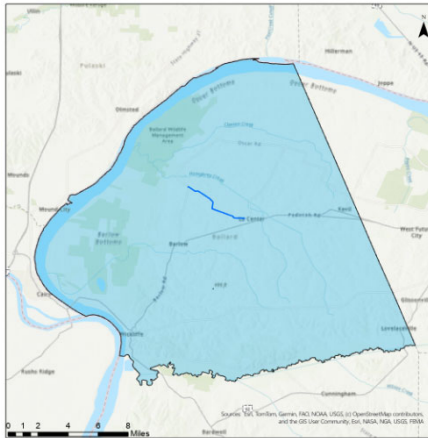


Recommendations

Point ID	RT UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
740	004-CR-1102 -000	CEREDO RD	16	4	3	0-20		✓	✓
Point ID	RT UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
738	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
739	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
741	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
742	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
743	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
744	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
749	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
750	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
752	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
753	004-CR-1102 -000	CEREDO RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
751	004-CR-1102 -000	CEREDO RD	22	3	1	Evaluate need for guardrail on approach, install/Replace Type 3 Object Markers on all corners if necessary			
Point ID	RT UNIQUE	Road Name	Vegetation	Recommendation			Comments		
747	004-CR-1102 -000	CEREDO RD	Yes	Clear Vegetation; Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew			Insufficient_Sight_Distance_at_Intersection_Obscured_on_Approach, Intersection_Skew		

HAZELWOOD RD (004-CR-1302 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	2	1	0	3
SS - Opp	2	0	0	2
SS - Same	0	0	0	0
Left Turn	0	0	0	0
Head On	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

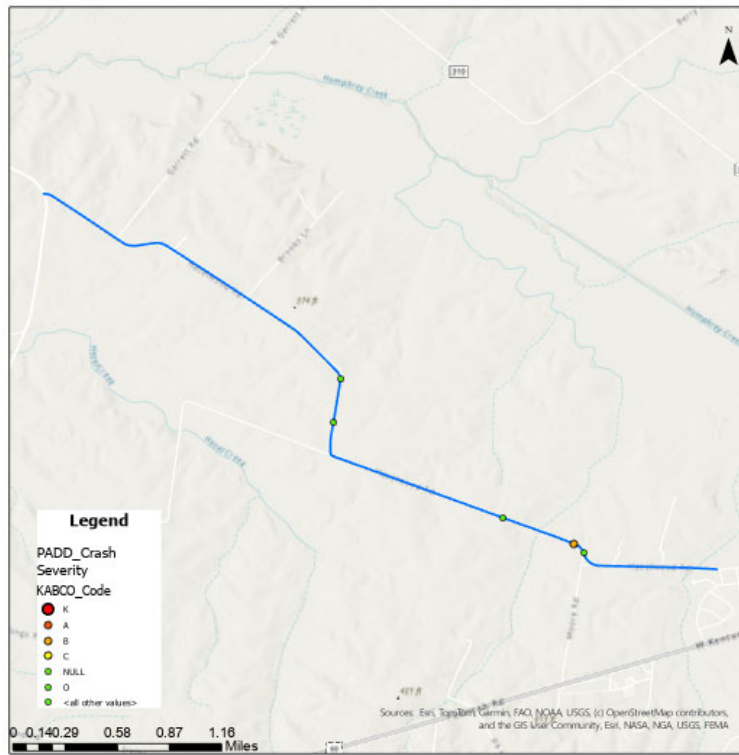
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
723	004-CR-1302 -000	HAZELWOOD RD	19	4	3	0-20

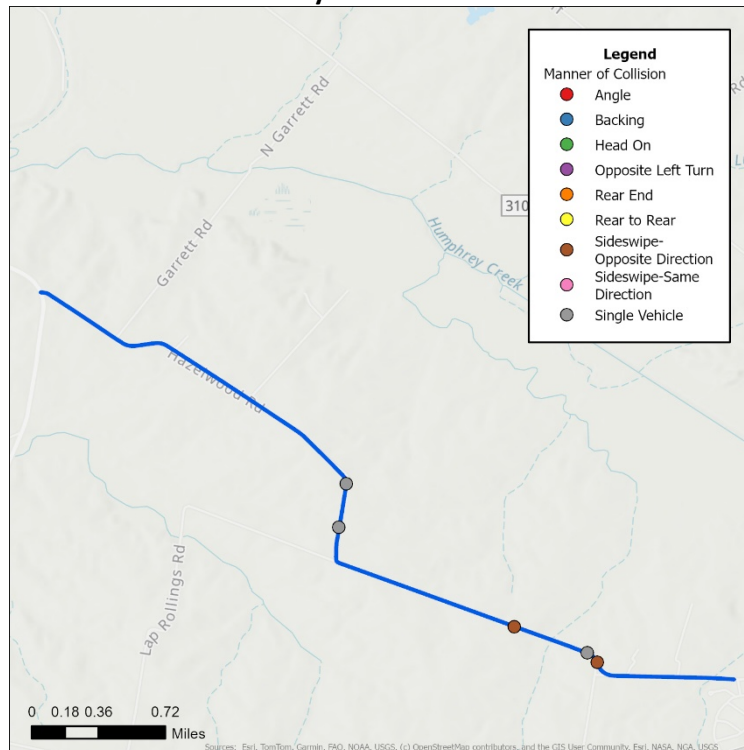
Roadway Typical Section



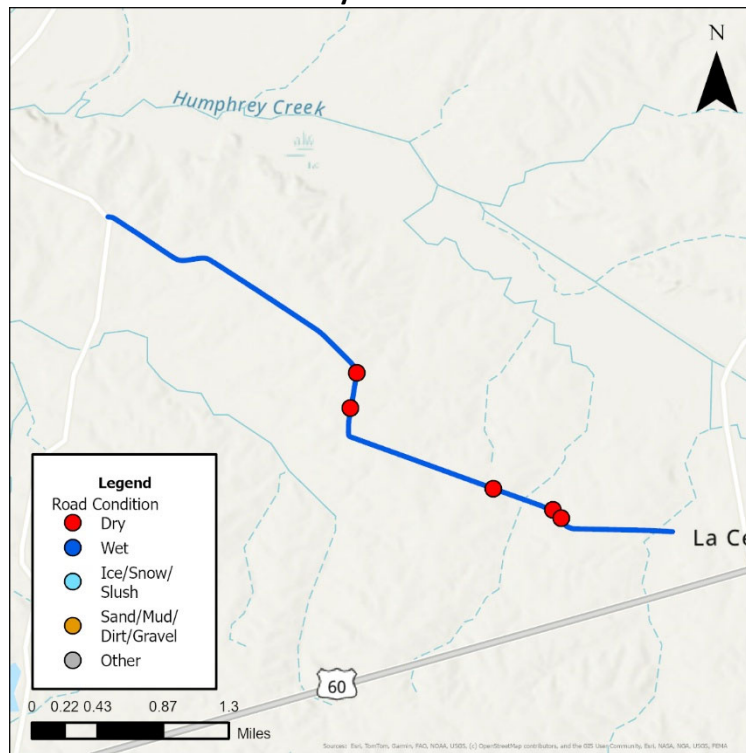
Crashes by Severity



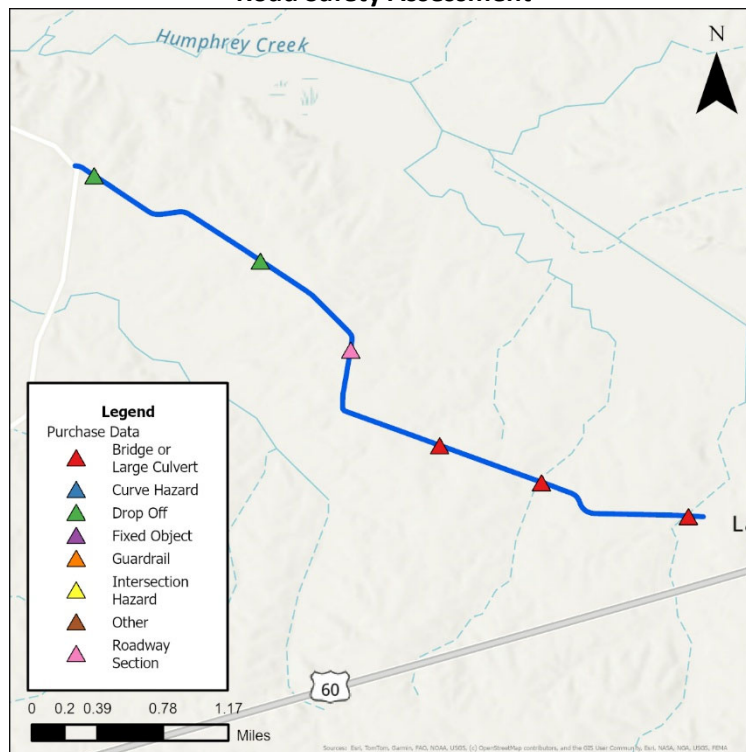
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

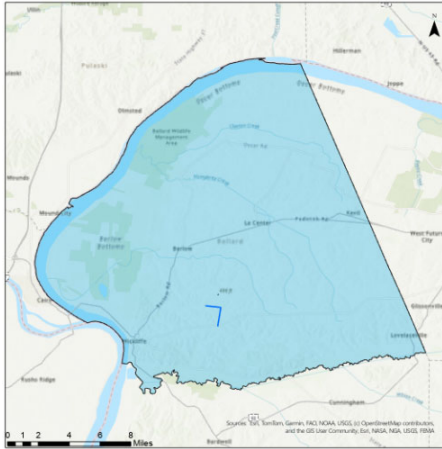


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
723	004-CR-1302 -000	HAZELWOOD RD	19	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
719	004-CR-1302 -000	HAZELWOOD RD	22	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
715	004-CR-1302 -000	HAZELWOOD RD	22	3	1	Evaluate need for guardrail on approach, install/Replace Type 3 Object Markers on all corners if necessary			
717	004-CR-1302 -000	HAZELWOOD RD	22	4	2	Install/Replace Type 3 Object Markers on all corners			
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
720	004-CR-1302 -000	HAZELWOOD RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)				
722	004-CR-1302 -000	HAZELWOOD RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)				

N BALLARD CHURCH RD (004-CR-1209 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	1	0	0	1
SS - Same	0	0	0	0
SS - Opp	0	0	0	0
Left Turn	0	0	0	0
Head On	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

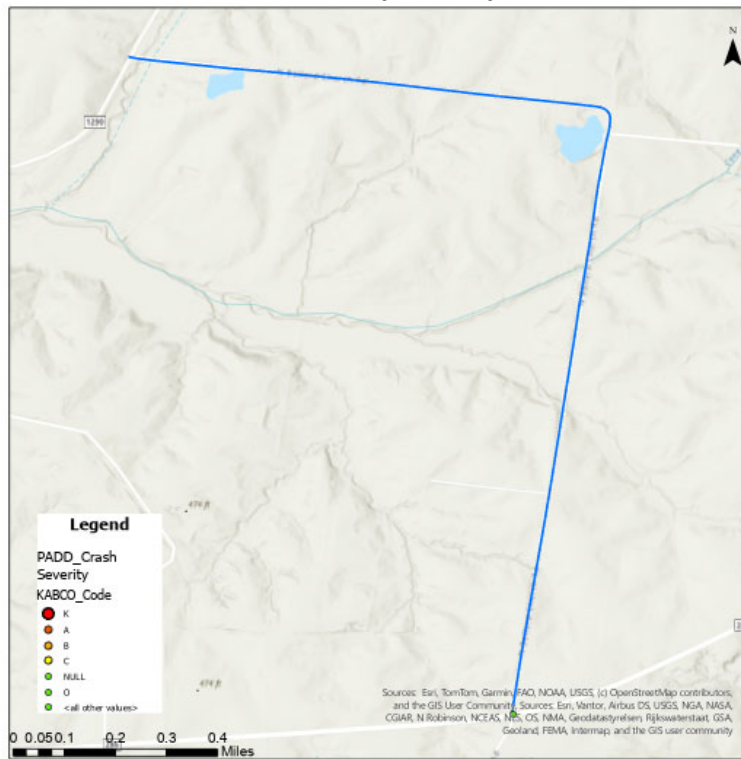
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
669	004-CR-1209 -000	N BALLARD CHURCH RD	17	4	3	0-20

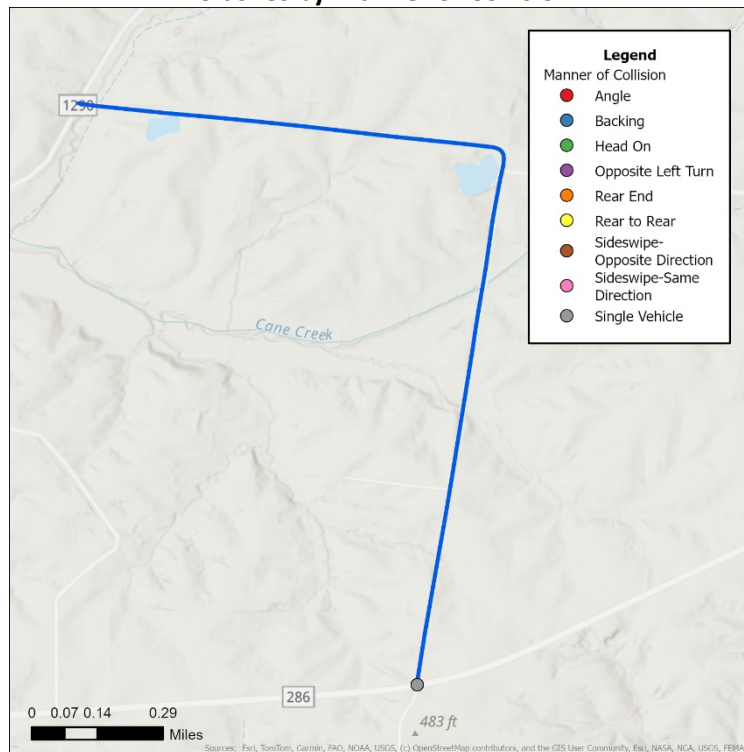
Roadway Typical Section



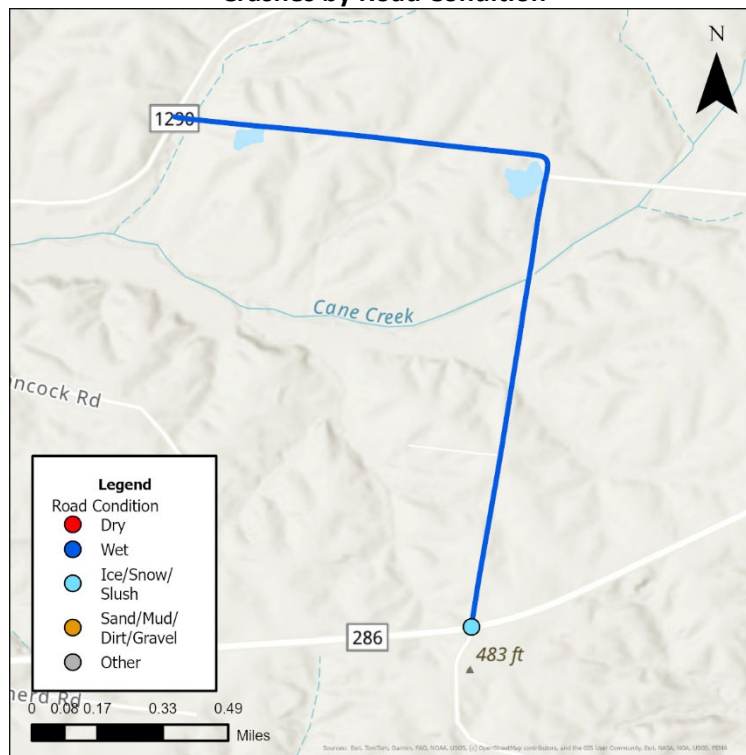
Crashes by Severity



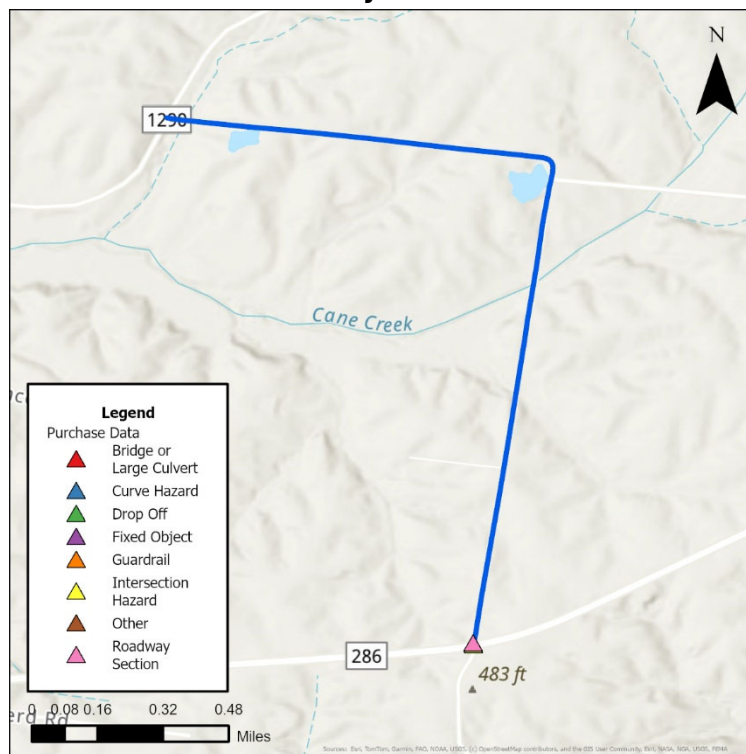
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

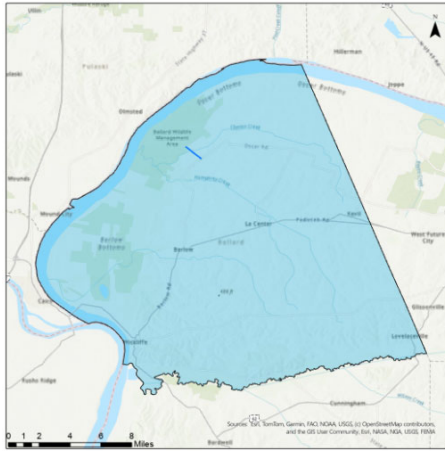


Recommendations

Point ID	RT UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
669	004-CR-1209 -000	N BALLARD CHURCH RD	17	4	3	0-20		✓	✓
Point ID	RT UNIQUE	Road Name	Vegetation	Recommendation				Comments	
668	004-CR-1209 -000	N BALLARD CHURCH RD	Yes	Clear Vegetation; Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X);				Insufficient_Sight_Distance_at_	

TURNER LANDING RD (004-CR-1311 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
SS - Opp	1	0	0	1
SS - Same	0	0	0	0
Backing	0	0	0	0
Left Turn	0	0	0	0
Head On	0	0	0	0
Single Vehicle	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

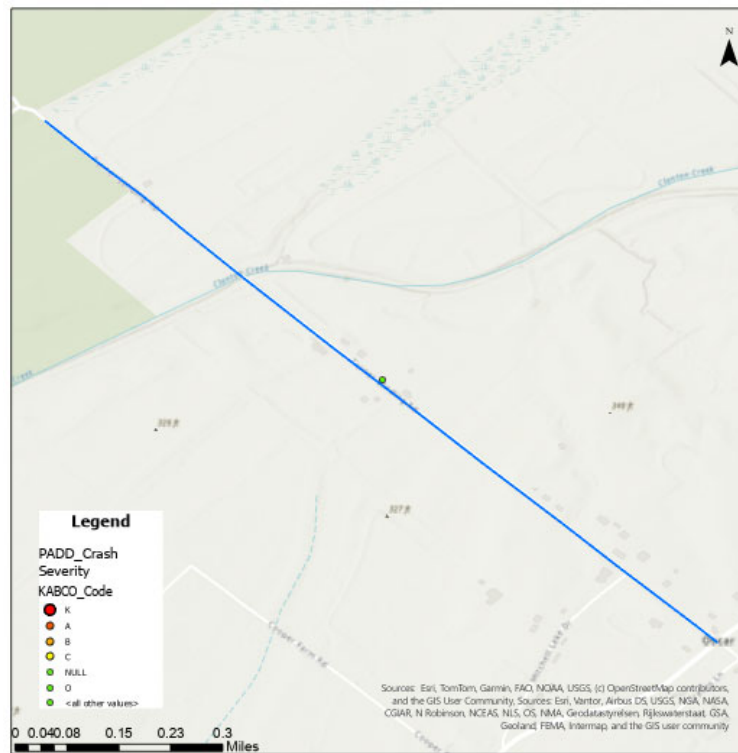
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
734	004-CR-1311 -000	TURNER LANDING RD	16	4	3	0-20

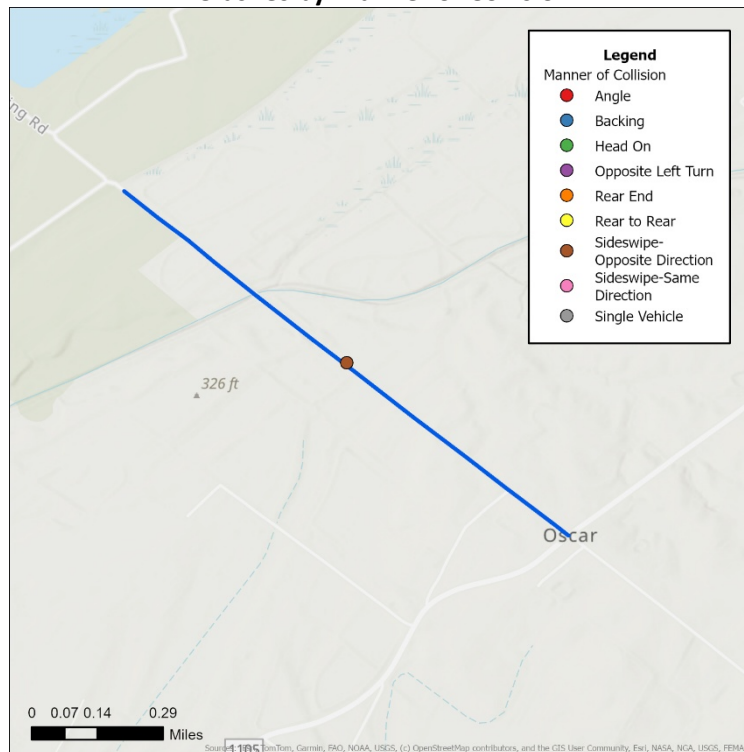
Roadway Typical Section



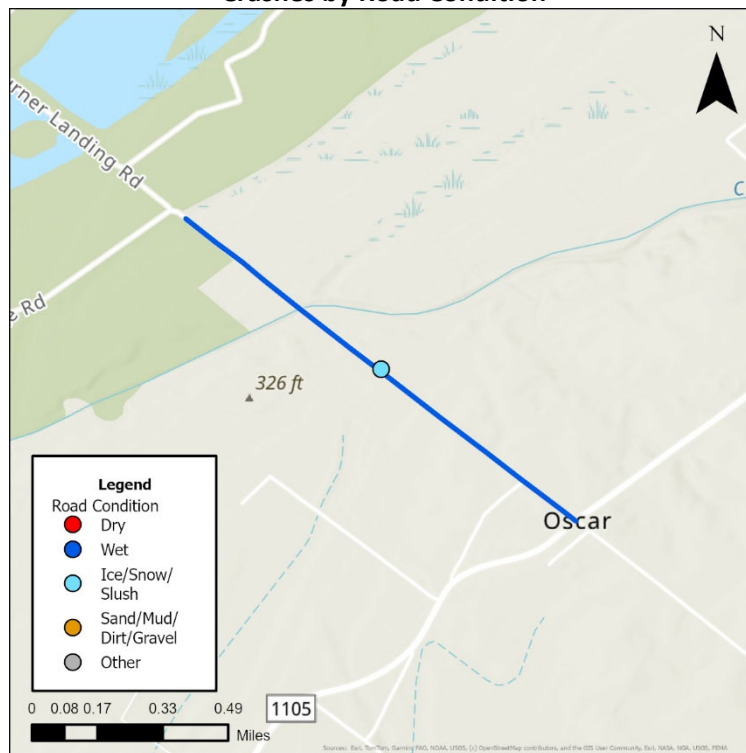
Crashes by Severity



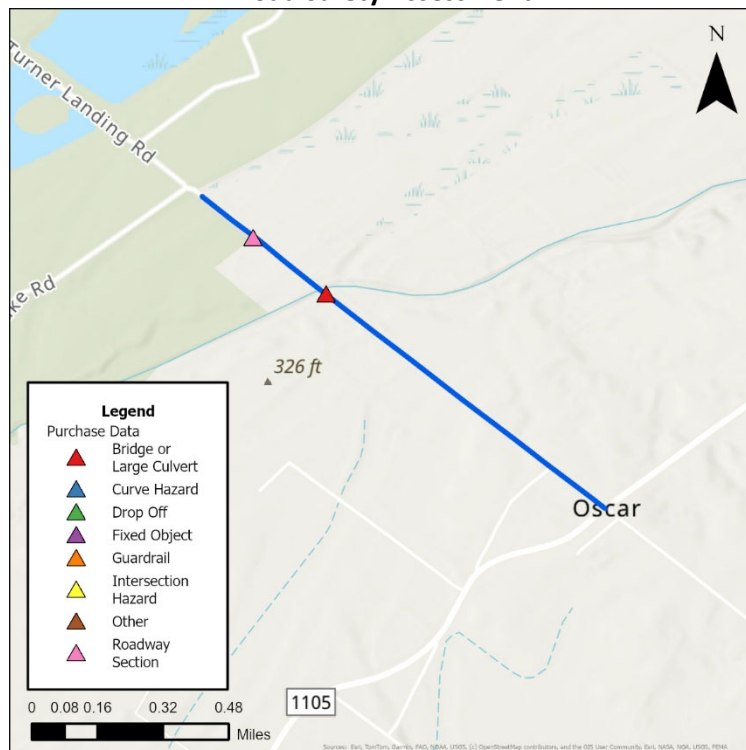
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

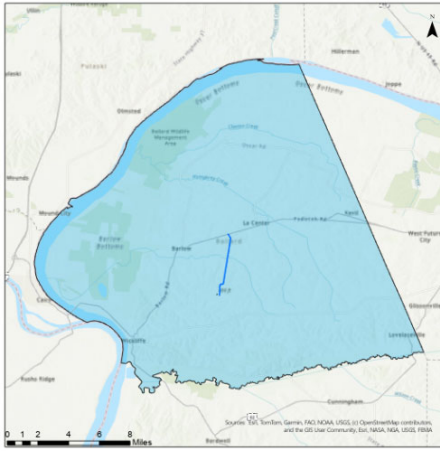


Recommendations

Point ID	RT UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
734	004-CR-1311 -000	TURNER LANDING RD	16	4	3	0-20		✓	✓
Point ID	RT UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
732	004-CR-1311 -000	TURNER LANDING RD	20	4	2	Install/Replace Type 3 Object Markers on all corners			

WAYSIDE INN RD (004-CR-1201 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	4	2	1	7
	SS - Same	0	0	0	0
	SS - Opp	0	0	0	0
	Left Turn	0	0	0	0
	Head On	0	0	0	0
	Backing	0	0	0	0
	Angle	0	0	0	0
	Rear to Rear	0	0	0	0
	Rear End	0	0	0	0

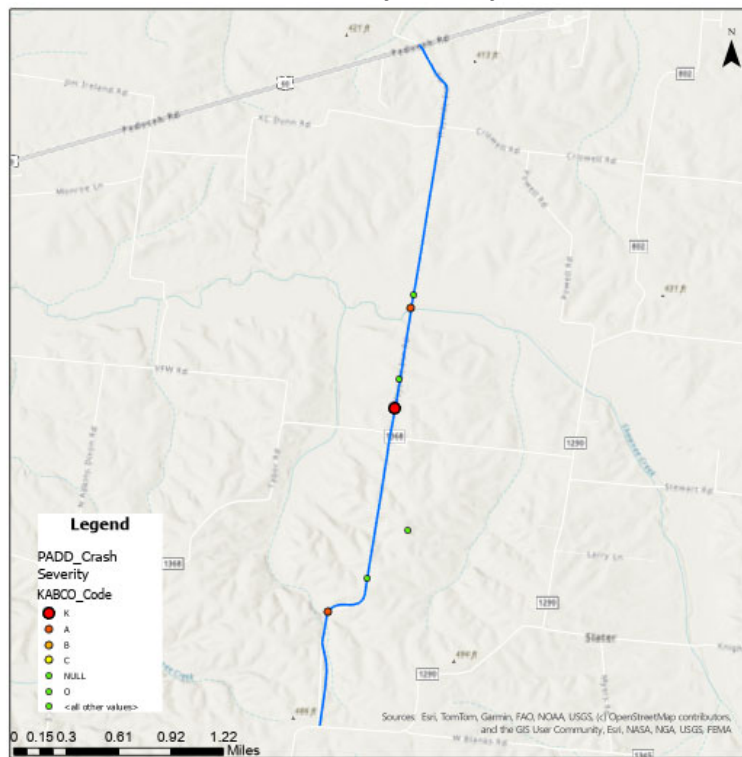
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
734	004-CR-1311 -000	TURNER LANDING RD	16	4	3	0-20

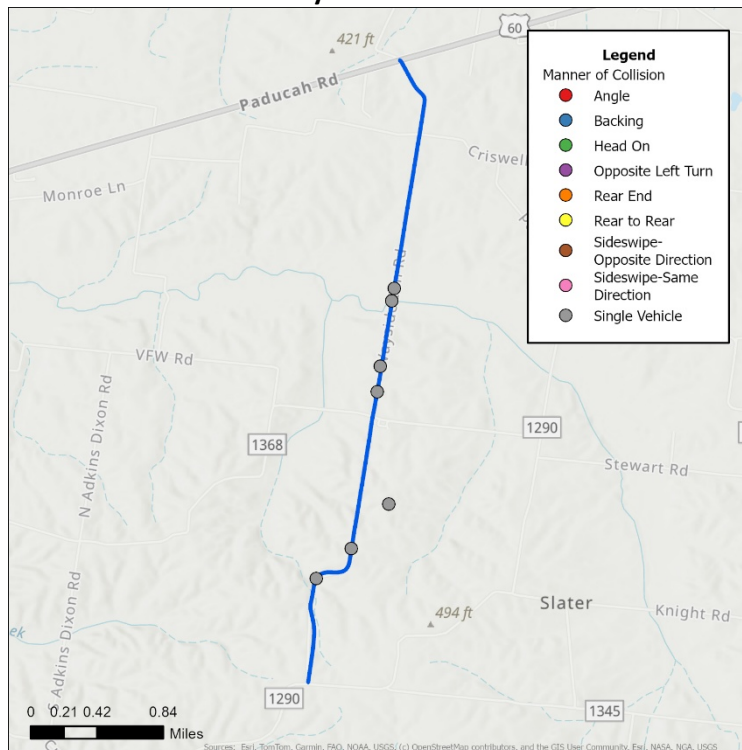
Roadway Typical Section



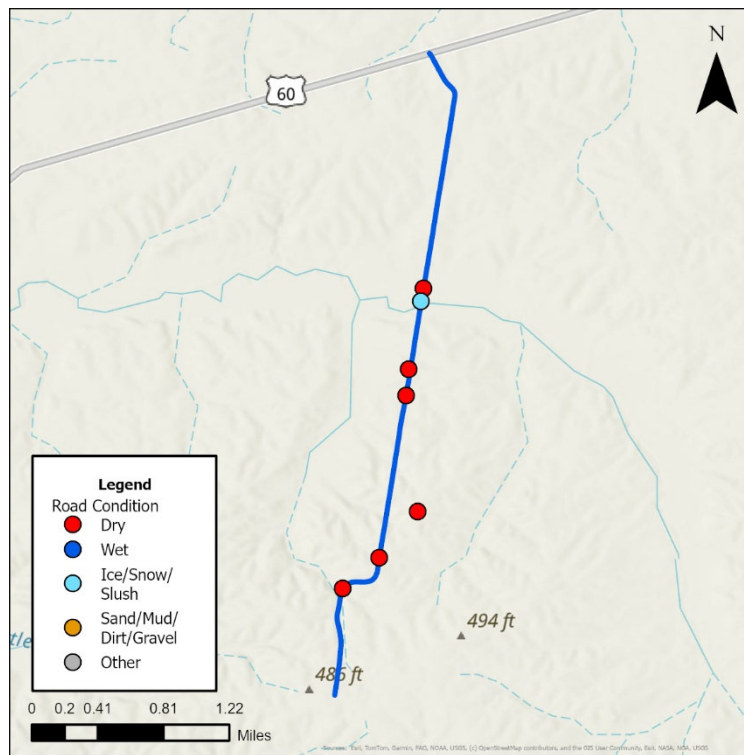
Crashes by Severity



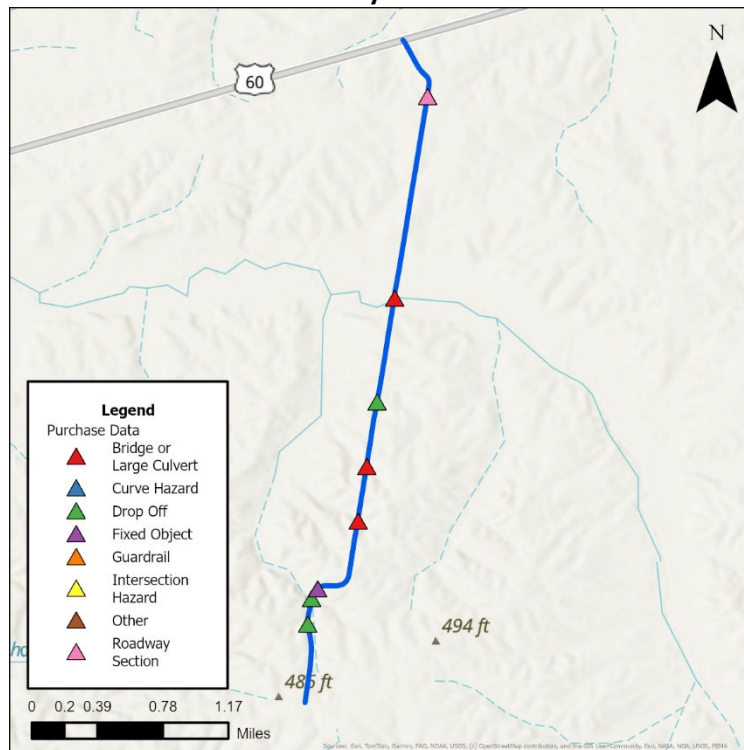
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
590	004-CR-1201 -000	WAYSIDE INN RD	17	3	4	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
571	004-CR-1201 -000	WAYSIDE INN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
573	004-CR-1201 -000	WAYSIDE INN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
581	004-CR-1201 -000	WAYSIDE INN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
568	004-CR-1201 -000	WAYSIDE INN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)				
605	004-CR-1201 -000	WAYSIDE INN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)				
569	004-CR-1201 -000	WAYSIDE INN RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)				
Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation			
588	004-CR-1201 -000	WAYSIDE INN RD	Culvert Headwall	Series	3-5	Remove trees within 3 ft of roadway			
611	004-CR-1201 -000	WAYSIDE INN RD	Tree	Series	3-5	Remove trees within 3 ft of roadway			

Other Roadways

General Roadway Conditions and Recommendations (Ballard County)

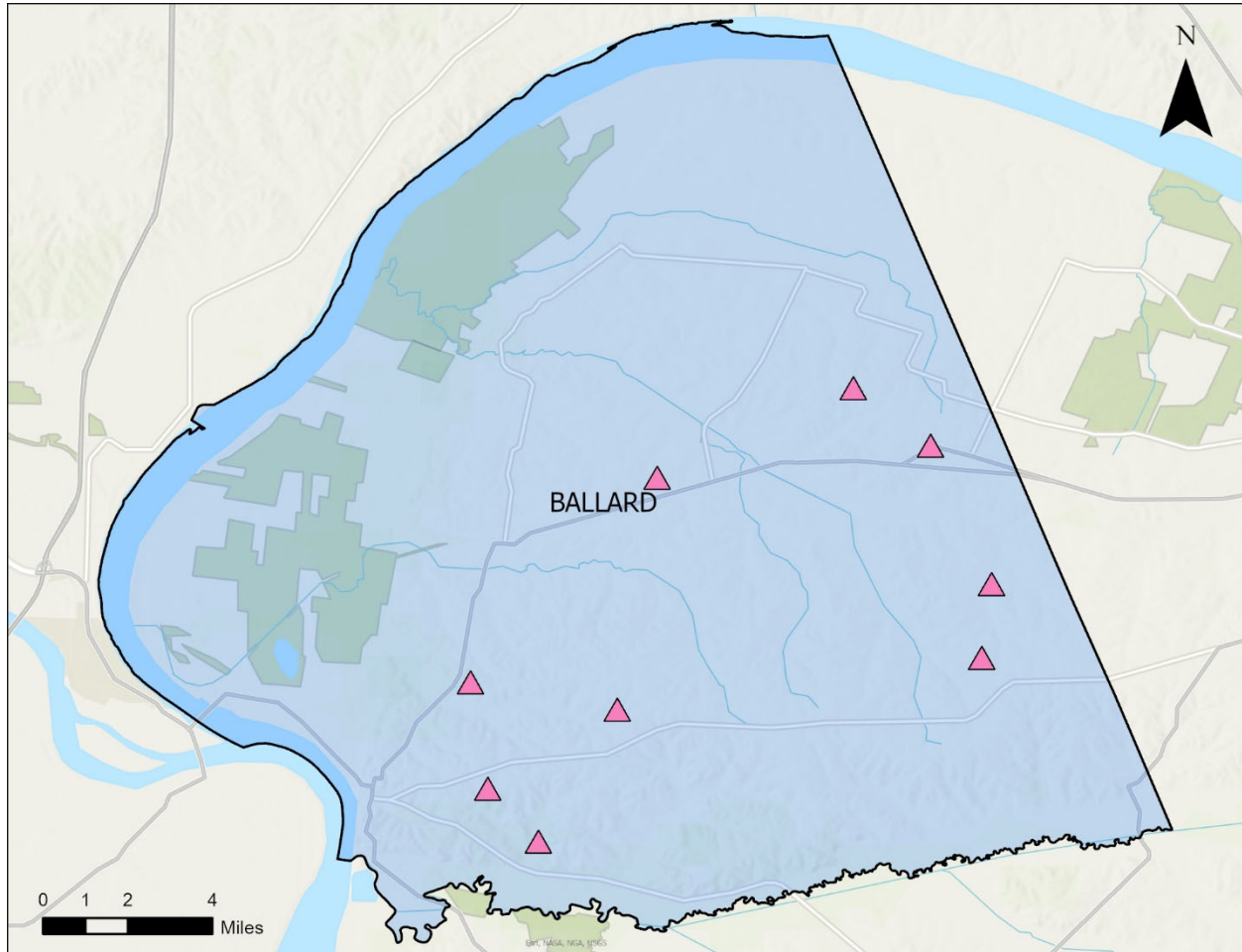


Exhibit Ballard County General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
693	004-CR-1301 -000	MOORE RD	19	4	3	0-20		✓	✓
710	004-CR-1301 -000	MOORE RD	19	4	4	0-20		✓	✓
700	004-CR-1007 -000	MT PLEASANT RD	18	4	3	0-20		✓	✓
644	004-CR-1213 -000	BETHLEHEM CHURCH RD	15	4	6	0-20		✓	✓
650	004-CR-1215 -000	CURTIS RD	17	4	2	0-20		✓	✓
590	004-CR-1201 -000	WAYSIDE INN RD	17	3	4	0-20		✓	✓
758	004-CR-1138 -000	ROBEY RD	16	4	3	0-20		✓	✓
681	004-CR-1208 -000	BATTS RD	15	4	3	0-20		✓	✓
782	004-CR-1107 -000	BUCHANAN RD	14	4	3	0-20		✓	✓
660	004-CR-1207 -000	BORDEN RD	15	3	5	0-20		✓	✓

Exhibit Ballard County General Roadway Recommendations

Bridge / Culvert Recommendations (Ballard County)

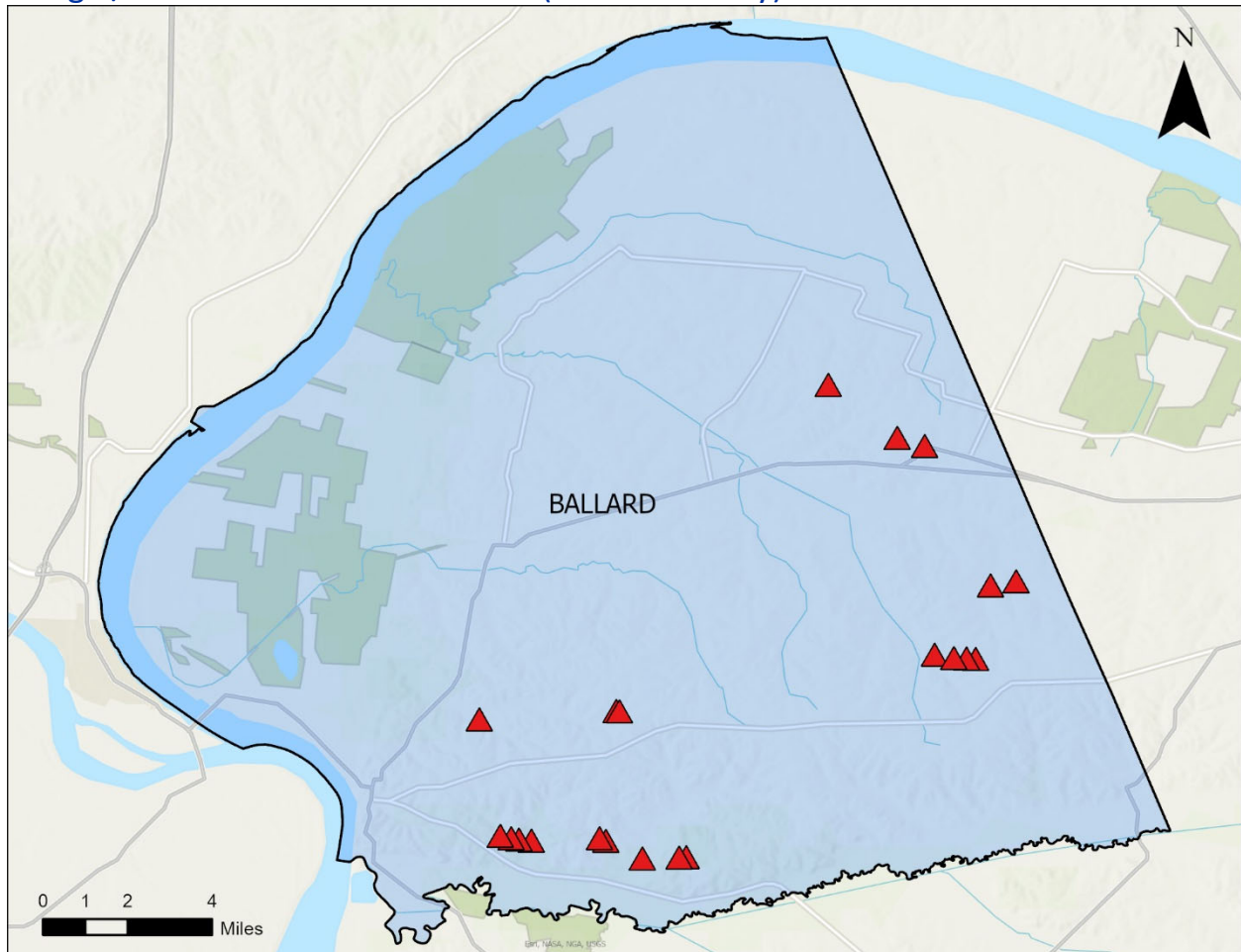


Exhibit Ballard County Focus Road Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
784	004-CR-1107 -000	BUCHANAN RD	14	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers; Install One Lane Bridge Sign (W5-3)
786	004-CR-1107 -000	BUCHANAN RD	14	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers; Install One Lane Bridge Sign (W5-3)
787	004-CR-1107 -000	BUCHANAN RD	14	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers; Install One Lane Bridge Sign (W5-3)
770	004-CR-1107 -000	BUCHANAN RD	22	4	2	Install/Replace Type 3 Object Markers on all corners
621	004-CR-1213 -000	BETHLEHEM CHURCH RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
626	004-CR-1213 -000	BETHLEHEM CHURCH RD	21	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
610	004-CR-1213 -000	BETHLEHEM CHURCH RD	16	0	1	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
614	004-CR-1213 -000	BETHLEHEM CHURCH RD	18	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
634	004-CR-1213 -000	BETHLEHEM CHURCH RD	20	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
618	004-CR-1213 -000	BETHLEHEM CHURCH RD	20	0	3	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
629	004-CR-1213 -000	BETHLEHEM CHURCH RD	20	0	3	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
622	004-CR-1213 -000	BETHLEHEM CHURCH RD	18	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
631	004-CR-1213 -000	BETHLEHEM CHURCH RD	15	4	4	Install One Lane Bridge Sign (W5-3)
761	004-CR-1138 -000	ROBEY RD	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
757	004-CR-1138 -000	ROBEY RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
682	004-CR-1208 -000	BATTS RD	17	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
679	004-CR-1208 -000	BATTS RD	21	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
697	004-CR-1007 -000	MT PLEASANT RD	18	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
694	004-CR-1301 -000	MOORE RD	19	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
695	004-CR-1301 -000	MOORE RD	19	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
571	004-CR-1201 -000	WAYSIDE INN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
573	004-CR-1201 -000	WAYSIDE INN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
581	004-CR-1201 -000	WAYSIDE INN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
657	004-CR-1207 -000	BORDEN RD	20	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;

Exhibit Ballard County Bridge / Culvert Recommendations

Roadside Drop Off Recommendations (Ballard County)

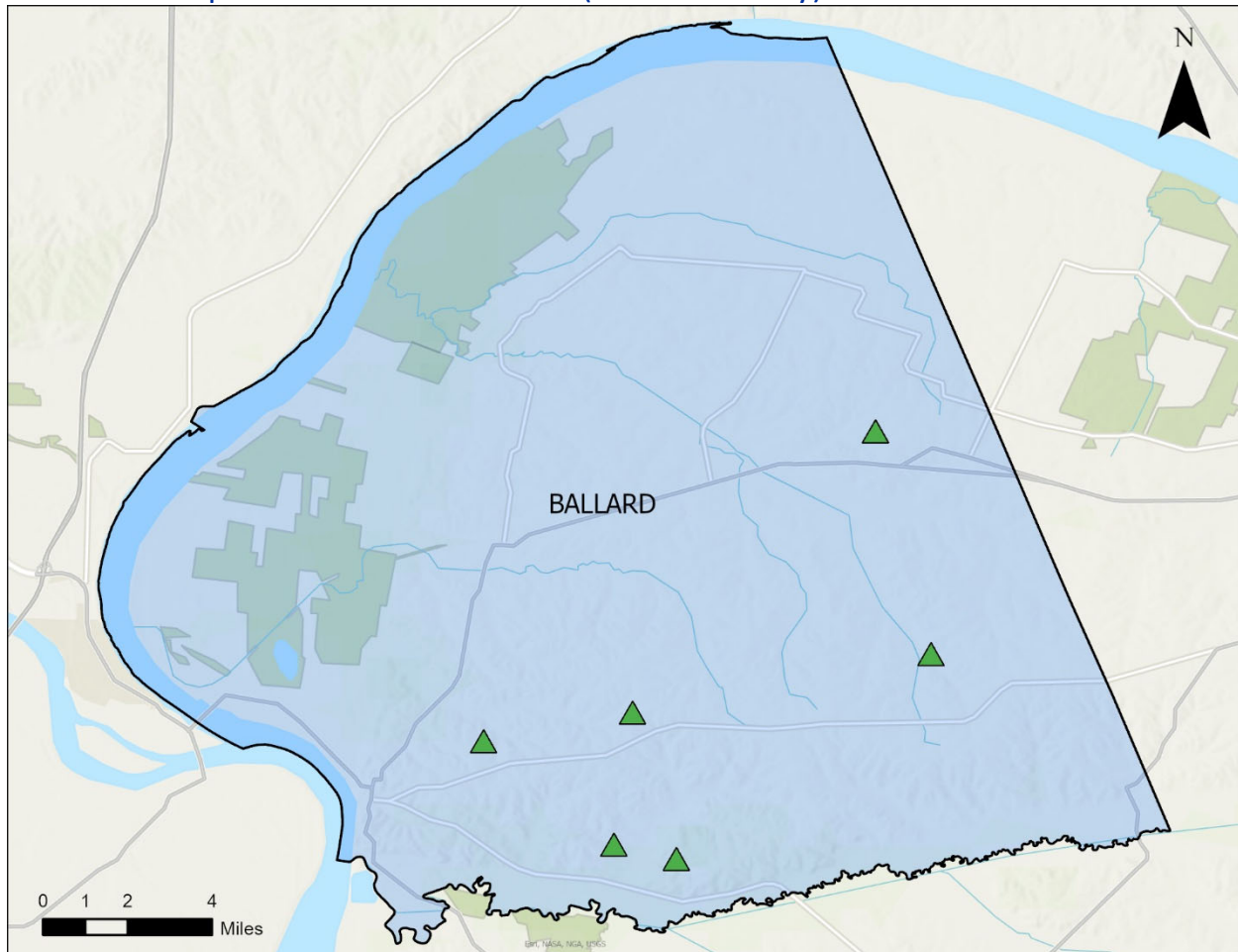


Exhibit Ballard County Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
615	004-CR-1213 -000	BETHLEHEM CHURCH RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
620	004-CR-1213 -000	BETHLEHEM CHURCH RD	0-1	5-10	Install Type 3 object markers
687	004-CR-1301 -000	MOORE RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
568	004-CR-1201 -000	WAYSIDE INN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
605	004-CR-1201 -000	WAYSIDE INN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
569	004-CR-1201 -000	WAYSIDE INN RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
683	004-CR-1208 -000	BATTS RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
768	004-CR-1107 -000	BUCHANAN RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
655	004-CR-1207 -000	BORDEN RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)

Exhibit Ballard County Roadside Drop Off Recommendations

Fixed Object Recommendations (Ballard County)

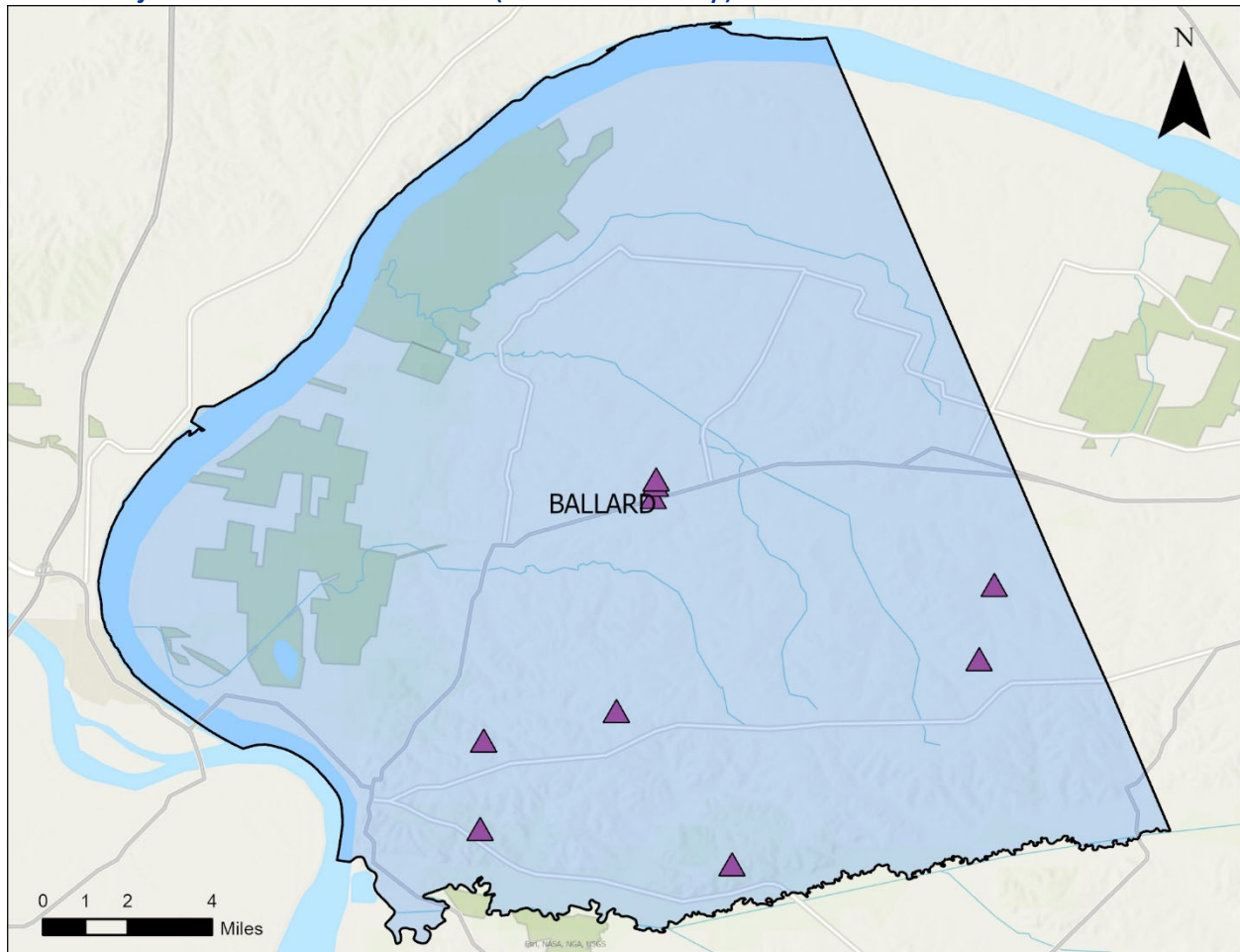


Exhibit Ballard County Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation
639	004-CR-1213 -000	BETHLEHEM CHURCH RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
607	004-CR-1213 -000	BETHLEHEM CHURCH RD	Culvert Headwall	Single	3-5	Install Type 2 or 3 Object Marker(s)
705	004-CR-1301 -000	MOORE RD	Culvert Headwall	Single	1-3	Install Type 2 Object Markers
709	004-CR-1301 -000	MOORE RD	Culvert Headwall	Single	1-3	Install Type 2 Object Markers
704	004-CR-1301 -000	MOORE RD	Culvert Headwall	Single	3-5	Install Type 2 or 3 Object Marker(s)
588	004-CR-1201 -000	WAYSIDE INN RD	Culvert Headwall	Series	3-5	Remove trees within 3 ft of roadway
611	004-CR-1201 -000	WAYSIDE INN RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
662	004-CR-1207 -000	BORDEN RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
783	004-CR-1107 -000	BUCHANAN RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
759	004-CR-1138 -000	ROBEY RD	Culvert Headwall	Single	1-3	Install Type 2 Object Markers
680	004-CR-1208 -000	BATTS RD	Tree	Single	3-5	--

Exhibit Ballard County Fixed Object Recommendations

Intersection Recommendations (Ballard County)

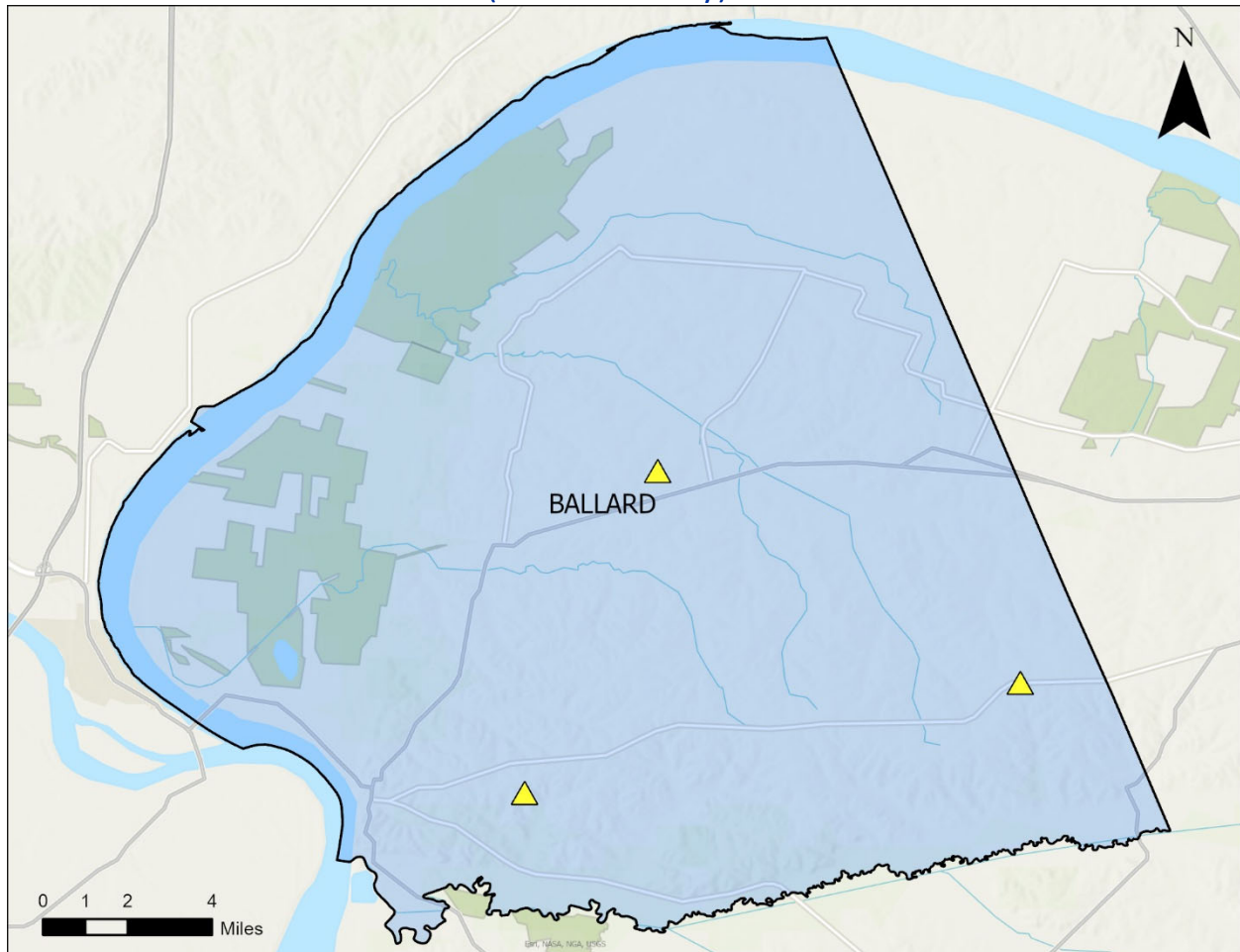


Exhibit Ballard County Intersection Locations

Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation	Comments
708	004-CR-1301 -000	MOORE RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Skew
652	004-CR-1215 -000	CURTIS RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Intersection Obscured on Approach, Insufficient Sight Distance at
776	004-CR-1107 -000	BUCHANAN RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Approach, Intersection Skew, Insufficient Sight Distance at

Exhibit Ballard County Intersection Recommendations

Signing Recommendations (Ballard County)

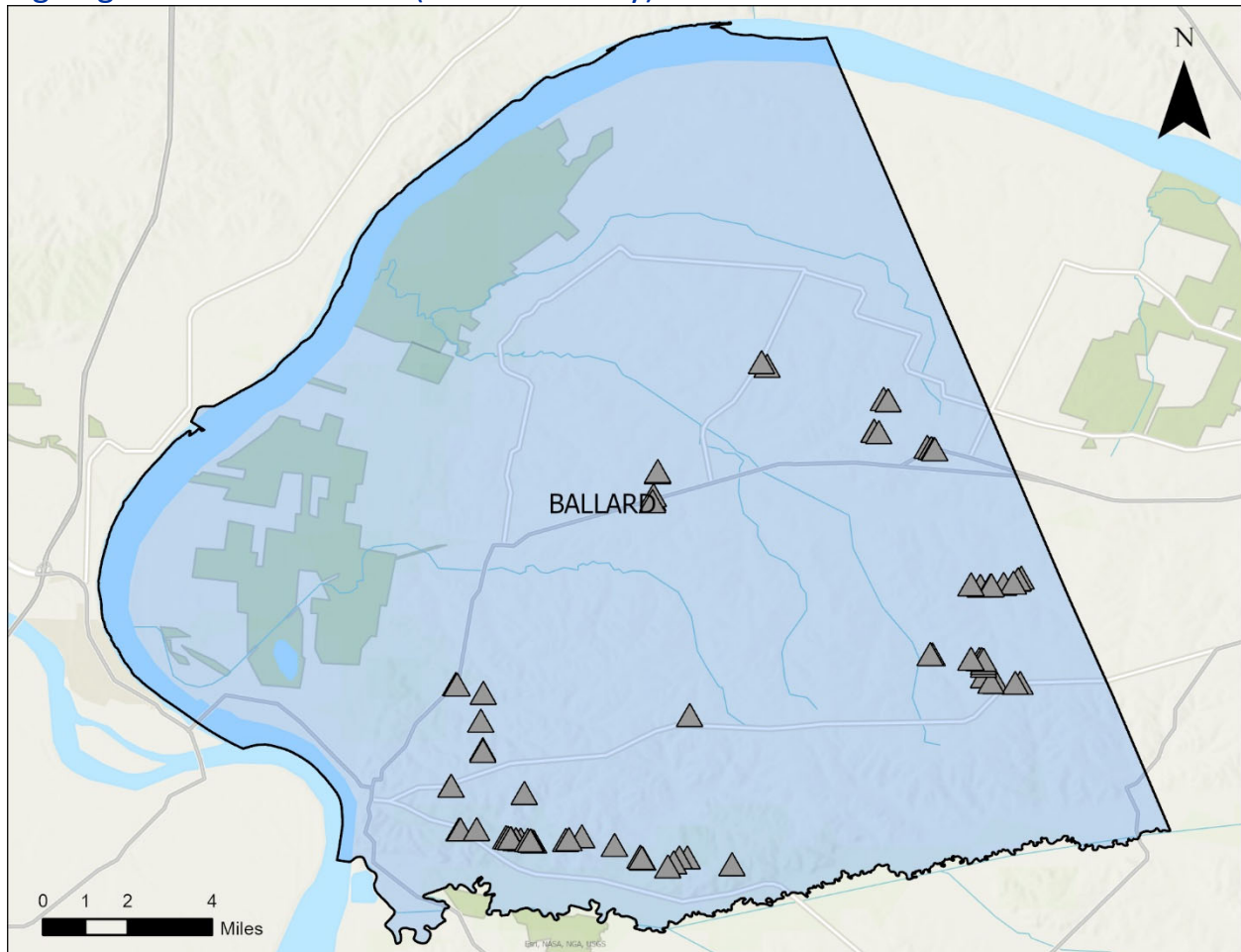


Exhibit Ballard County Sign Locations

As part of the RSA data collection effort, existing signs were inventoried along reviewed Focus Roadways, including a condition assessment and a photo of each sign. Additionally, preliminary Advisory Speed recommendations were calculated for each focus roadway to assist in the installation of horizontal alignment (curve) signs. Signing and advisory speed information is provided in digital format at <https://kyt2.uky.edu/purchase-area-development-district>.

APPENDIX E: CALLOWAY COUNTY

Calloway County Overview

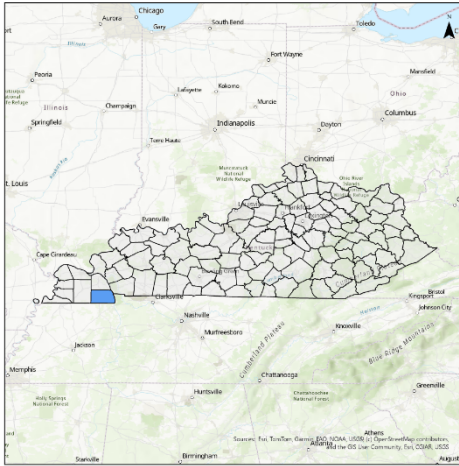


Exhibit Calloway-1: Location Map

Key Information Table	
Calloway County	
Population	38,280
Population in Persistent Poverty	20%
Underserved Community	No
Fatalities (All Roads)	33
Fatalities (County Roads)	7
Fatality Rate per 100,000 persons	862
County Road Mileage	672
State Road Mileage	288
Total Mileage	960

Exhibit Calloway-2: Key Information

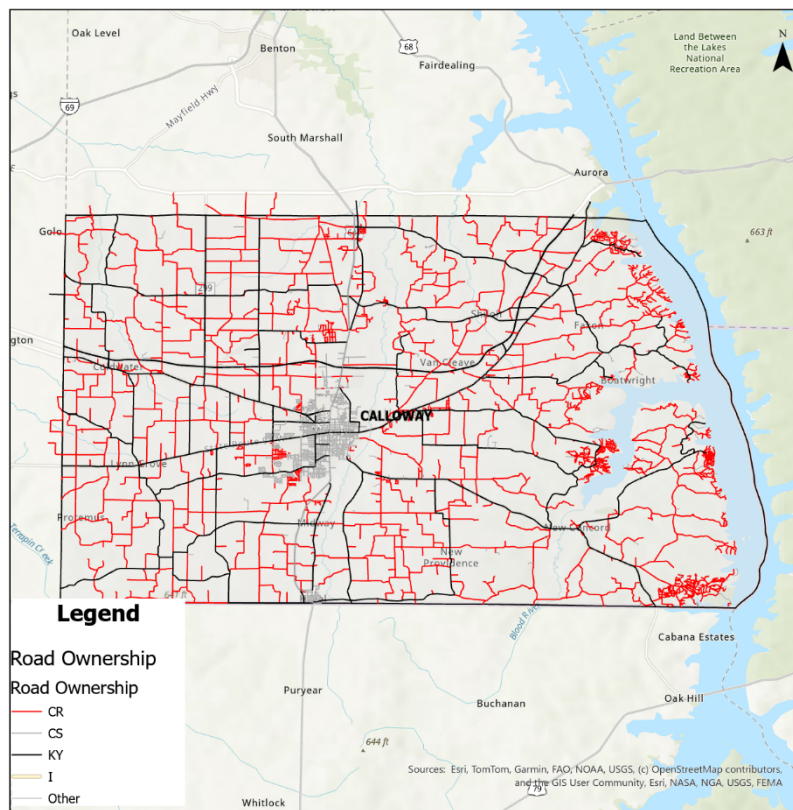


Exhibit Calloway-3: Map of County Roadways

Crash Analysis

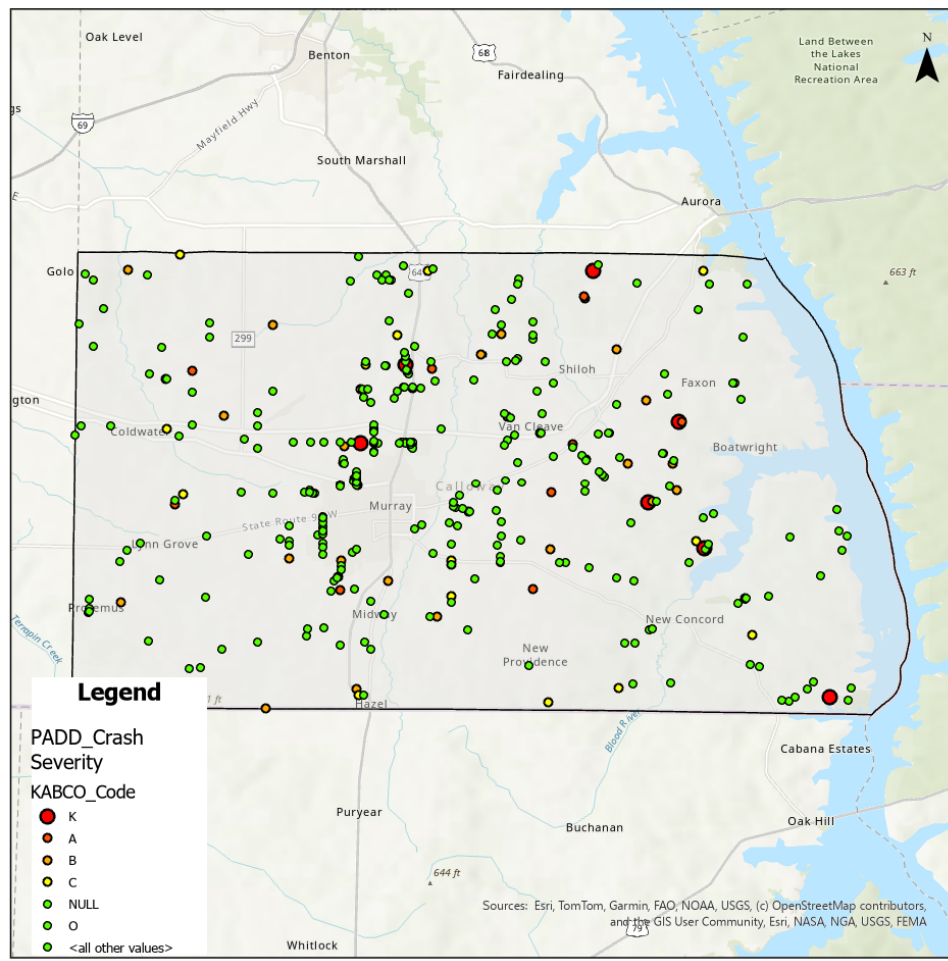


Exhibit Calloway-4: Map of County Road Crashes



Exhibit Calloway-5: Crash Distribution by Year

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	170	49	6	225
Angle	36	2	0	38
Backing	31	2	0	33
SS - Opp	29	2	0	31
Rear End	24	0	0	24
SS - Same	8	0	0	8
Head On	3	3	0	6
Left Turn	0	1	1	2
Rear to Rear	2	0	0	2

Exhibit Calloway-6: Crash Frequency and Severity by Manner of Collision

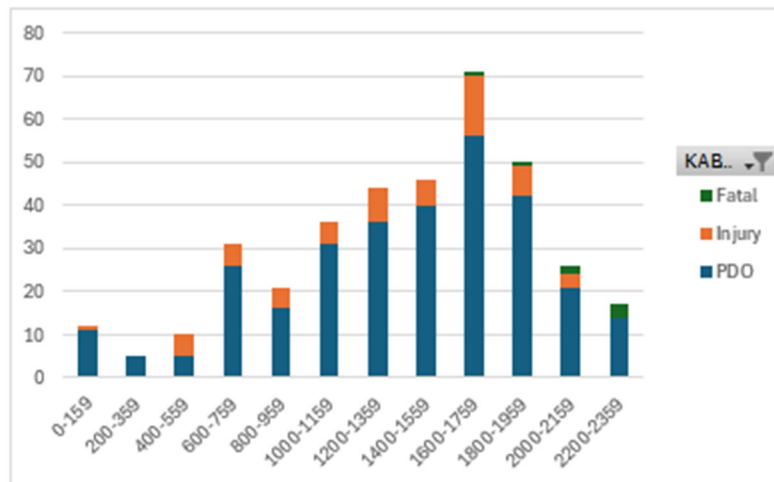


Exhibit Calloway-7: Crashes and Severity by Time of Day

Focus Roadways

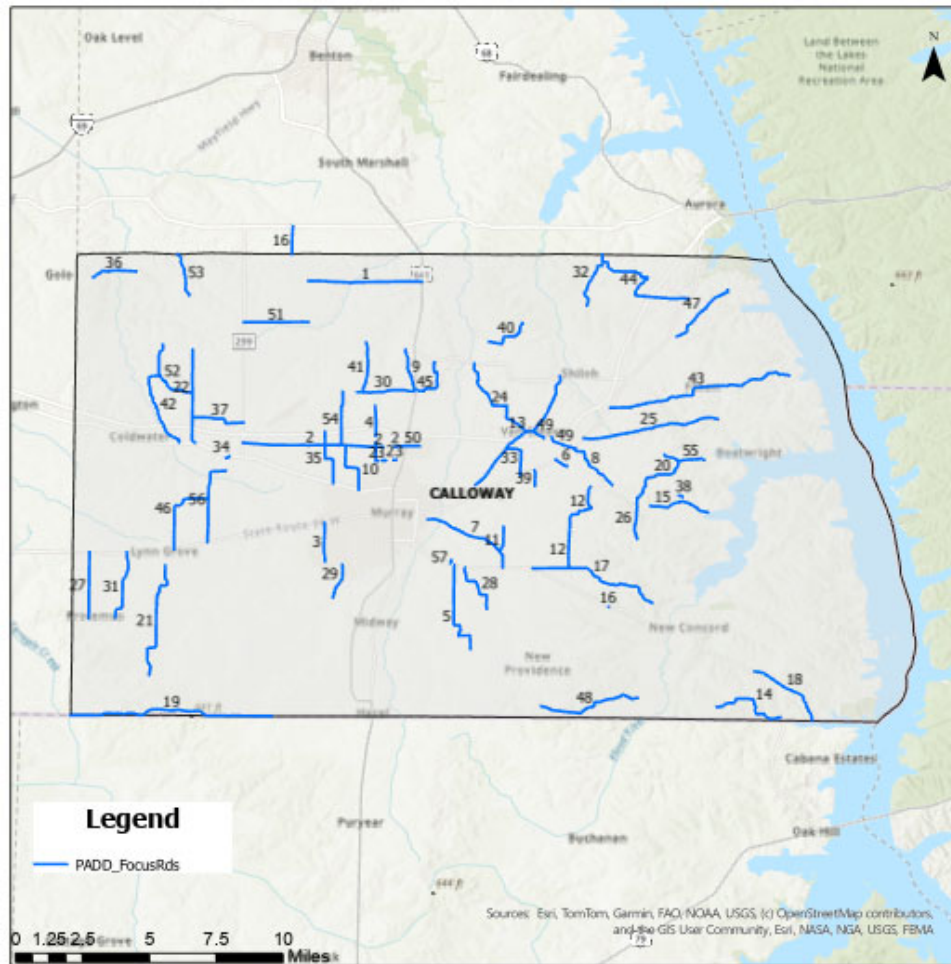


Exhibit Calloway-8: Focus Roads

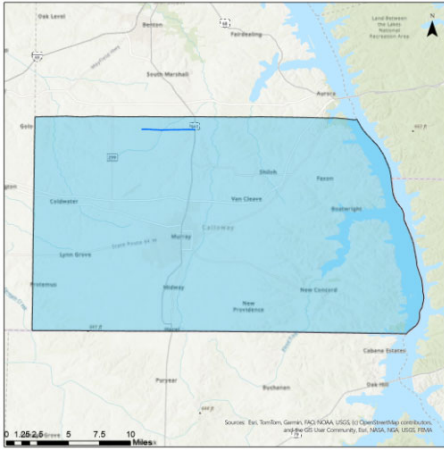
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Calloway											
018-CR-1438 -000	3.42	Calloway	Purchase	CHARLEY MILLER RD	4	0	5	2.64	0.45	1.91	1
018-CR-1403 -000	4.55	Calloway	Purchase	POOR FARM RD	2	3	3	2.50	0.56	1.86	2
018-CR-1363 -000	1.45	Calloway	Purchase	ROBERTSON RD S	0	2	13	1.28	2.85	1.80	3
018-CR-1401 -000	1.84	Calloway	Purchase	BRINN RD	1	1	18	1.70	1.95	1.78	4
018-CR-1217 -000	3.68	Calloway	Purchase	LOCUST GROVE RD	0	1	4	2.21	0.76	1.73	5
018-CR-1011 -000	0.42	Calloway	Purchase	OLD HERITAGE LN	1	0	0	2.28	0.05	1.54	6
018-CR-1224 -000	3.25	Calloway	Purchase	OLD SALEM RD	2	1	8	1.92	0.77	1.54	7
018-CR-1012 -000	1.98	Calloway	Purchase	ROCKWOOD RD	1	1	3	1.11	1.72	1.32	8
018-CR-1417 -000	1.57	Calloway	Purchase	FLINT RD	2	0	3	1.34	0.83	1.17	9
018-CR-1402 -000	2.01	Calloway	Purchase	BAILEY RD	1	0	15	1.19	1.06	1.15	10
018-CR-1123 -000	0.92	Calloway	Purchase	OUTLAND SCHOOL RD	0	0	3	0.12	3.10	1.10	11
018-CR-1130 -000	3.59	Calloway	Purchase	SCOTT FITTS RD	2	0	7	1.49	0.23	1.08	12
018-CR-1006 -000	5.01	Calloway	Purchase	VAN C LEAVE RD	1	0	8	0.92	1.11	0.98	13
018-CR-1181 -000	2.66	Calloway	Purchase	BILLIE BRANCH RD	2	0	0	1.22	0.05	0.84	14
018-CR-1140 -000	1.93	Calloway	Purchase	POPLAR SPRINGS DR	1	1	2	1.08	0.32	0.83	15
018-CR-1194 -020	0.02	Calloway	Purchase	YARBOROUGH RD Y	0	0	0	0.00	2.50	0.83	16
018-CR-1135 -000	4.33	Calloway	Purchase	CHERRY CORNER RD	1	0	11	1.04	0.30	0.79	17
018-CR-1177 -000	2.76	Calloway	Purchase	CYPRESS TRL	0	0	3	0.12	2.08	0.77	18
018-CR-1296 -000	6.26	Calloway	Purchase	STATE LINE RD W	1	0	2	0.69	0.57	0.65	19
018-CR-1024 -000	2.71	Calloway	Purchase	BEANE RD	1	0	4	0.77	0.39	0.64	20
018-CR-1331 -000	4.51	Calloway	Purchase	RAYBURN RD	1	0	2	0.69	0.44	0.61	21
018-CR-1478 -000	3.51	Calloway	Purchase	POTTS RD	1	0	0	0.61	0.57	0.60	22
018-CR-1552 -000	0.33	Calloway	Purchase	UTTERBACK RD	0	0	2	0.08	1.64	0.59	23
018-CR-1005 -000	3.44	Calloway	Purchase	ELM GROVE RD	1	0	3	0.73	0.28	0.58	24
018-CR-1014 -000	4.18	Calloway	Purchase	OLD NEWBURG RD	1	0	5	0.80	0.12	0.58	25
018-CR-1131 -000	1.54	Calloway	Purchase	WRIGHT RD	1	0	2	0.69	0.35	0.57	26
018-CR-1339 -000	2.44	Calloway	Purchase	HOWARD RD	0	1	2	0.47	0.67	0.53	27
018-CR-1219 -000	2.02	Calloway	Purchase	NEALE TRL	1	0	0	0.61	0.34	0.52	28
018-CR-1280 -000	1.28	Calloway	Purchase	GIBBS STORE RD	0	1	2	0.47	0.63	0.52	29
018-CR-1414 -000	1.81	Calloway	Purchase	WALSTON RD	0	1	1	0.43	0.70	0.52	30
018-CR-1367 -000	2.59	Calloway	Purchase	KELSO RD	1	0	1	0.65	0.24	0.52	31
018-CR-1060 -000	2.15	Calloway	Purchase	MCEL RATH RD	1	0	2	0.69	0.11	0.50	32
018-CR-1008 -000	1.44	Calloway	Purchase	COLONIAL RD	0	0	1	0.04	1.42	0.49	33
018-CR-1807 -000	0.16	Calloway	Purchase	HALLELUJAH DR	0	0	0	0.00	1.45	0.48	34
018-CR-1508 -000	2.15	Calloway	Purchase	GRAHAM RD	1	0	0	0.61	0.19	0.47	35
018-CR-1461 -000	1.39	Calloway	Purchase	MOUNT OLIVE RD	1	0	0	0.61	0.18	0.47	36
018-CR-1484 -000	1.68	Calloway	Purchase	ALEX FORKS DR	1	0	0	0.61	0.11	0.45	37
018-CR-1142 -000	0.17	Calloway	Purchase	LYNX LN	1	0	1	0.65	0.02	0.44	38
018-CR-1122F -000	0.62	Calloway	Purchase	POST OAK DR	0	0	0	0.00	1.33	0.44	39
018-CR-1069 -000	1.58	Calloway	Purchase	INDEPENDENCE RD	1	0	0	0.61	0.06	0.43	40
018-CR-1410 -000	1.88	Calloway	Purchase	SHORT RD	0	1	2	0.47	0.17	0.37	41
018-CR-1480 -000	3.15	Calloway	Purchase	COOK STORE TRL	0	1	3	0.50	0.09	0.37	42
018-CR-1021 -000	5.98	Calloway	Purchase	FAXON RD	0	0	8	0.31	0.48	0.36	43
018-CR-1055 -000	4.16	Calloway	Purchase	PALESTINE CHURCH RD	0	1	1	0.43	0.23	0.36	44
018-CR-1419 -000	1.70	Calloway	Purchase	BOGESS DR	0	1	1	0.43	0.18	0.35	45
018-CR-1354 -000	2.80	Calloway	Purchase	OLD LYNN GROVE RD	0	1	2	0.47	0.07	0.34	46
018-CR-1047 -000	2.47	Calloway	Purchase	HIGHLAND RD	0	1	1	0.43	0.15	0.34	47
018-CR-1199 -000	3.29	Calloway	Purchase	STATE LINE RD E	0	1	1	0.43	0.12	0.33	48
018-CR-1087 -000	1.27	Calloway	Purchase	TODD RD	0	1	1	0.43	0.11	0.32	49
018-CR-1407 -000	0.40	Calloway	Purchase	PELLA WAY	0	0	4	0.16	0.66	0.32	50
018-CR-1554 -000	1.93	Calloway	Purchase	OLD HICKORY RD	0	1	0	0.39	0.14	0.31	51
018-CR-1479 -000	2.56	Calloway	Purchase	TUCKER GARLAND RD	0	1	1	0.43	0.06	0.31	52
018-CR-1470 -000	1.63	Calloway	Purchase	OLD SOLDIERS CREEK RD	0	1	0	0.39	0.12	0.30	53
018-CR-1409 -000	2.01	Calloway	Purchase	HALE RD	0	1	0	0.39	0.11	0.30	54
018-CR-1025 -000	0.84	Calloway	Purchase	GEURIN RD	0	0	3	0.12	0.66	0.30	55
018-CR-1356 -000	3.08	Calloway	Purchase	THURMOND RD	0	1	0	0.39	0.11	0.30	56
018-CR-1226A -000	0.16	Calloway	Purchase	GREENVIEW DR	0	1	0	0.39	0.10	0.29	57

Exhibit Calloway-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

CHARLEY MILLER RD (018-CR-1438 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	3	0	0	3
	Backing	1	0	0	1
	Left Turn	0	0	0	0
	SS - Same	0	0	0	0
	Head On	0	0	0	0
	SS - Opp	0	0	0	0
	Angle	0	0	0	0
	Rear to Rear	0	0	0	0
	Rear End	0	0	0	0

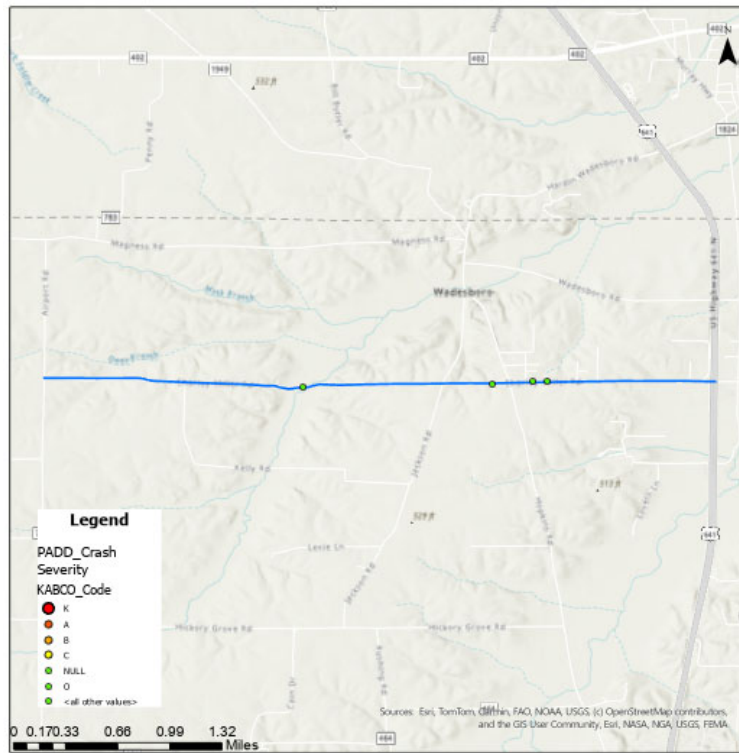
General Roadway Conditions

Roadway Section Information Not Collected

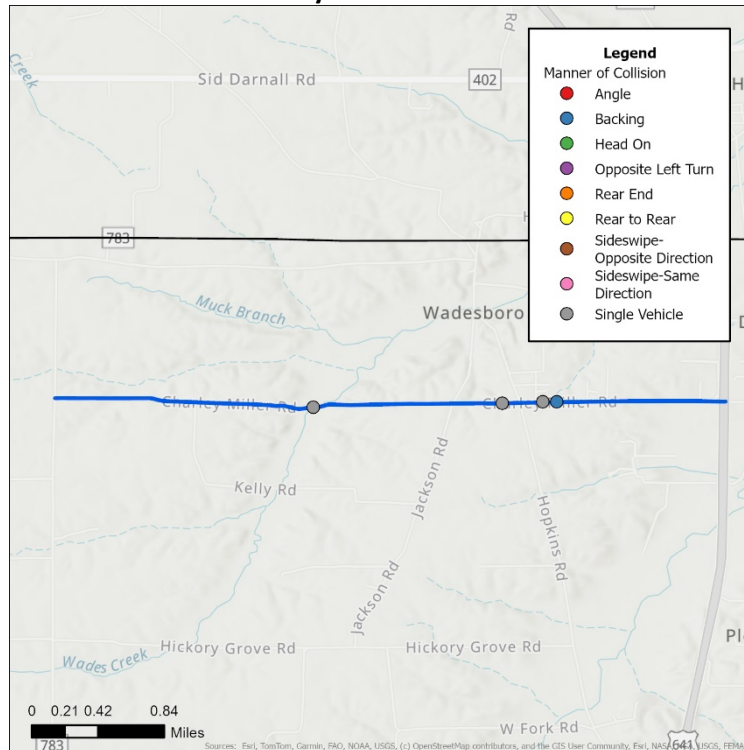
Roadway Typical Section



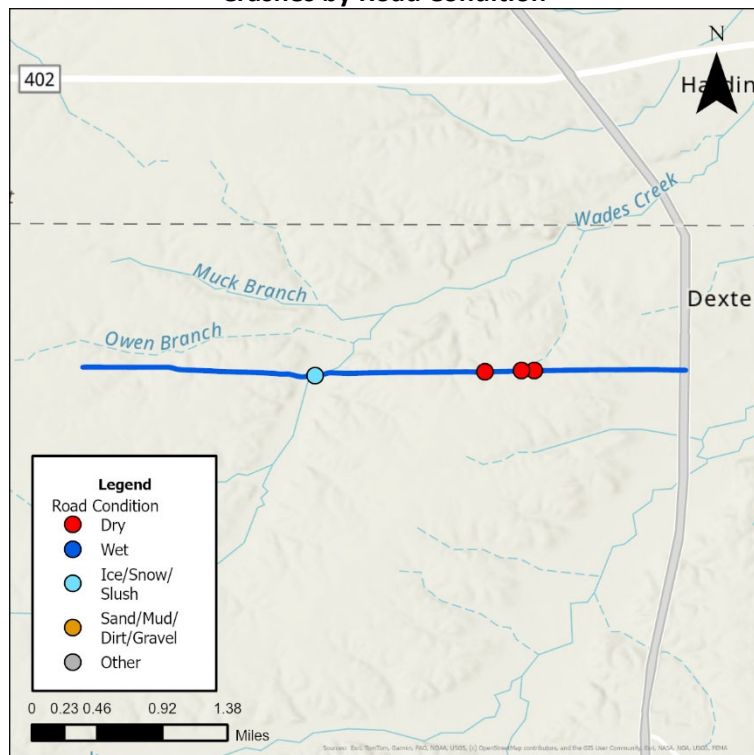
Crashes by Severity



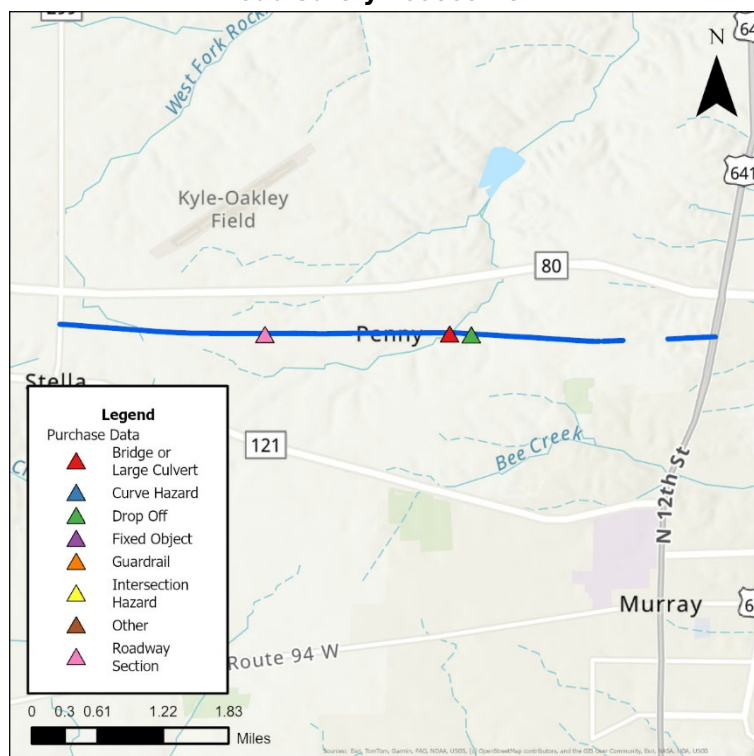
Crashes by Manner of Collision



Crashes by Road Condition

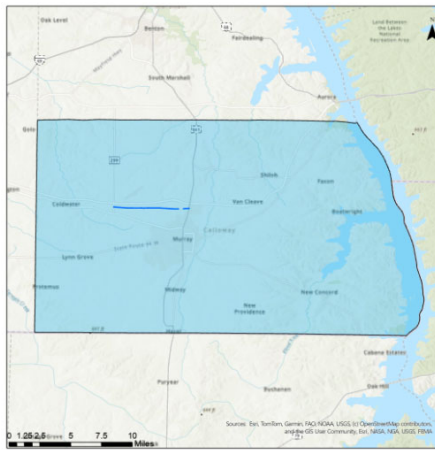


Road Safety Assessment



POOR FARM RD (018-CR-1403 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	4	0	1	5
Angle	4	0	0	4
Rear End	2	0	0	2
Backing	1	0	0	1
SS - Opp	0	0	0	0
Head On	0	0	0	0
SS - Same	0	0	0	0
Rear to Rear	0	0	0	0
Left Turn	0	0	0	0

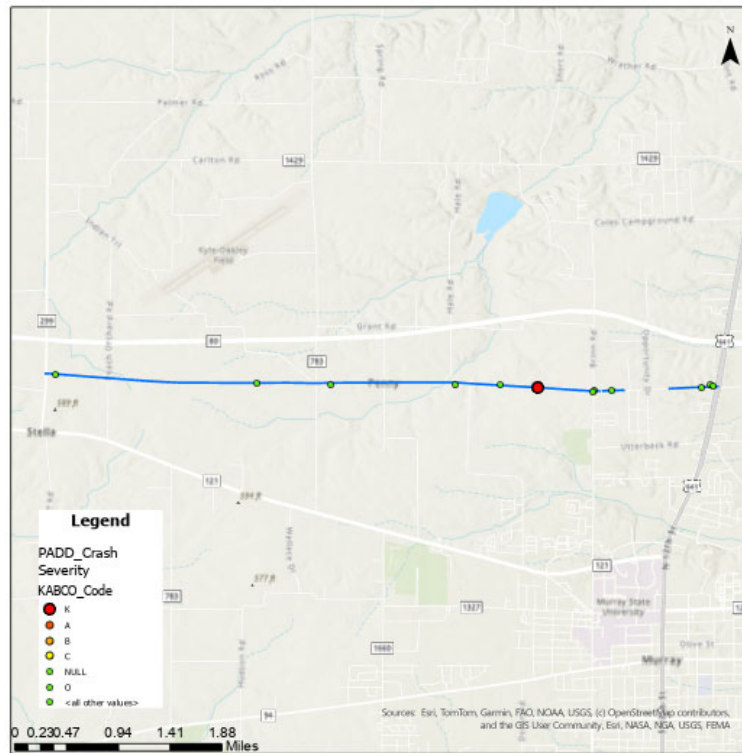
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1499	018-CR-1403 -000	POOR FARM RD	18	2	3	20-40

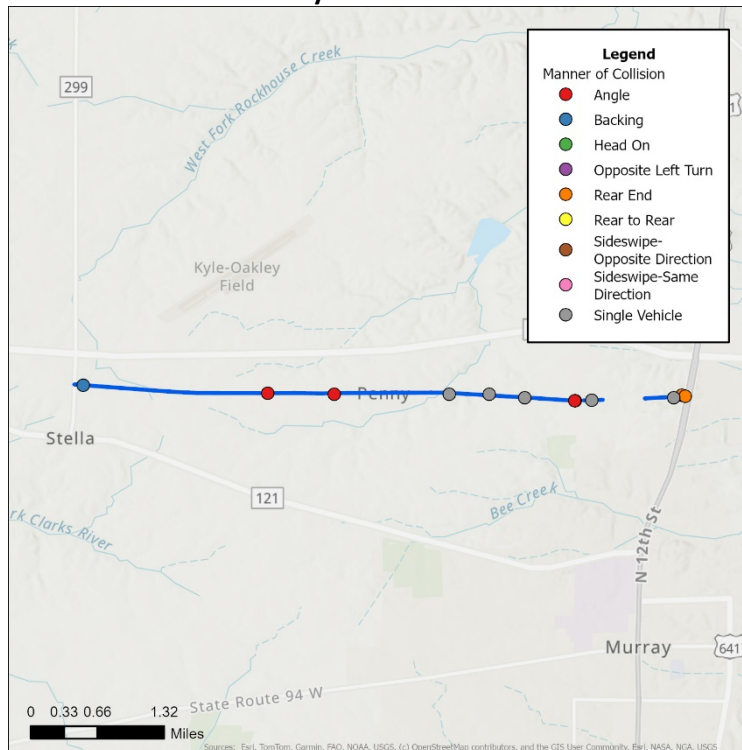
Roadway Typical Section



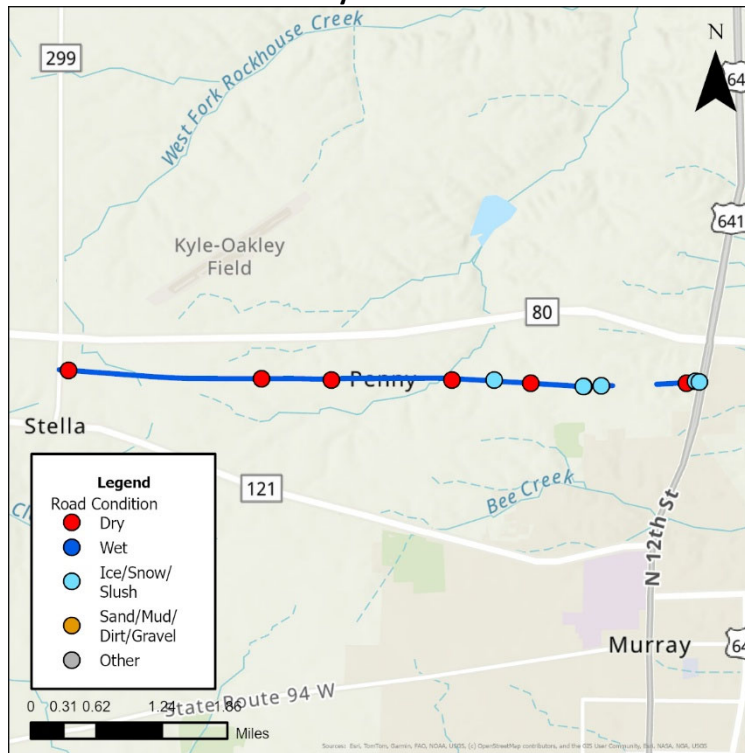
Crashes by Severity



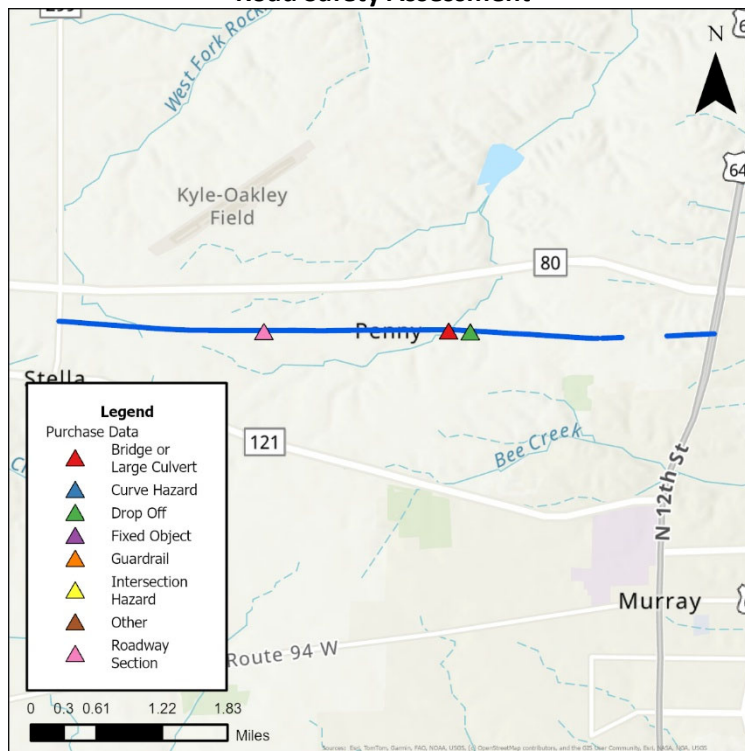
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

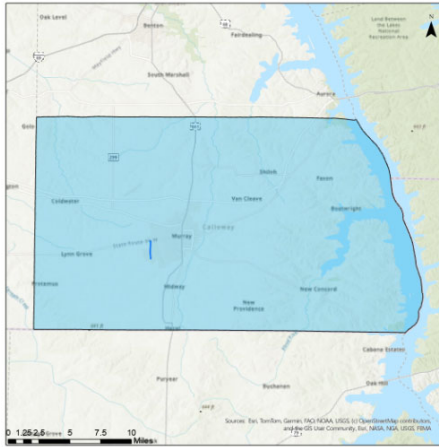


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1499	018-CR-1403 -000	POOR FARM RD	18	2	3	20-40	✓		✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
1495	018-CR-1403 -000	POOR FARM RD	21	4	4	--			
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
1494	018-CR-1403 -000	POOR FARM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)				

ROBERTSON RD S (018-CR-1363 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	7	0	0	7
Angle	4	0	0	4
SS - Opp	3	0	0	3
Rear End	3	0	0	3
Backing	1	0	0	1
SS - Same	0	0	0	0
Rear to Rear	0	0	0	0
Left Turn	0	0	0	0
Head On	0	0	0	0

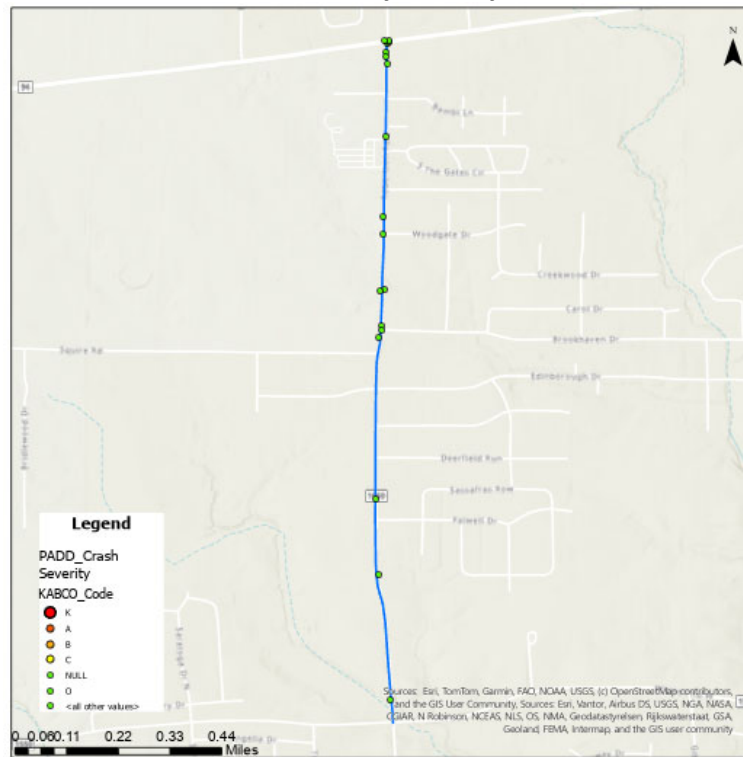
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1471	018-CR-1363 -000	ROBERTSON RD S	18	4	4	0-20

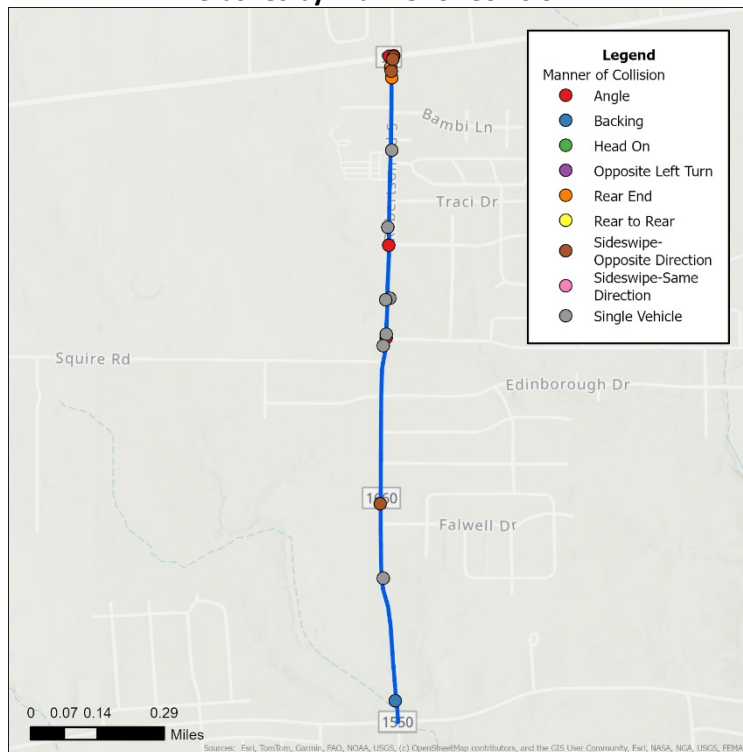
Roadway Typical Section



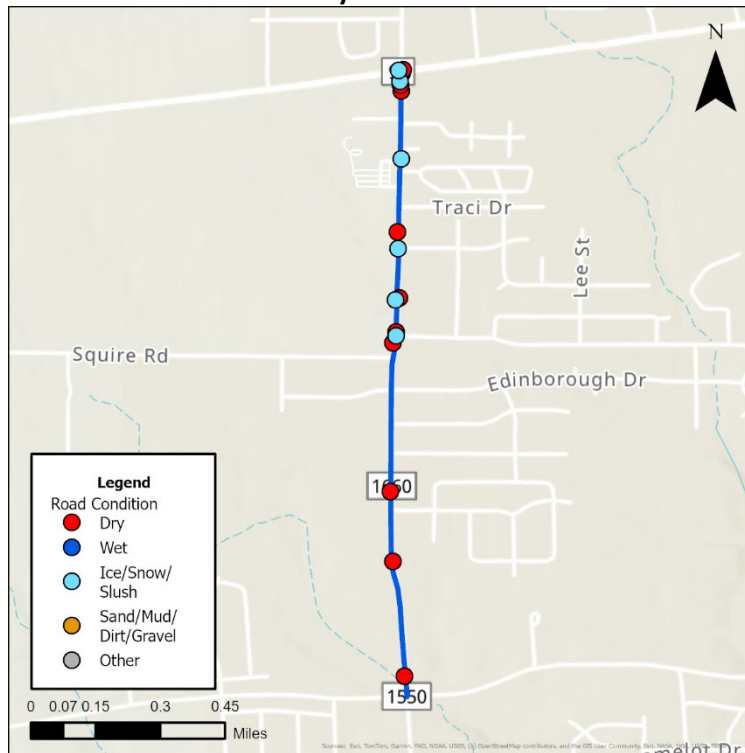
Crashes by Severity



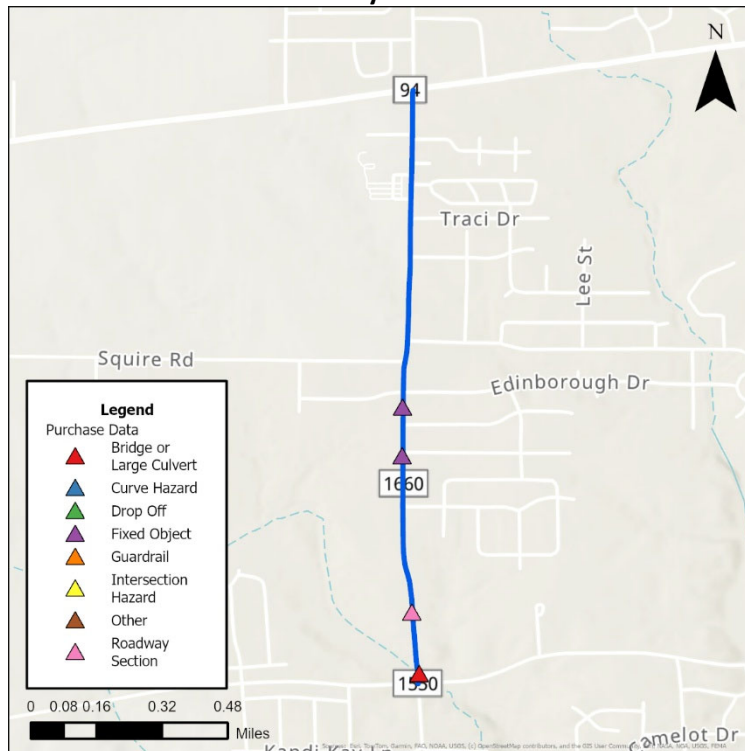
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

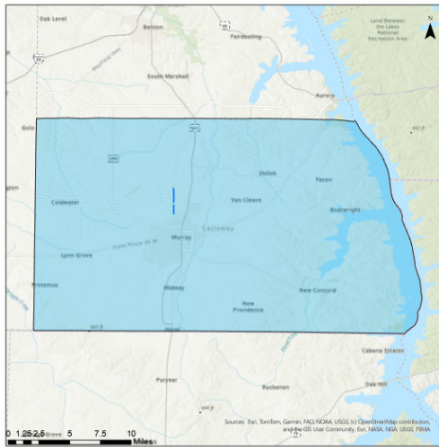


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1471	018-CR-1363 -000	ROBERTSON RD S	18	4	4	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
1459	018-CR-1363 -000	ROBERTSON RD S	24	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary			

BRINN RD (018-CR-1401 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	5	0	0	5
SS - Opp	3	0	0	3
Rear End	3	0	0	3
Angle	1	0	0	1
Head On	0	0	0	0
Backing	0	0	0	0
SS - Same	0	0	0	0
Rear to Rear	0	0	0	0
Left Turn	0	0	0	0

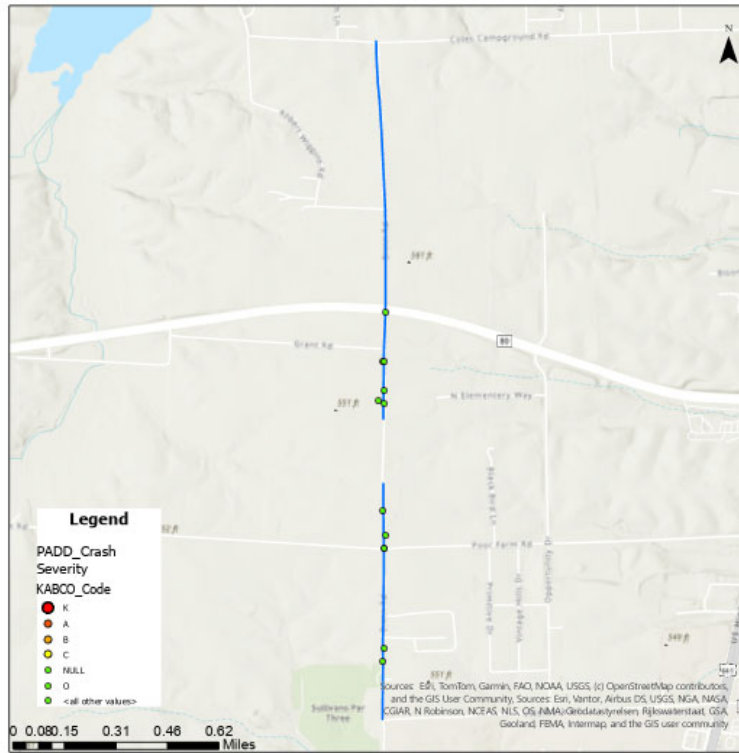
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1484	018-CR-1401 -000	BRINN RD	18	4	3	0-20

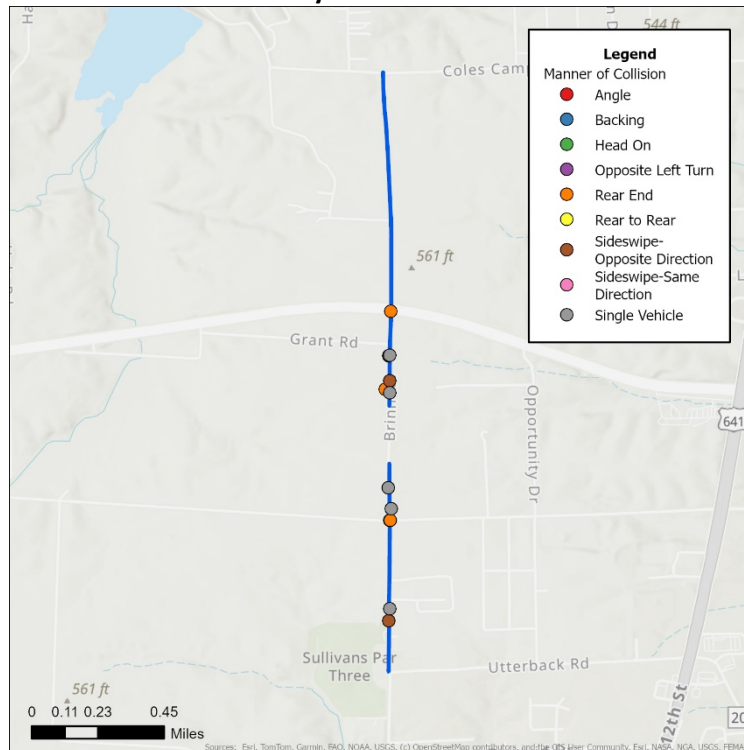
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

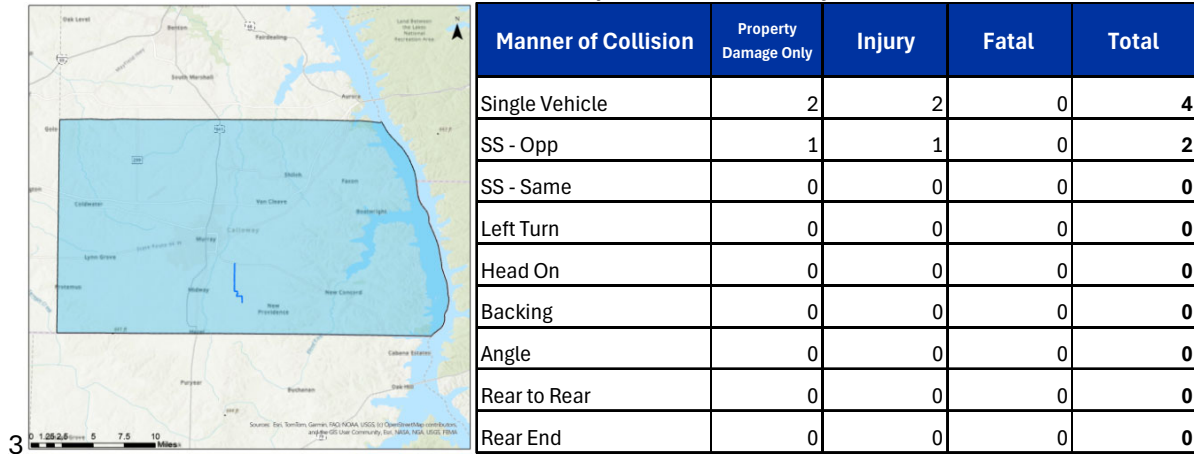


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1484	018-CR-1401 -000	BRINN RD	18	4	3	0-20		✓	✓

LOCUST GROVE RD (018-CR-1217 -000)

Road Location Map and Crash History



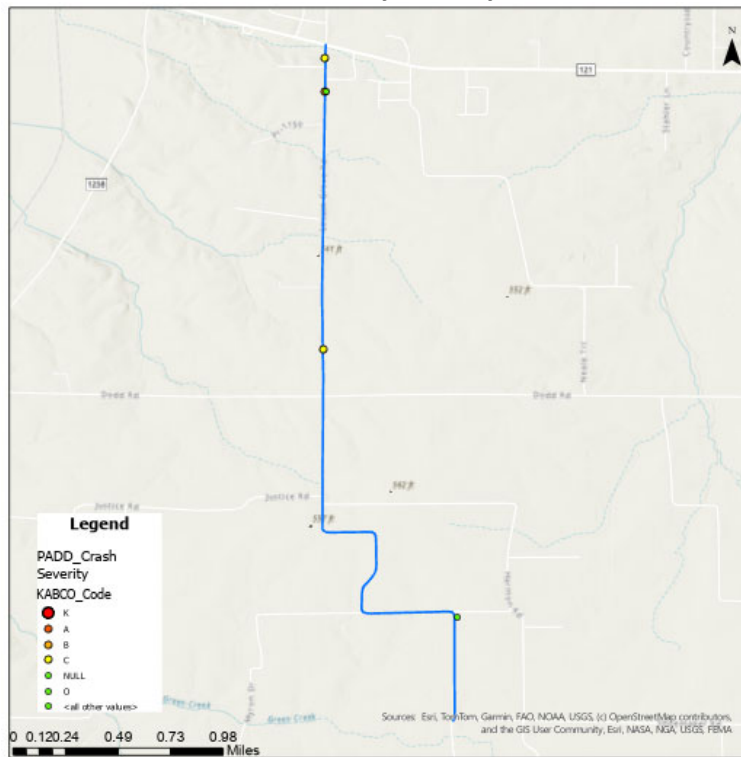
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1517	018-CR-1217 -000	LOCUST GROVE RD	18	2	3	0-20

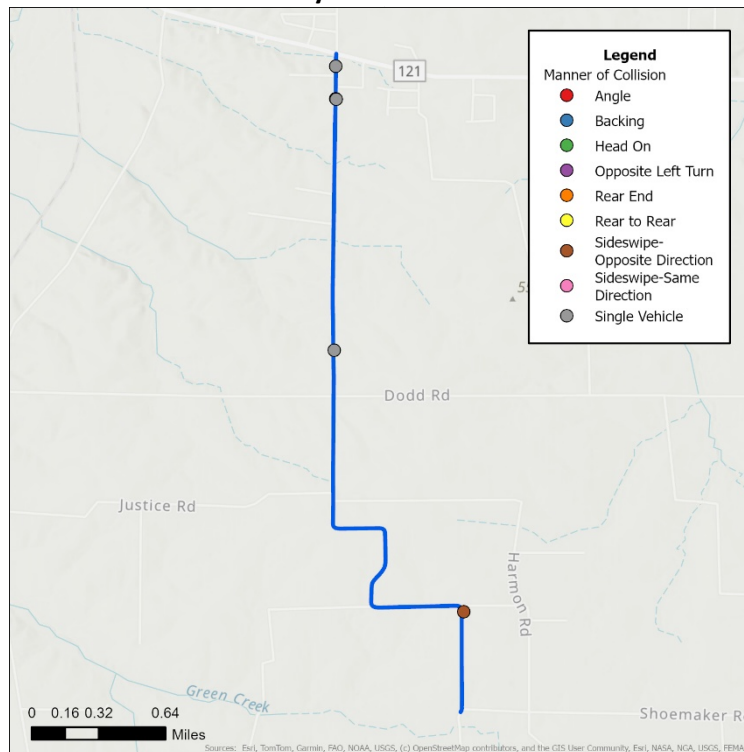
Roadway Typical Section



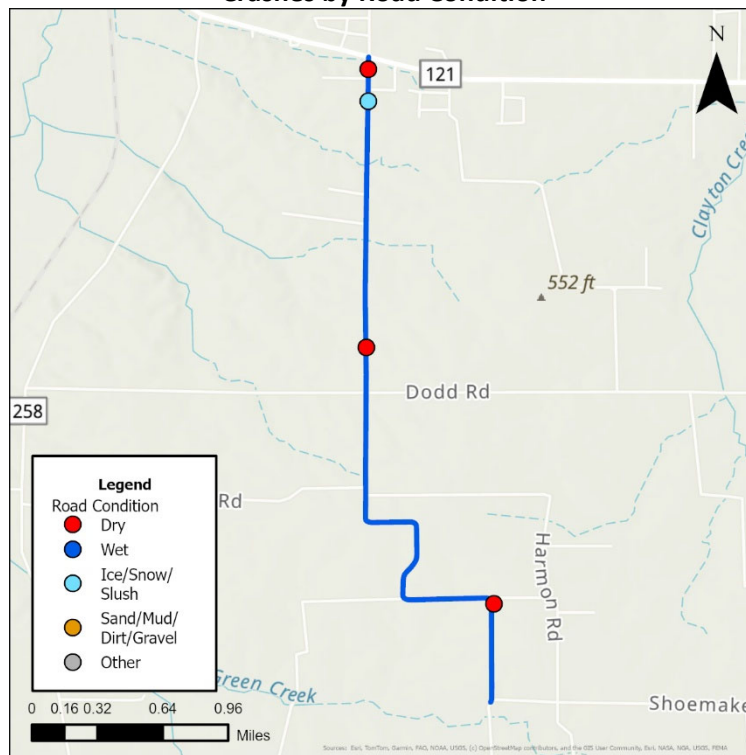
Crashes by Severity



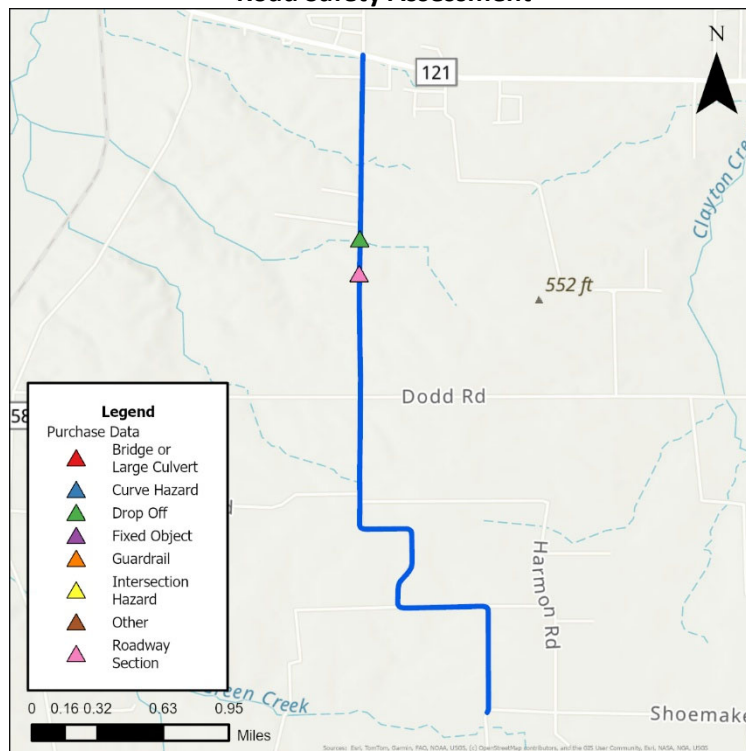
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1517	018-CR-1217 -000	LOCUST GROVE RD	18	2	3	0-20			✓
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
1516	018-CR-1217 -000	LOCUST GROVE RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)				

Other Roadways

General Roadway Conditions and Recommendations (Calloway County)

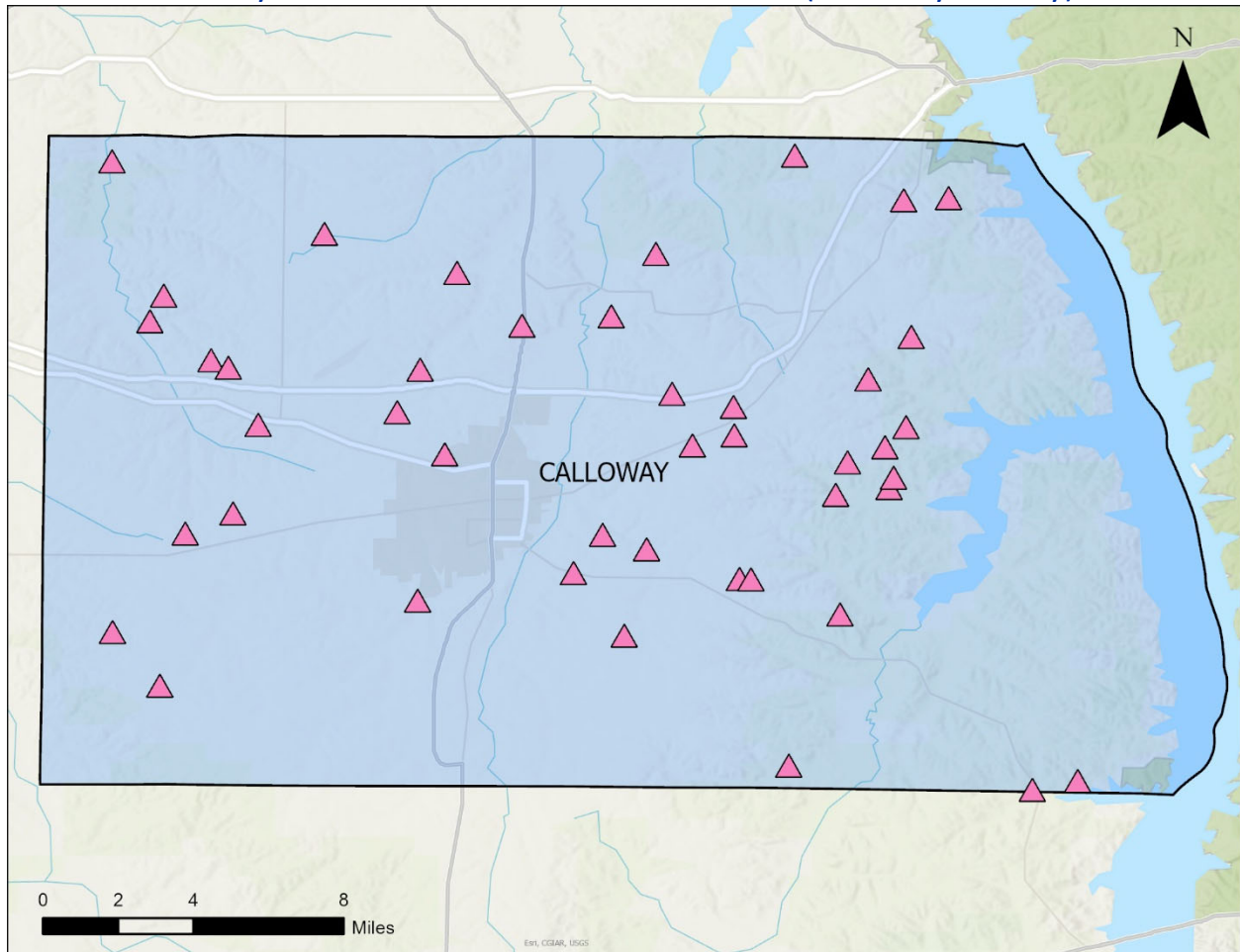


Exhibit Calloway County General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1556	018-CR-1130 -000	SCOTT FITTS RD	19	3	3	0-20		✓	✓
1517	018-CR-1217 -000	LOCUST GROVE RD	18	2	3	0-20			✓
2393	018-CR-1461 -000	MOUNT OLIVE RD	16	4	3	0-20		✓	✓
2413	018-CR-1478 -000	POTTS RD	18	2	4	0-20			✓
1056	018-CR-1480 -000	COOK STORE TRL	18	4	3	0-20		✓	✓
1062	018-CR-1480 -000	COOK STORE TRL	15	4	5	0-20		✓	✓
1072	018-CR-1480 -000	COOK STORE TRL	16	4	4	0-20		✓	✓
2399	018-CR-1480 -000	COOK STORE TRL	18	3	3	0-20		✓	✓
2337	018-CR-1508 -000	GRAHAM RD	17	4	3	0-20		✓	✓
2425	018-CR-1508 -000	GRAHAM RD	18	3	2	0-20		✓	✓
2589	018-CR-1047 -000	HIGHLAND RD	17	3	3	0-20		✓	✓
2517	018-CR-1199 -000	STATE LINE RD E	15	3	5	20-40	✓	✓	✓
1527	018-CR-1224 -000	OLD SALEM RD	15	3	3	20-40	✓	✓	✓
2502	018-CR-1024 -000	BEANE RD	16	3	3	0-20		✓	✓
2562	018-CR-1024 -000	BEANE RD	17	3	3	0-20		✓	✓
2496	018-CR-1025 -000	GEURIN RD	14	4	3	0-20		✓	✓
2594	018-CR-1055 -000	PALESTINE CHURCH RD	18	4	1	0-20		✓	✓
2600	018-CR-1055 -000	PALESTINE CHURCH RD	16	3	3	0-20		✓	✓
2507	018-CR-1069 -000	INDEPENDENCE RD	18	3	3	0-20		✓	✓
2535	018-CR-1135 -000	CHERRY CORNER RD	17	4	3	0-20		✓	✓
2542	018-CR-1135 -000	CHERRY CORNER RD	18	3	2	0-20		✓	✓
2492	018-CR-1219 -000	NEALE TRL	17	4	1	0-20		✓	✓
2466	018-CR-1331 -000	RAYBURN RD	18	4	2	0-20		✓	✓
2512	018-CR-1226A -000	GREENVIEW DR	17	4	1	0-20		✓	✓
2586	018-CR-1021 -000	FAXON RD	17	3	3	0-20		✓	✓
2438	018-CR-1356 -000	THURMOND RD	14	3	2	0-20		✓	✓
1566	018-CR-1417 -000	FLINT RD	19	4	2	0-20		✓	✓
2554	018-CR-1140 -000	POPLAR SPRINGS DR	19	4	3	0-20		✓	✓
2446	018-CR-1354 -000	OLD LYNN GROVE RD	18	3	2	0-20		✓	✓
2358	018-CR-1410 -000	SHORT RD	16	4	3	0-20		✓	✓
2432	018-CR-1807 -000	HALLELUJAH DR	12	2	2	0-20			✓
2297	018-CR-1087 -000	TODD RD	18	3	3	0-20		✓	✓
2560	018-CR-1142 -000	LYNX LN	16	2	3	0-20			✓
2528	018-CR-1177 -000	CYPRESS TRL	19	4	2	0-20		✓	✓
2305	018-CR-1122F -000	POST OAK DR	18	4	2	0-20		✓	✓
1579	018-CR-1402 -000	BAILEY RD	18	3	3	0-20		✓	✓
2350	018-CR-1409 -000	HALE RD	15	1	3	40-60	✓		✓
2382	018-CR-1554 -000	OLD HICKORY RD	16	4	3	0-20		✓	✓
1592	018-CR-1280 -000	GIBBS STORE RD	18	3	3	0-20		✓	✓
2521	018-CR-1181 -000	BILLIE BRANCH RD	18	5	2	0-20		✓	✓
2457	018-CR-1367 -000	KELSO RD	18	3	2	0-20		✓	✓
830	018-CR-1123 -000	OUTLAND SCHOOL RD	15	4	3	0-20		✓	✓
1535	018-CR-1123 -000	OUTLAND SCHOOL RD	18	4	2	0-20		✓	✓
2322	018-CR-1006 -000	VAN CLEAVE RD	19	4	2	0-20		✓	✓
2327	018-CR-1005 -000	ELM GROVE RD	18	4	3	0-20		✓	✓
1537	018-CR-1011 -000	OLD HERITAGE LN	12	2	2	0-20			✓
2567	018-CR-1014 -000	OLD NEWBURG RD	15	4	3	0-20		✓	✓
2548	018-CR-1131 -000	WRIGHT RD	17	4	3	20-40	✓	✓	✓
2421	018-CR-1484 -000	ALEX FORKS DR	16	4	3	0-20		✓	✓

Exhibit Calloway County General Roadway Recommendations

Bridge / Culvert Recommendations (Calloway County)

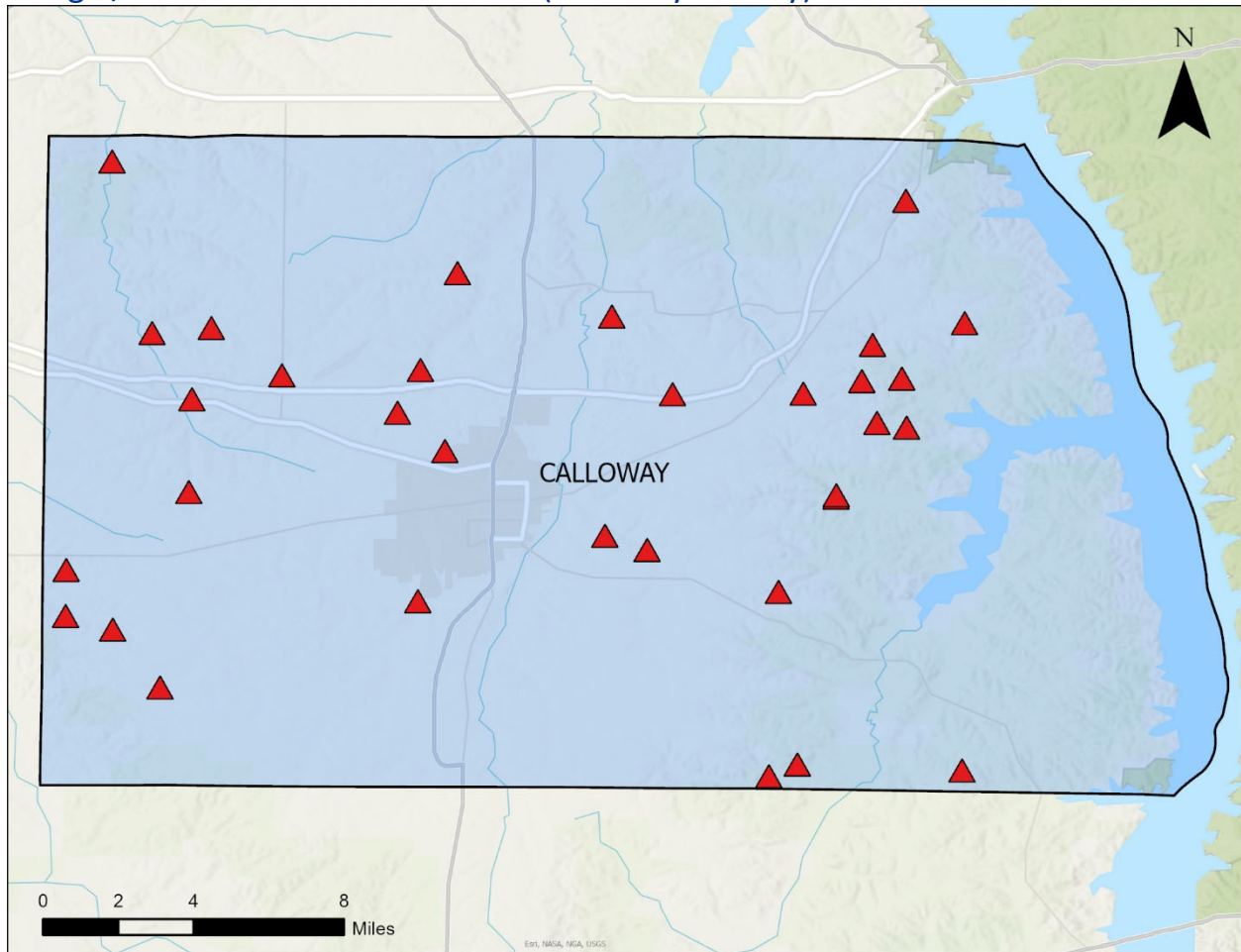


Exhibit Calloway County Bridge / Culvert Locations

Point ID	RT UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
2392	018-CR-1461 -000	MOUNT OLIVE RD	20	4	4	--
2407	018-CR-1478 -000	POTTS RD	21	4	4	--
1054	018-CR-1480 -000	COOK STORE TRL	22	4	0	Install Type 3 Object Markers
2397	018-CR-1480 -000	COOK STORE TRL	15	4	4	Install One Lane Bridge Sign (W5-3)
2394	018-CR-1480 -000	COOK STORE TRL	21	4	4	--
2336	018-CR-1508 -000	GRAHAM RD	22	4	4	--
2515	018-CR-1199 -000	STATE LINE RD E	24	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
2518	018-CR-1199 -000	STATE LINE RD E	25	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1524	018-CR-1224 -000	OLD SALEM RD	18	4	2	Install/Replace Type 3 Object Markers on all corners
2498	018-CR-1024 -000	BEANE RD	23	4	2	Guardrail noted as in poor condition, evaluate need to replace; Install/Replace Type 3 Object Markers on all corners
2495	018-CR-1025 -000	GEURIN RD	18	2	1	Evaluate need for guardrail on approach, install/Replace Type 3 Object Markers on all corners if necessary
2593	018-CR-1055 -000	PALESTINE CHURCH RD	22	4	4	--
2539	018-CR-1135 -000	CHERRY CORNER RD	18	4	2	Install/Replace Type 3 Object Markers on all corners
2465	018-CR-1331 -000	RAYBURN RD	21	4	4	--
2578	018-CR-1021 -000	FAXON RD	20	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
2573	018-CR-1021 -000	FAXON RD	26	4	4	--
2450	018-CR-1339 -000	HOWARD RD	21	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
2449	018-CR-1339 -000	HOWARD RD	21	4	4	--
2442	018-CR-1354 -000	OLD LYNN GROVE RD	21	4	4	--
2357	018-CR-1410 -000	SHORT RD	20	4	4	--
2523	018-CR-1181 -000	BILLIE BRANCH RD	34	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1573	018-CR-1402 -000	BAILEY RD	22	4	4	--
2349	018-CR-1409 -000	HALE RD	20	4	4	--
1591	018-CR-1280 -000	GIBBS STORE RD	21	3	3	Evaluate need for guardrail on approach, install/Replace Type 3 Object Markers on all corners if necessary
2456	018-CR-1367 -000	KELSO RD	20	4	4	--
1534	018-CR-1123 -000	OUTLAND SCHOOL RD	24	4	0	Install Type 3 Object Markers
2321	018-CR-1006 -000	VAN CLEAVE RD	22	4	4	--
2326	018-CR-1005 -000	ELM GROVE RD	21	4	4	--
2569	018-CR-1014 -000	OLD NEWBURG RD	35	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
2564	018-CR-1014 -000	OLD NEWBURG RD	19	4	3	Install/Replace Type 3 Object Markers on all corners
2568	018-CR-1014 -000	OLD NEWBURG RD	22	4	4	--
2547	018-CR-1131 -000	WRIGHT RD	23	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
2546	018-CR-1131 -000	WRIGHT RD	25	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
2419	018-CR-1484 -000	ALEX FORKS DR	21	4	4	--

Exhibit Calloway County Bridge / Culvert Recommendations

Roadside Drop Off Recommendations (Calloway County)

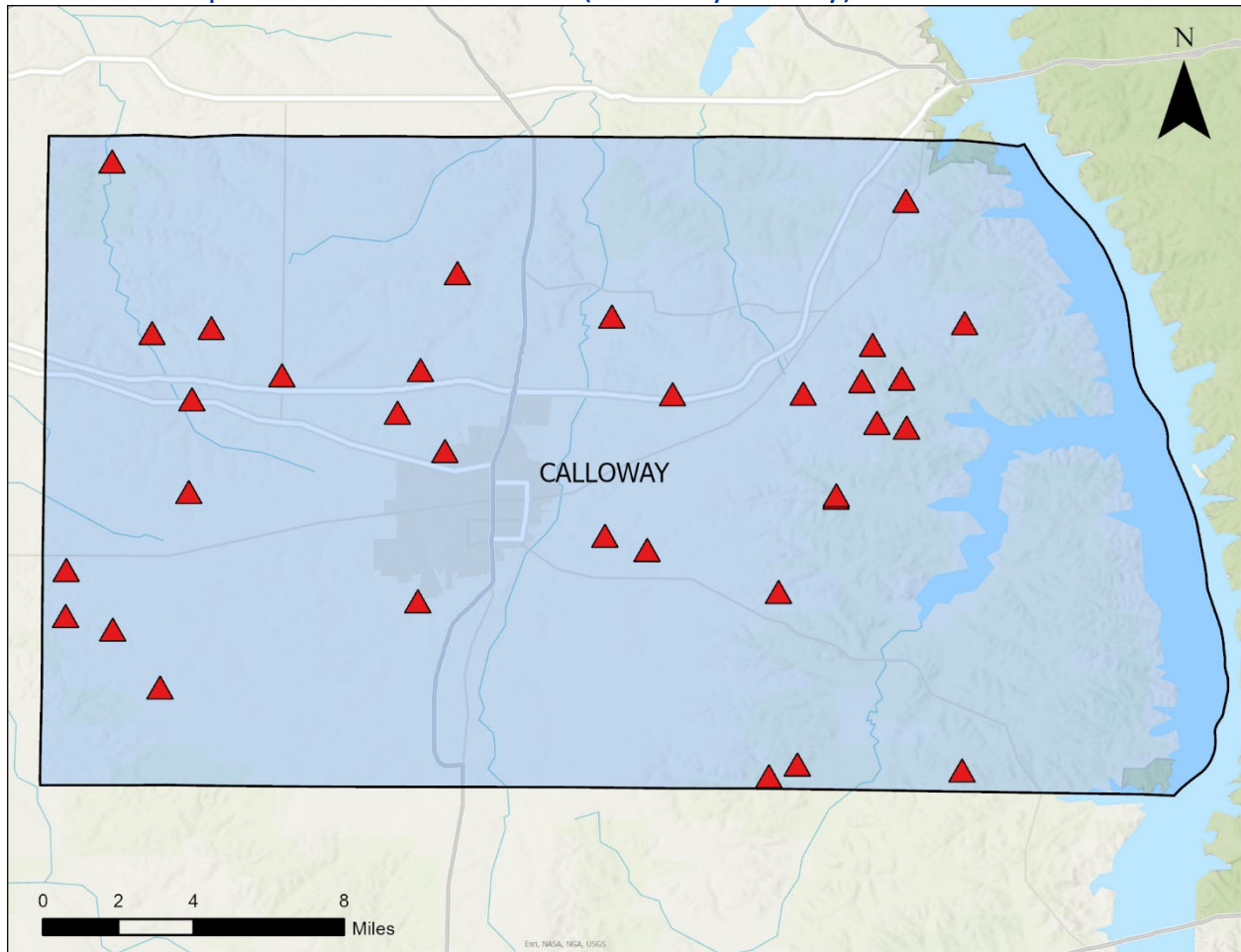


Exhibit Calloway County Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
1551	018-CR-1130 -000	SCOTT FITTS RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1516	018-CR-1217 -000	LOCUST GROVE RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2409	018-CR-1478 -000	POTTS RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2410	018-CR-1478 -000	POTTS RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2402	018-CR-1480 -000	COOK STORE TRL	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2403	018-CR-1480 -000	COOK STORE TRL	0-1	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2401	018-CR-1480 -000	COOK STORE TRL	0-1	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Markers or Delineators
2338	018-CR-1508 -000	GRAHAM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2428	018-CR-1508 -000	GRAHAM RD	>5	5-10	--
2424	018-CR-1508 -000	GRAHAM RD	0-1	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2590	018-CR-1047 -000	HIGHLAND RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1523	018-CR-1224 -000	OLD SALEM RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1522	018-CR-1224 -000	OLD SALEM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1525	018-CR-1224 -000	OLD SALEM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1526	018-CR-1224 -000	OLD SALEM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1528	018-CR-1224 -000	OLD SALEM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2595	018-CR-1055 -000	PALESTINE CHURCH RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2599	018-CR-1055 -000	PALESTINE CHURCH RD	0-1	5-10	Install Type 3 object markers
2464	018-CR-1331 -000	RAYBURN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2365	018-CR-1414 -000	WALSTON RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2369	018-CR-1414 -000	WALSTON RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2366	018-CR-1414 -000	WALSTON RD	0-1	5-10	Install Type 3 object markers
2368	018-CR-1414 -000	WALSTON RD	0-1	5-10	Install Type 3 object markers
2576	018-CR-1021 -000	FAXON RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2572	018-CR-1021 -000	FAXON RD	3-5	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2583	018-CR-1021 -000	FAXON RD	0-1	5-10	Install Type 3 object markers
2384	018-CR-1470 -000	OLD SOLDIERS CREEK RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2385	018-CR-1470 -000	OLD SOLDIERS CREEK RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2389	018-CR-1470 -000	OLD SOLDIERS CREEK RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2387	018-CR-1470 -000	OLD SOLDIERS CREEK RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2386	018-CR-1470 -000	OLD SOLDIERS CREEK RD	>5	>10	--
2451	018-CR-1339 -000	HOWARD RD	0-1	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2345	018-CR-1409 -000	HALE RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2351	018-CR-1409 -000	HALE RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2436	018-CR-1356 -000	THURMOND RD	0-1	5-10	Install Type 3 object markers
2443	018-CR-1354 -000	OLD LYNN GROVE RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2353	018-CR-1410 -000	SHORT RD	3-5	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2375	018-CR-1087 -000	TODD RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2296	018-CR-1087 -000	TODD RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1543	018-CR-1012 -000	ROCKWOOD RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)

Exhibit Calloway County Roadside Drop Off Recommendations

Fixed Object Recommendations (Calloway County)

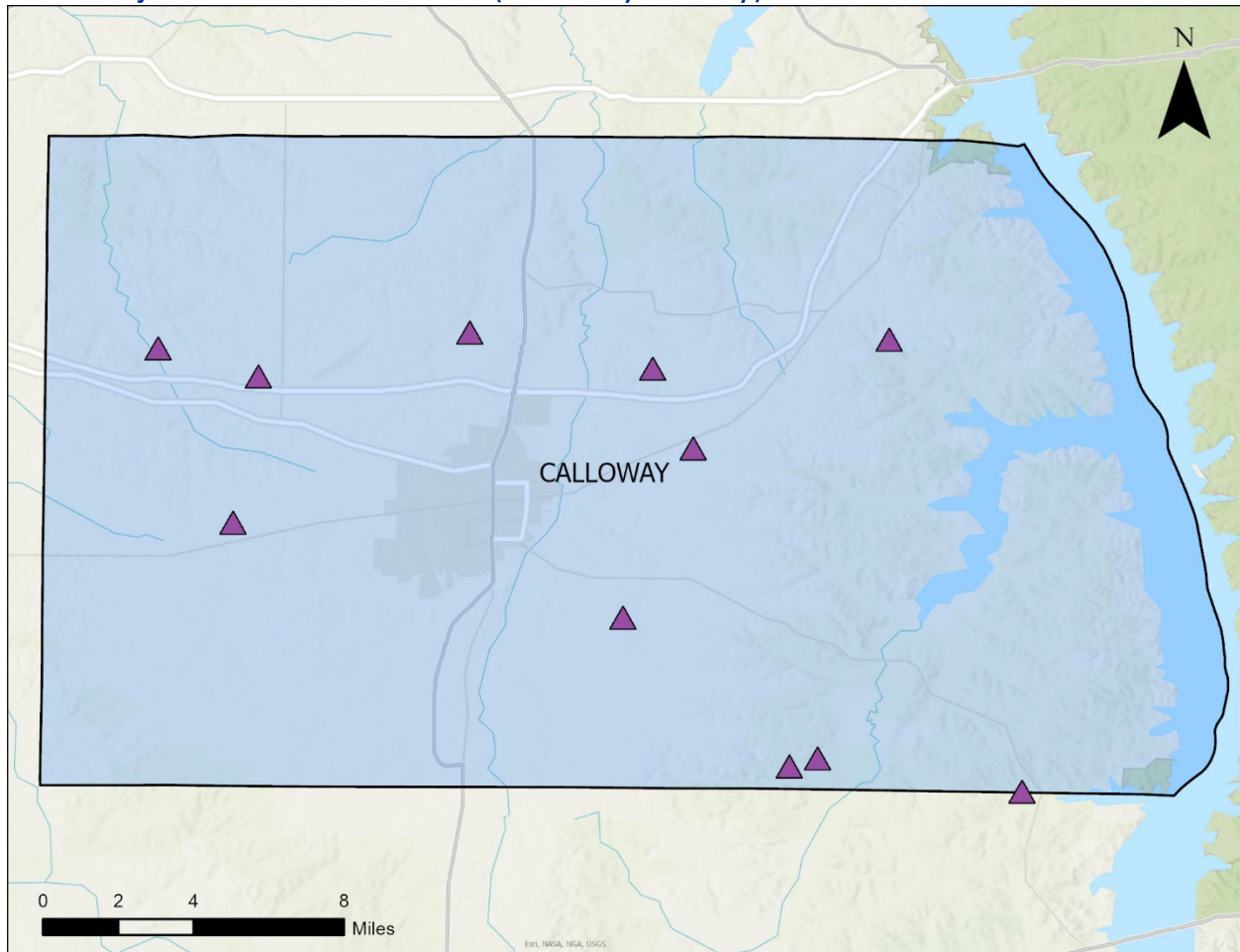


Exhibit Calloway County Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation
2400	018-CR-1480 -000	COOK STORE TRL	Tree	Single	1-3	Remove
829	018-CR-1123 -000	OUTLAND SCHOOL RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
2516	018-CR-1199 -000	STATE LINE RD E	Tree	Series	1-3	Remove trees within 3 ft of roadway
2519	018-CR-1199 -000	STATE LINE RD E	Tree	Series	0-1	Remove trees within 3 ft of roadway
2493	018-CR-1219 -000	NEALE TRL	Mailbox	Single	0-1	Relocate mailbox further from road
2367	018-CR-1414 -000	WALSTON RD	Tree	Series	0-1	Remove trees within 3 ft of roadway
2574	018-CR-1021 -000	FAXON RD	Mailbox	Single	0-1	Relocate mailbox further from road
2304	018-CR-1122F -000	POST OAK DR	Mailbox	Series	1-3	--
2439	018-CR-1356 -000	THURMOND RD	Brick Mailbox	Single	0-1	Evaluate potential to remove; See Policy Recommendations
2525	018-CR-1181 -000	BILLIE BRANCH RD	Tree	Single	0-1	Remove
2332	018-CR-1005 -000	ELM GROVE RD	Mailbox	Single	0-1	Relocate mailbox further from road
2418	018-CR-1484 -000	ALEX FORKS DR	Tree	Series	1-3	Remove trees within 3 ft of roadway

Exhibit Calloway County Fixed Object Recommendations

Guardrail Recommendations (Calloway County)

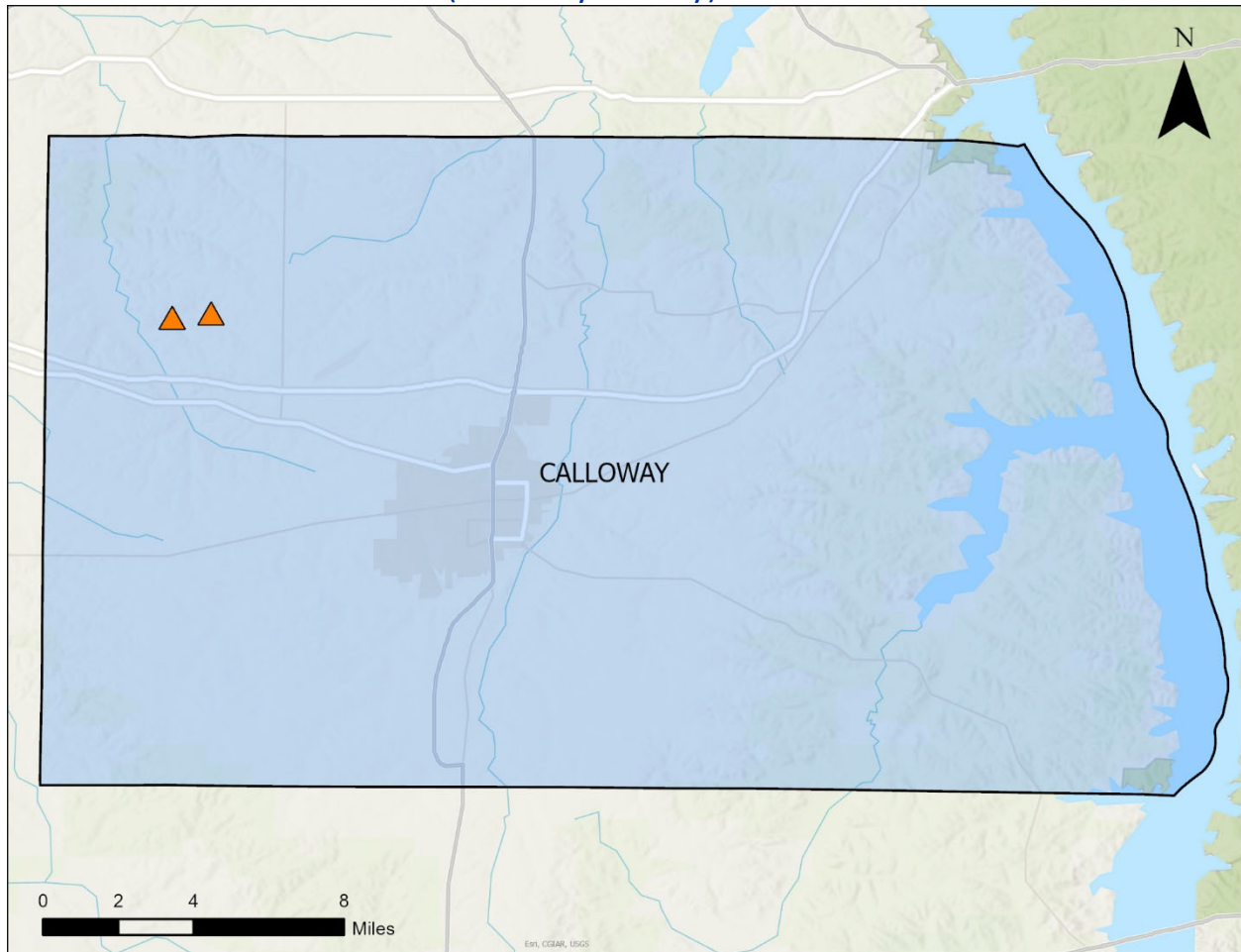


Exhibit Calloway County Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Guard Condition	Meet Warrants	End Treatments	Recommendation
2411	018-CR-1478 -000	POTTS RD	Fair	Maybe	Some	Evaluate warrants and cost to upgrade/install end treatments and/or Type 3 Object Markers
2427	018-CR-1508 -000	GRAHAM RD	Fair	Maybe	Some	Evaluate warrants and cost to upgrade/install end treatments and/or Type 3 Object Markers

Exhibit Calloway County Guardrail Recommendations

Intersection Recommendations (Calloway County)

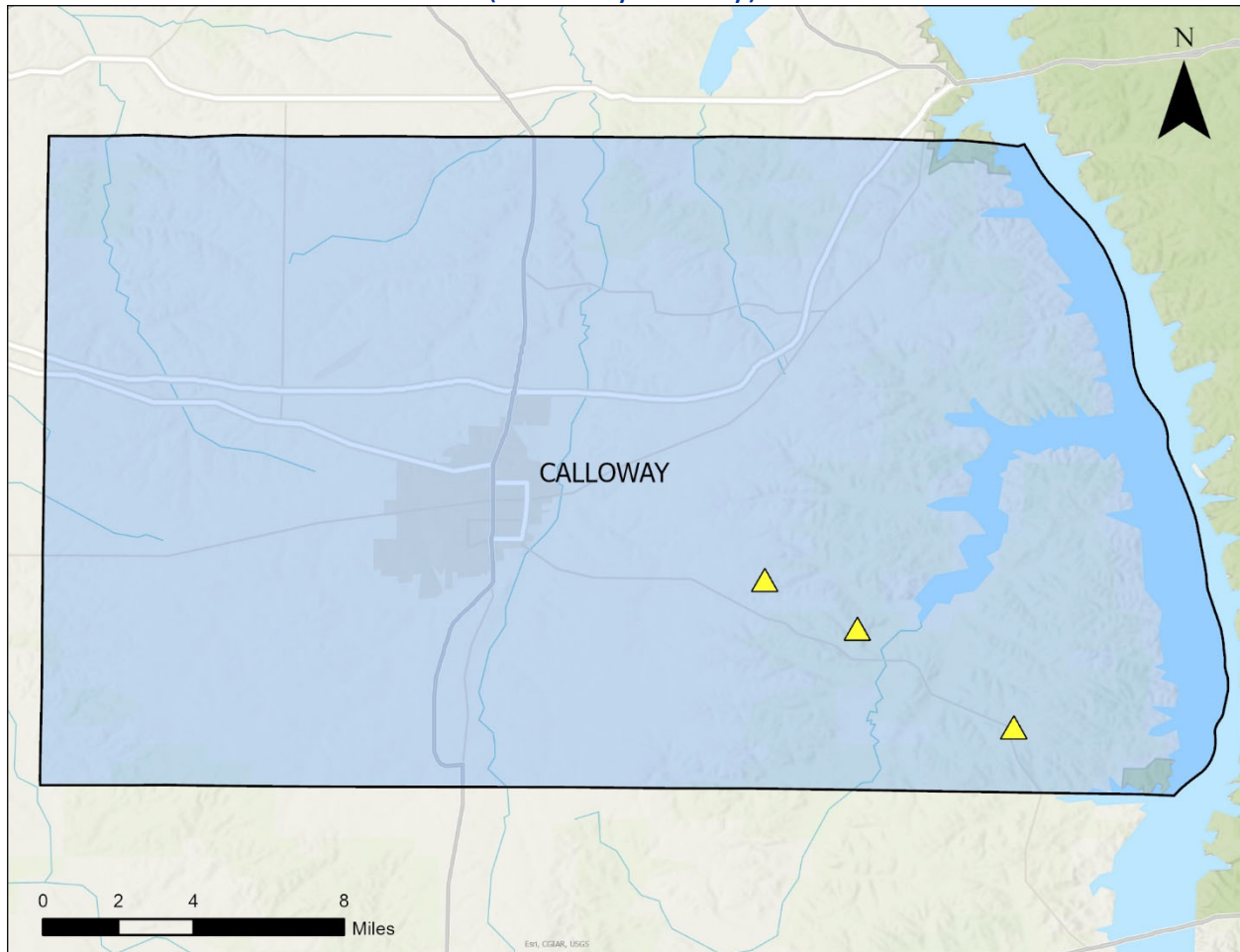


Exhibit Calloway County Intersection Locations

Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation	Comments
1047	018-CR-1480 -000	COOK STORE TRL	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at
2541	018-CR-1135 -000	CHERRY CORNER RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Apprao,Intersection Skew,Insufficient Sight Distance at
2533	018-CR-1135 -000	CHERRY CORNER RD	Yes	Clear Vegetation; Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X);	Intersection Obscured on Apprao,Insufficient Sight Distance at
2530	018-CR-1177 -000	CYPRESS TRL	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Skew
828	018-CR-1123 -000	OUTLAND SCHOOL RD	Yes	Clear Vegetation; Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Skew,Insufficient Sight Distance at

Exhibit Calloway County Intersection Recommendations

Other Recommendations (Calloway County)

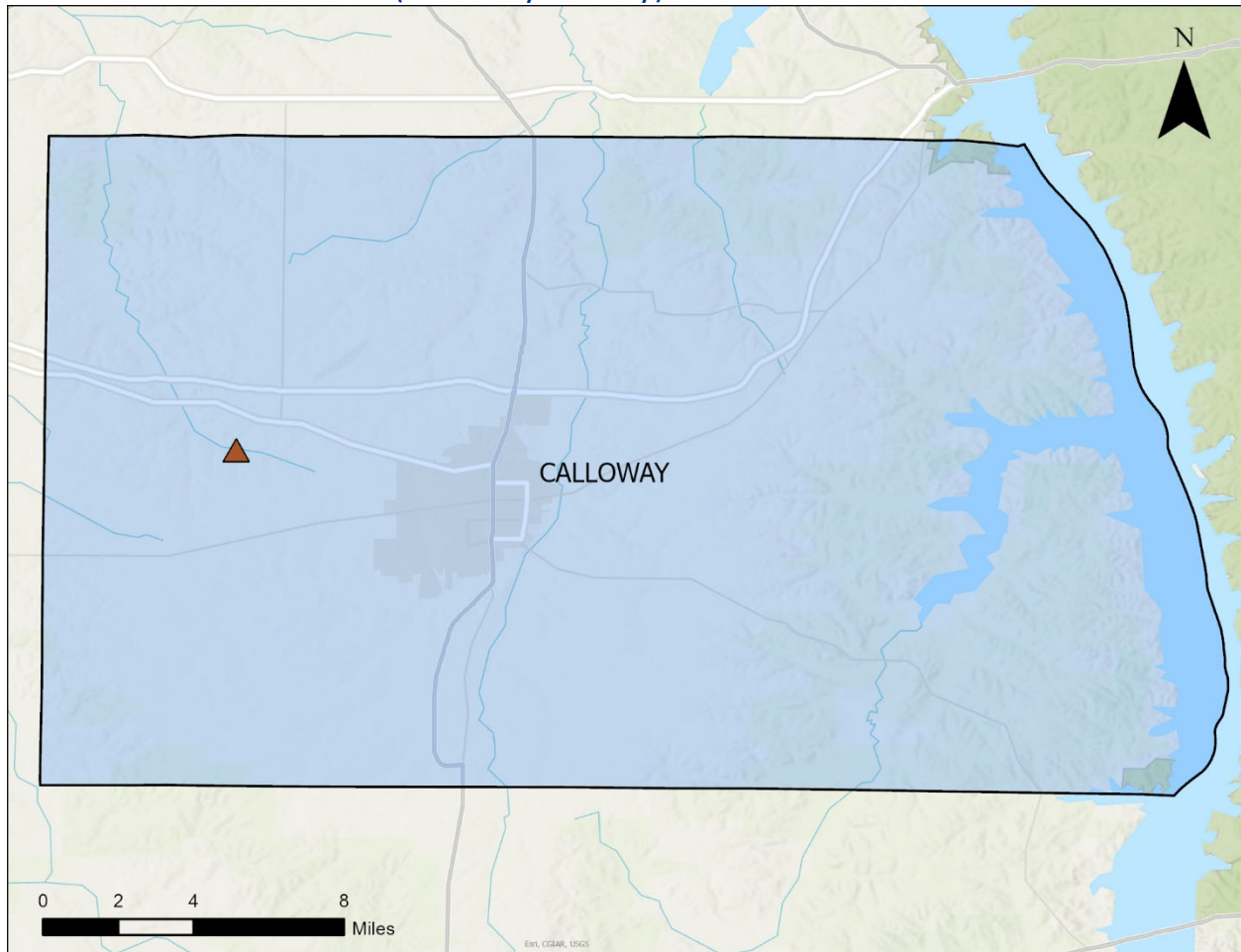


Exhibit Calloway County Other Item Locations

Point ID	RT_UNIQUE	Road Name	Comments	Recommendation
2435	018-CR-1356 -000	THURMOND RD	Washed out bridge	Review Roadway

Exhibit Calloway County Other Item Recommendations

Signing Recommendations (Calloway County)

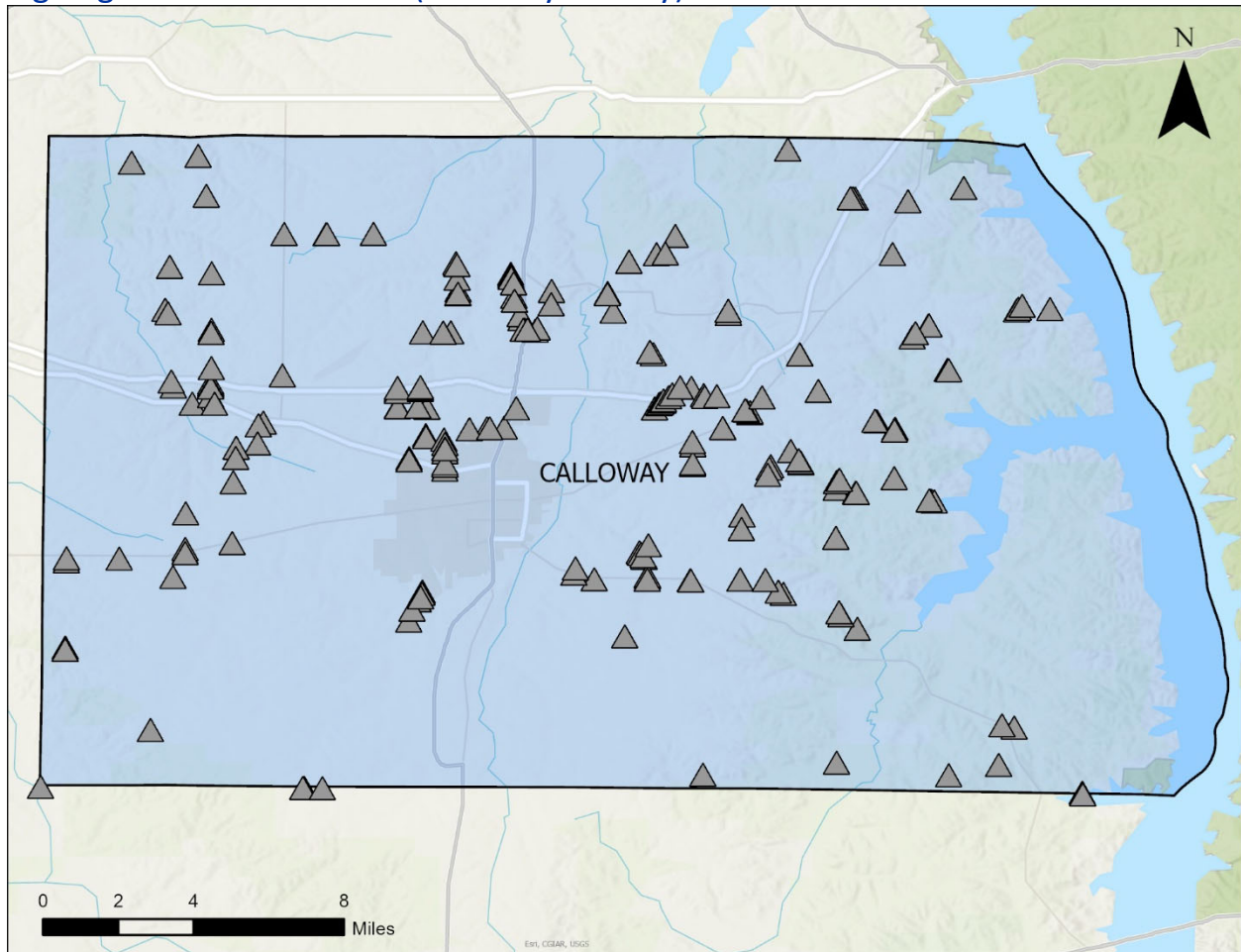


Exhibit Calloway County Sign Locations

As part of the RSA data collection effort, existing signs were inventoried along reviewed Focus Roadways, including a condition assessment and a photo of each sign. Additionally, preliminary Advisory Speed recommendations were calculated for each focus roadway to assist in the installation of horizontal alignment (curve) signs. Signing and advisory speed information is provided in digital format at <https://kyt2.uky.edu/purchase-area-development-district>.

APPENDIX F: CARLISLE COUNTY

Carlisle County Overview

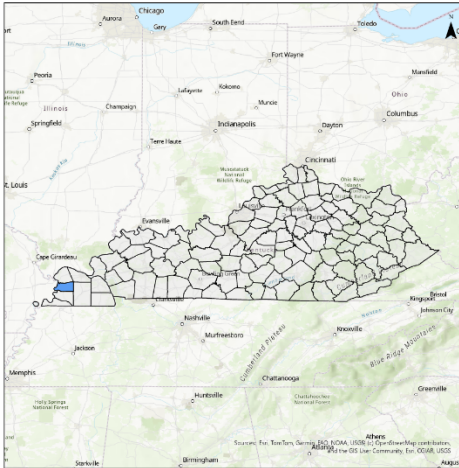


Exhibit Carlisle-1: Location Map

Key Information Table	
Carlisle County	
Population	4,704
Population in Persistent Poverty	19%
Underserved Community	No
Fatalities (All Roads)	6
Fatalities (County Roads)	1
Fatality Rate per 100,000 persons	1,276
County Road Mileage	176
State Road Mileage	150
Total Mileage	326

Exhibit Carlisle-2: Key Information

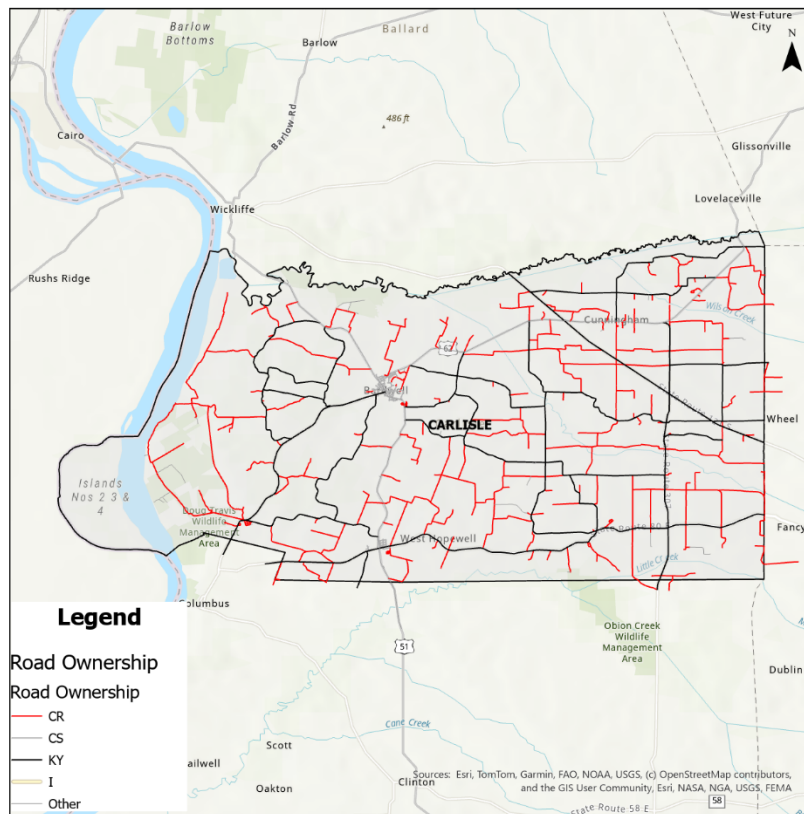


Exhibit Carlisle-3: Map of County Roadways

Crash Analysis

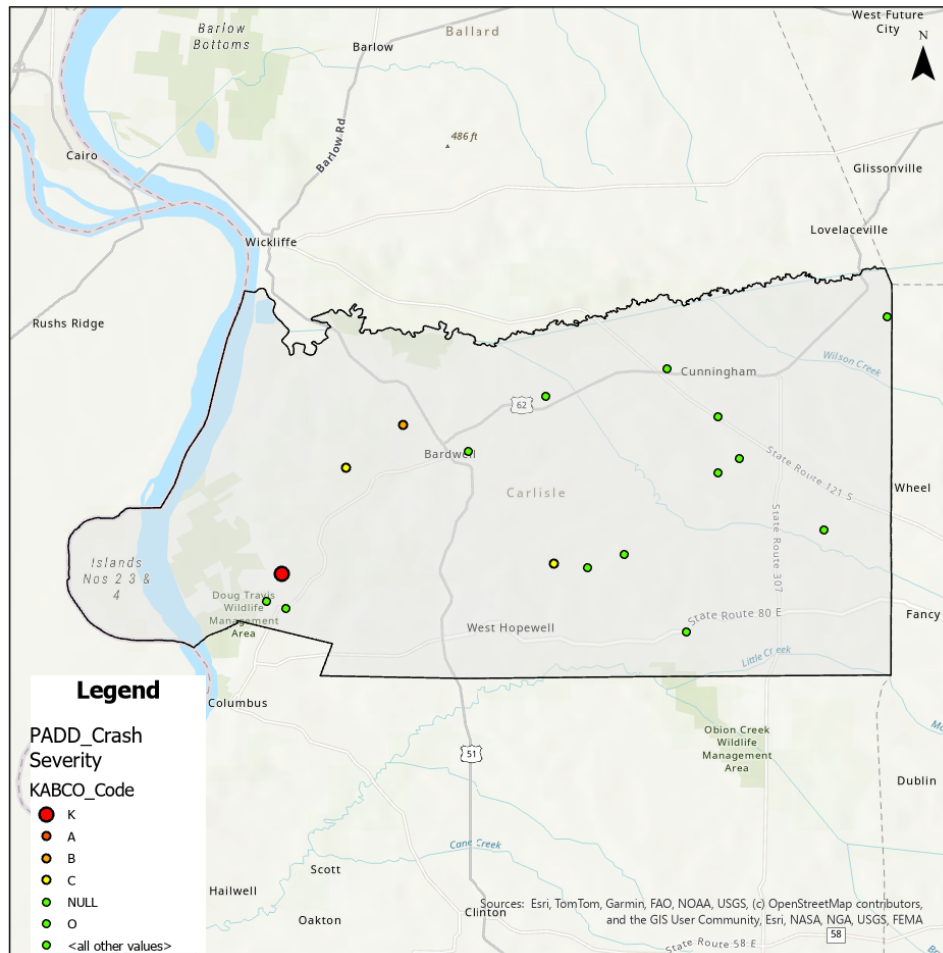


Exhibit Carlisle-4: Map of County Road Crashes



Exhibit Carlisle-5: Crash Distribution by Year

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	6	3	1	10
Head On	2	0	0	2
Backing	2	0	0	2
SS - Opp	2	0	0	2
Rear End	1	0	0	1
Angle	0	0	0	0
SS - Same	0	0	0	0
Left Turn	0	0	0	0
Rear to Rear	0	0	0	0

Exhibit Carlisle-6: Crash Frequency and Severity by Manner of Collision

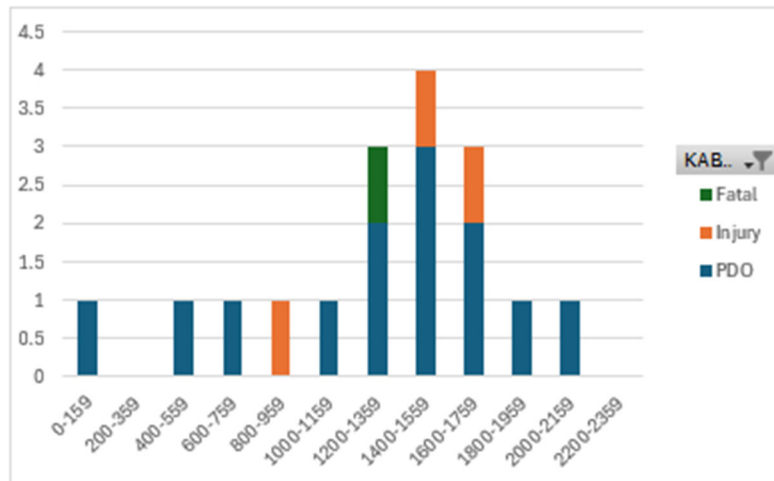


Exhibit Carlisle-7: Crashes and Severity by Time of Day

Focus Roadways

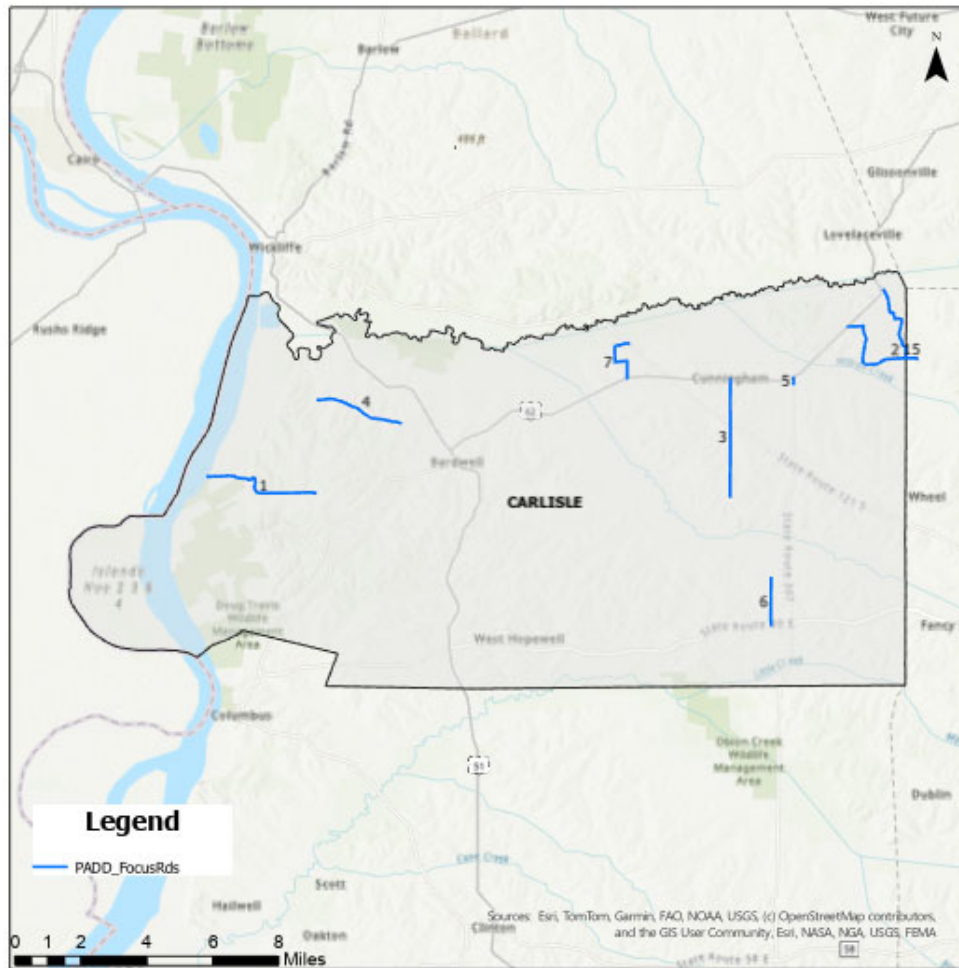


Exhibit Carlisle-8: Focus Roads

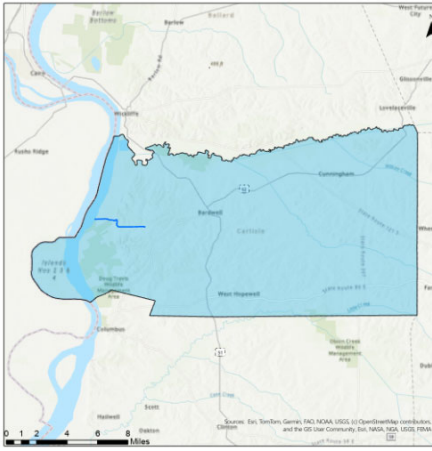
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Carlisle											
020-CR-1310 -000	3.08	Carlisle	Purchase	LAKETON RD	1	1	0	3.33	0.56	2.42	1
020-CR-1024 -000	5.02	Carlisle	Purchase	PALESTINE	1	0	1	2.33	2.07	2.25	2
020-CR-1015 -000	3.56	Carlisle	Purchase	SAINT CHARLES RD	1	0	0	2.22	1.62	2.02	3
020-CR-1314 -000	2.20	Carlisle	Purchase	IDA IRELAND RD	1	0	0	2.22	0.71	1.72	4
020-CR-1057 -000	0.20	Carlisle	Purchase	SHELBY RD	0	0	0	0.00	5.00	1.65	5
020-CR-1149 -000	1.40	Carlisle	Purchase	DOC SMITH PORTION RD	1	0	0	2.22	0.08	1.52	6
020-CR-1031 -000	1.64	Carlisle	Purchase	MAGEE SPGS RD	0	1	0	1.11	0.84	1.02	7

Exhibit Carlisle-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

LAKETON RD (020-CR-1310 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	0	0	0	0
	SS - Same	0	0	0	0
	Head On	0	0	0	0
	SS - Opp	0	0	0	0
	Backing	0	0	0	0
	Rear End	0	0	0	0
	Rear to Rear	0	0	0	0
	Angle	0	0	0	0
	Left Turn	0	0	0	0

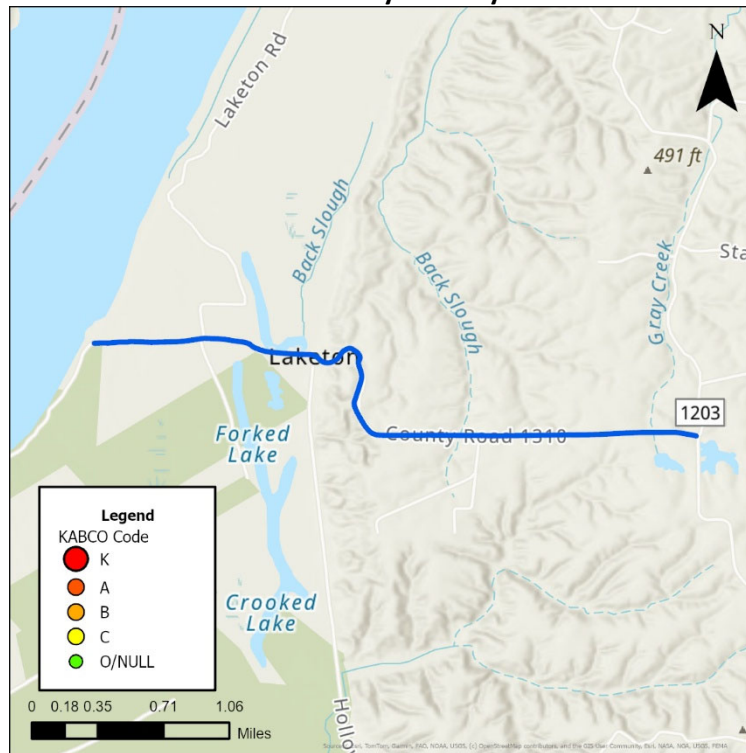
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
541	020-CR-1310 -000	LAKETON RD	17	3	3	0-20

Roadway Typical Section



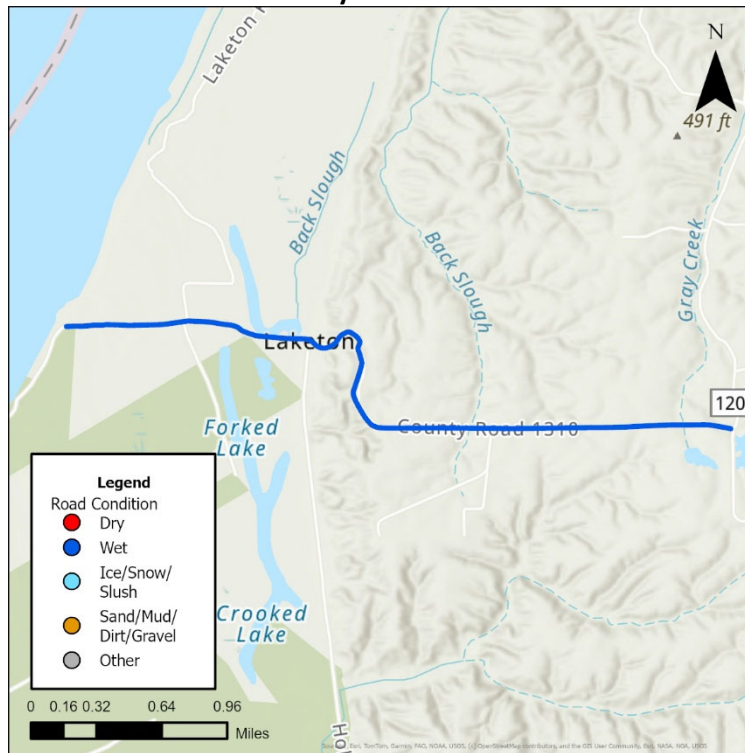
Crashes by Severity



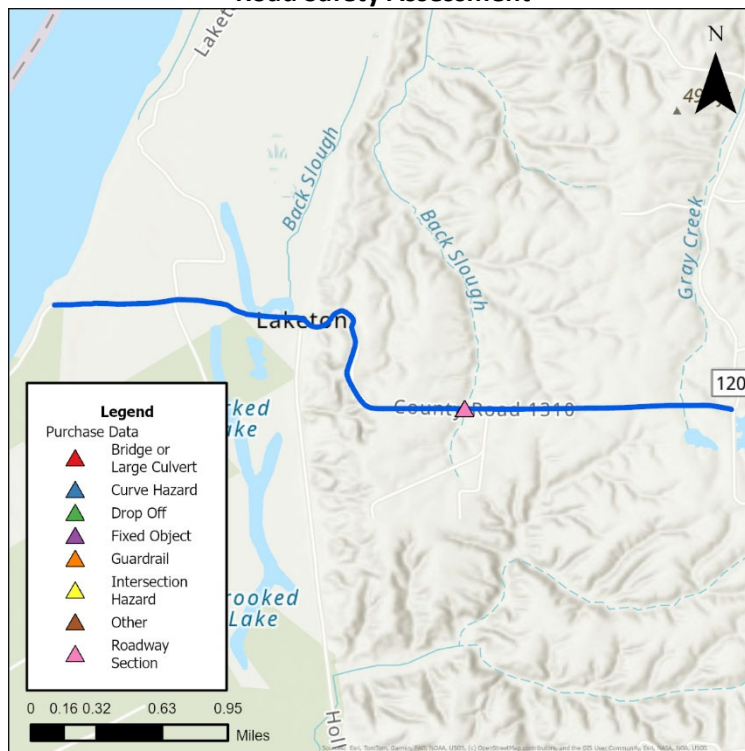
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

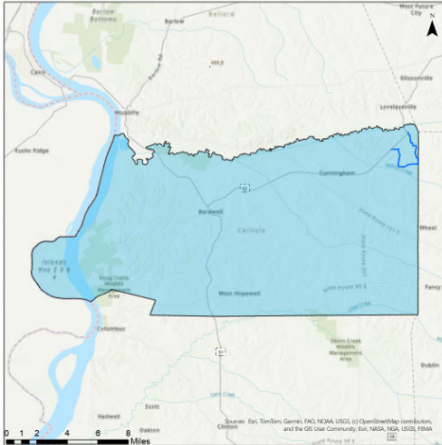


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
541	020-CR-1310 -000	LAKETON RD	17	3	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
540	020-CR-1310 -000	LAKETON RD	24	4	4	--			

PALESTINE (020-CR-1024 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Head On	1	0	0	1
	SS - Same	0	0	0	0
	Backing	0	0	0	0
	SS - Opp	0	0	0	0
	Left Turn	0	0	0	0
	Single Vehicle	0	0	0	0
	Angle	0	0	0	0
	Rear to Rear	0	0	0	0
	Rear End	0	0	0	0

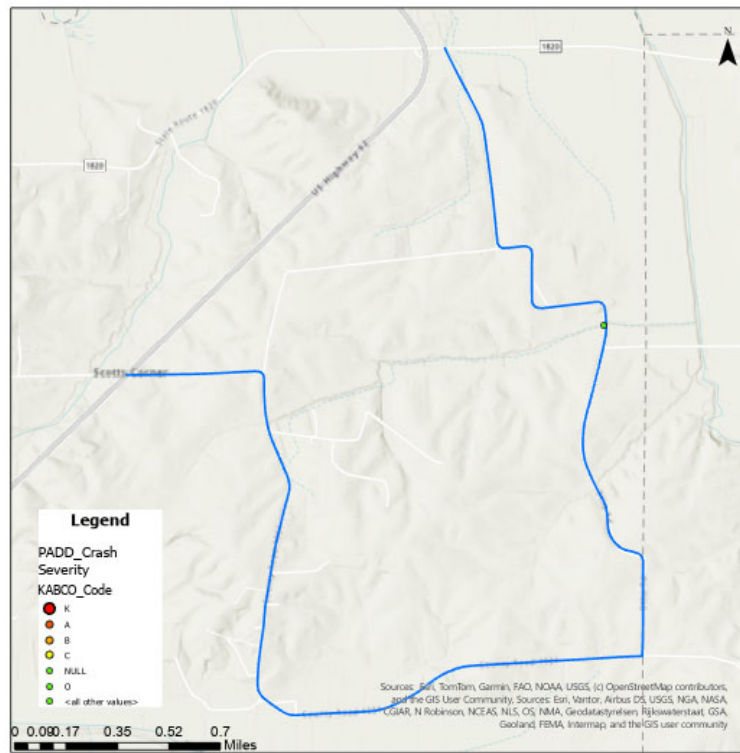
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
582	020-CR-1024 -000	PALESTINE	17	4	3	0-20
909	020-CR-1024 -000	PALESTINE	20	3	3	0-20

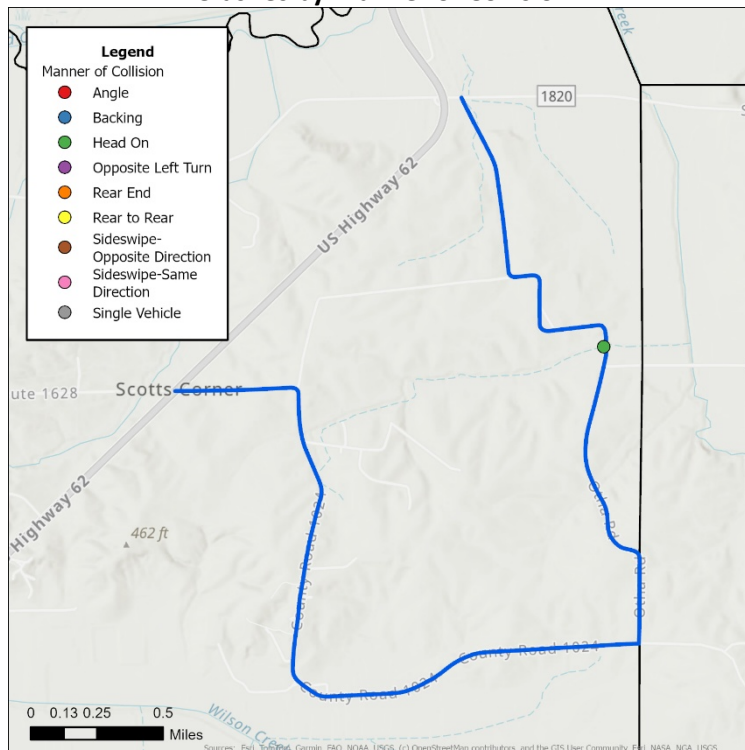
Roadway Typical Section



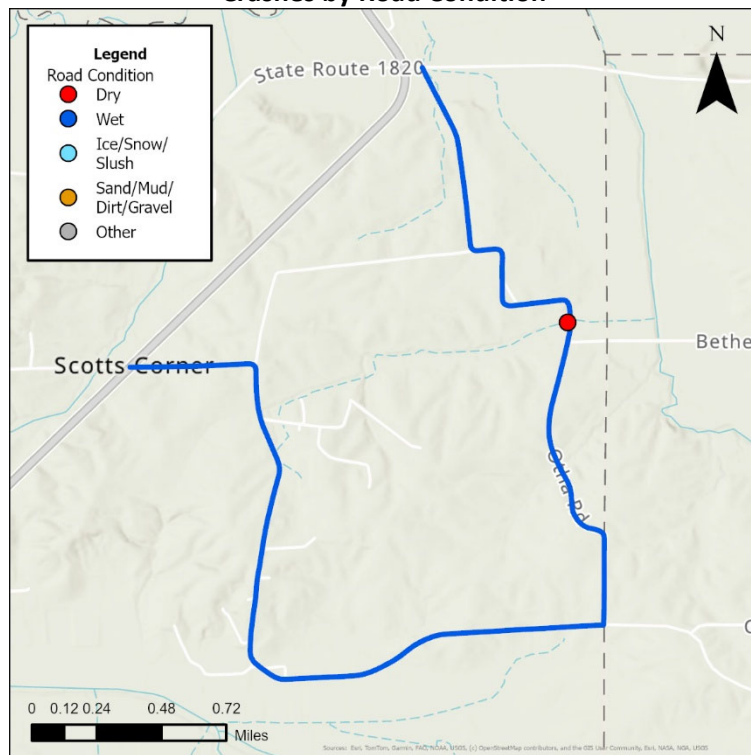
Crashes by Severity



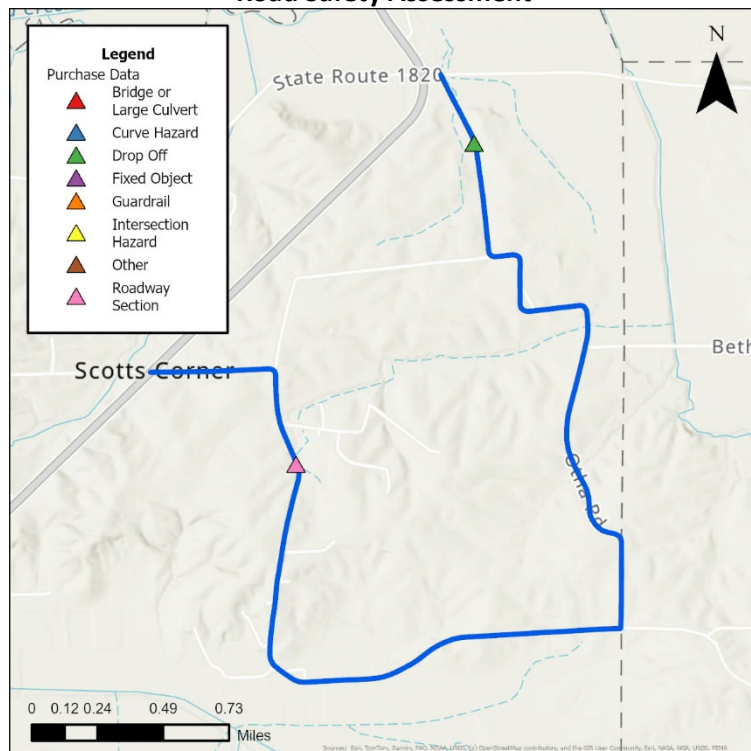
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

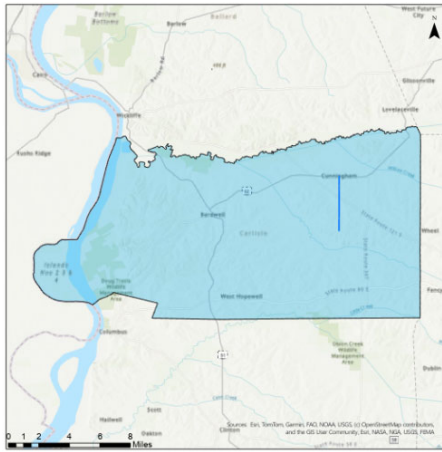


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
582	020-CR-1024 -000	PALESTINE	17	4	3	0-20		✓	✓
909	020-CR-1024 -000	PALESTINE	20	3	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
903	020-CR-1024 -000	PALESTINE	30	4	0	Install Type 3 Object Markers			
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
589	020-CR-1024 -000	PALESTINE	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)				
Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation			
910	020-CR-1024 -000	PALESTINE	Brick Mailbox	Single	1-3	Install Type 2 or 3 Object Marker(s); See policy Recommendations			

SAINT CHARLES RD (020-CR-1015 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
SS - Opp	1	0	0	1
Single Vehicle	1	0	0	1
Left Turn	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

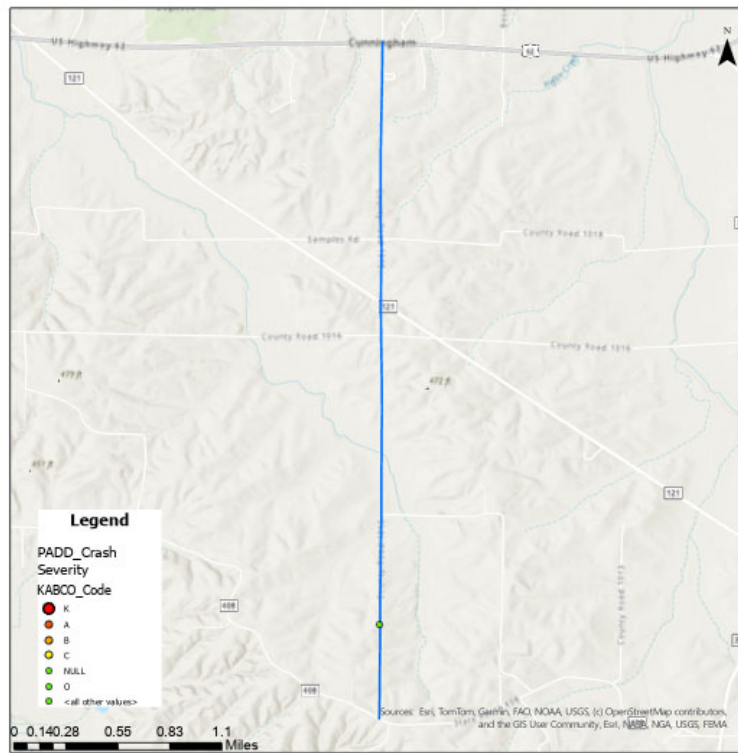
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
555	020-CR-1015 -000	SAINT CHARLES RD	18	4	3	0-20

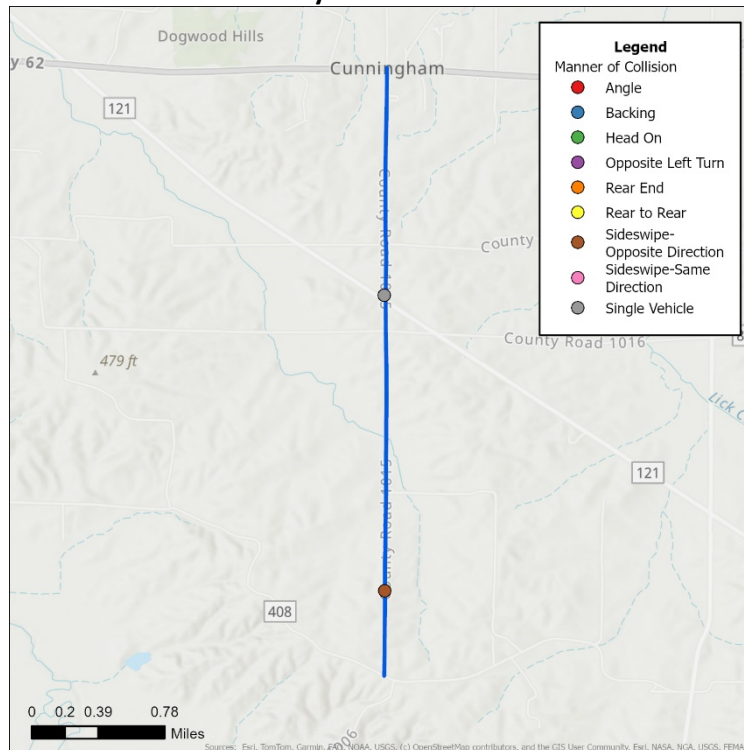
Roadway Typical Section



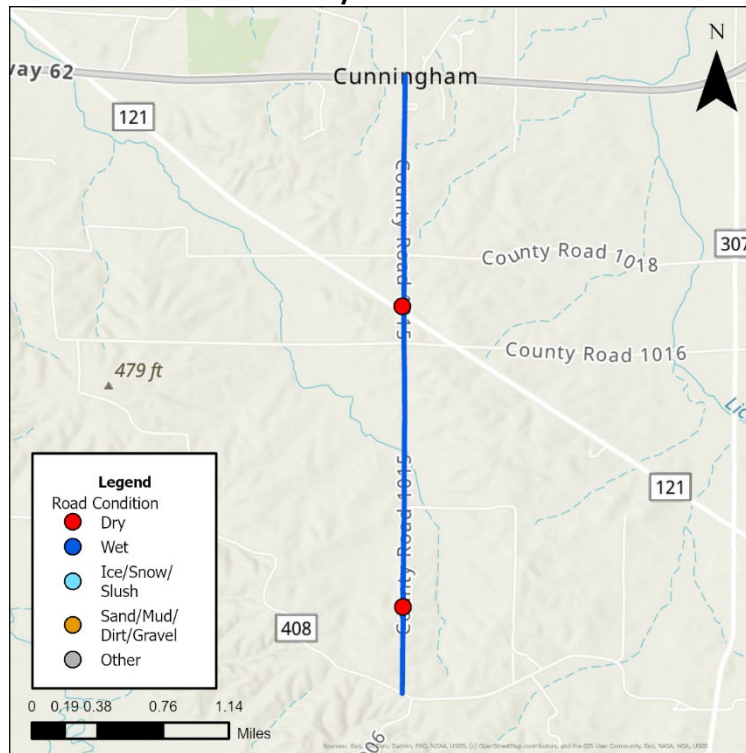
Crashes by Severity



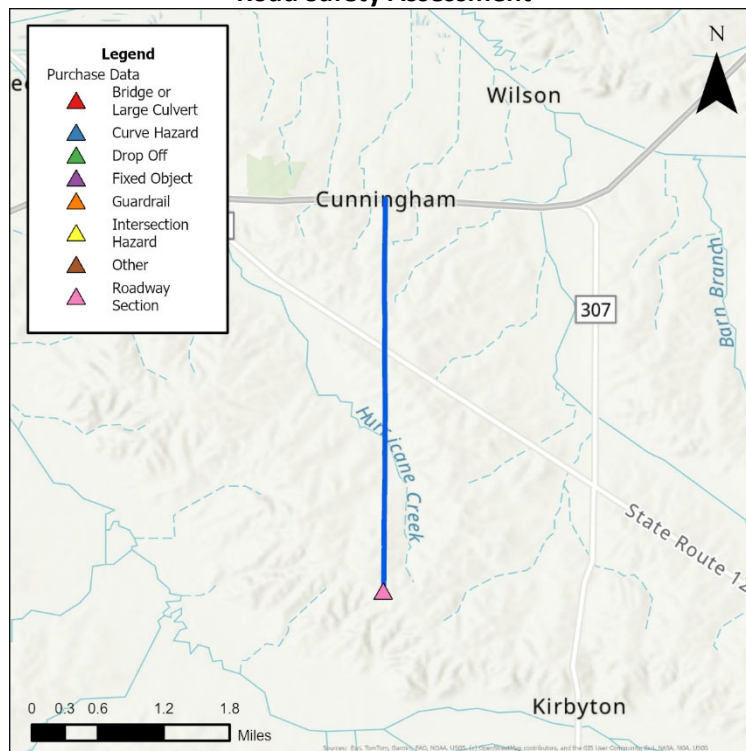
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

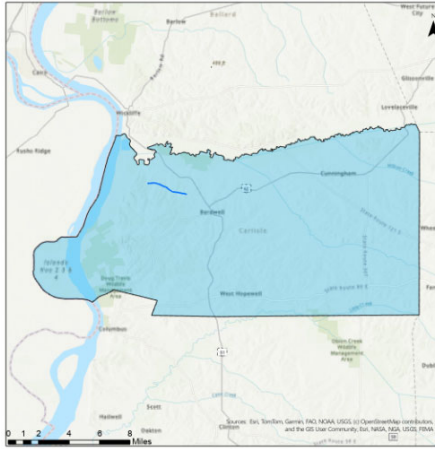


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgetline1	Curve Signing
555	020-CR-1015 -000	SAINT CHARLES RD	18	4	3	0-20		✓	✓

IDA IRELAND RD (020-CR-1314 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Rear End	0	0	0	0
Rear to Rear	0	0	0	0
Angle	0	0	0	0
Left Turn	0	0	0	0

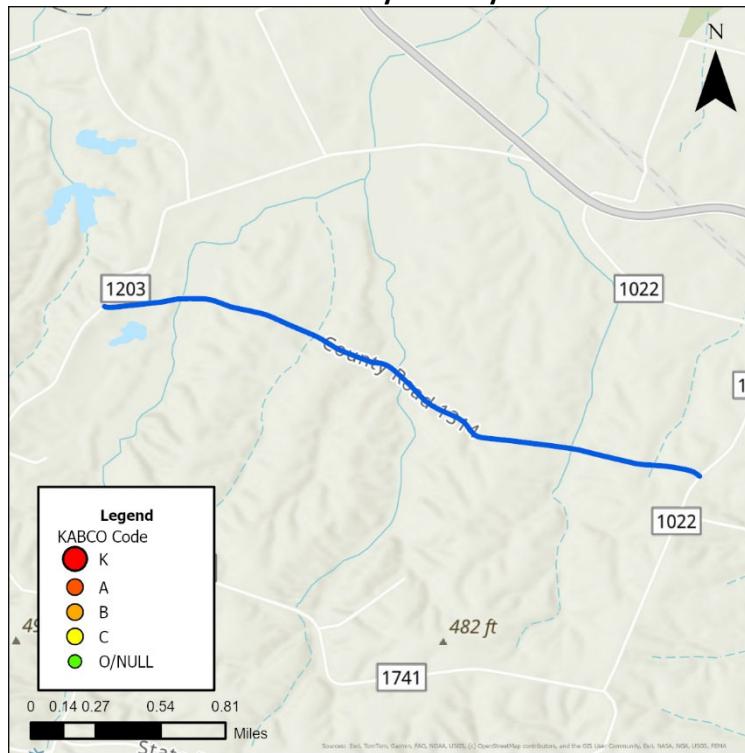
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
547	020-CR-1314 -000	IDA IRELAND RD	16	4	3	0-20

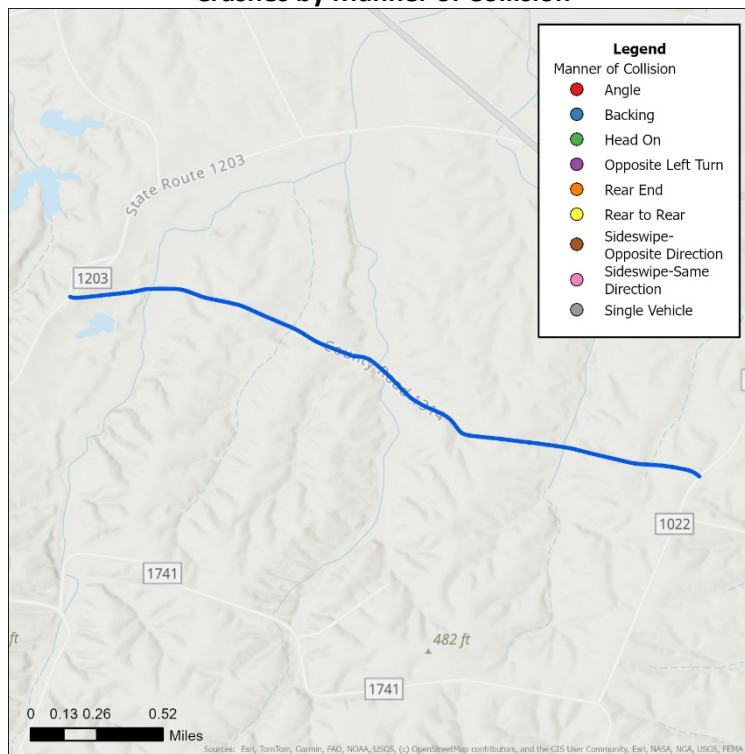
Roadway Typical Section



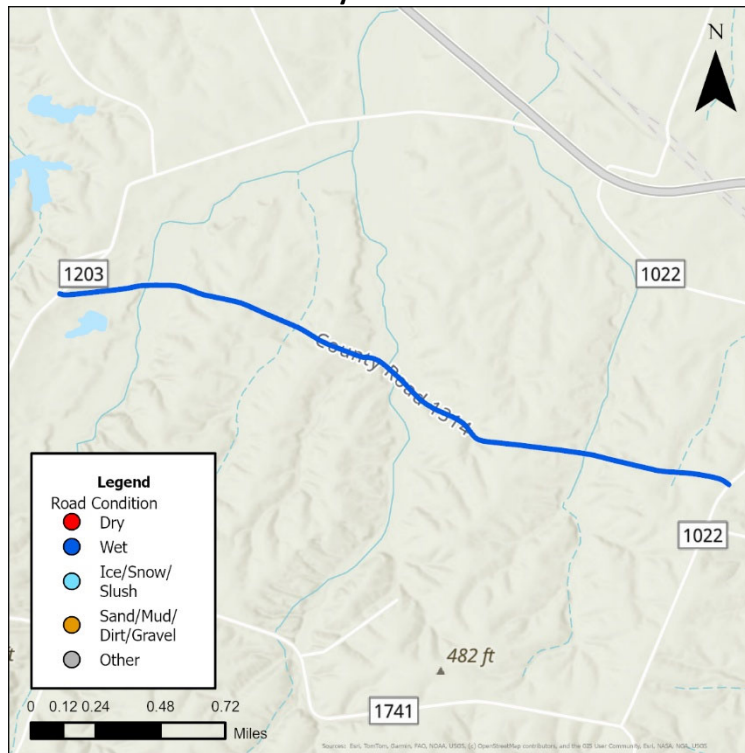
Crashes by Severity



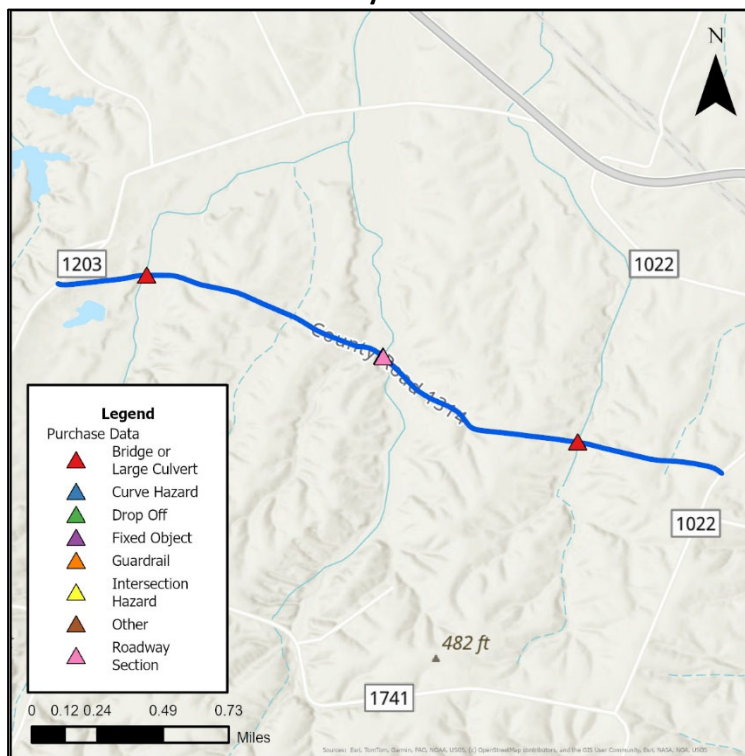
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

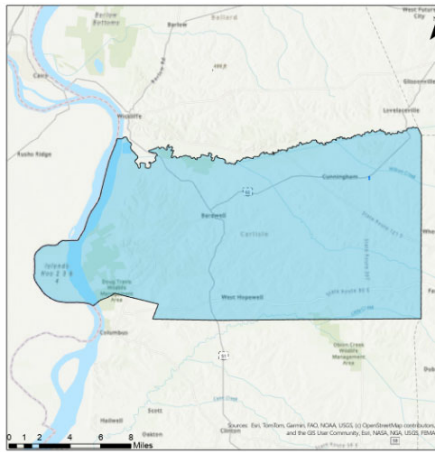


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
547	020-CR-1314 -000	IDA IRELAND RD	16	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
545	020-CR-1314 -000	IDA IRELAND RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;			
546	020-CR-1314 -000	IDA IRELAND RD	21	4	0	Install Type 3 Object Markers			
548	020-CR-1314 -000	IDA IRELAND RD	22	4	0	Install Type 3 Object Markers			

SHELBY RD (020-CR-1057 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Rear End	0	0	0	0
Rear to Rear	0	0	0	0
Angle	0	0	0	0
Left Turn	0	0	0	0

General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
547	020-CR-1314 -000	IDA IRELAND RD	16	4	3	0-20

Roadway Typical Section



Crashes by Severity



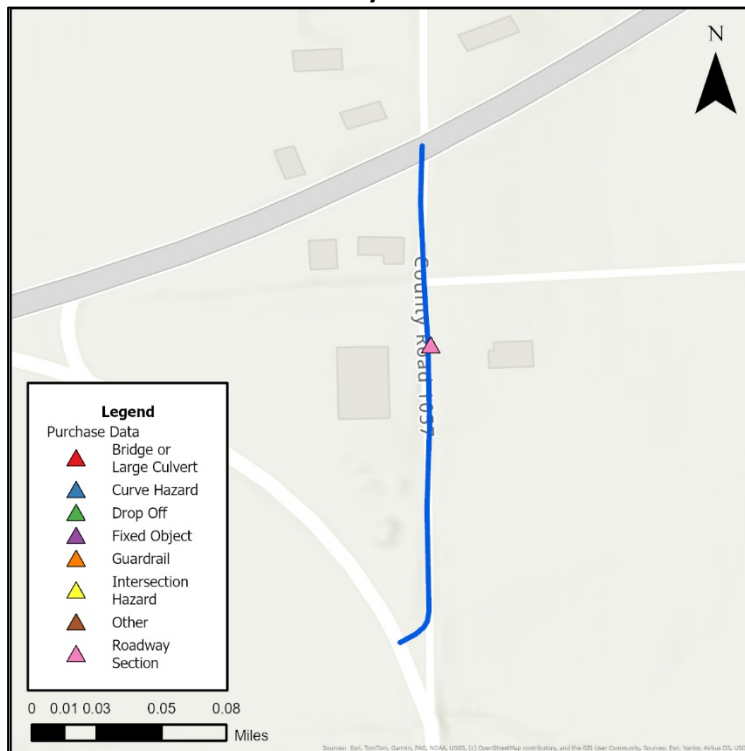
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
575	020-CR-1057 -000	SHELBY RD	16	4	1	0-20		✓	✓

Other Roadways

General Roadway Conditions and Recommendations (Carlisle County)

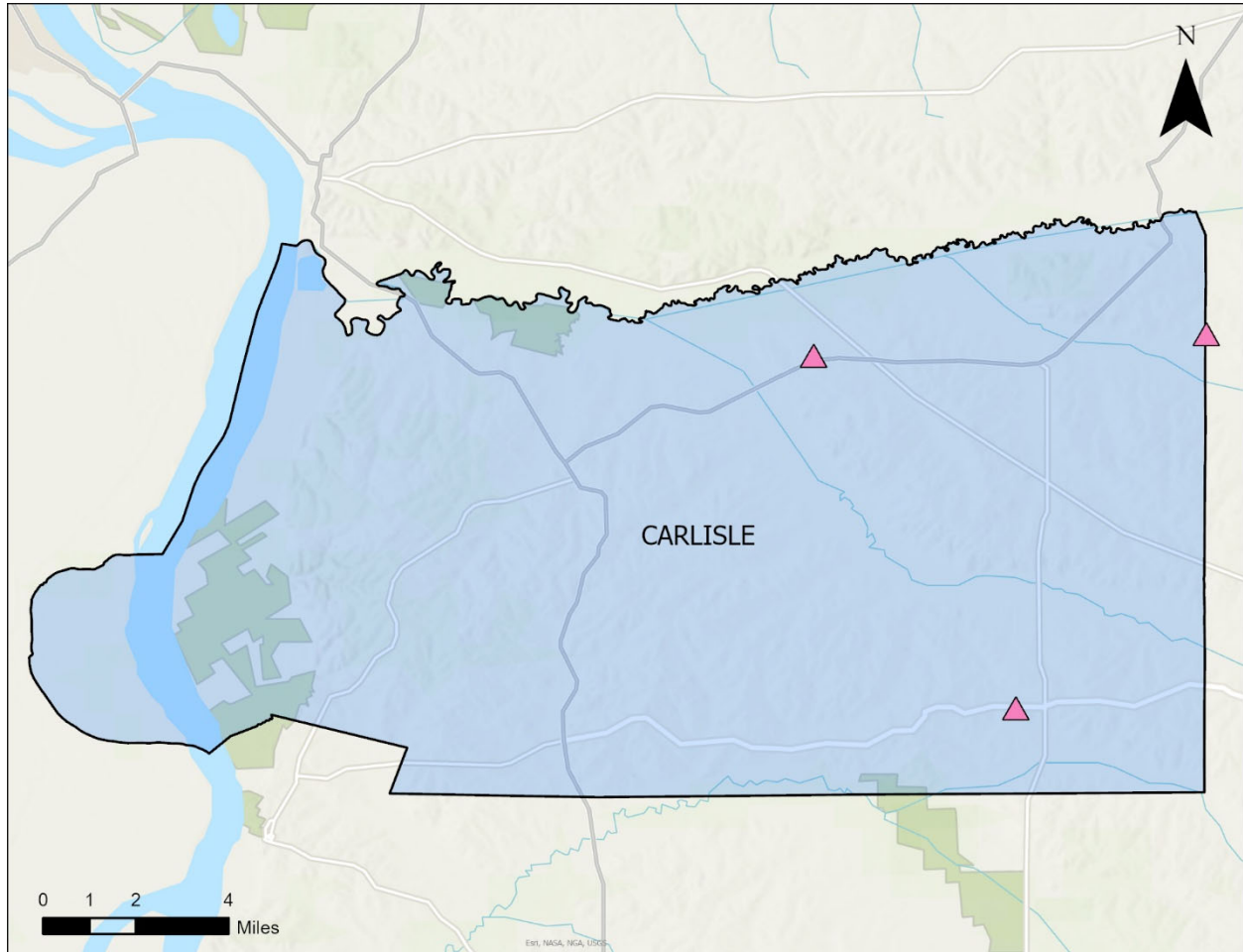


Exhibit Carlisle County General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
552	020-CR-1149 -000	DOC SMITH PORTION RD	16	3	3	0-20		✓	✓
575	020-CR-1057 -000	SHELBY RD	16	4	1	0-20		✓	✓
596	020-CR-1031 -000	MAGEE SPGS RD	17	4	3	0-20		✓	✓

Exhibit Carlisle County General Roadway Recommendations

Bridge / Culvert Recommendations (Carlisle County)

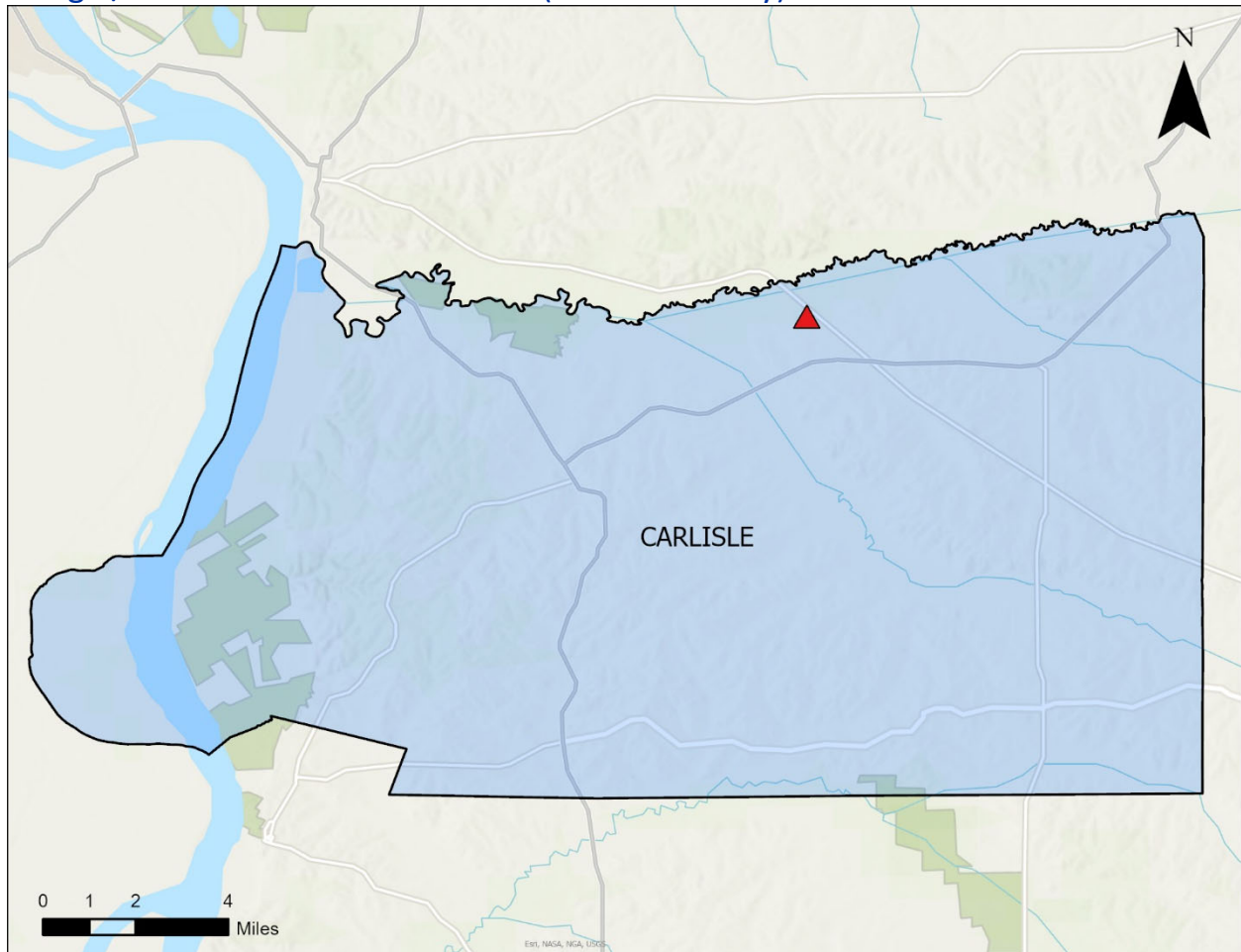


Exhibit Carlisle County Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
598	020-CR-1031 -000	MAGEE SPGS RD	22	4	0	Install Type 3 Object Markers

Exhibit Carlisle County Bridge / Culvert Recommendations

Signing Recommendations (Carlisle County)

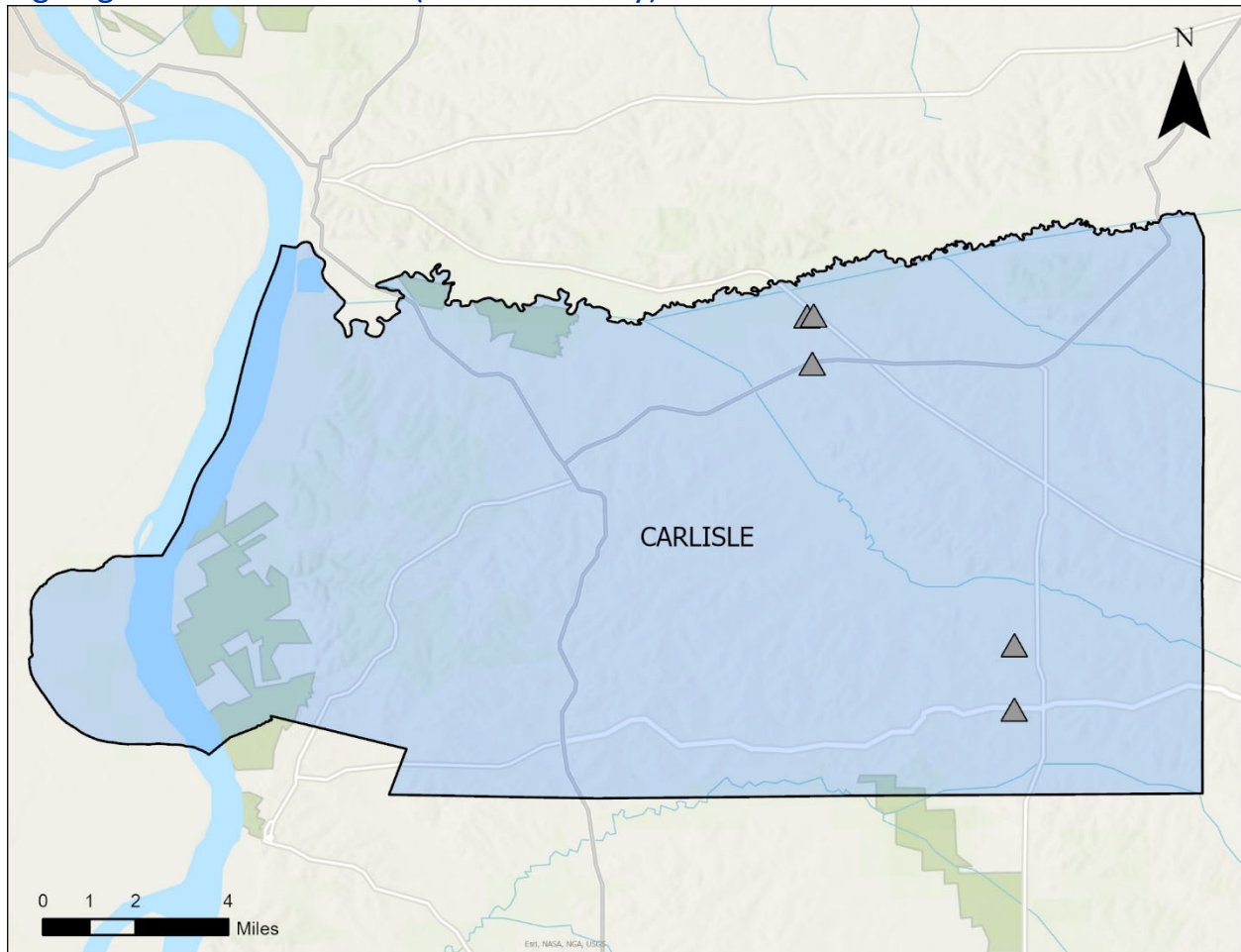


Exhibit Carlisle County Sign Locations

As part of the RSA data collection effort, existing signs were inventoried along reviewed Focus Roadways, including a condition assessment and a photo of each sign. Additionally, preliminary Advisory Speed recommendations were calculated for each focus roadway to assist in the installation of horizontal alignment (curve) signs. Signing and advisory speed information is provided in digital format at <https://kyt2.uky.edu/purchase-area-development-district>.

APPENDIX G: FULTON COUNTY

Fulton County Overview

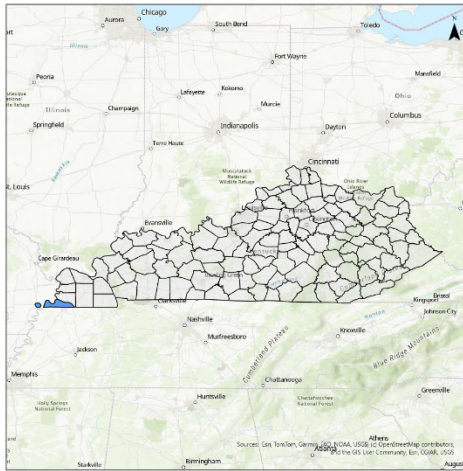


Exhibit Fulton-1: Location Map

Key Information Table	
Fulton County	
Population	6,338
Population in Persistent Poverty	29%
Underserved Community	Yes
Fatalities (All Roads)	7
Fatalities (County Roads)	0
Fatality Rate per 100,000 persons	1,104
County Road Mileage	120
State Road Mileage	187
Total Mileage	306

Exhibit Fulton-2: Key Information

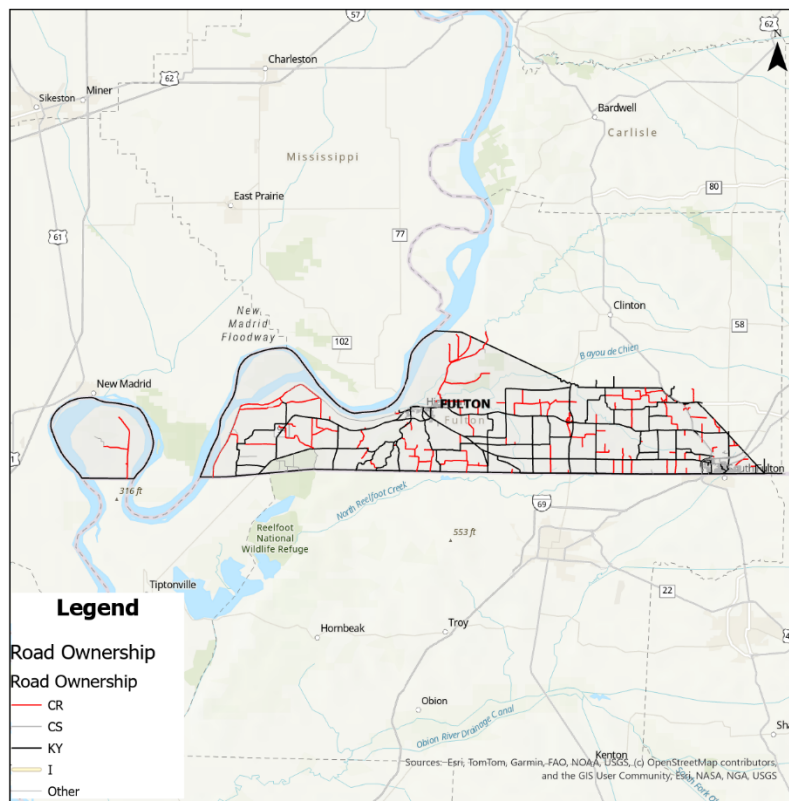


Exhibit Fulton-3: Map of County Roadways

Legend

PADD_Crash Severity

KABCO_Code

- K
- A
- B
- C
- NULL
- O
- <all other values>

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community; Esri, NASA, NGA, USGS

Year	Property Damage Only	Injury	Fatal	Total
2020	1	0	0	1
2021	0	0	0	0
2022	1	0	0	1
2023	3	0	0	3
2024	1	1	0	2

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	4	0	0	4
SS - Same	1	1	0	2
Head On	1	0	0	1
Left Turn	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

Exhibit Fulton-6: Crash Frequency and Severity by Manner of Collision

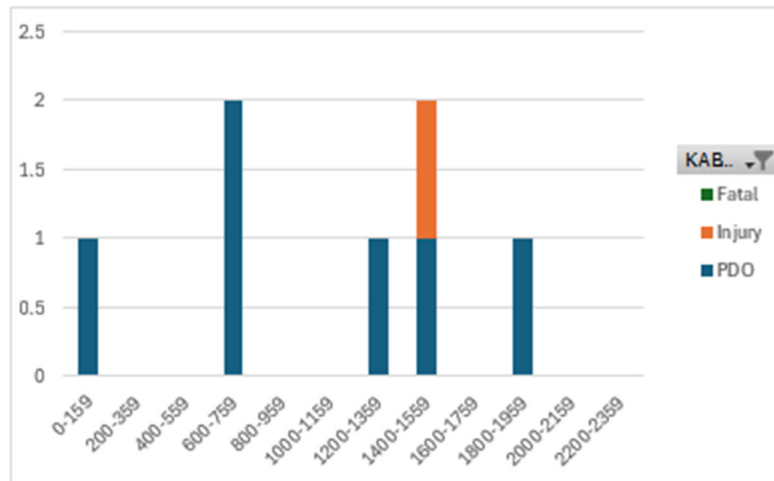


Exhibit Fulton-7: Crashes and Severity by Time of Day

Focus Roadways

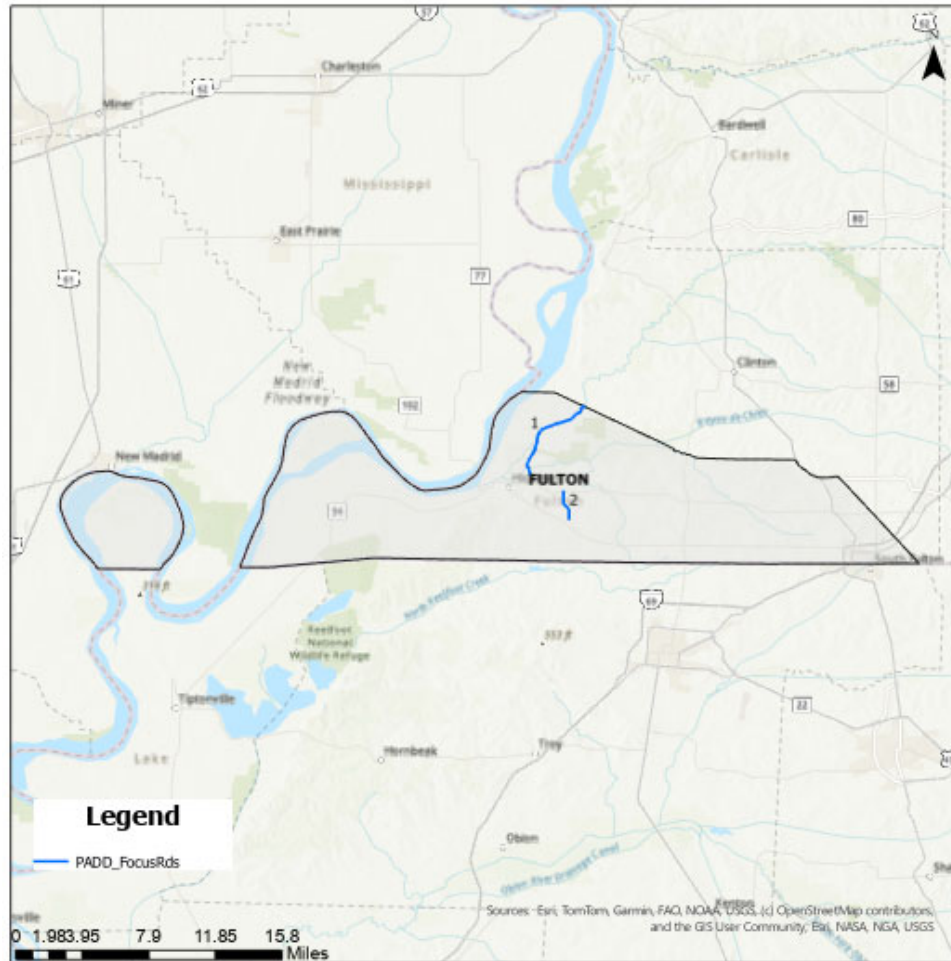


Exhibit Fulton-8: Focus Roads

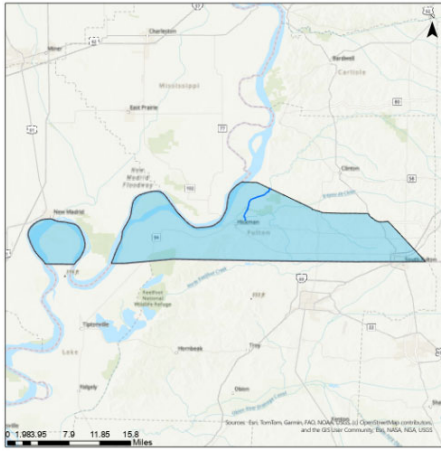
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Fulton											
038-CR-1304 -000	5.37	Fulton	Purchase	UPPER BOTTOM RD	1	0	1	2.67	2.38	2.57	1
038-CR-1200 -000	1.67	Fulton	Purchase	SAUNDERS LN	1	0	0	2.50	1.00	2.00	2

Exhibit Fulton-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

UPPER BOTTOM RD (038-CR-1304 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	1	0	0	1
SS - Same	0	0	0	0
SS - Opp	0	0	0	0
Left Turn	0	0	0	0
Head On	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

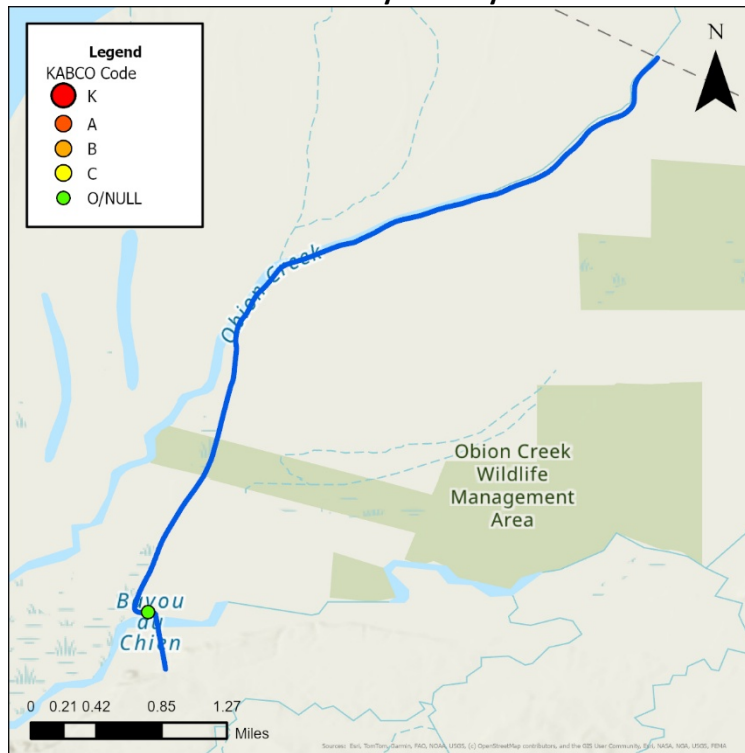
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
515	038-CR-1304 -000	UPPER BOTTOM RD	17	3	3	0-20

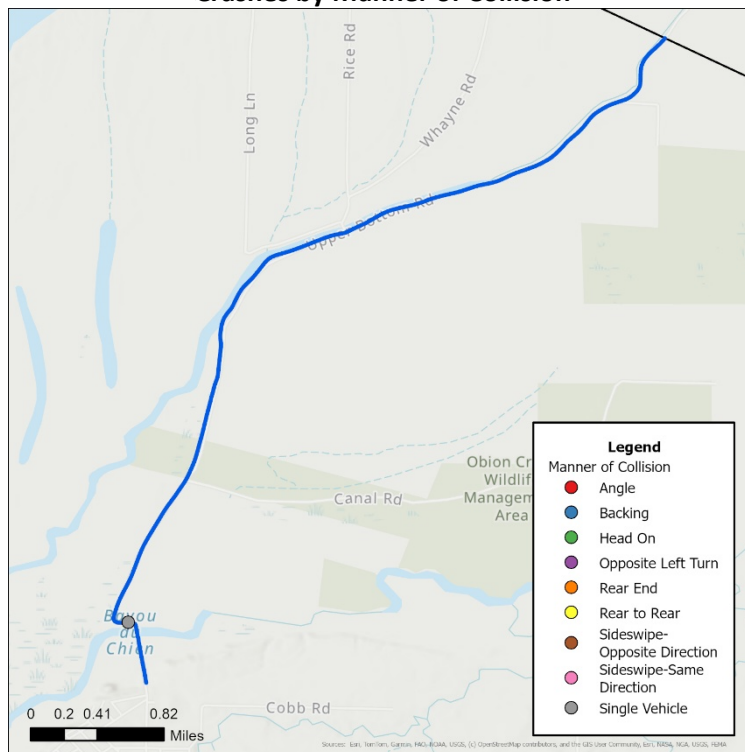
Roadway Typical Section



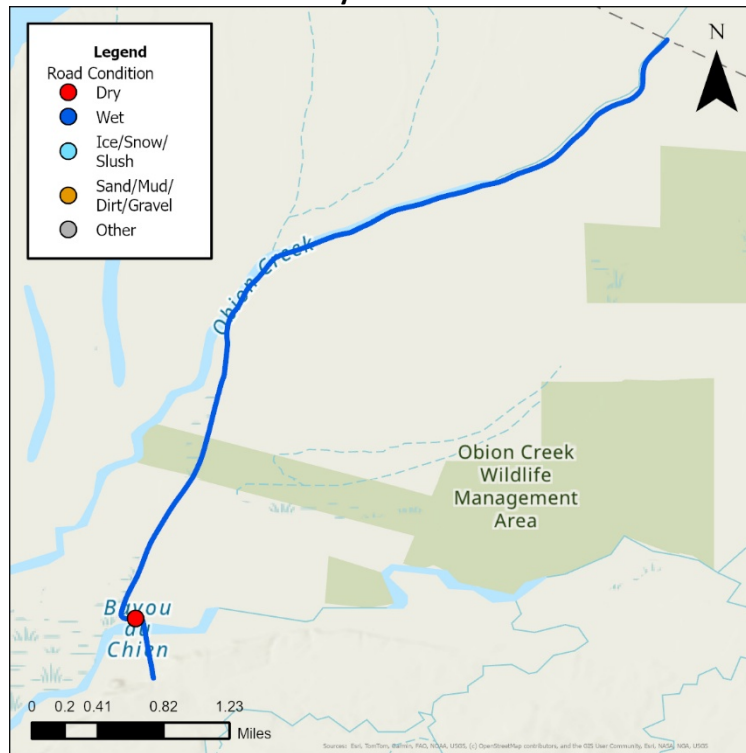
Crashes by Severity



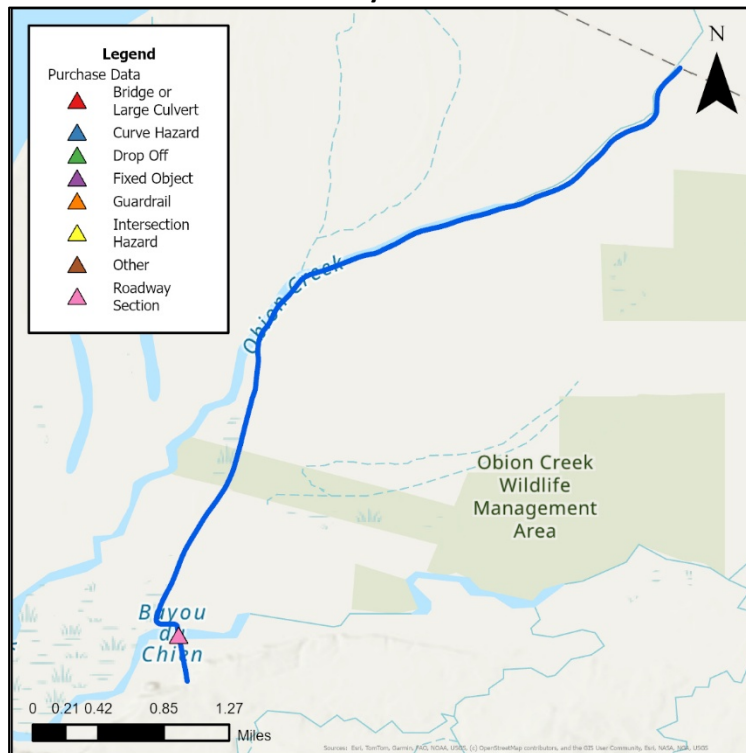
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

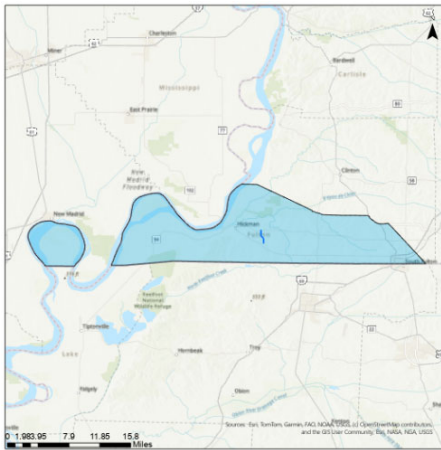


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
515	038-CR-1304 -000	UPPER BOTTOM RD	17	3	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
514	038-CR-1304 -000	UPPER BOTTOM RD	14	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers; Install One Lane Bridge Sign (W5-3)			

SAUNDERS LN (038-CR-1200 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Rear End	0	0	0	0
Rear to Rear	0	0	0	0
Angle	0	0	0	0
Left Turn	0	0	0	0

General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
510	038-CR-1200 -000	SAUNDERS LN	16	4	4	0-20

Roadway Typical Section



Crashes by Manner of Collision

Legend

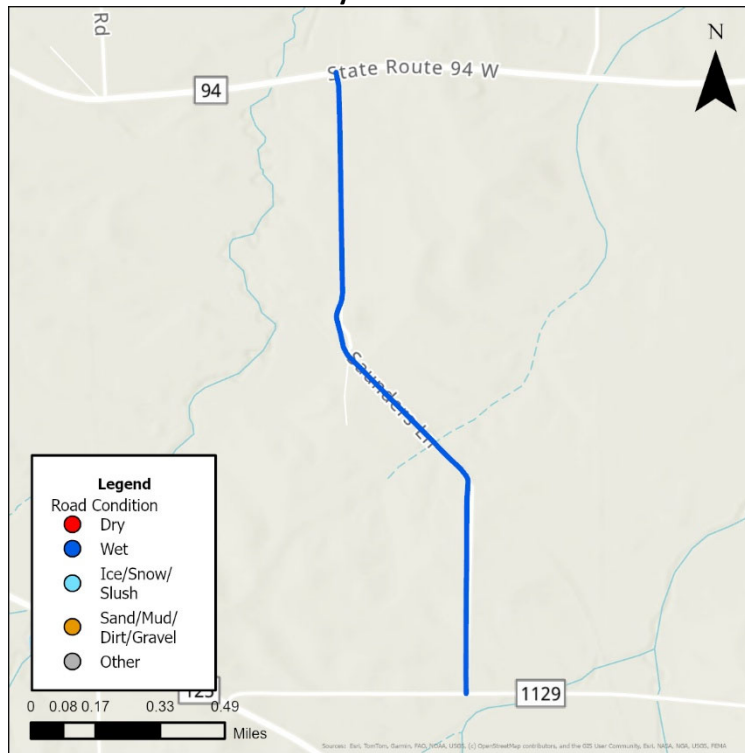
Manner of Collision

- Angle
- Backing
- Head On
- Opposite Left Turn
- Rear End
- Rear to Rear
- Sideswipe- Opposite Direction
- Sideswipe-Same Direction
- Single Vehicle

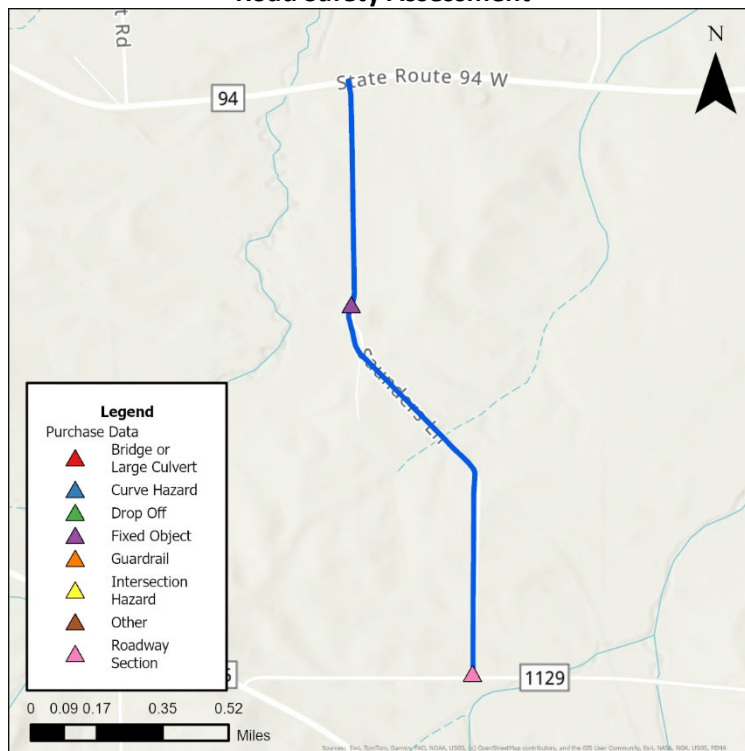
0 0.08 0.17 0.33 Miles

Sources: Esri, DeLorme, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community, Esri, NASA, NGA, USGS, IGNIA

Crashes by Road Condition



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
510	038-CR-1200 -000	SAUNDERS LN	16	4	4	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation			
507	038-CR-1200 -000	SAUNDERS LN	Tree	Series	3-5	Remove trees within 3 ft of roadway			

APPENDIX H: GRAVES COUNTY

GRAVES COUNTY OVERVIEW

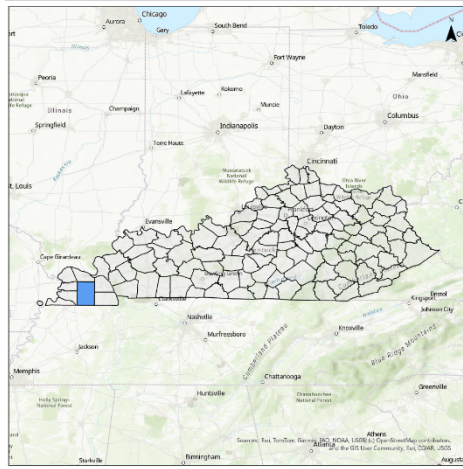


Exhibit Graves-1: Location Map

Key Information Table	
Graves County	
Population	36,461
Population in Persistent Poverty	19%
Underserved Community	No
Fatalities (All Roads)	27
Fatalities (County Roads)	2
Fatality Rate per 100,000 persons	741
County Road Mileage	656
State Road Mileage	480
Total Mileage	1136

Exhibit Graves-2: Key Information

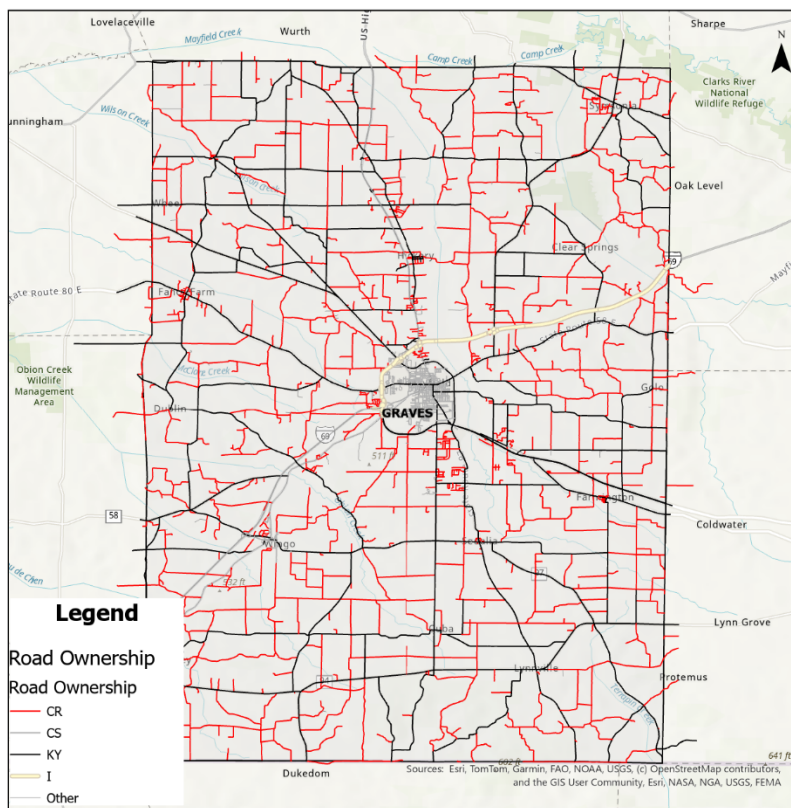


Exhibit Graves-3: Map of County Roadways

Crash Analysis

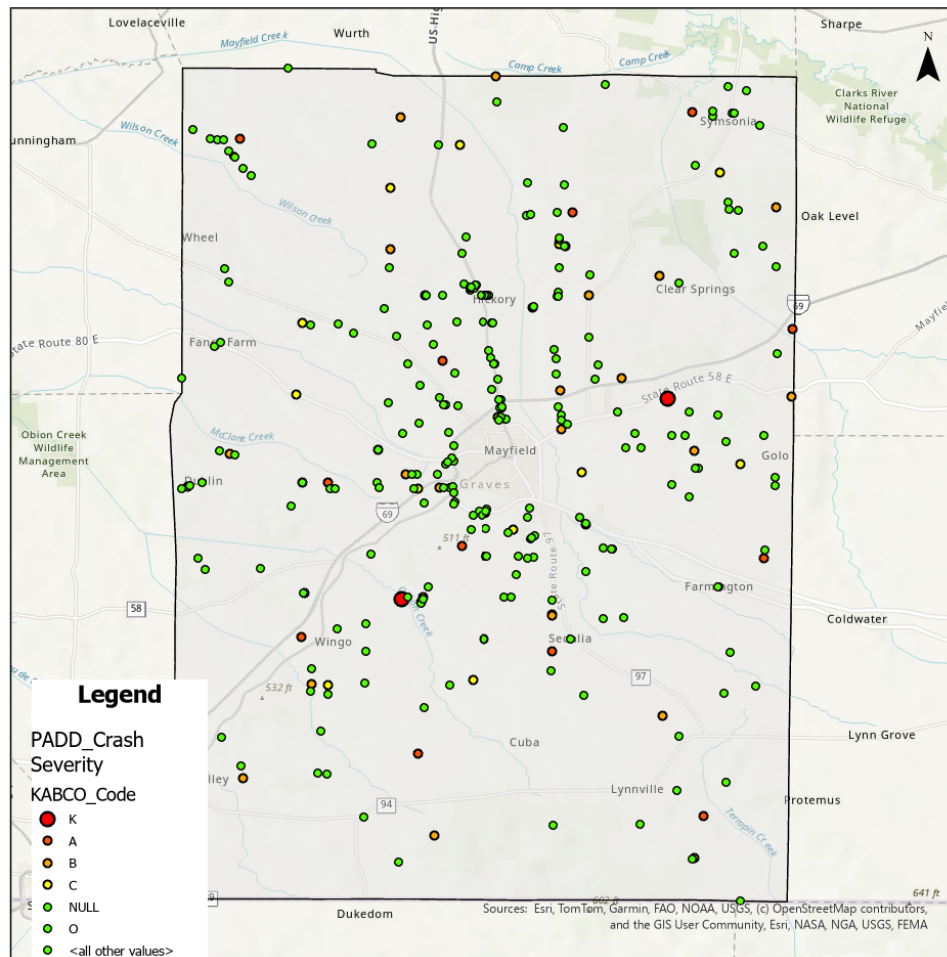


Exhibit Graves-4: Map of County Road Crashes



Exhibit Graves-5: Crash Distribution by Year

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	119	44	2	165
Backing	43	0	0	43
SS - Opp	36	4	0	40
Angle	24	3	0	27
Rear End	16	2	0	18
SS - Same	15	0	0	15
Head On	7	7	0	14
Rear to Rear	2	0	0	2
Left Turn	1	0	0	1

Exhibit Graves-6: Crash Frequency and Severity by Manner of Collision

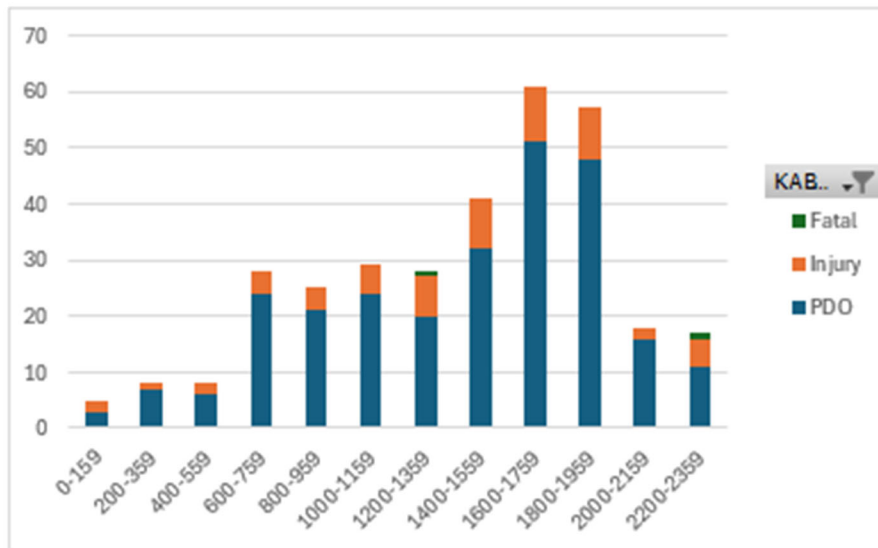


Exhibit Graves-7: Crashes and Severity by Time of Day

Focus Roadways

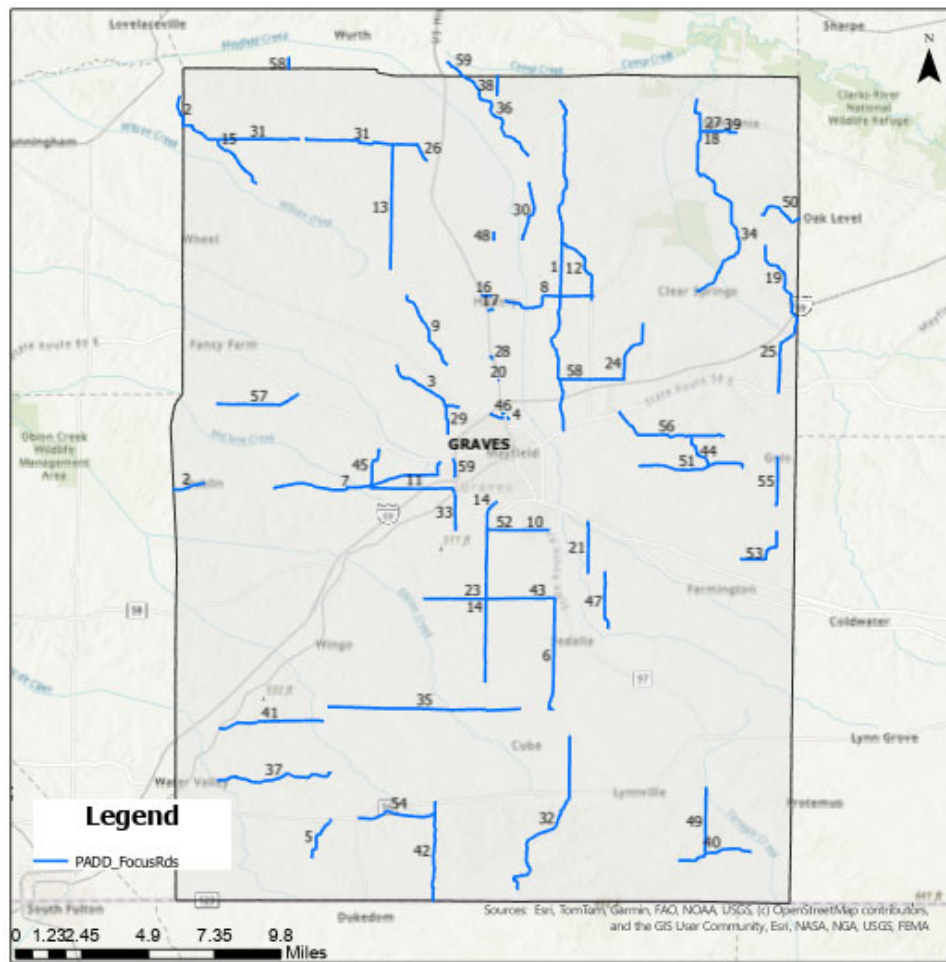


Exhibit Graves-8: Focus Roads

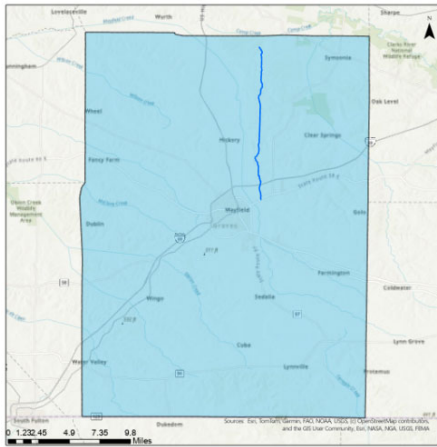
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Graves											
042-CR-1011 -000	12.50	Graves	Purchase	HOPEWELL RD	3	1	17	5.00	0.75	3.60	1
042-CR-1347 -000	0.95	Graves	Purchase	DUBLIN HILL RD	0	1	1	2.10	0.45	1.56	2
042-CR-1473 -000	2.65	Graves	Purchase	JIMTOWN RD	2	0	9	1.87	0.63	1.46	3
042-CR-1001N -000	0.08	Graves	Purchase	TURNER LN	0	1	0	2.06	0.19	1.44	4
042-CR-1295 -000	1.65	Graves	Purchase	JOHNS RD	0	1	0	2.06	0.02	1.39	5
042-CR-1224 -000	4.21	Graves	Purchase	SC OTT RD	2	0	2	1.59	0.85	1.35	6
042-CR-1375 -000	5.54	Graves	Purchase	OLD DUBLIN RD	1	1	8	1.47	0.77	1.24	7
042-CR-1019 -000	3.07	Graves	Purchase	WESTPLAINS RD	2	0	3	1.63	0.44	1.23	8
042-CR-1461 -000	2.90	Graves	Purchase	CARTER RD	2	0	1	1.55	0.53	1.21	9
042-CR-1619 -000	0.80	Graves	Purchase	E TUC KER RD	2	0	1	1.55	0.51	1.20	10
042-CR-1351 -000	2.60	Graves	Purchase	CARDINAL RD	1	1	5	1.35	0.74	1.15	11
042-CR-1026 -000	2.56	Graves	Purchase	HERMAN RD	1	1	3	1.27	0.55	1.03	12
042-CR-1444 -000	4.56	Graves	Purchase	MERIDIAN RD	1	1	2	1.23	0.60	1.02	13
042-CR-1140 -000	6.68	Graves	Purchase	CENTRAL RD	1	0	10	1.15	0.67	0.99	14
042-CR-1419 -000	3.33	Graves	Purchase	LOWES RD	1	0	5	0.95	0.95	0.95	15
042-CR-1507 -000	0.25	Graves	Purchase	POULTRY DR	1	0	4	0.91	0.91	0.91	16
042-CR-1010 -000	0.16	Graves	Purchase	E POWELL RD	0	0	1	0.04	2.55	0.87	17
042-CR-1065 -000	3.10	Graves	Purchase	KALER MILL RD	1	1	2	1.23	0.12	0.86	18
042-CR-1081 -000	3.15	Graves	Purchase	WAYNE FREEMAN RD	1	0	2	0.83	0.82	0.83	19
042-CR-1541 -030	0.01	Graves	Purchase	KENTEX RD X	0	0	0	0.00	2.50	0.83	20
042-CR-1148 -000	1.87	Graves	Purchase	JEFF DAVIS RD	1	0	1	0.79	0.87	0.82	21
042-CR-1001D -000	0.42	Graves	Purchase	CONSTRUCTION RD	1	0	1	0.79	0.86	0.82	22
042-CR-1230 -000	2.85	Graves	Purchase	SLAUGHTER RD W	1	0	4	0.91	0.57	0.80	23
042-CR-1527 -000	3.29	Graves	Purchase	SPENCE C HAPEL RD	1	0	2	0.83	0.64	0.77	24
042-CR-1500 -000	2.88	Graves	Purchase	WADESBORO RD	1	0	0	0.75	0.80	0.77	25
042-CR-1439 -000	0.65	Graves	Purchase	MELBER RD	0	0	0	0.00	2.28	0.75	26
042-CR-1067 -000	0.89	Graves	Purchase	BROOKHAVEN LN	1	0	0	0.75	0.65	0.72	27
042-CR-1004D -000	0.12	Graves	Purchase	CR-1004D	0	0	0	0.00	2.16	0.71	28
042-CR-1478 -000	1.06	Graves	Purchase	BUTTERWORTH RD	1	0	3	0.87	0.32	0.69	29
042-CR-1032 -000	2.19	Graves	Purchase	MCCRACKEN COUNTY RD	1	0	1	0.79	0.47	0.69	30
042-CR-1423 -000	5.91	Graves	Purchase	SHAW RD	1	0	1	0.79	0.40	0.66	31
042-CR-1210 -000	6.65	Graves	Purchase	HIGH RD	1	0	1	0.79	0.37	0.65	32
042-CR-1252 -000	1.32	Graves	Purchase	INGERSOLL RAND RD	0	1	4	0.56	0.81	0.64	33
042-CR-1076 -000	5.30	Graves	Purchase	TIM RD	0	1	3	0.52	0.87	0.63	34
042-CR-1270 -000	5.68	Graves	Purchase	WAGGONER BOTTOM RD	1	0	1	0.79	0.29	0.63	35
042-CR-1042 -000	3.92	Graves	Purchase	WICE CHURCH RD	1	0	1	0.79	0.25	0.61	36
042-CR-1307 -000	3.66	Graves	Purchase	PEARIDGE RD	1	0	3	0.87	0.07	0.61	37
042-CR-1044 -000	0.69	Graves	Purchase	WHITESIDE RD	1	0	0	0.75	0.27	0.59	38
042-CR-1122A -000	0.19	Graves	Purchase	LISA LN	0	0	0	0.00	1.75	0.58	39
042-CR-1197 -000	2.33	Graves	Purchase	BELL CITY RD	1	0	0	0.75	0.22	0.58	40
042-CR-1311 -000	3.11	Graves	Purchase	WRAY RD	1	0	0	0.75	0.19	0.57	41
042-CR-1287 -000	3.66	Graves	Purchase	KNOBCREEK RD	1	0	1	0.79	0.11	0.57	42
042-CR-1649 -000	1.02	Graves	Purchase	SLAUGHTER RD E	1	0	0	0.75	0.19	0.57	43
042-CR-1100 -000	1.41	Graves	Purchase	BILL RD	1	0	1	0.79	0.10	0.56	44
042-CR-1349 -000	1.47	Graves	Purchase	PRINTERS ALY	1	0	0	0.75	0.16	0.56	45
042-CR-1001L -000	0.06	Graves	Purchase	PARK TER	1	0	0	0.75	0.16	0.56	46
042-CR-1168 -000	2.10	Graves	Purchase	MCC LAIN RD	1	0	1	0.79	0.07	0.55	47
042-CR-1031 -000	0.24	Graves	Purchase	ETHEL RD	1	0	0	0.75	0.14	0.55	48
042-CR-1195 -000	2.42	Graves	Purchase	LESTER RD	1	0	0	0.75	0.10	0.54	49
042-CR-1074 -000	1.70	Graves	Purchase	ROLLIE RD	1	0	0	0.75	0.06	0.53	50
042-CR-1111 -000	3.28	Graves	Purchase	GOLO RD	0	1	2	0.48	0.59	0.51	51
042-CR-1142 -000	1.02	Graves	Purchase	WTUCKER RD	0	1	0	0.40	0.75	0.51	52
042-CR-1632 -000	1.93	Graves	Purchase	CLAYTON RD	1	0	0	0.75	0.02	0.51	53
042-CR-1282 -000	2.41	Graves	Purchase	COLTHARP RD	1	0	0	0.75	0.01	0.51	54
042-CR-1107 -000	1.73	Graves	Purchase	PARKER RD	0	0	0	0.00	1.53	0.50	55
042-CR-1134 -000	3.68	Graves	Purchase	BYRD RD	0	1	4	0.56	0.39	0.50	56
042-CR-1384 -000	2.49	Graves	Purchase	RULE SHACK RD	0	1	1	0.44	0.55	0.47	57
042-CR-1012 -000	0.89	Graves	Purchase	CARLISLE RD	0	0	0	0.00	1.44	0.47	58
042-CR-1491 -000	0.63	Graves	Purchase	SUTTON LN	0	0	3	0.12	1.15	0.46	59

Exhibit Graves-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

HOPEWELL RD (042-CR-1011 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	9	2	0	11
SS - Opp	3	0	0	3
Angle	2	0	0	2
SS - Same	1	0	0	1
Rear End	0	1	0	1
Rear to Rear	0	0	0	0
Backing	0	0	0	0
Left Turn	0	0	0	0
Head On	0	0	0	0

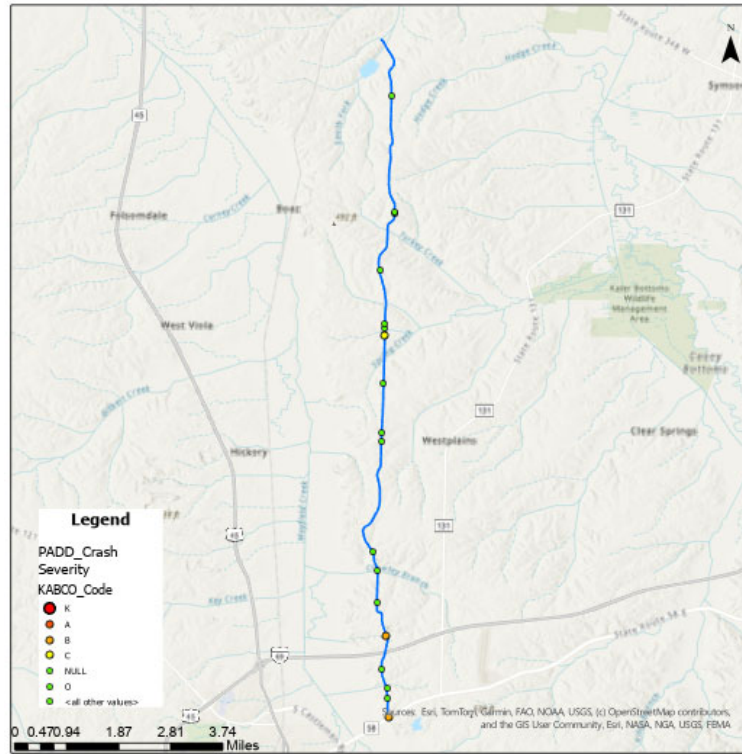
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
886	042-CR-1011 -000	HOPEWELL RD	18	3	3	0-20

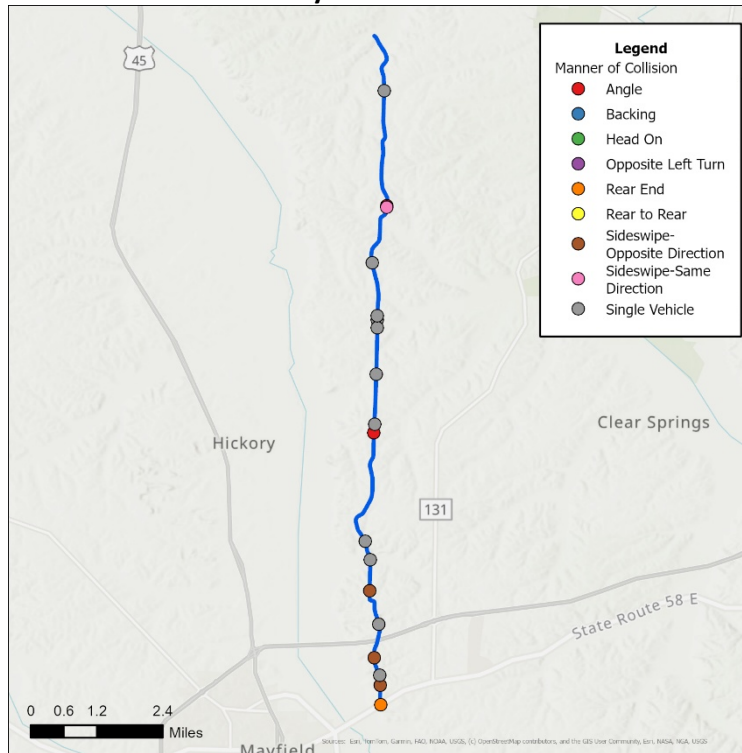
Roadway Typical Section



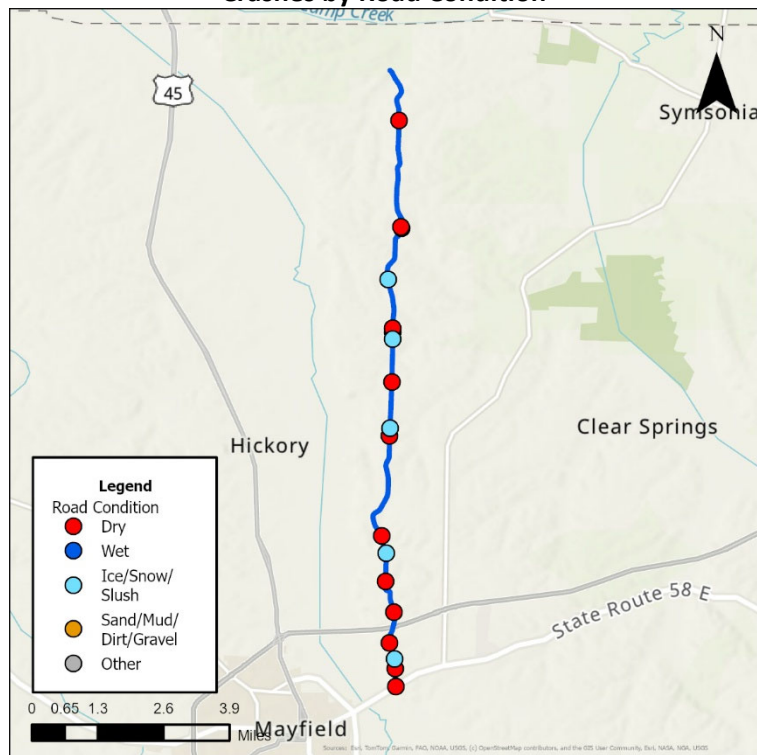
Crashes by Severity



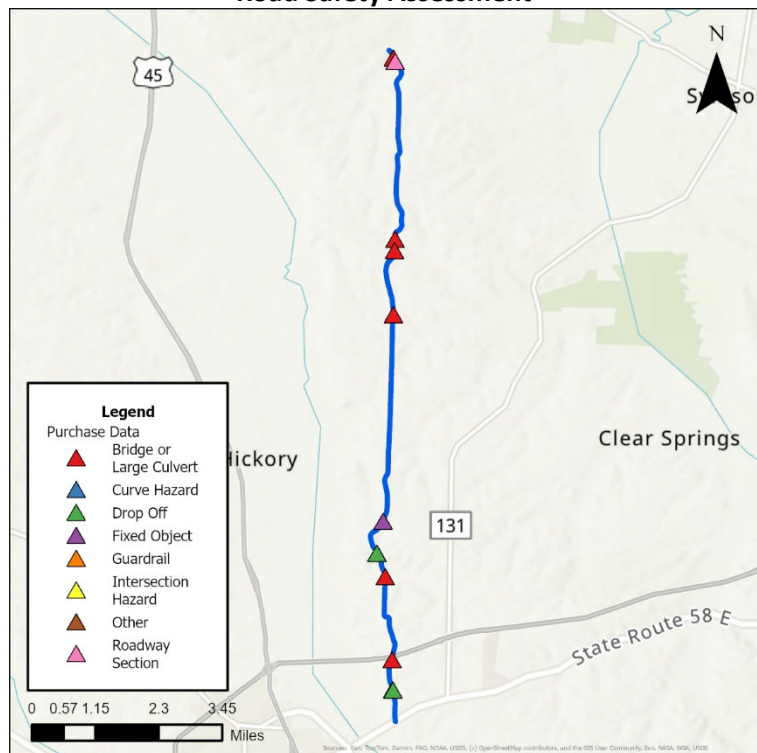
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
886	042-CR-1011 -000	HOPEWELL RD	18	3	3	0-20		✓	✓

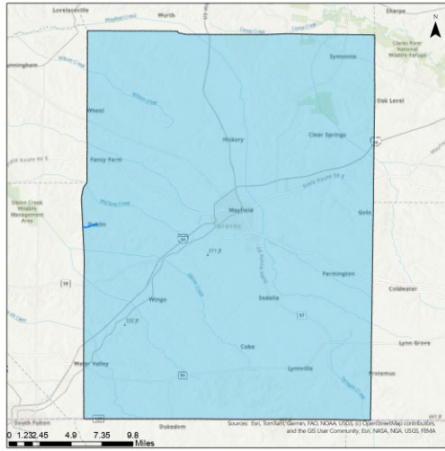
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
890	042-CR-1011 -000	HOPEWELL RD	18	0	1	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
899	042-CR-1011 -000	HOPEWELL RD	18	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
874	042-CR-1011 -000	HOPEWELL RD	21	4	0	Install Type 3 Object Markers
864	042-CR-1011 -000	HOPEWELL RD	26	4	0	Install Type 3 Object Markers
869	042-CR-1011 -000	HOPEWELL RD	21	4	1	Install/Replace Type 3 Object Markers on all corners
876	042-CR-1011 -000	HOPEWELL RD	21	4	1	Install/Replace Type 3 Object Markers on all corners
882	042-CR-1011 -000	HOPEWELL RD	21	4	2	Install/Replace Type 3 Object Markers on all corners

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
860	042-CR-1011 -000	HOPEWELL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
870	042-CR-1011 -000	HOPEWELL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
892	042-CR-1011 -000	HOPEWELL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)

Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation
871	042-CR-1011 -000	HOPEWELL RD	Mail Box Brick	Single	3-5	Install Type 2 or 3 Object Marker(s); See policy Recommendations

DUBLIN HILL RD (042-CR-1347 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
SS - Opp	2	0	0	2
Single Vehicle	1	1	0	2
Left Turn	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

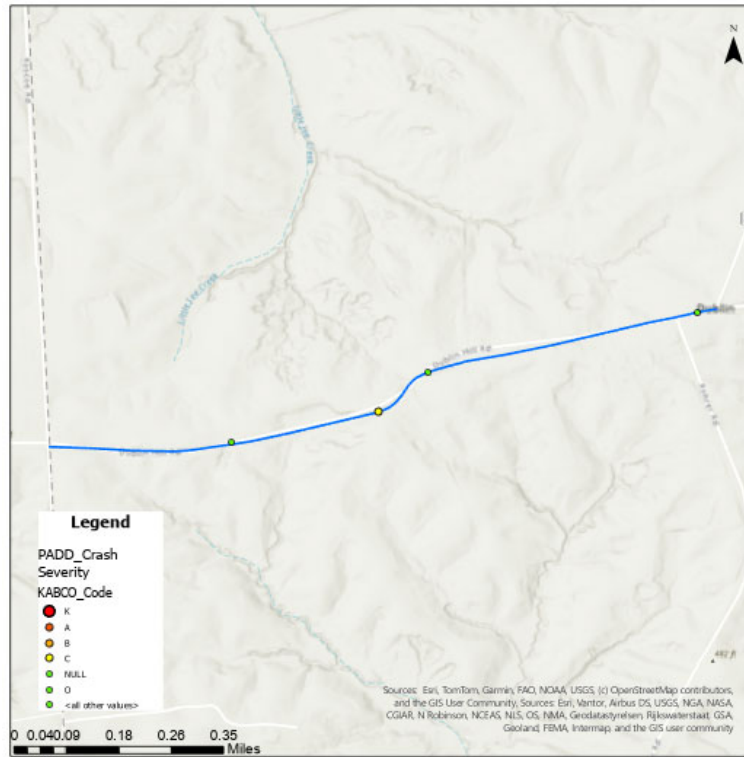
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1249	042-CR-1347 -000	DUBLIN HILL RD	16	4	3	0-20

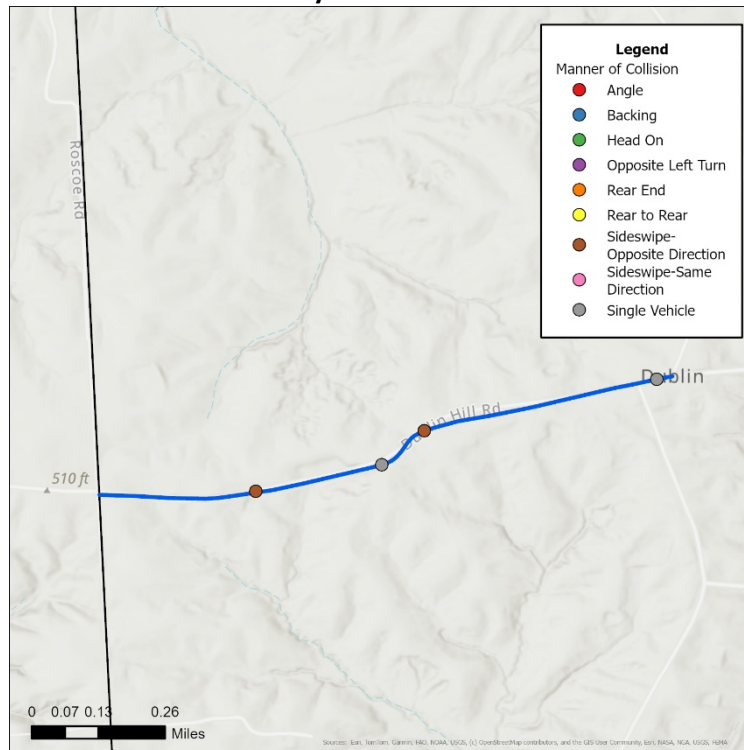
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Legend

Road Condition

- Dry
- Wet
- Ice/Snow/Slush
- Sand/Mud/Dirt/Gravel
- Other

510 ft

Rocky

Dirt Hill Rd

Dublin

Jim

0 0.07 0.14 0.27 0.41 Miles

0 0.07 0.14 0.27 0.41 Miles

0 0.07 0.14 0.27 0.41 Miles

Legend

- Purchase Data
- Bridge or Large Culvert
- Curve Hazard
- Drop Off
- Fixed Object
- Guardrail
- Intersection Hazard
- Other
- Roadway Section

510 ft

Dublin Hill Rd

Dublin

0 0.06 0.12 0.25 0.38 Miles

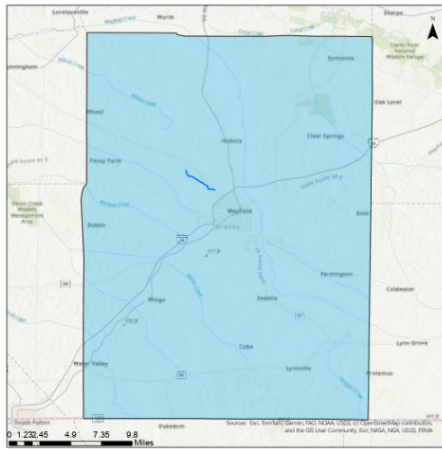
Source: Esri, DeLorme, Garmin, FGA, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, NASA, NOAA, USGS, 1996

Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1249	042-CR-1347 -000	DUBLIN HILL RD	16	4	3	0-20		✓	✓

JIMTOWN RD (042-CR-1473 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	2	0	0	2
SS - Opp	1	0	0	1
Backing	1	0	0	1
Head On	0	0	0	0
Left Turn	0	0	0	0
SS - Same	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

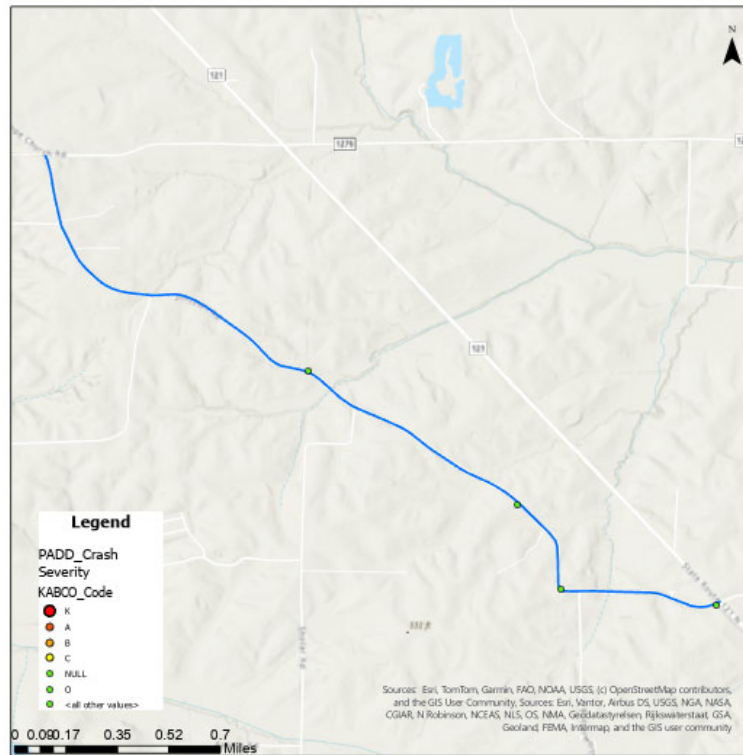
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
822	042-CR-1473 -000	JIMTOWN RD	19	4	3	0-20

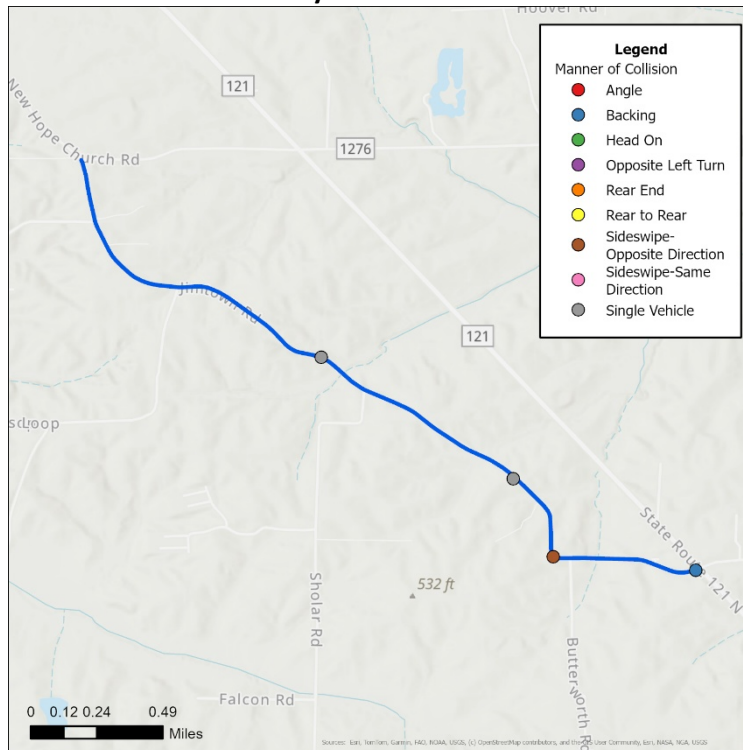
Roadway Typical Section



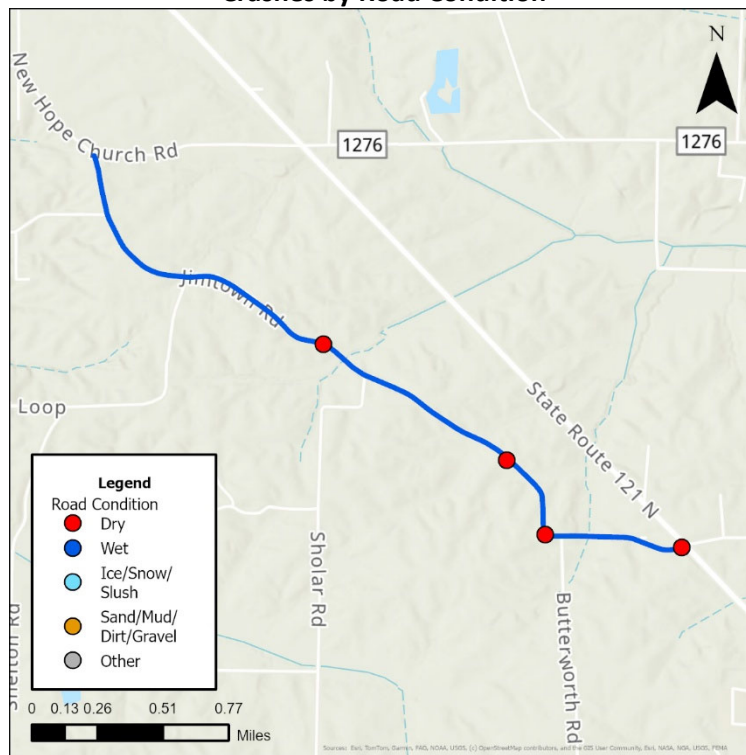
Crashes by Severity



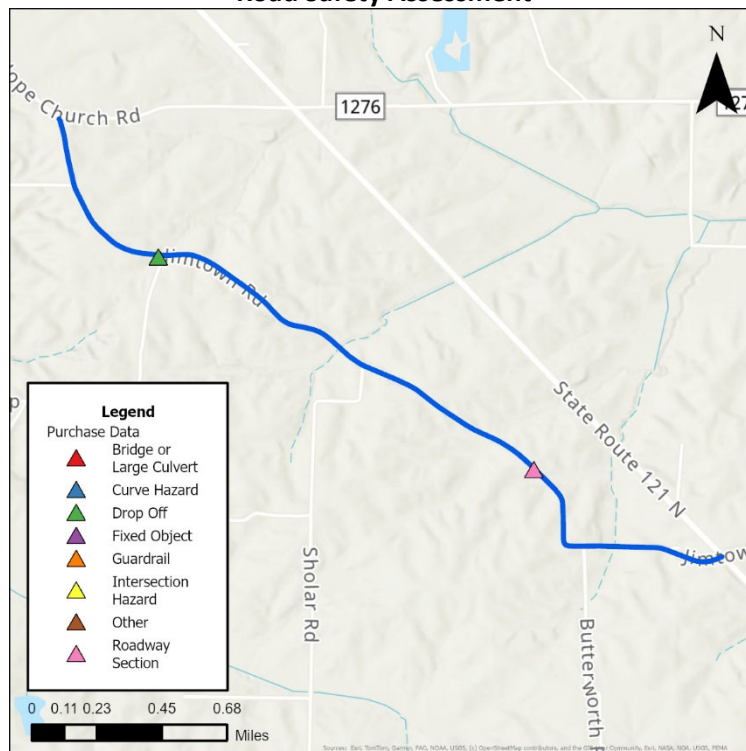
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



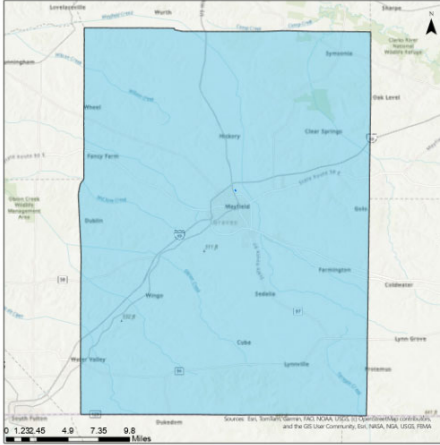
Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
822	042-CR-1473 -000	JIMTOWN RD	19	4	3	0-20		✓	✓

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
820	042-CR-1473 -000	JIMTOWN RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)

TURNER LN (042-CR-1001N -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	0	0	0	0
	SS - Same	0	0	0	0
	Head On	0	0	0	0
	SS - Opp	0	0	0	0
	Backing	0	0	0	0
	Rear End	0	0	0	0
	Rear to Rear	0	0	0	0
	Angle	0	0	0	0
	Left Turn	0	0	0	0

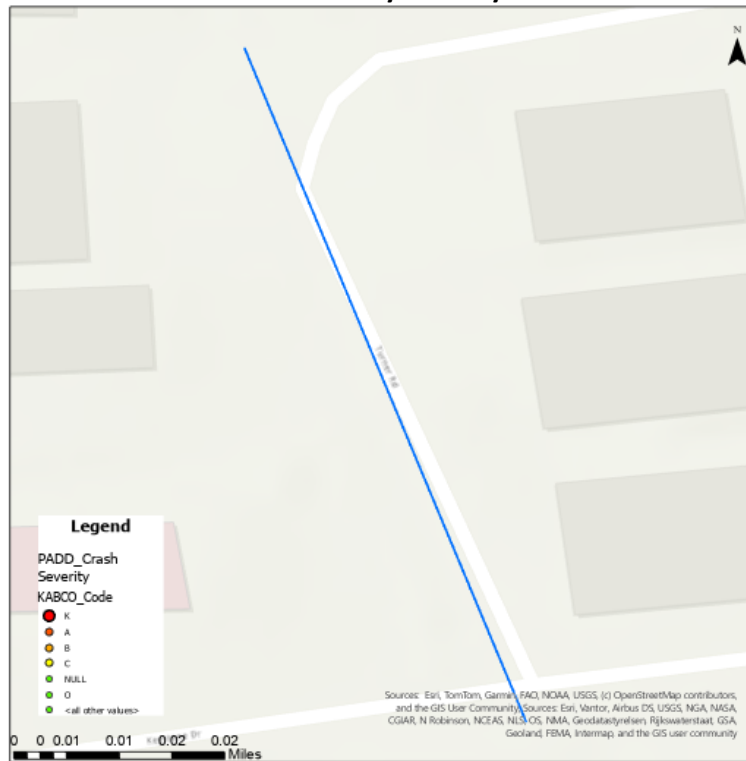
General Roadway Conditions

Point ID	RT UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
793	042-CR-1001N -000	TURNER LN	24	4	1	0-20

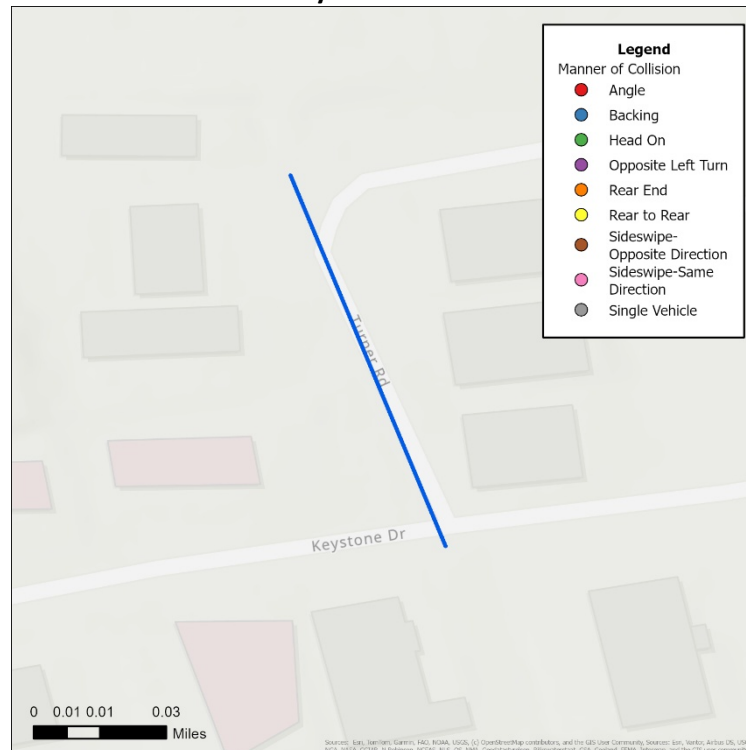
Roadway Typical Section



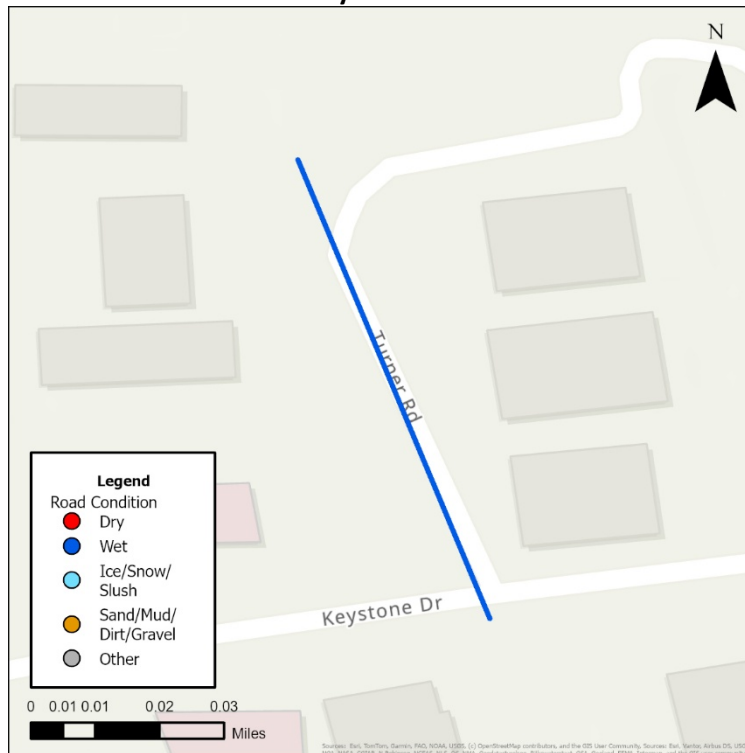
Crashes by Severity



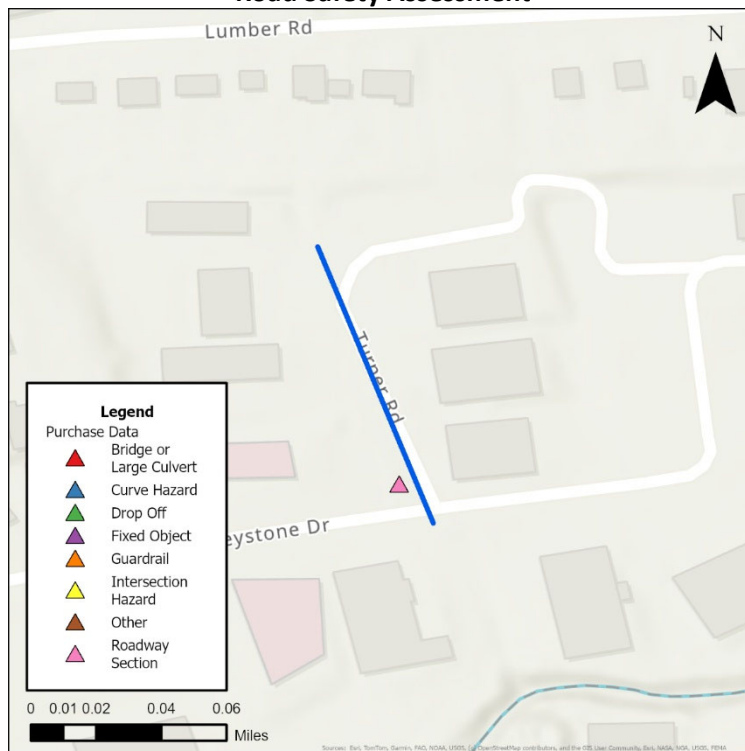
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

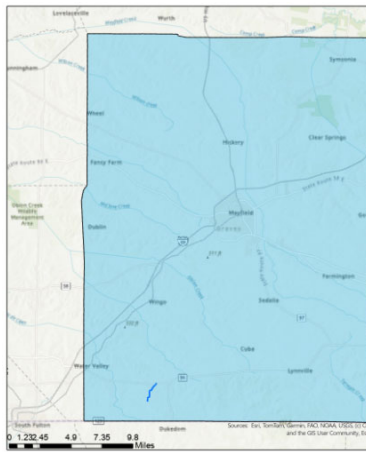


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
793	042-CR-1001N -000	TURNER LN	24	4	1	0-20		✓	✓

JOHNS RD (042-CR-1295 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Rear End	0	0	0	0
Rear to Rear	0	0	0	0
Angle	0	0	0	0
Left Turn	0	0	0	0

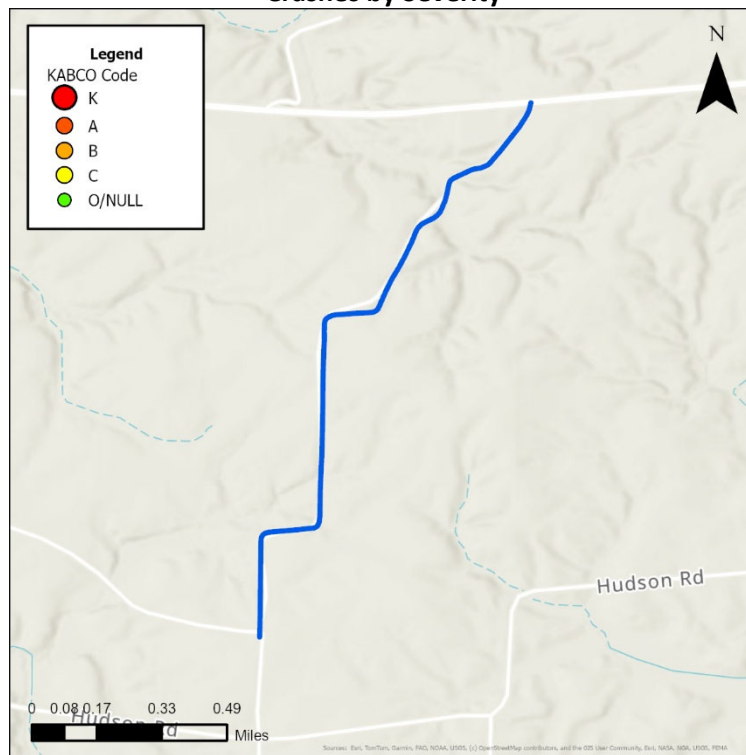
General Roadway Conditions

Point ID	RT UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
793	042-CR-1001N -000	TURNER LN	24	4	1	0-20

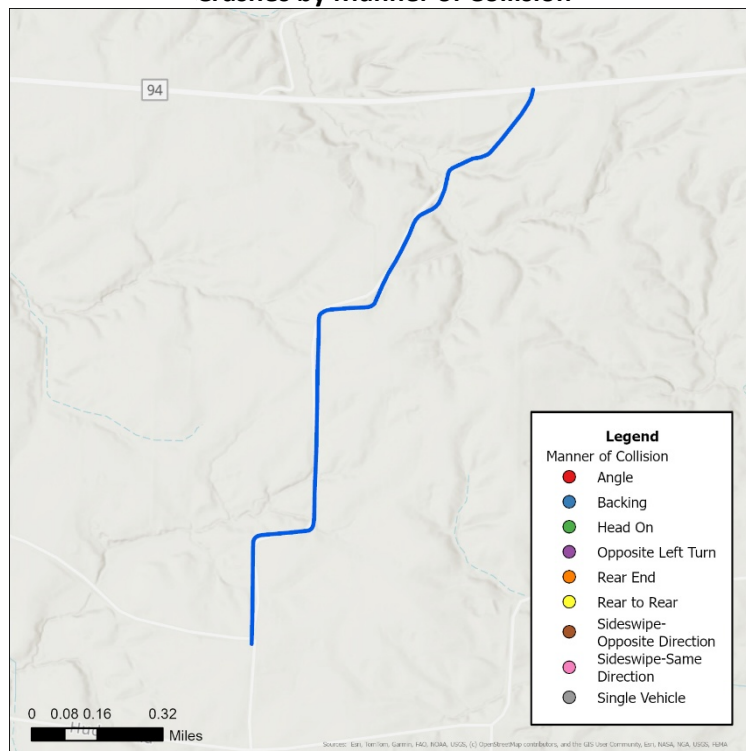
Roadway Typical Section



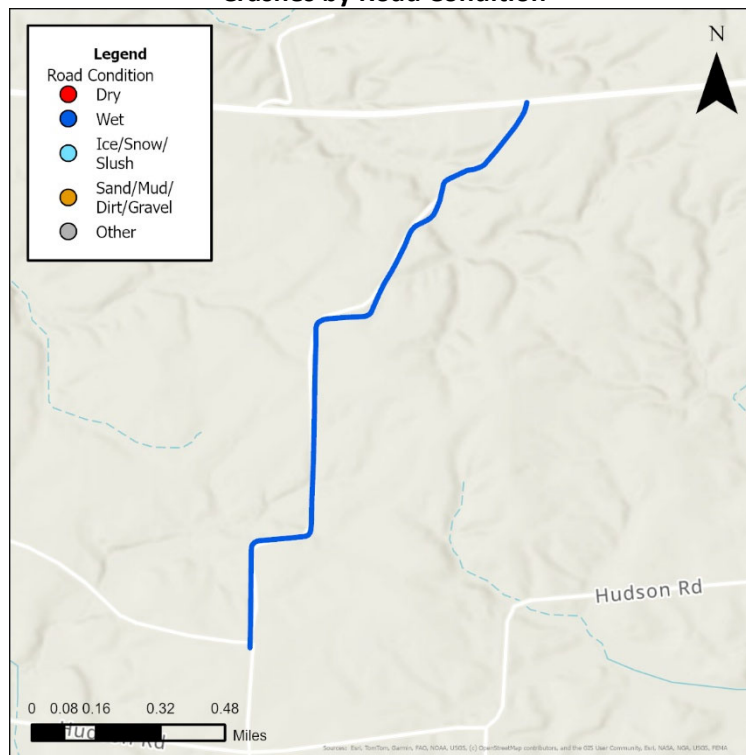
Crashes by Severity



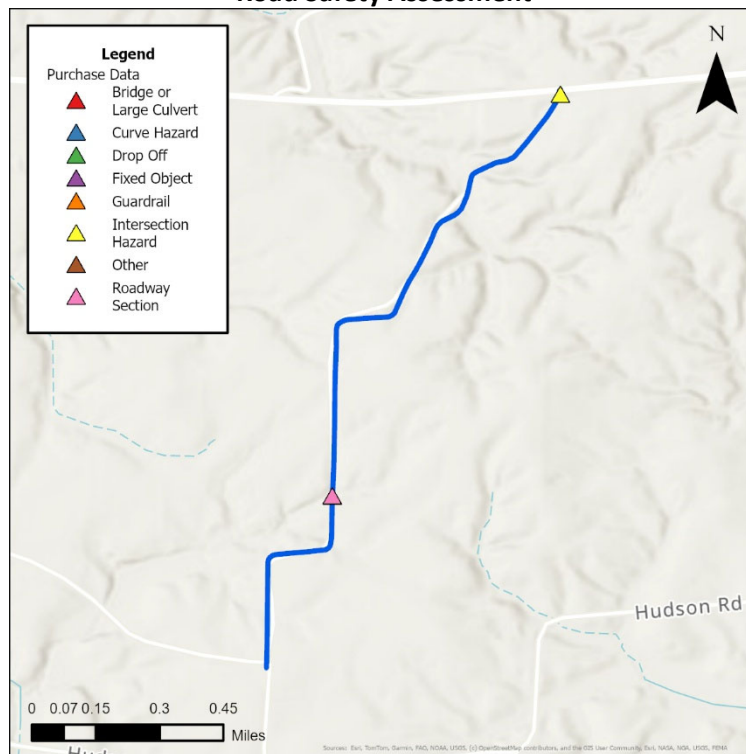
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



General Recommendation

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1427	042-CR-1295 -000	JOHNS RD	12	1	3	0-20			✓
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
1426	042-CR-1295 -000	JOHNS RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)				
Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation			Comments		
1425	042-CR-1295 -000	JOHNS RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew			Intersection_Obscured_on_Approa,Intersection_Skew,Insufficient_Sight_Distance_at_		

Other Roadways

General Roadway Conditions and Recommendations (Graves County)

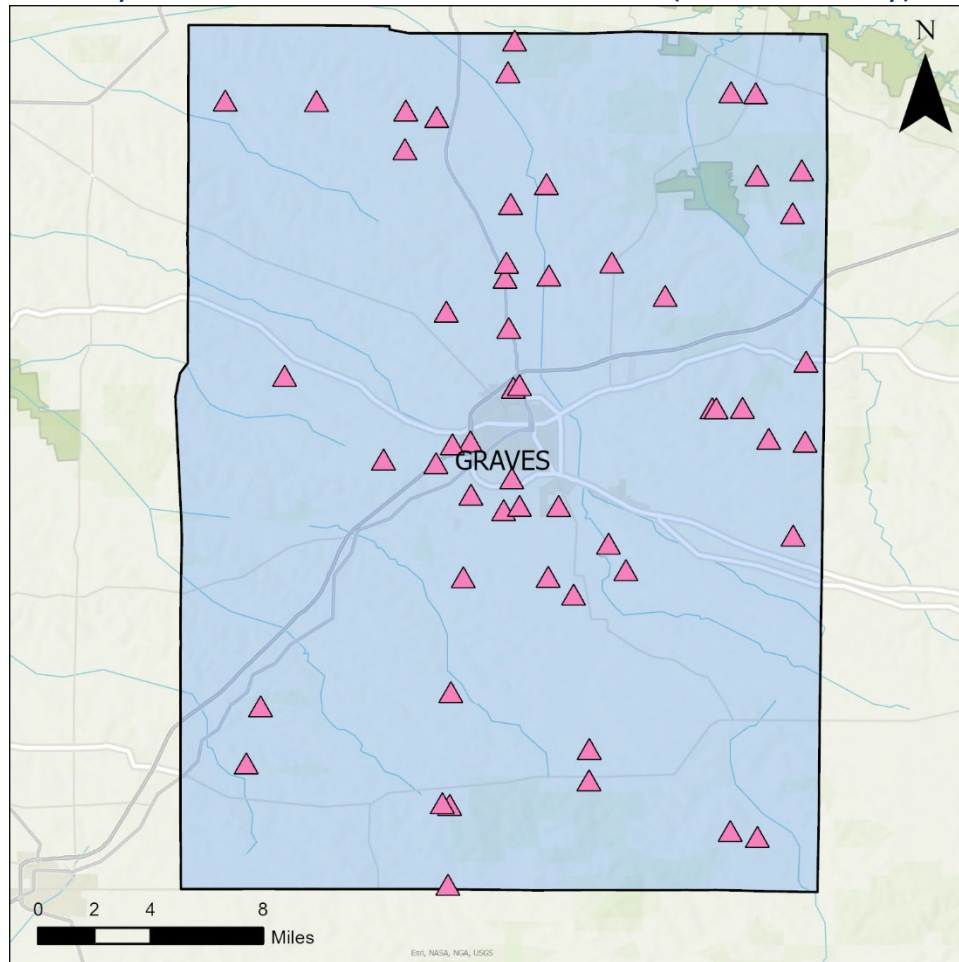


Exhibit Graves County General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing	Comments
192	042-CR-1224 -000	SCOTT RD	17	4	2	0-20		✓	✓	
1321	042-CR-1224 -000	SCOTT RD	18	4	2	0-20		✓	✓	
801	042-CR-1019 -000	WESTPLAINS RD	24	4	2	0-20		✓	✓	
1100	042-CR-1019 -000	WESTPLAINS RD	14	4	3	0-20		✓	✓	
1085	042-CR-1076 -000	TIM RD	18	4	3	0-20		✓	✓	
1152	042-CR-1081 -000	WAYNE FREEMAN RD	18	4	3	0-20		✓	✓	
1016	042-CR-1111 -000	GOLO RD	19	4	3	0-20		✓	✓	
995	042-CR-1134 -000	BYRD RD	18	3	3	0-20		✓	✓	
998	042-CR-1134 -000	BYRD RD	14	2	3	0-20			✓	
1343	042-CR-1230 -000	SLAUGHTER RD W	16	3	3	0-20		✓	✓	
1357	042-CR-1230 -000	SLAUGHTER RD W	19	4	3	0-20		✓	✓	
501	042-CR-1444 -000	MERIDIAN RD	18	3	5	0-20		✓	✓	
960	042-CR-1444 -000	MERIDIAN RD	17	4	3	0-20		✓	✓	
962	042-CR-1444 -000	MERIDIAN RD	15	3	4	0-20		✓	✓	
1230	042-CR-1351 -000	CARDINAL RD	19	4	2	0-20		✓	✓	
1118	042-CR-1527 -000	SPENCE CHAPEL RD	18	4	3	0-20		✓	✓	
913	042-CR-1423 -000	SHAW RD	19	3	3	0-20		✓	✓	
921	042-CR-1423 -000	SHAW RD	16	3	4	0-20		✓	✓	
1037	042-CR-1067 -000	BROOKHAVEN LN	16	4	5	0-20		✓	✓	
1165	042-CR-1140 -000	CENTRAL RD	20	4	3	0-20		✓	✓	North
1178	042-CR-1140 -000	CENTRAL RD	19	4	3	0-20		✓	✓	South
1265	042-CR-1140 -000	CENTRAL RD	18	3	3	0-20		✓	✓	
1279	042-CR-1148 -000	JEFF DAVIS RD	17	3	3	0-20		✓	✓	
1372	042-CR-1270 -000	WAGGONER BOTTOM RD	15	3	3	0-20		✓	✓	
1414	042-CR-1282 -000	COLTHARP RD	15	3	3	0-20		✓	✓	
813	042-CR-1461 -000	CARTER RD	18	4	2	0-20		✓	✓	
1130	042-CR-1500 -000	WADESBORO RD	20	4	3	0-20		✓	✓	
791	042-CR-1001D -000	CONSTRUCTION RD	15	4	3	0-20		✓	✓	
795	042-CR-1001L -000	PARK TER	18	2	2	0-20			✓	
797	042-CR-1004D -000	CR-1004D	19	3	2	0-20		✓	✓	
799	042-CR-1010 -000	E POWELL RD	22	4	1	0-20		✓	✓	
974	042-CR-1032 -000	MCCRACKEN COUNTY RD	18	3	3	0-20		✓	✓	
1012	042-CR-1100 -000	BILL RD	18	3	3	0-20		✓	✓	
1220	042-CR-1252 -000	INGERSOLL RAND RD	18	3	3	0-20		✓	✓	
1389	042-CR-1311 -000	WRAY RD	15	3	7	0-20		✓	✓	
836	042-CR-1491 -000	S SUTTON LN	17	4	3	0-20		✓	✓	
857	042-CR-1375 -000	OLD DUBLIN RD	21	3	3	0-20		✓	✓	
1063	042-CR-1012 -000	CARLISLE RD	18	4	3	0-20		✓	✓	
1293	042-CR-1168 -000	MCCLAIN RD	16	3	3	0-20		✓	✓	
1252	042-CR-1349 -000	PRINTERS ALY	17	4	4	0-20		✓	✓	
1315	042-CR-1107 -000	PARKER RD	19	4	2	0-20		✓	✓	
937	042-CR-1439 -000	MELBER RD	15	3	4	0-20		✓	✓	
968	042-CR-1044 -000	WHITESIDE RD	12	4	3	0-20		✓	✓	
978	042-CR-1031 -000	ETHEL RD	12	3	3	0-20		✓	✓	
1027	042-CR-1122A -000	LISA LN	14	4	2	0-20		✓	✓	
1427	042-CR-1295 -000	JOHNS RD	12	1	3	0-20			✓	
1272	042-CR-1142 -000	W TUCKER RD	18	3	3	0-20		✓	✓	
1306	042-CR-1632 -000	CLAYTON RD	12	4	3	0-20		✓	✓	Narrow
2310	042-CR-1632 -000	CLAYTON RD	15	2	3	0-20			✓	
1239	042-CR-1384 -000	RULE SHACK RD	18	3	3	0-20		✓	✓	

Exhibit Graves County General Roadway Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing	Comments
1156	042-CR-1074 -000	ROLLIE RD	12	3	5	0-20		✓	✓	
1401	042-CR-1307 -000	PEA RIDGE RD	19	3	3	0-20		✓	✓	
1409	042-CR-1195 -000	LESTER RD	13	2	3	0-20			✓	
1411	042-CR-1195 -000	LESTER RD	18	4	3	0-20		✓	✓	
1435	042-CR-1195 -000	LESTER RD	14	2	3	0-20			✓	
1439	042-CR-1197 -000	BELL CITY RD	16	2	3	0-20			✓	
1443	042-CR-1210 -000	HIGH RD	19	4	3	0-20		✓	✓	
1453	042-CR-1210 -000	HIGH RD	15	4	3	0-20		✓	✓	

Exhibit Graves County General Roadway Recommendations (Continued)

Bridge / Culvert Recommendations (Graves County)

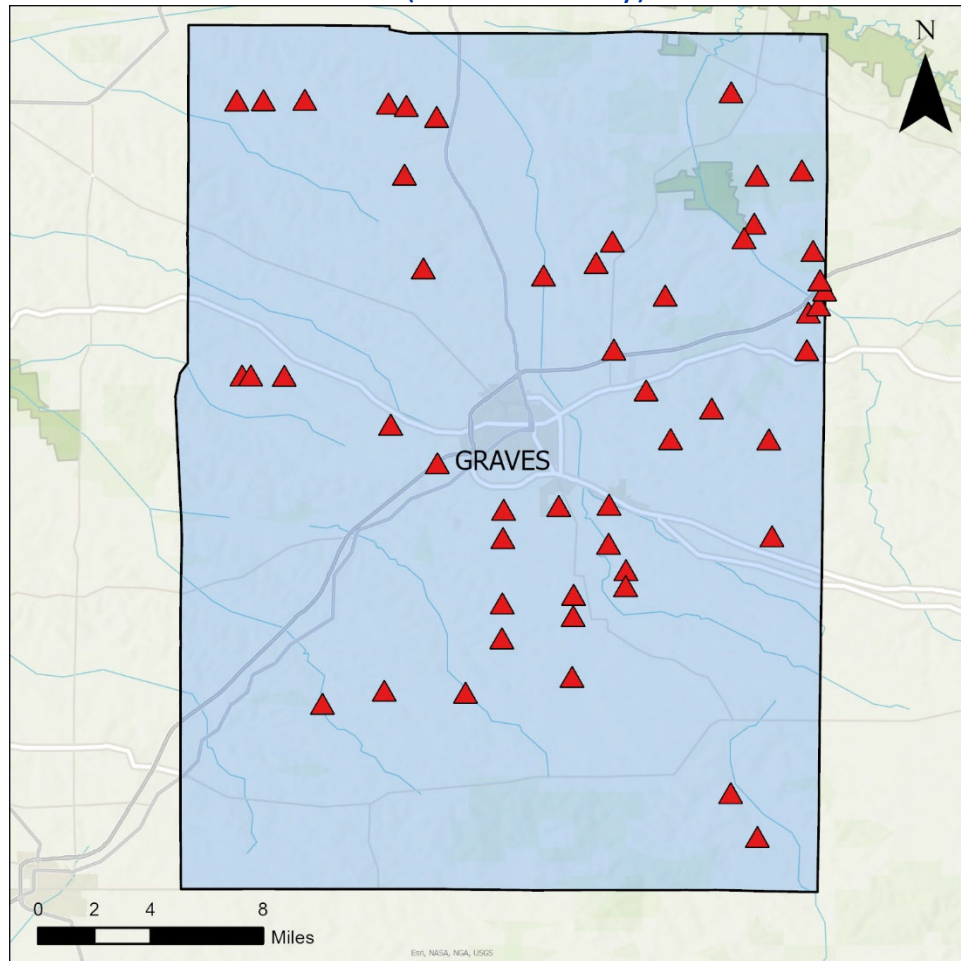


Exhibit Graves County Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
931	042-CR-1423 -000	SHAW RD	16	0	0	Bridge Noted as dangerous-Review; Evaluate need for guardrail on approach, install Type 3 Object Markers;
933	042-CR-1423 -000	SHAW RD	18	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
918	042-CR-1423 -000	SHAW RD	19	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
915	042-CR-1423 -000	SHAW RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
917	042-CR-1423 -000	SHAW RD	30	4	4	--
1035	042-CR-1067 -000	BROOKHAVEN LN	16	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1155	042-CR-1074 -000	ROLLIE RD	19	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1131	042-CR-1500 -000	WADESBO RO	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1136	042-CR-1500 -000	WADESBO RO	42	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1133	042-CR-1500 -000	WADESBO RO	22	4	2	Install/Replace Type 3 Object Markers on all corners
1135	042-CR-1500 -000	WADESBO RO	23	4	2	Install/Replace Type 3 Object Markers on all corners
1145	042-CR-1081 -000	WAYNE FREEMAN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1147	042-CR-1081 -000	WAYNE FREEMAN RD	20	4	2	Install/Replace Type 3 Object Markers on all corners
1292	042-CR-1168 -000	MCCLAIN RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1296	042-CR-1168 -000	MCCLAIN RD	15	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1430	042-CR-1195 -000	LESTER RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1370	042-CR-1270 -000	WAGGONER BOTTOM RD	21	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1375	042-CR-1270 -000	WAGGONER BOTTOM RD	21	4	0	Install Type 3 Object Markers
1322	042-CR-1224 -000	SCOTT RD	22	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1320	042-CR-1224 -000	SCOTT RD	22	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1328	042-CR-1224 -000	SCOTT RD	22	4	2	Install/Replace Type 3 Object Markers on all corners
1278	042-CR-1148 -000	JEFF DAVIS RD	23	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1283	042-CR-1148 -000	JEFF DAVIS RD	22	4	2	Install/Replace Type 3 Object Markers on all corners
1177	042-CR-1140 -000	CENTRAL RD	24	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1264	042-CR-1140 -000	CENTRAL RD	27	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1182	042-CR-1140 -000	CENTRAL RD	21	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1202	042-CR-1140 -000	CENTRAL RD	24	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1196	042-CR-1140 -000	CENTRAL RD	25	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1071	042-CR-1019 -000	WESTPLAINS RD	21	4	0	Install Type 3 Object Markers
1084	042-CR-1019 -000	WESTPLAINS RD	18	4	2	Install/Replace Type 3 Object Markers on all corners
1090	042-CR-1076 -000	TIM RD	19	4	0	Install Type 3 Object Markers
1083	042-CR-1076 -000	TIM RD	21	4	2	Install/Replace Type 3 Object Markers on all corners
1094	042-CR-1076 -000	TIM RD	22	4	2	Install/Replace Type 3 Object Markers on all corners
1022	042-CR-1111 -000	GOLO RD	22	3	2	Evaluate need for guardrail on approach, install/Replace Type 3 Object Markers on all corners if necessary
1014	042-CR-1111 -000	GOLO RD	22	4	1	Install/Replace Type 3 Object Markers on all corners
993	042-CR-1134 -000	BYRD RD	19	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
981	042-CR-1134 -000	BYRD RD	22	4	2	Install/Replace Type 3 Object Markers on all corners
1229	042-CR-1351 -000	CARDINAL RD	28	4	0	Install Type 3 Object Markers
1116	042-CR-1527 -000	SPENCE CHAPEL RD	22	4	2	Install/Replace Type 3 Object Markers on all corners
1124	042-CR-1527 -000	SPENCE CHAPEL RD	22	4	2	Install/Replace Type 3 Object Markers on all corners
806	042-CR-1461 -000	CARTER RD	19	0	1	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1302	042-CR-1632 -000	CLAYTON RD	16	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
949	042-CR-1444 -000	MERIDIAN RD	17	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1258	042-CR-1349 -000	PRINTERS ALY	17	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1244	042-CR-1384 -000	RULE SHACK RD	18	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1238	042-CR-1384 -000	RULE SHACK RD	26	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;

Exhibit Graves County Bridge/Culvert Recommendations

Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
1241	042-CR-1384 -000	RULE SHACK RD	22	4	4	--
936	042-CR-1439 -000	MELBER RD	20	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1386	042-CR-1311 -000	WRAY RD	21	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1045	042-CR-1012 -000	CARLISLE RD	21	4	4	--
1438	042-CR-1197 -000	BELL CITY RD	22	2	2	Evaluate need for guardrail on approach, install/Replace Type 3 Object Markers on all corners if necessary

Exhibit Graves County Bridge/Culvert Recommendations (Continued)

Curve Recommendations (Graves County)

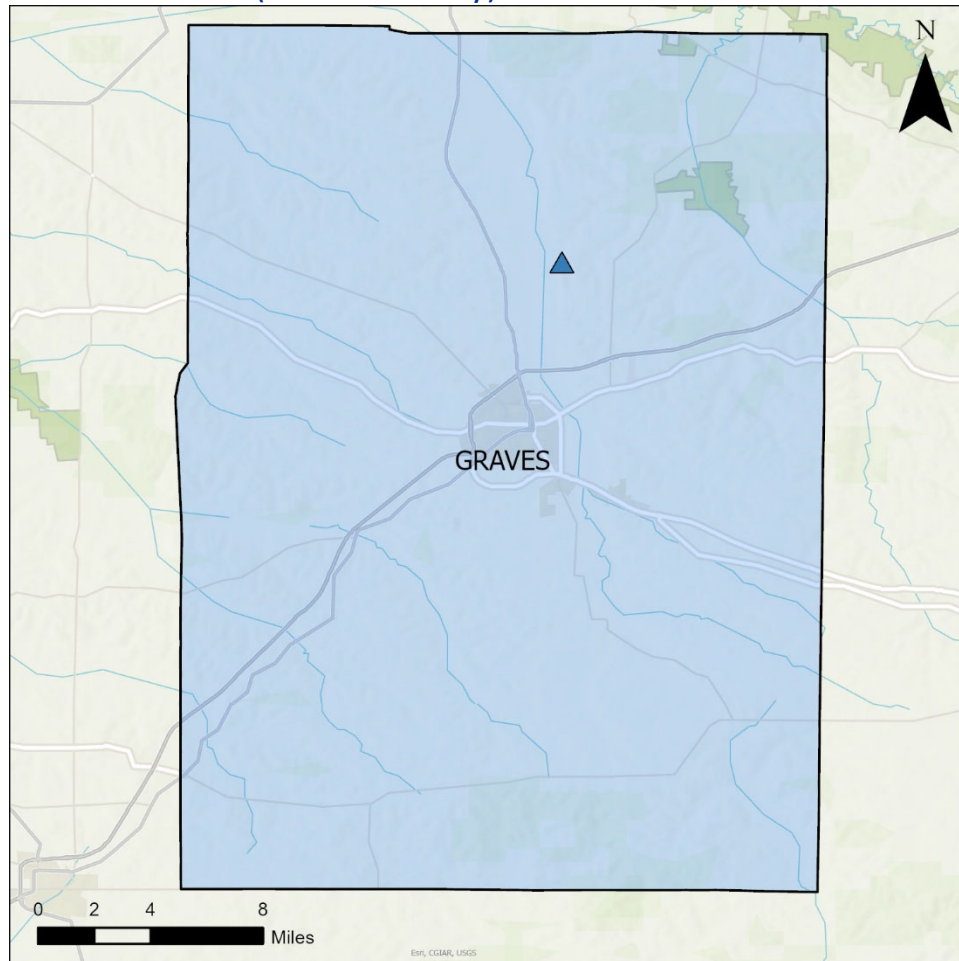


Exhibit Graves County Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Comments	Vegetation	Recommendation
1078	042-CR-1019 -000	WESTPLAINS RD	Entrance in Curve	No	Install Horizontal Alignment Signing; Consider striping enhancements at intersection; Clear vegetation
194	042-CR-1224 -000	SCOTT RD	Curve Obscured	No	Install Horizontal Alignment Signing

Exhibit Graves County Curve Recommendations

Roadside Drop Off Recommendations (Graves County)

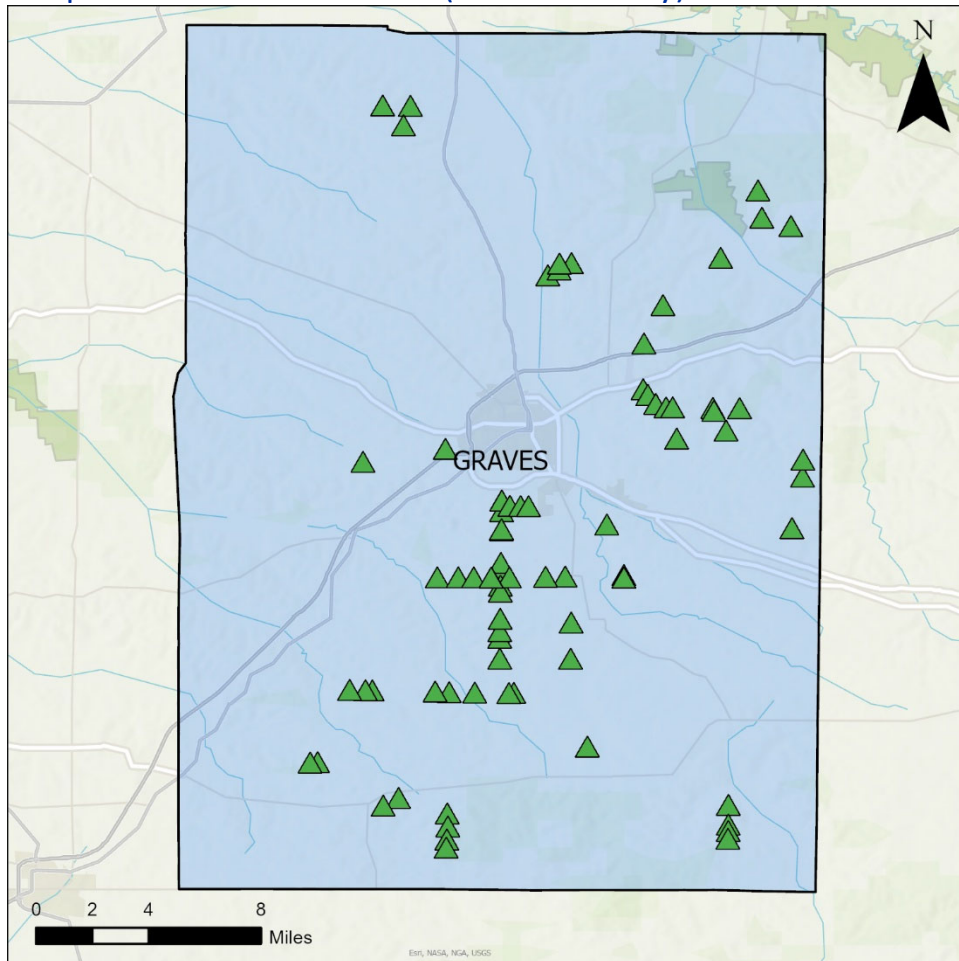


Exhibit Graves County Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
1201	042-CR-1140 -000	CENTRAL RD	1-3	<2	Evaluate potential to improve ditch slope/shoulder;
1195	042-CR-1140 -000	CENTRAL RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1206	042-CR-1140 -000	CENTRAL RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1209	042-CR-1140 -000	CENTRAL RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1210	042-CR-1140 -000	CENTRAL RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1176	042-CR-1140 -000	CENTRAL RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1179	042-CR-1140 -000	CENTRAL RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1192	042-CR-1140 -000	CENTRAL RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1208	042-CR-1140 -000	CENTRAL RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1183	042-CR-1140 -000	CENTRAL RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1187	042-CR-1140 -000	CENTRAL RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1189	042-CR-1140 -000	CENTRAL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1197	042-CR-1140 -000	CENTRAL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
929	042-CR-1423 -000	SHAW RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
935	042-CR-1423 -000	SHAW RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1086	042-CR-1076 -000	TIM RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1102	042-CR-1076 -000	TIM RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1098	042-CR-1076 -000	TIM RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1371	042-CR-1270 -000	WAGGONER BOTTOM RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1373	042-CR-1270 -000	WAGGONER BOTTOM RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1376	042-CR-1270 -000	WAGGONER BOTTOM RD	3-5	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1377	042-CR-1270 -000	WAGGONER BOTTOM RD	3-5	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1368	042-CR-1270 -000	WAGGONER BOTTOM RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1365	042-CR-1270 -000	WAGGONER BOTTOM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1366	042-CR-1270 -000	WAGGONER BOTTOM RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1378	042-CR-1270 -000	WAGGONER BOTTOM RD	0-1	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1407	042-CR-1195 -000	LESTER RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1410	042-CR-1195 -000	LESTER RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1436	042-CR-1195 -000	LESTER RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1405	042-CR-1195 -000	LESTER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1431	042-CR-1195 -000	LESTER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1433	042-CR-1195 -000	LESTER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1406	042-CR-1195 -000	LESTER RD	3-5	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1434	042-CR-1195 -000	LESTER RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1420	042-CR-1282 -000	COLTHARP RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1419	042-CR-1282 -000	COLTHARP RD	0-1	5-10	Install Type 3 object markers
1426	042-CR-1295 -000	JOHNS RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
854	042-CR-1375 -000	OLD DUBLIN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
851	042-CR-1375 -000	OLD DUBLIN RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
980	042-CR-1134 -000	BYRD RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
985	042-CR-1134 -000	BYRD RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
987	042-CR-1134 -000	BYRD RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
990	042-CR-1134 -000	BYRD RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
991	042-CR-1134 -000	BYRD RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
996	042-CR-1134 -000	BYRD RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
999	042-CR-1134 -000	BYRD RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)

Exhibit Graves County Roadside Drop Off Recommendations

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
1021	042-CR-1111 -000	GOLO RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1077	042-CR-1019 -000	WESTPLAINS RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1082	042-CR-1019 -000	WESTPLAINS RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1105	042-CR-1019 -000	WESTPLAINS RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1103	042-CR-1019 -000	WESTPLAINS RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1119	042-CR-1527 -000	SPENCE CHAPEL RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1121	042-CR-1527 -000	SPENCE CHAPEL RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1282	042-CR-1148 -000	JEFF DAVIS RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1294	042-CR-1168 -000	MCCLAIN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1295	042-CR-1168 -000	MCCLAIN RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1324	042-CR-1224 -000	SCOTT RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1331	042-CR-1224 -000	SCOTT RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1161	042-CR-1081 -000	WAYNE FREEMAN RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2309	042-CR-1632 -000	CLAYTON RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1307	042-CR-1632 -000	CLAYTON RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1344	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1348	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1350	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1354	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1356	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1358	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1360	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1363	042-CR-1230 -000	SLAUGHTER RD W	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1341	042-CR-1230 -000	SLAUGHTER RD W	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1312	042-CR-1107 -000	PARKER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1311	042-CR-1107 -000	PARKER RD	0-1	5-10	Install Type 3 object markers
961	042-CR-1444 -000	MERIDIAN RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1006	042-CR-1100 -000	BILL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1009	042-CR-1100 -000	BILL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1273	042-CR-1142 -000	W TUCKER RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1274	042-CR-1142 -000	W TUCKER RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1271	042-CR-1142 -000	W TUCKER RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1396	042-CR-1307 -000	PEA RIDGE RD	3-5	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1397	042-CR-1307 -000	PEA RIDGE RD	3-5	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1455	042-CR-1210 -000	HIGH RD	0-1	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Markers or Delineators

Exhibit Graves County Roadside Drop Off Recommendations (Continued)

Fixed Object Recommendations (Graves County)

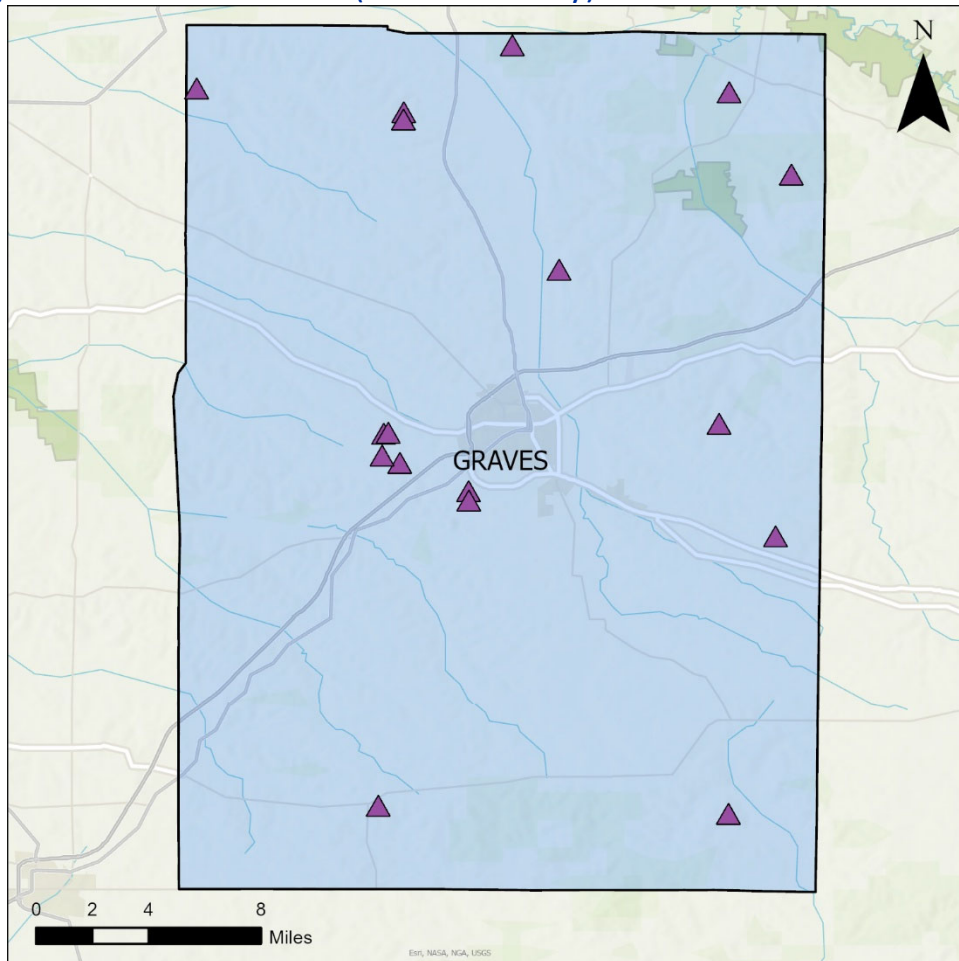


Exhibit Graves County Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation
1080	042-CR-1019 -000	WESTPLAINS RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
1421	042-CR-1282 -000	COLTHARP RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
942	042-CR-1444 -000	MERIDIAN RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
943	042-CR-1444 -000	MERIDIAN RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
1040	042-CR-1067 -000	BROOKHAVEN LN	Tree	Series	3-5	Remove trees within 3 ft of roadway
1234	042-CR-1351 -000	CARDINAL RD	Tree	Single	0-1	Remove
1008	042-CR-1100 -000	BILL RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
1216	042-CR-1252 -000	INGERSOLL RAND RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
1217	042-CR-1252 -000	INGERSOLL RAND RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
1253	042-CR-1349 -000	PRINTERS ALY	Tree	Series	1-3	Remove trees within 3 ft of roadway
1257	042-CR-1349 -000	PRINTERS ALY	Tree	Series	1-3	Remove trees within 3 ft of roadway
1256	042-CR-1349 -000	PRINTERS ALY	Tree	Single	0-1	Remove
969	042-CR-1044 -000	WHITESIDE RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
1304	042-CR-1632 -000	CLAYTON RD	Tree	Single	1-3	Remove
1154	042-CR-1074 -000	ROLLIE RD	Tree	Series	>5	--
1432	042-CR-1195 -000	LESTER RD	Tree	Series	1-3	Remove trees within 3 ft of roadway

Exhibit Graves County Fixed Object Recommendations

Intersection Recommendations (Graves County)

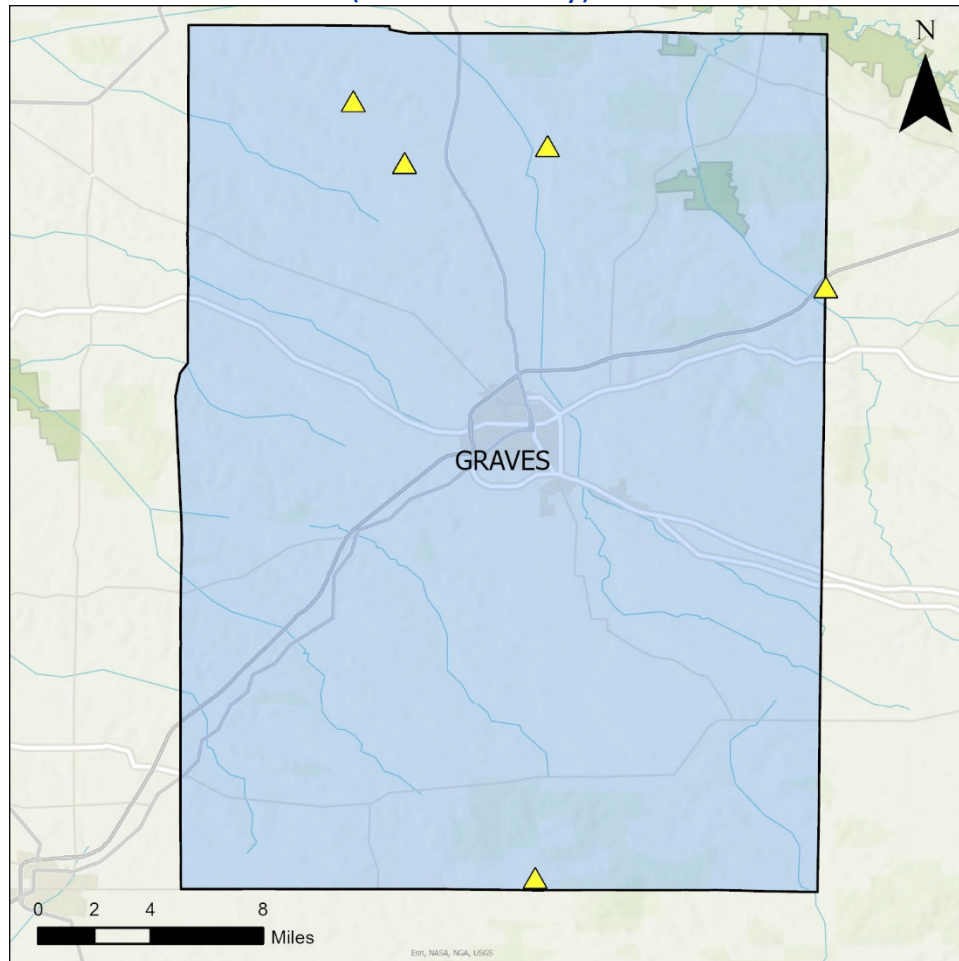


Exhibit Graves County Intersection Locations

Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation	Comments
197	042-CR-1224 -000	SCOTT RD	Yes	Clear Vegetation; Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X);	Insufficient Sight Distance at
927	042-CR-1423 -000	SHAW RD	Yes	Clear Vegetation; Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Apprao,Intersection Skew,Insufficient Sight Distance at
1138	042-CR-1500 -000	WADESBORO RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at
947	042-CR-1444 -000	MERIDIAN RD	No	Clear Vegetation; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Intersection Skew,Insufficient Sight Distance at
958	042-CR-1444 -000	MERIDIAN RD	No	Clear Vegetation; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Intersection Skew,Insufficient Sight Distance at
972	042-CR-1032 -000	MCCRACKEN COUNTY RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Apprao,Intersection Skew,Insufficient Sight Distance at
1425	042-CR-1295 -000	JOHNS RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Apprao,Intersection Skew,Insufficient Sight Distance at
1447	042-CR-1210 -000	HIGH RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at

Exhibit Graves County Intersection Recommendations

Other Recommendations (Graves County)

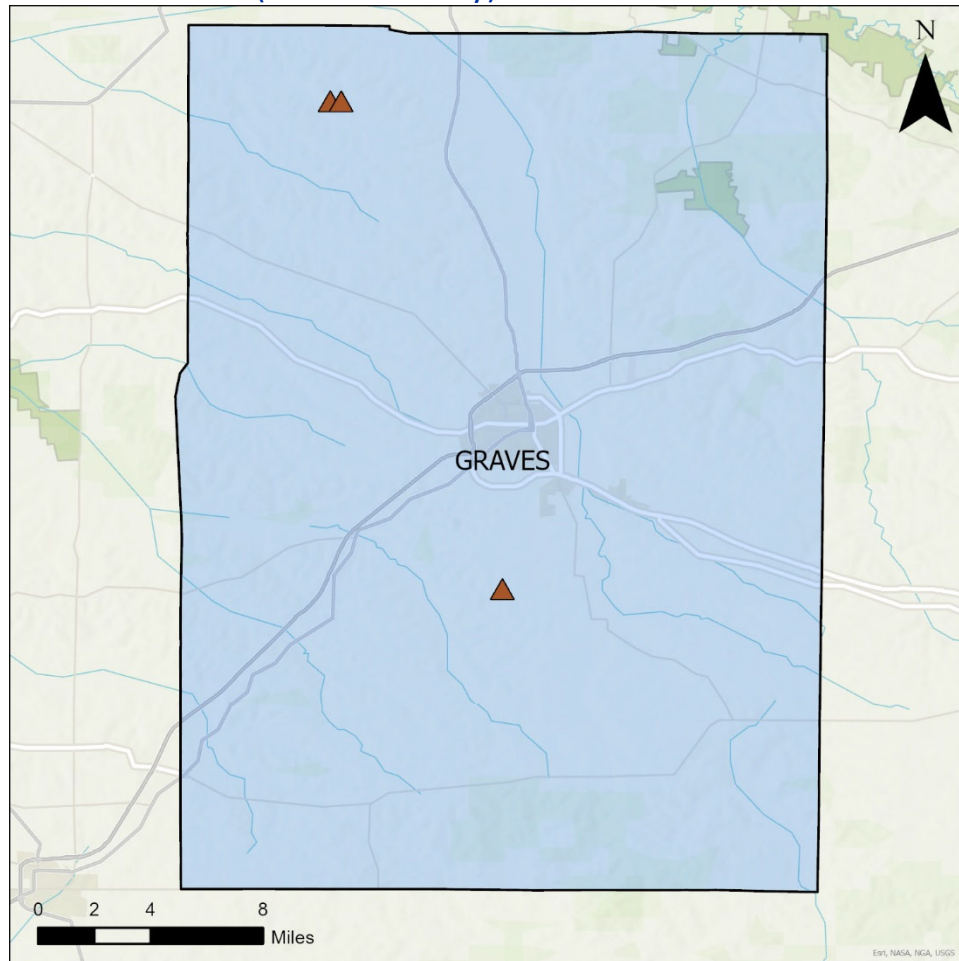


Exhibit Graves County Other Item Locations

Point ID	RT_UNIQUE	Road Name	Comments	Recommendation
922	042-CR-1423 -000	SHAW RD	Hill blocks view	Review Roadway
924	042-CR-1423 -000	SHAW RD	Roadway Hazard Series of hills limits sight distance	Review Roadway
1188	042-CR-1140 -000	CENTRAL RD	Series of hills poor visibility	Review Roadway

Exhibit Graves County Other Item Recommendations

Signing Recommendations (Graves County)

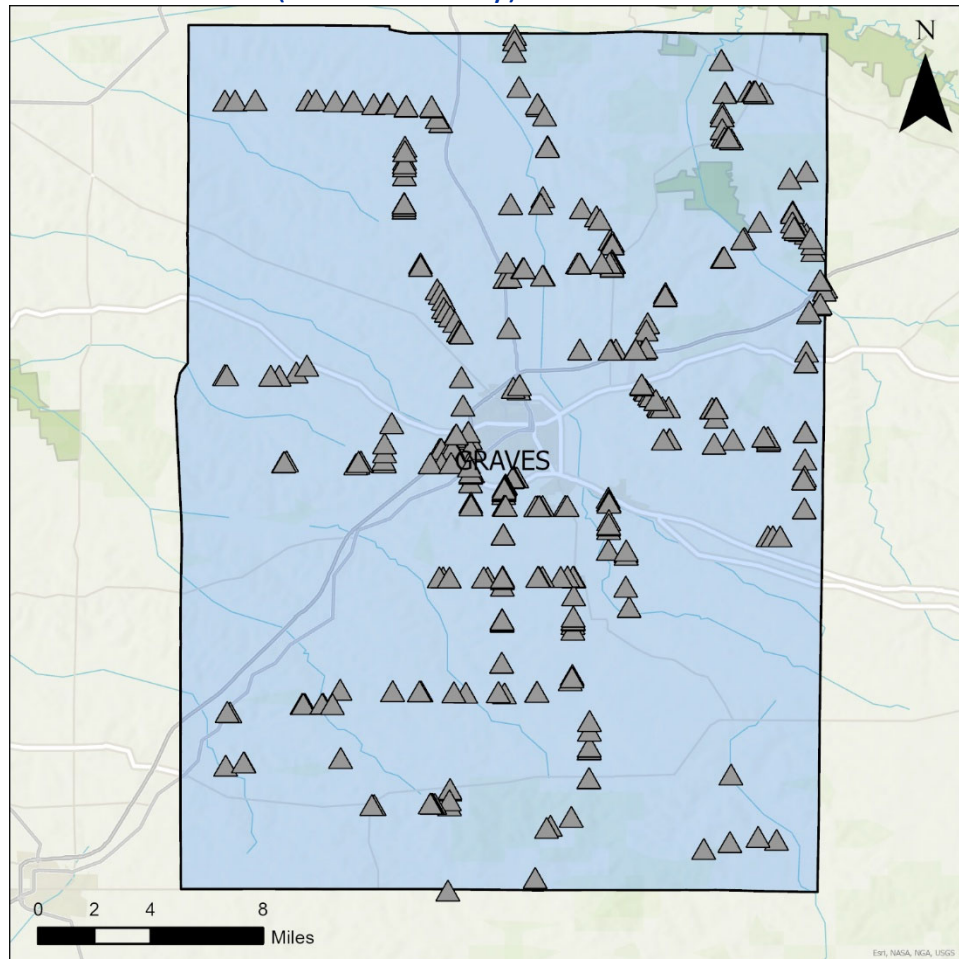
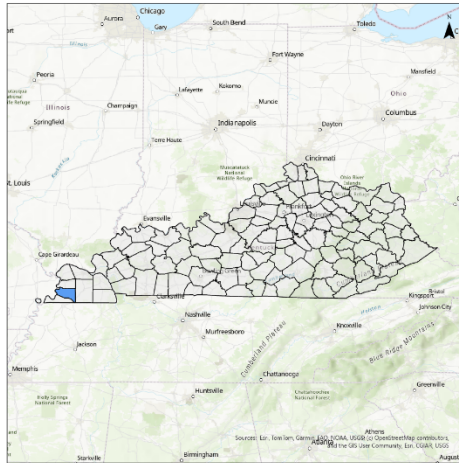


Exhibit Graves County Sign Locations

As part of the RSA data collection effort, existing signs were inventoried along reviewed Focus Roadways, including a condition assessment and a photo of each sign. Additionally, preliminary Advisory Speed recommendations were calculated for each focus roadway to assist in the installation of horizontal alignment (curve) signs. Signing and advisory speed information is provided in digital format at <https://kyt2.uky.edu/purchase-area-development-district>.

APPENDIX I: HICKMAN COUNTY

Hickman County Overview



Key Information Table	
Hickman County	
Population	4,447
Population in Persistent Poverty	23%
Underserved Community	No
Fatalities (All Roads)	6
Fatalities (County Roads)	0
Fatality Rate per 100,000 persons	1,349
County Road Mileage	196
State Road Mileage	206
Total Mileage	402

Exhibit Hickman-2: Key Information

Exhibit Hickman-1: Location Map

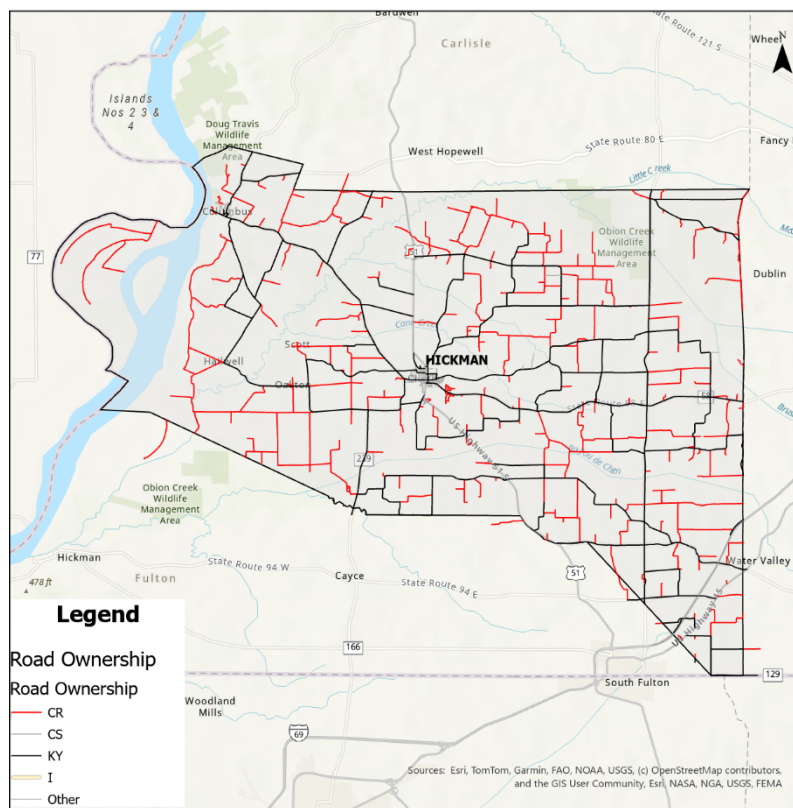


Exhibit Hickman-3: Map of County Roadways

Crash Analysis

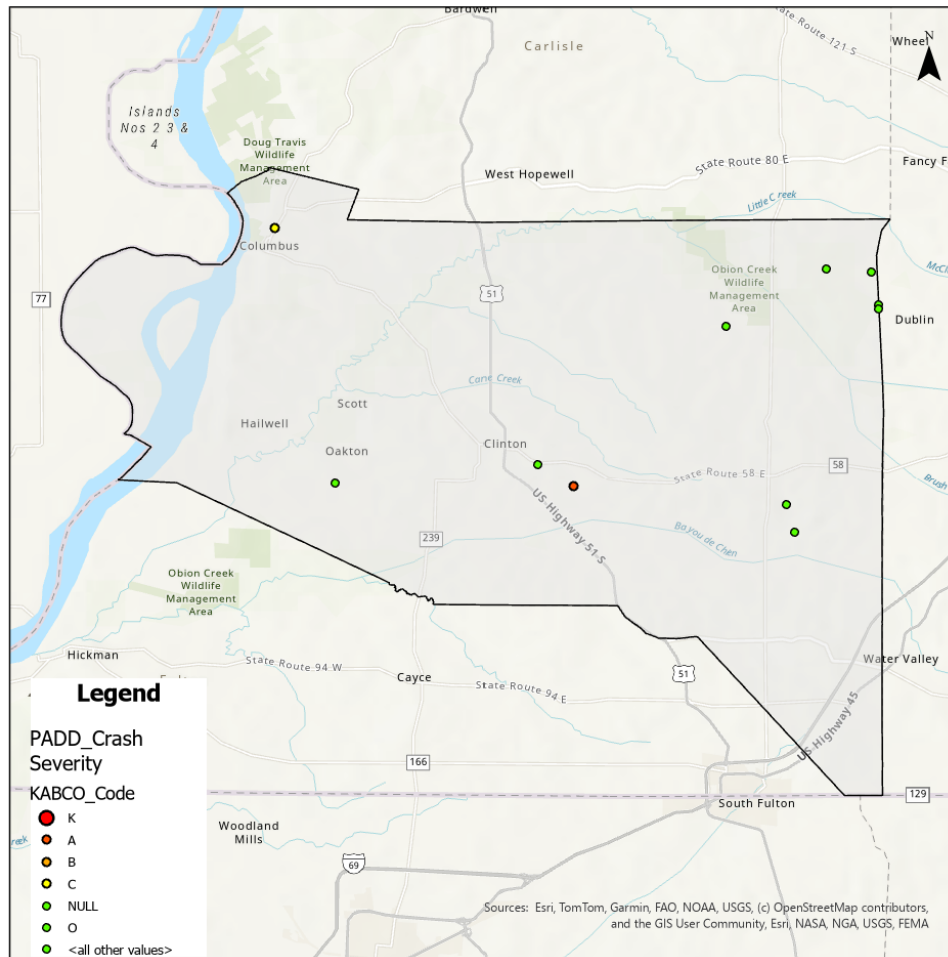


Exhibit Hickman-4: Map of County Road Crashes



Exhibit Hickman-5: Crash Distribution by Year

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	5	2	0	7
Backing	2	0	0	2
SS - Opp	1	0	0	1
Angle	1	0	0	1
SS - Same	0	0	0	0
Head On	0	0	0	0
Left Turn	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

Exhibit Hickman-6: Crash Frequency and Severity by Manner of Collision

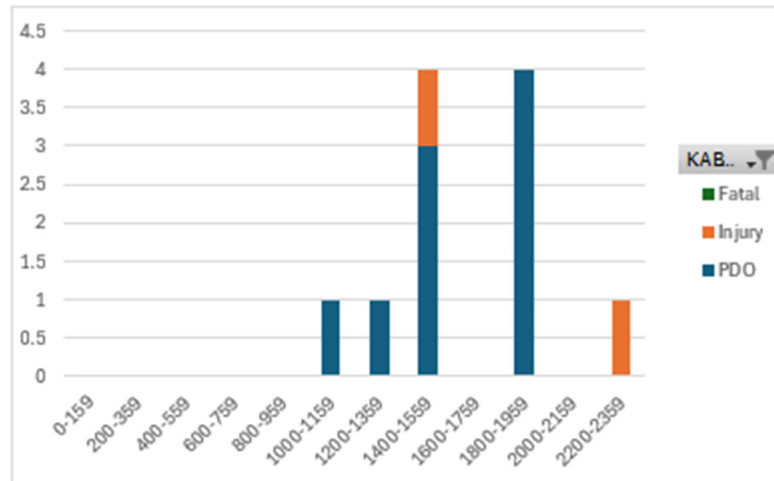


Exhibit Hickman-7: Crashes and Severity by Time of Day

Focus Roadways

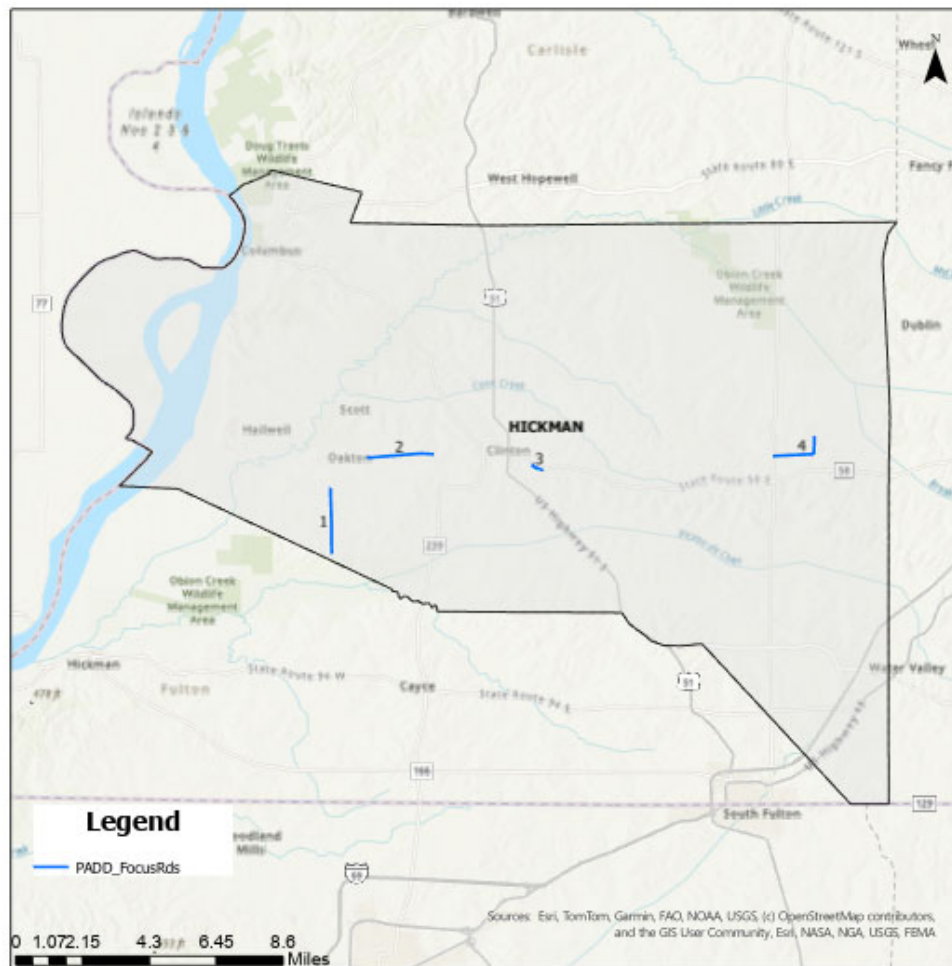


Exhibit Hickman-8: Focus Roads

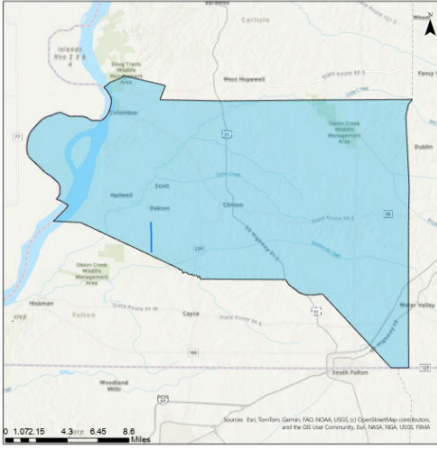
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Hickman											
053-CR-1216 -000	2.02	Hickman	Purchase	BOSTICK RD	0	1	0	1.52	0.94	1.33	1
053-CR-1226 -000	1.68	Hickman	Purchase	POOLE RD	0	0	0	0.00	3.60	1.19	2
053-CR-1200B -000	0.34	Hickman	Purchase	PIPER DR	0	1	1	1.67	0.16	1.17	3
053-CR-1104 -000	1.56	Hickman	Purchase	HICKERSON RD	0	1	0	1.52	0.19	1.08	4

Exhibit Hickman-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

BOSTICK RD (053-CR-1216 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	0	0	0	0
	SS - Same	0	0	0	0
	Head On	0	0	0	0
	SS - Opp	0	0	0	0
	Backing	0	0	0	0
	Rear End	0	0	0	0
	Rear to Rear	0	0	0	0
	Angle	0	0	0	0
	Left Turn	0	0	0	0

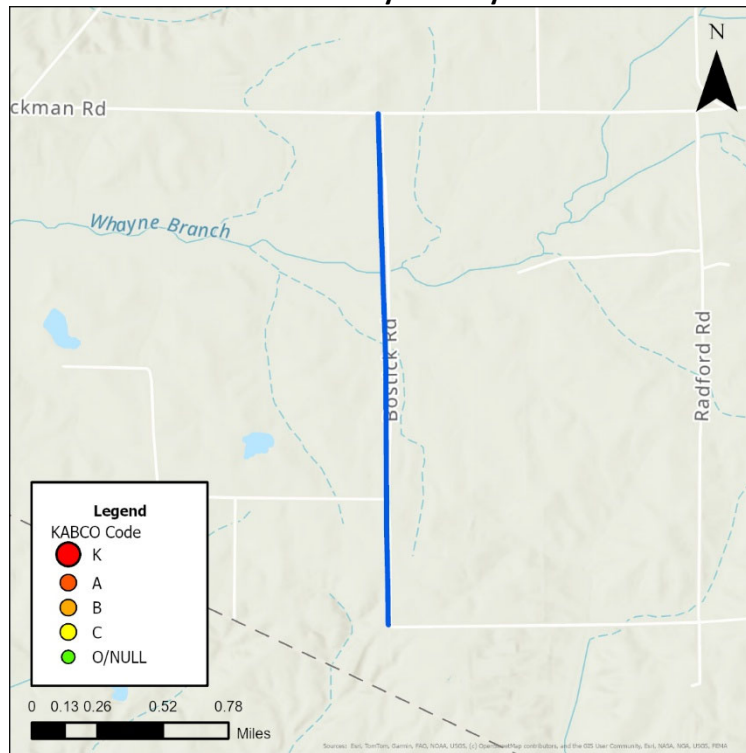
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
519	053-CR-1216 -000	BOSTICK RD	16	4	2	0-20

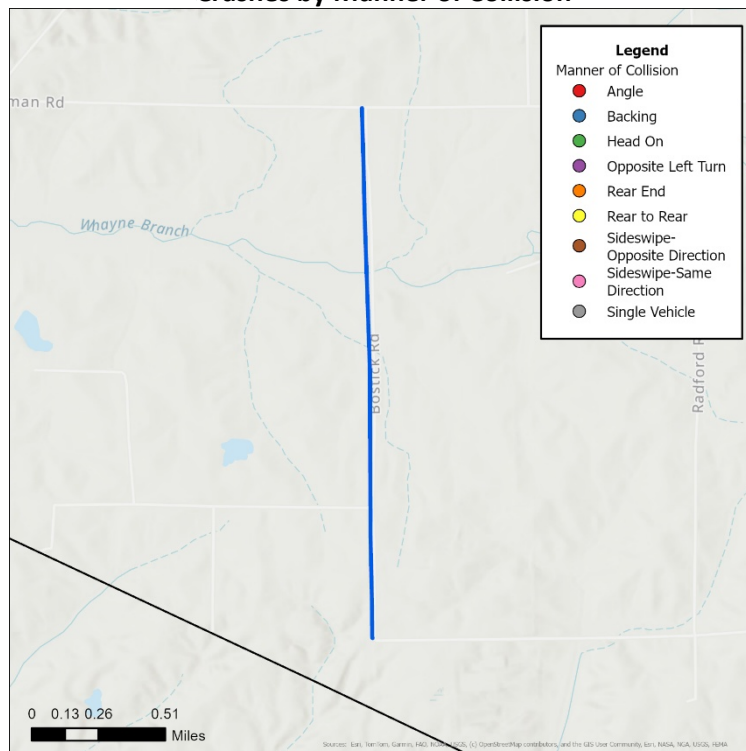
Roadway Typical Section



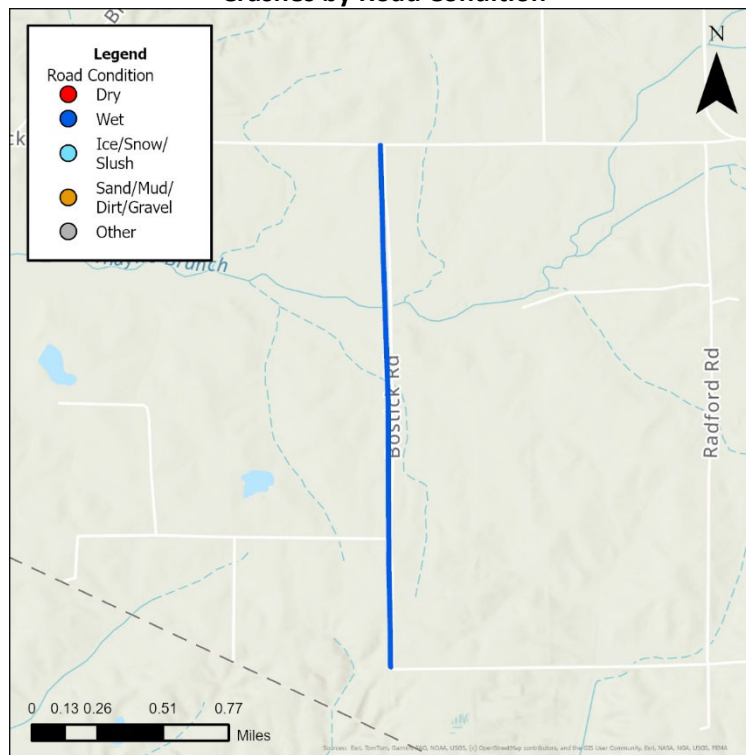
Crashes by Severity



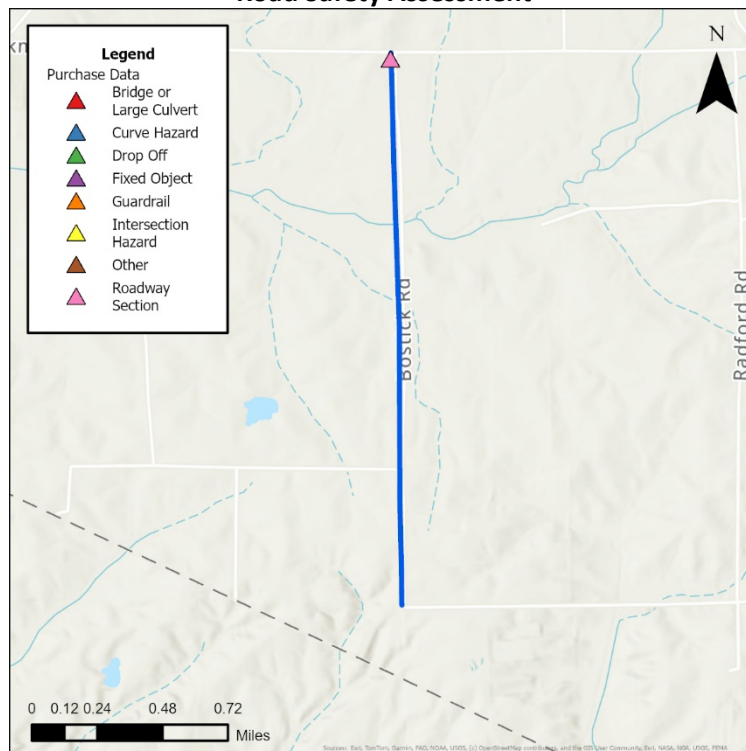
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

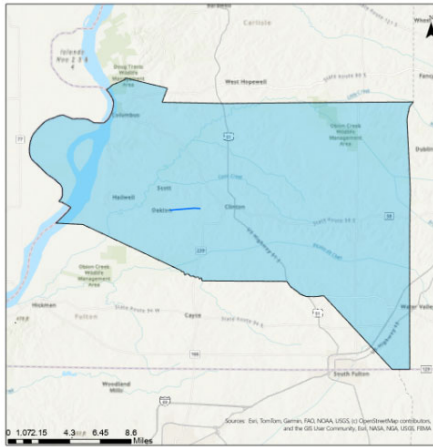


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
519	053-CR-1216 -000	BOSTICK RD	16	4	2	0-20		✓	✓

POOLE RD (053-CR-1226 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Rear End	0	0	0	0
Rear to Rear	0	0	0	0
Angle	0	0	0	0
Left Turn	0	0	0	0

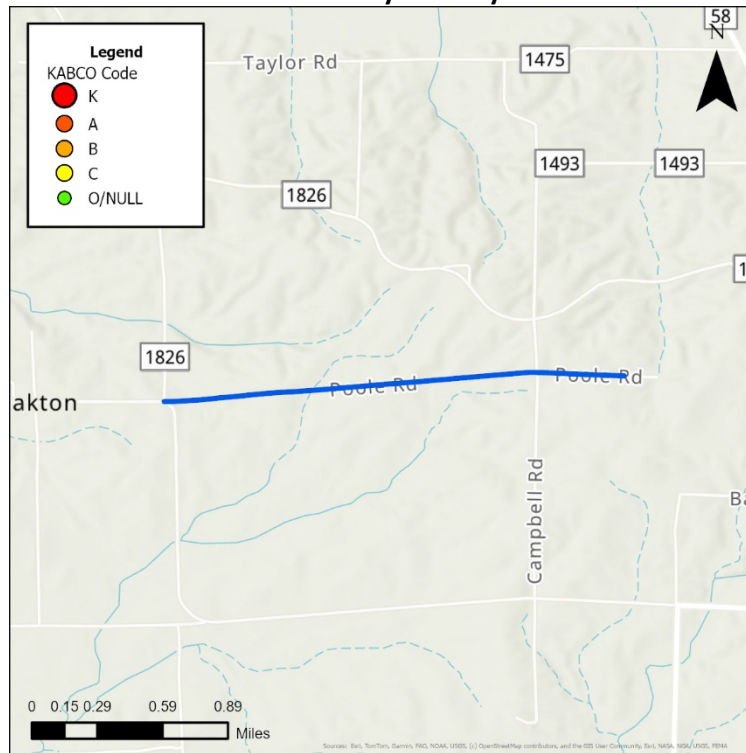
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
523	053-CR-1226 -000	POOLE RD	16	4	2	0-20
524	053-CR-1226 -000	POOLE RD	14	4	2	0-20

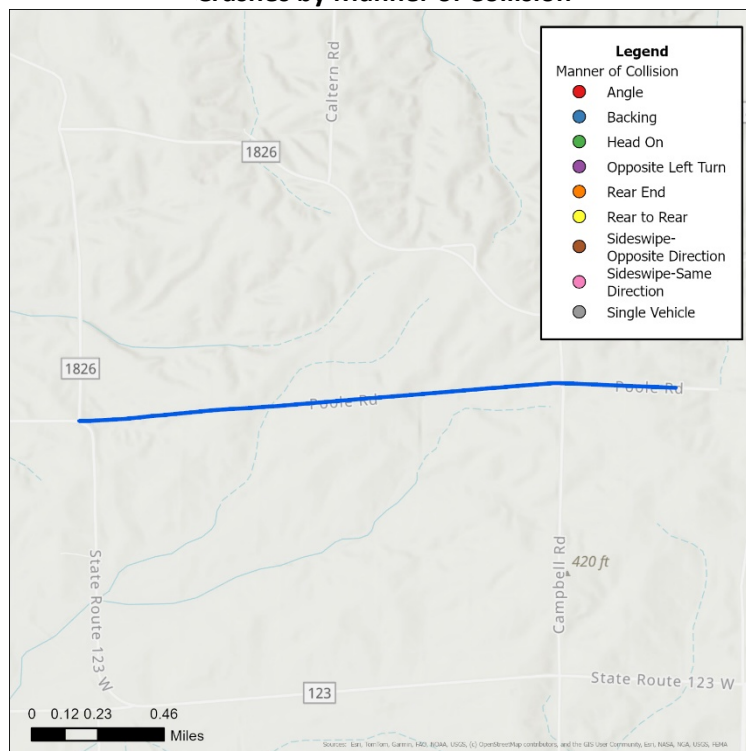
Roadway Typical Section



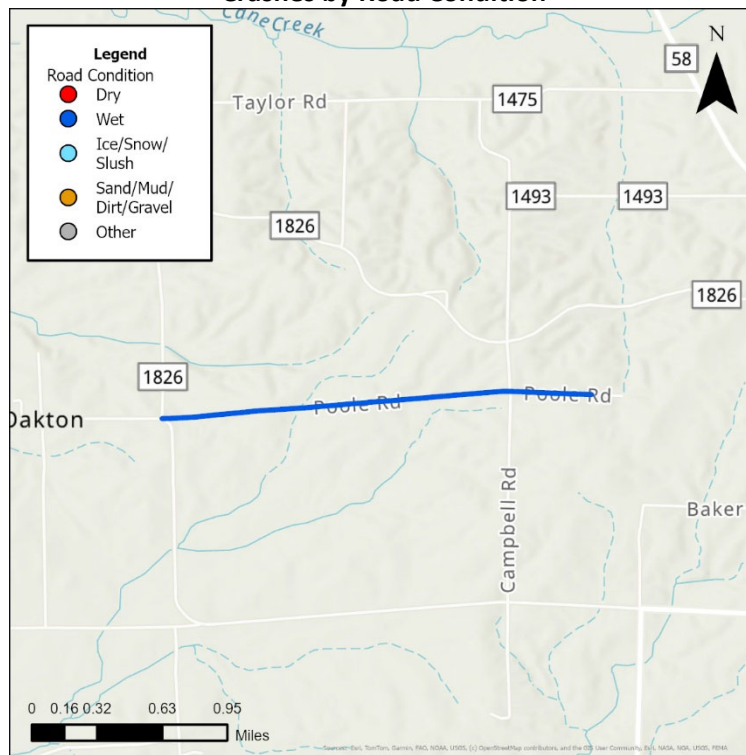
Crashes by Severity



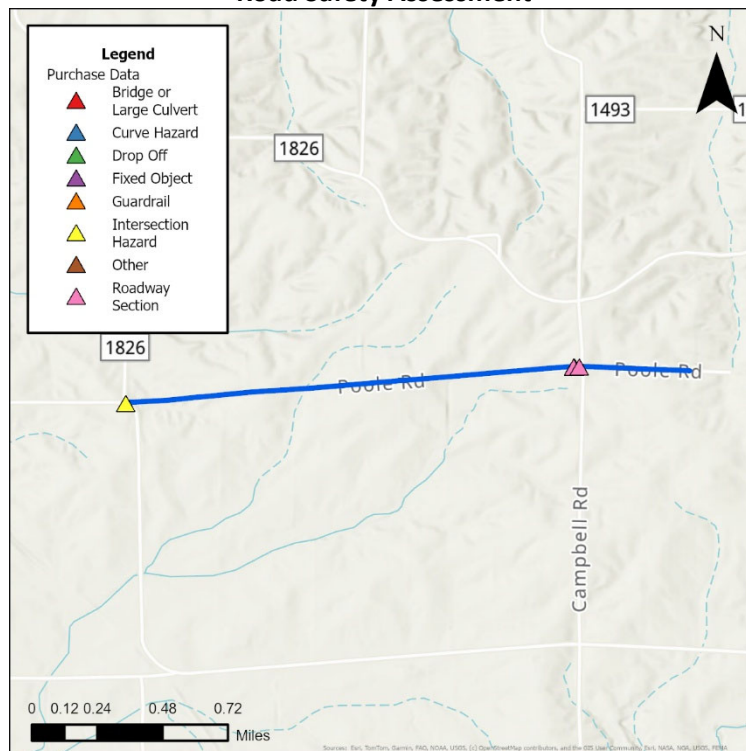
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

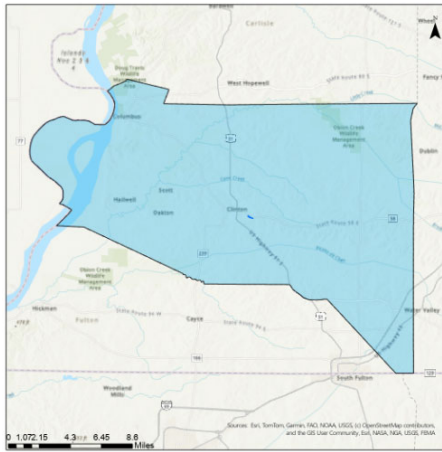


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
523	053-CR-1226 -000	POOLE RD	16	4	2	0-20		✓	✓
524	053-CR-1226 -000	POOLE RD	14	4	2	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation			Comments		
520	053-CR-1226 -000	POOLE RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew			Intersection_Obscured_on_Approa,Intersection_Skew		
522	053-CR-1226 -000	POOLE RD	No	INSTALL STOP SIGN; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)			Intersection_Obscured_on_Approa,other; 'No stop sign		

PIPER DR (053-CR-1200B -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Backing	1	0	0	1
Left Turn	0	0	0	0
SS - Same	0	0	0	0
SS - Opp	0	0	0	0
Head On	0	0	0	0
Single Vehicle	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

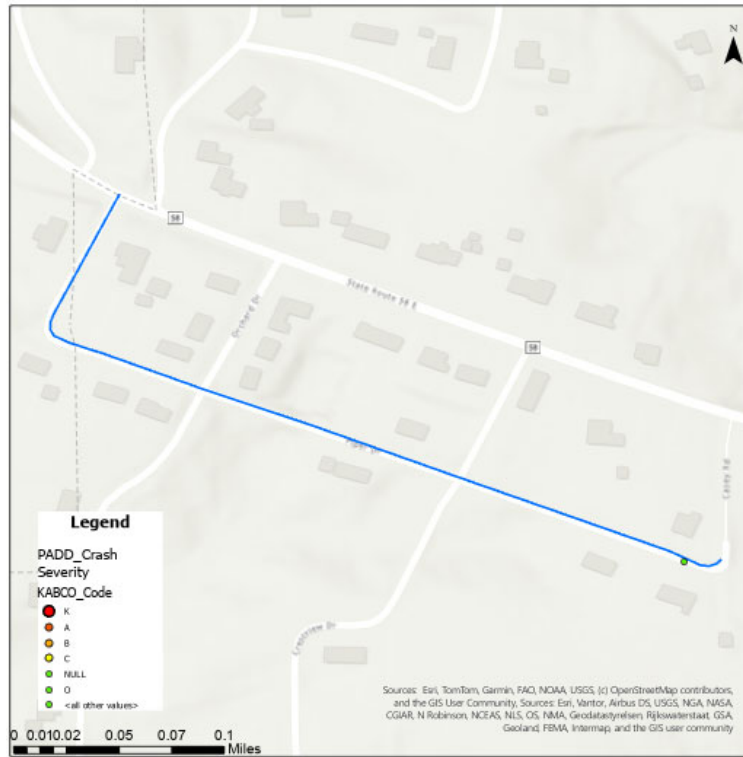
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
527	053-CR-1200B -000	PIPER DR	17	4	2	0-20

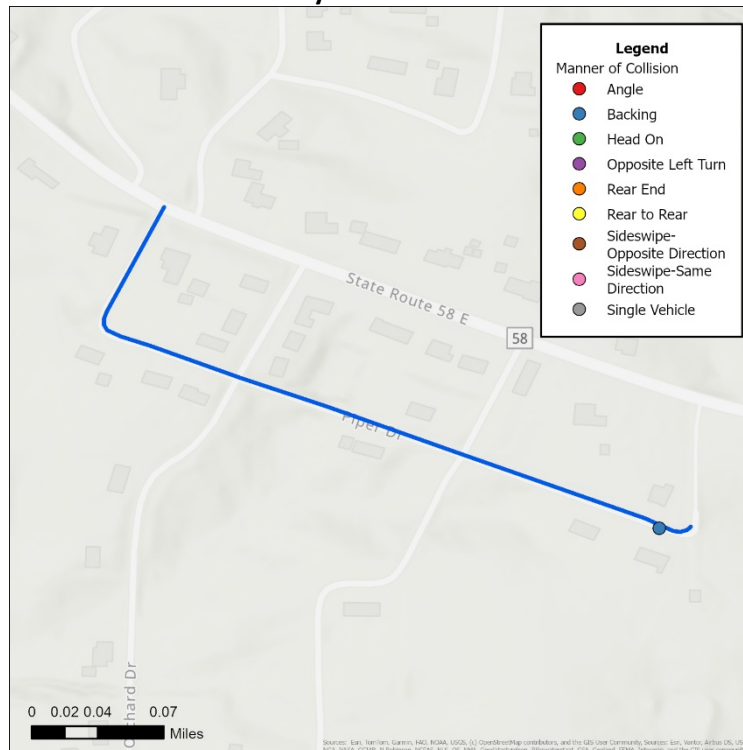
Roadway Typical Section



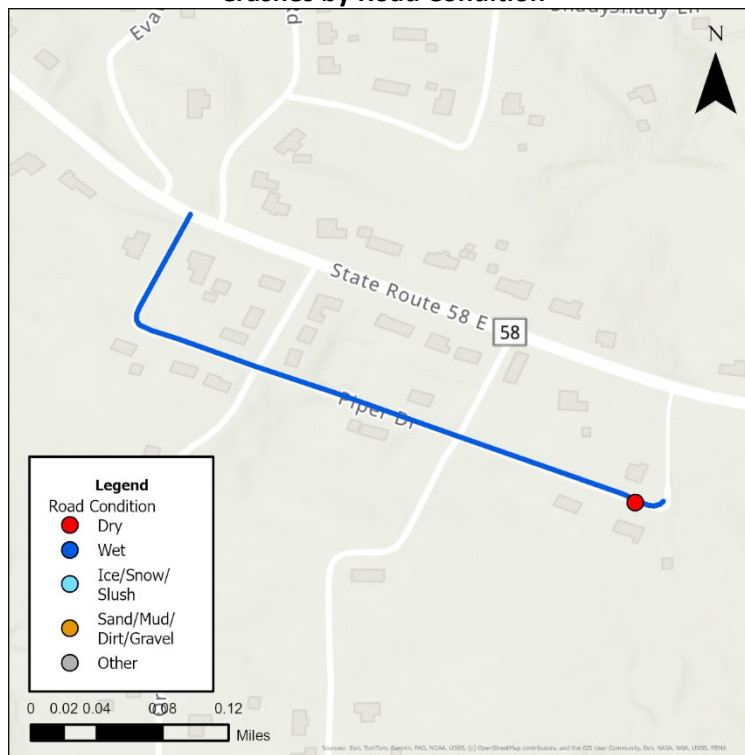
Crashes by Severity



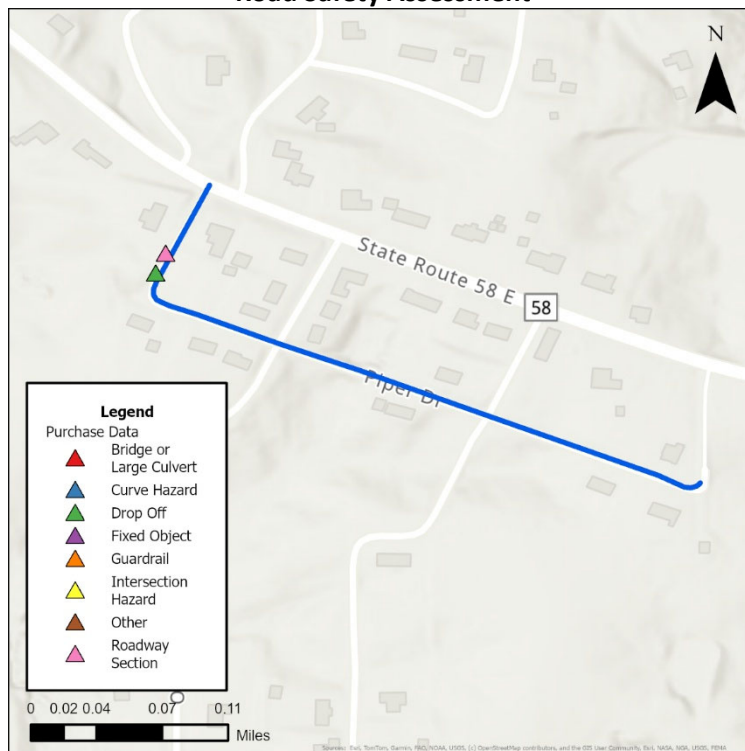
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

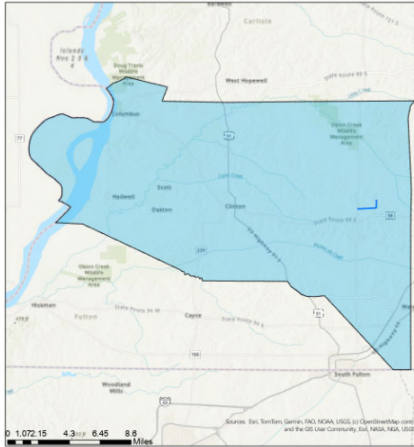


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
527	053-CR-1200B -000	PIPER DR	17	4	2	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
528	053-CR-1200B -000	PIPER DR	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)				

HICKERSON RD (053-CR-1104 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Rear End	0	0	0	0
Rear to Rear	0	0	0	0
Angle	0	0	0	0
Left Turn	0	0	0	0

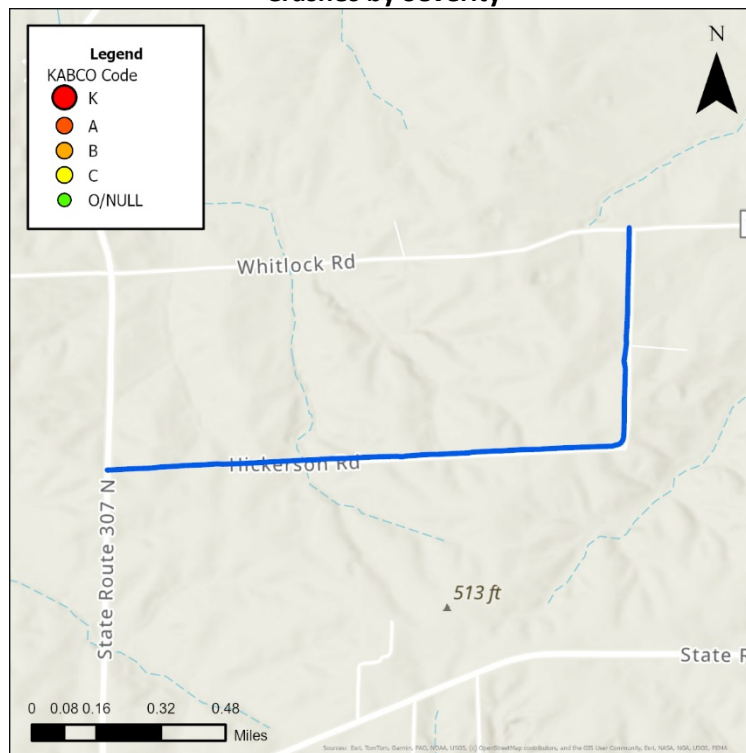
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
538	053-CR-1104 -000	HICKERSON RD	13	4	3	0-20

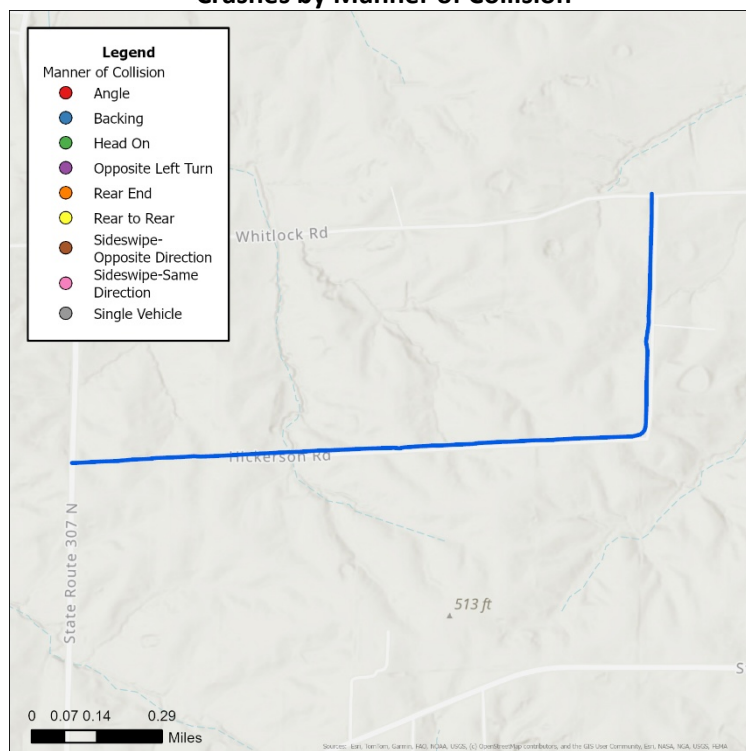
Roadway Typical Section



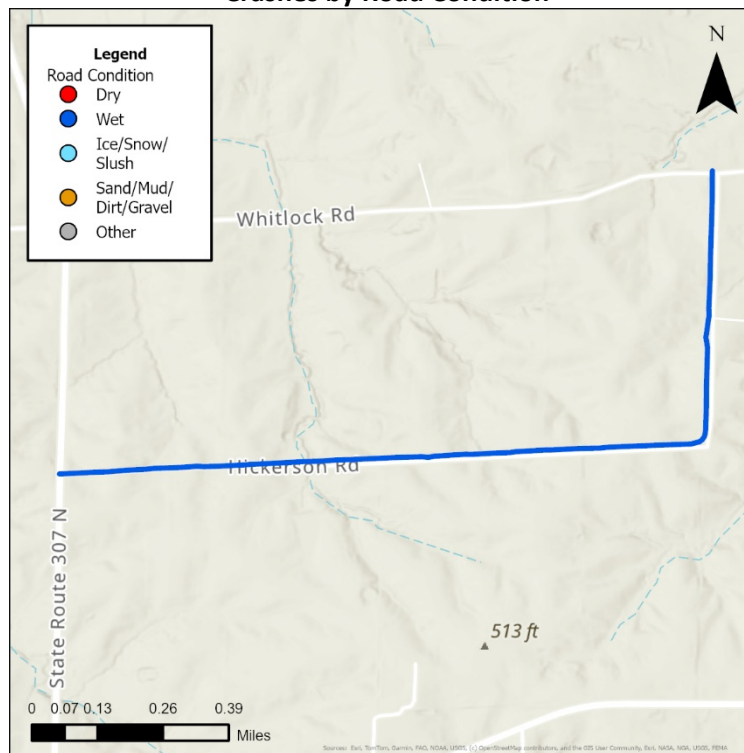
Crashes by Severity



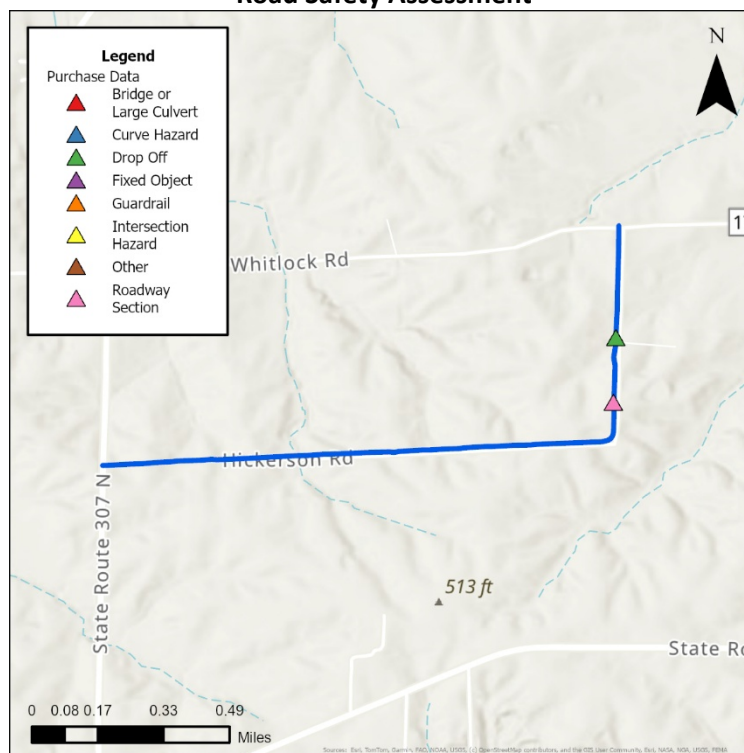
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

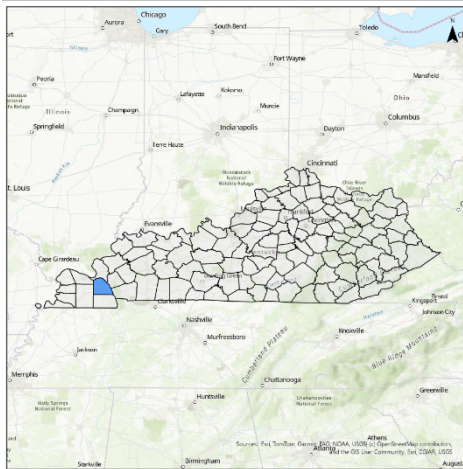


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
538	053-CR-1104 -000	HICKERSON RD	13	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
535	053-CR-1104 -000	HICKERSON RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)				

APPENDIX J: MARSHALL COUNTY

Marshall County Overview



Key Information Table	
Marshall County	
Population	31,744
Population in Persistent Poverty	16%
Underserved Community	No
Fatalities (All Roads)	40
Fatalities (County Roads)	10
Fatality Rate per 100,000 persons	1,260
County Road Mileage	451
State Road Mileage	295
Total Mileage	746

Exhibit Marshall-2: Key Information

Exhibit Marshall-1: Location Map

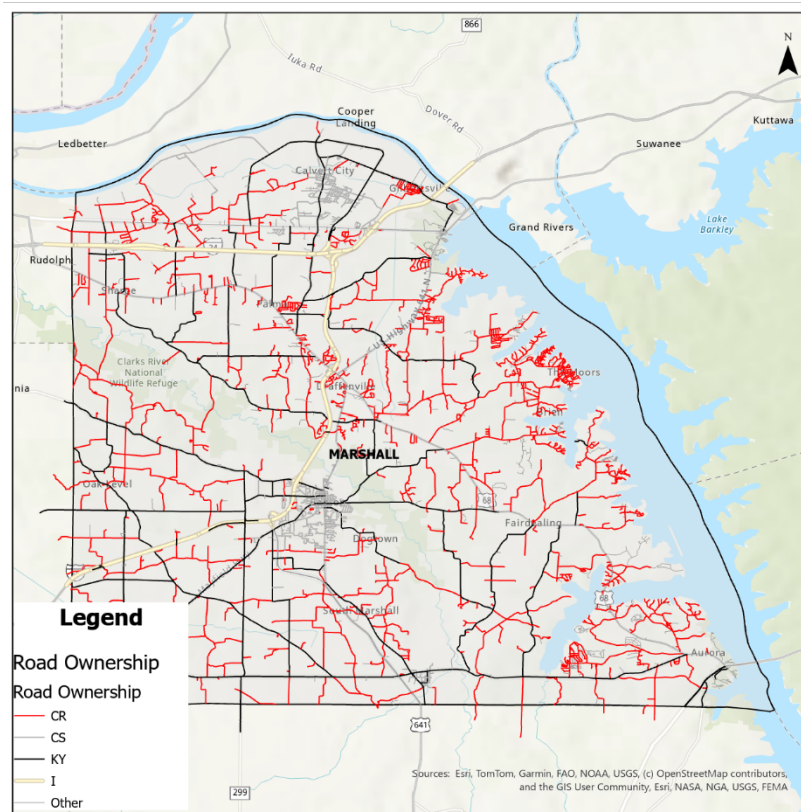


Exhibit Marshall-3: Map of County Roadways

Crash Analysis

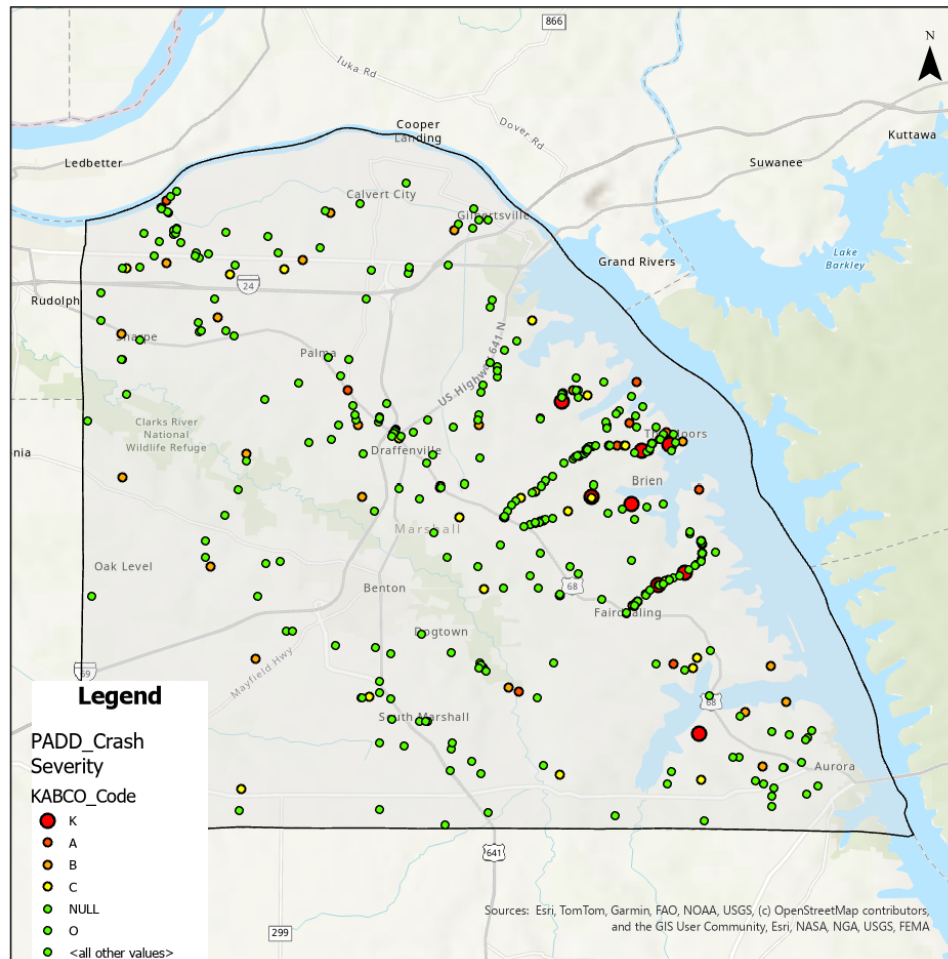


Exhibit Marshall-4: Map of County Road Crashes



Exhibit Marshall-5: Crash Distribution by Year

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	176	66	9	251
Angle	28	5	0	33
Backing	31	0	0	31
SS - Opp	20	2	0	22
Rear End	18	4	0	22
Head On	14	4	0	18
SS - Same	5	0	0	5
Left Turn	3	0	0	3
Rear to Rear	2	0	0	2

Exhibit Marshall-6: Crash Frequency and Severity by Manner of Collision

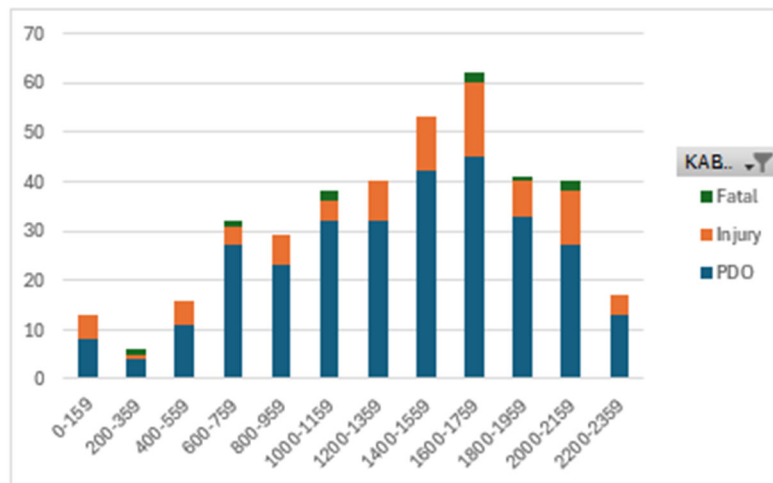


Exhibit Marshall-7: Crashes and Severity by Time of Day

RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Marshall											
079-CR-1009 -000	7.87	Marshall	Purchase	MOORS CAMP HWY	12	12	42	3.33	3.29	3.32	1
079-CR-1077 -000	1.52	Marshall	Purchase	SLEDD CREEK RD	0	1	3	1.76	0.78	1.44	2
079-CR-1061 -000	3.62	Marshall	Purchase	BIG BEAR HWY	2	1	6	0.47	2.94	1.29	3
079-CR-1613 -000	5.41	Marshall	Purchase	BARGE ISLAND RD	3	4	18	0.96	1.62	1.18	4
079-CR-1457 -000	0.05	Marshall	Purchase	HILL CREEK CT	0	0	0	0.00	2.54	0.84	5
079-CR-1008 -000	2.24	Marshall	Purchase	DUSTY TRAIL RD	0	1	2	0.09	1.79	0.65	6
079-CR-1063 -000	4.39	Marshall	Purchase	BRIENSBURG-TATUMSVILLE	1	1	2	0.27	1.40	0.64	7
079-CR-1286 -000	4.46	Marshall	Purchase	HOUSER RD	3	3	1	0.76	0.37	0.63	8
079-CR-1081 -000	3.28	Marshall	Purchase	LITTLE BEAR HWY	1	0	7	0.23	1.17	0.54	9
079-CR-1164 -000	2.36	Marshall	Purchase	UNION RIDGE RD	1	2	4	0.36	0.75	0.49	10
079-CR-1128 -000	1.92	Marshall	Purchase	REED RD	0	0	1	0.01	1.17	0.39	11
079-CR-1150 -000	1.04	Marshall	Purchase	PIRATES COVE RD	0	0	1	0.01	1.17	0.39	12
079-CR-1101 -000	1.46	Marshall	Purchase	TUBBS RD	2	0	1	0.36	0.32	0.35	13
079-CR-1392 -000	2.65	Marshall	Purchase	SHAR-CAL RD	2	0	6	0.40	0.23	0.34	14
079-CR-1040J -000	0.23	Marshall	Purchase	FRAZIER DR	0	1	0	0.08	0.87	0.34	15
079-CR-1256 -000	1.02	Marshall	Purchase	OAK GROVE CHURCH RD	0	0	0	0.00	0.99	0.33	16
079-CR-1825 -000	2.66	Marshall	Purchase	OLD CALVERT CITY RD	1	3	2	0.42	0.13	0.32	17
079-CR-1240 -000	1.74	Marshall	Purchase	RILEY RD	0	0	2	0.02	0.93	0.32	18
079-CR-1752 -000	3.55	Marshall	Purchase	SID DARNALL RD	2	0	3	0.38	0.19	0.32	19
079-CR-1065 E -000	0.10	Marshall	Purchase	B-T C CONNECTOR RD	0	1	0	0.08	0.79	0.31	20
079-CR-1418 -000	3.39	Marshall	Purchase	SHARPE-ELVA RD	1	1	1	0.26	0.41	0.31	21
079-CR-1876 -000	0.48	Marshall	Purchase	MARCO ST	1	0	0	0.18	0.44	0.26	22
079-CR-1125K -000	1.15	Marshall	Purchase	FOREST RD	0	0	0	0.00	0.77	0.25	23
079-CR-1071H -000	0.08	Marshall	Purchase	CATALINA RD	0	0	0	0.00	0.76	0.25	24
079-CR-1134 -000	1.90	Marshall	Purchase	VILLAGE RD	0	2	3	0.17	0.40	0.25	25
079-CR-1378 -000	0.67	Marshall	Purchase	DRIVERS RD	1	1	0	0.25	0.23	0.25	26
079-CR-1029B -000	0.95	Marshall	Purchase	CAMBRIDGE SHORES DR	0	0	1	0.01	0.71	0.24	27
079-CR-1065G -000	0.13	Marshall	Purchase	BENTON BRIENSBURG RD	0	0	0	0.00	0.71	0.23	28
079-CR-1380 -000	0.31	Marshall	Purchase	PATTERSON RD	0	0	0	0.00	0.69	0.23	29
079-CR-1360 E -000	0.99	Marshall	Purchase	TRUCK PLAZA LN	0	0	0	0.00	0.62	0.20	30
079-CR-1024 -000	1.14	Marshall	Purchase	TAFT RD	0	0	0	0.00	0.61	0.20	31
079-CR-1249 -000	1.50	Marshall	Purchase	DOWDY CEMETERY RD	0	1	2	0.09	0.41	0.20	32
079-CR-1175 -000	1.47	Marshall	Purchase	RUDOLPH RD	0	0	3	0.02	0.51	0.18	33
079-CR-1131 -000	1.14	Marshall	Purchase	PALESTINE RD	1	0	1	0.18	0.17	0.18	34
079-CR-1621 -000	0.56	Marshall	Purchase	LOVERS LN	1	0	0	0.18	0.18	0.18	35
079-CR-1374 -000	4.62	Marshall	Purchase	CALVERT CITY RD	1	0	4	0.21	0.12	0.18	36
079-CR-1218 -000	0.60	Marshall	Purchase	CONE RD	0	0	0	0.00	0.54	0.18	37
079-CR-1111 -000	1.64	Marshall	Purchase	HOLLAND RD	1	0	1	0.18	0.15	0.17	38
079-CR-1071G -000	0.22	Marshall	Purchase	BAYVIEW DR	0	0	0	0.00	0.51	0.17	39
079-CR-1151 -000	1.01	Marshall	Purchase	BEASLEY RD	1	0	1	0.18	0.14	0.17	40
079-CR-1241 -000	0.11	Marshall	Purchase	COPE RD	0	0	0	0.00	0.50	0.16	41
079-CR-1311 -000	0.37	Marshall	Purchase	PHILLIPS RD	0	0	0	0.00	0.50	0.16	42
079-CR-1193 -000	1.57	Marshall	Purchase	HARDIN-WADESBORO RD	0	1	1	0.08	0.32	0.16	43
079-CR-1010 -000	1.21	Marshall	Purchase	KING CREEK RD	0	0	2	0.02	0.46	0.16	44
079-CR-1126D -000	0.54	Marshall	Purchase	KNIGHT LN	0	0	0	0.00	0.48	0.16	45
079-CR-1071M -000	0.64	Marshall	Purchase	MOORS RD	0	0	0	0.00	0.48	0.16	46
079-CR-1346F -000	0.30	Marshall	Purchase	VINE ST	0	1	1	0.08	0.31	0.16	47
079-CR-1368 -000	0.58	Marshall	Purchase	DR SMITH LN	1	0	2	0.19	0.08	0.16	48
079-CR-1161 -000	1.71	Marshall	Purchase	GARDNER RD	1	0	2	0.19	0.07	0.15	49
079-CR-1377 -000	0.91	Marshall	Purchase	HOWARDS GROVE RD	1	0	1	0.18	0.09	0.15	50
079-CR-1072B -000	1.70	Marshall	Purchase	STEAMBOAT RD	0	0	0	0.00	0.46	0.15	51
079-CR-1108 -000	1.35	Marshall	Purchase	ABRAHAM RD	1	0	1	0.18	0.08	0.15	52
079-CR-1162 -000	0.86	Marshall	Purchase	SIRLS RD	0	0	0	0.00	0.46	0.15	53
079-CR-1109 -000	0.83	Marshall	Purchase	SALEM CHAPEL RD N	0	0	0	0.00	0.45	0.15	54
079-CR-1071J -000	0.18	Marshall	Purchase	ADAIR DR	0	0	0	0.00	0.45	0.15	55
079-CR-1146 -000	3.28	Marshall	Purchase	CURD RD	0	2	0	0.15	0.14	0.15	56
079-CR-1647 -000	3.45	Marshall	Purchase	WALNUT GROVE CHURCH	0	2	1	0.16	0.12	0.15	57
079-CR-1346B -000	0.54	Marshall	Purchase	NATIVE CIR	1	0	0	0.18	0.08	0.14	58
079-CR-1346G -000	0.27	Marshall	Purchase	CARROLL RD	0	0	2	0.02	0.40	0.14	59
079-CR-1376 -000	2.05	Marshall	Purchase	HORACE BARNES RD	1	0	1	0.18	0.05	0.14	60
079-CR-1441 -000	2.06	Marshall	Purchase	MILLIKEN MILL LN	0	0	5	0.04	0.34	0.14	61
079-CR-1018 -000	0.33	Marshall	Purchase	BILL HAMMEL LN	1	0	0	0.18	0.05	0.13	62
079-CR-1036 -000	2.49	Marshall	Purchase	DYKE RD	0	0	3	0.02	0.35	0.13	63

Exhibit Marshall-9: List of Focus Roadways

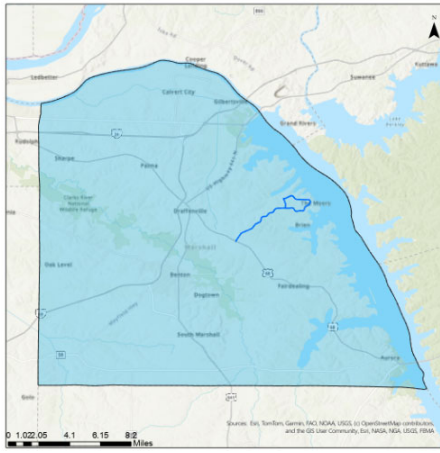
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
Marshall											
079-CR-1166 -000	1.76	Marshall	Purchase	SHOEMAKER RD	0	0	1	0.01	0.38	0.13	64
079-CR-1402 -000	0.92	Marshall	Purchase	WARNICK RD	0	0	0	0.00	0.40	0.13	65
079-CR-1375 -000	0.95	Marshall	Purchase	RETIREMENT CIR	1	0	0	0.18	0.03	0.13	66
079-CR-1631 -000	0.85	Marshall	Purchase	MERMIE RD	0	0	0	0.00	0.38	0.13	67
079-CR-1874 -000	0.69	Marshall	Purchase	VETERANS PLAZA BLVD	0	0	1	0.01	0.36	0.12	68
079-CR-1154 -000	4.82	Marshall	Purchase	BEAL RD	0	0	4	0.03	0.31	0.12	69
079-CR-1163 -000	0.28	Marshall	Purchase	HUGHES RD	0	0	0	0.00	0.36	0.12	70
079-CR-1244 -000	1.68	Marshall	Purchase	TOY YORK RD	0	1	3	0.10	0.16	0.12	71
079-CR-1040D -000	0.22	Marshall	Purchase	MCCRACKEN RD	0	0	1	0.01	0.33	0.11	72
079-CR-1622 -000	0.12	Marshall	Purchase	BRITTANY LN	0	0	0	0.00	0.34	0.11	73

Exhibit Marshall-10: List of Focus Roadways (continued)

Recommended Improvements (Top 5 Roads)

MOORS CAMP HWY (079-CR-1009 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	29	14	1	44
Rear End	3	2	0	5
Angle	3	0	0	3
Backing	3	0	0	3
SS - Same	2	0	0	2
SS - Opp	1	0	0	1
Head On	0	1	0	1
Rear to Rear	0	0	0	0
Left Turn	0	0	0	0

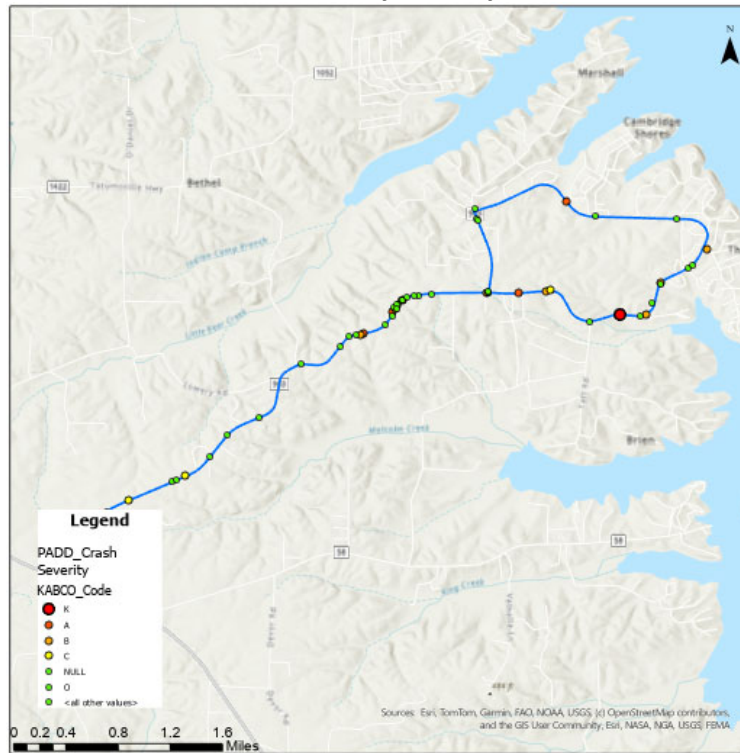
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1641	079-CR-1009 -000	MOORS CAMP HWY	24	4	3	0-20

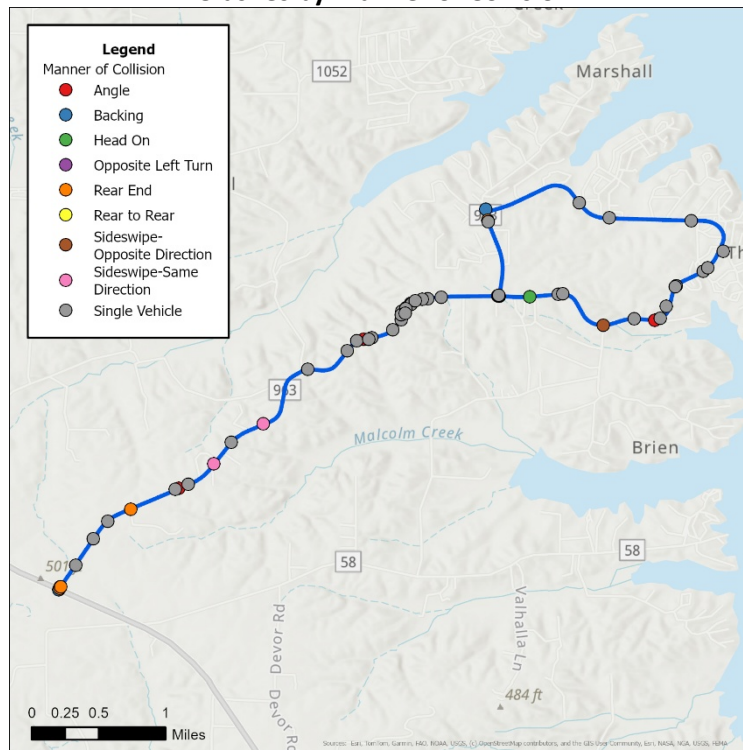
Roadway Typical Section



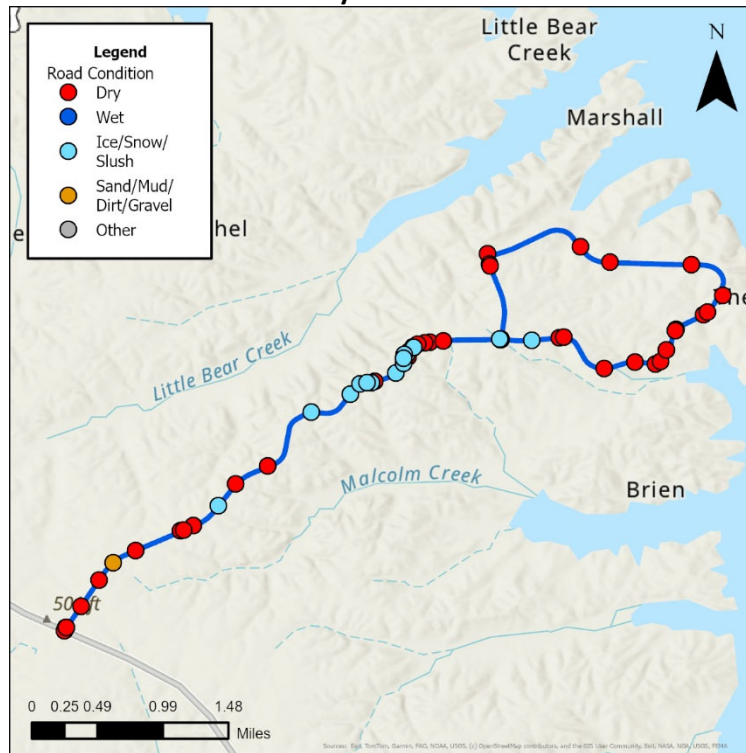
Crashes by Severity



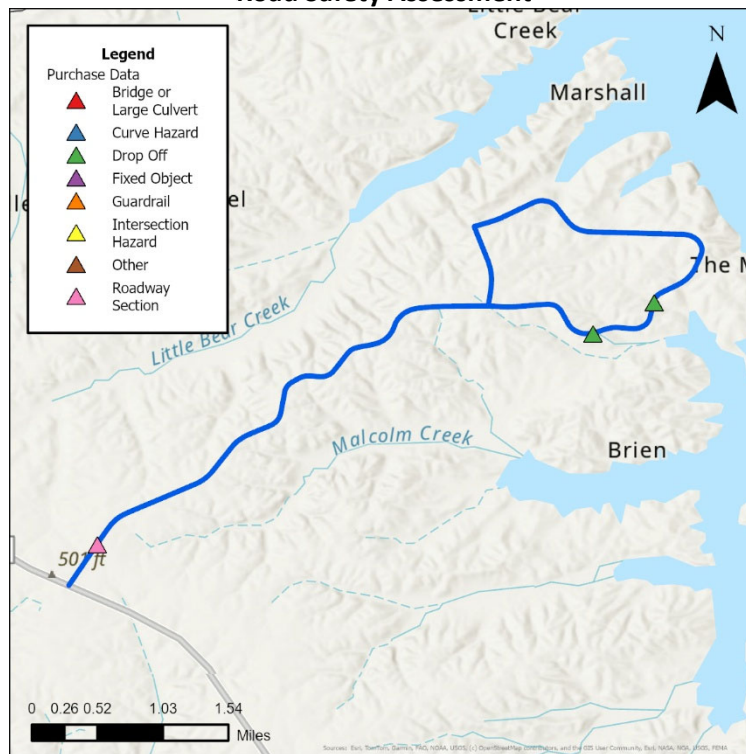
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

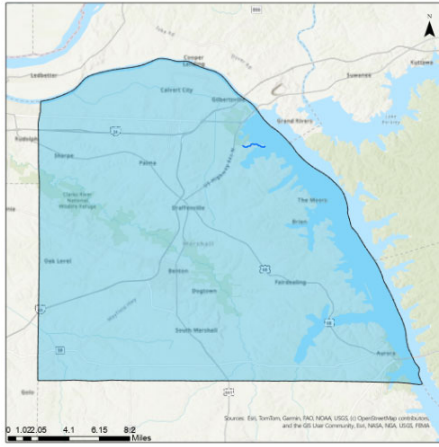


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1641	079-CR-1009 -000	MOORS CAMP HWY	24	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
1609	079-CR-1009 -000	MOORS CAMP HWY	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)				
1629	079-CR-1009 -000	MOORS CAMP HWY	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)				

SLEDD CREEK RD (079-CR-1077 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	0	0	0	0
SS - Same	0	0	0	0
Head On	0	0	0	0
SS - Opp	0	0	0	0
Backing	0	0	0	0
Rear End	0	0	0	0
Rear to Rear	0	0	0	0
Angle	0	0	0	0
Left Turn	0	0	0	0

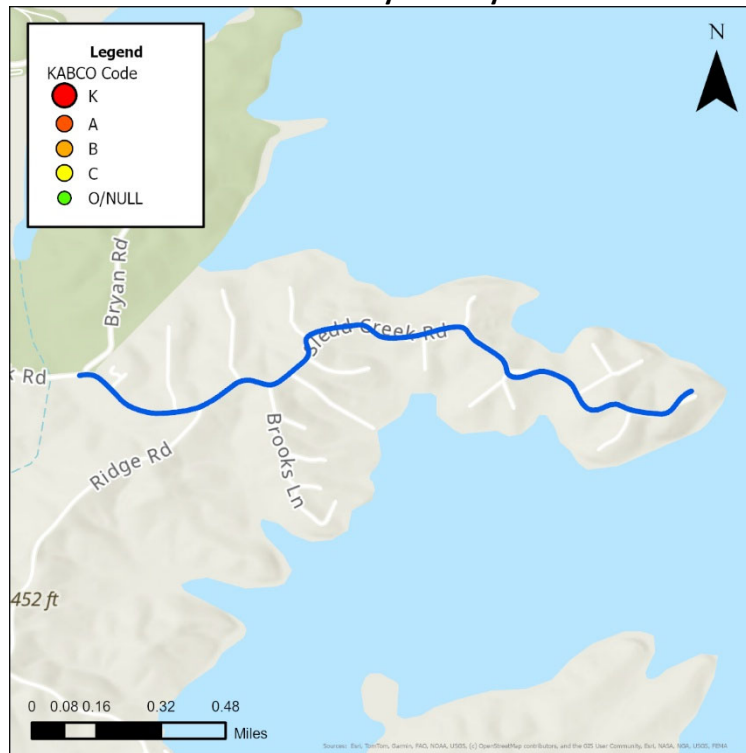
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1903	079-CR-1077 -000	SLEDD CREEK RD	20	4	3	0-20

Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

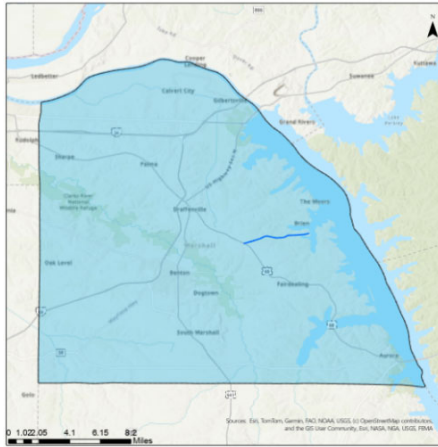


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1903	079-CR-1077 -000	SLEDD CREEK RD	20	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
1896	079-CR-1077 -000	SLEDD CREEK RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)				

BIG BEAR HWY (079-CR-1061 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	6	3	0	9
Rear End	3	0	0	3
SS - Same	1	0	0	1
Head On	0	0	0	0
Rear to Rear	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
SS - Opp	0	0	0	0
Left Turn	0	0	0	0

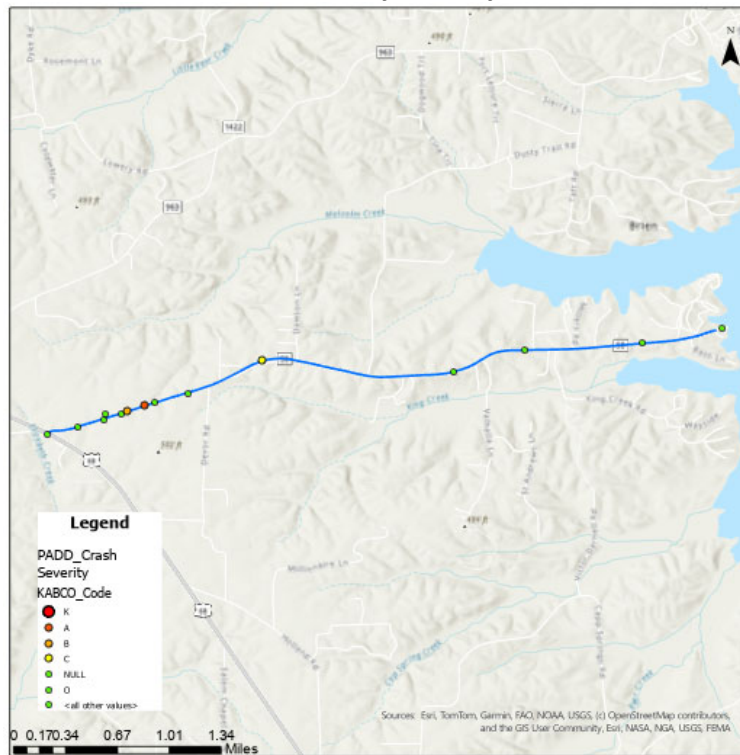
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1652	079-CR-1061 -000	BIG BEAR HWY	21	4	3	0-20

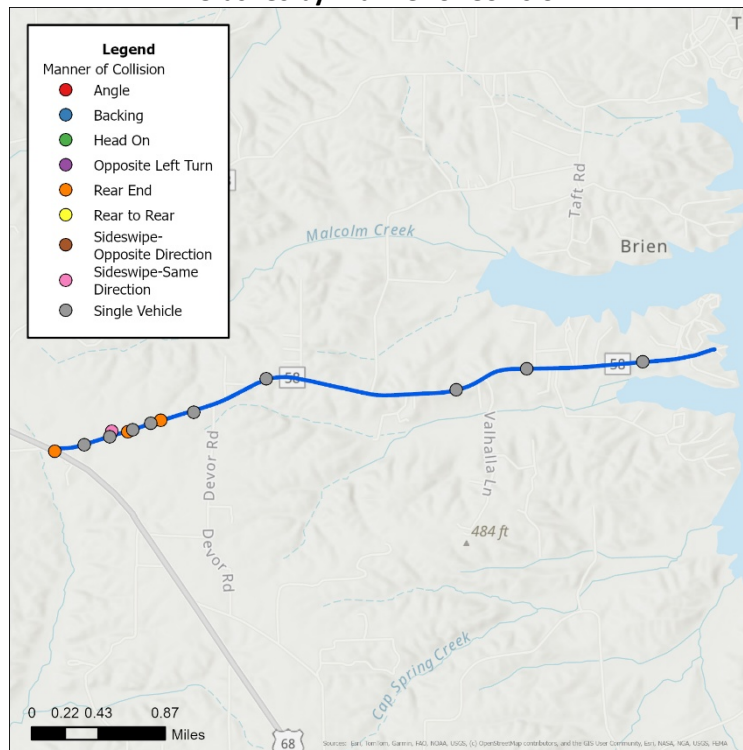
Roadway Typical Section



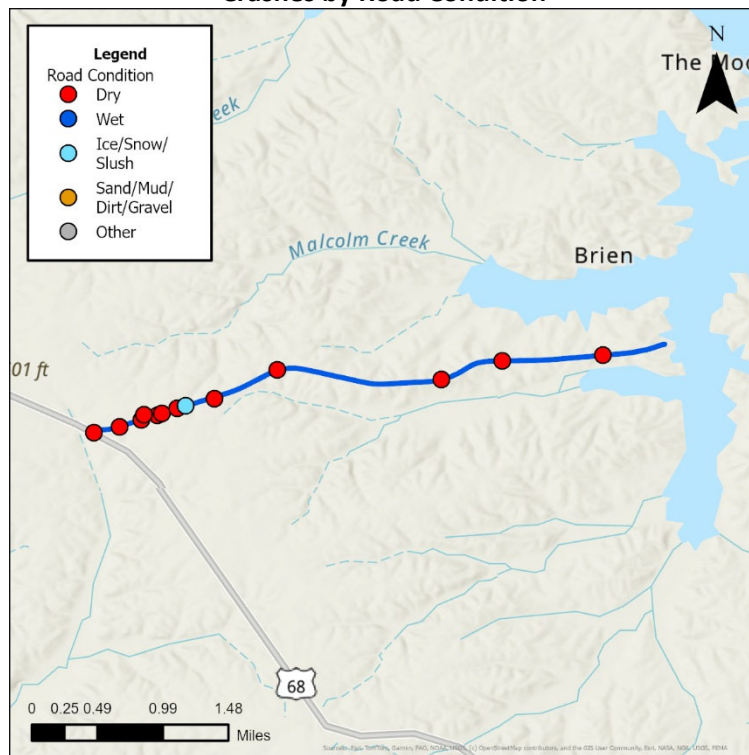
Crashes by Severity



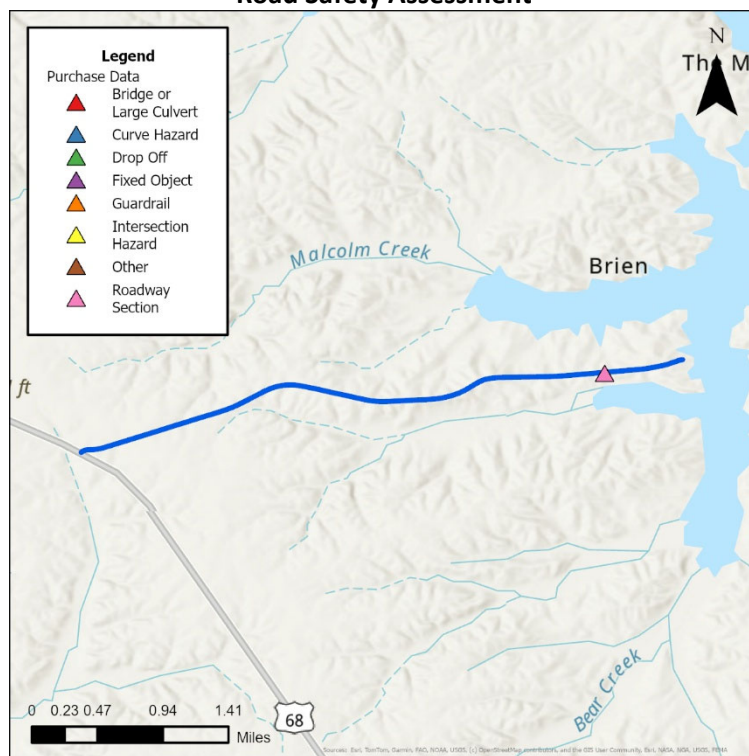
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

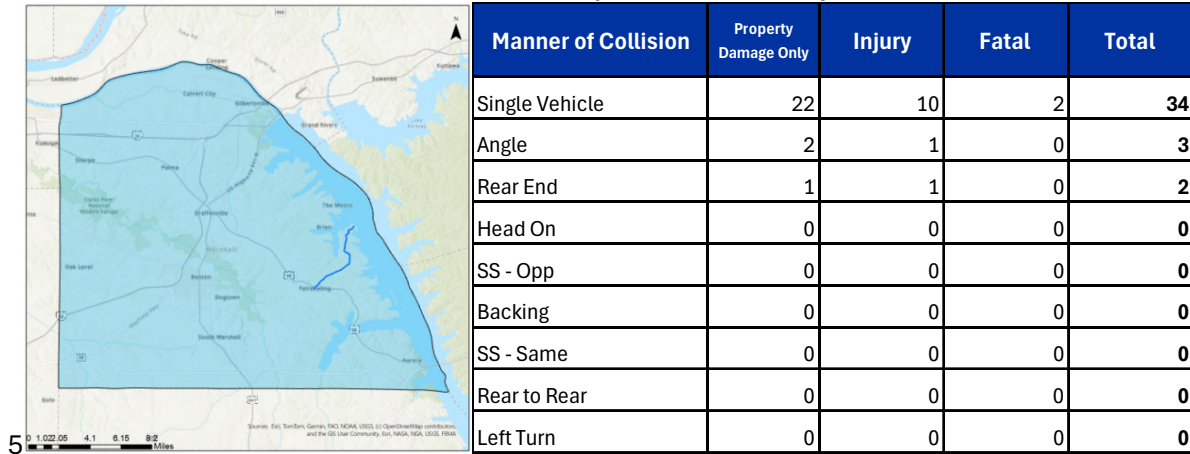


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1652	079-CR-1061 -000	BIG BEAR HWY	21	4	3	0-20		✓	✓

BARGE ISLAND RD (079-CR-1613 -000)

Road Location Map and Crash History



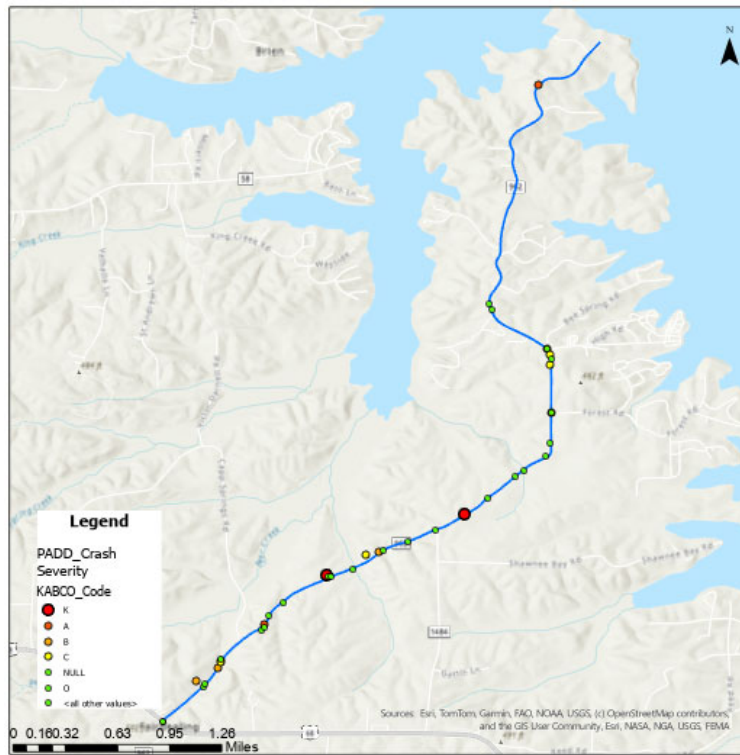
General Roadway Conditions

Roadway Section Information Not Collected

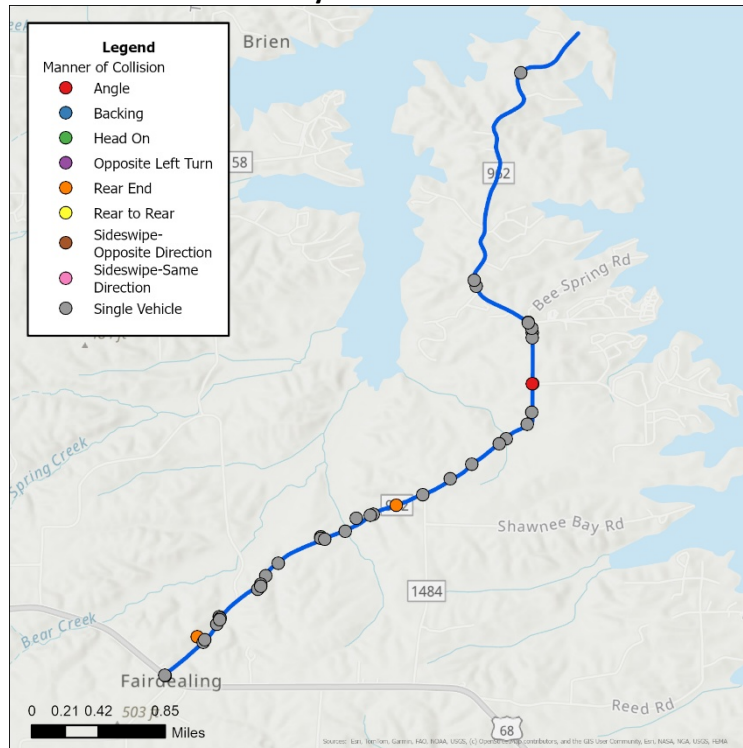
Roadway Typical Section



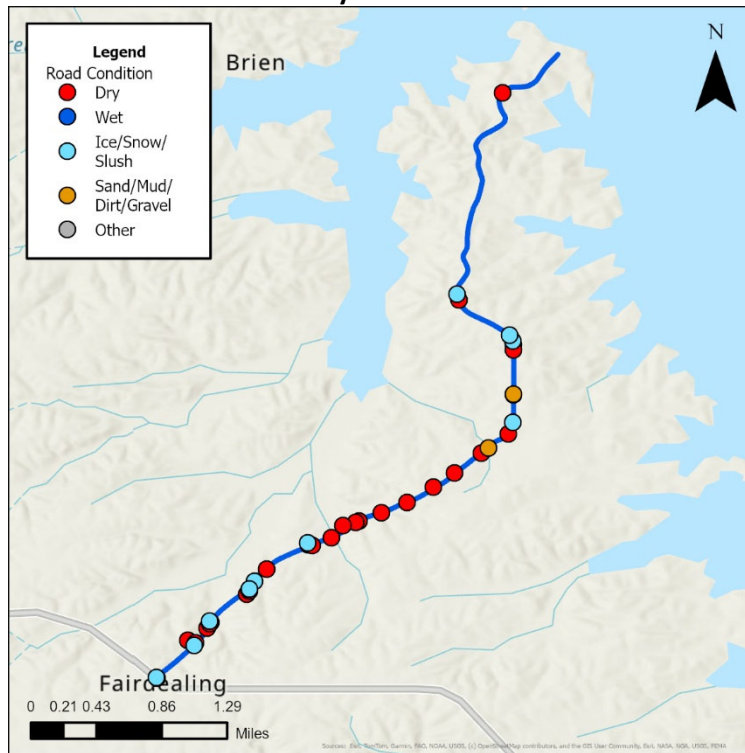
Crashes by Severity



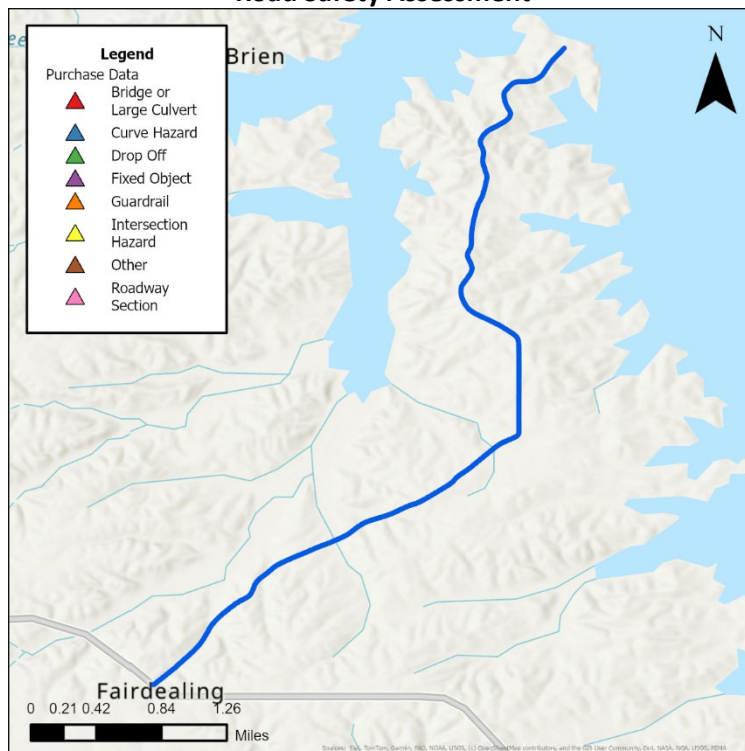
Crashes by Manner of Collision



Crashes by Road Condition

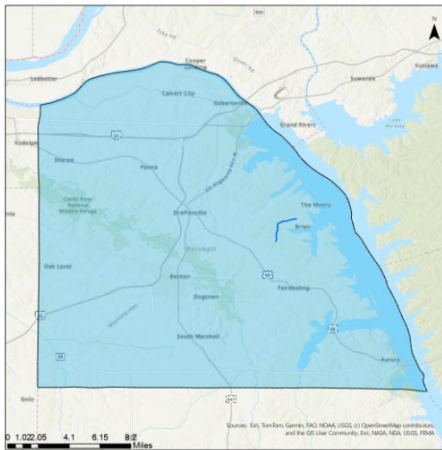


Road Safety Assessment



DUSTY TRAIL RD (079-CR-1008 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	1	1	1	3
SS - Same	0	0	0	0
SS - Opp	0	0	0	0
Left Turn	0	0	0	0
Head On	0	0	0	0
Backing	0	0	0	0
Angle	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

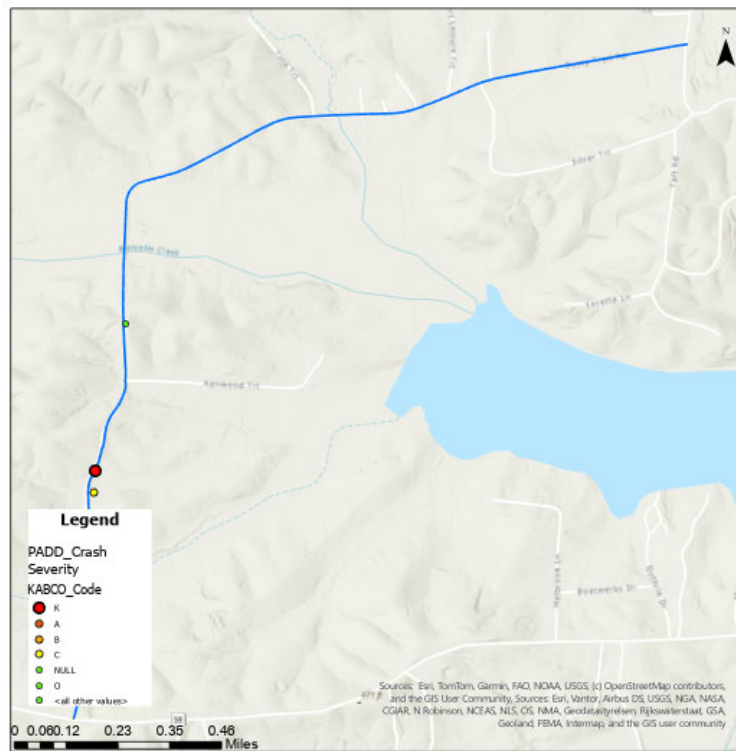
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
1667	079-CR-1008 -000	DUSTY TRAIL RD	21	4	3	0-20

Roadway Typical Section



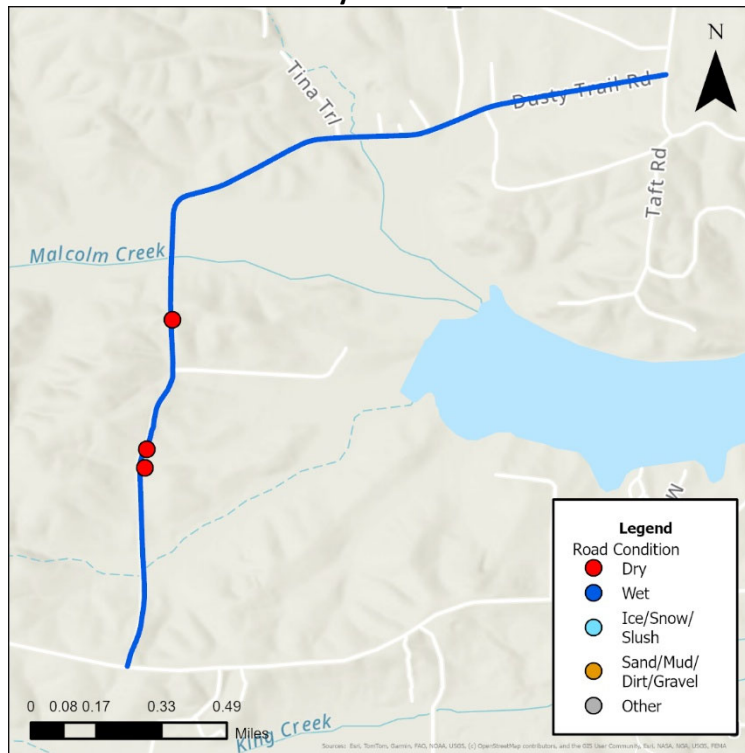
Crashes by Severity



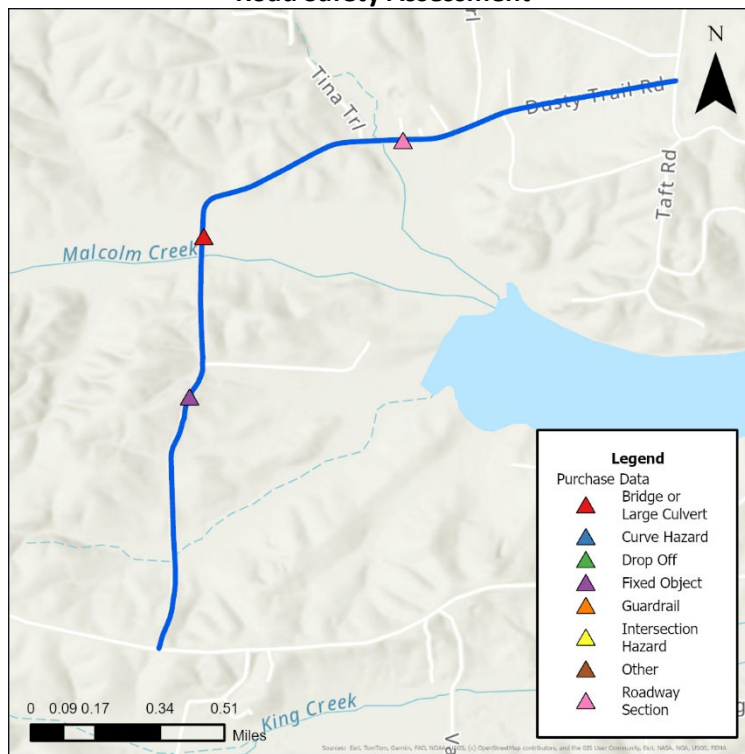
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
1667	079-CR-1008 -000	DUSTY TRAIL RD	21	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
1663	079-CR-1008 -000	DUSTY TRAIL RD	21	4	4	--			
Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation			
1661	079-CR-1008 -000	DUSTY TRAIL RD	Mailbox	Single	1-3	--			

Other Roadways

General Roadway Conditions and Recommendations (Marshall County)

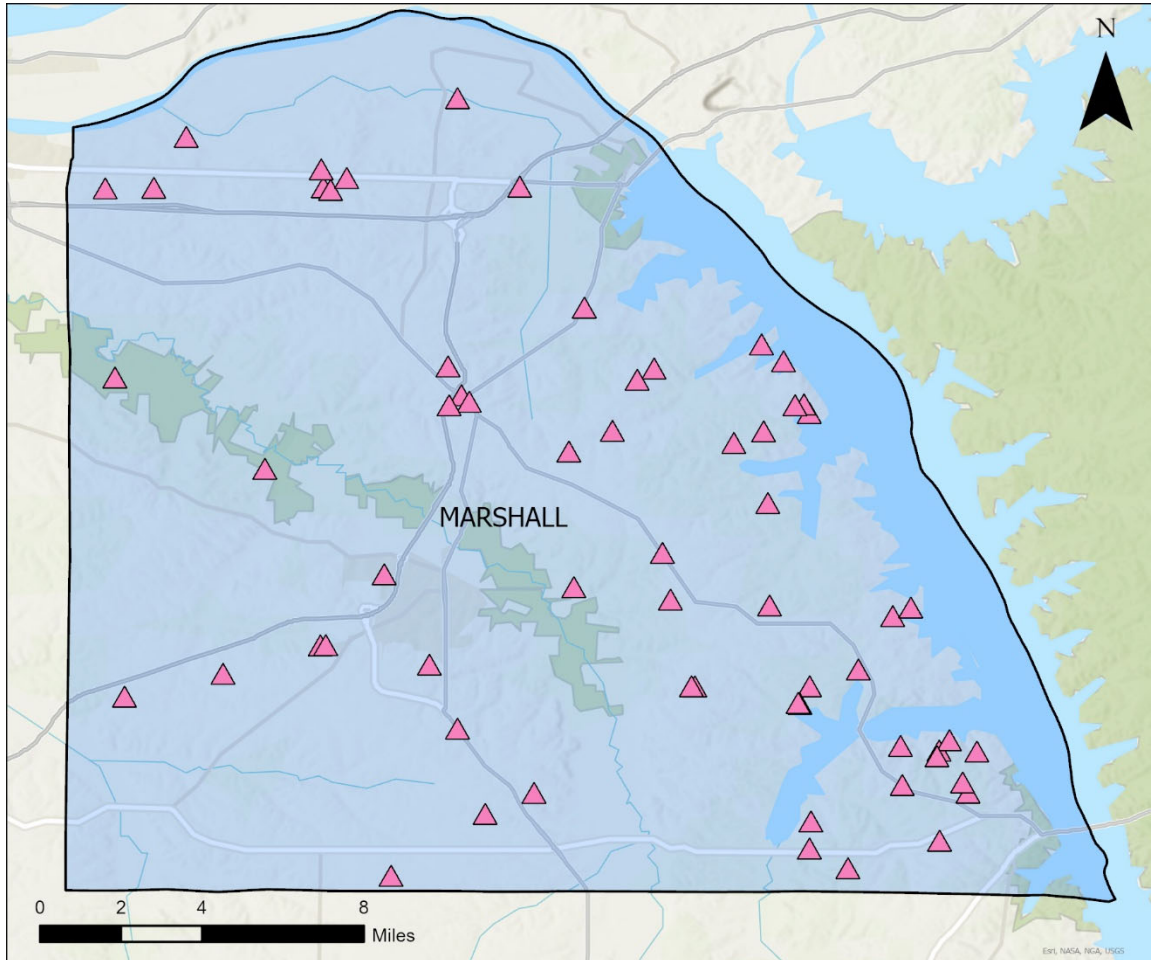


Exhibit Marshall County General Roadway

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing	Comments
1832	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	18	4	2	0-20		✓	✓	
2128	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	18	3	3	0-20		✓	✓	
2230	079-CR-1071G -000	BAY VIEW DR	15	4	3	0-20		✓	✓	
2233	079-CR-1071G -000	BAY VIEW DR	16	3	3	0-20		✓	✓	
1982	079-CR-1166 -000	SHOEMAKER RD	19	4	3	0-20		✓	✓	
2002	079-CR-1166 -000	SHOEMAKER RD	18	5	3	0-20		✓	✓	
2226	079-CR-1071M -000	MOORS RD	19	4	3	0-20		✓	✓	
2213	079-CR-1072B -000	STEAMBOAT RD	19	4	3	0-20		✓	✓	
1843	079-CR-1081 -000	LITTLE BEAR HWY	18	4	3	0-20		✓	✓	
1800	079-CR-1126D -000	KNIGHT LN	17	4	2	0-20		✓	✓	
1796	079-CR-1128 -000	REED RD	21	3	3	0-20		✓	✓	
1960	079-CR-1151 -000	BEASLEY RD	13	3	3	0-20		✓	✓	
1688	079-CR-1240 -000	RILEY RD	19	3	3	0-20		✓	✓	
2088	079-CR-1346B -000	NATIVE CIR	18	4	2	0-20		✓	✓	
2014	079-CR-1621 -000	LOVERS LN	18	4	3	0-20		✓	✓	
2284	079-CR-1621 -000	LOVERS LN	19	3	2	0-20		✓	✓	
1512	079-CR-1193 -000	HARDIN-WADESBORO RD	18	4	3	0-20		✓	✓	
2485	079-CR-1647 -000	WALNUT GROVE CHURCH RD	20	4	3	0-20		✓	✓	
1932	079-CR-1752 -000	SID DARNALL RD	19	3	3	0-20		✓	✓	
1719	079-CR-1825 -000	OLD CALVERT CITY RD	18	5	4	0-20		✓	✓	
1726	079-CR-1825 -000	OLD CALVERT CITY RD	18	2	4	0-20			✓	
2217	079-CR-1029B -000	CAMBRIDGE SHORES DR	17	5	3	0-20		✓	✓	
1676	079-CR-1101 -000	TUBBS RD	18	4	3	0-20		✓	✓	
2469	079-CR-1108 -000	ABRAHAM RD	14	4	3	0-20		✓	✓	
2473	079-CR-1108 -000	ABRAHAM RD	17	4	3	0-20		✓	✓	
2253	079-CR-1111 -000	HOLLAND RD	20	5	3	0-20		✓	✓	
1702	079-CR-1286 -000	HOUSER RD	15	4	2	0-20		✓	✓	
1707	079-CR-1286 -000	HOUSER RD	19	4	2	0-20		✓	✓	
1777	079-CR-1150 -000	PIRATES COVE RD	20	4	3	0-20		✓	✓	
2080	079-CR-1346G -000	CARROLL RD	24	4	1	0-20		✓	✓	
1739	079-CR-1392 -000	SHAR-CAL RD	18	3	6	0-20		✓	✓	
2161	079-CR-1376 -000	HORACE BARNES RD	14	3	4	0-20		✓	✓	
1765	079-CR-1418 -000	SHARPE-ELVA RD	18	3	4	0-20		✓	✓	
2144	079-CR-1378 -000	DRIVERS RD	18	4	2	0-20		✓	✓	
1774	079-CR-1256 -000	OAK GROVE CHURCH RD	18	3	2	0-20		✓	✓	
1786	079-CR-1164 -000	UNION RIDGE RD	18	3	3	0-20		✓	✓	
1788	079-CR-1164 -000	UNION RIDGE RD	16	4	3	0-20		✓	✓	
1789	079-CR-1164 -000	UNION RIDGE RD	15	4	4	0-20		✓	✓	
2208	079-CR-1018 -000	BILL HAMMEL LN	18	4	3	0-20		✓	✓	
2203	079-CR-1036 -000	DYKE RD	20	4	3	0-20		✓	✓	
2058	079-CR-1249 -000	DOWDY CEMETERY RD	18	4	2	0-20		✓	✓	
2178	079-CR-1249 -000	DOWDY CEMETERY RD	20	4	1	0-20		✓	✓	
1805	079-CR-1010 -000	KING CREEK RD	19	4	3	0-20		✓	✓	
2250	079-CR-1010 -000	KING CREEK RD	21	4	3	0-20		✓	✓	
1909	079-CR-1040J -000	FRAZIER DR	16	4	2	0-20		✓	✓	
1999	079-CR-1163 -000	HUGHES RD	15	4	2	0-20		✓	✓	
1987	079-CR-1161 -000	GARDNER RD	16	3	2	0-20		✓	✓	
2018	079-CR-1131 -000	PALESTINE RD	18	4	2	0-20		✓	✓	
2603	079-CR-1131 -000	PALESTINE RD	16	2	3	0-20			✓	
2085	079-CR-1346F -000	VINE ST	24	4	1	0-20		✓	✓	
2172	079-CR-1360E -000	TRUCK PLAZA LN	14	2	1	0-20			✓	
2077	079-CR-1874 -000	VETERANS PLAZA BLVD	24	4	1	0-20		✓	✓	
2279	079-CR-1134 -000	VILLAGE RD	22	4	3	0-20		✓	✓	
2281	079-CR-1134 -000	VILLAGE RD	17	4	3	0-20		✓	✓	

Exhibit Marshall County General Roadway Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing	Comments
2183	079-CR-1311 -000	PHILLIPS RD	10	1	6	40-60	✓		✓	Basically a driveway
2187	079-CR-1311 -000	PHILLIPS RD	18	4	1	0-20		✓	✓	
2141	079-CR-1380 -000	PATTERSON RD	18	4	2	0-20		✓	✓	
2151	079-CR-1377 -000	HOWARDS GROVE RD	18	4	2	0-20		✓	✓	
2288	079-CR-1622 -000	BRITTANY LN	22	4	3	0-20		✓	✓	
2192	079-CR-1441 -000	MILLIKEN MILL LN	22	4	3	0-20		✓	✓	
2239	079-CR-1071H -000	CATALINA RD	19	4	3	0-20		✓	✓	
1994	079-CR-1162 -000	SIRLS RD	18	4	3	0-20		✓	✓	
2263	079-CR-1109 -000	SALEM CHAPEL RD N	18	5	3	0-20		✓	✓	

Exhibit Marshall County General Roadway Recommendations (Continued)

Bridge / Culvert Recommendations (Marshall County)

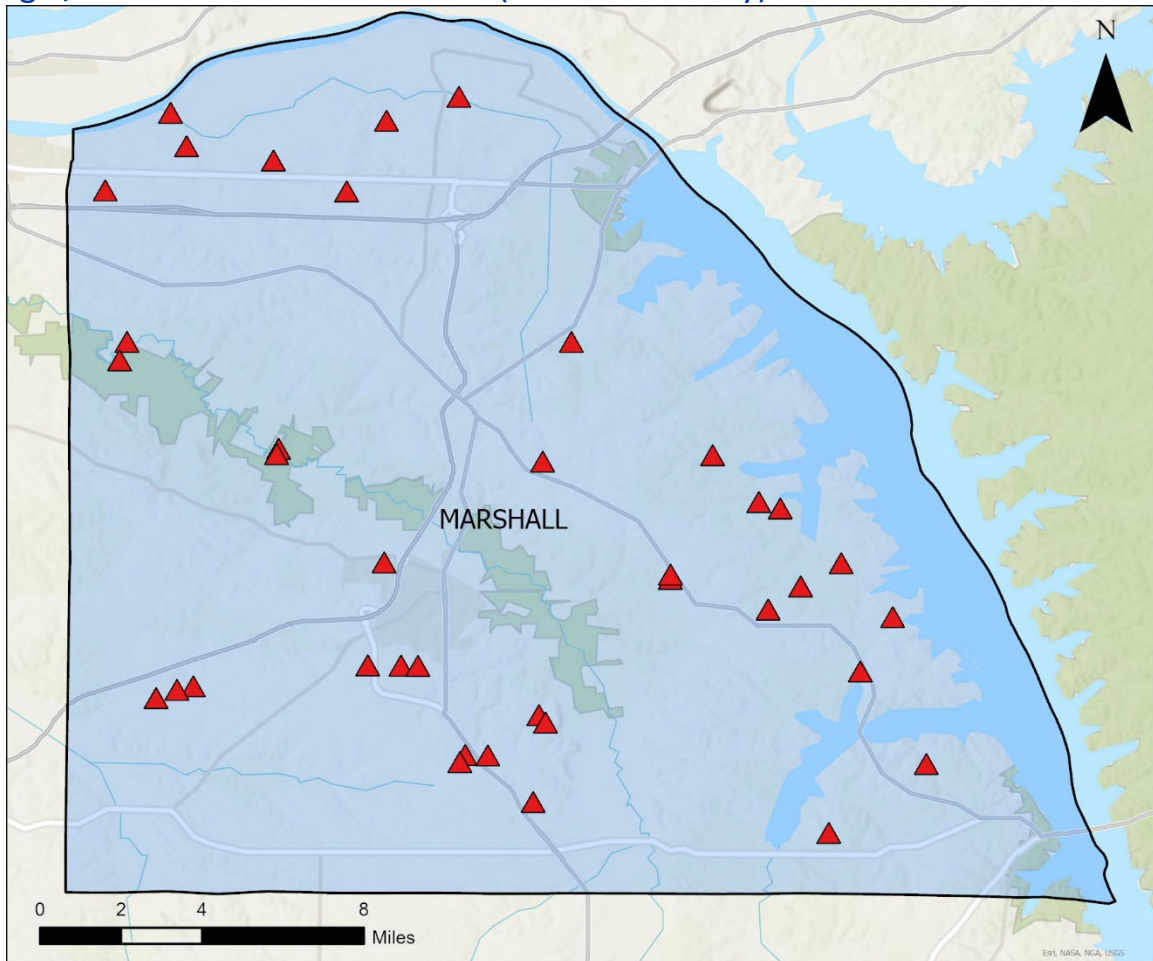


Exhibit Marshall County Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
1681	079-CR-1240 -000	RILEY RD	18	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1684	079-CR-1240 -000	RILEY RD	18	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1685	079-CR-1240 -000	RILEY RD	18	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1781	079-CR-1150 -000	PIRATES COVE RD	24	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
2487	079-CR-1647 -000	WALNUT GROVE CHURCH RD	28	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
2477	079-CR-1647 -000	WALNUT GROVE CHURCH RD	22	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
2480	079-CR-1647 -000	WALNUT GROVE CHURCH RD	22	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
1797	079-CR-1128 -000	REED RD	31	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1942	079-CR-1752 -000	SID DARNALL RD	19	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
1923	079-CR-1752 -000	SID DARNALL RD	21	4	4	--
1921	079-CR-1752 -000	SID DARNALL RD	24	4	4	--
1830	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	22	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
2125	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	20	4	4	--
1880	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	25	4	4	--
1663	079-CR-1008 -000	DUSTY TRAIL RD	21	4	4	--
1718	079-CR-1825 -000	OLD CALVERT CITY RD	24	4	4	--
1989	079-CR-1161 -000	GARDNER RD	21	4	4	--
2176	079-CR-1249 -000	DOWDY CEMETERY RD	21	4	4	--
2604	079-CR-1131 -000	PALESTINE RD	21	4	4	--
2605	079-CR-1131 -000	PALESTINE RD	21	4	4	--
2105	079-CR-1374 -000	CALVERT CITY RD	24	4	4	--
2117	079-CR-1374 -000	CALVERT CITY RD	24	4	4	--
2278	079-CR-1134 -000	VILLAGE RD	24	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
1744	079-CR-1392 -000	SHAR-CAL RD	18	4	4	Noted as Single lane wooden bridge; evaluate need to improve/replace bridge.
1736	079-CR-1392 -000	SHAR-CAL RD	24	4	4	--
1508	079-CR-1193 -000	HARDIN-WADESBORO RD	24	4	0	Install Type 3 Object Markers
2148	079-CR-1377 -000	HOWARDS GROVE RD	22	4	4	--
1763	079-CR-1418 -000	SHARPE-ELVA RD	18	4	4	--
1761	079-CR-1418 -000	SHARPE-ELVA RD	24	4	4	--
1698	079-CR-1286 -000	HOUSER RD	19	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1699	079-CR-1286 -000	HOUSER RD	19	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1696	079-CR-1286 -000	HOUSER RD	24	4	4	--
2248	079-CR-1010 -000	KING CREEK RD	22	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
1806	079-CR-1010 -000	KING CREEK RD	21	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
1809	079-CR-1010 -000	KING CREEK RD	21	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
1804	079-CR-1010 -000	KING CREEK RD	22	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
2243	079-CR-1010 -000	KING CREEK RD	23	0	4	Evaluate need for guardrail on approach, Replace Type 3 Object Markers on all corners if necessary
2194	079-CR-1441 -000	MILLIKEN MILL LN	24	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
2197	079-CR-1441 -000	MILLIKEN MILL LN	22	4	2	Install/Replace Type 3 Object Markers on all corners
2264	079-CR-1109 -000	SALEM CHAPEL RD N	28	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
2265	079-CR-1109 -000	SALEM CHAPEL RD N	28	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;

Exhibit Marshall County Bridge / Culvert Recommendations

Roadside Drop Off Recommendations (Marshall County)

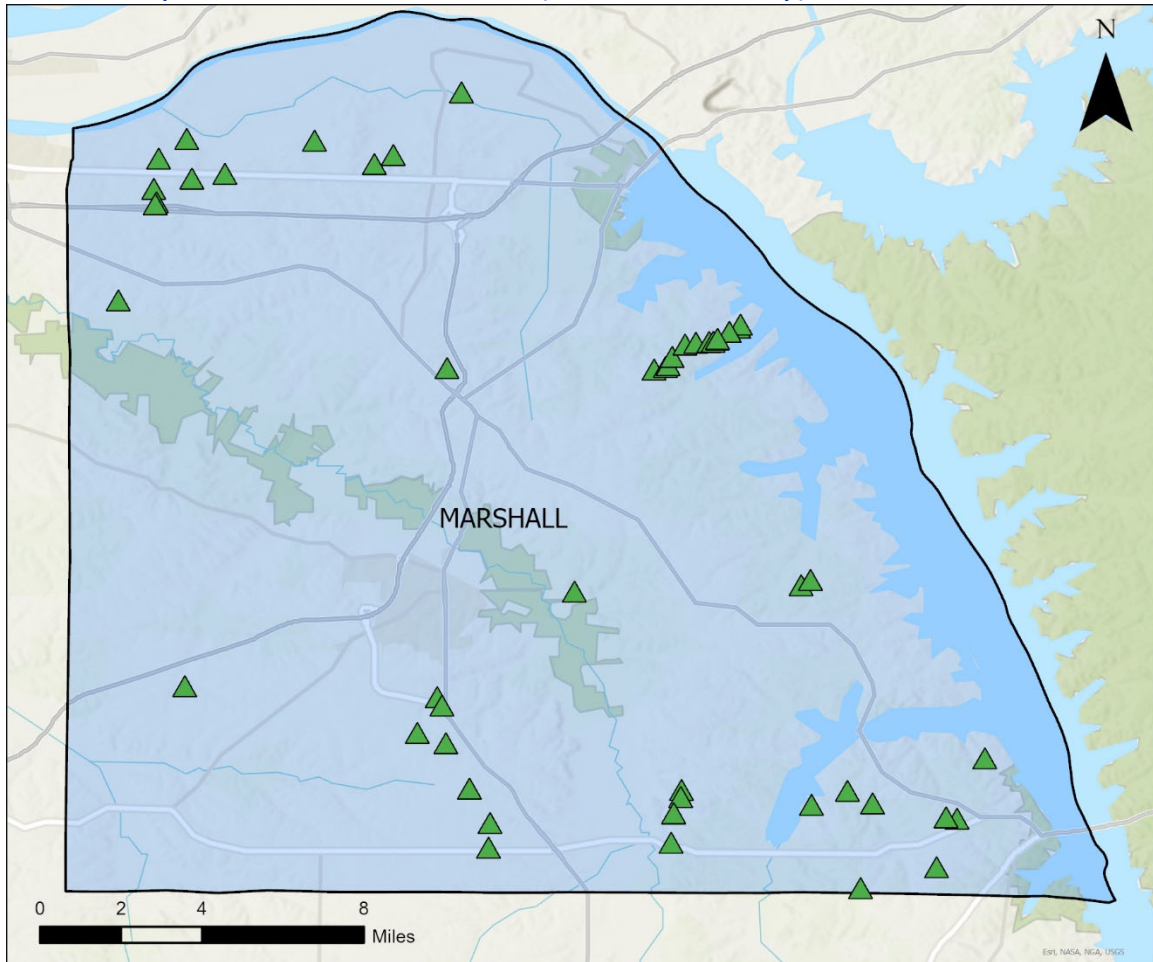


Exhibit Marshall County Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
1846	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1847	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1848	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1852	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1853	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1855	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1857	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1858	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1862	079-CR-1081 -000	LITTLE BEAR HWY	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1844	079-CR-1081 -000	LITTLE BEAR HWY	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1867	079-CR-1081 -000	LITTLE BEAR HWY	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1868	079-CR-1081 -000	LITTLE BEAR HWY	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1872	079-CR-1081 -000	LITTLE BEAR HWY	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2033	079-CR-1166 -000	SHOEMAKER RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
2036	079-CR-1166 -000	SHOEMAKER RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1965	079-CR-1166 -000	SHOEMAKER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1972	079-CR-1166 -000	SHOEMAKER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2001	079-CR-1166 -000	SHOEMAKER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2022	079-CR-1166 -000	SHOEMAKER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2034	079-CR-1166 -000	SHOEMAKER RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1967	079-CR-1166 -000	SHOEMAKER RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1974	079-CR-1166 -000	SHOEMAKER RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2035	079-CR-1166 -000	SHOEMAKER RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1712	079-CR-1825 -000	OLD CALVERT CITY RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1725	079-CR-1825 -000	OLD CALVERT CITY RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2016	079-CR-1131 -000	PALESTINE RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2602	079-CR-1131 -000	PALESTINE RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2068	079-CR-1244 -000	TOY YORK RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2063	079-CR-1244 -000	TOY YORK RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2060	079-CR-1244 -000	TOY YORK RD	0-1	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Markers or Delineators
2099	079-CR-1374 -000	CALVERT CITY RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2108	079-CR-1374 -000	CALVERT CITY RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2123	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2155	079-CR-1376 -000	HORACE BARNES RD	1-3	2-5	Evaluate potential to improve ditch slope/shoulder; Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2153	079-CR-1376 -000	HORACE BARNES RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1675	079-CR-1101 -000	TUBBS RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1930	079-CR-1752 -000	SID DARNALL RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1928	079-CR-1752 -000	SID DARNALL RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1926	079-CR-1752 -000	SID DARNALL RD	0-1	5-10	Install Type 3 object markers
2008	079-CR-1621 -000	LOVERS LN	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2053	079-CR-1249 -000	DOWDY CEMETERY RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2095	079-CR-1402 -000	WARNICK RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
2093	079-CR-1402 -000	WARNICK RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1738	079-CR-1392 -000	SHAR-CAL RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1734	079-CR-1392 -000	SHAR-CAL RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1509	079-CR-1193 -000	HARDIN-WADESBORO RD	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1757	079-CR-1418 -000	SHARPE-ELVA RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
2078	079-CR-1874 -000	VETERANS PLAZA BLVD	0-1	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
1697	079-CR-1286 -000	HOUSER RD	3-5	2-5	Evaluate need for Type 2 Object Marker(s) or Delineator(s)
1949	079-CR-1631 -000	MEEMIE RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1807	079-CR-1010 -000	KING CREEK RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
1823	079-CR-1010 -000	KING CREEK RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)

Exhibit Marshall County Roadside Drop Off Recommendations

Fixed Object Recommendations (Marshall County)

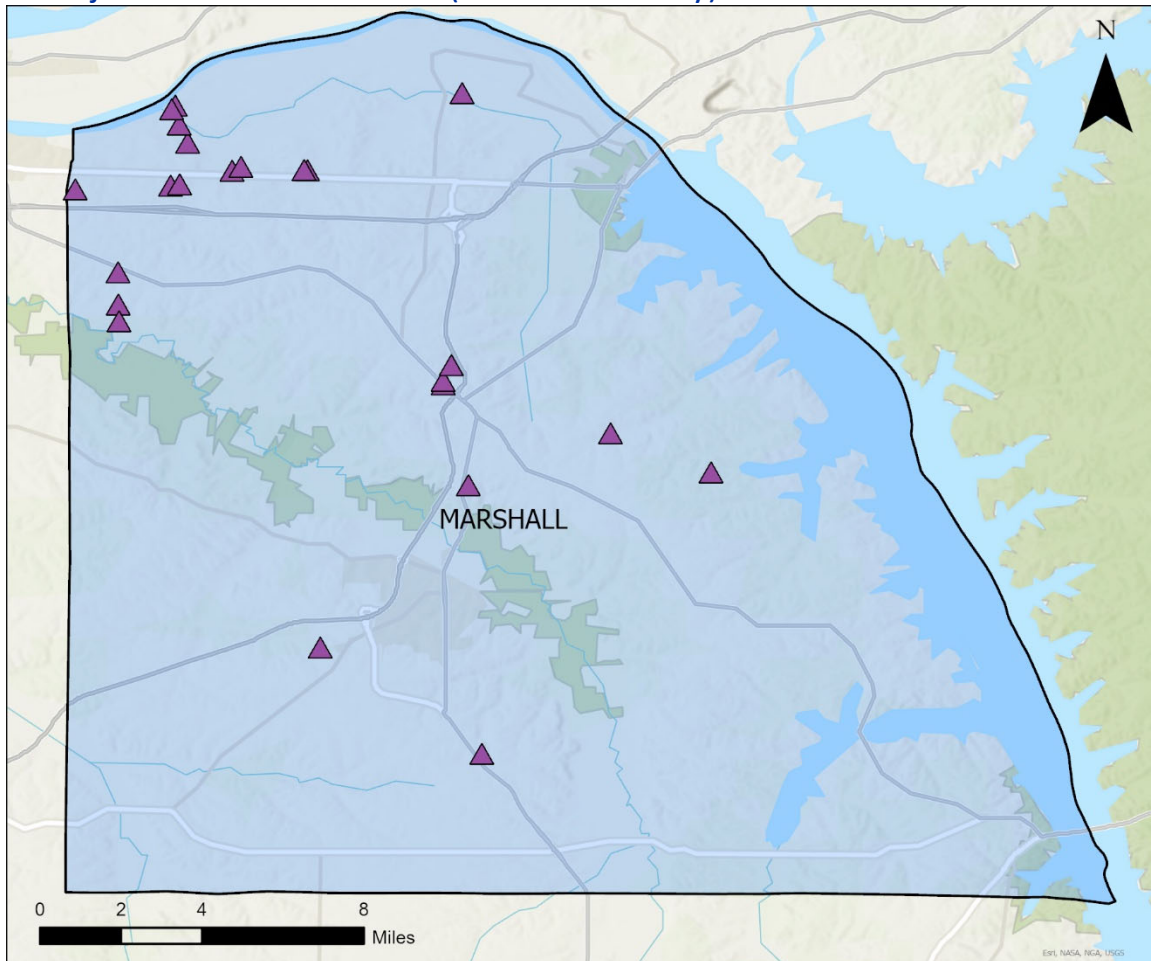


Exhibit Marshall County Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation
2122	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
1940	079-CR-1752 -000	SID DARNALL RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
1728	079-CR-1825 -000	OLD CALVERT CITY RD	Tree	Series	0-1	Remove trees within 3 ft of roadway
1721	079-CR-1825 -000	OLD CALVERT CITY RD	Tree	Single	1-3	Remove
1730	079-CR-1825 -000	OLD CALVERT CITY RD	Mailbox	Single	0-1	Relocate mailbox further from road
2164	079-CR-1376 -000	HORACE BARNES RD	Tree	Single	0-1	Remove
2165	079-CR-1376 -000	HORACE BARNES RD	Tree	Single	0-1	Noted Root is destroying pavement; Remove
1661	079-CR-1008 -000	DUSTY TRAIL RD	Mailbox	Single	1-3	--
2202	079-CR-1036 -000	DYKE RD	Mailbox	Single	1-3	--
2101	079-CR-1374 -000	CALVERT CITY RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
2104	079-CR-1374 -000	CALVERT CITY RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
1915	079-CR-1876 -000	MARCO ST	Tree	Series	3-5	Remove trees within 3 ft of roadway
2182	079-CR-1311 -000	PHILLIPS RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
1740	079-CR-1392 -000	SHAR-CAL RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
1747	079-CR-1392 -000	SHAR-CAL RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
1749	079-CR-1392 -000	SHAR-CAL RD	Tree	Series	0-1	Remove trees within 3 ft of roadway
1737	079-CR-1392 -000	SHAR-CAL RD	Railway Bridge	Single	0-1	Install Type 3 Object Marker
1755	079-CR-1418 -000	SHARPE-ELVA RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
1760	079-CR-1418 -000	SHARPE-ELVA RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
1758	079-CR-1418 -000	SHARPE-ELVA RD	Tree	Single	1-3	Remove
2072	079-CR-1874 -000	VETERANS PLAZA BLVD	Utility Pole	Series	1-3	Install Type 2 Object Markers
2074	079-CR-1874 -000	VETERANS PLAZA BLVD	Utility Pole	Series	1-3	Install Type 2 Object Markers
2076	079-CR-1874 -000	VETERANS PLAZA BLVD	Utility Pole	Series	1-3	Install Type 2 Object Markers

Exhibit Marshall County Fixed Object Recommendations

Guardrail Recommendations (Marshall County)

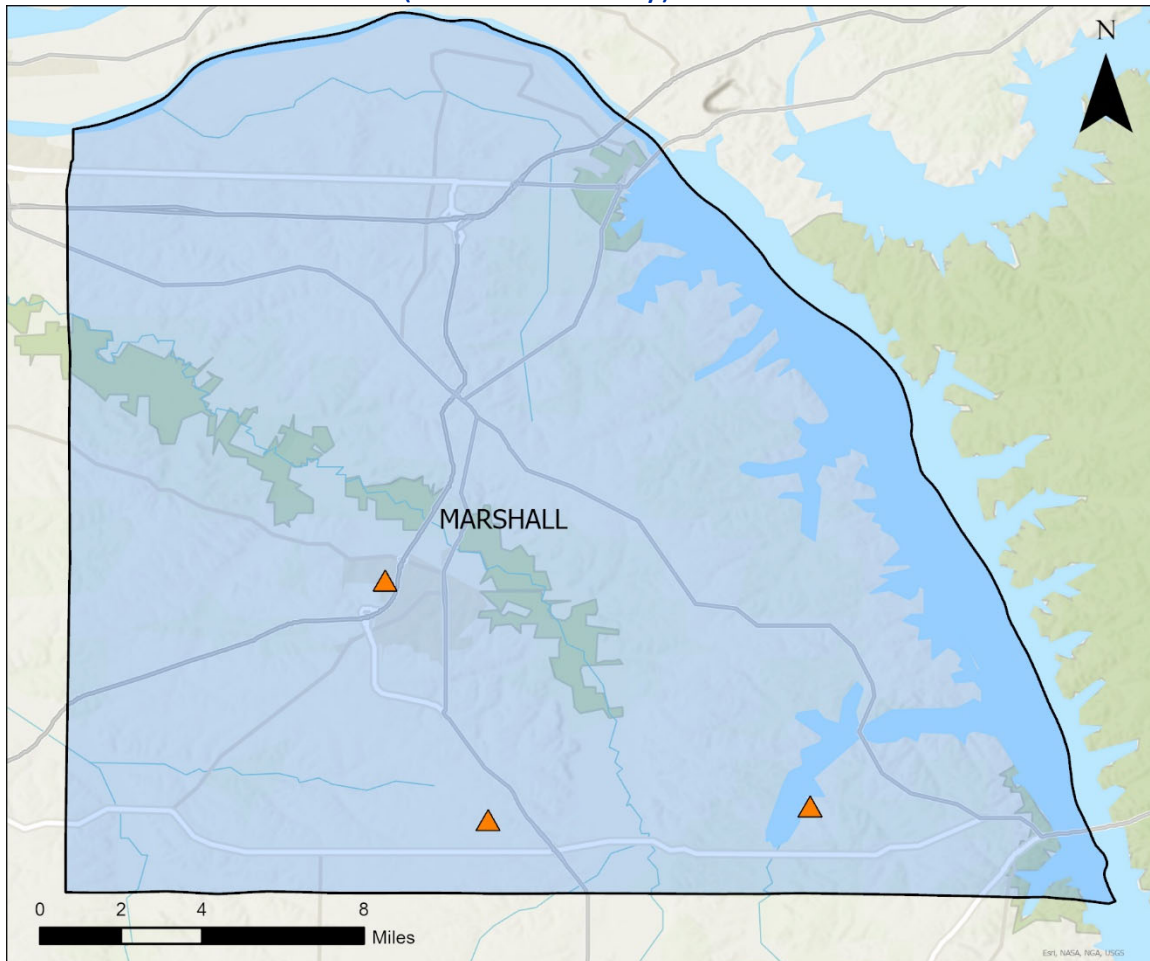


Exhibit Marshall County Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Guard Condition	Meet Warrants	End Treatments	Recommendation
1931	079-CR-1752 -000	SID DARNALL RD	Good	Maybe	Some	Evaluate warrants and cost to upgrade/install end treatments and/or Type 3 Object Markers
2179	079-CR-1249 -000	DOWDY CEMETERY RD	Good	Yes	All	--
1951	079-CR-1631 -000	MERMIE RD	Good	Yes	All	--

Exhibit Marshall County Guardrail Recommendations

Intersection Recommendations (Marshall County)

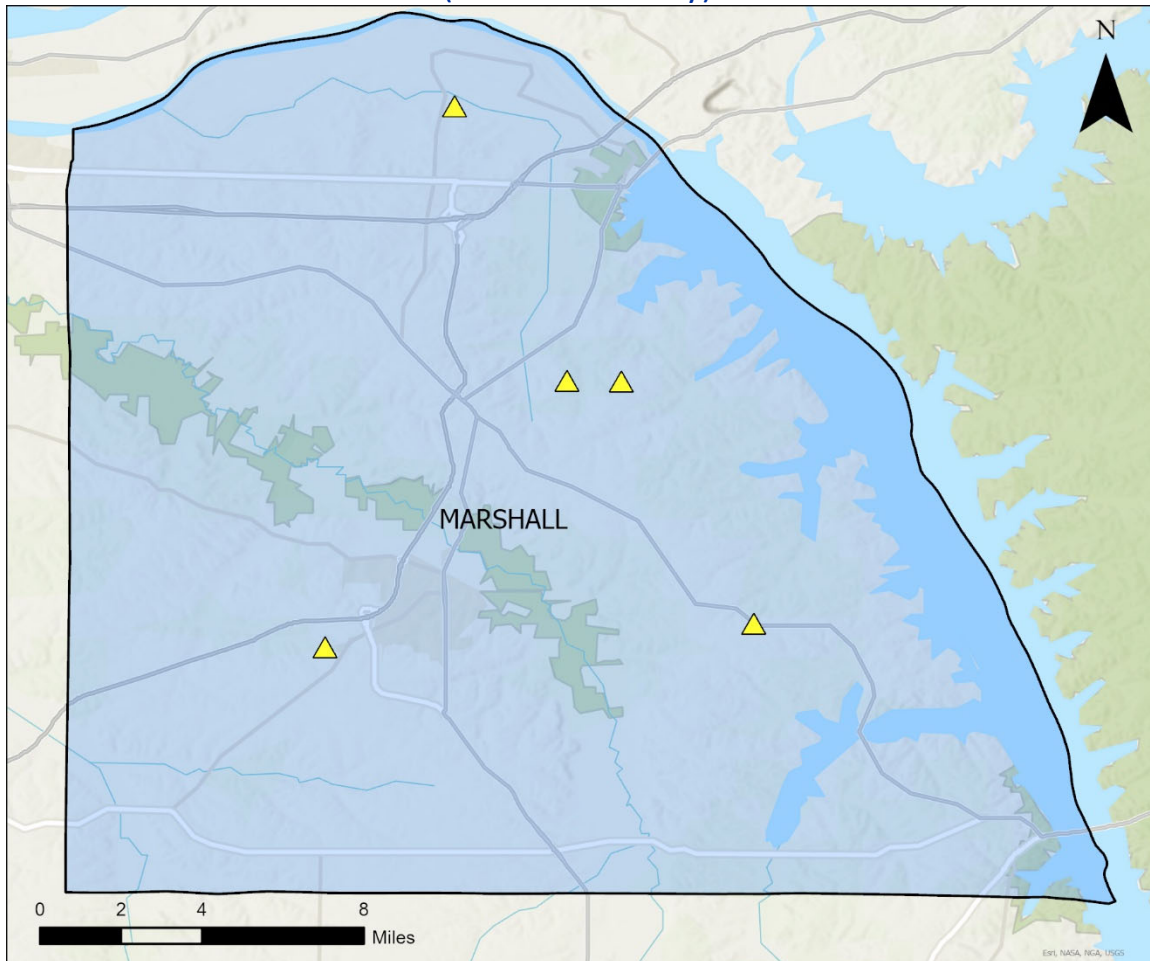


Exhibit Marshall County Intersection Locations

Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation	Comments
1836	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at
2132	079-CR-1063 -000	BRIENSBURG-TATUMSVILLE RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Intersection Obscured on Approa
2206	079-CR-1036 -000	DYKE RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at
2186	079-CR-1311 -000	PHILLIPS RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Intersection Skew, Insufficient Sight Distance at
1826	079-CR-1010 -000	KING CREEK RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at
1827	079-CR-1010 -000	KING CREEK RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at

Exhibit Marshall County Intersection Recommendations

Signing Recommendations (Marshall County)

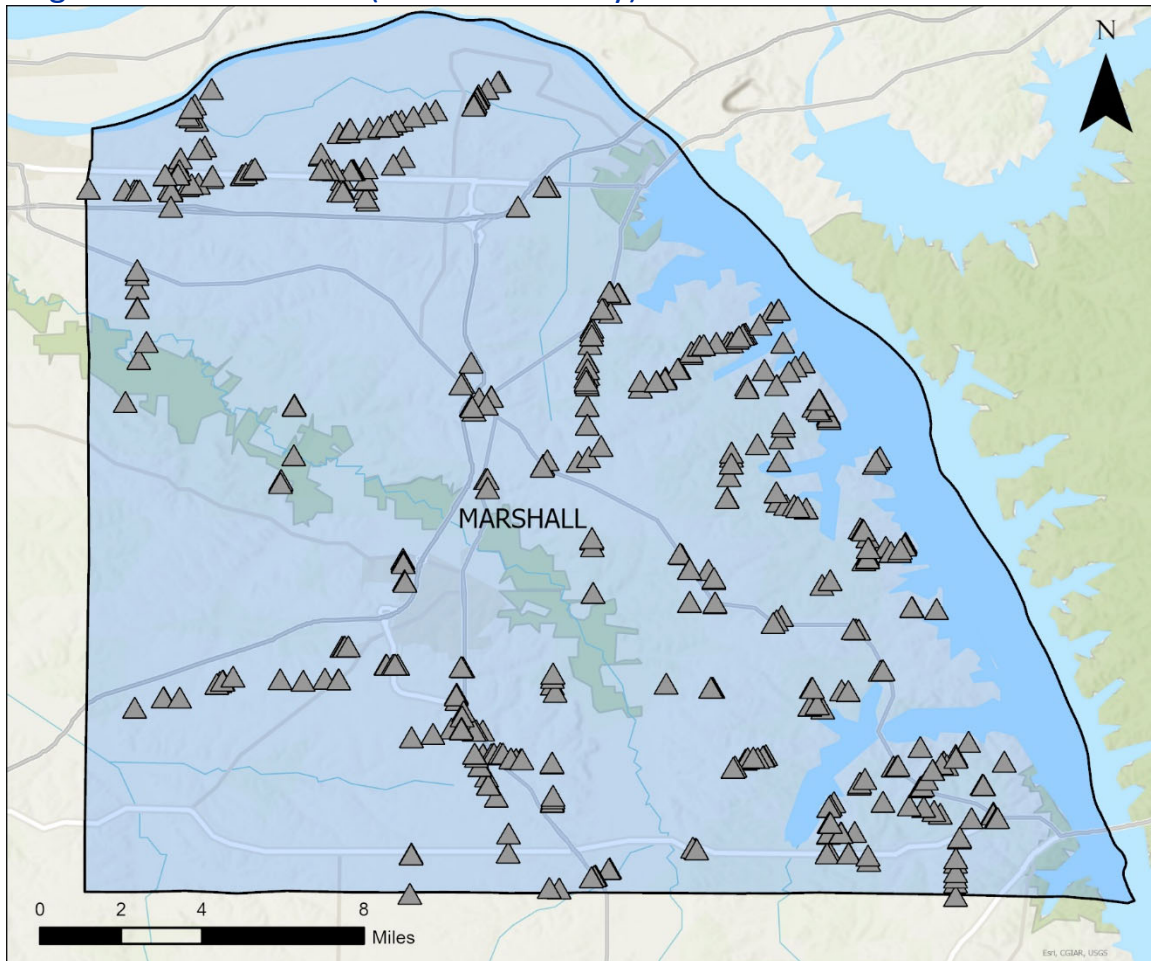


Exhibit Marshall County Sign Locations

As part of the RSA data collection effort, existing signs were inventoried along reviewed Focus Roadways, including a condition assessment and a photo of each sign. Additionally, preliminary Advisory Speed recommendations were calculated for each focus roadway to assist in the installation of horizontal alignment (curve) signs. Signing and advisory speed information is provided in digital format at <https://kyt2.uky.edu/purchase-area-development-district>.

APPENDIX K: MCCRACKEN COUNTY

McCracken County Overview

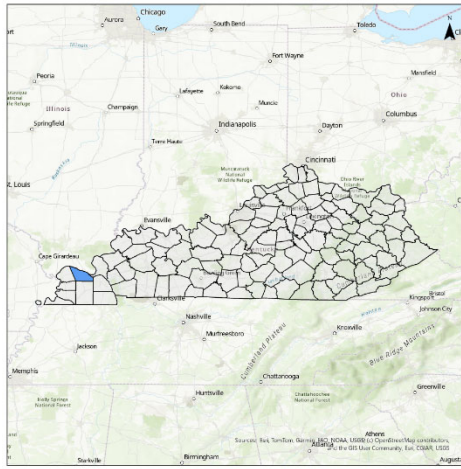


Exhibit McCracken-1: Location Map

Key Information Table	
McCracken County	
Population	67,428
Population in Persistent Poverty	20%
Underserved Community	No
Fatalities (All Roads)	67
Fatalities (County Roads)	2
Fatality Rate per 100,000 persons	994
County Road Mileage	331
State Road Mileage	305
Total Mileage	636

Exhibit McCracken-2: Key Information

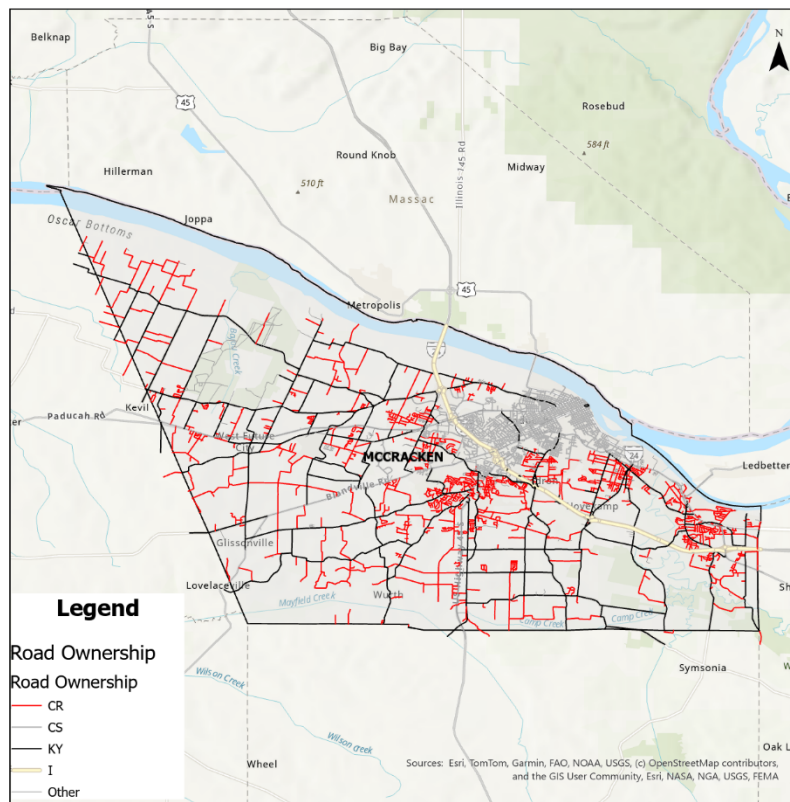


Exhibit McCracken-3: Map of County Roadways

Crash Analysis

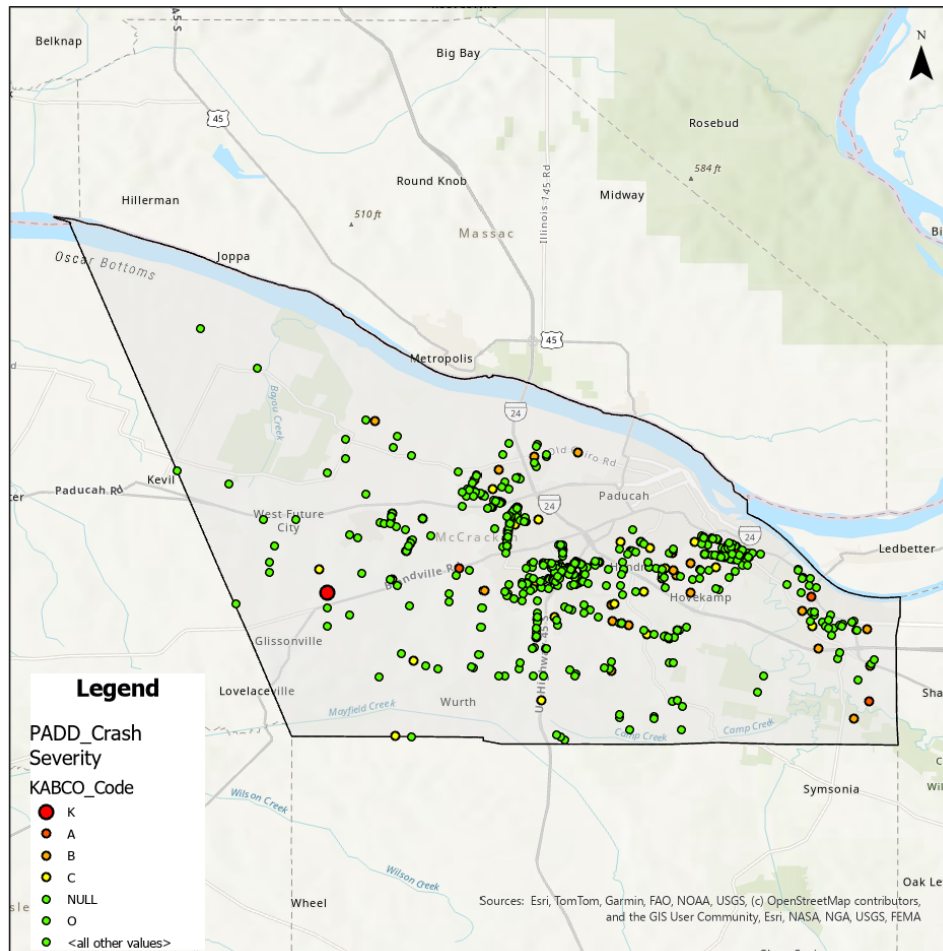


Exhibit McCracken-4: Map of County Road Crashes



Exhibit McCracken-5: Crash Distribution by Year

Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	151	66	1	218
Angle	113	27	1	141
Backing	73	1	0	74
SS - Opp	71	2	0	73
Rear End	55	5	0	60
SS - Same	25	2	0	27
Head On	18	2	0	20
Left Turn	6	5	0	11
Rear to Rear	10	1	0	11

Exhibit McCracken-6: Crash Frequency and Severity by Manner of Collision

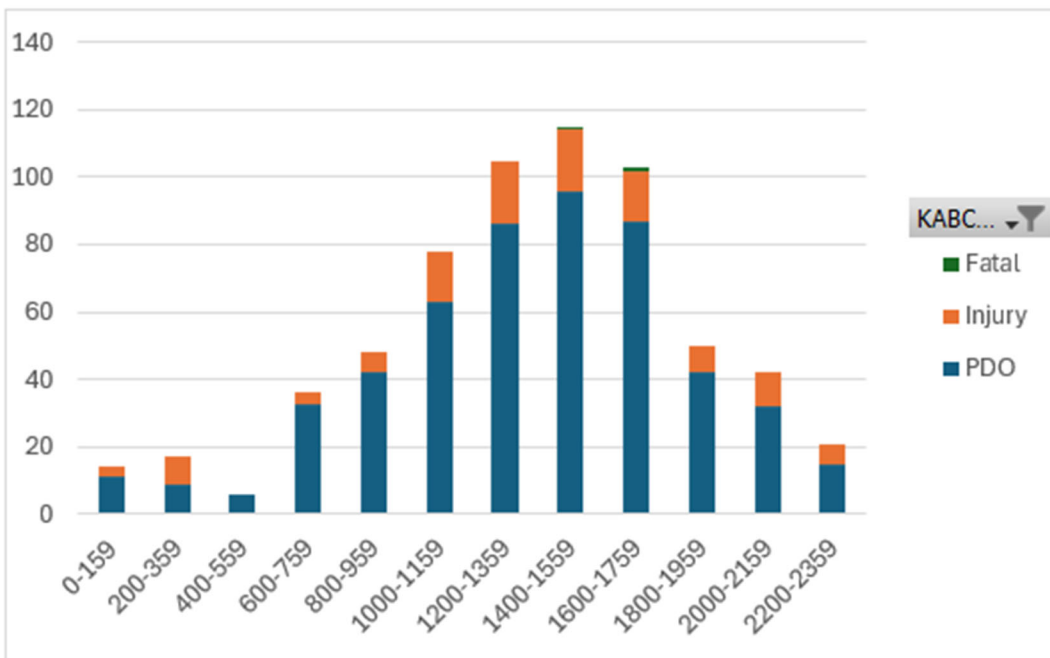


Exhibit McCracken-7: Crashes and Severity by Time of Day

RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
McCracken											
073-CR-1019 -000	1.64	McCracken	Purchase	NEW HOLT RD	2	3	33	2.33	3.44	2.70	1
073-CR-1167 -000	1.53	McCracken	Purchase	CLARKLINE RD E	2	3	11	1.83	2.01	1.89	2
073-CR-1174 -000	2.64	McCracken	Purchase	CLARK LINE RD W	5	0	5	2.35	0.78	1.83	3
073-CR-1005 -000	1.52	McCracken	Purchase	J HARRIS RD	0	1	14	2.21	0.79	1.75	4
073-CR-1022D -000	1.30	McCracken	Purchase	I.C. AVE	1	1	0	2.34	0.04	1.58	5
073-CR-1241 -000	0.79	McCracken	Purchase	OLD HINKLEVILLE S RD	2	2	14	1.67	1.33	1.56	6
073-CR-1030P -000	1.03	McCracken	Purchase	YARBRO LN	1	0	5	2.23	0.13	1.54	7
073-CR-1144E -000	0.38	McCracken	Purchase	MAJESTIC OAK DR	1	0	0	2.11	0.08	1.44	8
073-CR-1001B7-000	0.54	McCracken	Purchase	COLLEGE AVE	3	0	5	1.46	0.87	1.26	9
073-CR-1003 -000	1.53	McCracken	Purchase	HANSEN RD	2	2	12	1.63	0.33	1.20	10
073-CR-1001C4-000	0.13	McCracken	Purchase	CAVE THOMAS DR	0	0	6	0.14	3.28	1.17	11
073-CR-1101 -000	4.75	McCracken	Purchase	CONTEST RD	2	1	12	1.40	0.49	1.10	12
073-CR-1034C5-000	2.02	McCracken	Purchase	POOL RD	2	1	4	1.21	0.60	1.01	13
073-CR-1030L -000	0.84	McCracken	Purchase	HOVEKAMP RD	2	1	5	1.24	0.52	1.00	14
073-CR-1032 -000	0.97	McCracken	Purchase	LANE RD	2	0	2	0.94	0.99	0.96	15
073-CR-1042 -000	2.11	McCracken	Purchase	SCHNEIDMAN RD	1	3	6	1.27	0.28	0.94	16
073-CR-1115 -000	2.69	McCracken	Purchase	LOVELACEVILLE FLORENCE	0	0	8	0.18	2.27	0.87	17
073-CR-1023A6-030	0.01	McCracken	Purchase	BRIGHTON GATE X	0	0	0	0.00	2.50	0.83	18
073-CR-1066 -000	0.26	McCracken	Purchase	JOHN E ROBINSON RD	0	2	6	0.59	1.20	0.79	19
073-CR-1302 -000	1.51	McCracken	Purchase	MAXON RD	0	1	7	0.39	1.19	0.65	20
073-CR-1034B3-000	0.60	McCracken	Purchase	ELMDALE RD	0	1	3	0.30	1.29	0.62	21
073-CR-1015A -000	0.63	McCracken	Purchase	PULLEN LN	1	1	0	0.68	0.51	0.62	22
073-CR-1155 -000	0.12	McCracken	Purchase	LANCE WALTON RD	0	0	0	0.00	1.86	0.61	23
073-CR-1214 -000	1.35	McCracken	Purchase	LOVELACEVILLE-FLORENCE	1	0	4	0.54	0.44	0.51	24
073-CR-1041 -000	0.80	McCracken	Purchase	ROSEWOOD DR	1	0	2	0.49	0.53	0.50	25
073-CR-1030U -000	1.00	McCracken	Purchase	HOMEWOOD AVE	1	0	8	0.63	0.25	0.50	26
073-CR-1023E1-000	0.59	McCracken	Purchase	ANITA DR	1	1	0	0.68	0.14	0.50	27
073-CR-1030K -000	0.90	McCracken	Purchase	ESTES LN	0	1	3	0.30	0.90	0.50	28
073-CR-1015K -000	0.27	McCracken	Purchase	COLEMAN RD	0	1	5	0.34	0.71	0.46	29
073-CR-1140D -000	0.51	McCracken	Purchase	WATSON RD	1	0	1	0.47	0.45	0.46	30
073-CR-1227 -000	5.66	McCracken	Purchase	CHILDRESS RD	0	2	4	0.55	0.13	0.41	31
073-CR-1002 -000	1.05	McCracken	Purchase	HOLT RD	0	2	3	0.53	0.17	0.41	32
073-CR-1035C1-000	1.41	McCracken	Purchase	STARR HL RD	1	0	4	0.54	0.13	0.41	33
073-CR-1068 -000	0.27	McCracken	Purchase	MARYLAND ST	1	0	2	0.49	0.20	0.40	34
073-CR-1033A -000	0.31	McCracken	Purchase	LANSING AVE	1	0	3	0.52	0.14	0.39	35
073-CR-1372 -000	0.79	McCracken	Purchase	RIC KMAN RD	1	0	1	0.47	0.23	0.39	36
073-CR-1001C8-000	0.44	McCracken	Purchase	CHARLOTTE ANN DR	1	0	1	0.47	0.22	0.39	37
073-CR-1030E5-000	0.27	McCracken	Purchase	VALLEY ST	1	0	1	0.47	0.20	0.38	38
073-CR-1153 -000	0.95	McCracken	Purchase	OLD CALVERT CITY RD	1	0	0	0.45	0.25	0.38	39
073-CR-1035D -000	1.33	McCracken	Purchase	LAKEVIEW DR	0	0	11	0.25	0.65	0.38	40
073-CR-1023R -000	0.30	McCracken	Purchase	FISHER BLVD	1	0	2	0.49	0.15	0.38	41
073-CR-1012 -000	0.97	McCracken	Purchase	SHAFFER RD	0	1	2	0.27	0.59	0.38	42
073-CR-1001E4-000	0.08	McCracken	Purchase	TERRE VERTE BLVD	1	0	0	0.45	0.22	0.37	43
073-CR-1023F4-000	0.65	McCracken	Purchase	COLD SPRING RD	1	0	0	0.45	0.20	0.37	44
073-CR-1035Q -000	0.64	McCracken	Purchase	PARKER ST	1	0	0	0.45	0.18	0.36	45
073-CR-1023C7-000	0.70	McCracken	Purchase	STILES RD	0	0	2	0.05	0.97	0.35	46
073-CR-1034A -000	0.26	McCracken	Purchase	WALNUT DR E	0	0	2	0.05	0.96	0.35	47
073-CR-1133 -000	1.01	McCracken	Purchase	MAYES RD	0	2	1	0.48	0.07	0.34	48
073-CR-1309 -000	0.35	McCracken	Purchase	VANCE LN	1	0	0	0.45	0.14	0.34	49
073-CR-1212 -000	1.21	McCracken	Purchase	CROSS MILL RD	1	0	0	0.45	0.13	0.34	50
073-CR-1037 -000	1.60	McCracken	Purchase	SCHMIDT RD	1	0	1	0.47	0.06	0.34	51
073-CR-1138 -000	1.77	McCracken	Purchase	POWERS RD	1	0	0	0.45	0.10	0.33	52
073-CR-1204A -000	1.26	McCracken	Purchase	JEWELL LN	0	1	3	0.30	0.39	0.33	53
073-CR-1127 -000	2.81	McCracken	Purchase	BRYAN RD	1	0	0	0.45	0.08	0.33	54
073-CR-1014H -000	0.09	McCracken	Purchase	GRUBBS LN	1	0	0	0.45	0.06	0.32	55
073-CR-1023H2-000	0.16	McCracken	Purchase	CALVERT DR	1	0	0	0.45	0.05	0.32	56
073-CR-1228 -000	0.47	McCracken	Purchase	WILSON RD	1	0	0	0.45	0.05	0.32	57
073-CR-1219 -000	0.38	McCracken	Purchase	HIGGENBOTTOM RD	1	0	0	0.45	0.05	0.32	58
073-CR-1122 -000	0.72	McCracken	Purchase	WICE CHURCH RD	0	1	1	0.25	0.41	0.30	59
073-CR-1030Z -000	0.69	McCracken	Purchase	DIXIE AVE	0	0	10	0.23	0.42	0.29	60
073-CR-1001T -000	0.49	McCracken	Purchase	WINDMILL DR	0	1	1	0.25	0.36	0.29	61
073-CR-1103 -000	0.41	McCracken	Purchase	KREBS STATION RD	0	0	0	0.00	0.84	0.28	62
073-CR-1016 -000	0.23	McCracken	Purchase	OLD FRIENDSHIP RD	0	0	4	0.09	0.59	0.26	63

Exhibit McCracken-9: List of Focus Roadways

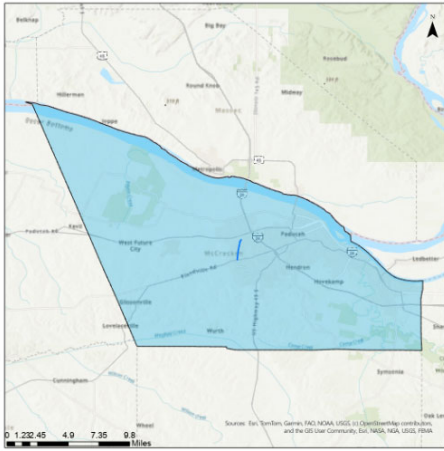
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashes	Fatal Crashes	PDO	Crash Score	Use Score	Score	Rank
McCracken											
073-CR-1034P-000	0.44	McCracken	Purchase	BROYLES AVE	0	0	0	0.00	0.77	0.25	64
073-CR-1035K-000	0.55	McCracken	Purchase	ALBANY AVE	0	0	2	0.05	0.65	0.25	65
073-CR-1154D-000	0.06	McCracken	Purchase	PEPPERS MILL DR SPUR	0	0	0	0.00	0.74	0.24	66
073-CR-1023A6-000	0.13	McCracken	Purchase	BRIGHTON GATE	0	0	0	0.00	0.72	0.24	67

Exhibit McCracken-10: List of Focus Roadways (continued)

Recommended Improvements (Top 5 Roads)

NEW HOLT RD (073-CR-1019 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Angle	26	13	0	39
	Rear End	28	2	0	30
	Backing	5	0	0	5
	Single Vehicle	2	2	0	4
	SS - Same	3	1	0	4
	SS - Opp	3	0	0	3
	Left Turn	2	1	0	3
	Rear to Rear	1	1	0	2
	Head On	1	0	0	1

General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
464	073-CR-1019 -000	NEW HOLT RD	24	4	1	0-20

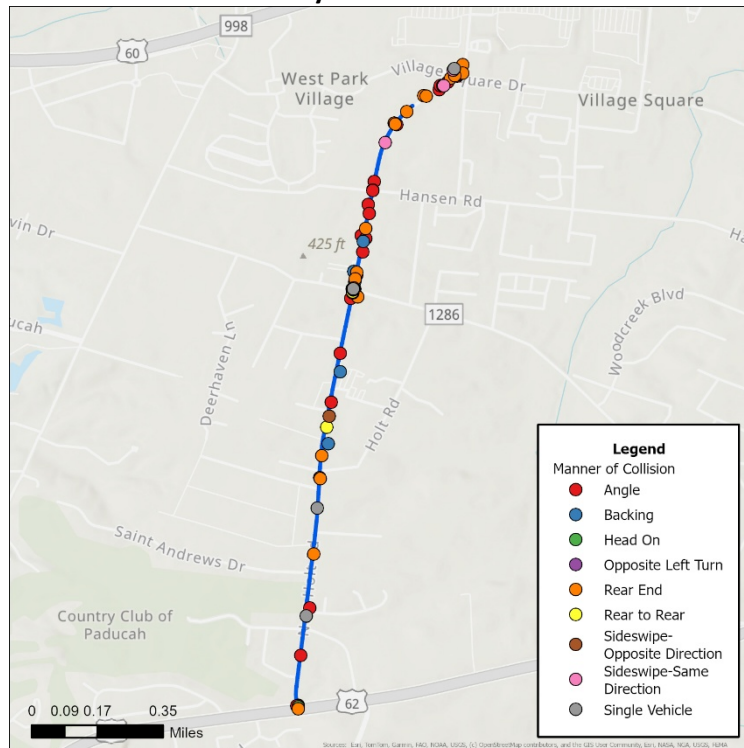
Roadway Typical Section



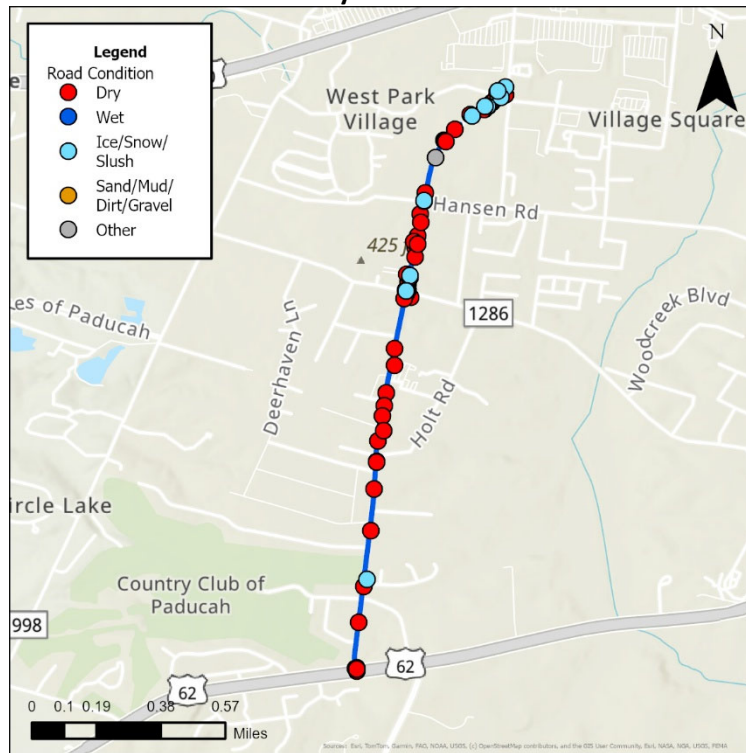
Crashes by Severity



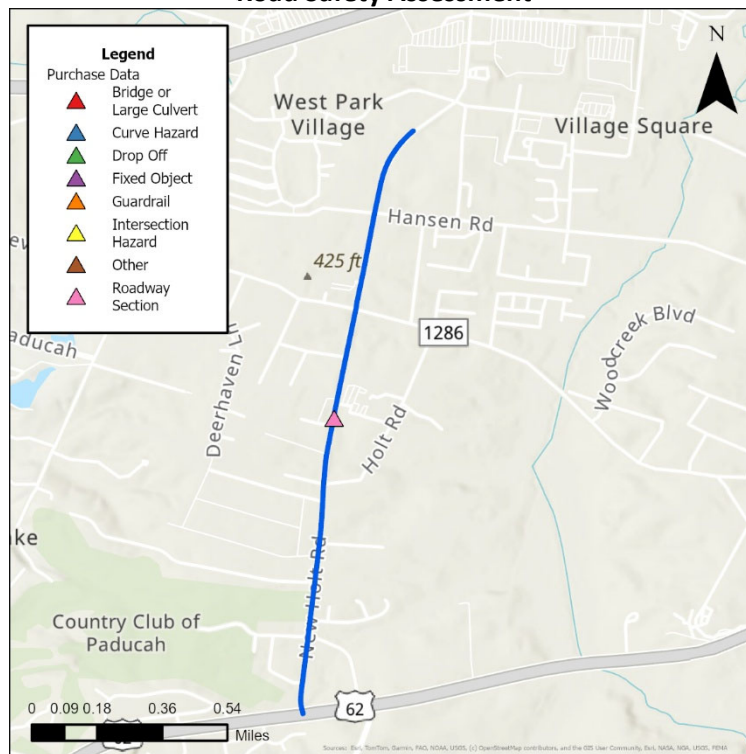
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

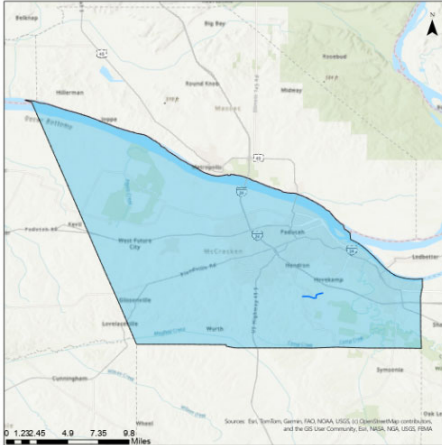


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
464	073-CR-1019 -000	NEW HOLT RD	24	4	1	0-20		✓	✓

CLARKLINE RD E (073-CR-1167 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	4	2	0	6
	SS - Opp	3	1	0	4
	Backing	1	1	0	2
	Head On	1	0	0	1
	SS - Same	1	0	0	1
	Left Turn	0	0	0	0
	Angle	0	0	0	0
	Rear to Rear	0	0	0	0
	Rear End	0	0	0	0

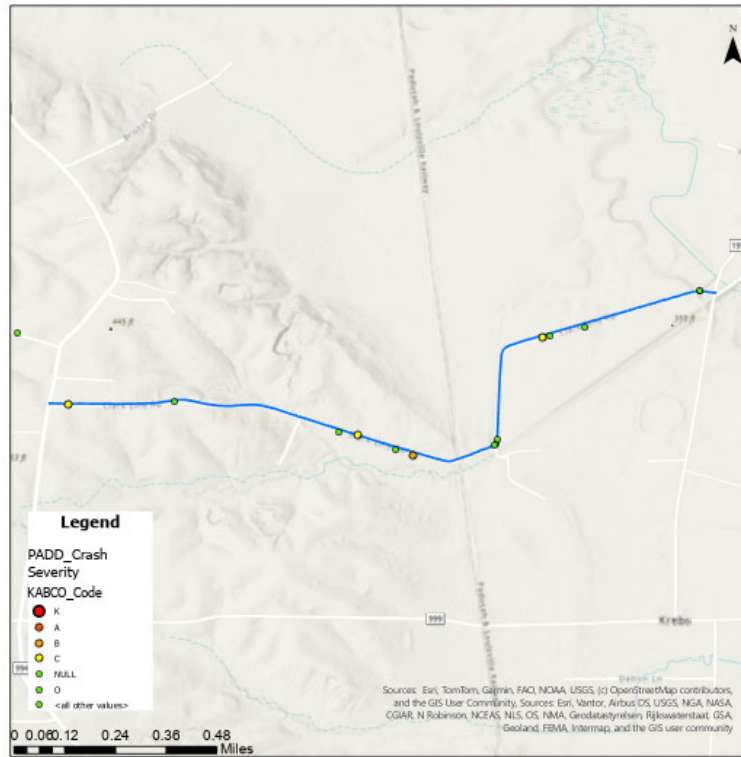
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
449	073-CR-1167 -000	CLARKLINE RD E	22	4	3	0-20

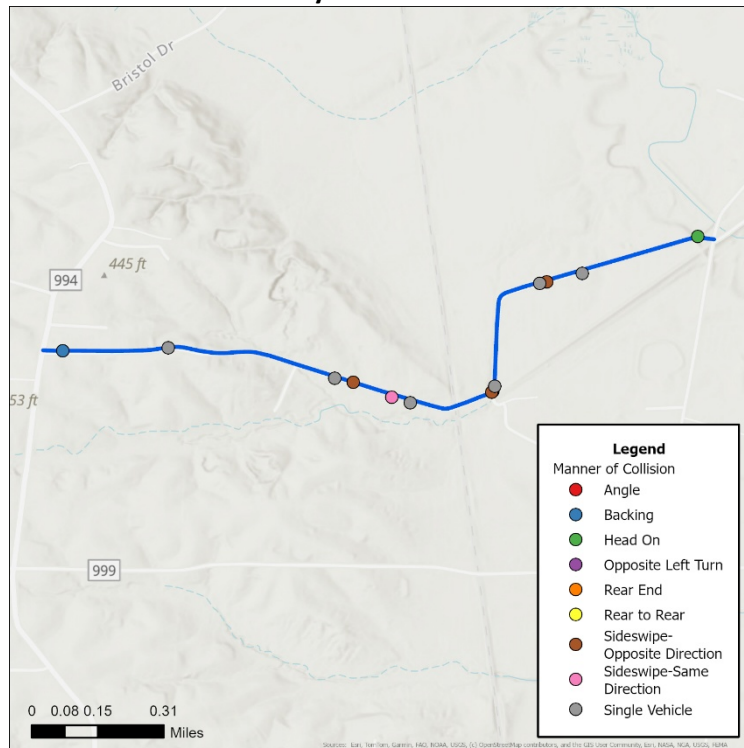
Roadway Typical Section



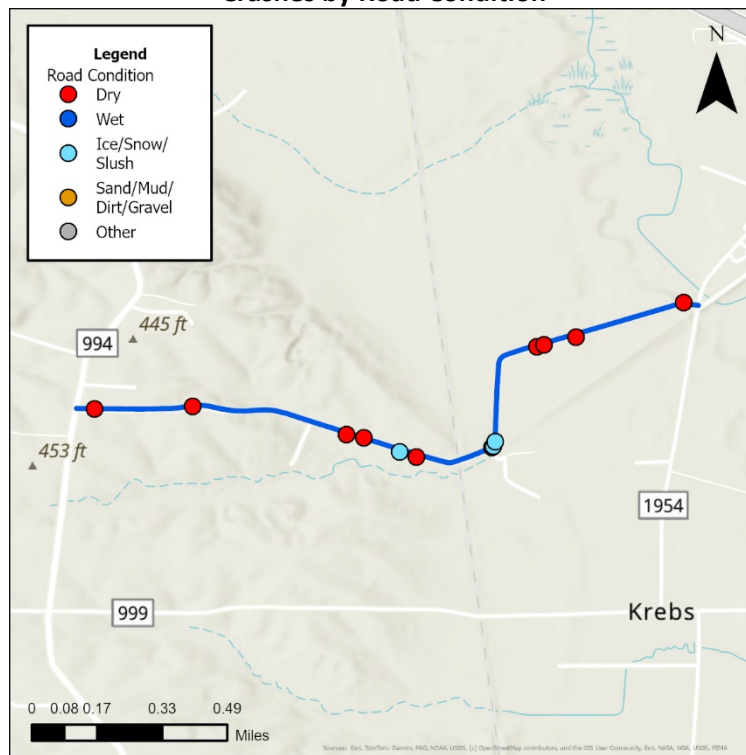
Crashes by Severity



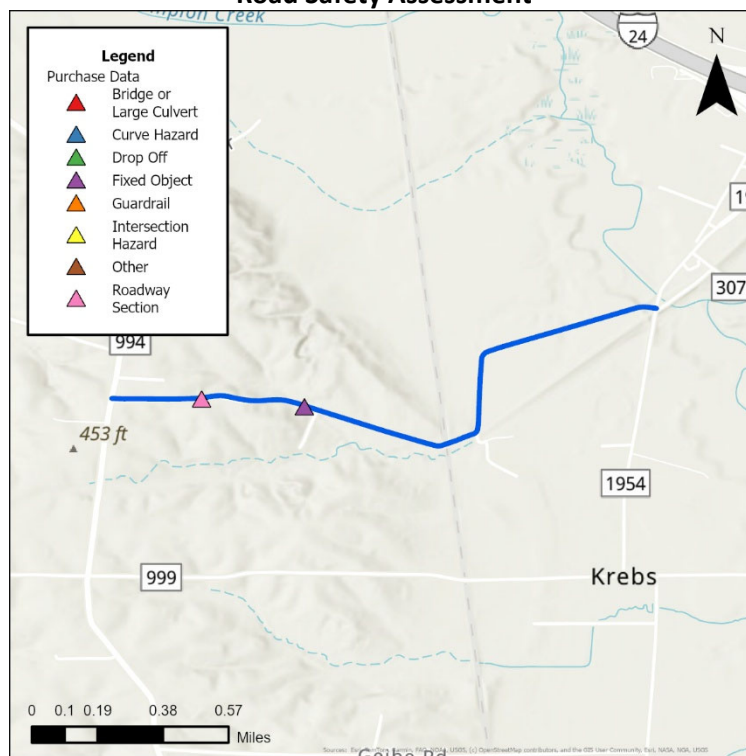
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

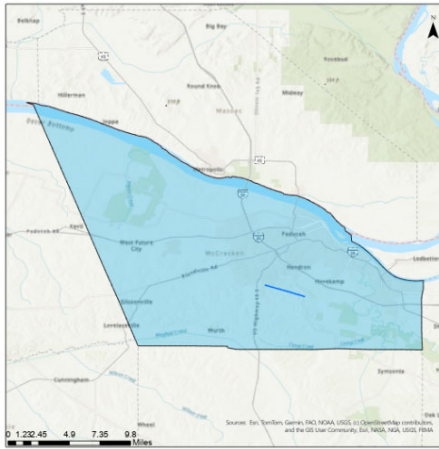


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
449	073-CR-1167 -000	CLARKLINE RD E	22	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation			
448	073-CR-1167 -000	CLARKLINE RD E	Mailbox	Single	3-5	--			

CLARK LINE RD W (073-CR-1174 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
Single Vehicle	6	3	0	9
Angle	2	2	0	4
SS - Same	1	0	0	1
Head On	0	0	0	0
Left Turn	0	0	0	0
Backing	0	0	0	0
SS - Opp	0	0	0	0
Rear to Rear	0	0	0	0
Rear End	0	0	0	0

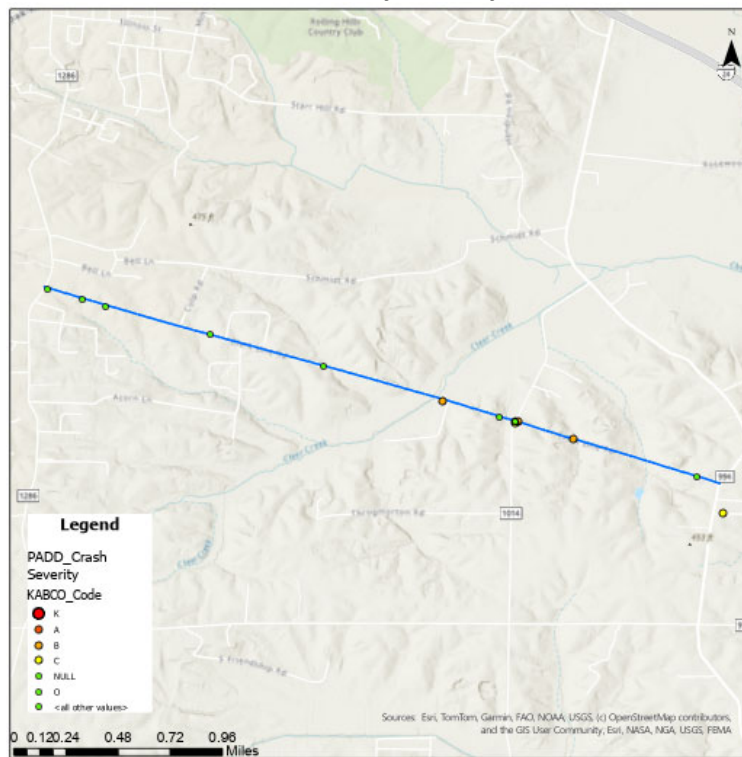
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
426	073-CR-1174 -000	CLARK LINE RD W	19	4	3	0-20

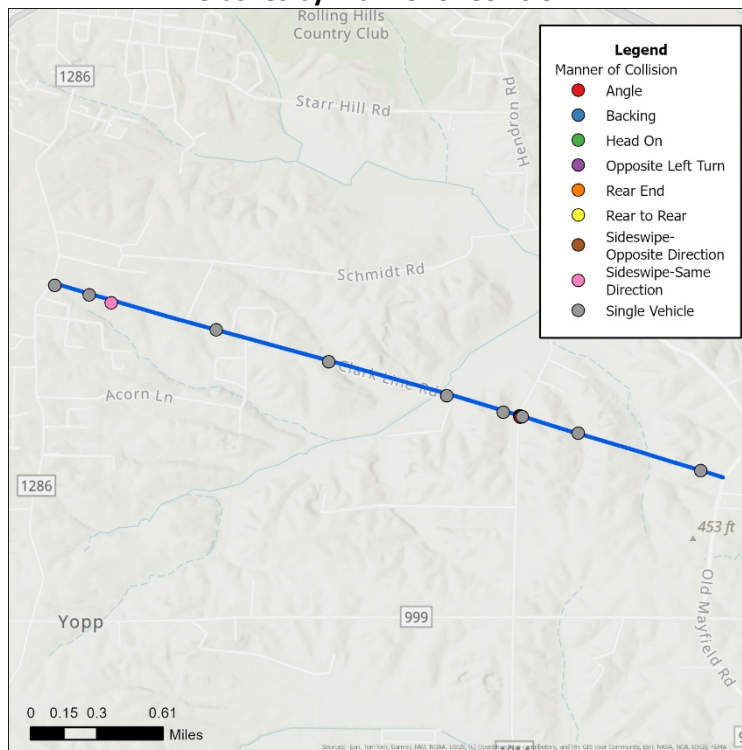
Roadway Typical Section



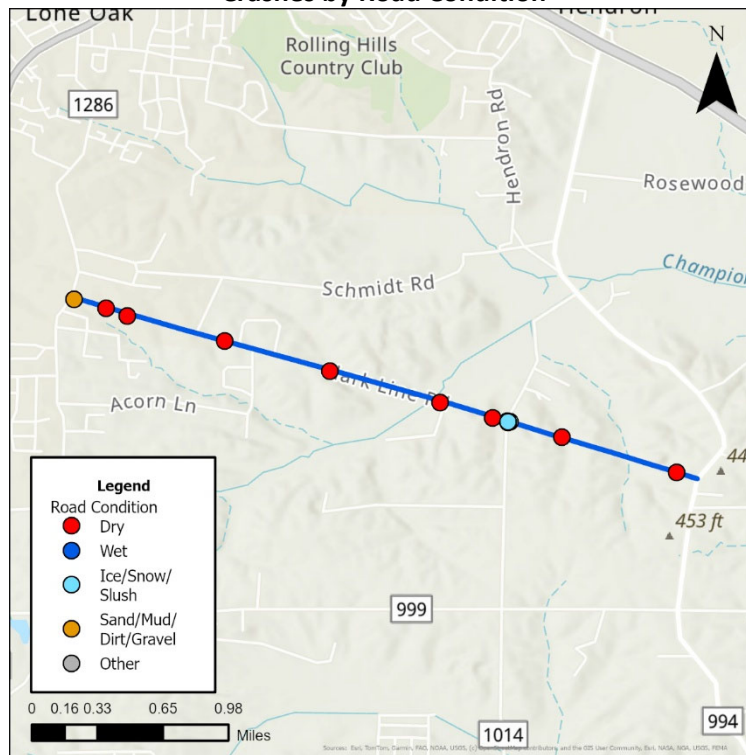
Crashes by Severity



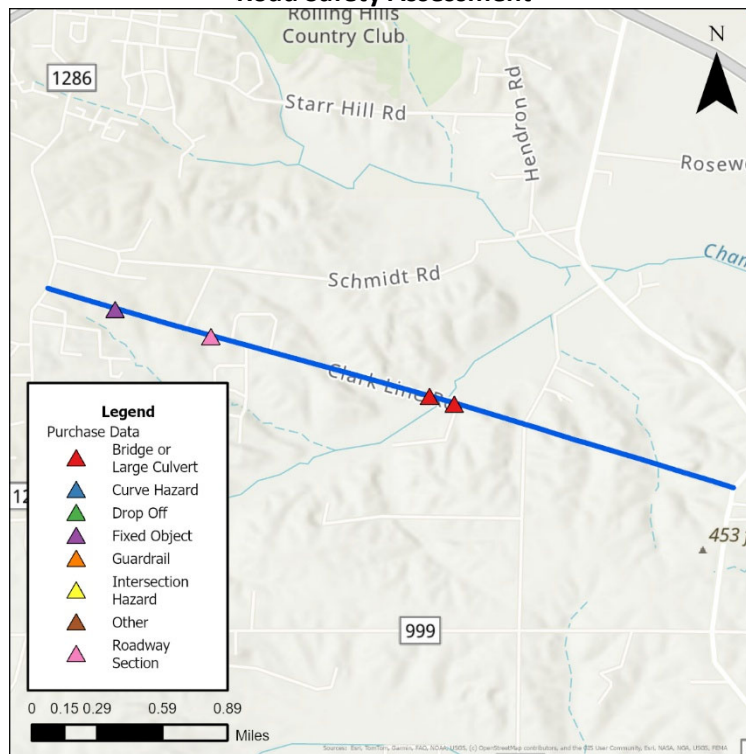
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

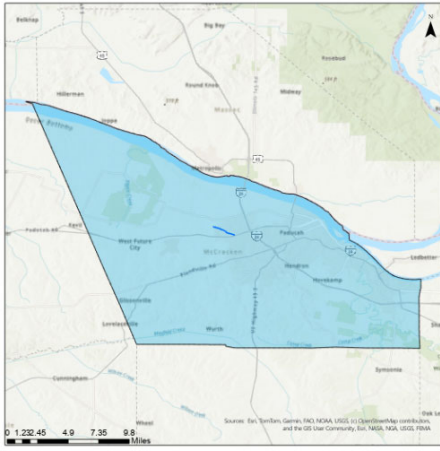


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
426	073-CR-1174 -000	CLARK LINE RD W	19	4	3	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation			
420	073-CR-1174 -000	CLARK LINE RD W	24	4	4	--			
424	073-CR-1174 -000	CLARK LINE RD W	24	4	4	--			
Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation			
428	073-CR-1174 -000	CLARK LINE RD W	Brick Columns	Single	1-3	Install Type 2 or 3 Object Marker(s); See policy Recommendations			

J HARRIS RD (073-CR-1005 -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	8	2	0	10
	SS - Opp	6	0	0	6
	Angle	2	1	0	3
	Head On	1	0	0	1
	Rear End	1	0	0	1
	SS - Same	0	0	0	0
	Backing	0	0	0	0
	Left Turn	0	0	0	0
	Rear to Rear	0	0	0	0

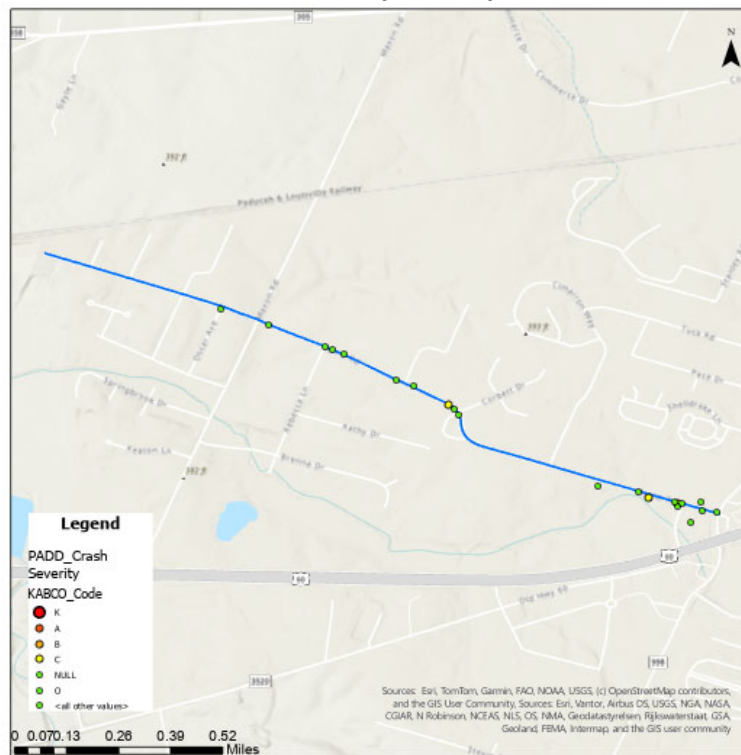
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
322	073-CR-1005 -000	J HARRIS RD	16	4	2	0-20

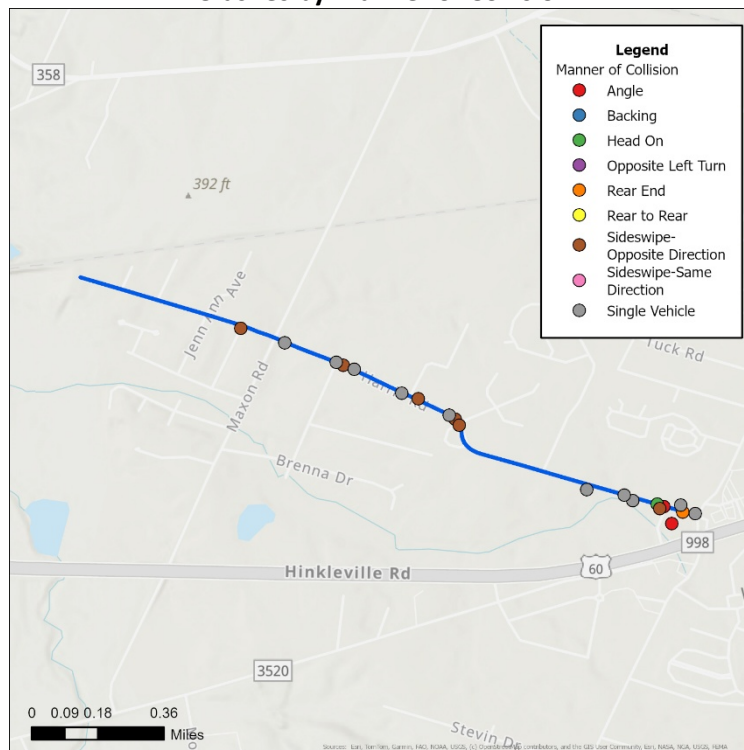
Roadway Typical Section



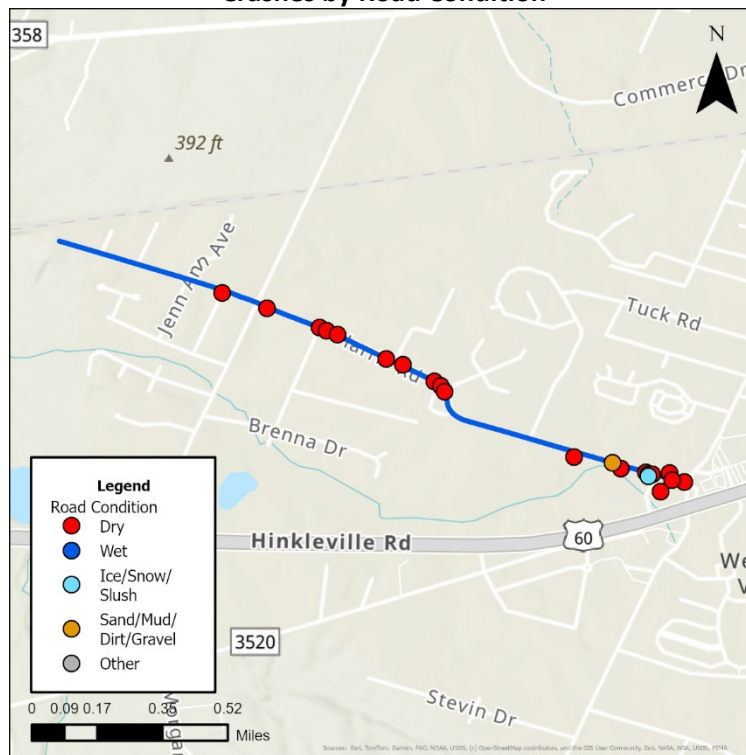
Crashes by Severity



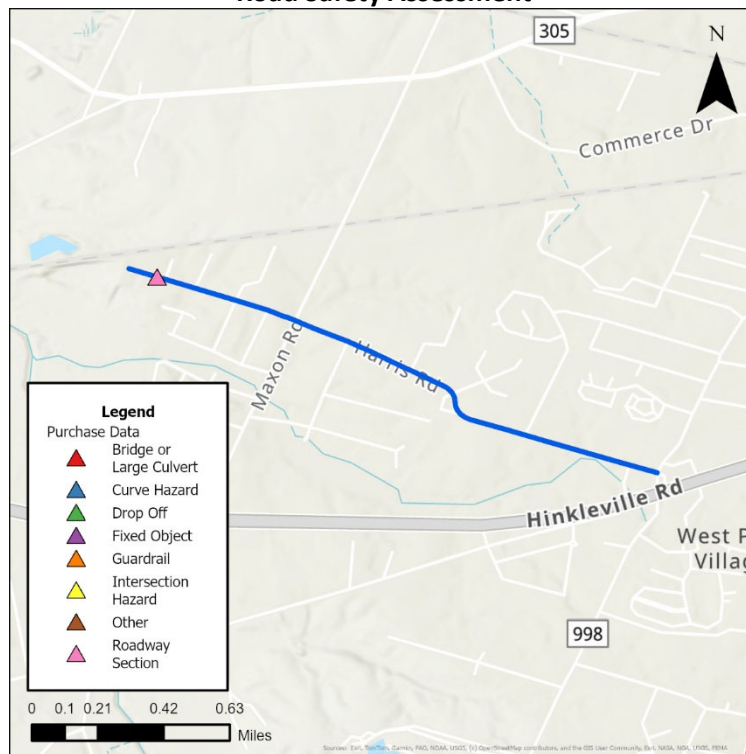
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment

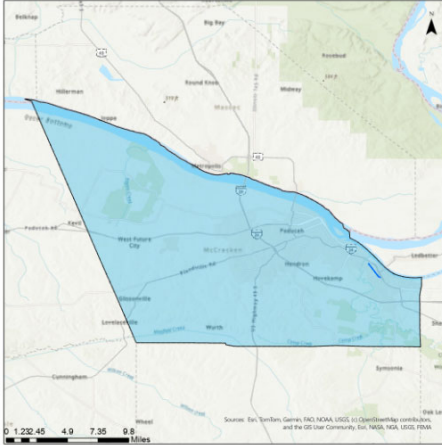


Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
322	073-CR-1005 -000	J HARRIS RD	16	4	2	0-20		✓	✓

I.C. AVE (073-CR-1022D -000)

Road Location Map and Crash History

	Manner of Collision	Property Damage Only	Injury	Fatal	Total
	Single Vehicle	0	1	0	1
	SS - Same	0	0	0	0
	SS - Opp	0	0	0	0
	Left Turn	0	0	0	0
	Head On	0	0	0	0
	Backing	0	0	0	0
	Angle	0	0	0	0
	Rear to Rear	0	0	0	0
	Rear End	0	0	0	0

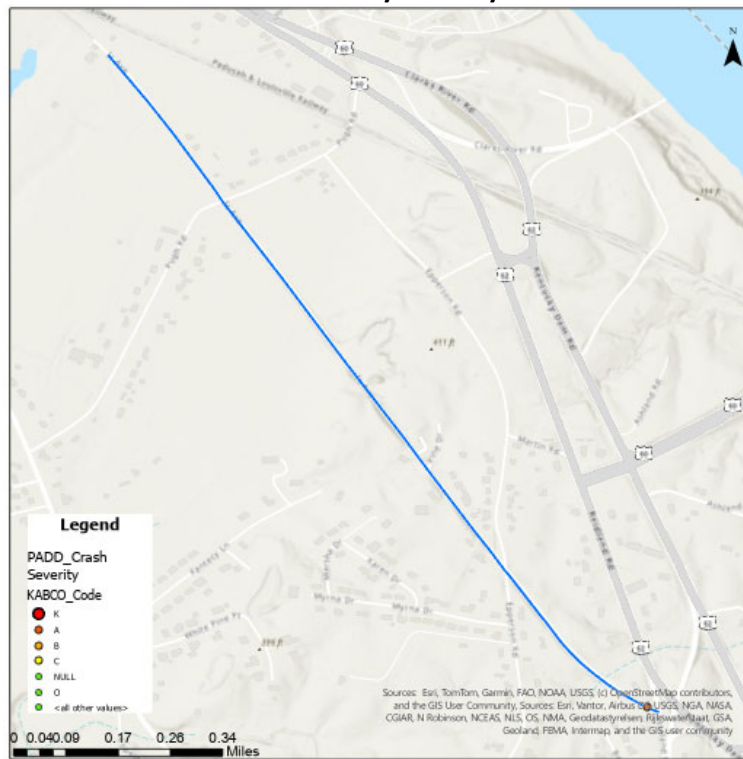
General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)
81	073-CR-1022D -000	I.C. AVE	16	4	6	0-20

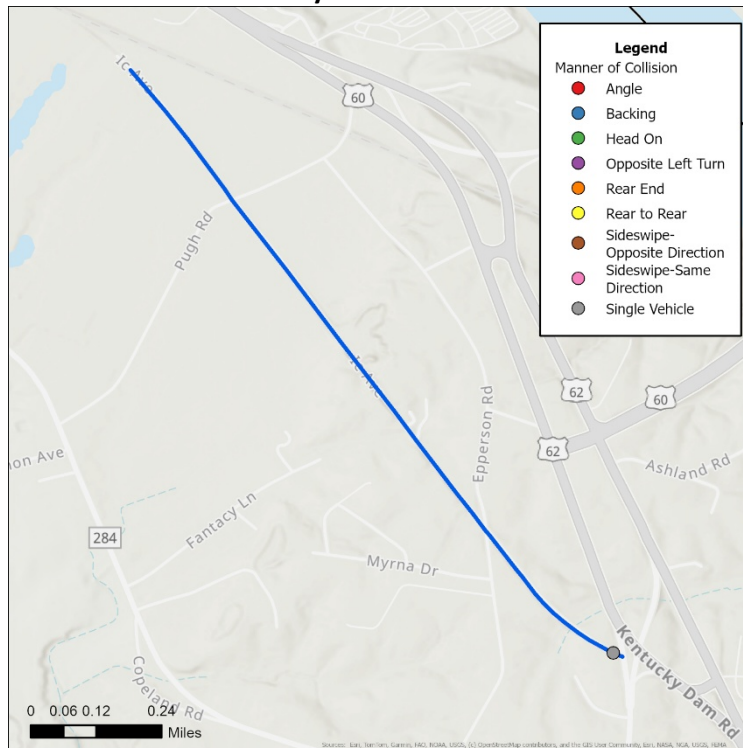
Roadway Typical Section



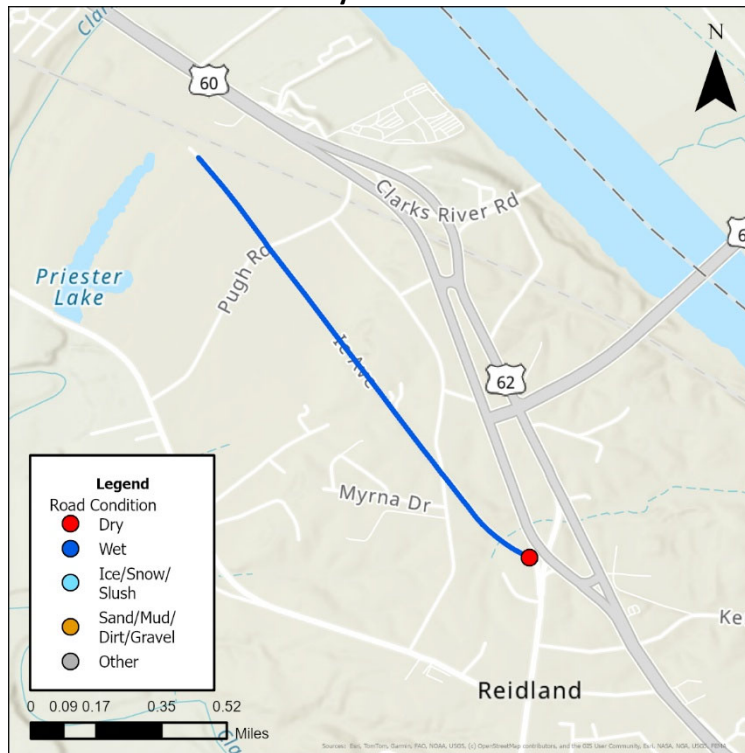
Crashes by Severity



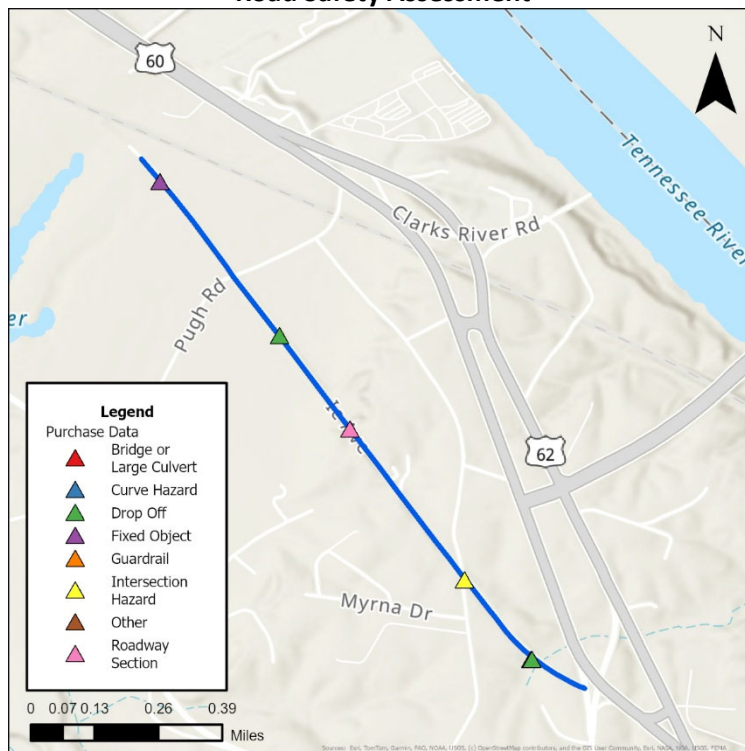
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
81	073-CR-1022D -000	I.C. AVE	16	4	6	0-20		✓	✓
Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation				
80	073-CR-1022D -000	I.C. AVE	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)				
83	073-CR-1022D -000	I.C. AVE	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)				
84	073-CR-1022D -000	I.C. AVE	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)				
Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation			Comments		
72	073-CR-1022D -000	I.C. AVE	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew			Intersection_Skew,Insufficient_Sight_Distance_at_,Inter section_Obscured_on_Approa		
Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation			
77	073-CR-1022D -000	I.C. AVE	Tree	Series	3-5	Remove trees within 3 ft of roadway			

Other Roadways

General Roadway Conditions and Recommendations (McCracken County)

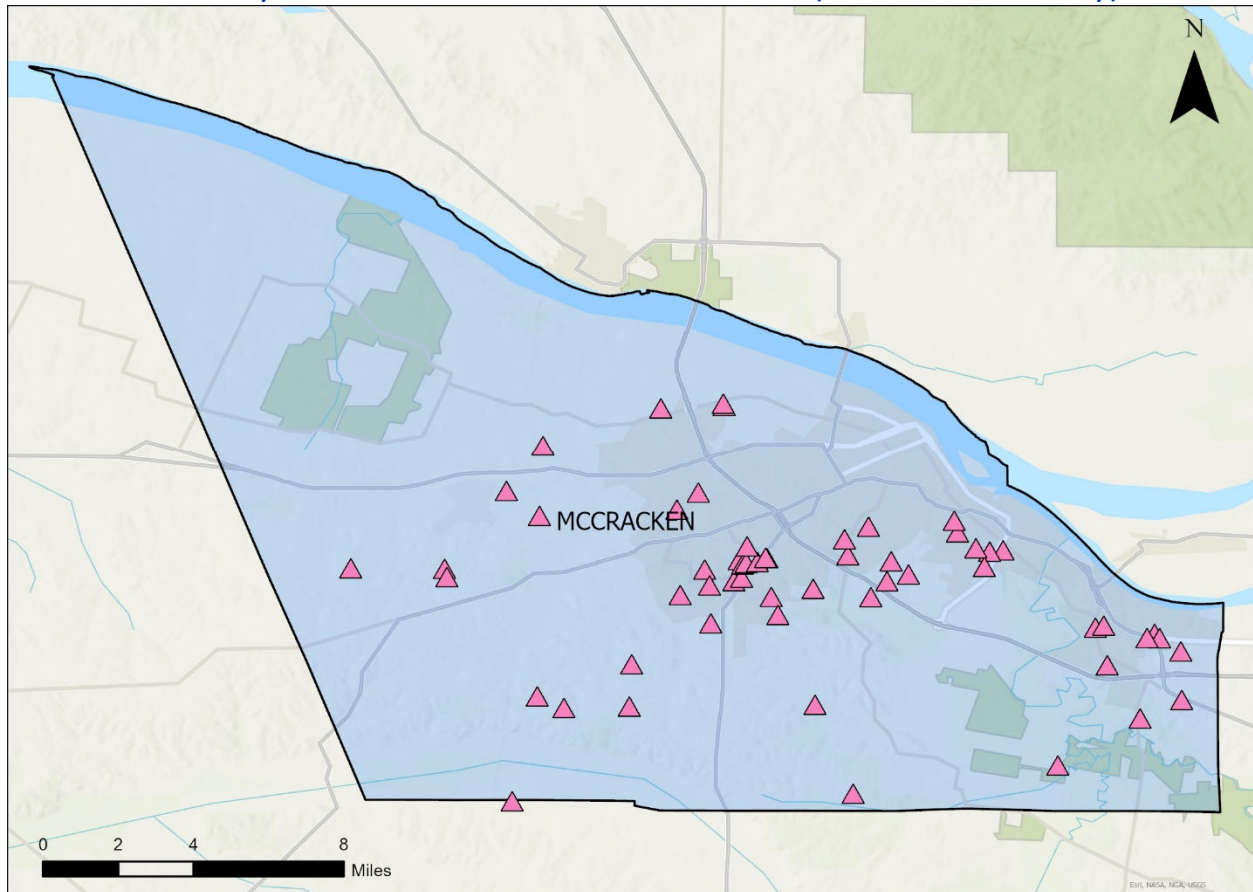


Exhibit McCracken County General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing
7	073-CR-1138 -000	POWERS RD	19	3	5	0-20		✓	✓
25	073-CR-1140D -000	WATSON RD	21	4	4	0-20		✓	✓
32	073-CR-1153 -000	OLD CALVERT CITY RD	16	4	4	0-20		✓	✓
38	073-CR-1023C7-000	STILES RD	19	4	4	0-20		✓	✓
47	073-CR-1023H2-000	CALVERT DR	20	4	3	0-20		✓	✓
50	073-CR-1023H2-000	CALVERT DR	20	2	4	0-20			✓
61	073-CR-1023F4-000	COLD SPRING RD	17	4	4	0-20		✓	✓
63	073-CR-1023E1-000	ANITA DR	19	4	4	0-20		✓	✓
70	073-CR-1023R -000	FISHER BLVD	20	4	4	0-20		✓	✓
81	073-CR-1022D -000	I.C. AVE	16	4	6	0-20		✓	✓
87	073-CR-1030E5-000	VALLEY ST	18	3	4	0-20		✓	✓
94	073-CR-1030L -000	HOVEKAMP RD	19	4	3	0-20		✓	✓
104	073-CR-1030K -000	ESTES LN	21	4	4	0-20		✓	✓
114	073-CR-1030P -000	YARBRO LN	18	4	3	20-40	✓	✓	✓
125	073-CR-1030U -000	HOMEWOOD AVE	17	4	4	20-40	✓	✓	✓
137	073-CR-1030Z -000	DIXIE AVE	18	3	3	0-20		✓	✓
147	073-CR-1032 -000	LANE RD	19	5	5	0-20		✓	✓
162	073-CR-1034C5-000	POOL RD	19	4	5	0-20		✓	✓
176	073-CR-1042 -000	SCHNEIDMAN RD	20	4	5	0-20		✓	✓
183	073-CR-1034A -000	WALNUT DR E	18	4	3	0-20		✓	✓
187	073-CR-1034B3-000	ELMDALE RD	20	4	2	0-20		✓	✓
204	073-CR-1144E -000	MAJESTIC OAK DR	20	4	1	0-20		✓	✓
219	073-CR-1101 -000	CONTEST RD	20	4	5	20-40	✓	✓	✓
231	073-CR-1204A -000	JEWELL LN	20	4	1	0-20		✓	✓
234	073-CR-1212 -000	CROSS MILL RD	16	4	5	20-40	✓	✓	✓
243	073-CR-1214 -000	LOVELACEVILLE-FLORENCE STATION RD W	16	4	5	0-20		✓	✓
248	073-CR-1115 -000	LOVELACEVILLE FLORENCE STATION RD	20	4	2	0-20		✓	✓
280	073-CR-1227 -000	CHILDRESS RD	18	4	5	0-20		✓	✓
289	073-CR-1227 -000	CHILDRESS RD	14	4	5	0-20		✓	✓
292	073-CR-1228 -000	WILSON RD	14	5	4	0-20		✓	✓
297	073-CR-1241 -000	OLD HINKLEVILLE S RD	18	4	2	0-20		✓	✓
307	073-CR-1372 -000	RICKMAN RD	16	4	2	0-20		✓	✓
311	073-CR-1309 -000	VANCE LN	18	4	5	0-20		✓	✓
325	073-CR-1012 -000	SHAFFER RD	18	4	4	0-20		✓	✓
334	073-CR-1155 -000	LANCE WALTON RD	20	4	1	0-20		✓	✓
338	073-CR-1001E4-000	TERRE VERTE BLVD	16	3	1	0-20		✓	✓
344	073-CR-1001T -000	WINDMILL DR	20	5	2	0-20		✓	✓
349	073-CR-1001C8-000	CHARLOTTE ANN DR	18	4	2	0-20		✓	✓
355	073-CR-1033A -000	LANSING AVE	18	5	6	0-20		✓	✓
360	073-CR-1001B7-000	COLLEGE AVE	20	4	4	0-20		✓	✓
363	073-CR-1066 -000	JOHN E ROBINSON RD	20	4	4	0-20		✓	✓
364	073-CR-1068 -000	MARYLAND ST	14	3	4	0-20		✓	✓
367	073-CR-1068 -000	MARYLAND ST	18	4	3	0-20		✓	✓
371	073-CR-1016 -000	OLD FRIENDSHIP RD	18	4	2	0-20		✓	✓
373	073-CR-1035D -000	LAKEVIEW DR	20	4	3	0-20		✓	✓
386	073-CR-1035K -000	ALBANY AVE	20	5	3	0-20		✓	✓
390	073-CR-1035Q -000	PARKER ST	21	4	2	0-20		✓	✓
403	073-CR-1035C1-000	STARR HL RD	18	4	5	0-20		✓	✓
407	073-CR-1041 -000	ROSEWOOD DR	19	4	3	20-40	✓	✓	✓
411	073-CR-1037 -000	SCHMIDT RD	15	4	6	0-20		✓	✓
456	073-CR-1133 -000	MAYES RD	21	5	5	0-20		✓	✓

Exhibit McCracken County General Roadway Recommendations



Point ID	RT_UNIQUE	Road Name	Pvmt Width (ft)	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%)	Improve Shoulder	Edgeline1	Curve Signing	Comments
491	073-CR-1003 -000	HANSEN RD	16	4	5	0-20			✓	✓
506	073-CR-1219 -000	HIGGENBOTTOM RD	16	4	3	0-20			✓	✓
336	073-CR-1015K -000	COLEMAN RD	20	4	2	0-20			✓	✓
353	073-CR-1001C4-000	CAVE THOMAS DR	24	5	1	0-20			✓	✓
181	073-CR-1034P -000	BROYLES AVE	18	4	4	0-20			✓	✓

Exhibit McCracken County General Roadway Recommendations (Continued)

Bridge / Culvert Recommendations (McCracken County)

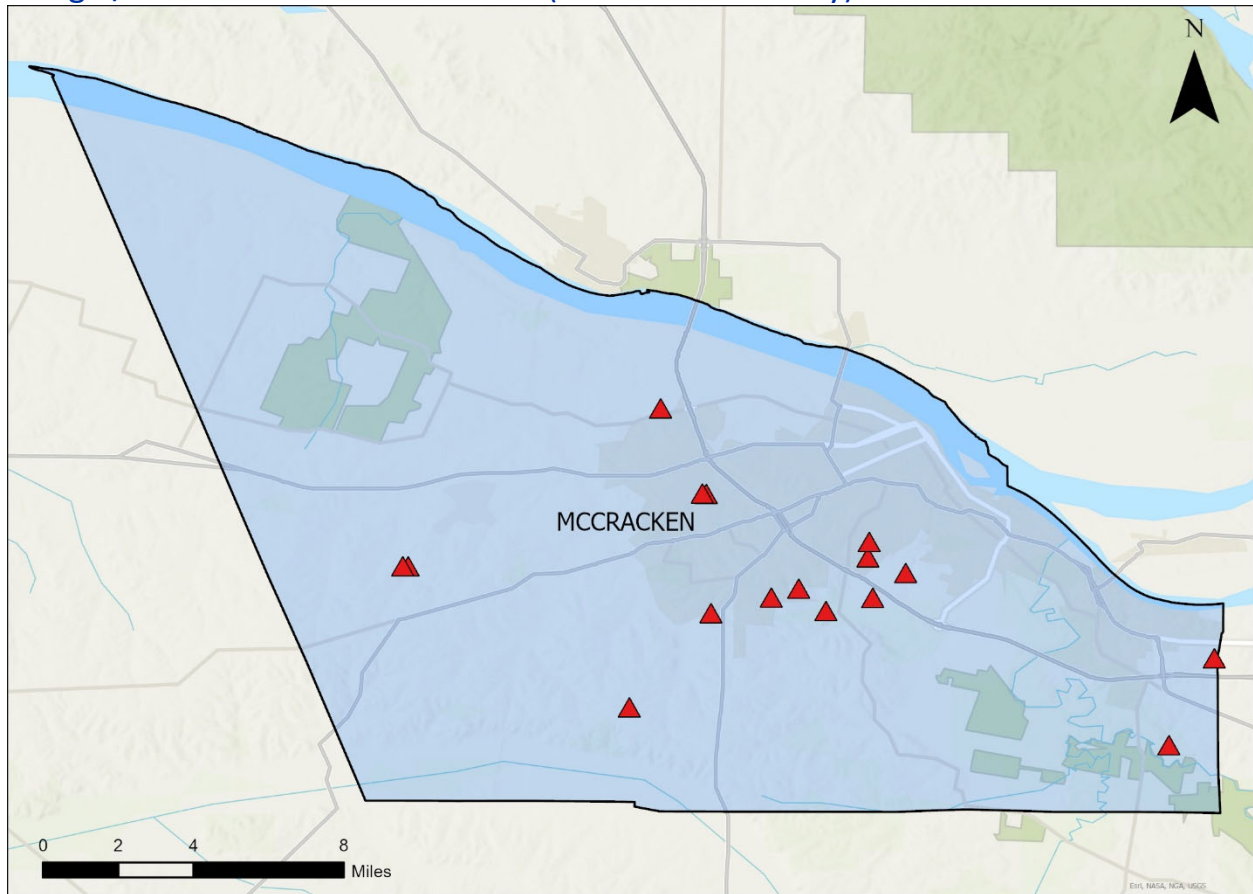


Exhibit McCracken County Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Bridge Width	Guardrail Present	OM Present	Recommendation
397	073-CR-1035C1-000	STARR HL RD	20	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
168	073-CR-1042 -000	SCHNEIDMAN RD	22	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
169	073-CR-1042 -000	SCHNEIDMAN RD	22	2	0	Evaluate need for guardrail on approach, install/Replace Type 3 Object Markers on all corners if necessary
34	073-CR-1153 -000	OLD CALVERT CITY RD	17	4	1	Install/Replace Type 3 Object Markers on all corners
285	073-CR-1227 -000	CHILDRESS RD	18	4	1	Install/Replace Type 3 Object Markers on all corners
284	073-CR-1227 -000	CHILDRESS RD	20	4	2	Install/Replace Type 3 Object Markers on all corners
218	073-CR-1101 -000	CONTEST RD	21	4	4	--
389	073-CR-1035Q -000	PARKER ST	23	0	0	Evaluate need for guardrail on approach, install Type 3 Object Markers;
413	073-CR-1037 -000	SCHMIDT RD	20	4	4	--
483	073-CR-1003 -000	HANSEN RD	20	4	4	--
488	073-CR-1003 -000	HANSEN RD	20	4	4	--
13	073-CR-1138 -000	POWERS RD	23	4	4	--
406	073-CR-1041 -000	ROSEWOOD DR	20	4	4	--
324	073-CR-1012 -000	SHAFFER RD	18	0	2	Evaluate need for guardrail on approach, Install/Replace Type 3 Object Markers on all corners;
249	073-CR-1115 -000	LOVELACEVILLE FLORENCE STATION RD	20	4	3	Install/Replace Type 3 Object Markers on all corners
146	073-CR-1032 -000	LANE RD	19	4	3	Install/Replace Type 3 Object Markers on all corners

Exhibit McCracken County Bridge / Culvert Recommendations

Curve Recommendations (McCracken County)

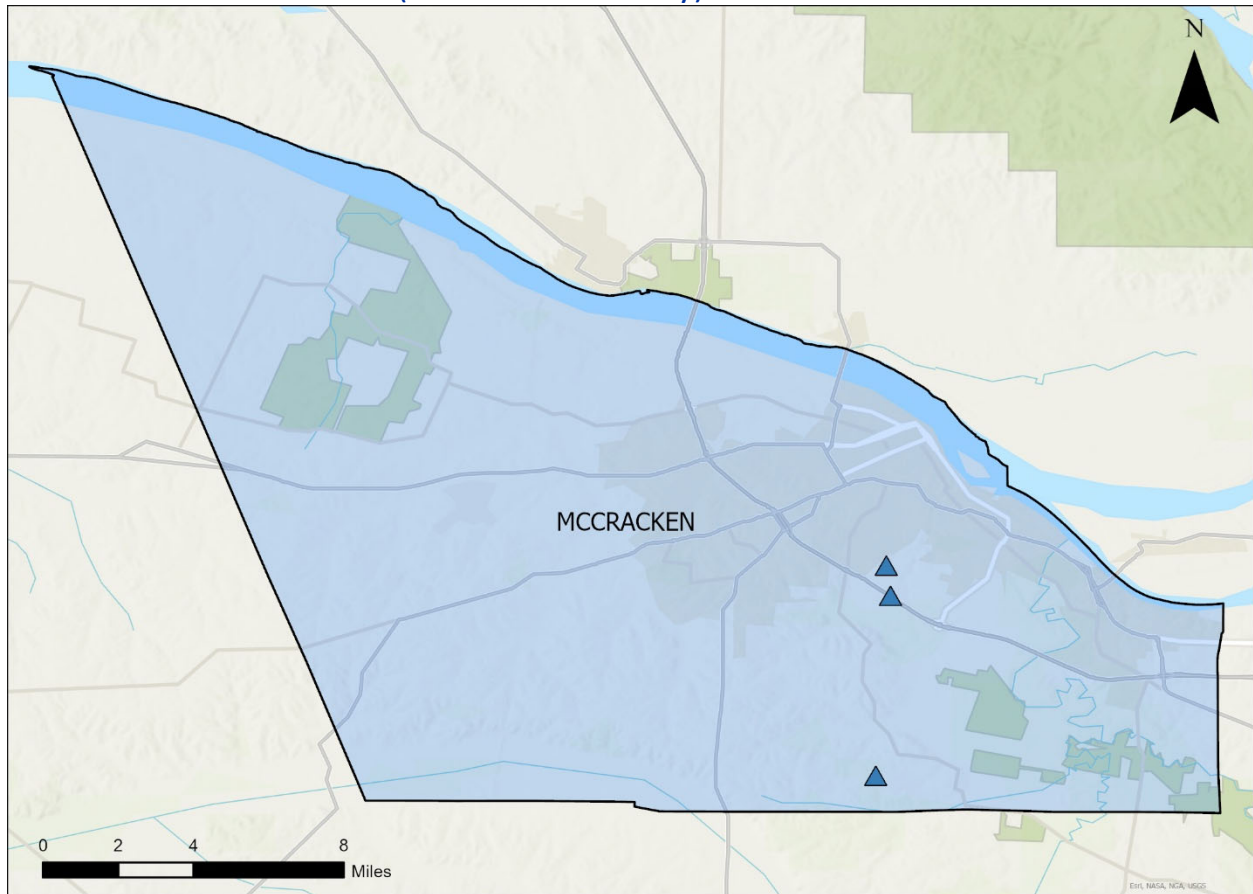


Exhibit McCracken County Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Comments	Vegetation	Recommendation
165	073-CR-1042 -000	SCHNEIDMAN RD	Other; No Signage	Yes	Install Horizontal Alignment Signing
175	073-CR-1042 -000	SCHNEIDMAN RD	vegetation	Yes	Clear Vegetation

Exhibit McCracken County Curve Recommendations

Roadside Drop Off Recommendations (McCracken County)

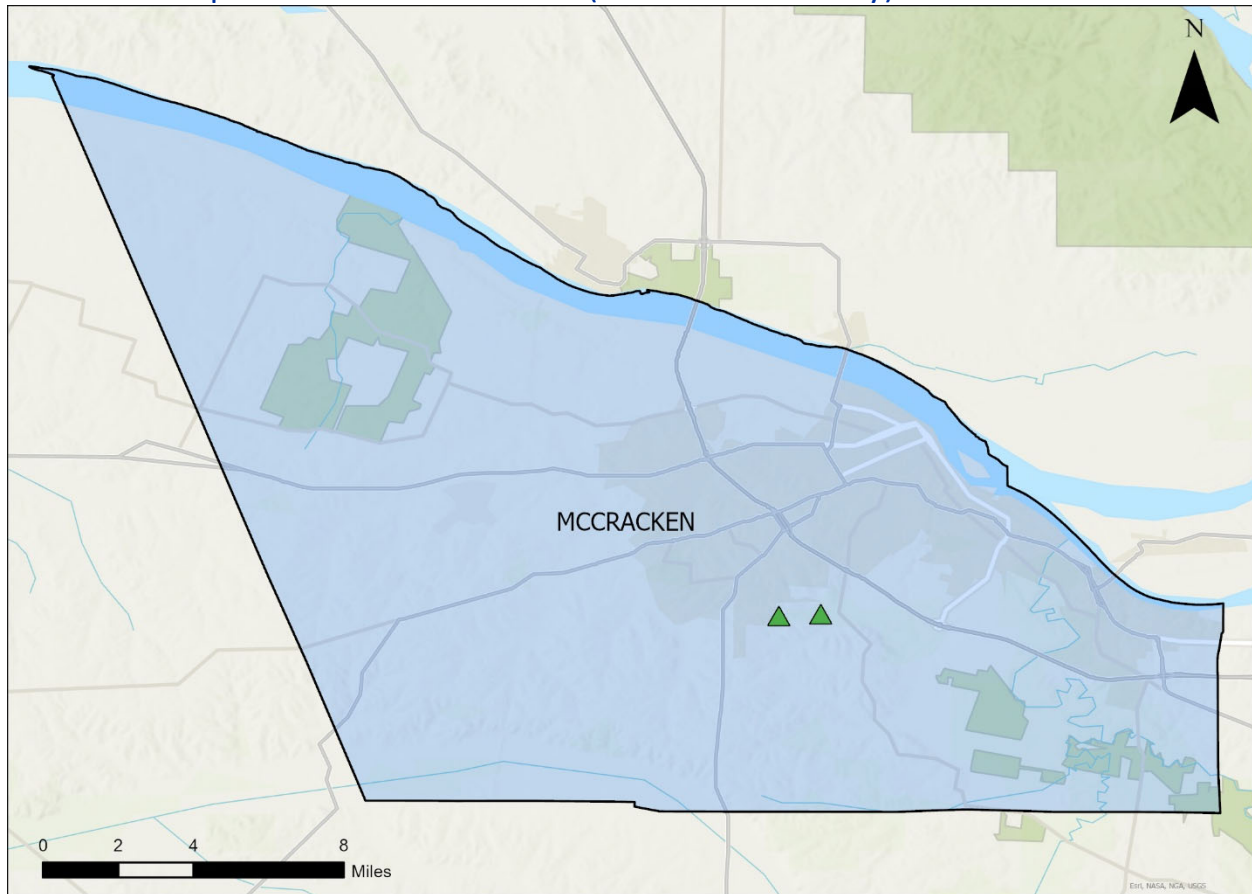


Exhibit McCracken County Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Drop Off Offset	Drop Off Height	Recommendation
415	073-CR-1037 -000	SCHMIDT RD	1-3	5-10	Install Type 2 Object Marker(s) or Delineator(s)
412	073-CR-1037 -000	SCHMIDT RD	3-5	5-10	Install Type 2 Object Marker(s) or Delineator(s)
80	073-CR-1022D -000	I.C. AVE	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
83	073-CR-1022D -000	I.C. AVE	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)
84	073-CR-1022D -000	I.C. AVE	1-3	>10	Evaluate need for guardrail ; Install Type 2 Object Marker(s) or Delineator(s)

Exhibit McCracken County Roadside Drop Off Recommendations

Fixed Object Recommendations (McCracken County)

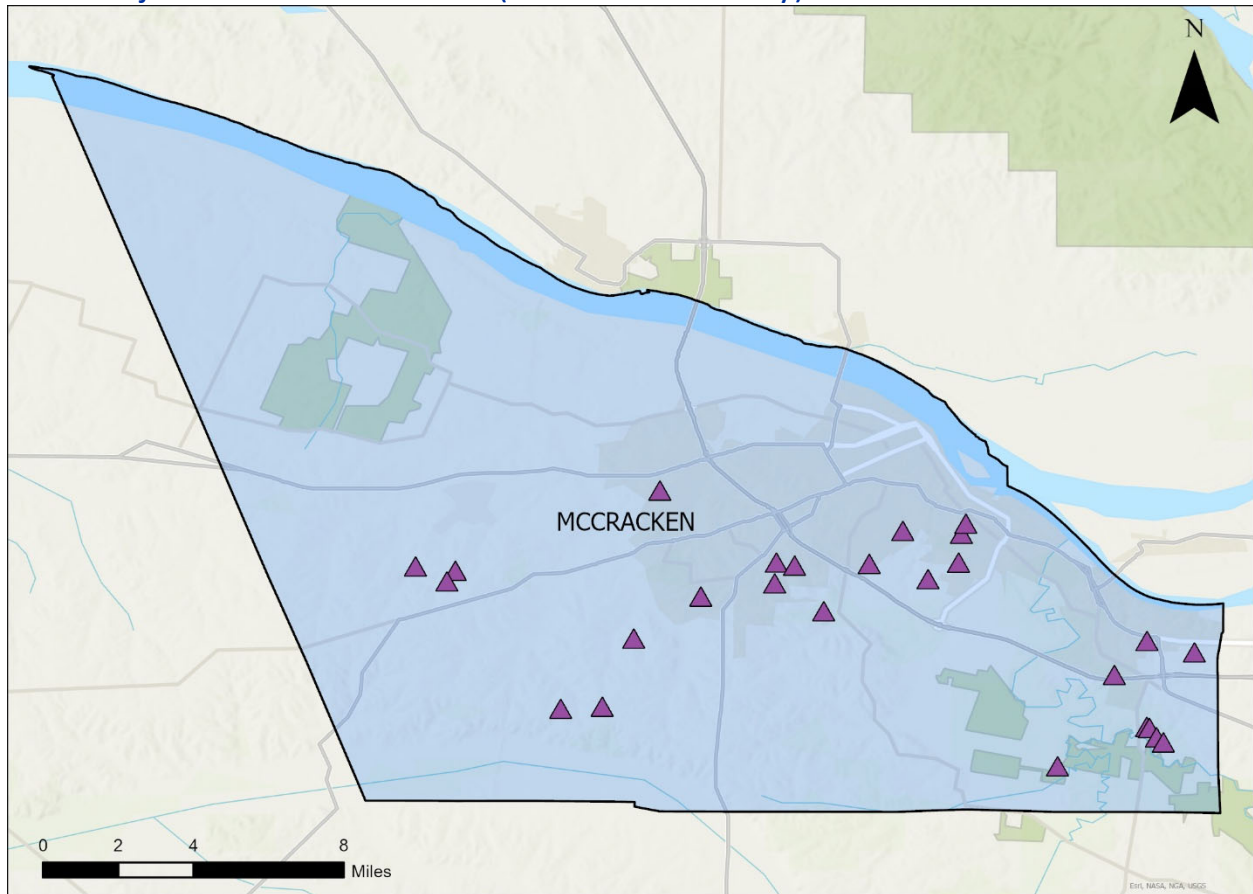


Exhibit McCracken County Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Single / Series	Offset	Recommendation
106	073-CR-1030K-000	ESTES LN	Tree	Series	3-5	Remove trees within 3 ft of roadway
33	073-CR-1153 -000	OLD CALVERT CITY RD	Brick Mailbox	Series	3-5	2 or 3 Object Marker(s); See policy Recom
229	073-CR-1204A-000	JEWELL LN	Mailbox	Single	1-3	--
395	073-CR-1035C1-000	STARR HL RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
374	073-CR-1035D-000	LAKEVIEW DR	Stone Columns	Series	1-3	2 or 3 Object Marker(s); See policy Recom
376	073-CR-1035D-000	LAKEVIEW DR	Culvert Headwall	Single	1-3	Install Type 2 Object Markers
167	073-CR-1042 -000	SCHNEIDMAN RD	Object	Single	1-3	ate potential to remove or Install Object M
283	073-CR-1227 -000	CHILDRESS RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
279	073-CR-1227 -000	CHILDRESS RD	Mailbox	Single	1-3	--
414	073-CR-1037 -000	SCHMIDT RD	Tree	Series	1-3	Remove trees within 3 ft of roadway
261	073-CR-1214 -000	LOVELACEVILLE-FLORENCE STATION RD W	Tree	Series	1-3	Remove trees within 3 ft of roadway
496	073-CR-1003 -000	HANSEN RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
57	073-CR-1023F4-000	COLD SPRING RD	Brick Mailbox	Series	0-1	2 or 3 Object Marker(s); See policy Recom
8	073-CR-1138 -000	POWERS RD	Culvert Headwall	Series	3-5	Remove trees within 3 ft of roadway
18	073-CR-1138 -000	POWERS RD	Brick Mailboxes	Series	3-5	2 or 3 Object Marker(s); See policy Recom
12	073-CR-1138 -000	POWERS RD	Tree	Series	>5	--
9	073-CR-1138 -000	POWERS RD	Culvert Headwall	Single	3-5	Install Type 2 or 3 Object Marker(s)
77	073-CR-1022D-000	I.C. AVE	Tree	Series	3-5	Remove trees within 3 ft of roadway
135	073-CR-1030Z-000	DIXIE AVE	Tree	Single	3-5	--
124	073-CR-1030U-000	HOMWOOD AVE	Tree	Series	3-5	Remove trees within 3 ft of roadway
348	073-CR-1001C8-000	CHARLOTTE ANN DR	Mailbox	Single	1-3	--
53	073-CR-1023H2-000	CALVERT DR	Utility Pole	Single	3-5	Install Type 2 or 3 Object Marker(s)
245	073-CR-1115 -000	LOVELACEVILLE FLORENCE STATION RD	Mailbox	Series	1-3	--
293	073-CR-1228 -000	WILSON RD	Tree	Single	1-3	Remove trees within 3 ft of roadway
457	073-CR-1133 -000	MAYES RD	Tree	Series	3-5	Remove trees within 3 ft of roadway
139	073-CR-1032 -000	LANE RD	Tree	Series	1-3	Remove trees within 3 ft of roadway

Exhibit McCracken County Fixed Object Recommendations

Intersection Recommendations (McCracken County)

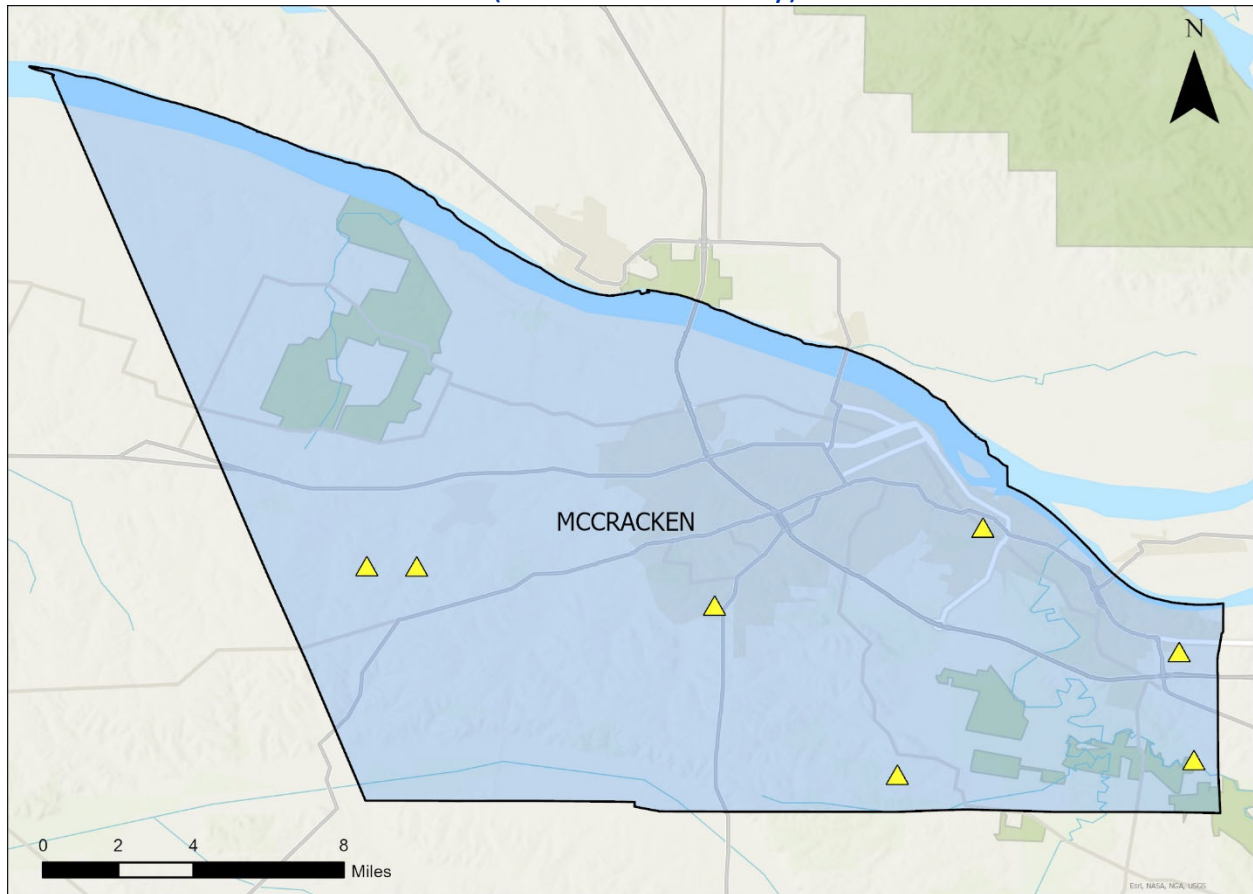


Exhibit McCracken County Intersection Locations

Point ID	RT_UNIQUE	Road Name	Vegetation	Recommendation	Comments
30	073-CR-1153 -000	OLD CALVERT CITY RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Apprao,Intersection Skew,Insufficient Sight Distance at
216	073-CR-1101 -000	CONTEST RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Skew
282	073-CR-1227 -000	CHILDRESS RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Insufficient Sight Distance at ,Intersection Obscured on Approach
287	073-CR-1227 -000	CHILDRESS RD	No	Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X)	Intersection Obscured on Approach,Insufficient Sight Distance at
16	073-CR-1138 -000	POWERS RD	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Apprao,Intersection Skew,Insufficient Sight Distance at
117	073-CR-1030P -000	YARBRO LN	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Obscured on Approach,Intersection Skew
72	073-CR-1022D -000	I.C. AVE	No	Evaluate sight distance ; Install Advance Traffic Control Signs (W3-X) and Intersection Warning Signs (W2-X); Consider pavement markings including extended dotted edgeline and stop bar. Evaluate for reduction of intersection skew	Intersection Skew,Insufficient Sight Distance at ,Intersection Obscured on Approach

Exhibit McCracken County Intersection Recommendations

Other Recommendations (McCracken County)

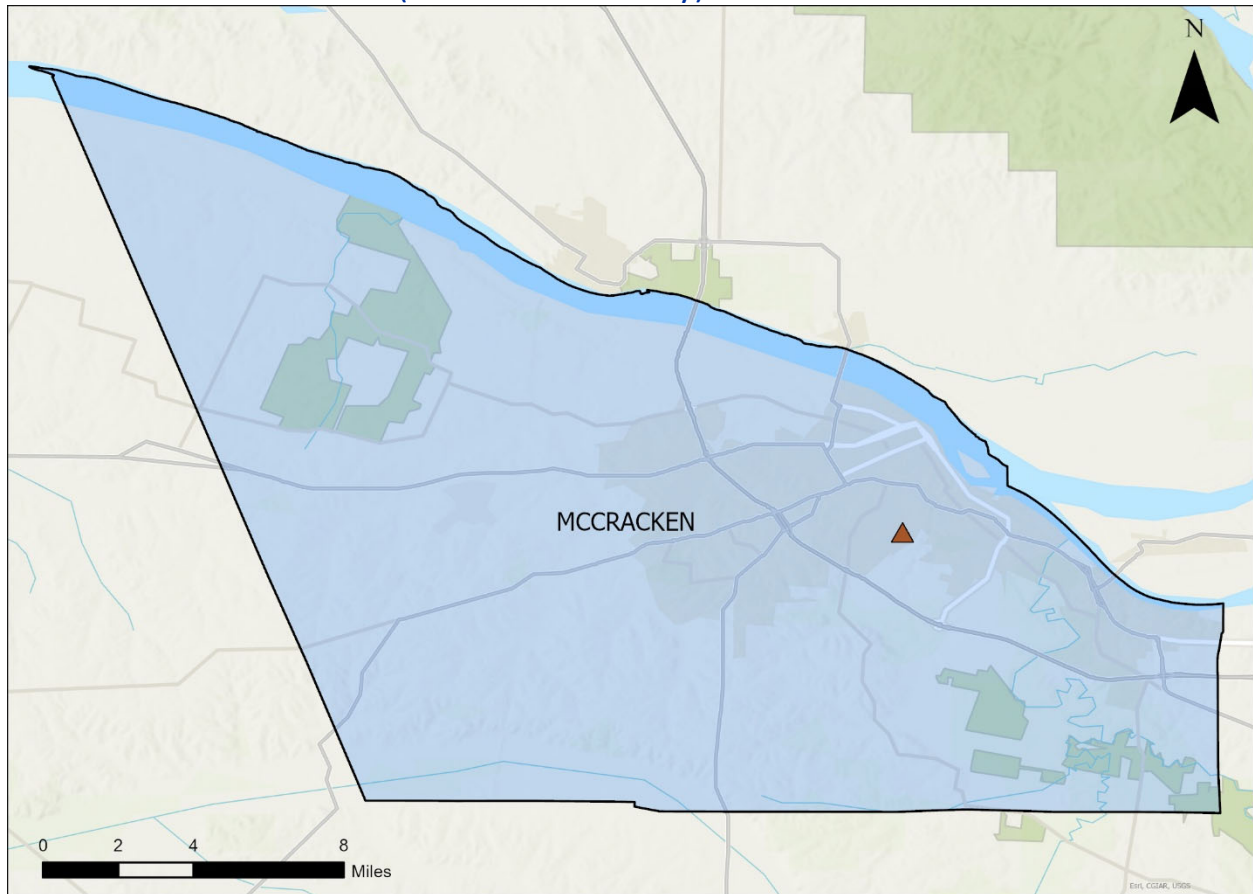


Exhibit McCracken County Other Item Locations

Point ID	RT_UNIQUE	Road Name	Comments	Recommendation
157	073-CR-1034C5-000	POOL RD		Evaluate potential to remove or Install Object Marker
156	073-CR-1034C5-000	POOL RD		Review Roadway

Exhibit McCracken County Other Item Recommendations

Signing Recommendations (McCracken County)

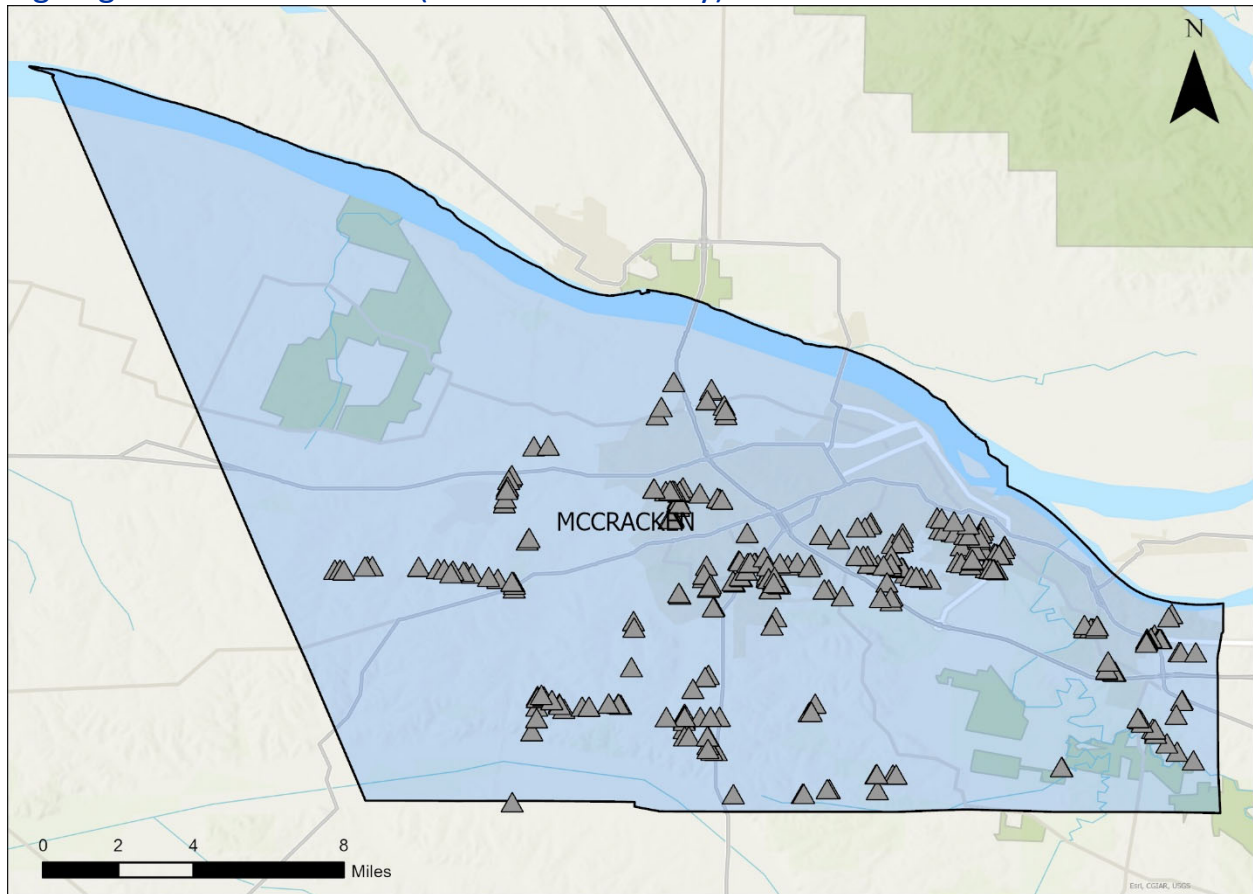


Exhibit McCracken County Sign Locations

As part of the RSA data collection effort, existing signs were inventoried along reviewed Focus Roadways, including a condition assessment and a photo of each sign. Additionally, preliminary Advisory Speed recommendations were calculated for each focus roadway to assist in the installation of horizontal alignment (curve) signs. Signing and advisory speed information is provided in digital format at <https://kyt2.uky.edu/purchase-area-development-district>.

