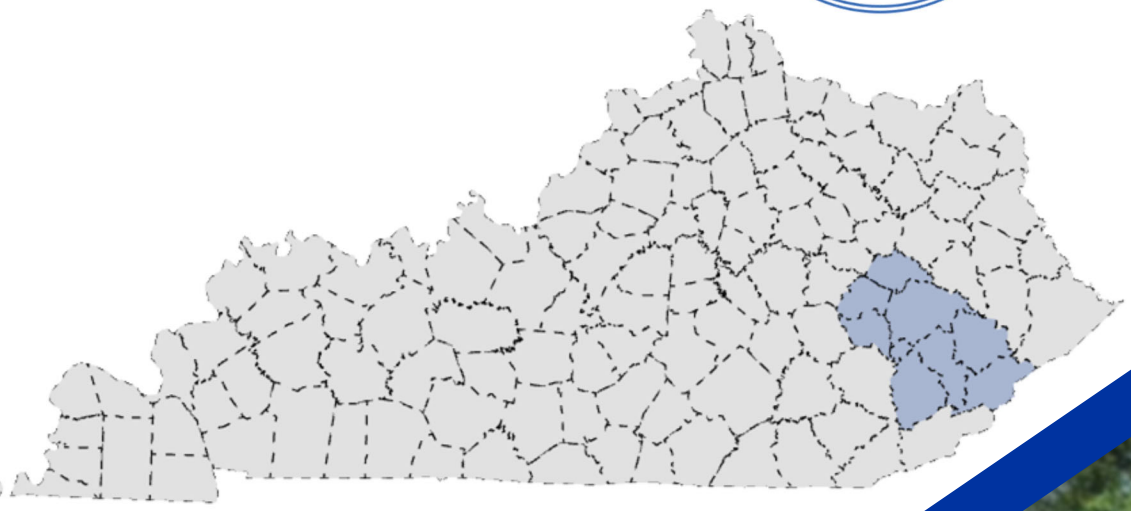
SAFETY ACTION PLAN



Kentucky River

AREA DEVELOPMENT DISTRICT



College of Engineering
Kentucky Transportation Center

TECHNOLOGY TRANSFER PROGRAM

TABLE OF CONTENTS

Table of Contents 2
INTRODUCTION 4
OVERVIEW OF SS4A PROGRAM 4
SAP Task Force 5
STUDY AREA 6
CRASH ANALYSIS 7
FOCUS ROADWAYS 10
DATA COLLECTION 14
PUBLIC INVOLVEMENT 17
RECOMMENDED IMPROVEMENTS 20
APPENDIX A: Road Safety Assessment Data Collection Guide A-1
APPENDIX B: Roadway Improvement Guides B-1
APPENDIX C: PUBLIC SURVEY C-1
APPENDIX D: BREATHITT COUNTY D-1
Breathitt County Overview D-2
Crash Analysis D-3
Focus Roadways D-5
Recommended Improvements (Top 5 Roads) D-7
Other Roadways D-22
APPENDIX E: KNOTT COUNTY E-1
Knott County Overview E-2
Crash Analysis E-3
Focus Roadways E-5
Recommended Improvements (Top 5 Roads) E-7
Other Roadways 22
APPENDIX F: LEE COUNTY F-1
Lee County Overview F-2
Crash Analysis F-3
Focus Roadways F-5
Recommended Improvements (Top 5 Roads) F-7
Other Roadways F-25
APPENDIX G: LESLIE COUNTY G-1
Leslie County Overview G-2
Crash Analysis G-3
Focus Roadways G-5

Recommended Improvements (Top 5 Roads) G-7
Other Roadways G-23
APPENDX H: LETCHER COUNTY H-1
Crash Analysis H-3
Focus Roadways H-5
Recommended Improvements (Top 5 Roads) H-7
Other Roadways H-23
APPENDIX I: OWLSEY COUNTY I-1
Owsley County Overview I-2
Crash Analysis I-3
Focus Roadways I-5
Recommended Improvements (Top 5 Roads) I-6
Other Roadways I-21
APPENDIX J: PERRY COUNTY J-1
Crash Analysis J-2
Focus Roadways J-4
Recommended Improvements (Top 5 Roads) J-6
Other Roadways J-22
APPENDIX K: WOLFE COUNTY K-1
Wolfe County Overview K-2
Crash Analysis K-3
Focus Roadways K-5
Recommended Improvements (Top 5 Roads) K-7
Other Roadways K-22

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 Kentucky River Area Development District (KRADD), which includes Breathitt, Knott, Lee, Leslie, Letcher, Owsley, Perry, and Wolfe 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.

In developing this Safety Action Plan KRADD partnered with member counties, the Kentucky Transportation Cabinet (KYTC) and the Technology Transfer Program at the University of Kentucky's Transportation Center (T2) to bring safety expertise and local knowledge together to decrease fatal and severe crashes.

This report provides a region wide analysis of crash patterns within KRADD 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 KRADD 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. KRADD 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 Kentucky River 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 has been provided by the standing KRADD Regional Transportation Committee (RTC). The RTC plays a critical role in developing the Regional Transportation Program for the KRADD area. As new projects are developed and existing ones evaluated and prioritized using criteria of regional significance. The Regional Transportation Committee is composed of interested stakeholders in the regional who meet quarterly at the Kentucky River 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 Kentucky River ADD region which includes Breathitt, Knott, Lee, Leslie, Letcher, Owsley, Perry, and Wolfe 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

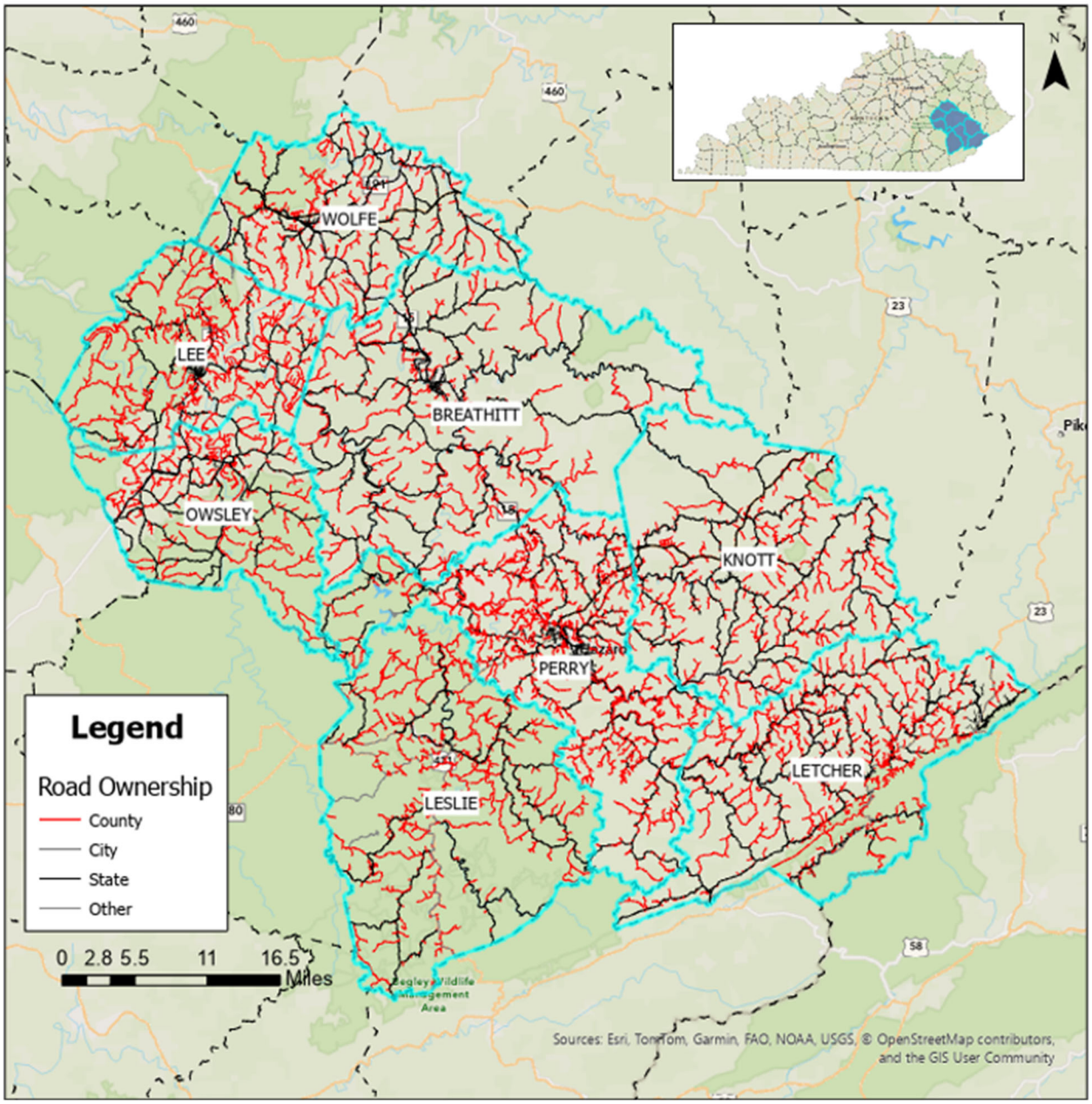


Exhibit 1: Study Area

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.

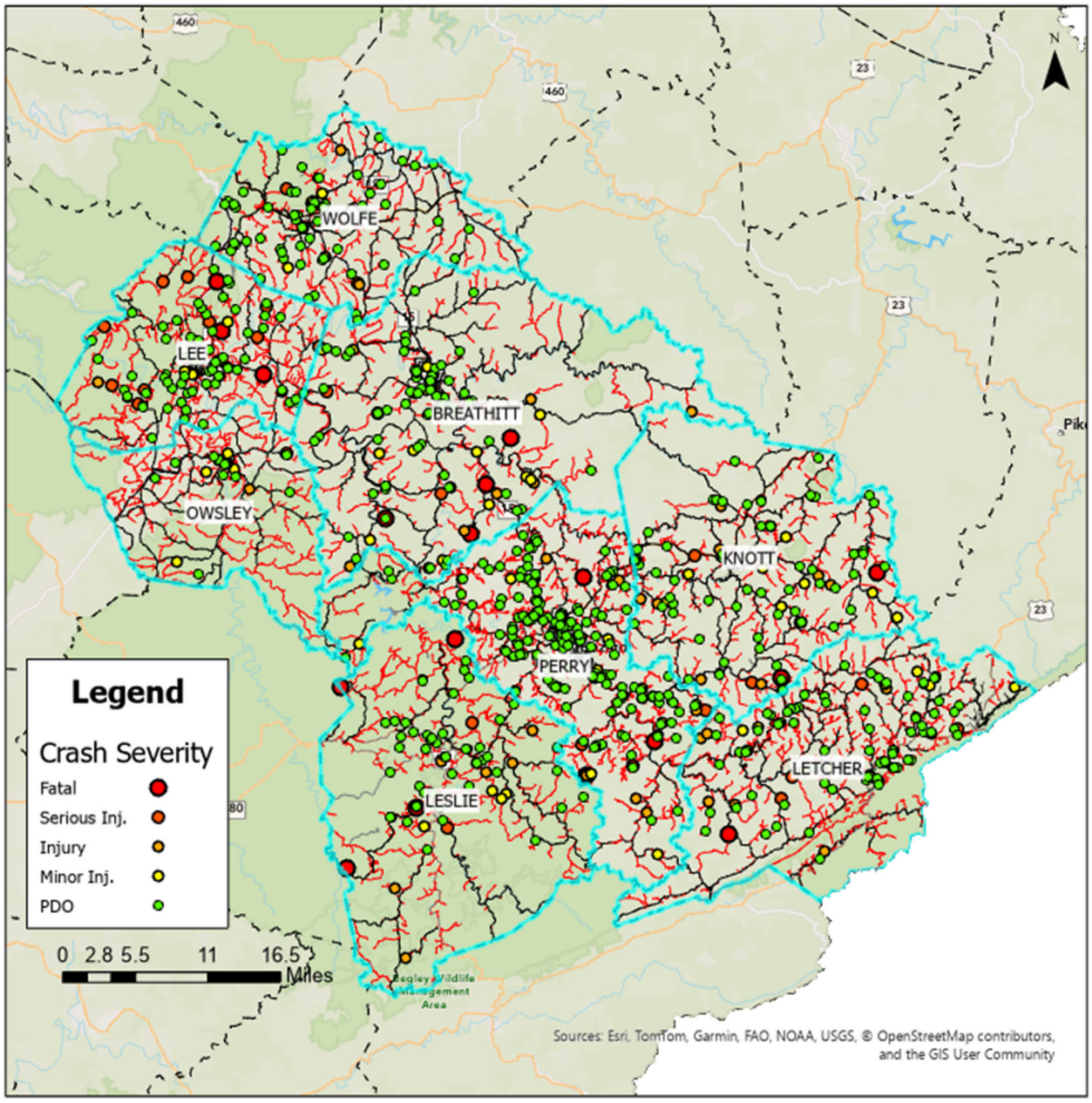
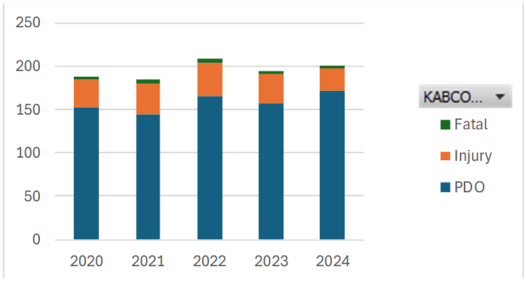


Exhibit 2: Crash Distribution

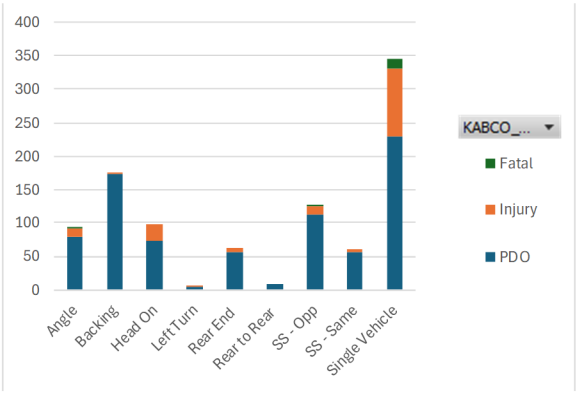
Crash data was provided in a database format with latitude and longitude provided for each crash, and crash characteristics such as crash severity, manner of collision, and human, vehicular and environmental contributing factors. Crash data was spatially joined to the city roadway network available from 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.



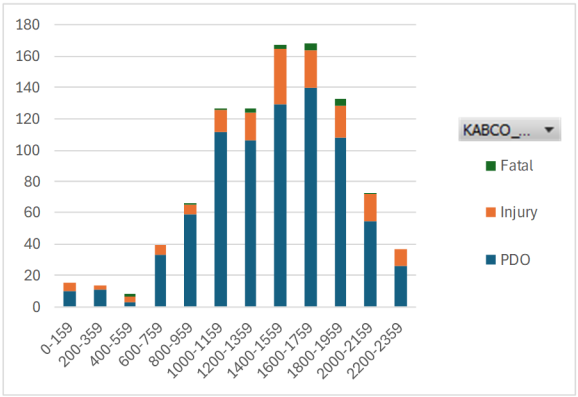
Year	Property Damage Only	Injury	Fatal	Total
2020	152	32	3	**187**
2021	145	35	5	**185**
2022	166	38	4	**208**
2023	157	34	3	**194**
2024	172	26	3	**201**

Exhibit 3: Crash Severity by Year



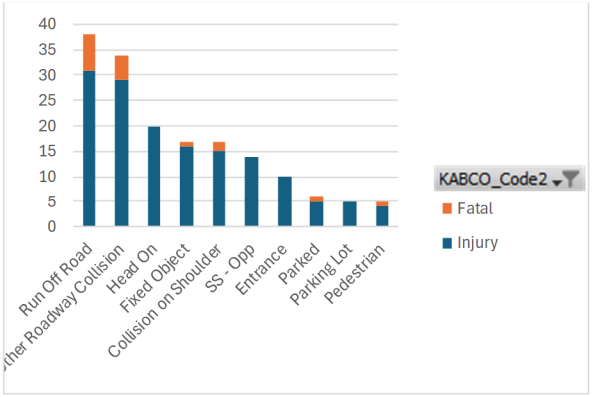
Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	79	13	1	**93**
BACKING	173	3	0	**176**
HEAD ON	73	24	0	**97**
OPPOSING LEFT TURN	4	2	0	**6**
REAR END	56	6	0	**62**
REAR TO REAR	9	0	0	**9**
SIDESWIPE-OPPOSITE	111	14	1	**126**
SIDESWIPE-SAME DIR	57	3	0	**60**
SINGLE VEHICLE	230	100	16	**346**

Exhibit 4: Crash Type by Severity



Time of Day	Property Damage Only	Injury	Fatal	Total
0-159	10	5	0	**15**
200-359	11	3	0	**14**
400-559	3	4	1	**8**
600-759	33	6	0	**39**
800-959	59	6	1	**66**
1000-1159	112	14	1	**127**
1200-1359	106	18	3	**127**
1400-1559	129	36	2	**167**
1600-1759	140	24	4	**168**
1800-1959	108	20	5	**133**
2000-2159	54	18	1	**73**
2200-2359	26	11	0	**37**

Exhibit 5: Crash Distribution (County Road Crashes)



Time of Day	Injury	Fatal	Total
Run Off Road	31	7	38
Other Roadway Collision	29	5	34
Head On	20	0	20
Fixed Object	16	1	17
Collision on Shoulder	15	2	17
SS - Opp	14	0	14
Entrance	10	0	10
Parked	5	1	6
Parking Lot	5	0	5
Pedestrian	4	1	5

Exhibit 5: Directional Analysis (Top 10 Injury/Fatal Crash Types)

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

- Injury and fatal crashes
- 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:

1. *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).
2. *Total Fatal and Injury Crashes*. The frequency of all injury and fatal crashes.
3. *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:

1. *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.

2. *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 of 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.

County	Total Mileage	Focus Road Mileage	Focus Road Percent
Breathitt	292.6	48.9	17%
Knott	260.6	48.1	18%
Lee	314.4	30.2	10%
Leslie	336.7	24.8	7%
Letcher	388.3	38.7	10%
Owsley	226.7	13.5	6%
Perry	469.9	73.1	16%
Wolfe	207.7	18.6	9%
Grand Total	**2496.9**	**295.9**	12%

Exhibit 8: Focus Road Mileage

Note: Initial focus road lists were determined from 2018-2023 data available at the beginning of data collection. This list was updated based on 2020-2024 data which resulted in minor shifting of roadway rankings.



Exhibit 7: Top 5 Focus Roads by County

RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	Crash Score	Use Score	Rank
Breathitt									
013-CR-1351 -000	3.87	Breathitt	Kentucky River	ROCK LICK RD	3	0	9.32	2.76	1
013-CR-1414 -000	2.35	Breathitt	Kentucky River	TOWN HL RD	3	0	9.55	2.28	2
013-CR-1312 -000	2.05	Breathitt	Kentucky River	PANBOWL RD	2	0	8.33	2.20	3
013-CR-1117 -000	2.87	Breathitt	Kentucky River	HARDSHELL CANEY RD	3	0	8.41	0.58	4
013-CR-1225 -000	3.13	Breathitt	Kentucky River	MILLER BR BARWICK RD	2	0	6.06	1.54	5
Knott									
060-CR-1134 -000	1.67	Knott	Kentucky River	MALLET FORK RD	2	0	9.23	0.57	1
060-CR-1006 -000	4.05	Knott	Kentucky River	DRY CREEK RD	0	1	6.35	1.71	2
060-CR-1053 -000	3.53	Knott	Kentucky River	WILEY FORK RD	1	0	5.19	1.25	3
060-CR-1108 -000	2.54	Knott	Kentucky River	HOLLYBUSH RD	1	0	4.81	1.57	4
060-CR-1239 -000	2.44	Knott	Kentucky River	CLEAR CREEK RD	1	0	4.81	1.15	5
Lee									
065-CR-1244 -000	11.90	Lee	Kentucky River	SPENCER RIDGE RD	3	0	10.00	0.69	1
065-CR-1135 -000	4.21	Lee	Kentucky River	MILL BRANCH SCHOOL RD	1	1	7.62	0.20	2
065-CR-1200 -000	4.92	Lee	Kentucky River	WHITE ASH RD	1	0	4.29	0.10	3
065-CR-1003 -000	1.43	Lee	Kentucky River	ROCK OF AGES RD	1	0	3.33	0.47	4
065-CR-1049 -000	1.56	Lee	Kentucky River	SANDY RIDGE RD	1	0	3.10	0.09	5
Leslie									
066-CR-1302 -000	2.13	Leslie	Kentucky River	SHORT CREEK RD	1	0	4.06	0.88	1
066-CR-1051 -000	5.95	Leslie	Kentucky River	OWLS NEST RD	1	0	4.06	0.20	2
066-CR-1528 -000	3.20	Leslie	Kentucky River	COON CREEK RD	1	0	4.06	0.07	3
066-CR-1041 -000	2.03	Leslie	Kentucky River	PLEASANT VALLEY RD	0	0	0.63	2.76	4
066-CR-1306 -000	0.96	Leslie	Kentucky River	THOUSANDSTICKS BRANCH RD	0	0	0.31	0.39	5
Letcher									
067-CR-1020 -000	3.07	Letcher	Kentucky River	INDIAN CREEK	2	0	6.94	1.69	1
067-CR-1367 -000	4.88	Letcher	Kentucky River	BULL CREEK	2	0	6.67	0.66	2
067-CR-1222 -000	2.12	Letcher	Kentucky River	SOUTH EAST RD	1	0	3.61	1.30	3
067-CR-1262 -000	4.26	Letcher	Kentucky River	TURKEY CREEK	1	0	3.61	0.21	4
067-CR-1359 -000	0.83	Letcher	Kentucky River	WOODROCK RD	1	0	3.61	0.14	5
Owsley									
095-CR-1031 -000	1.11	Owsley	Kentucky River	SPENCER FRK RD	1	0	10.00	0.08	1
095-CR-1003 -000	1.87	Owsley	Kentucky River	CHESTNUT GAP RD	1	0	9.17	0.59	2
095-CR-1015 -000	3.69	Owsley	Kentucky River	FISH CRK LOOP RD	1	0	9.17	0.41	3
095-CR-1325 -000	1.30	Owsley	Kentucky River	CHADWELL RD	0	0	0.00	2.69	4
095-CR-1026 -000	3.53	Owsley	Kentucky River	STRAIGHT FORK-ZEKE BR RD	0	0	0.00	0.24	5
Perry									
097-CR-1006 -000	0.62	Perry	Kentucky River	CRAWFORD MOUNTAIN RD	6	0	9.29	3.29	1
097-CR-1863 -000	0.37	Perry	Kentucky River	JUSTICE DR	3	0	7.50	0.49	2
097-CR-1210 -000	4.03	Perry	Kentucky River	BROWNS FORK RD	2	1	4.64	0.36	3
097-CR-1445 -000	0.30	Perry	Kentucky River	GRAND VUE PLZ	3	0	4.72	0.26	4
097-CR-1308 -000	1.90	Perry	Kentucky River	FLAT GAP RD	2	0	2.78	0.31	5
Wolfe									
119-CR-1326 -000	3.25	Wolfe	Kentucky River	ROCK BRIDGE RD	1	0	9.38	2.54	1
119-CR-1313 -000	3.48	Wolfe	Kentucky River	CALABOOSE RIDGE RD	1	0	8.75	0.97	2
119-CR-1314 -000	2.05	Wolfe	Kentucky River	HARVEST RIDGE RD	1	0	8.75	0.22	3
119-CR-1340 -000	0.73	Wolfe	Kentucky River	A J TAULBEE RD	1	0	8.13	0.44	4
119-CR-1148 -000	0.25	Wolfe	Kentucky River	HUNTING FORK LN	1	0	8.13	0.38	5

Exhibit 8: List of Top 5 Focus Roads by County

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 KRADD region.

DATA COLLECTION

Road Safety Assessments (RSAs) were conducted on the Focus Roadways by KRADD 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 1,577 collected data points within the region.

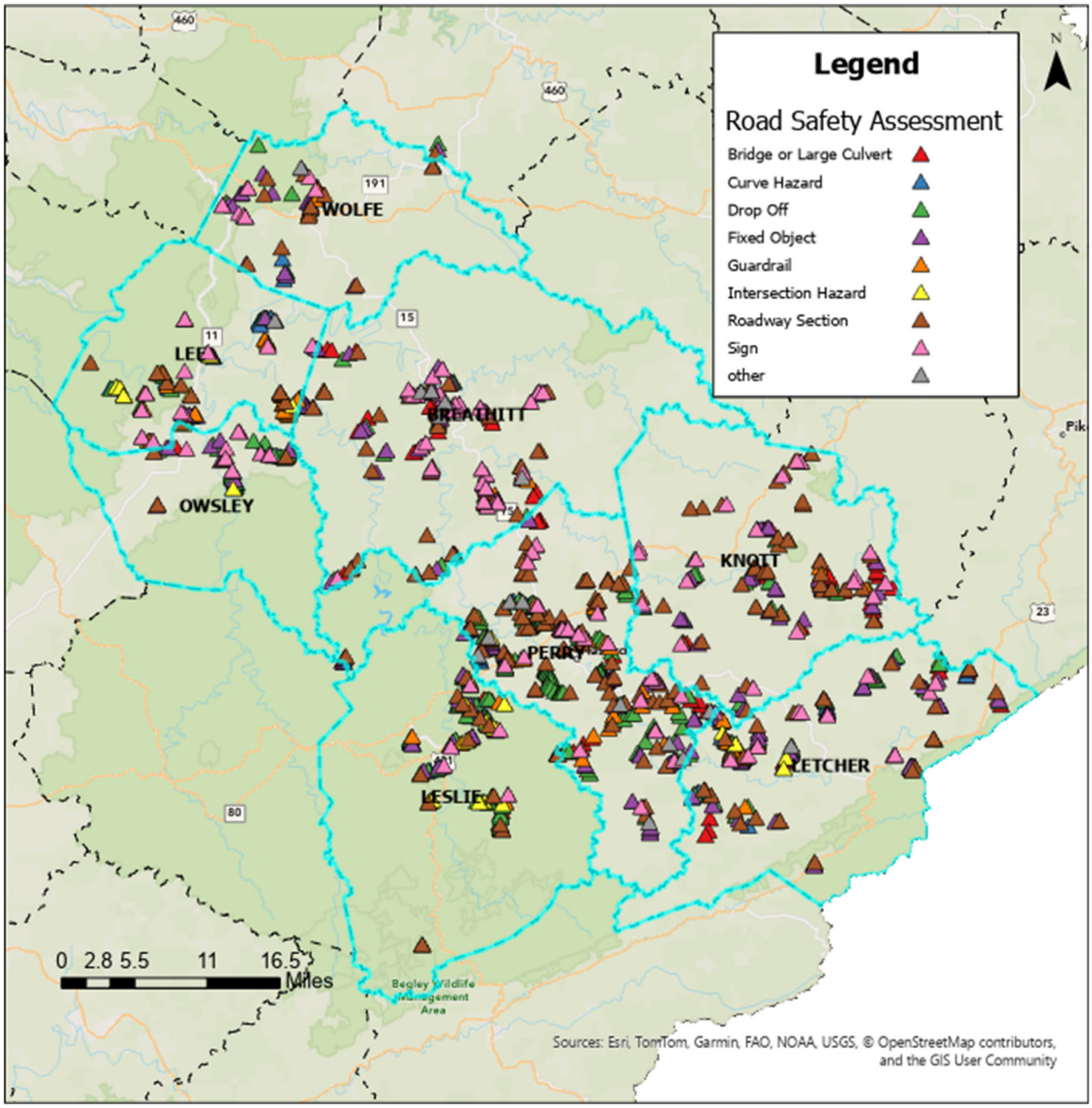


Exhibit 8: Road Safety Assessment Data Points

County	Bridge or Culvert	Curve Hazard	Drop Off	Fixed Object	Guardrail	Int. Hazard	other	Roadway Section	Sign	Total
BREATHITT	30	7	29	35	18		5	41	49	**214**
KNOTT	40	1	28	29	6			40	19	**163**
LEE	10	50	30	19	30	13	1	14	12	**179**
LESLIE	14	64	51	21	6	19		14	5	**194**
LETCHER	39	68	49	37	16	12	1	26	14	**262**
OWSLEY	8	19	22	7	2	3		6	8	**75**
PERRY	51	29	145	39	32	4	9	85	33	**427**
WOLFE		4	12	18	4		1	14	10	**63**
Total	**192**	**242**	**366**	**205**	**114**	**51**	**17**	**240**	**150**	**1577**

Exhibit 9: 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, 57 percent are 10 or less feet in width with only 7 percent of roadways equal to or greater than 18 feet. 83 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.

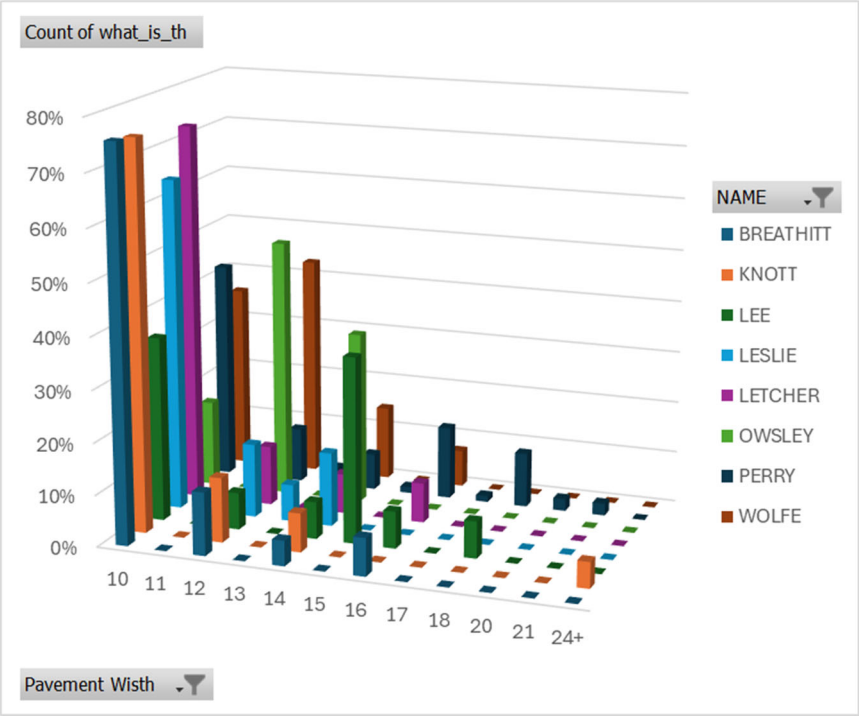


Exhibit 10: Roadway Width by County

County	Pavement Servicability Rating (PSR)				
	1	2	3	4	5
BREATHITT	39%	10%	34%	15%	2%
KNOTT	30%	23%	40%	8%	0%
LEE	36%	7%	36%	21%	0%
LESLIE	36%	14%	43%	7%	0%
LETCHER	12%	15%	54%	19%	0%
OWSLEY	17%	17%	33%	33%	0%
PERRY	12%	8%	34%	46%	0%
WOLFE	36%	14%	21%	29%	0%
(blank)	100%	0%	0%	0%	0%
Grand Total	**24%**	**12%**	**37%**	**26%**	**0%**

Exhibit 11: Roadway Condition 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 KRADD. The survey asked general demographic questions as well as what were the major concerns an 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.

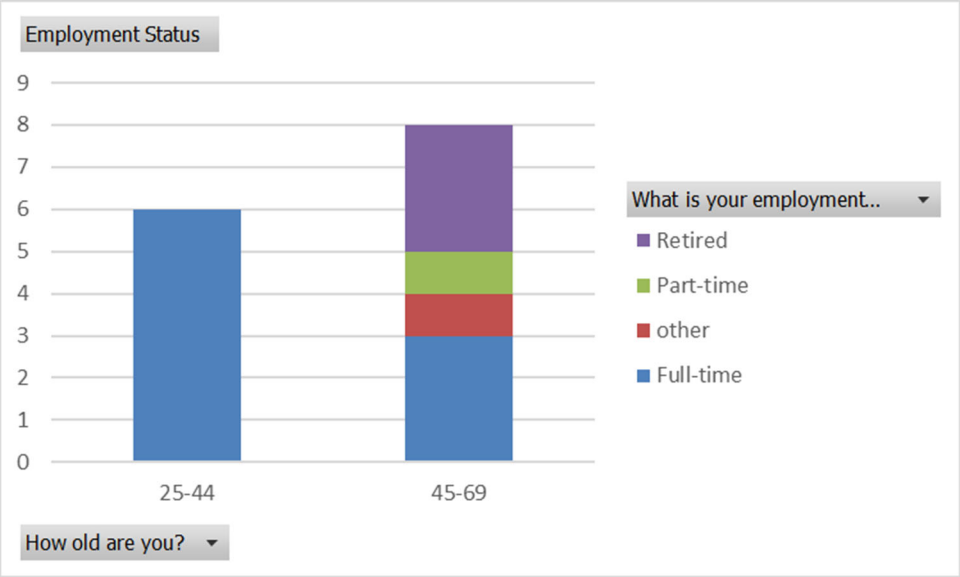


Exhibit 11: Public Survey Demographic Information

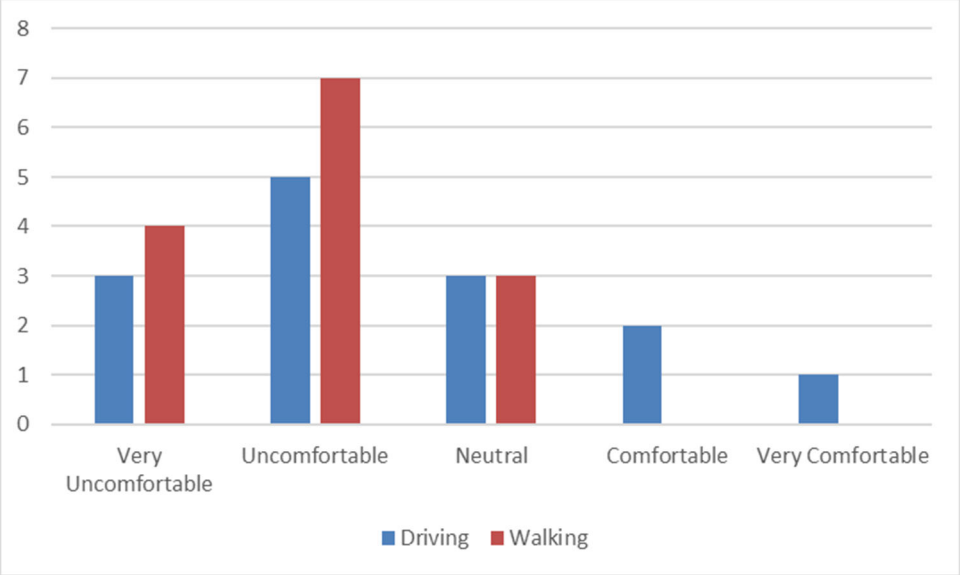


Exhibit 12: Public Survey Driving/Walking Comfort Level

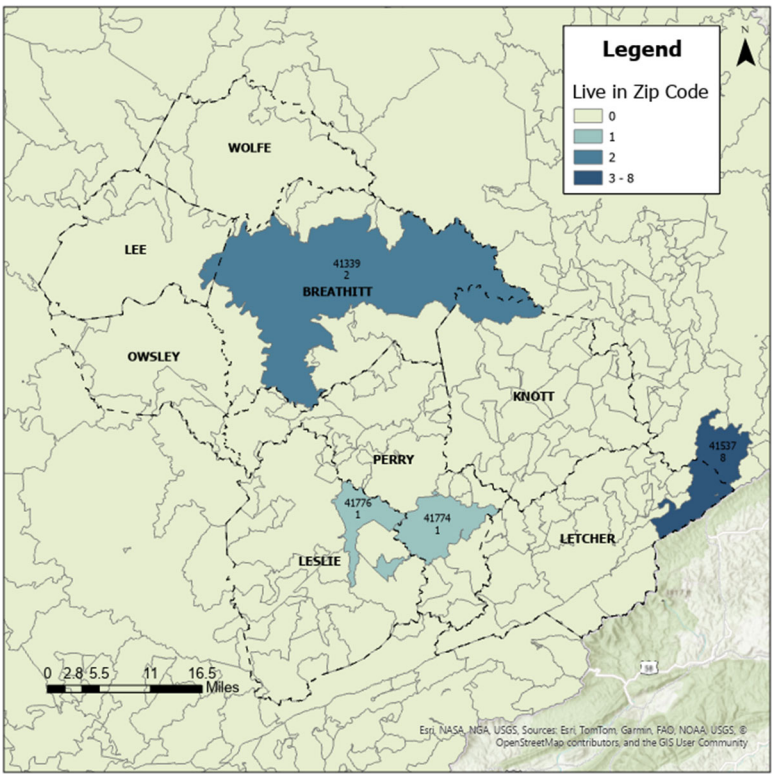


Exhibit 13: Public Survey Residency by Zip Code
(Note: Two respondents live outside of KRADD)

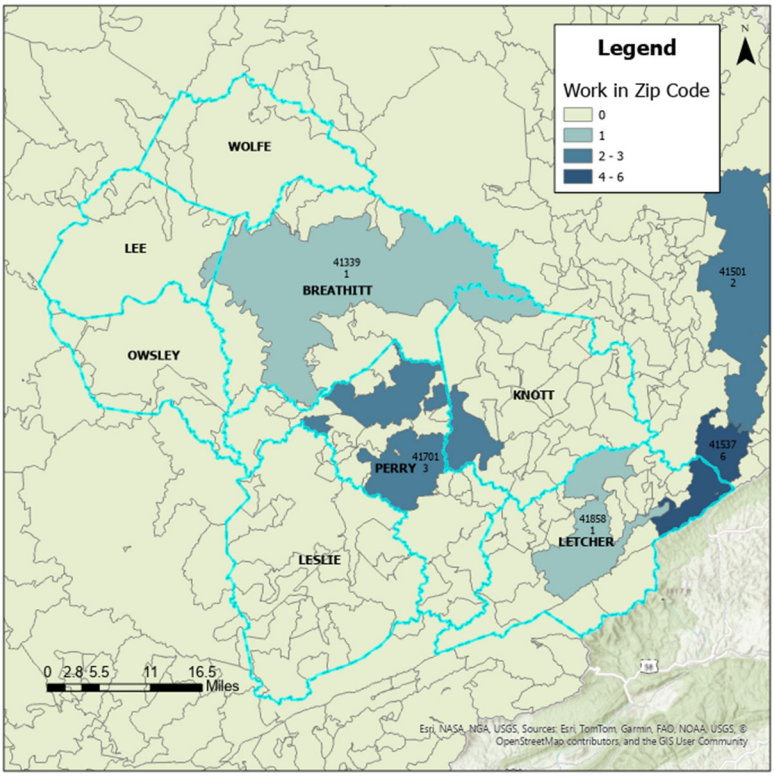


Exhibit 14: Public Survey Work Location by Zip Code

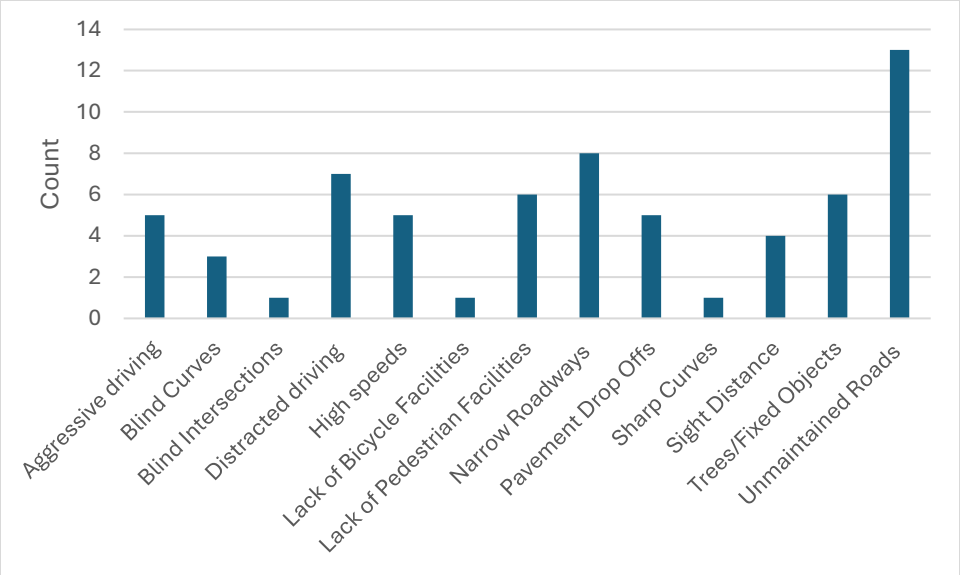


Exhibit 15: Public Survey Top Safety Issues

It is noted that proper road maintenance and narrow roadways are the most frequently cited safety concerns, which is consistent with roadway data collection. Lack of Pedestrian Facilities was a concern for 6 of 15 and is consistent with comfort ratings which indicated that NO respondents indicated that they feel comfortable walking in the area.

Only one site specific issue was identified within the interactive mapping. A road drop off on Lower Cutshin Road between Meetinghouse Branch Road and Highway 80 near Wooton in Leslie County. The comment was made "Road is breaking off to almost unpassable."



Exhibit 16: 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 KRADD, 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. Edgleine striping is recommended on all paved roadways, in which the pavement condition is sufficient to support striping (Present Servicability Rating (PSR) of 4-5. Roadways with a PSR of 3 should be manually reviewed to determine is 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 zone 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 zone on Focus Roadways.

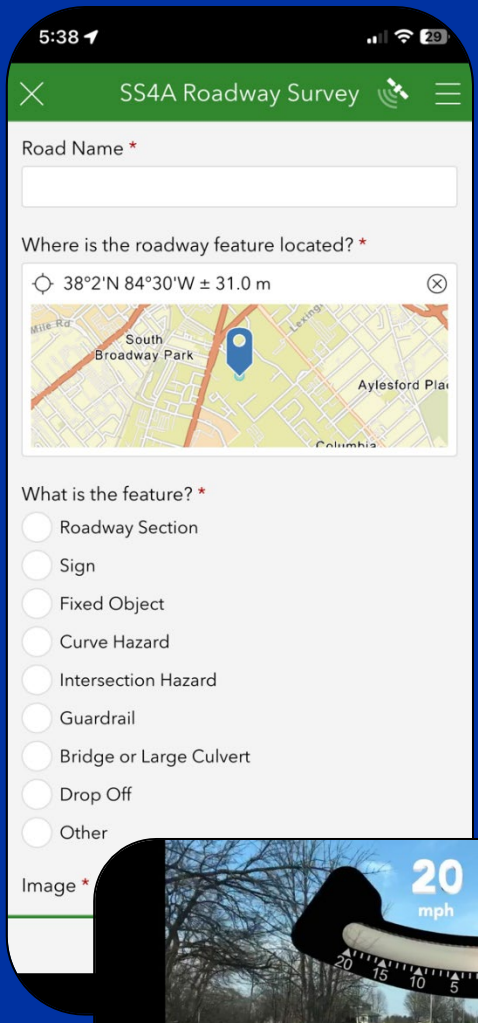
- Remove Fixed objects if practical within 2 ft of the roadway on tangent roadway sections and within 5 ft of roadway on the outside of curves, due to the increased probability of vehicle running off the roadway. If multiple fixed objects, such as a tree line or fence line, are within this distance, 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 an 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.

APPENDIX A: ROAD SAFETY ASSESSMENT DATA COLLECTION GUIDE





KY Area Development District

SS4A Data Collection Procedures

Pigman College of Engineering
Kentucky Transportation Center
TECHNOLOGY TRANSFER PROGRAM
www.ktp2.com

GUIDE OVERVIEW

The purpose of this guide 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).

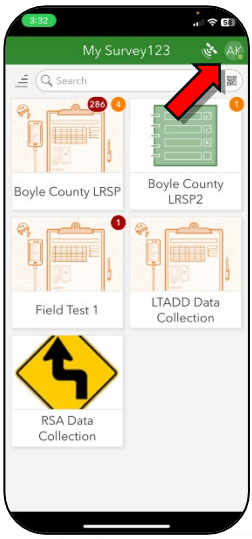


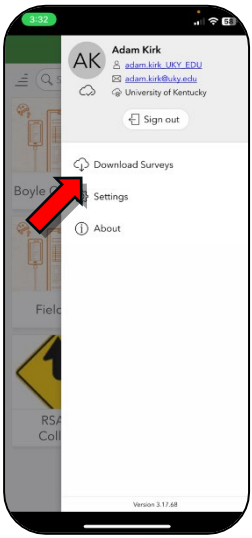
4. Open and Sign into the ArcGIS Survey123 app. Survey123 licenses are managed by the ADD. If there are issues signing in please contact your local ADD for further assistance.



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.





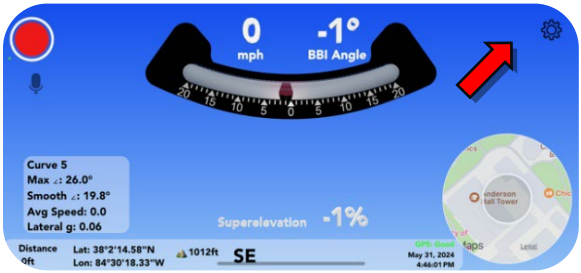


Pigman College of Engineering
Kentucky Transportation Center
TECHNOLOGY TRANSFER PROGRAM
www.ktp2.com

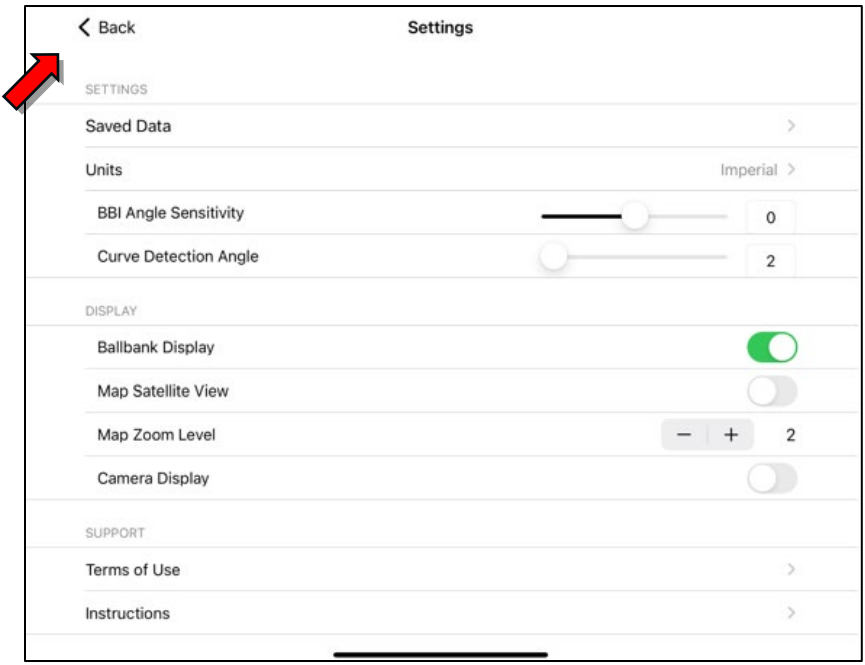
BALLBANK APP

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

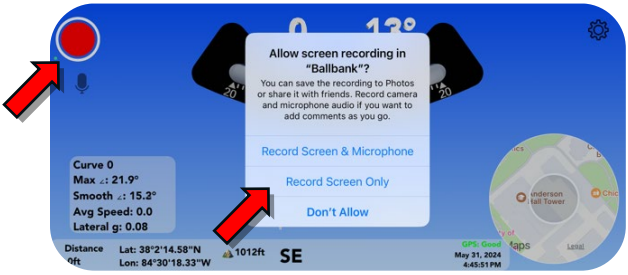
1. To set up the app click on the settings (gear) button in the top right of the screen.



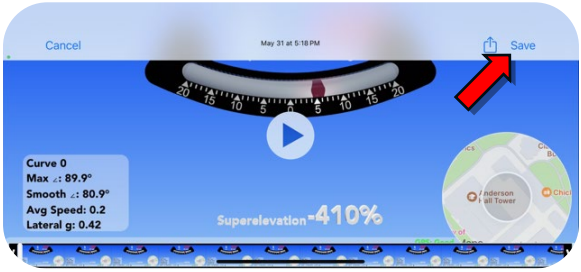
2. Configure the settings to match those shown in the figure below. Once completed, hit the back button.



3. 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.
4. 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.”



5. 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.
6. Once completed hit the "Stop Recording”  button in the top left corner of the screen.
7. When presented with the option, hit “Save.”

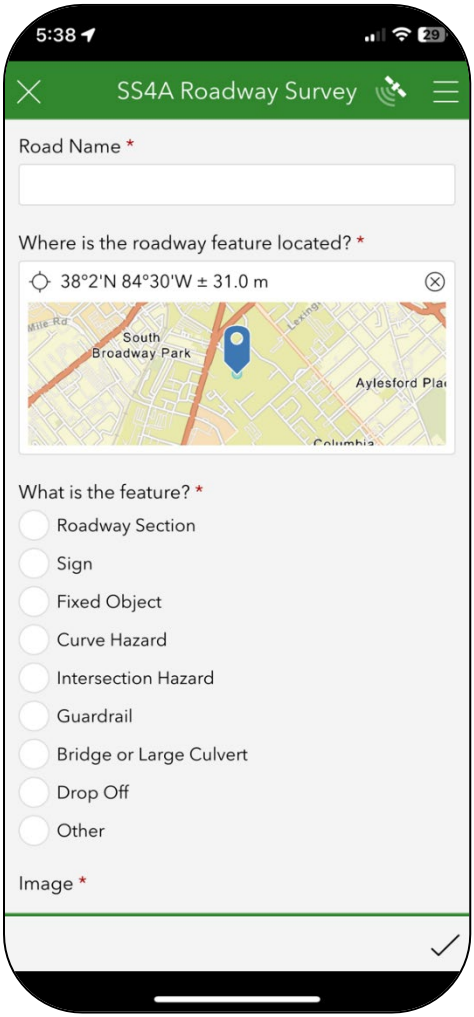


8. Curve data for this roadway has been completed and you can move to the next data collection element or roadway.

SURVEY123

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.

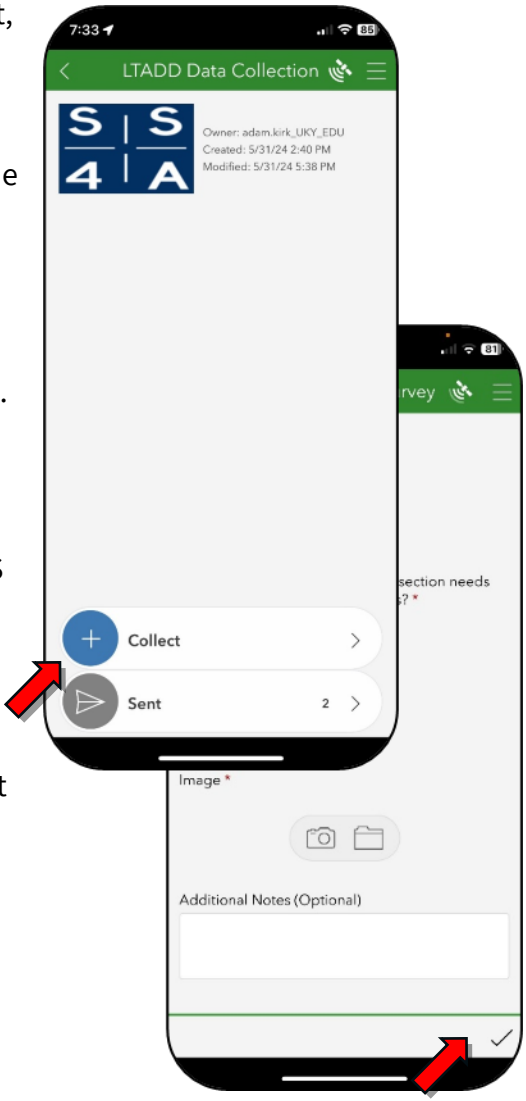


1. General Roadway Information such as condition and width
2. Road Signs
3. Fixed Objects within 5 feet of the roadway
4. Curve Hazards
5. Intersection Hazards
6. Guardrail
7. Bridge / Culvert locations
8. Edge Drop Offs
9. Other hazards noted by the survey team.

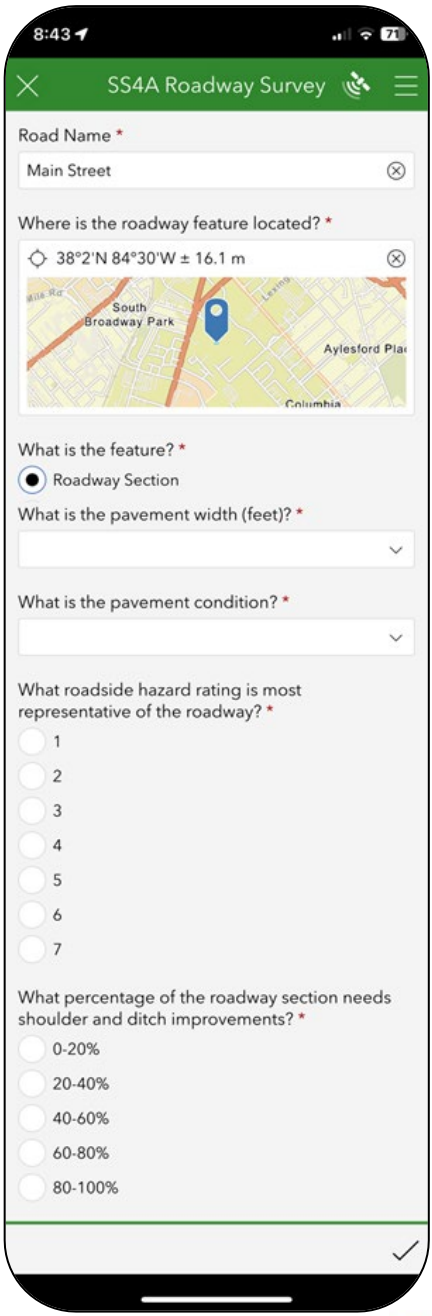
Additional information on each survey item can be found in their respective sections in this guide.

SURVEY123

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.



SURVEY123-Roadway



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.

SURVEY123-Roadway

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 spalding.	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

SURVEY123-Roadway

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 ≥ 4:1.
– Recoverable.

RHR = 3

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



RHR = 4

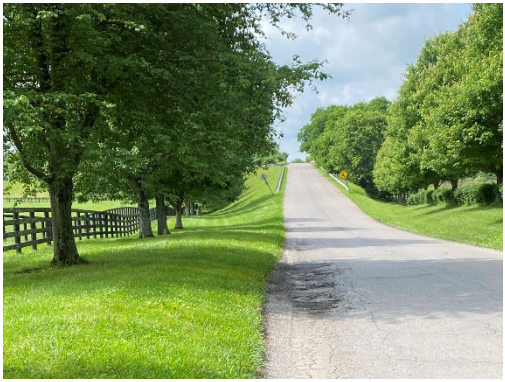
– Clear zone 5 to 10 ft
– Sideslope 3:1 to 4:1.
– May have guardrail (5 to 6.5 ft from road).
– Exposed trees, poles, or other objects (~10 ft from road).
– Marginally forgiving, but increased chance of a roadside collision.



SURVEY123-Roadway

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



SURVEY123-Roadway

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.

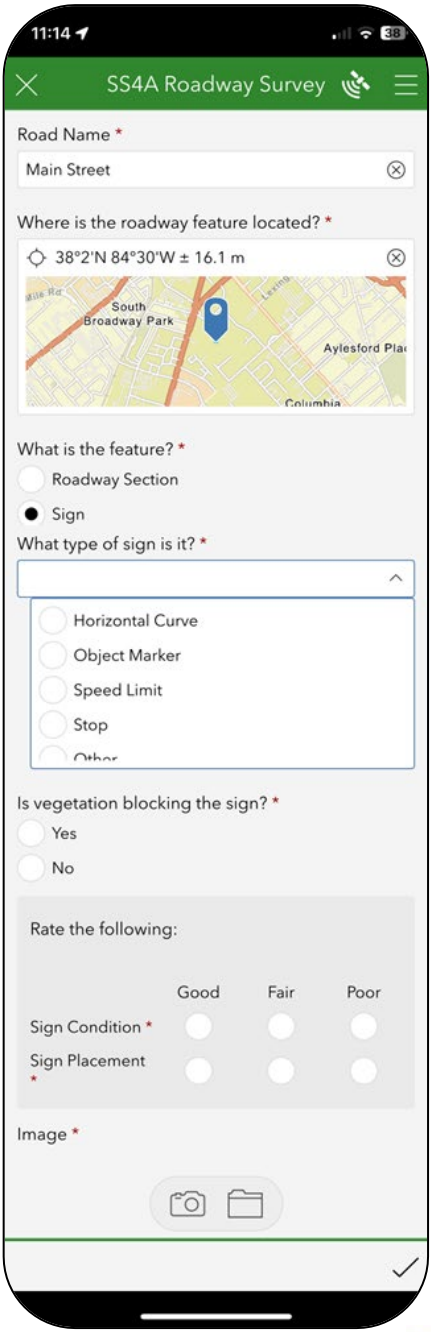




Pigman College of Engineering
Kentucky Transportation Center
TECHNOLOGY TRANSFER PROGRAM
www.kyt2.com

This page intentionally left blank.

SURVEY123-Signs



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.

SURVEY123-Signs

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.



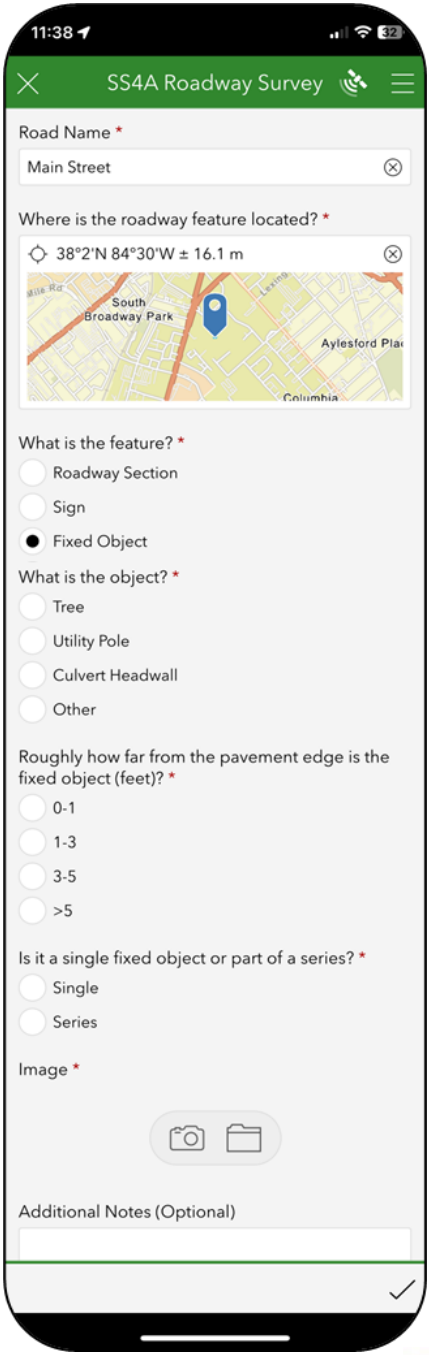
Fair. Some visible deterioration, not impacting legibility of the sign. Some common forms of sign deterioration are minor bending, cracking, fading, peeling, rusting, or vandalism.



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



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?



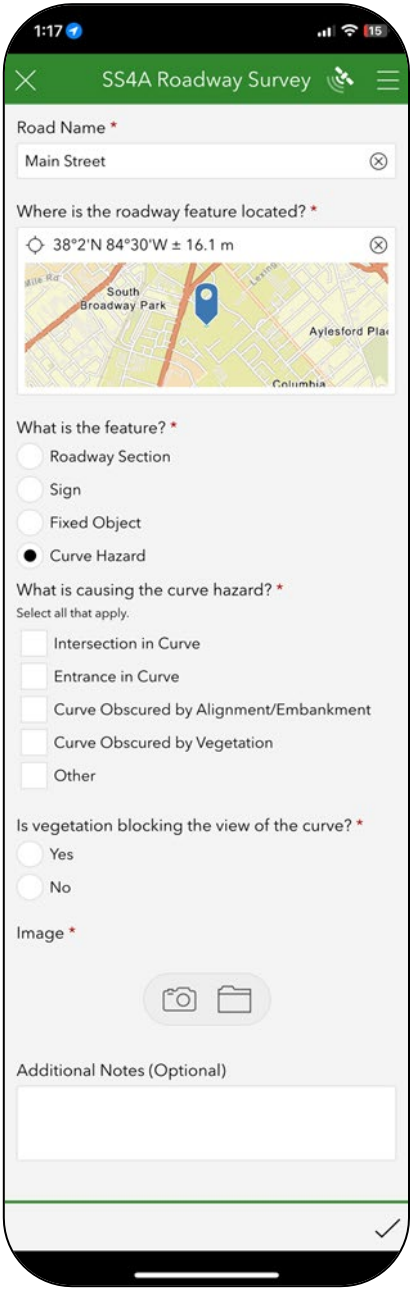
If there is just one object on the side of the road you are evaluating, select single. If there are a series of the same fixed object, select series. For example: A row of trees within 2 ft. of the pavement edge would be a series, a single tree within 2 ft. of the pavement edge would be a single fixed 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



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

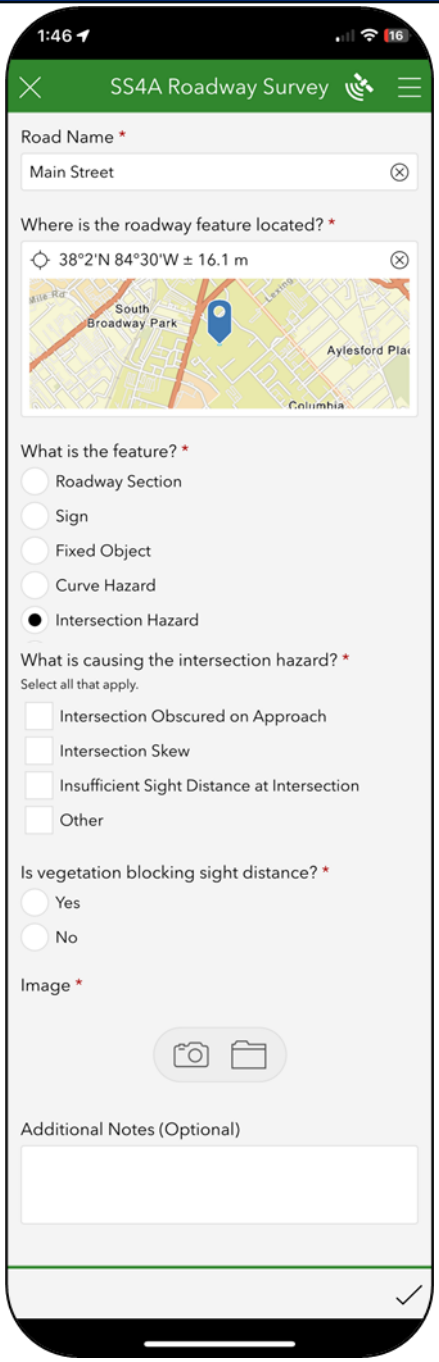


Intersection in Curve



Curve Obscured by Embankment

SURVEY123-Intersections



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

Is there any intersection hazards?

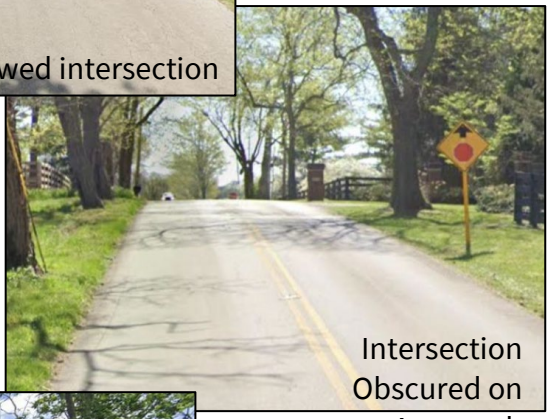
Log any hazards identified on the next page. If there is something about the intersection that appears hazardous but not listed, log it as other and provide a description of the issue.

Pigman College of Engineering
Kentucky Transportation Center
TECHNOLOGY TRANSFER PROGRAM
www.kytc2.com

SURVEY123-Intersections



Skewed intersection



Intersection Obscured on Approach



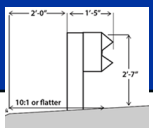
Restricted Sight Distance



Restricted Sight Distance

Pigman College of Engineering
Kentucky Transportation Center
TECHNOLOGY TRANSFER PROGRAM
www.kyt2.com

SURVEY123-Guardrail



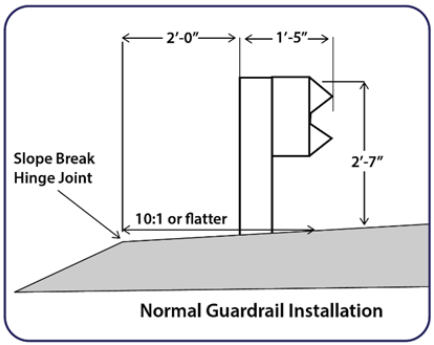


Log each guardrail segment along the roadway.

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.

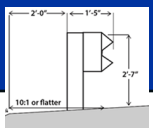


Good. Meets height requirements and no noticeable damage.

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

Pigman College of Engineering
Kentucky Transportation Center
TECHNOLOGY TRANSFER PROGRAM
www.kytc.com

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

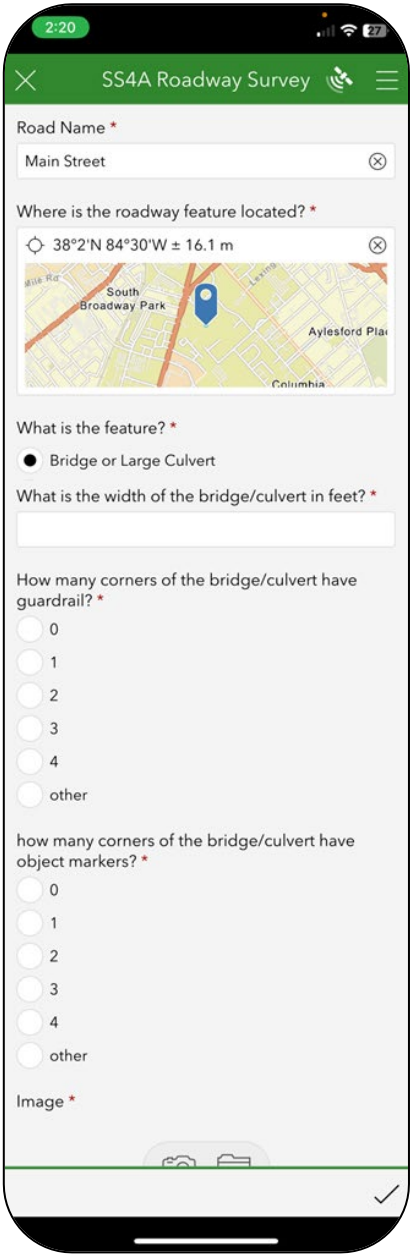
Indicate whether all, some, or none of the end treatments meet current guidelines. The three types of end treatments that meet current guidelines from the AASHTO Manual for Assessing Safety Hardware are shown below.


Type 3: Anchored in Backslope


Type 2A: Terminal Section out of Clear Zone


Type 1: Energy Absorbing

SURVEY123-Bridges



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.

SURVEY123-Bridges

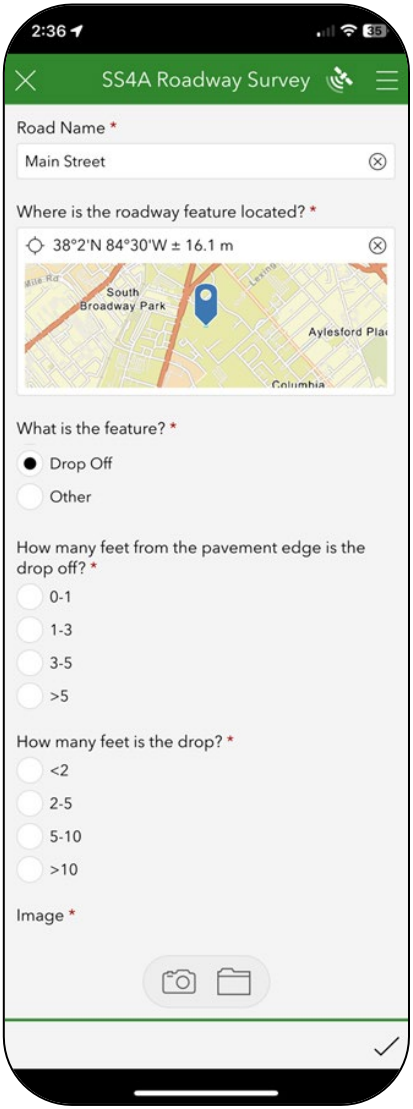


Large Box Culvert



Bridge Width Measurement

SURVEY123-Drop Offs



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.

SURVEY123-Drop Offs

Drop Off Examples



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

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.

Contact Information

If you have any questions regarding the data collection or hazards found in reviewing the roadway, you may contact your Area Development District Transportation Planner at the information below.

ADD Name	Contact	Email
Barren River	Austin Sims	austin.sims@bradd.org
Gateway	Jocelyn Gross	jocelynr.gross@ky.gov
Bufallo Trace	Melissa Hardy	mhardy@btadd.com
Green River	Jennifer Alvey	jenniferalvey@gradd.com
Kentucky River	Scott Melton	scott@kradd.org
Lake Cumberland	Ian Cole	ian@lcadd.org
Lincoln Trail	Jake Zimmerer	jake@ltadd.org
Northern Kentucky	Jeff Thelen	jeff.thelen@nkadd.org
Pennyrile	Angela Herndon	angelas.herndon@ky.gov
Purchase	Jim LeFevre	jim.lefevre@purchaseadd.org

Should you need further assistance, please contact Adam Kirk at the University of Kentucky Transportation center at adam.kirk@uky.edu.

APPENDIX B: ROADWAY IMPROVEMENT GUIDES

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 Enhancements[1] 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.

# 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

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.

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

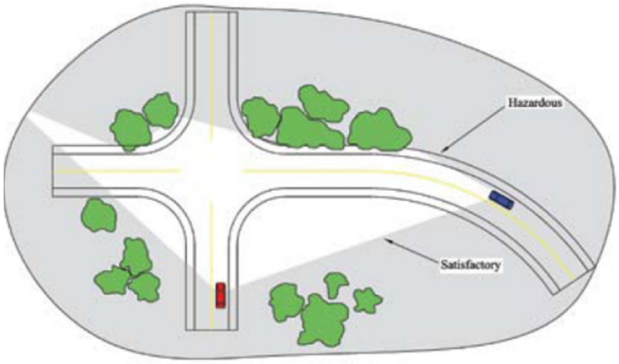
Fixed objects in the clear zone include trees, utility poles, headwalls, signs, guardrails, etc. These fixed objects often result in fatal crashes.

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

TAP IT!

Technical Assistance Program, Information Transfer
KY Local Technical Assistance Program

Horizontal Alignment Signing

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.

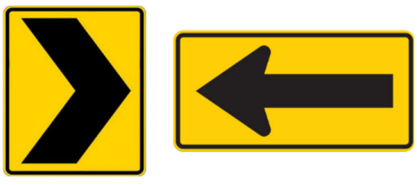
Horizontal alignment signing is used to advise motorists of changes in the roadway alignment consisting of advance warning signs, guidance through curve, and advisory speed plaques.

# 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.

TAP IT!

Technical Assistance Program, Information Transfer
KY Local Technical Assistance Program

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.

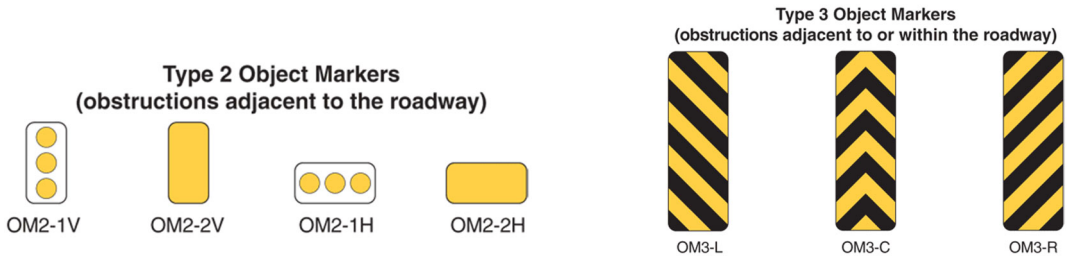
Learn more in the Horizontal Alignment TapIT! Sheet.

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/

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.

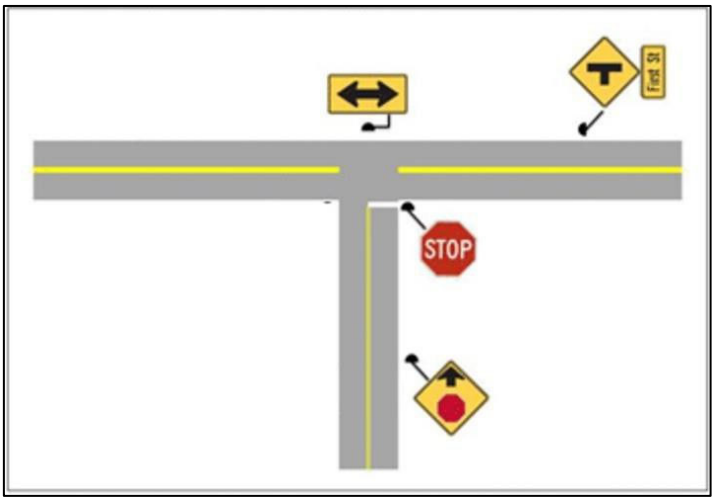
TAP IT!

Technical Assistance Program, Information Transfer
KY Local Technical Assistance Program

Stop-Controlled Intersections

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 whether 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/

TAP IT!

Technical Assistance Program, Information Transfer
KY Local Technical Assistance Program

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

Kentucky River Area Development District

The Kentucky River ADD is currently developing a Safety Action Plan for Breathitt, Knott, Lee, Leslie, Letcher, Owsley, Perry, and Wolfe 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.



Kentucky River
AREA DEVELOPMENT DISTRICT

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.

KRADD 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

KRADD Safety Survey

What is your home zip code?*

What is your work/school zip code?*

How comfortable do you feel driving on local roads in your area?*

- ○ Very Comfortable
- ○ Comfortable
- ○ Neutral
- ○ Uncomfortable
- ○ Very Uncomfortable

KRADD Safety Survey

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

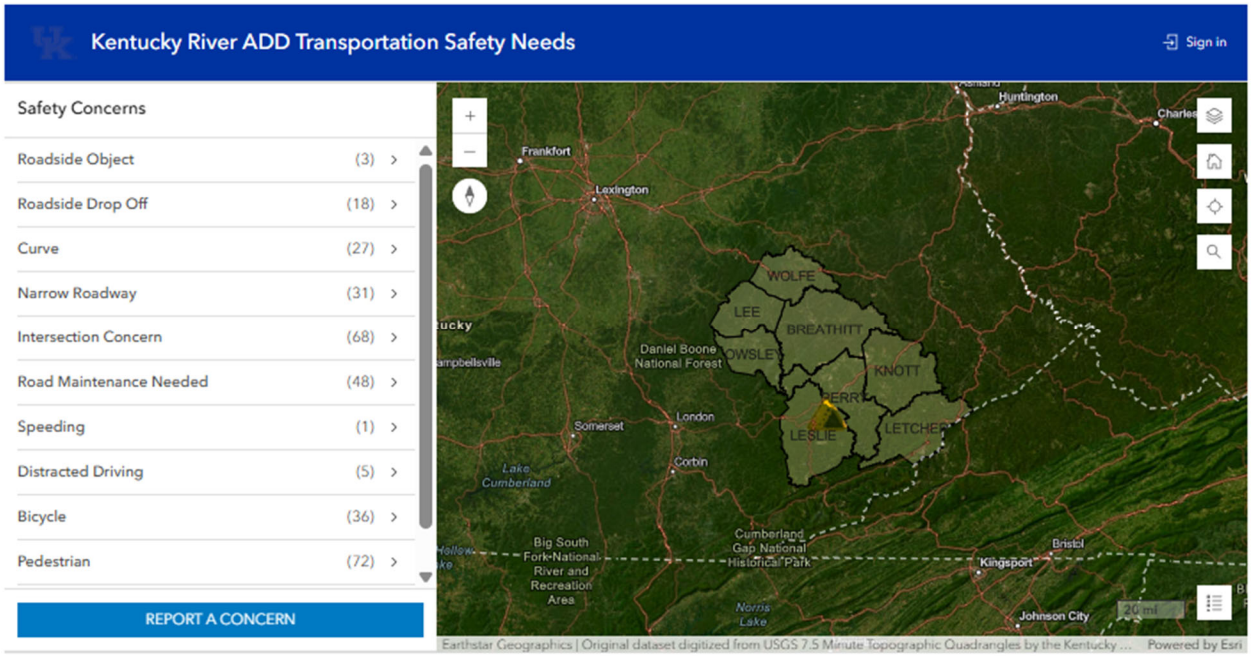
Powered by ArcGIS Survey123

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.



APPENDIX D: BREATHITT COUNTY

Breathitt County Overview

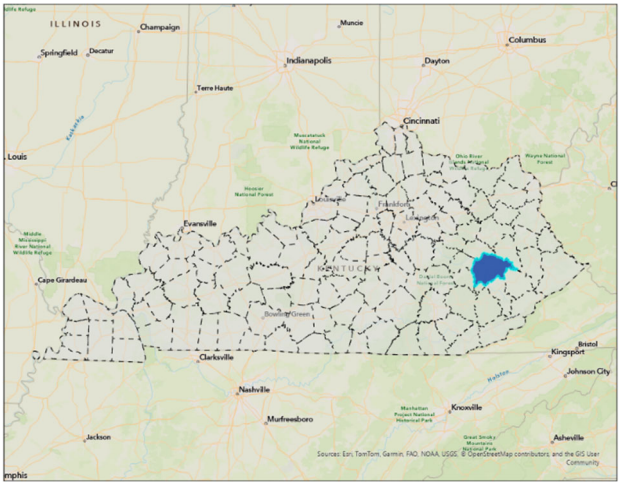


Exhibit Breathitt-1: Location Map

Key Information Table	
Population	13,116
Population in Underserved Communities	25%
Fatalities (All Roads)	29
Fatalities (County Roads)	4
Fatality rate per 100,000 persons	221.10
County Road Mileage	289.2
City Road Mileage	11.0
State Road Mileage	278.6
Total Mileage	**578.9**

Exhibit Breathitt-2: Key Information



Exhibit Breathitt-3: Map of County Roadways

Crash Analysis

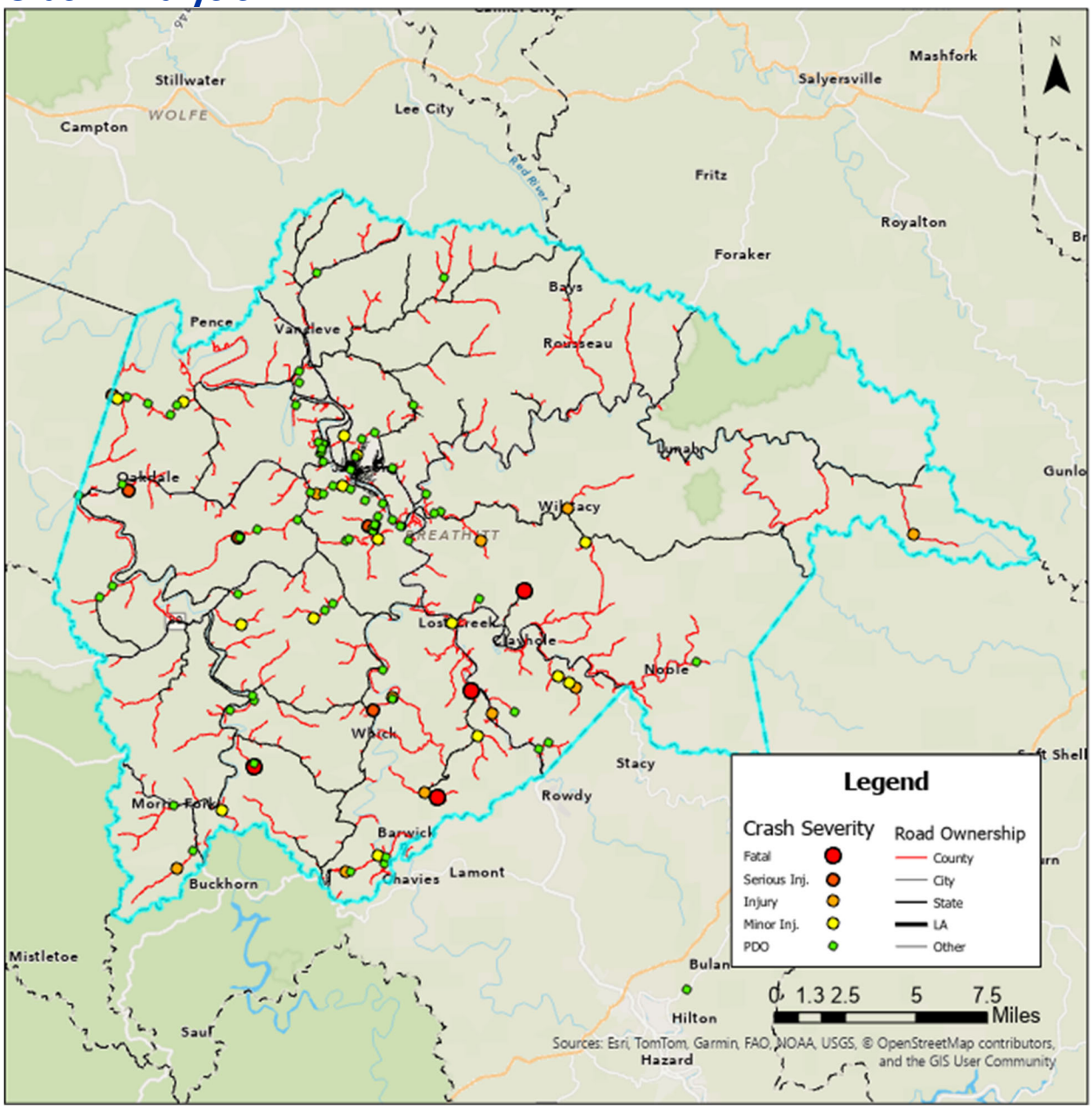
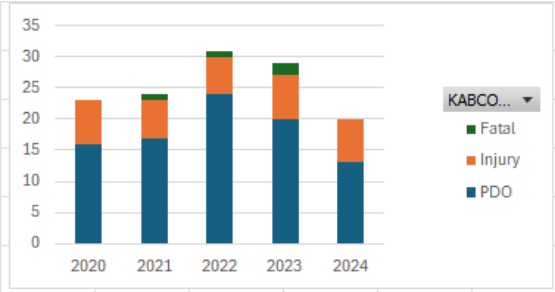


Exhibit Breathitt-4: Map of County Road Crashes



Year	Property Damage Only	Injury	Fatal	Total
2020	16	7	0	**23**
2021	17	6	1	**24**
2022	24	6	1	**31**
2023	20	7	2	**29**
2024	13	7	0	**20**

Exhibit Breathitt-5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	1	3	6	10
Backing	0	0	21	21
Head On	0	5	6	11
Opposing Left Turn	0	0	1	1
Rear End	0	1	4	5
Rear To Rear	0	0	1	1
Sideswipe-Opposit	0	2	12	14
Sideswipe-Same D	0	1	2	3
Single Vehicle	3	21	37	61
Total	**4**	**33**	**90**	**127**

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

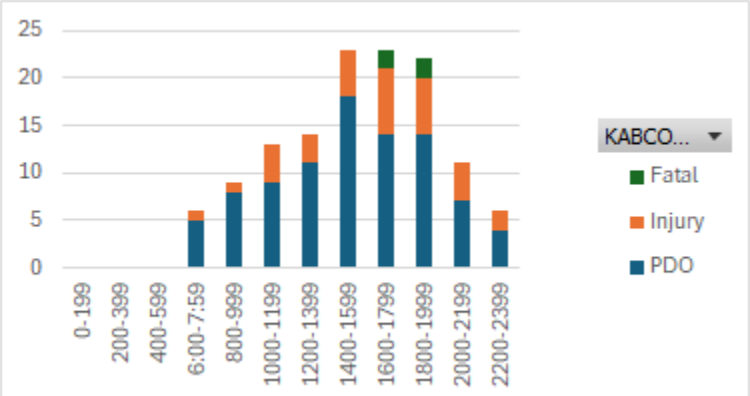


Exhibit Breathitt-7: Crashes and Severity by Time of Day

Focus Roadways



Exhibit Breathitt-8: Focus Roads

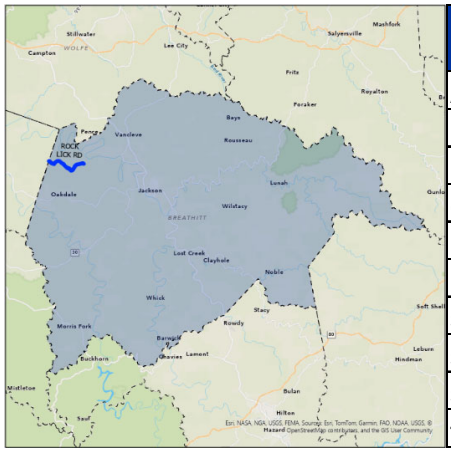
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Breathitt												
013-CR-1351 -000	3.87	Breathitt	Kentucky River	ROCK LICK RD	3	0	4	9.32	2.76	8.1%	8.1%	1
013-CR-1414 -000	2.35	Breathitt	Kentucky River	TOWN HL RD	3	0	5	9.55	2.28	8.1%	16.2%	1
013-CR-1312 -000	2.05	Breathitt	Kentucky River	PANBOWL RD	2	0	12	8.33	2.20	5.4%	21.6%	1
013-CR-1117 -000	2.87	Breathitt	Kentucky River	HARDSHELL CANEY RD	3	0	0	8.41	0.58	8.1%	29.7%	1
013-CR-1225 -000	3.13	Breathitt	Kentucky River	MILLER BR BARWICK RD	2	0	2	6.06	1.54	5.4%	35.1%	1
013-CR-1302 -000	2.07	Breathitt	Kentucky River	LICK BRANCH-ARMORY RD	1	0	4	3.71	2.16	2.7%	48.6%	1
013-CR-1156 -000	1.91	Breathitt	Kentucky River	WATTS RD	0	1	0	3.94	1.06	2.7%	51.4%	1
013-CR-1202 -000	1.54	Breathitt	Kentucky River	CURT RD	1	0	2	3.26	0.89	2.7%	56.8%	1
013-CR-1100 -000	2.22	Breathitt	Kentucky River	STRAY BR RD	1	0	1	3.03	1.02	2.7%	59.5%	1
013-CR-1143 -000	1.08	Breathitt	Kentucky River	LEATHERWOOD RD	1	0	0	2.80	0.87	2.7%	64.9%	1
013-CR-1327 -000	0.62	Breathitt	Kentucky River	ARMORY DR	0	0	1	0.23	3.34	0.0%	67.6%	1
013-CR-1259 -000	2.30	Breathitt	Kentucky River	OLD BUCK RD	1	0	0	2.80	0.70	2.7%	70.3%	1
013-CR-1256 -000	3.36	Breathitt	Kentucky River	PUNCHEON CRK RD	1	0	1	3.03	0.47	2.7%	73.0%	1
013-CR-1004 -000	1.88	Breathitt	Kentucky River	SMITH BR RD	1	0	0	2.80	0.67	2.7%	78.4%	1
013-CR-1230 -000	3.25	Breathitt	Kentucky River	FREEMAN FRK RD	1	0	1	3.03	0.37	2.7%	81.1%	1
013-CR-1135 -000	0.91	Breathitt	Kentucky River	NOBLE RD	1	0	0	2.80	0.40	2.7%	83.8%	1
013-CR-1018 -000	2.98	Breathitt	Kentucky River	PRESS HOWARD FRK	1	0	0	2.80	0.29	2.7%	91.9%	1
013-CR-1358 -000	0.38	Breathitt	Kentucky River	BURCHAM FRK RD	1	0	0	2.80	0.20	2.7%	97.3%	1
013-CR-1082 -000	0.02	Breathitt	Kentucky River	NEACE TURNER LN	0	0	0	0.00	2.59	0.0%	100.0%	1
013-CR-1250 -000	0.14	Breathitt	Kentucky River	RILEY CEMETERY RD	0	0	0	0.00	2.42	0.0%	100.0%	1
013-CR-1074 -000	0.01	Breathitt	Kentucky River	BESSIE LN	0	0	0	0.00	2.33	0.0%	100.0%	1
013-CR-1305 -000	0.79	Breathitt	Kentucky River	ROARK RDG RD	0	0	7	1.59	0.70	0.0%	100.0%	1
013-CR-1000 -000	0.01	Breathitt	Kentucky River	LARRY AND ELIZABETH DR	0	0	0	0.00	2.28	0.0%	100.0%	1
013-CR-1301G -000	0.78	Breathitt	Kentucky River	SNOWDEN BR RD	0	0	1	0.23	1.59	0.0%	100.0%	1
013-CR-1139 -000	1.19	Breathitt	Kentucky River	COCKRELL FRK RD	0	0	2	0.45	1.33	0.0%	100.0%	1
013-CR-1387 -000	0.54	Breathitt	Kentucky River	ROBINSON RD	0	0	0	0.00	1.67	0.0%	100.0%	1
013-CR-1148 -000	1.77	Breathitt	Kentucky River	BARWICK RD	0	0	2	0.45	0.42	0.0%	100.0%	1
013-CR-1373 -000	0.66	Breathitt	Kentucky River	CHICK LITTLE RD	0	0	0	0.00	0.72	0.0%	100.0%	1
013-CR-1207 -000	0.98	Breathitt	Kentucky River	HENSLEY RD	0	0	0	0.00	0.38	0.0%	100.0%	1
013-CR-1263 -000	0.35	Breathitt	Kentucky River	BEECH GROVE RD	0	0	0	0.00	0.30	0.0%	100.0%	1
013-CR-1115 -000	2.88	Breathitt	Kentucky River	NIX BR	0	0	0	0.00	0.08	0.0%	100.0%	1

Exhibit Breathitt-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Rock Lick Rd (013-CR-1351 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	3	3	0	**6**
Total	**4**	**3**	**0**	**7**

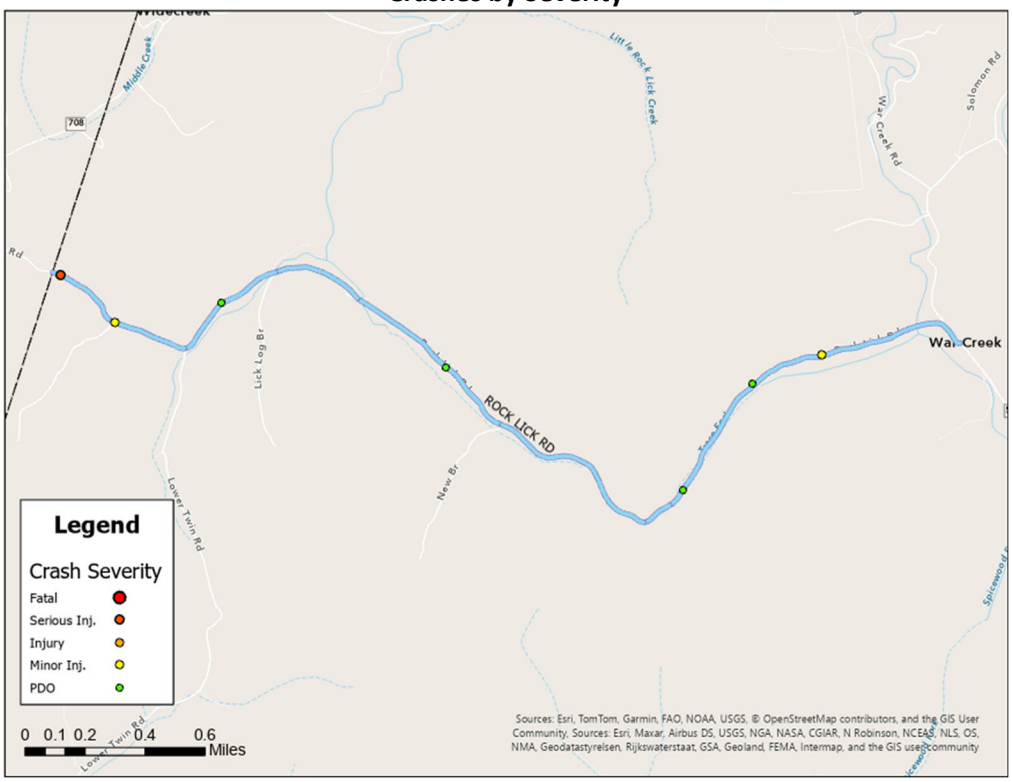
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
013-CR-1351 -000	ROCK LICK RD	12	3-Fair	RHR 5 - 5- 10 ft non-recoverable	60-80

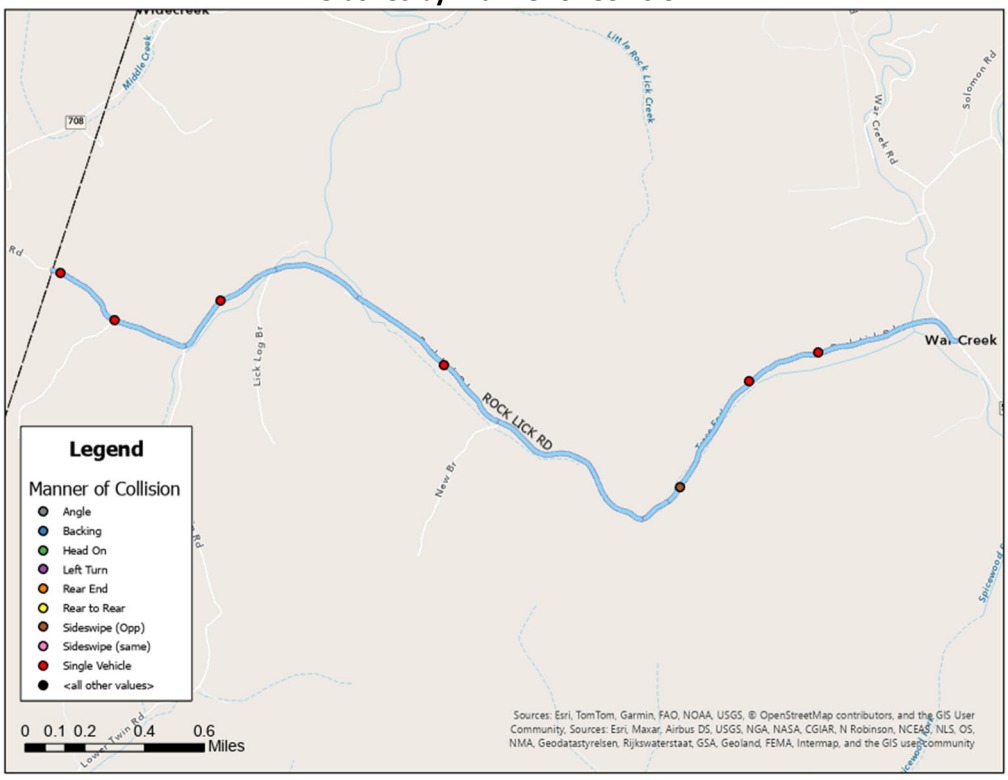
Roadway Typical Section



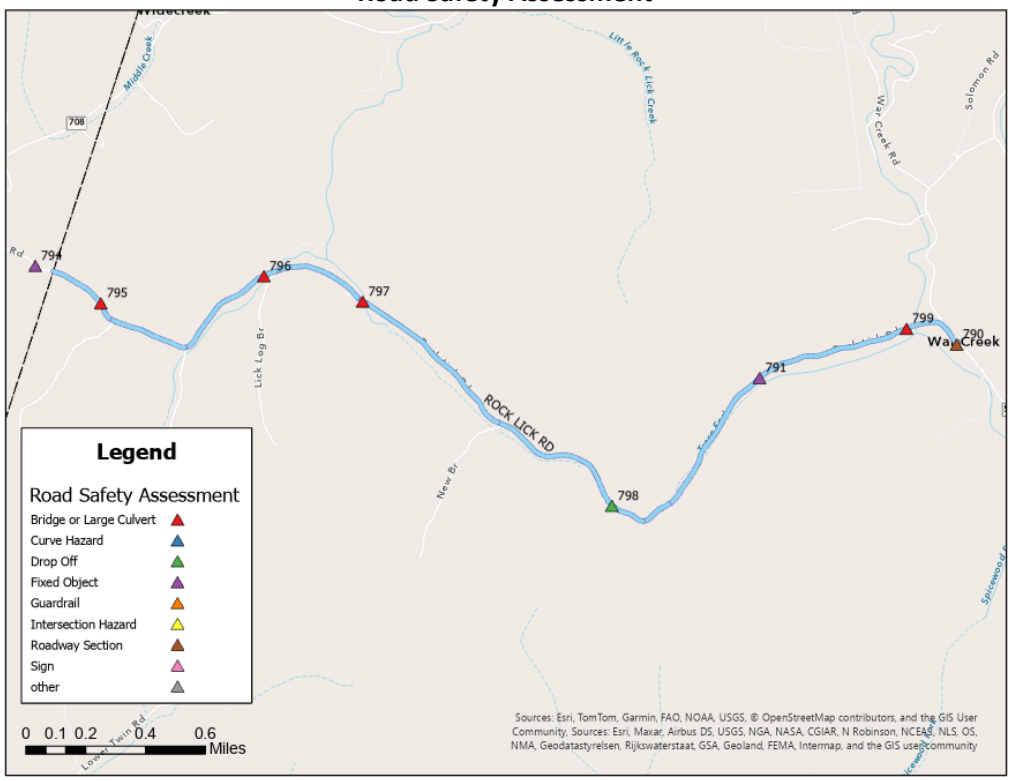
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

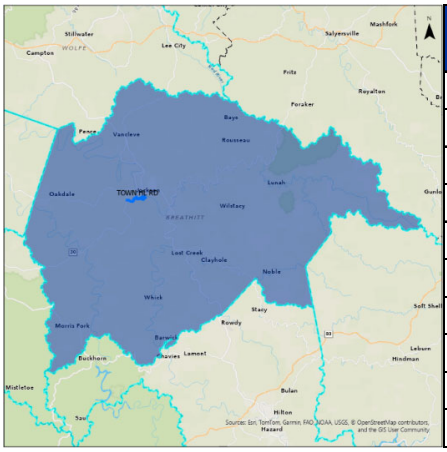
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline1	Curve Signin	Other Recommendations
791	013-CR-1351 -000	ROCK LICK RD	12	3-Fair	RHR 5 - 5- 10 ft non-recoverable	60-80	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
799	013-CR-1351 -000	ROCK LICK RD	Drop Off	3-5	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
791	013-CR-1351 -000	ROCK LICK RD	Fixed Object	Utility Pole	Series	>5	--

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
795	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
796	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	8	4	0	--
797	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	10	2	0	--
799	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	10	4	0	--

Town Hill Rd (013-CR-1414 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	1	0	**1**
BACKING	0	0	0	**0**
HEAD ON	1	1	0	**2**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	1	0	0	**1**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	1	0	**1**
SINGLE VEHICLE	3	0	0	**3**
Total	**5**	**3**	**0**	**8**

General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
013-CR-1414 -000	TOWN HL RD	16	4-Poor	RHR 3 - >10 ft	20-40
013-CR-1414 -000	TOWN HL RD	12	3-Fair	RHR 6 - <5 ft non-recoverable	40-60

Roadway Typical Section





Crashes by Severity



Crashes by Manner of Collision

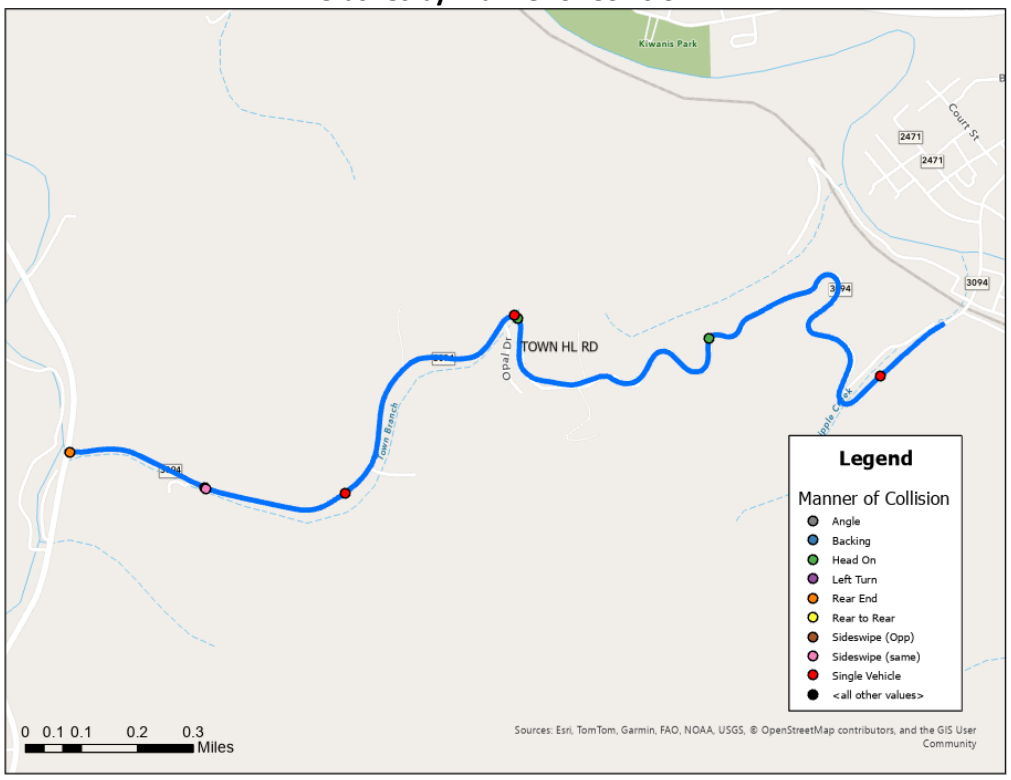


Figure Breathitt-A3: Rock Lick Road Crashes by Manner of Collision

Road Safety Assessment



Figure Breathitt-A4: Rock Lick Road Safety Assessment

Recommendations

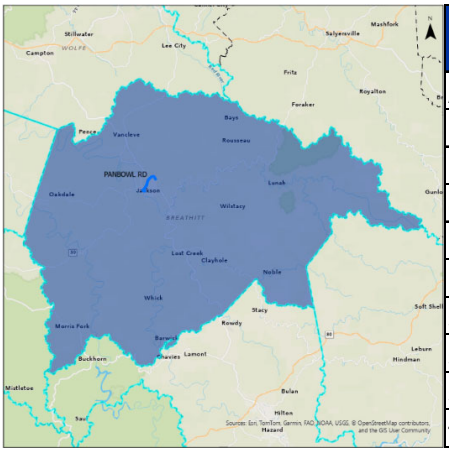
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin	Other Recommendations
721	013-CR-1414 -000	TOWN HL RD	16	4-Poor	RHR 3 - >10 ft	20-40	✓	✓	✓	
756	013-CR-1414 -000	TOWN HL RD	12	3-Fair	RHR 6 - <5 ft non-recoverable	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
757	013-CR-1414 -000	TOWN HL RD	Drop Off	0-1	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
722	013-CR-1414 -000	TOWN HL RD	Fixed Object	Utility Pole	Series	3-5	--
759	013-CR-1414 -000	TOWN HL RD	Fixed Object	Utility Pole	Series	3-5	--

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
754	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
755	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
758	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
765	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	Some	Evaluate for Warrants; remove if not met
Point ID	**RT_UNIQUE**	**RD_NAME**	**Issue Type**	**--**	**--**	**Description**	**Recommendation**
765	013-CR-1414 -000	TOWN HL RD	other	--	--	Road breaking off.	Repair and Stabilize Roadway
767	013-CR-1414 -000	TOWN HL RD	other	--	--	Railroad bridge.	Install Type 3 Object Marker

Panbowl Rd (013-CR-1312 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	1	0	0	**1**
BACKING	3	0	0	**3**
HEAD ON	1	1	0	**2**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	1	0	0	**1**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	5	1	0	**6**
Total	**12**	**2**	**0**	**14**

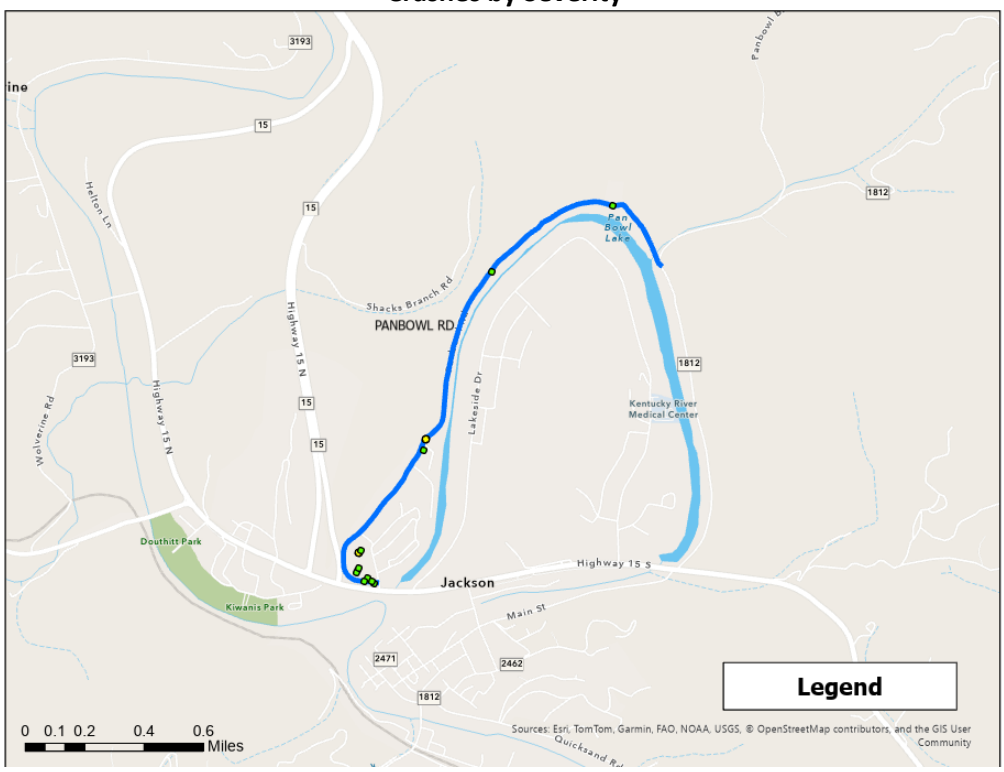
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
013-CR-1312 -000	PANBOWL RD	10	3-Fair	RHR 5 - 5- 10 ft non-recoverable	40-60

Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision

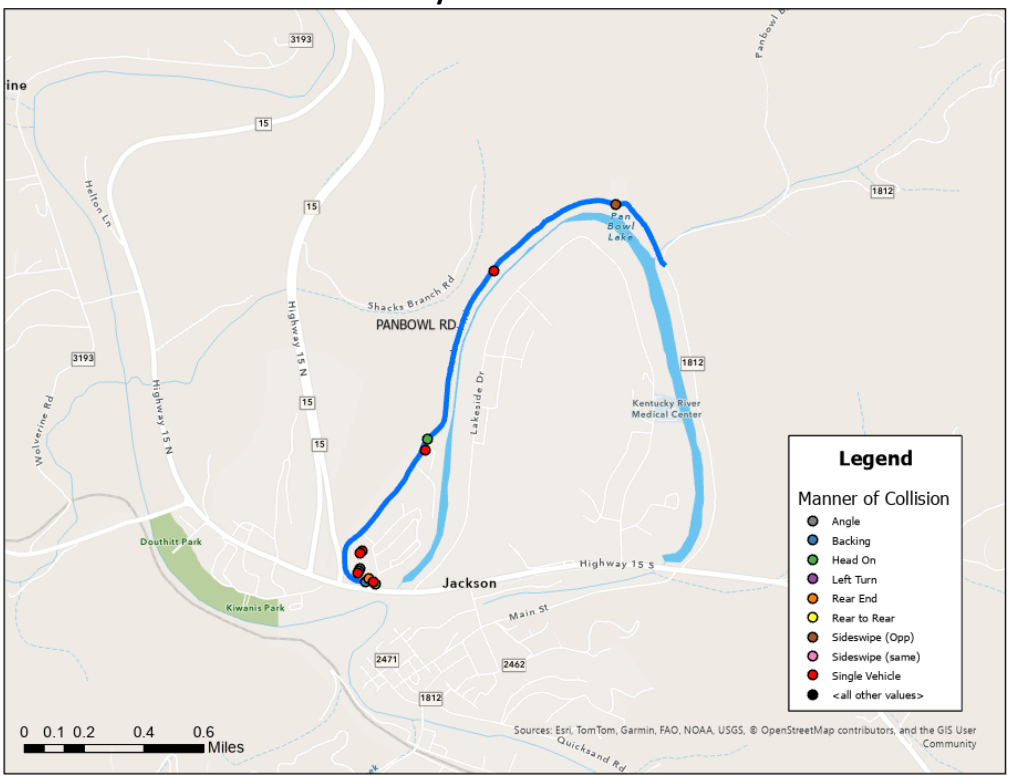
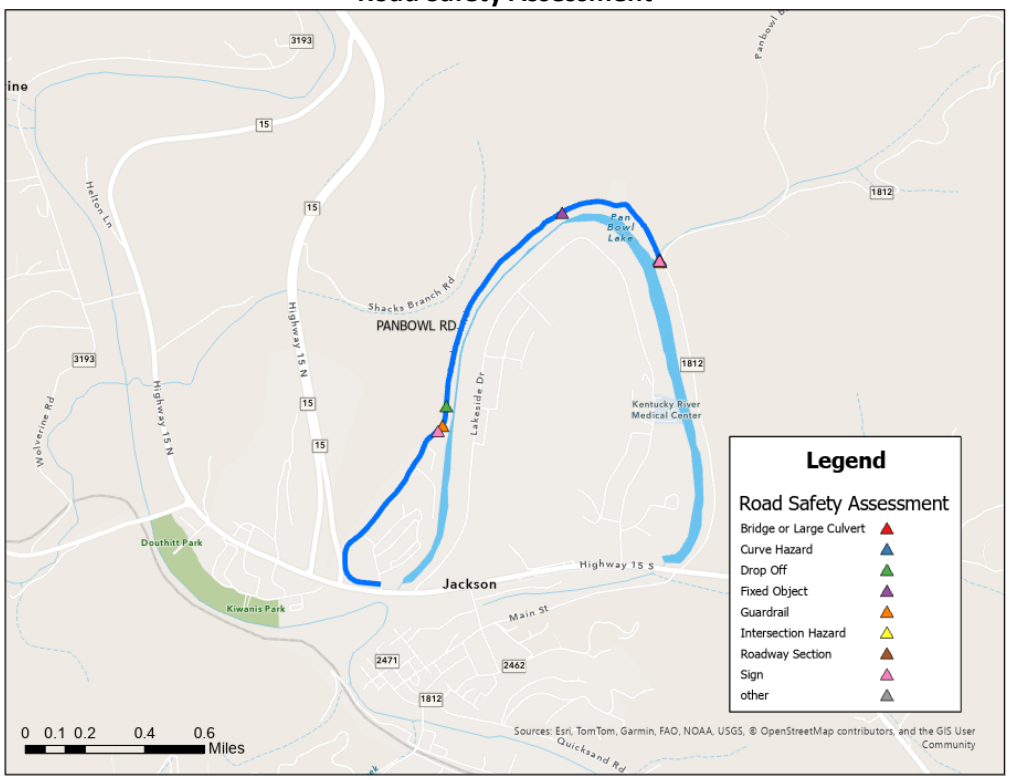


Figure Breathitt-A3: Rock Lick Road Crashes by Manner of Collision

Road Safety Assessment



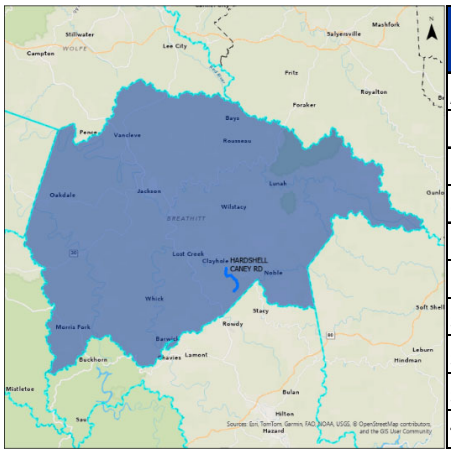
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%	Improve Shoulder	Edgeline[1]	Curve Signin
1187	013-CR-1312 -000	PANBOWL RD	10	3-Fair	RHR 5 - 5- 10 ft non-recoverable	40-60	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1191	013-CR-1312 -000	PANBOWL RD	Drop Off	1-3	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1188	013-CR-1312 -000	PANBOWL RD	Fixed Object	Utility Pole	Series	3-5	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
1190	013-CR-1312 -000	PANBOWL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1193	013-CR-1312 -000	PANBOWL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met

Hardshell Caney Rd (013-CR-1117 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	1	0	**1**
BACKING	0	0	0	**0**
HEAD ON	0	1	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**0**	**3**	**0**	**3**

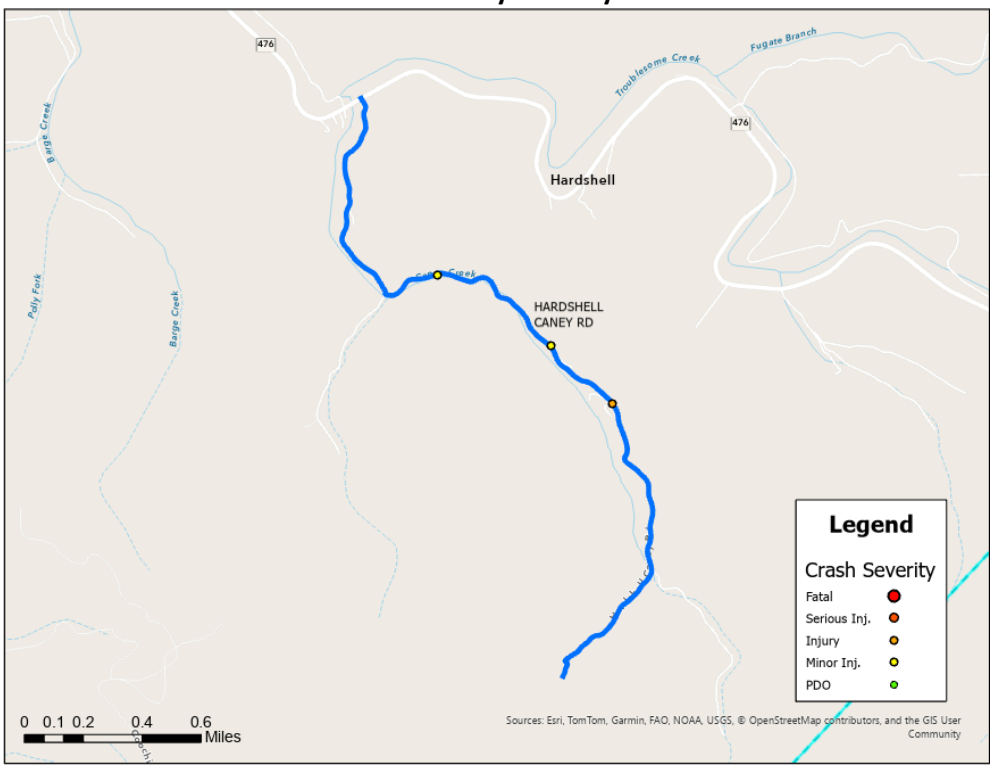
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
013-CR-1117 -000	HARDSHELL CANEY RD	10	1-Very Good	RHR 6 - <5 ft non-recoverable	60-80

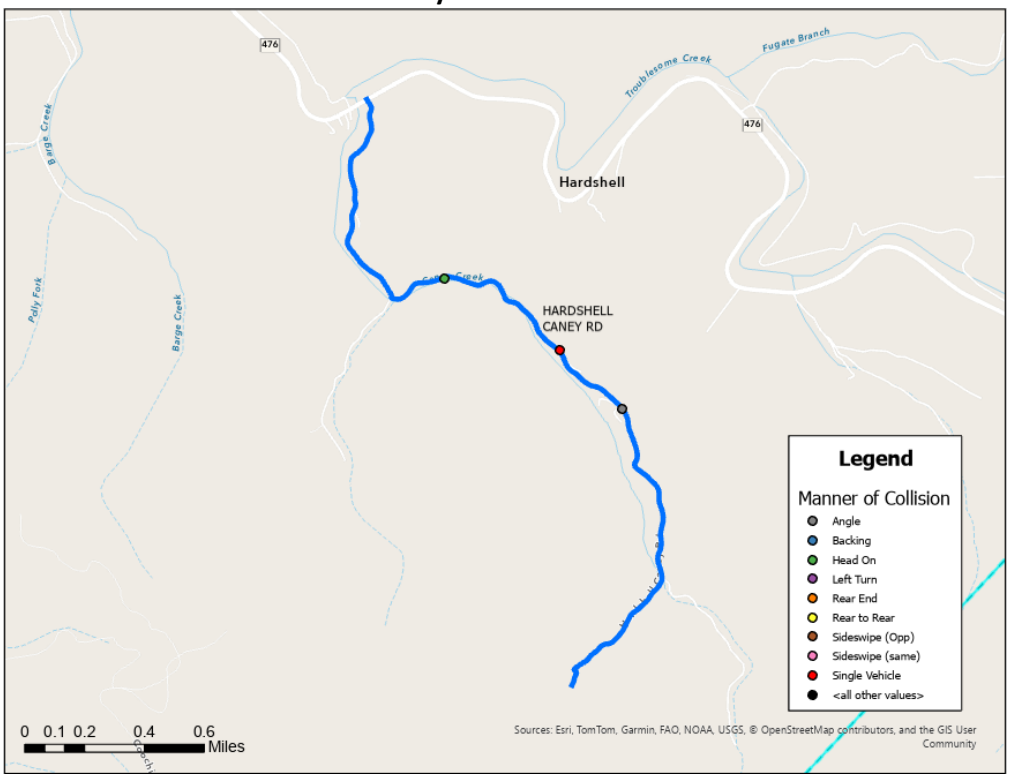
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment

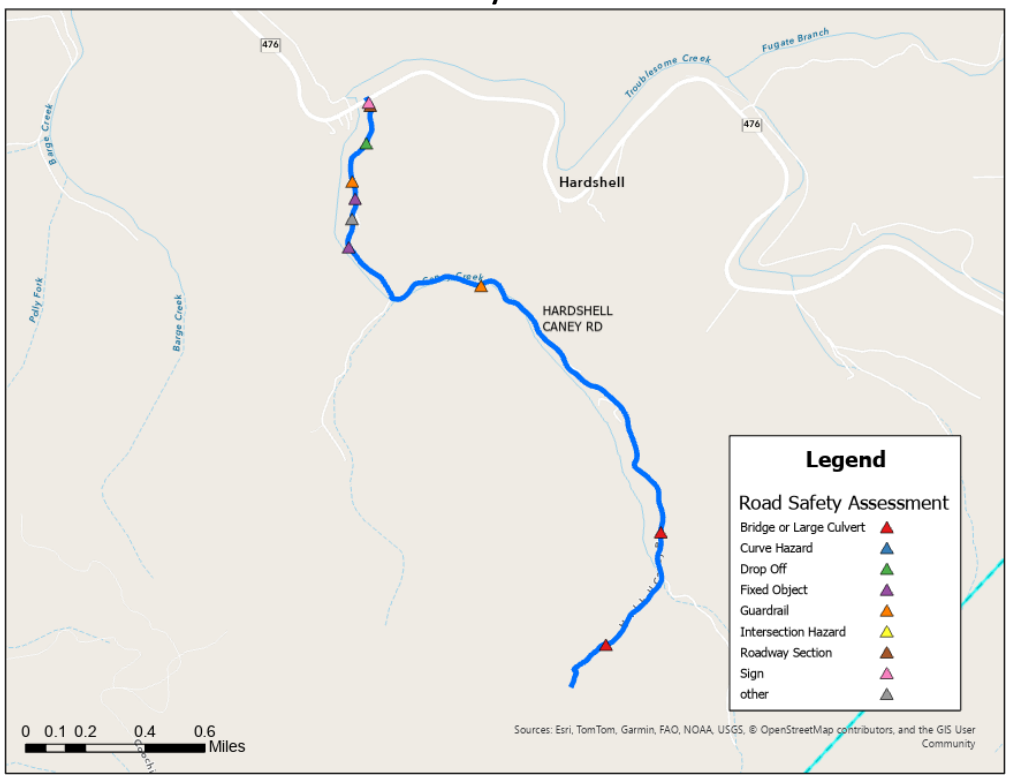


Figure Breathitt-A4: Rock Lick Road Safety Assessment

General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline1	Curve Signin	Other Recommendations
671	013-CR-1117 -000	HARDSHELL CANEY RD	10	1-Very Good	RHR 6 - <5 ft non-recoverable	60-80	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
672	013-CR-1117 -000	HARDSHELL CANEY RD	Drop Off	0-1	>10	--	Install Guardrail

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
674	013-CR-1117 -000	HARDSHELL CANEY RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
675	013-CR-1117 -000	HARDSHELL CANEY RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker

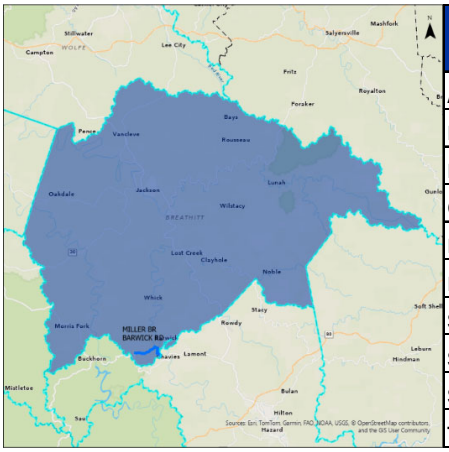
Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
673	013-CR-1117 -000	HARDSHELL CANEY RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
676	013-CR-1117 -000	HARDSHELL CANEY RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
676	013-CR-1117 -000	HARDSHELL CANEY RD	Bridge or Large Culvert	10	0	0	Install Object Markers
677	013-CR-1117 -000	HARDSHELL CANEY RD	Bridge or Large Culvert	10	0	0	Install Object Markers

Point ID	RT_UNIQUE	RD_NAME	Issue Type	--	--	Description	Recommendation
678	013-CR-1117 -000	HARDSHELL CANEY RD	other	--	--	Retaining wall in poor condition.	Replace / Stabilize Retaining Wall

Miller Bridge Barwick Rd (013-CR-1225 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	1	0	**1**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	2	1	0	**3**
Total	**2**	**2**	**0**	**4**

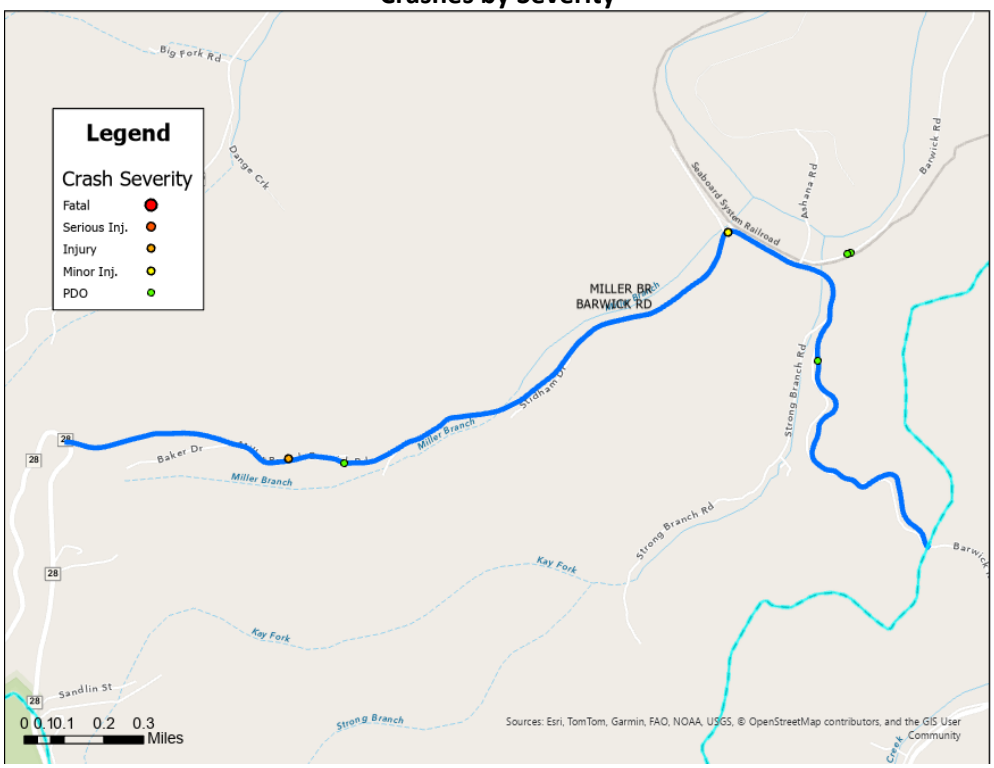
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
013-CR-1225 -000	MILLER BR BARWICK RD	12	4-Poor	RHR 3 - >10 ft	40-60

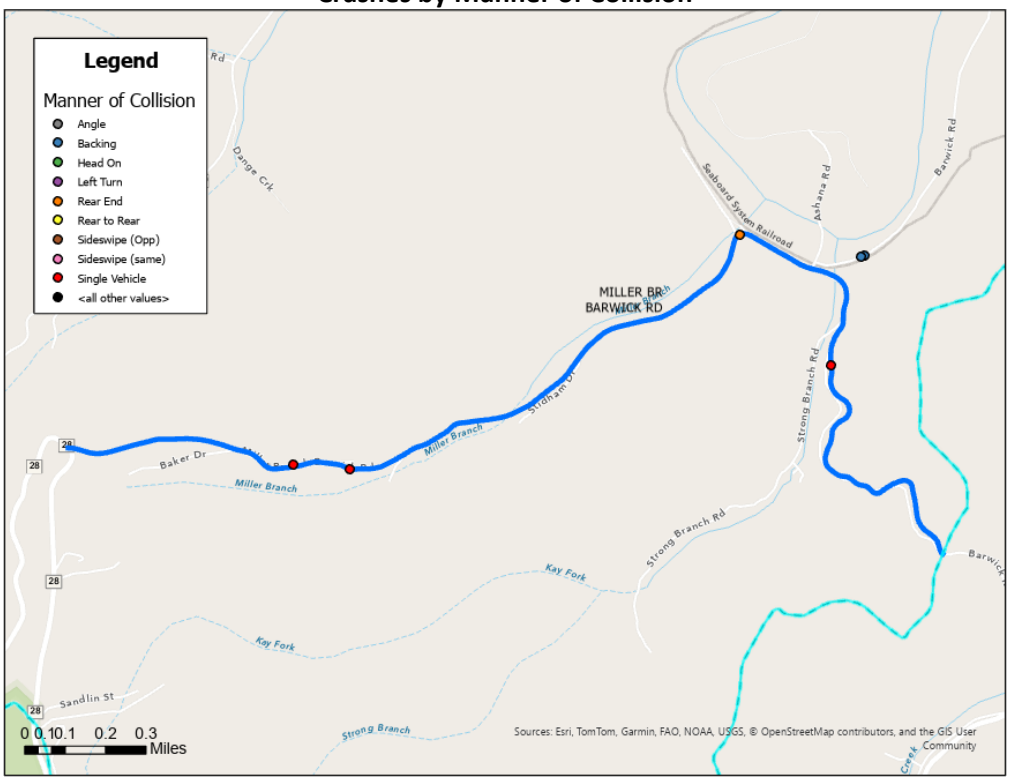
Roadway Typical Section



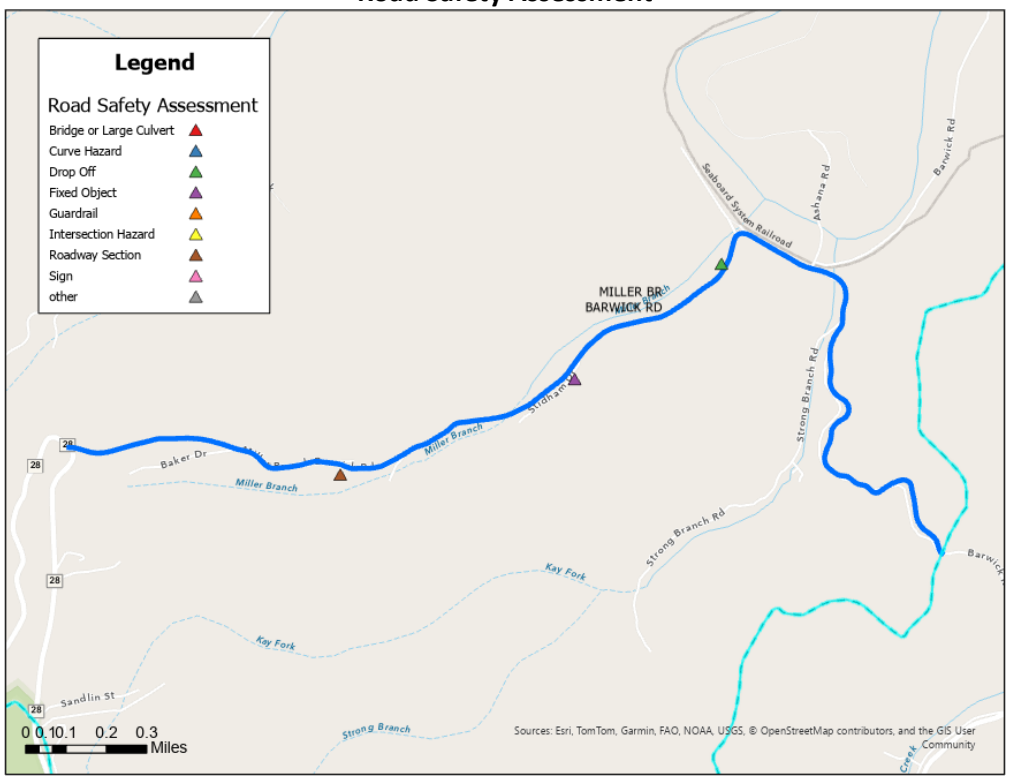
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
1356	013-CR-1225 -000	MILLER BR BARWICK RD	12	4-Poor	RHR 3 - >10 ft	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1358	013-CR-1225 -000	MILLER BR BARWICK RD	Drop Off	1-3	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1357	013-CR-1225 -000	MILLER BR BARWICK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road

Other Roadways

General Roadway Conditions and Recommendations (Breathitt County)

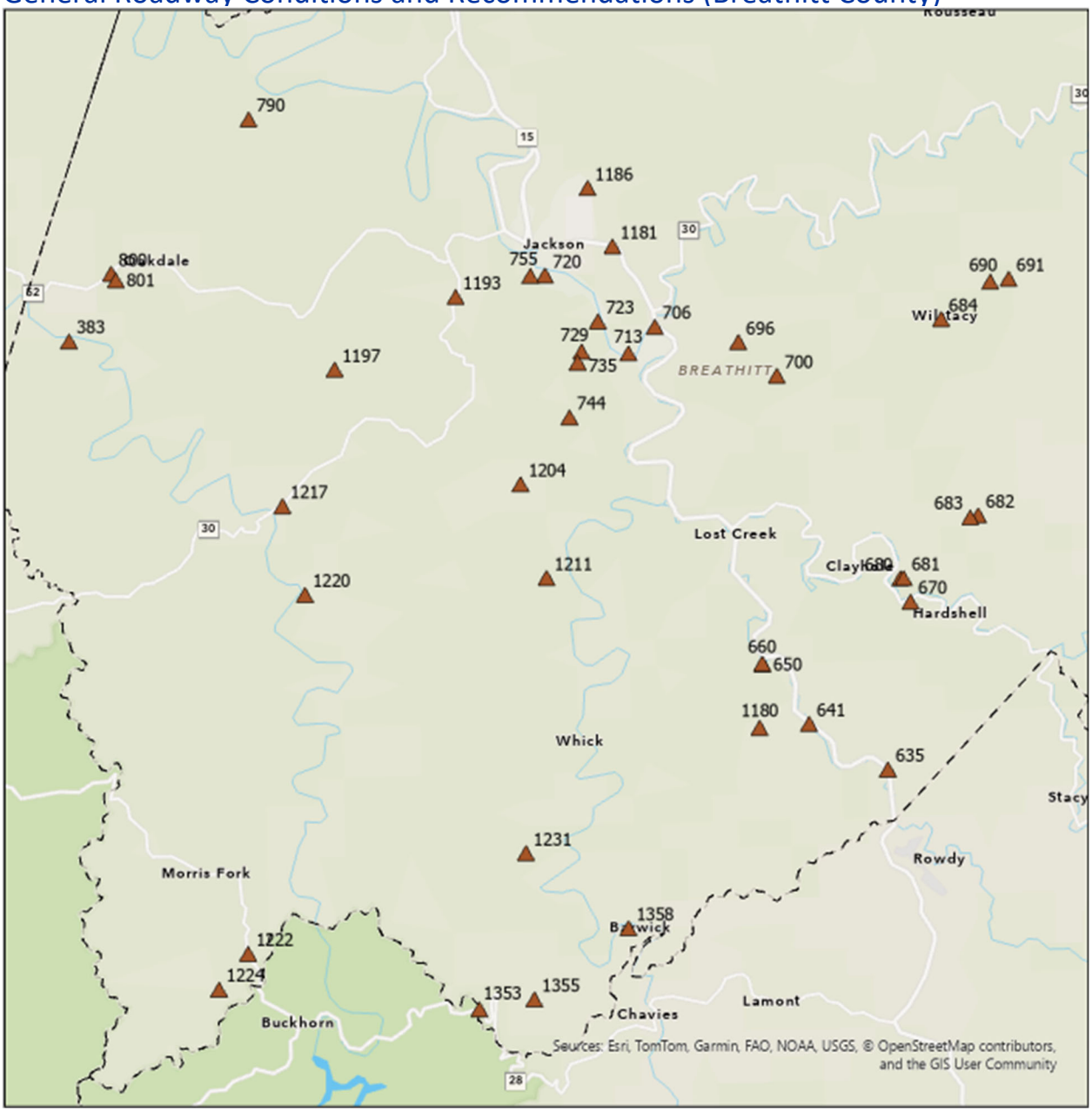


Exhibit Breathitt-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
791	013-CR-1351 -000	ROCK LICK RD	12	3	5	60-80		✓	✓	✓	
721	013-CR-1414 -000	TOWN HL RD	16	4	3	20-40		✓	✓	✓	
756	013-CR-1414 -000	TOWN HL RD	12	3	6	40-60		✓	✓	✓	
1187	013-CR-1312 -000	PANBOWL RD	10	3	5	40-60		✓	✓	✓	
384	065-CR-1135 -000	MILL BRANCH SCHOOL RD	10	1	5	60-80	Gravel	✓		✓	
671	013-CR-1117 -000	HARDSHELL CANEY RD	10	1	6	60-80		✓	✓	✓	
1356	013-CR-1225 -000	MILLER BR BARWICK RD	12	5	6	40-60		✓	✓	✓	
730	013-CR-1302 -000	LICK BRANCH-ARMORY RD	10	4	7	0-20	Private Driveway				Consider removing from county road maintenance
724	013-CR-1302 -000	LICK BRANCH-ARMORY RD	10	2	6	40-60		✓	✓	✓	
651	013-CR-1156 -000	WATTS RD	16	4	4	20-40		✓	✓	✓	
661	013-CR-1156 -000	WATTS RD	10	3	4	40-60		✓	✓	✓	
1205	013-CR-1202 -000	CURT RD	14	3	4	40-60		✓	✓	✓	
736	013-CR-1100 -000	STRAY BR RD	10	3	7	40-60		✓	✓	✓	
745	013-CR-1100 -000	STRAY BR RD	10	1	6	40-60		✓	✓	✓	
1218	013-CR-1259 -000	OLD BUCK RD	10	3	5	40-60		✓	✓	✓	
1198	013-CR-1256 -000	PUNCHEON CRK RD	10	3	7	60-80		✓	✓	✓	
697	013-CR-1004 -000	SMITH BR RD	10	3	4	20-40		✓	✓	✓	
701	013-CR-1004 -000	SMITH BR RD	10	1	6	60-80		✓	✓	✓	
1223	013-CR-1230 -000	FREEMAN FRK RD	10	3	3	40-60		✓	✓	✓	
1225	013-CR-1230 -000	FREEMAN FRK RD	10	1	6	40-60		✓	✓	✓	
642	013-CR-1135 -000	NOBLE RD	10	3	4	20-40		✓	✓	✓	
685	013-CR-1018 -000	PRESS HOWARD FRK	10	2	6	60-80		✓	✓	✓	
691	013-CR-1018 -000	PRESS HOWARD FRK	10	1	5	60-80		✓	✓	✓	
692	013-CR-1018 -000	PRESS HOWARD FRK	10	1	4	60-80	Impassable due to gate.				Consider removing from county road maintenance
801	013-CR-1358 -000	BURCHAM FRK RD	10	2	7	40-60		✓			
802	013-CR-1358 -000	BURCHAM FRK RD	10	1	7	40-60		✓			
707	013-CR-1387 -000	ROBINSON RD	16	4	3	0-20		✓			
714	013-CR-1301G -000	SNOWDEN BR RD	14	4	3	0-20		✓			
1181	013-CR-1074 -000	BESSIE LN	12	4	6	0-20		✓			
636	013-CR-1139 -000	COCKRELL FRK RD	12	2	5	40-60		✓			
1221	013-CR-1263 -000	BEECH GROVE RD	10	3	4	20-40		✓			
1232	013-CR-1082 -000	NEACE TURNER LN	10	3	7	0-20	Driveway	✓			Consider removing from county road maintenance
1359	013-CR-1148 -000	BARWICK RD	10	3	6	60-80		✓			
681	013-CR-1115 -000	NIX BR	10	1	7	80-100		✓			
682	013-CR-1115 -000	NIX BR	10	1	7	80-100	Impassable				Consider removing from county road maintenance
683	013-CR-1115 -000	NIX BR	10	1	7	80-100		✓			
684	013-CR-1115 -000	NIX BR	10	1	7	80-100	Impassable				Consider removing from county road maintenance
1182	013-CR-1305 -000	ROARK RDG RD	10	1	7	80-100		✓			
1194	013-CR-1373 -000	CHICK LITTLE RD	10	1	3	20-40		✓			
1212	013-CR-1207 -000	HENSLEY RD	10	1	4	40-60		✓			
1354	013-CR-1250 -000	RILEY CEMETERY RD	10	1	7	40-60		✓			

Exhibit Breathitt-F2: General Roadway Recommendations

Bridge / Culvert Recommendations (Breathitt County)

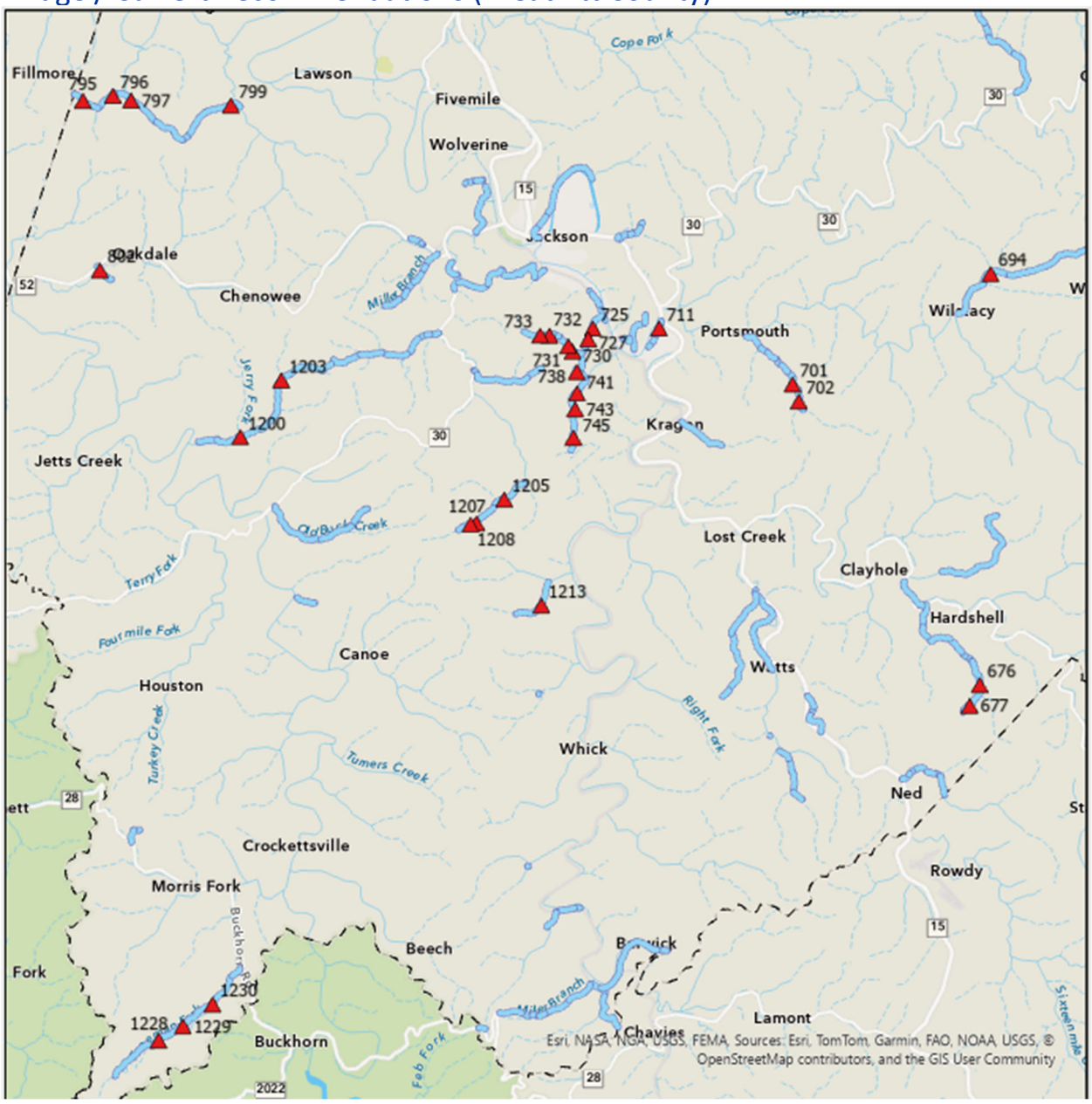


Exhibit Breathitt-F3: Focus Road Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Hazard	Bridge Width	Guard Present	Object Markers	Recommendation
802	013-CR-1358 -000	BURCHAM FRK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1205	013-CR-1202 -000	CURT RD	Bridge or Large Culvert	12	2	1	--
1207	013-CR-1202 -000	CURT RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1208	013-CR-1202 -000	CURT RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1228	013-CR-1230 -000	FREEMAN FRK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1229	013-CR-1230 -000	FREEMAN FRK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1230	013-CR-1230 -000	FREEMAN FRK RD	Bridge or Large Culvert	8	0	2	Install Object Markers
676	013-CR-1117 -000	HARDSHELL CANEY RD	Bridge or Large Culvert	10	0	0	Install Object Markers
677	013-CR-1117 -000	HARDSHELL CANEY RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1213	013-CR-1207 -000	HENSLEY RD	Bridge or Large Culvert	8	0	0	Install Object Markers
725	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Bridge or Large Culvert	8	0	0	Install Object Markers
727	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Bridge or Large Culvert	8	0	0	Install Object Markers
730	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Bridge or Large Culvert	8	0	0	Install Object Markers
731	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Bridge or Large Culvert	8	0	0	Install Object Markers
732	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Bridge or Large Culvert	8	0	0	Install Object Markers
733	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Bridge or Large Culvert	8	0	0	Install Object Markers
694	013-CR-1018 -000	PRESS HOWARD FRK	Bridge or Large Culvert	10	0	0	Culvert is not visible or marked. Install Object Markers
1200	013-CR-1256 -000	PUNCHEON CRK RD	Bridge or Large Culvert	8	2	0	--
1203	013-CR-1256 -000	PUNCHEON CRK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
711	013-CR-1387 -000	ROBINSON RD	Bridge or Large Culvert	16	4	0	--
795	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
796	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	8	4	0	--
797	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	10	2	0	--
799	013-CR-1351 -000	ROCK LICK RD	Bridge or Large Culvert	10	4	0	--
701	013-CR-1004 -000	SMITH BR RD	Bridge or Large Culvert	8	0	0	Install Object Markers
702	013-CR-1004 -000	SMITH BR RD	Bridge or Large Culvert	8	0	0	Install Object Markers
738	013-CR-1100 -000	STRAY BR RD	Bridge or Large Culvert	8	0	0	Install Object Markers
741	013-CR-1100 -000	STRAY BR RD	Bridge or Large Culvert	8	4	0	--
743	013-CR-1100 -000	STRAY BR RD	Bridge or Large Culvert	8	0	0	Install Object Markers
745	013-CR-1100 -000	STRAY BR RD	Bridge or Large Culvert	8	0	0	Install Object Markers

Exhibit Breathitt-F4: Bridge / Culvert Recommendations

Curve Recommendations (Breathitt County)



Exhibit COUNTY-F5: Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
384	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
386	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
389	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
390	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
393	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
394	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
395	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign

Exhibit COUNTY-F6: Curve Recommendations

Roadside Drop Off Recommendations (Breathitt County)

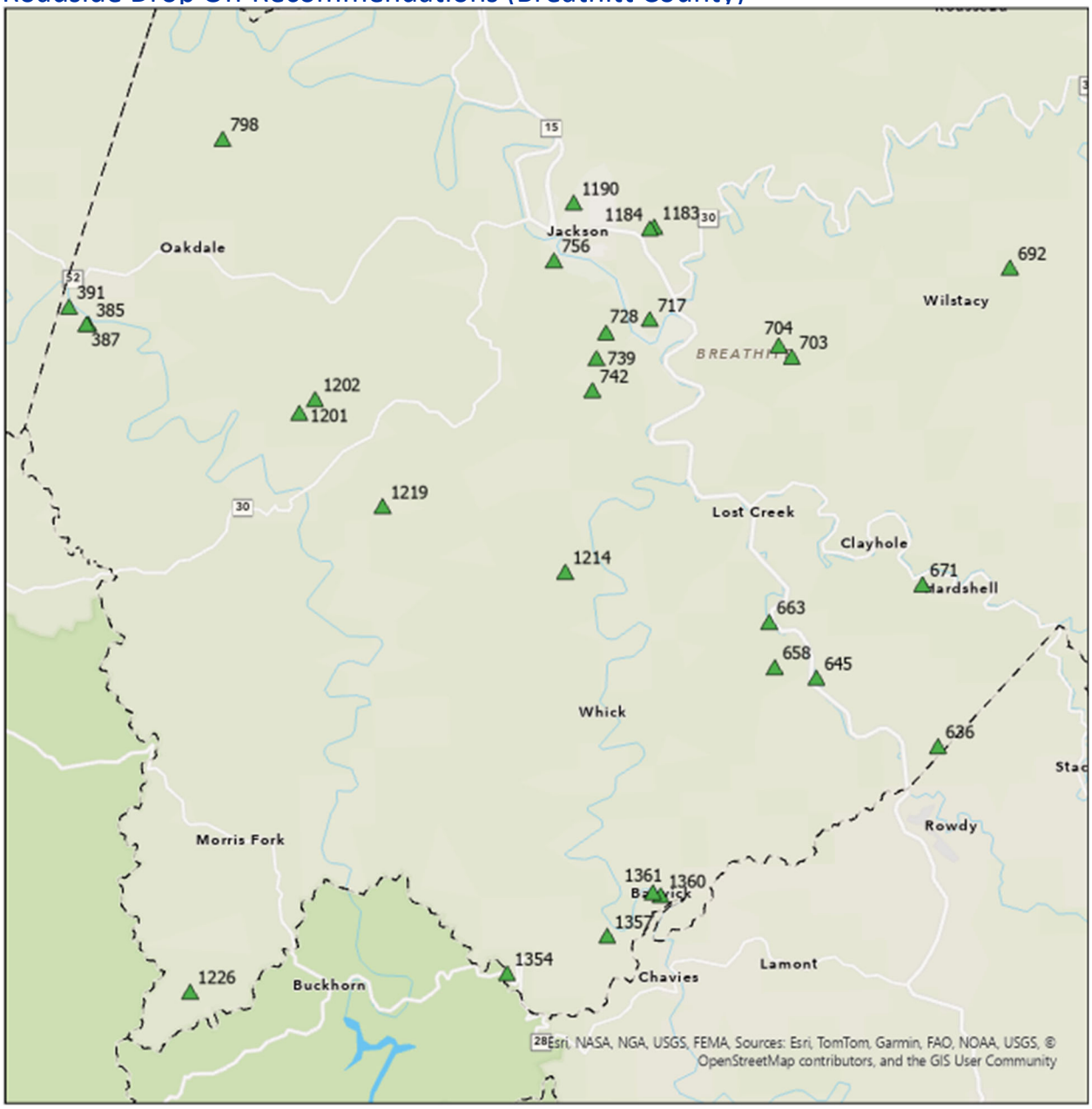


Exhibit Breathitt-F7: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
1360	013-CR-1148 -000	BARWICK RD	Drop Off	3-5	>10	Install Guardrail
1361	013-CR-1148 -000	BARWICK RD	Drop Off	3-5	>10	Install Guardrail
636	013-CR-1139 -000	COCKRELL FRK RD	Drop Off	3-5	>10	Install Guardrail
1226	013-CR-1230 -000	FREEMAN FRK RD	Drop Off	3-5	>10	Install Guardrail
671	013-CR-1117 -000	HARDSHELL CANEY RD	Drop Off	0-1	>10	Install Guardrail
1214	013-CR-1207 -000	HENSLEY RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
728	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
385	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	Install Guardrail
387	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	Install Guardrail
391	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	Install Guardrail
1357	013-CR-1225 -000	MILLER BR BARWICK RD	Drop Off	1-3	>10	Install Guardrail
645	013-CR-1135 -000	NOBLE RD	Drop Off	1-3	>10	Install Guardrail
1219	013-CR-1259 -000	OLD BUCK RD	Drop Off	3-5	>10	Install Guardrail
1190	013-CR-1312 -000	PANBOWL RD	Drop Off	1-3	>10	Install Guardrail
692	013-CR-1018 -000	PRESS HOWARD FRK	Drop Off	1-3	>10	Install Guardrail
1201	013-CR-1256 -000	PUNCHEON CRK RD	Drop Off	3-5	2-5	Shouldering / Repair if Possible
1202	013-CR-1256 -000	PUNCHEON CRK RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
1354	013-CR-1250 -000	RILEY CEMETERY RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
1183	013-CR-1305 -000	ROARK RDG RD	Drop Off	1-3	>10	Install Guardrail
1184	013-CR-1305 -000	ROARK RDG RD	Drop Off	0-1	>10	Install Guardrail
798	013-CR-1351 -000	ROCK LICK RD	Drop Off	3-5	>10	Install Guardrail
703	013-CR-1004 -000	SMITH BR RD	Drop Off	0-1	5-10	Shoulderering
704	013-CR-1004 -000	SMITH BR RD	Drop Off	0-1	5-10	Shoulderering
717	013-CR-1301G -000	SNOWDEN BR RD	Drop Off	0-1	2-5	Shoulderering
739	013-CR-1100 -000	STRAY BR RD	Drop Off	1-3	>10	Install Guardrail
742	013-CR-1100 -000	STRAY BR RD	Drop Off	3-5	2-5	Shouldering / Repair if Possible
756	013-CR-1414 -000	TOWN HL RD	Drop Off	0-1	>10	Install Guardrail
658	013-CR-1156 -000	WATTS RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
663	013-CR-1156 -000	WATTS RD	Drop Off	1-3	>10	Install Guardrail

Exhibit Breathitt-F8: Roadside Drop Off Recommendations

Fixed Object Recommendations (Breathitt County)

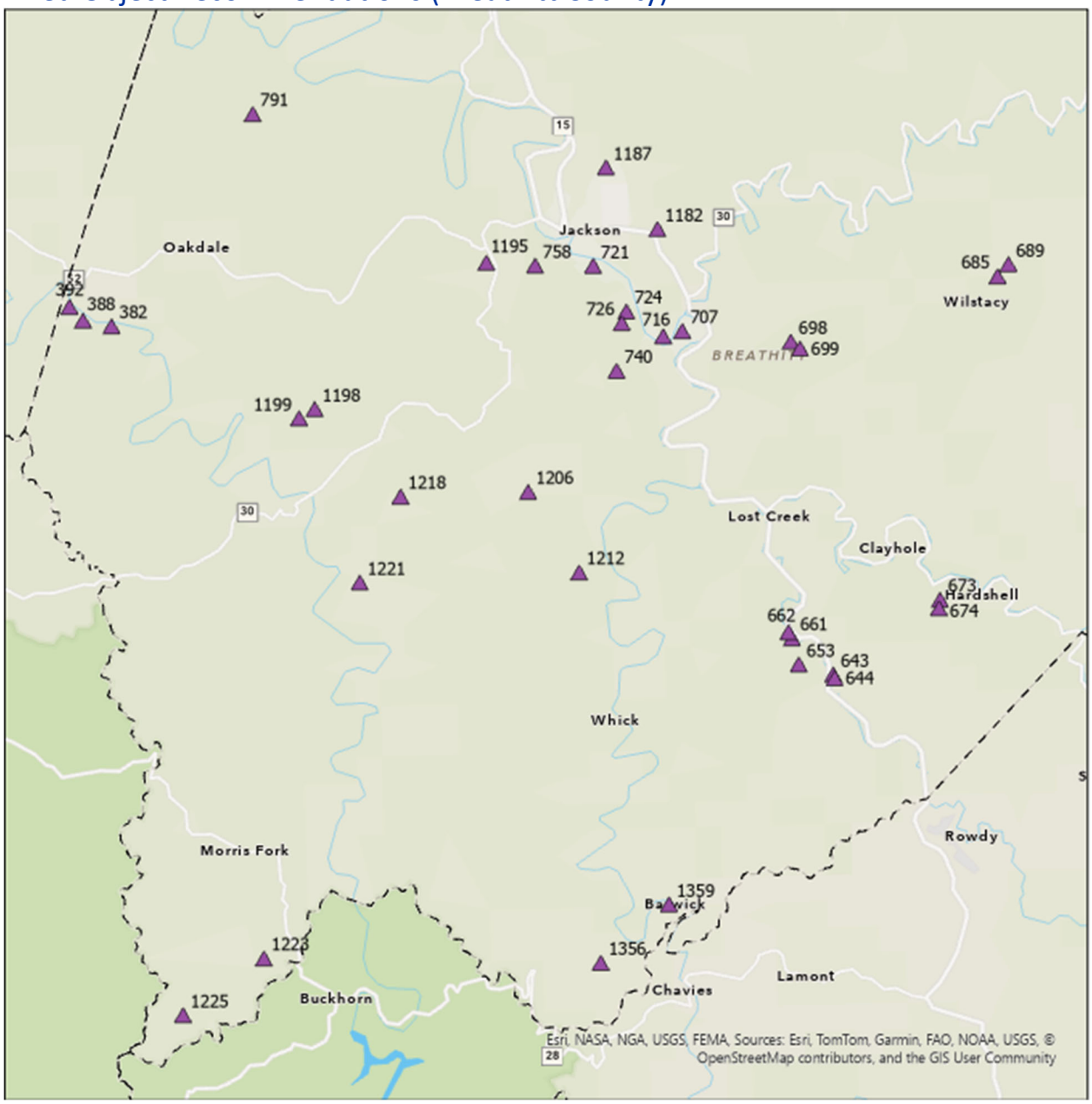


Exhibit Breathitt-F9: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
644	013-CR-1135 -000	NOBLE RD	Fixed Object	Utility Pole	Single	3-5	--
685	013-CR-1018 -000	PRESS HOWARD FRK	Fixed Object	Utility Pole	Single	3-5	--
382	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
388	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
673	013-CR-1117 -000	HARDSHELL CANEY RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1223	013-CR-1230 -000	FREEMAN FRK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1356	013-CR-1225 -000	MILLER BR BARWICK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
662	013-CR-1156 -000	WATTS RD	Fixed Object	Tree	Series	3-5	--
698	013-CR-1004 -000	SMITH BR RD	Fixed Object	Tree	Series	3-5	--
724	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Fixed Object	Tree	Series	3-5	--
1182	013-CR-1305 -000	ROARK RDG RD	Fixed Object	Tree	Series	3-5	--
1195	013-CR-1373 -000	CHICK LITTLE RD	Fixed Object	Tree	Series	3-5	--
1199	013-CR-1256 -000	PUNCHEON CRK RD	Fixed Object	Tree	Series	3-5	--
643	013-CR-1135 -000	NOBLE RD	Fixed Object	Tree	Series	>5	--
392	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
740	013-CR-1100 -000	STRAY BR RD	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
674	013-CR-1117 -000	HARDSHELL CANEY RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
661	013-CR-1156 -000	WATTS RD	Fixed Object	Utility Pole	Series	3-5	--
689	013-CR-1018 -000	PRESS HOWARD FRK	Fixed Object	Utility Pole	Series	3-5	--
699	013-CR-1004 -000	SMITH BR RD	Fixed Object	Utility Pole	Series	3-5	--
716	013-CR-1301G -000	SNOWDEN BR RD	Fixed Object	Utility Pole	Series	3-5	--
721	013-CR-1414 -000	TOWN HL RD	Fixed Object	Utility Pole	Series	3-5	--
726	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Fixed Object	Utility Pole	Series	3-5	--
758	013-CR-1414 -000	TOWN HL RD	Fixed Object	Utility Pole	Series	3-5	--
1187	013-CR-1312 -000	PANBOWL RD	Fixed Object	Utility Pole	Series	3-5	--
1221	013-CR-1263 -000	BEECH GROVE RD	Fixed Object	Utility Pole	Series	3-5	--
1359	013-CR-1148 -000	BARWICK RD	Fixed Object	Utility Pole	Series	3-5	--
653	013-CR-1156 -000	WATTS RD	Fixed Object	Utility Pole	Series	>5	--
707	013-CR-1387 -000	ROBINSON RD	Fixed Object	Utility Pole	Series	>5	--
791	013-CR-1351 -000	ROCK LICK RD	Fixed Object	Utility Pole	Series	>5	--
1198	013-CR-1256 -000	PUNCHEON CRK RD	Fixed Object	Utility Pole	Series	>5	--
1206	013-CR-1202 -000	CURT RD	Fixed Object	Utility Pole	Series	>5	--
1212	013-CR-1207 -000	HENSLEY RD	Fixed Object	Utility Pole	Series	>5	--
1218	013-CR-1259 -000	OLD BUCK RD	Fixed Object	Utility Pole	Series	>5	--
1225	013-CR-1230 -000	FREEMAN FRK RD	Fixed Object	Utility Pole	Series	>5	--

Exhibit Breathitt-F10: Fixed Object Recommendations

Guardrail Recommendations (Breathitt County)

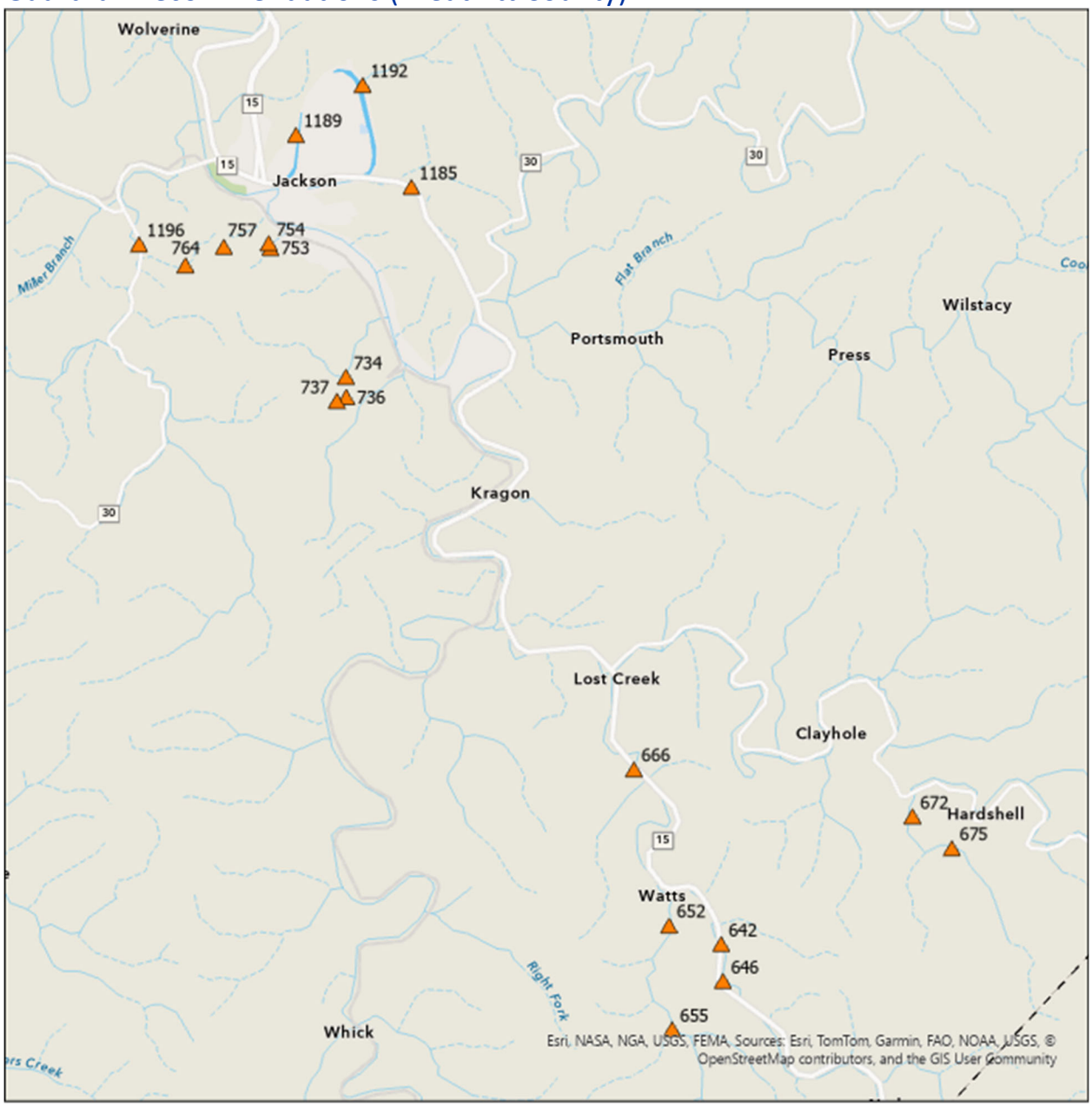


Exhibit Breathitt-F11: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
642	013-CR-1135 -000	NOBLE RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
646	013-CR-1135 -000	NOBLE RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
652	013-CR-1156 -000	WATTS RD	Guardrail	Good	Maybe	All_	--
655	013-CR-1143 -000	LEATHERWOOD RD	Guardrail	Good	Maybe	All_	--
666	013-CR-1156 -000	WATTS RD	Guardrail	Poor	Maybe	Some	Evaluate for Warrants; remove if not met
672	013-CR-1117 -000	HARDSHELL CANEY RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
675	013-CR-1117 -000	HARDSHELL CANEY RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
734	013-CR-1100 -000	STRAY BR RD	Guardrail	Good	Maybe	None	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.
736	013-CR-1100 -000	STRAY BR RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
737	013-CR-1100 -000	STRAY BR RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
753	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
754	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
757	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
764	013-CR-1414 -000	TOWN HL RD	Guardrail	Poor	Maybe	Some	Evaluate for Warrants; remove if not met
1185	013-CR-1305 -000	ROARK RDG RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
1189	013-CR-1312 -000	PANBOWL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1192	013-CR-1312 -000	PANBOWL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1196	013-CR-1373 -000	CHICK LITTLE RD	Guardrail	Good	Maybe	None	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.

Exhibit Breathitt-F12: Guardrail Locations Recommendations

Other Recommendations (Breathitt County)

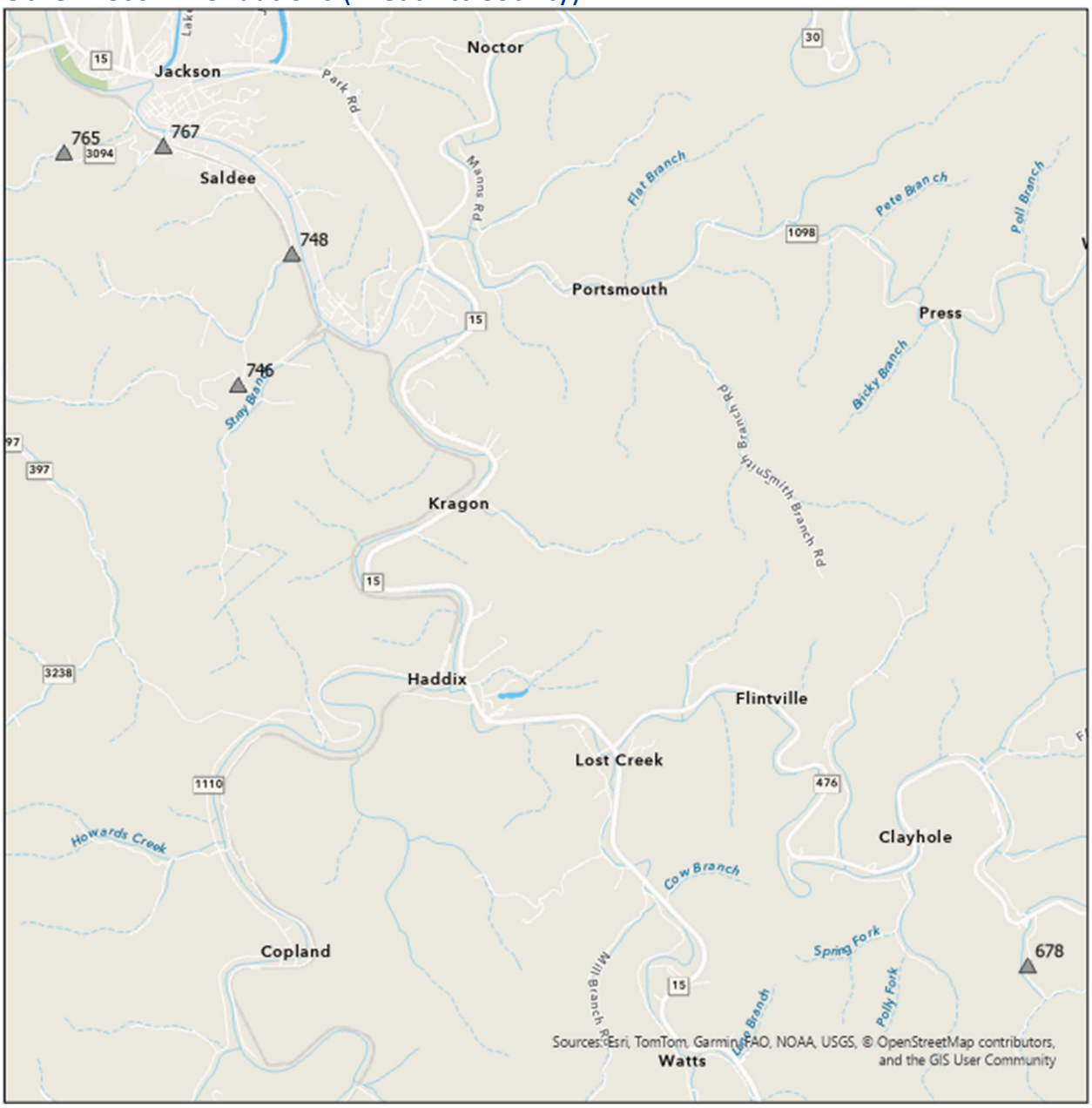


Exhibit Breathitt-F13: Other Item Locations

Point ID	RT_UNIQUE	RD_NAME	Issue Type	Description	Recommendation
678	013-CR-1117 -000	HARDSHELL CANEY RD	other	Retaining wall in poor condition.	Replace / Stabilize Retaining Wall
746	013-CR-1100 -000	STRAY BR RD	other	Road breaking off the side of the mountain	Repair and Stabilize Roadway
748	013-CR-1302 -000	LICK BRANCH-ARMORY RD	other	Railroad crossing	Install Signs
765	013-CR-1414 -000	TOWN HL RD	other	Road breaking off.	Repair and Stabilize Roadway
767	013-CR-1414 -000	TOWN HL RD	other	Railroad bridge.	Install Type 3 Object Marker

Exhibit Breathitt-F14: Other Item Recommendations

APPENDIX E: KNOTT COUNTY

Knott County Overview

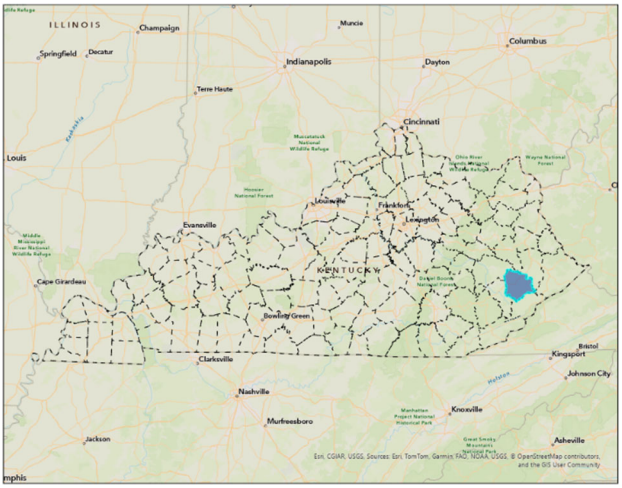


Exhibit Knott-1: Location Map

Key Information Table Knott County	
Population	15,513
Population in Underserved Communities	50%
Fatalities (All Roads)	0
Fatalities (County Roads)	0
Fatality rate per 100,000 persons	-
County Road Mileage	234.0
City Road Mileage	8.0
State Road Mileage	232.0
Total Mileage	**474.0**

Exhibit Knott-2: Key Information

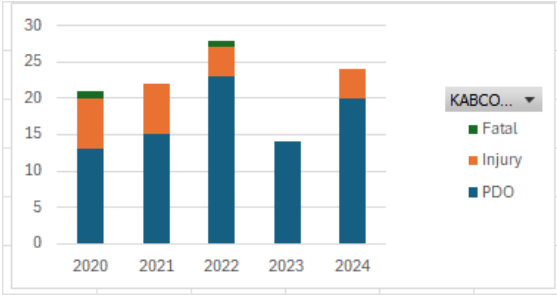


Figure Knott-3: Map of County Roadways

Crash Analysis



Figure Knott-4: Map of County Road Crashes



Year	Property Damage Only	Injury	Fatal	Total
2020	13	7	1	**21**
2021	15	7	0	**22**
2022	23	4	1	**28**
2023	14	0	0	**14**
2024	20	4	0	**24**

Figure Knott-5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	0	0	9	9
Backing	0	1	21	22
Head On	0	4	11	15
Opposing Left Turn	0	1	0	1
Rear End	0	0	3	3
Rear To Rear	0	0	2	2
Sideswipe-Opposit	0	0	8	8
Sideswipe-Same D	0	0	3	3
Single Vehicle	2	16	28	46
Total	**2**	**22**	**85**	**109**

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

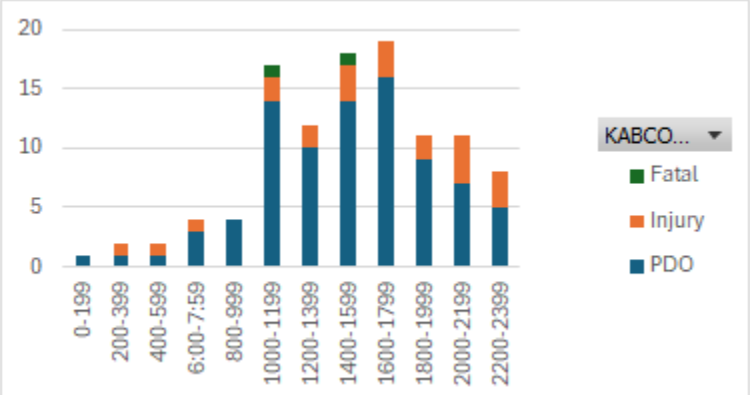


Figure Knott-7: Crashes and Severity by Time of Day

Focus Roadways



Exhibit Knott-8: Focus Roads

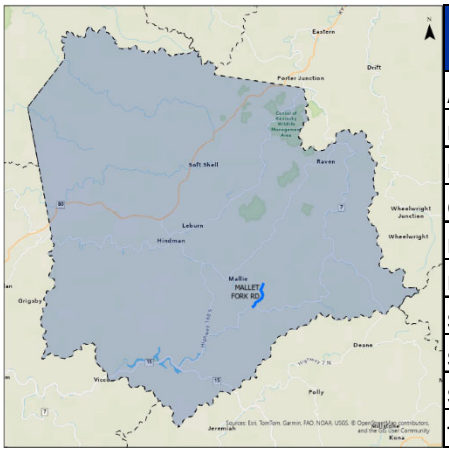
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crashe	Fatal Crashe	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Knott												
060-CR-1134 -000	1.67	Knott	Kentucky River	MALLET FORK RD	2	0	1	9.23	0.57	8.3%	8.3%	1
060-CR-1006 -000	4.05	Knott	Kentucky River	DRY CREEK RD	0	1	0	6.35	1.71	4.2%	16.7%	1
060-CR-1053 -000	3.53	Knott	Kentucky River	WILEY FORK RD	1	0	2	5.19	1.25	4.2%	25.0%	1
060-CR-1108 -000	2.54	Knott	Kentucky River	HOLLYBUSH RD	1	0	1	4.81	1.57	4.2%	29.2%	1
060-CR-1239 -000	2.44	Knott	Kentucky River	CLEAR CREEK RD	1	0	1	4.81	1.15	4.2%	33.3%	1
060-CR-1250 -000	1.05	Knott	Kentucky River	LICK BRANCH RD	1	0	0	4.42	0.91	4.2%	37.5%	1
060-CR-1155 -000	3.26	Knott	Kentucky River	MALLIE RD	1	0	1	4.81	0.45	4.2%	41.7%	1
060-CR-1113 -000	1.79	Knott	Kentucky River	HAWK RD	1	0	0	4.42	0.82	4.2%	45.8%	1
060-CR-1236 -000	1.27	Knott	Kentucky River	COCKRELLS TRACE RD	1	0	0	4.42	0.69	4.2%	54.2%	1
060-CR-1119 -000	2.99	Knott	Kentucky River	PUNCHEON RD	1	0	0	4.42	0.52	4.2%	62.5%	1
060-CR-1064 -000	0.29	Knott	Kentucky River	HUMMINGBIRD LN	1	0	0	4.42	0.41	4.2%	66.7%	1
060-CR-1324 -000	0.28	Knott	Kentucky River	DRIFTWOOD LN	1	0	0	4.42	0.37	4.2%	75.0%	1
060-CR-1193 -000	0.32	Knott	Kentucky River	C HALL RD	1	0	0	4.42	0.24	4.2%	79.2%	1
060-CR-1212 -000	3.86	Knott	Kentucky River	DEFEATED CREEK RD	1	0	0	4.42	0.23	4.2%	83.3%	1
060-CR-1629 -000	0.09	Knott	Kentucky River	RED OAK MOUNTAIN RD	1	0	0	4.42	0.15	4.2%	91.7%	1
060-CR-1390 -000	0.93	Knott	Kentucky River	STARFIRE HAUL RD	0	0	1	0.38	2.66	0.0%	100.0%	1
060-CR-1454 -000	0.13	Knott	Kentucky River	POPPY DR	0	0	0	0.00	2.68	0.0%	100.0%	1
060-CR-1024A -000	0.12	Knott	Kentucky River	MUSICAL LOOP	0	0	0	0.00	2.53	0.0%	100.0%	1
060-CR-1114 -000	2.74	Knott	Kentucky River	MULLINS BRANCH RD	0	0	2	0.77	1.27	0.0%	100.0%	1
060-CR-1043 -030	0.01	Knott	Kentucky River	BOLEN CEMETERY RD X	0	0	0	0.00	1.88	0.0%	100.0%	1
060-CR-1100 -000	2.65	Knott	Kentucky River	UPPER MILL CREEK RD	0	0	0	0.00	1.47	0.0%	100.0%	1
060-CR-1225 -000	2.09	Knott	Kentucky River	KELLY FORK RD	0	0	1	0.38	1.01	0.0%	100.0%	1
060-CR-1200 -000	0.90	Knott	Kentucky River	COMBS BRANCH RD	0	0	0	0.00	1.36	0.0%	100.0%	1
060-CR-1750 -000	0.05	Knott	Kentucky River	VERSIE LN	0	0	0	0.00	1.36	0.0%	100.0%	1
060-CR-1342 -000	4.49	Knott	Kentucky River	ELK VIEW DR	0	0	2	0.77	0.24	0.0%	100.0%	1
060-CR-1158 -000	0.55	Knott	Kentucky River	SAMS BR	0	0	0	0.00	0.85	0.0%	100.0%	1
060-CR-1037 -000	2.06	Knott	Kentucky River	ROCK FORK RD	0	0	0	0.00	0.21	0.0%	100.0%	1
060-CR-1117 -000	1.78	Knott	Kentucky River	BATES BRANCH RD	0	0	0	0.00	0.19	0.0%	100.0%	1
060-CR-1438 -000	0.15	Knott	Kentucky River	LORA MARTIN LN	0	0	0	0.00	0.16	0.0%	100.0%	1

Exhibit Knott-8: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Mallet Fork Rd (060-CR-1134 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	2	0	**2**
Total	**1**	**2**	**0**	**3**

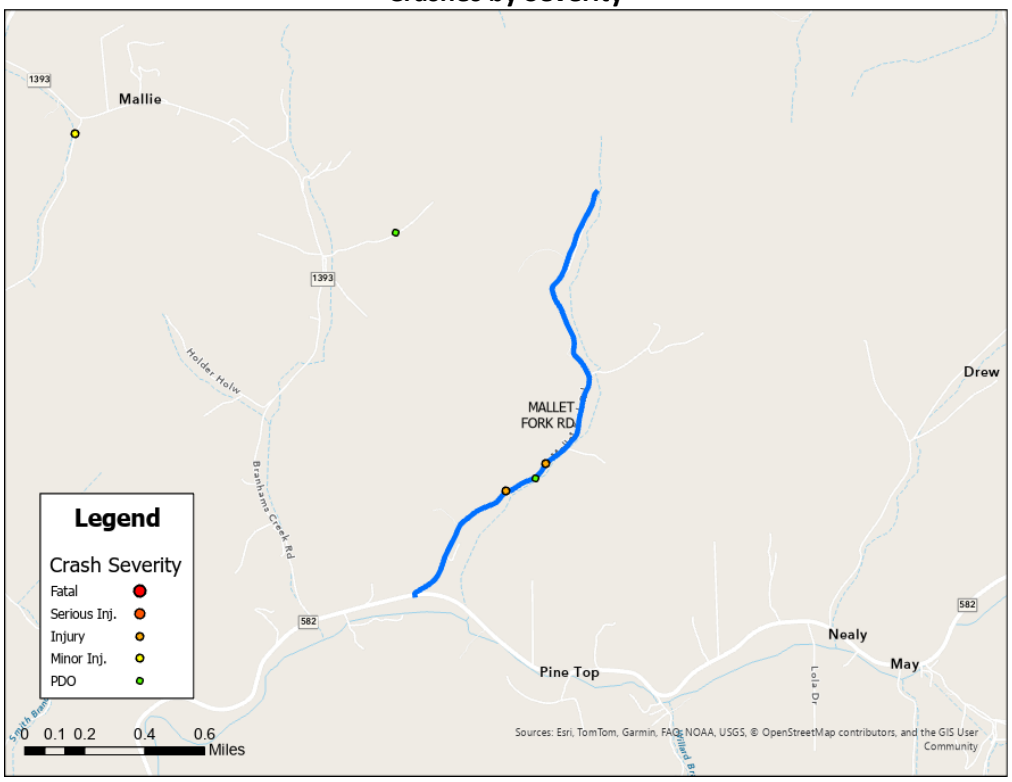
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
060-CR-1134 -000	MALLET FORK RD	12	3-Fair	RHR 6 - <5 ft non-recoverable	40-60

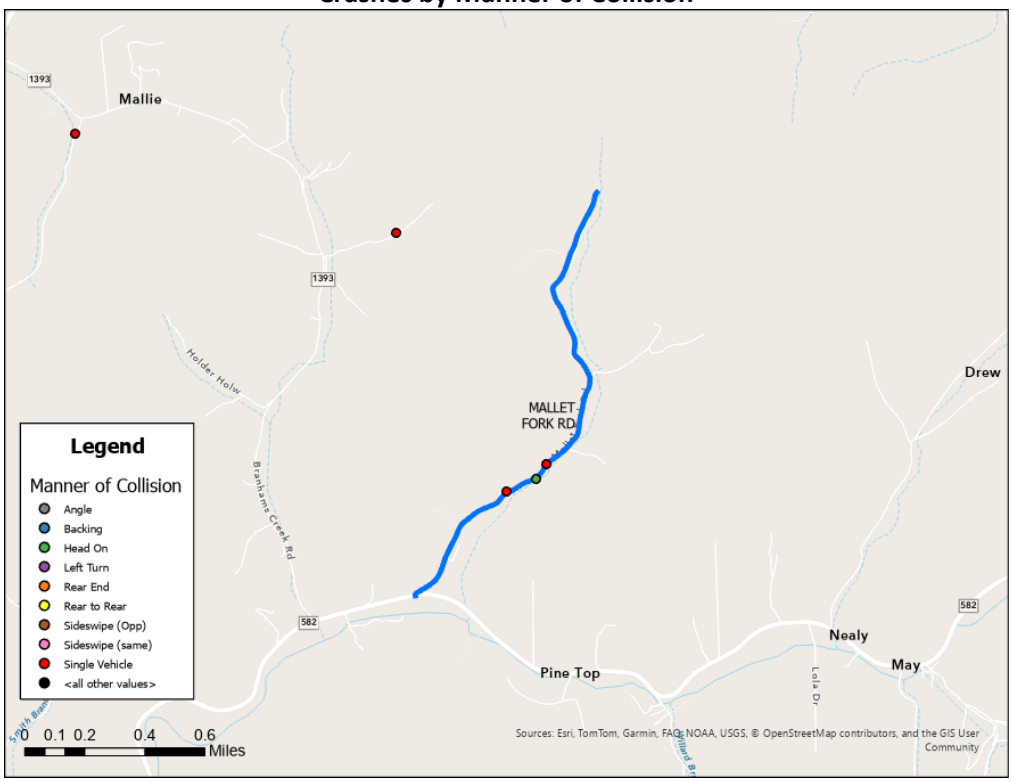
Roadway Typical Section



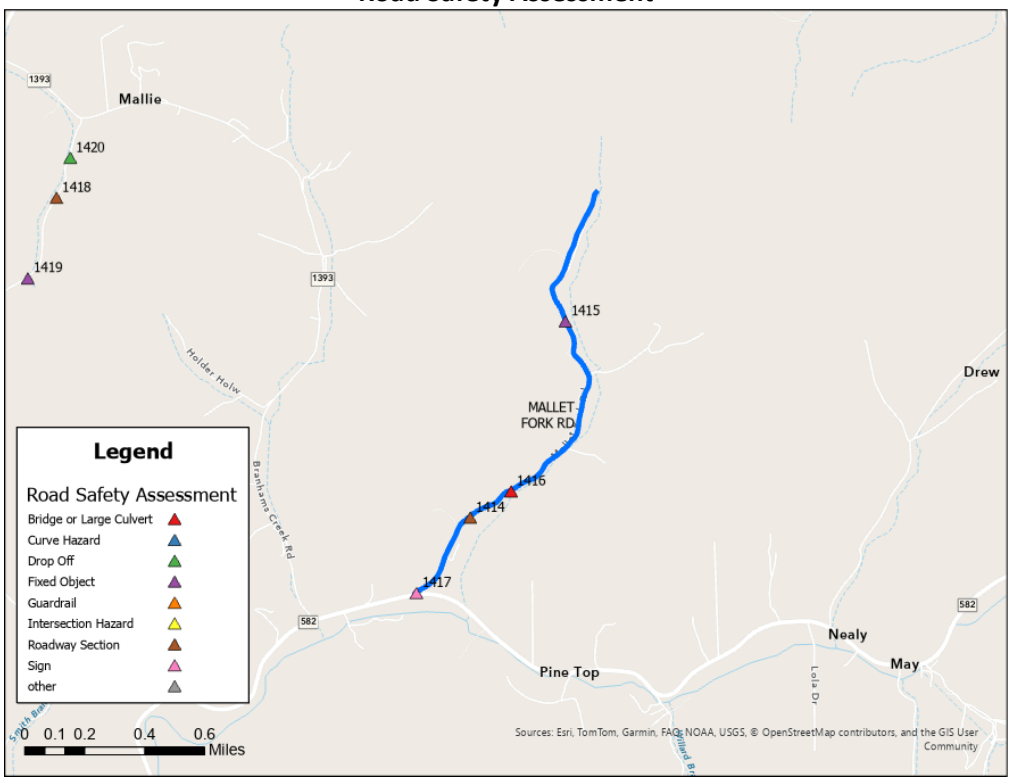
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



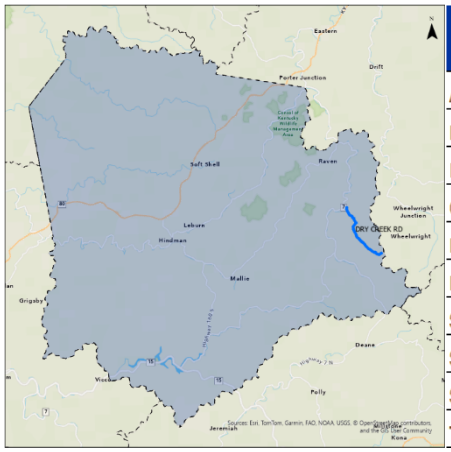
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
1415	060-CR-1134 -000	MALLET FORK RD	12	3-Fair	RHR 6 - < 5 ft non-recoverable	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
1415	060-CR-1134 -000	MALLET FORK RD	Fixed Object	Utility Pole	Series	>5	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail**	**OM Present1**	**Recommendation**
1416	060-CR-1134 -000	MALLET FORK RD	Bridge or Large Culvert	10	0	0	Install Object Markers

Dry Creek Rd (060-CR-1006 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	6	2	0	**8**
BACKING	1	0	0	**1**
HEAD ON	3	1	0	**4**
OPPOSING LEFT TURN	1	0	0	**1**
REAR END	8	2	0	**10**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	3	1	0	**4**
SINGLE VEHICLE	2	0	1	**3**
Total	**25**	**6**	**1**	**32**

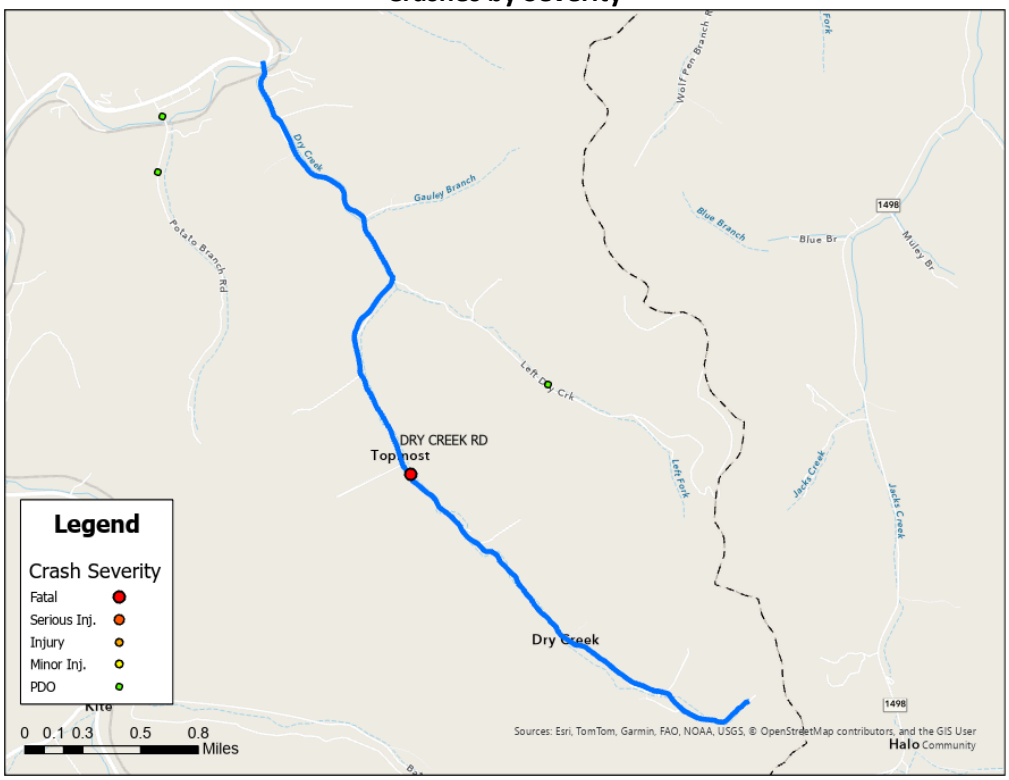
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
060-CR-1006 -000	DRY CREEK RD	12	3-Fair	RHR 6 - <5 ft non-recoverable	40-60

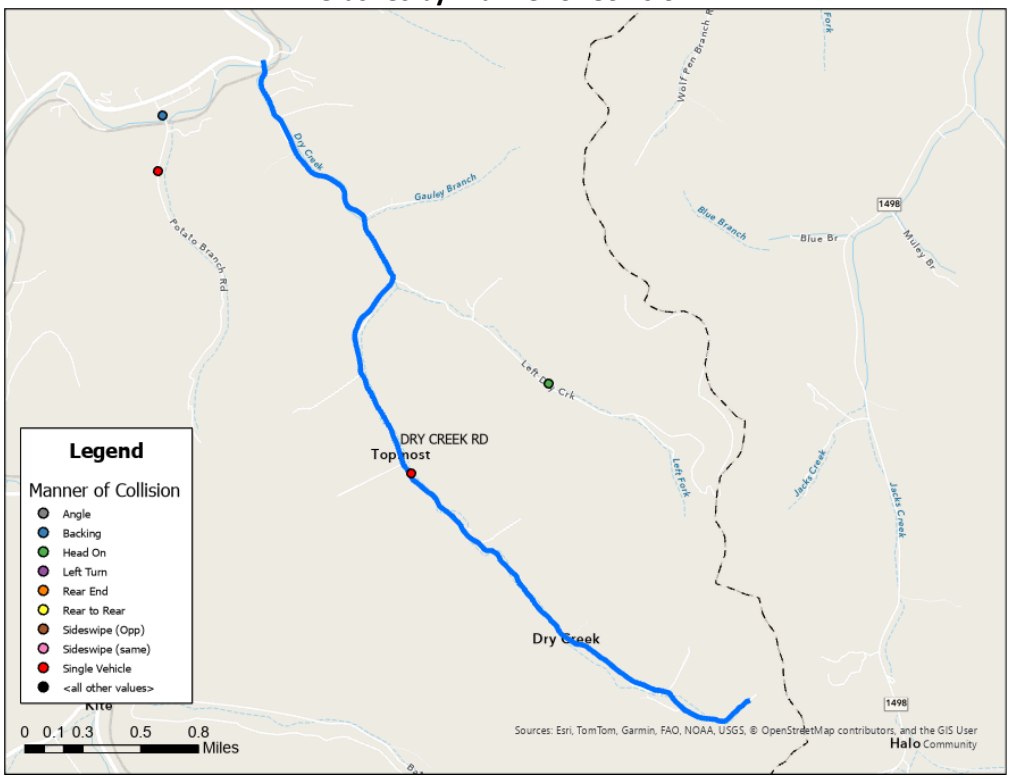
Roadway Typical Section



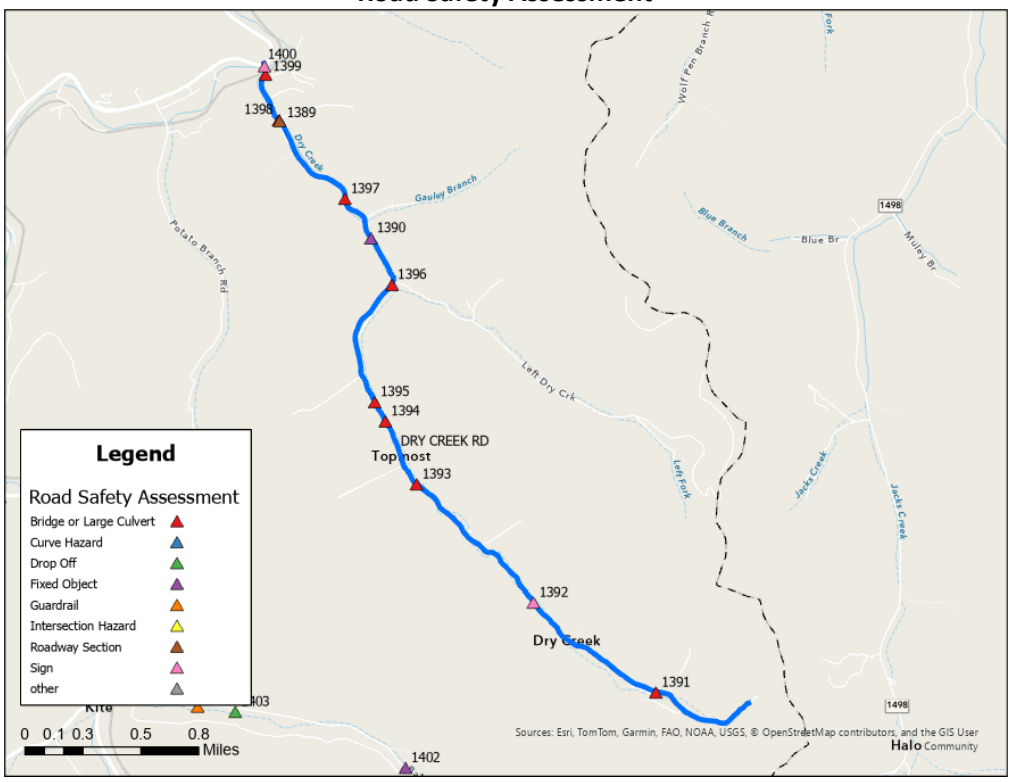
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

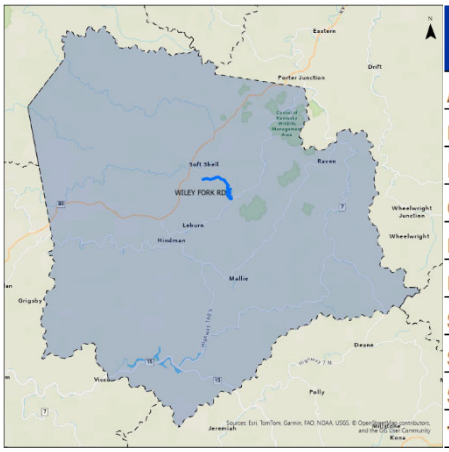
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline1	Curve Signin	Other Recommendations
1390	060-CR-1006 -000	DRY CREEK RD	12	3-Fair	RHR 6 - < 5 ft non-recoverable	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
1391	060-CR-1006 -000	DRY CREEK RD	Fixed Object	Utility Pole	Series	3-5	--

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
1391	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1393	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1394	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1395	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1396	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	4	0	--
1397	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1398	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1399	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	16	4	0	--

Wiley Fork Rd (060-CR-1053 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**2**	**1**	**0**	**3**

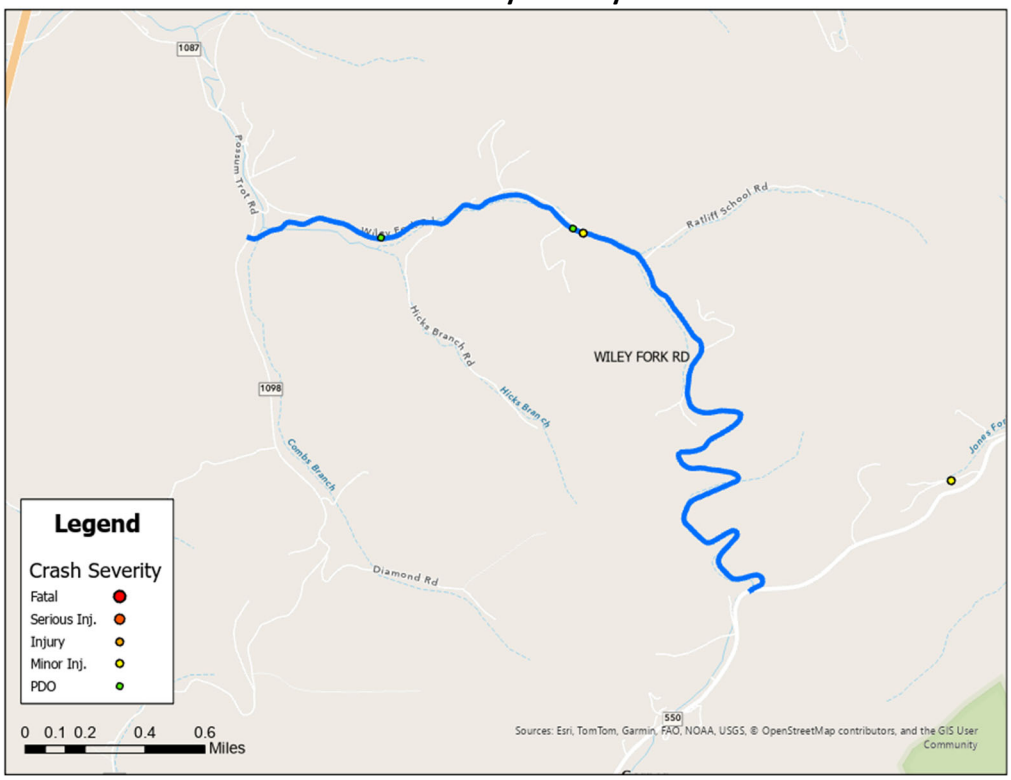
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
060-CR-1053 -000	WILEY FORK RD	10	1-Very Good	RHR 7 - <5 ft high injury	80-100
060-CR-1053 -000	WILEY FORK RD	10	4-Poor	RHR 7 - <5 ft high injury	60-80

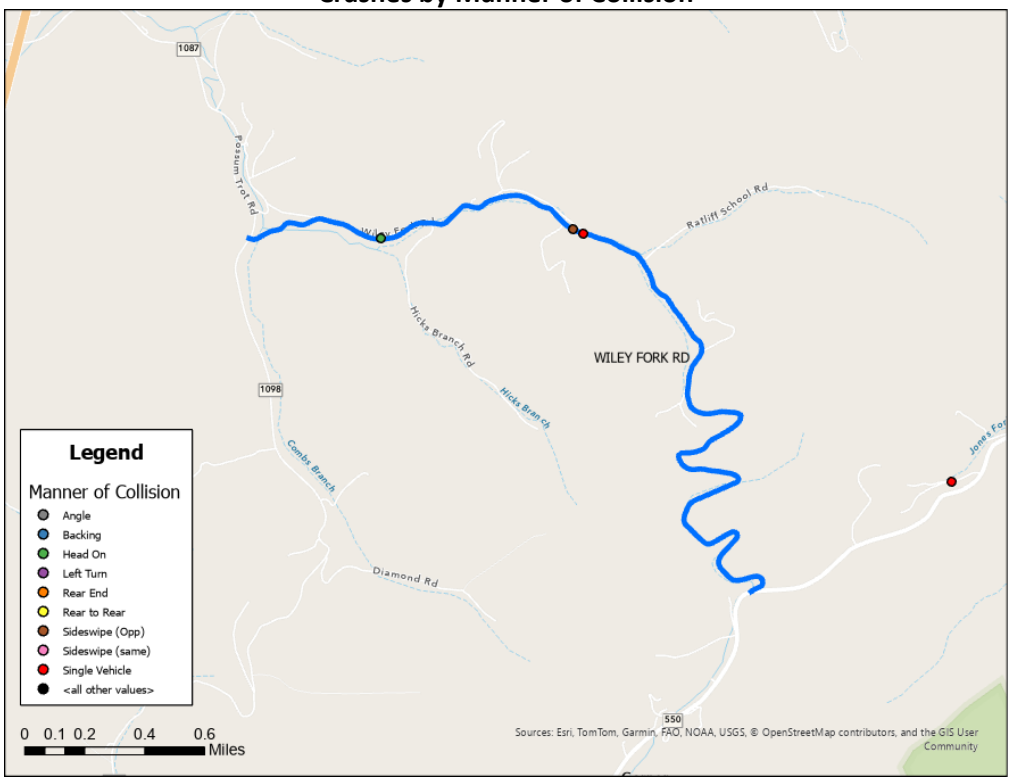
Roadway Typical Section



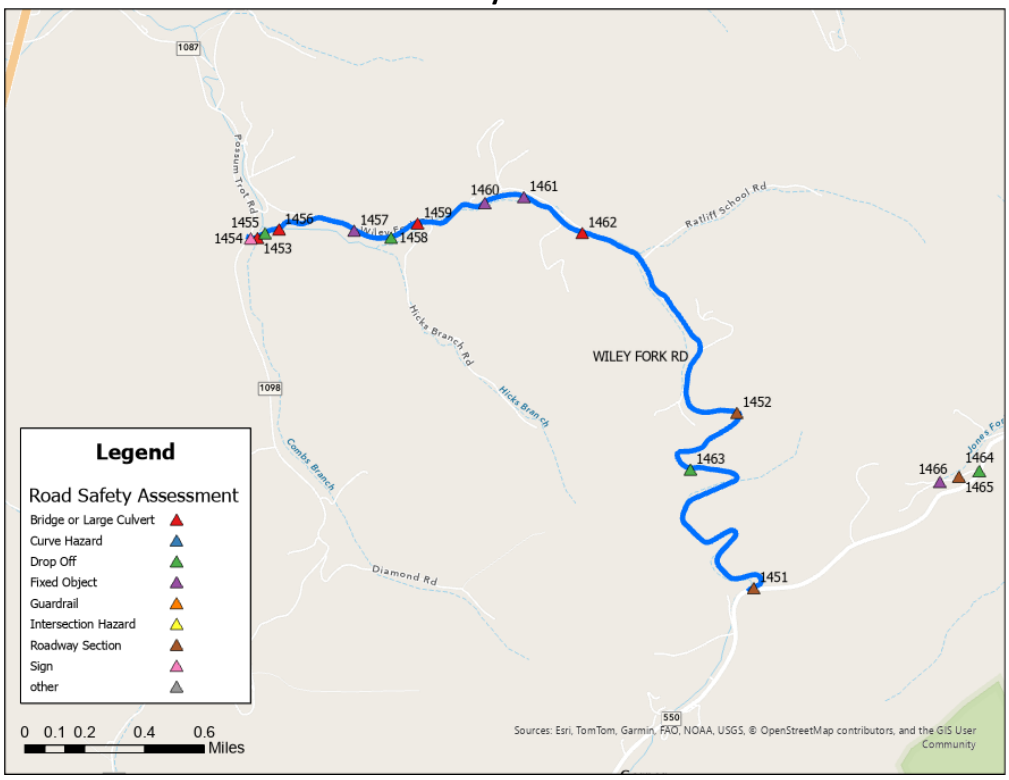
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
1452	060-CR-1053 -000	WILEY FORK RD	10	1-Very Good	RHR 7 - <5 ft high injury	80-100	✓	✓	✓	
1453	060-CR-1053 -000	WILEY FORK RD	10	4-Poor	RHR 7 - <5 ft high injury	60-80	✓	✓	✓	

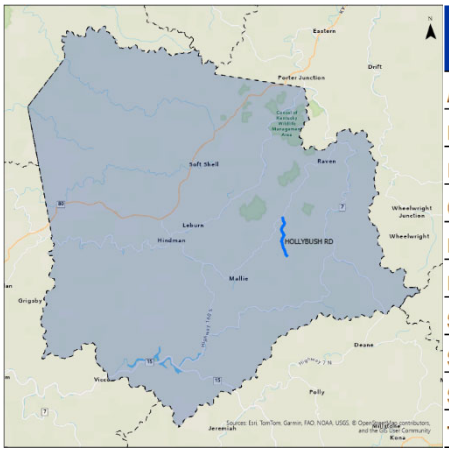
Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1456	060-CR-1053 -000	WILEY FORK RD	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
1459	060-CR-1053 -000	WILEY FORK RD	Drop Off	3-5	>10	--	Install Guardrail
1464	060-CR-1053 -000	WILEY FORK RD	Drop Off	0-1	>10	--	Install Guardrail

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
1458	060-CR-1053 -000	WILEY FORK RD	Fixed Object	Tree	Series	3-5	--
1461	060-CR-1053 -000	WILEY FORK RD	Fixed Object	Utility Pole	Single	3-5	--
1462	060-CR-1053 -000	WILEY FORK RD	Fixed Object	Utility Pole	Series	3-5	--

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
1453	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	8	4	0	--
1456	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1459	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1462	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers

Hollybush Rd (060-CR-1108 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	1	0	0	**1**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**1**	**1**	**0**	**2**

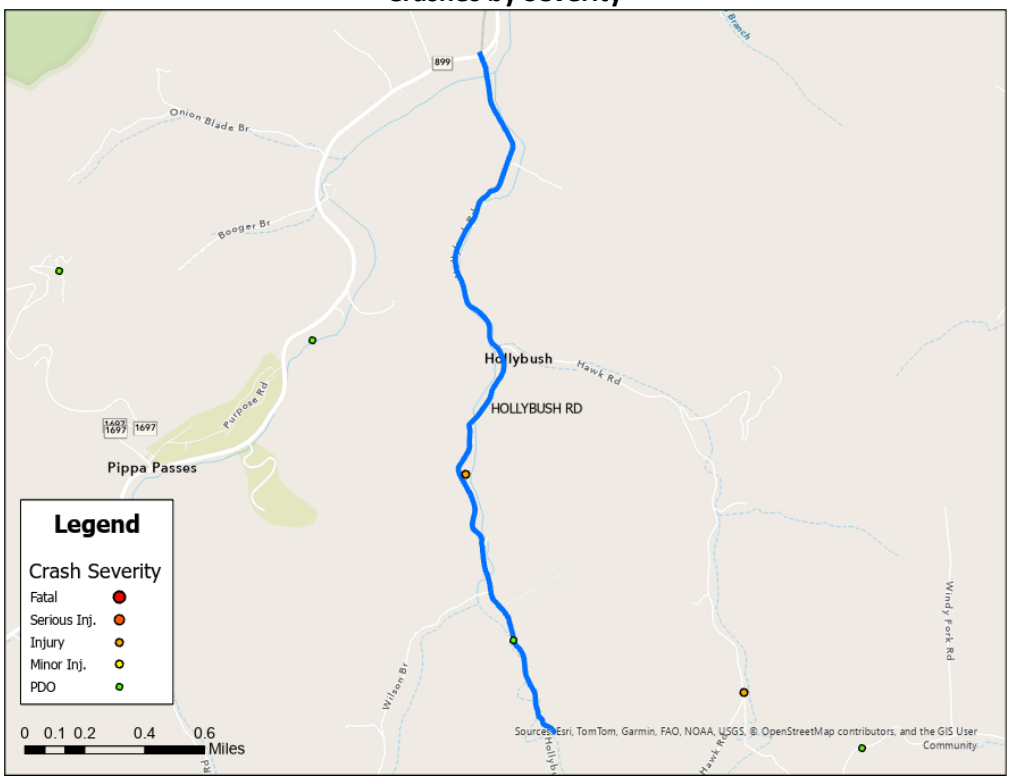
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
060-CR-1108 -000	HOLLYBUSH RD	14	3-Fair	RHR 6 - <5 ft non-recoverable	0-20
060-CR-1108 -000	HOLLYBUSH RD	10	2-Good	RHR 7 - <5 ft high injury	20-40
060-CR-1108 -000	HOLLYBUSH RD	10	2-Good	RHR 6 - <5 ft non-recoverable	20-40

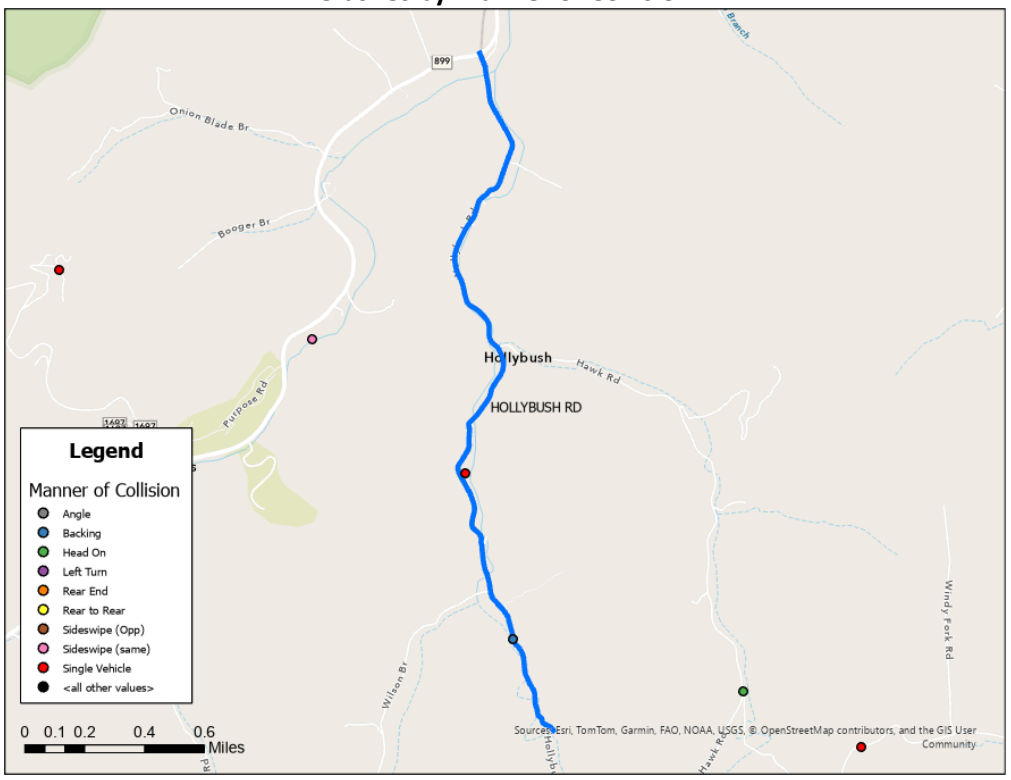
Roadway Typical Section



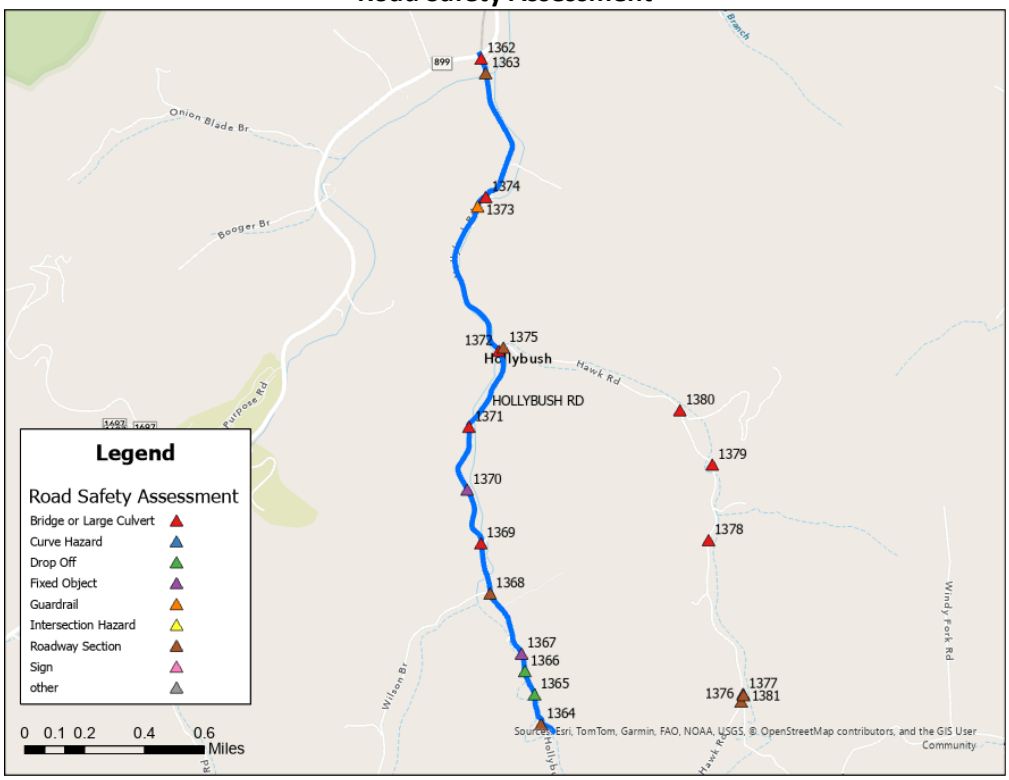
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

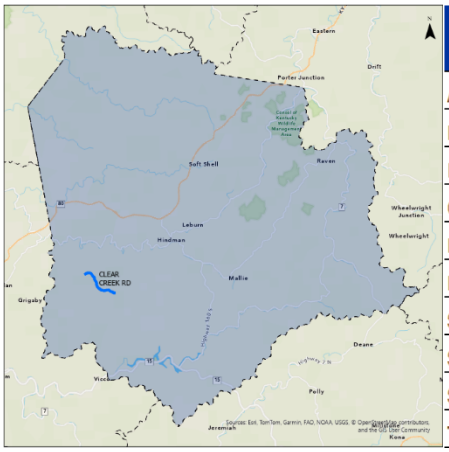
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Condition	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
1364	060-CR-1108 -000	HOLLYBUSH RD	14	3-Fair	RHR 6 - <5 ft non-recoverable	0-20	✓	✓	✓	
1365	060-CR-1108 -000	HOLLYBUSH RD	10	2-Good	RHR 7 - <5 ft high injury	20-40				Consider removing from county road maintenance
1369	060-CR-1108 -000	HOLLYBUSH RD	10	2-Good	RHR 6 - <5 ft non-recoverable	20-40	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1366	060-CR-1108 -000	HOLLYBUSH RD	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
1367	060-CR-1108 -000	HOLLYBUSH RD	Drop Off	0-1	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1368	060-CR-1108 -000	HOLLYBUSH RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1371	060-CR-1108 -000	HOLLYBUSH RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
1374	060-CR-1108 -000	HOLLYBUSH RD	Guardrail	Good	Maybe	All_	--

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
1362	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	12	4	0	--
1369	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1371	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1372	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1374	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	10	4	0	--

Clear Creek Rd (060-CR-1239 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	3	0	0	**3**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**4**	**1**	**0**	**5**

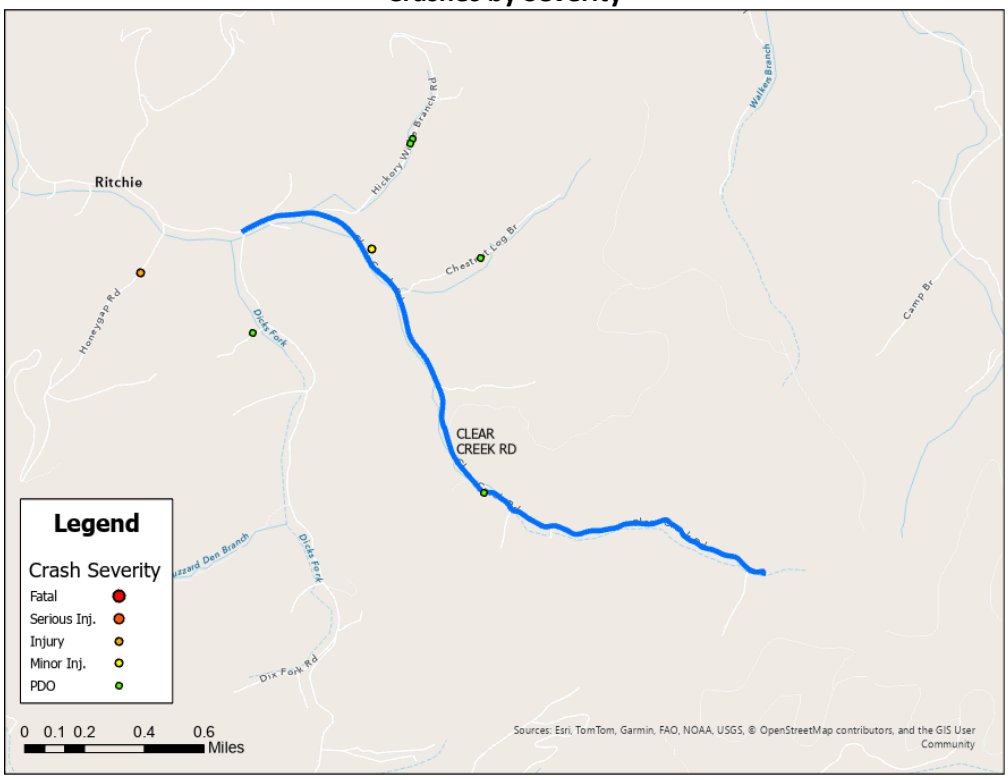
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
060-CR-1239 -000	CLEAR CREEK RD	12	1-Very Good	RHR 4 - 5-10 ft ~ recoverable	40-60

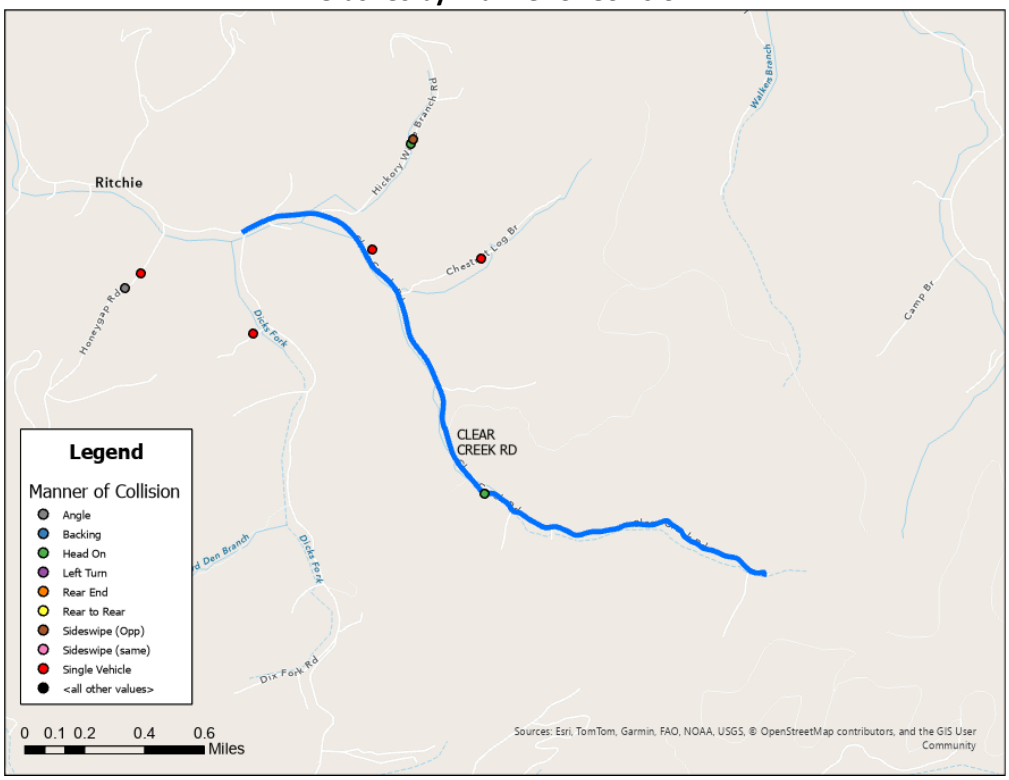
Roadway Typical Section



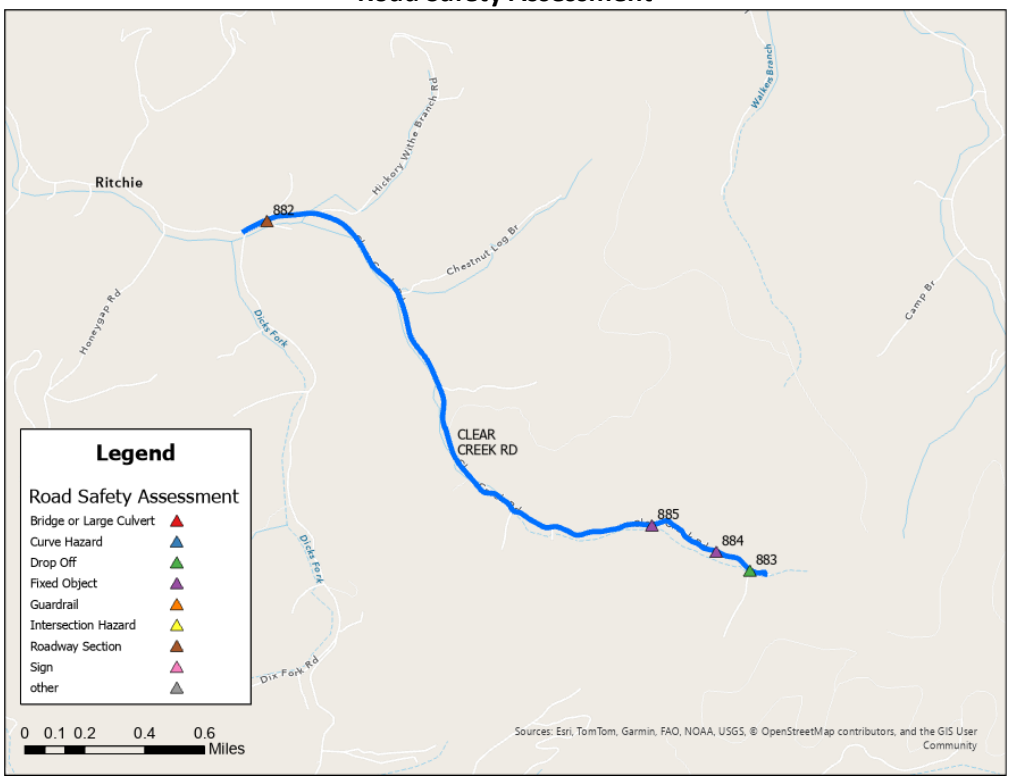
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
883	060-CR-1239 -000	CLEAR CREEK RD	12	1-Very Good	RHR 4 - 5-10 ft ~ recoverable	40-60	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
884	060-CR-1239 -000	CLEAR CREEK RD	Drop Off	0-1	5-10	--	Shoulderering
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
885	060-CR-1239 -000	CLEAR CREEK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
886	060-CR-1239 -000	CLEAR CREEK RD	Fixed Object	Utility Pole	Series	3-5	--

Other Roadways

General Roadway Conditions and Recommendations (Knott County)

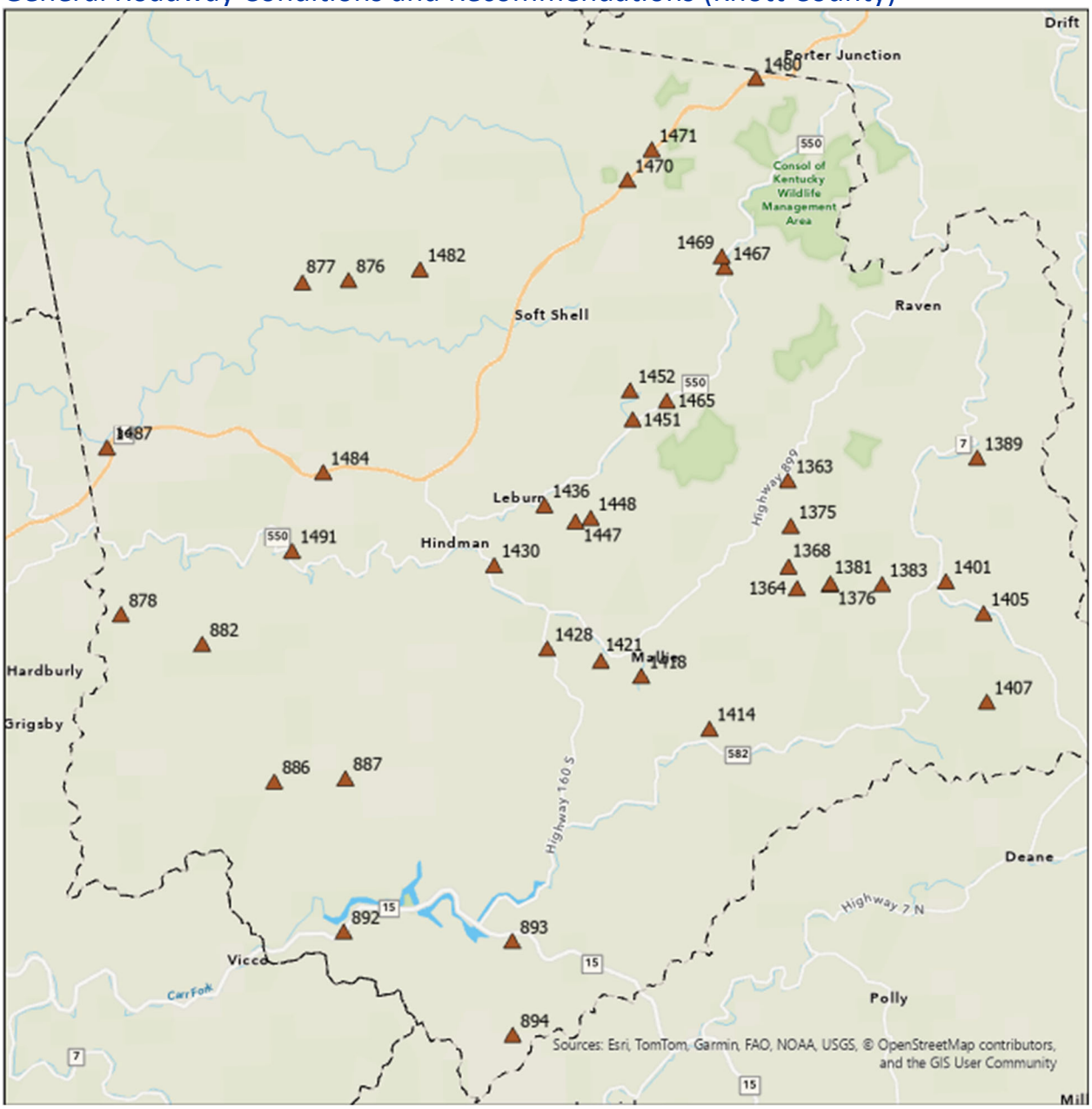


Exhibit Knott-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
1415	060-CR-1134 -000	MALLET FORK RD	12	3	6	40-60		✓	✓	✓	
1390	060-CR-1006 -000	DRY CREEK RD	12	3	6	40-60		✓	✓	✓	
1453	060-CR-1053 -000	WILEY FORK RD	10	4	7	60-80		✓	✓	✓	
1452	060-CR-1053 -000	WILEY FORK RD	10	1	7	80-100		✓	✓	✓	
1364	060-CR-1108 -000	HOLLYBUSH RD	14	3	6	0-20		✓	✓	✓	
1365	060-CR-1108 -000	HOLLYBUSH RD	10	2	7	20-40	Private property sign.				Consider removing from county road maintenance
1369	060-CR-1108 -000	HOLLYBUSH RD	10	2	6	20-40		✓	✓	✓	
883	060-CR-1239 -000	CLEAR CREEK RD	12	3	5	40-60		✓	✓	✓	
1492	060-CR-1250 -000	LICK BRANCH RD	10	3	6	40-60		✓	✓	✓	
1419	060-CR-1155 -000	MALLIE RD	10	3	6	60-80		✓	✓	✓	
1376	060-CR-1113 -000	HAWK RD	12	3	4	40-60		✓	✓	✓	
1377	060-CR-1113 -000	HAWK RD	10	1	7	60-80		✓	✓	✓	
879	060-CR-1236 -000	COCKRELLS TRACE RD	10	3	6	60-80		✓	✓	✓	
1406	060-CR-1119 -000	PUNCHEON RD	10	2	6	40-60		✓	✓	✓	
1408	060-CR-1119 -000	PUNCHEON RD	10	1	7	60-80		✓	✓	✓	
1466	060-CR-1064 -000	HUMMINGBIRD LN	10	3	7	40-60		✓	✓	✓	
1485	060-CR-1324 -000	DRIFTWOOD LN	10	2	6	40-60		✓	✓	✓	
1448	060-CR-1193 -000	C HALL RD	10	3	6	60-80		✓	✓	✓	
1449	060-CR-1193 -000	C HALL RD	10	1	7	80-100	Impassable	✓	✓	✓	Consider removing from county road maintenance
894	060-CR-1212 -000	DEFEATED CREEK RD	10	3	6	60-80		✓	✓	✓	
895	060-CR-1212 -000	DEFEATED CREEK RD	10	1	6	60-80		✓	✓	✓	
893	060-CR-1629 -000	RED OAK MOUNTAIN RD	24+	4	4	20-40		✓		✓	
1471	060-CR-1043 -030	BOLEN CEMETERY RD X	24+	4	4	0-20		✓			
1382	060-CR-1114 -000	MULLINS BRANCH RD	14	3	7	60-80		✓			
1483	060-CR-1342 -000	ELK VIEW DR	14	2	6	60-80		✓			
1488	060-CR-1390 -000	STARFIRE HAUL RD	12	2	6	60-80		✓			
887	060-CR-1225 -000	KELLY FORK RD	10	3	5	60-80		✓			
1431	060-CR-1200 -000	COMBS BRANCH RD	10	3	5	60-80		✓			
1437	060-CR-1100 -000	UPPER MILL CREEK RD	10	3	6	60-80		✓			
1472	060-CR-1037 -000	ROCK FORK RD	10	3	6	40-60		✓			
1384	060-CR-1114 -000	MULLINS BRANCH RD	10	2	7	60-80		✓			
1402	060-CR-1117 -000	BATES BRANCH RD	10	2	7	80-100		✓			
1470	060-CR-1024A -000	MUSICAL LOOP	10	2	7	60-80		✓			
877	060-CR-1342 -000	ELK VIEW DR	10	1	7	80-100		✓			
878	060-CR-1342 -000	ELK VIEW DR	10	1	6	80-100		✓			
888	060-CR-1225 -000	KELLY FORK RD	10	1	7	60-80		✓			
1422	060-CR-1158 -000	SAMS BR	10	1	6	60-80		✓			
1429	060-CR-1750 -000	VERSIE LN	10	1	7	60-80		✓			
1468	060-CR-1438 -000	LORA MARTIN LN	10	1	7	80-100		✓			
1481	060-CR-1454 -000	POPPY DR	10	1	6	80-100		✓			

Exhibit Knott-F2: General Roadway Recommendations

Bridge / Culvert Recommendations (Knott County)

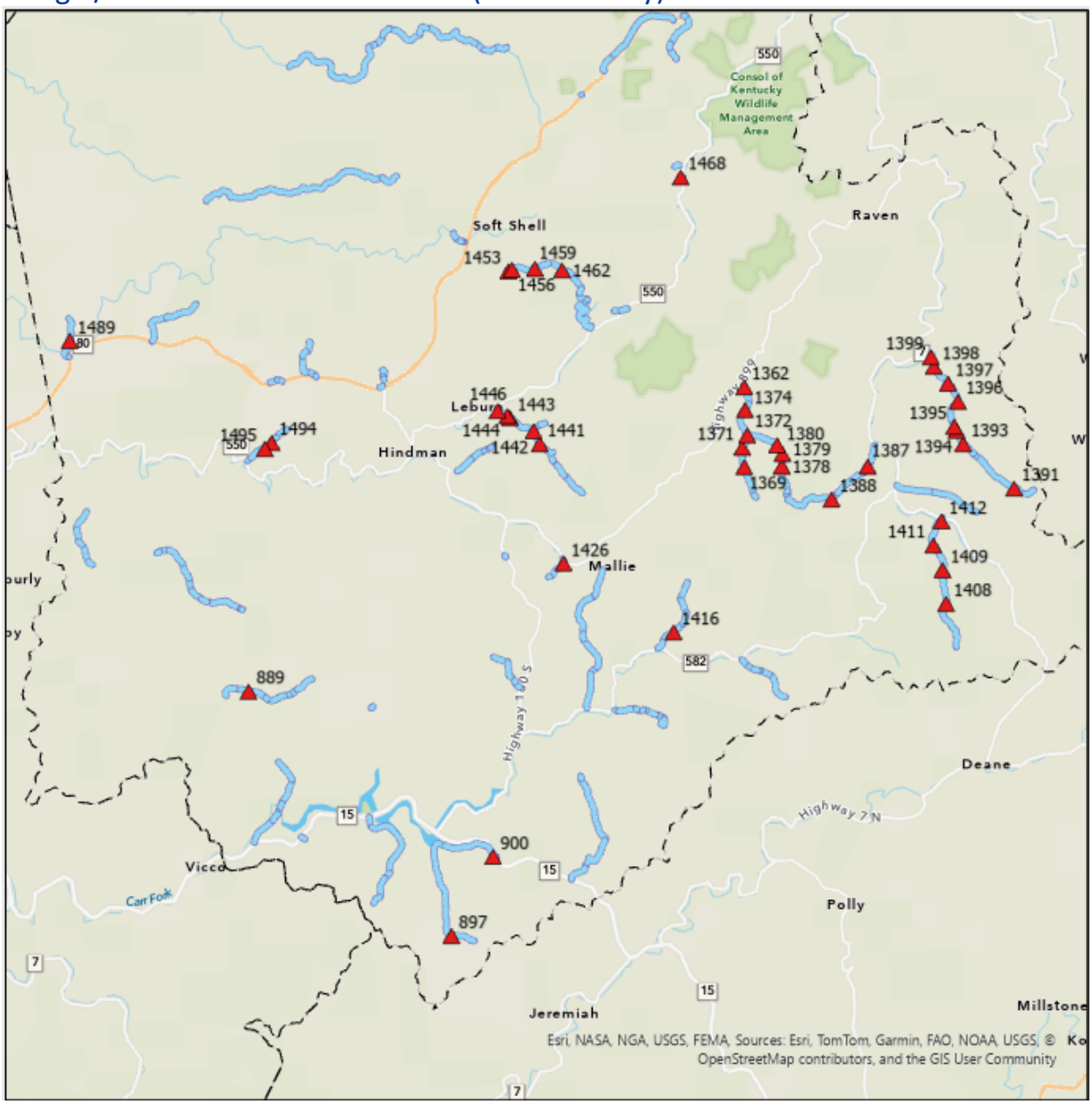


Exhibit Knott-F3: Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guard Presen	Object Marker	Recommendation
897	060-CR-1212 -000	DEFEATED CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
900	060-CR-1212 -000	DEFEATED CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1391	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1393	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1394	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1395	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1396	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	4	0	--
1397	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1398	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1399	060-CR-1006 -000	DRY CREEK RD	Bridge or Large Culvert	16	4	0	--
1378	060-CR-1113 -000	HAWK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1379	060-CR-1113 -000	HAWK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1380	060-CR-1113 -000	HAWK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1362	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	12	4	0	--
1369	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1371	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1372	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1374	060-CR-1108 -000	HOLLYBUSH RD	Bridge or Large Culvert	10	4	0	--
889	060-CR-1225 -000	KELLY FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1494	060-CR-1250 -000	LICK BRANCH RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1495	060-CR-1250 -000	LICK BRANCH RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1468	060-CR-1438 -000	LORA MARTIN LN	Bridge or Large Culvert	8	0	0	Install Object Markers
1416	060-CR-1134 -000	MALLET FORK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1387	060-CR-1114 -000	MULLINS BRANCH RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1388	060-CR-1114 -000	MULLINS BRANCH RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1408	060-CR-1119 -000	PUNCHEON RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1409	060-CR-1119 -000	PUNCHEON RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1411	060-CR-1119 -000	PUNCHEON RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1412	060-CR-1119 -000	PUNCHEON RD	Bridge or Large Culvert	12	0	2	Install Object Markers
1426	060-CR-1158 -000	SAMS BR	Bridge or Large Culvert	8	0	0	Install Object Markers
1489	060-CR-1390 -000	STARFIRE HAUL RD	Bridge or Large Culvert	8	0	1	Install Object Markers
1441	060-CR-1100 -000	UPPER MILL CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1442	060-CR-1100 -000	UPPER MILL CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1443	060-CR-1100 -000	UPPER MILL CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1444	060-CR-1100 -000	UPPER MILL CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1446	060-CR-1100 -000	UPPER MILL CREEK RD	Bridge or Large Culvert	14	0	0	Install Object Markers
1453	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	8	4	0	--
1456	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1459	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
1462	060-CR-1053 -000	WILEY FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers

Exhibit Knott-F4: Bridge / Culvert Recommendations

Curve Recommendations (Knott County)

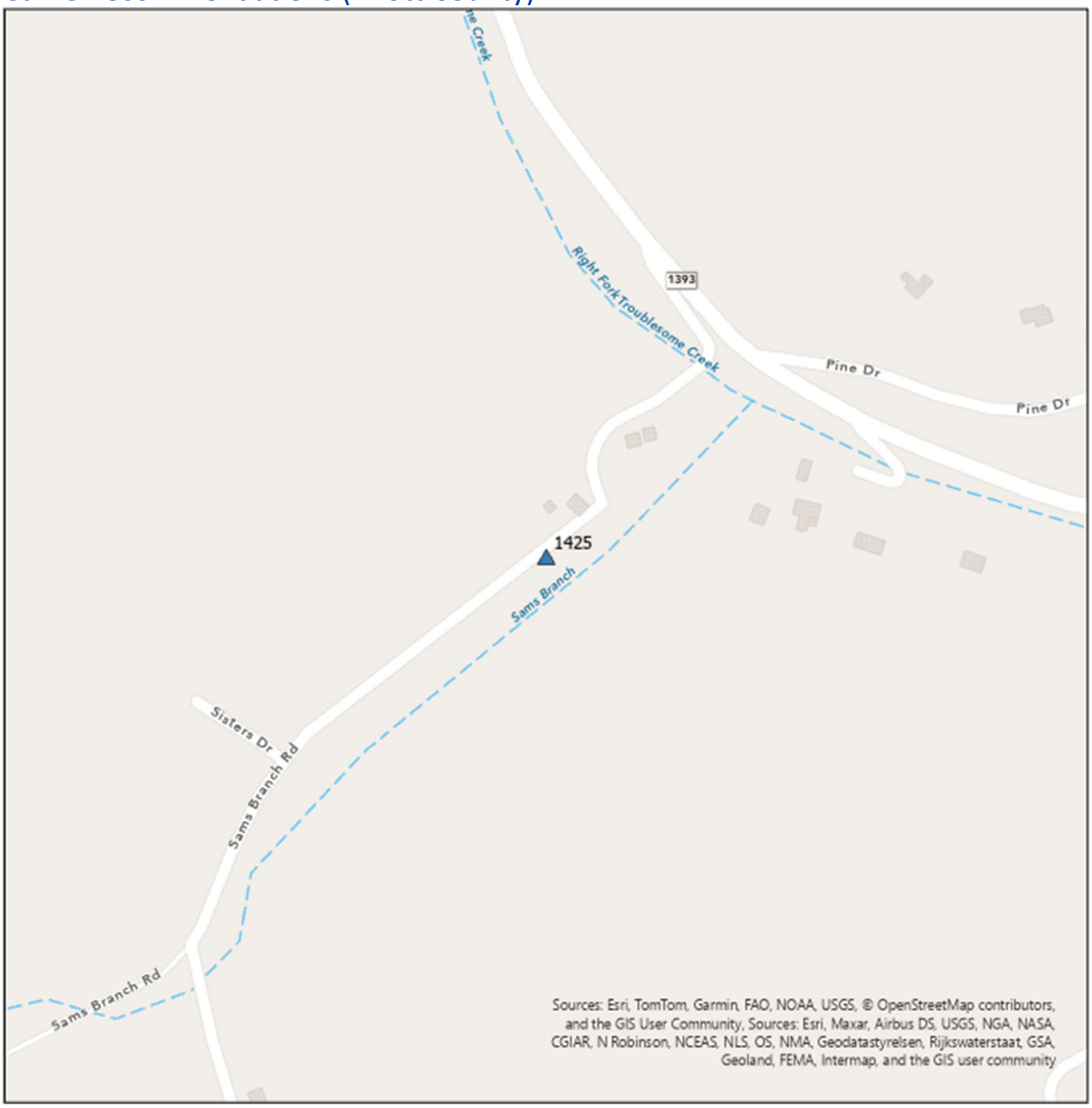


Exhibit Knott-F5: Focus Road Curve Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
1425	060-CR-1158 -000	SAMS BR	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation

Exhibit Knott-F6: Curve Recommendations

Roadside Drop Off Recommendations (Knott County)

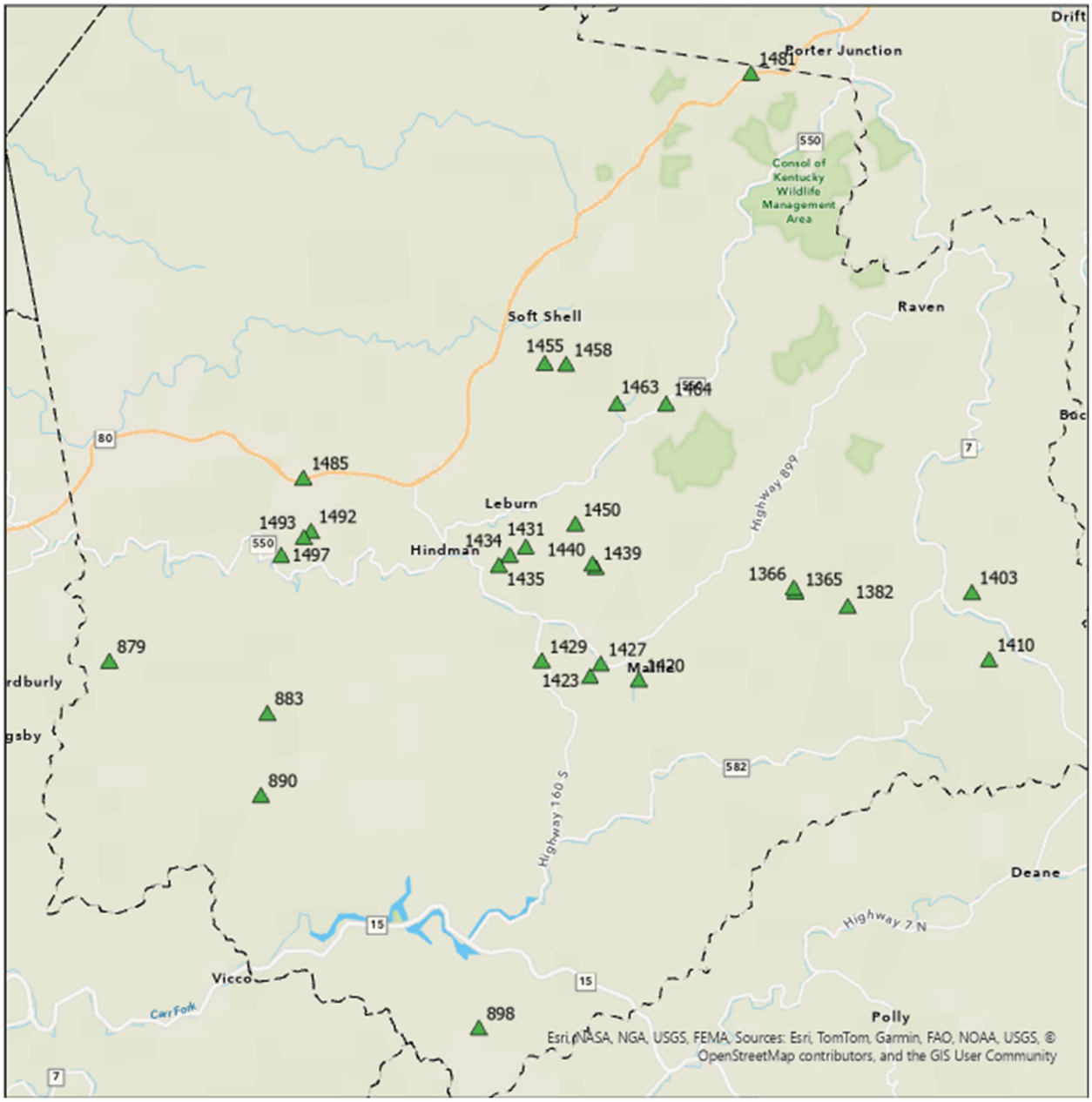


Exhibit Knott-F7: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
1360	013-CR-1148 -000	BARWICK RD	Drop Off	3-5	>10	Install Guardrail
1361	013-CR-1148 -000	BARWICK RD	Drop Off	3-5	>10	Install Guardrail
636	013-CR-1139 -000	COCKRELL FRK RD	Drop Off	3-5	>10	Install Guardrail
1226	013-CR-1230 -000	FREEMAN FRK RD	Drop Off	3-5	>10	Install Guardrail
671	013-CR-1117 -000	HARDSHELL CANEY RD	Drop Off	0-1	>10	Install Guardrail
1214	013-CR-1207 -000	HENSLEY RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
728	013-CR-1302 -000	LICK BRANCH-ARMORY RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
385	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	Install Guardrail
387	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	Install Guardrail
391	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	Install Guardrail
1357	013-CR-1225 -000	MILLER BR BARWICK RD	Drop Off	1-3	>10	Install Guardrail
645	013-CR-1135 -000	NOBLE RD	Drop Off	1-3	>10	Install Guardrail
1219	013-CR-1259 -000	OLD BUCK RD	Drop Off	3-5	>10	Install Guardrail
1190	013-CR-1312 -000	PANBOWL RD	Drop Off	1-3	>10	Install Guardrail
692	013-CR-1018 -000	PRESS HOWARD FRK	Drop Off	1-3	>10	Install Guardrail
1201	013-CR-1256 -000	PUNCHEON CRK RD	Drop Off	3-5	2-5	Shouldering / Repair if Possible
1202	013-CR-1256 -000	PUNCHEON CRK RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
1354	013-CR-1250 -000	RILEY CEMETERY RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
1183	013-CR-1305 -000	ROARK RDG RD	Drop Off	1-3	>10	Install Guardrail
1184	013-CR-1305 -000	ROARK RDG RD	Drop Off	0-1	>10	Install Guardrail
798	013-CR-1351 -000	ROCK LICK RD	Drop Off	3-5	>10	Install Guardrail
703	013-CR-1004 -000	SMITH BR RD	Drop Off	0-1	5-10	Shoulderering
704	013-CR-1004 -000	SMITH BR RD	Drop Off	0-1	5-10	Shoulderering
717	013-CR-1301G -000	SNOWDEN BR RD	Drop Off	0-1	2-5	Shoulderering
739	013-CR-1100 -000	STRAY BR RD	Drop Off	1-3	>10	Install Guardrail
742	013-CR-1100 -000	STRAY BR RD	Drop Off	3-5	2-5	Shouldering / Repair if Possible
756	013-CR-1414 -000	TOWN HL RD	Drop Off	0-1	>10	Install Guardrail
658	013-CR-1156 -000	WATTS RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
663	013-CR-1156 -000	WATTS RD	Drop Off	1-3	>10	Install Guardrail

Exhibit Knott-F8: Roadside Drop Off Recommendations

Fixed Object Recommendations (Knott County)

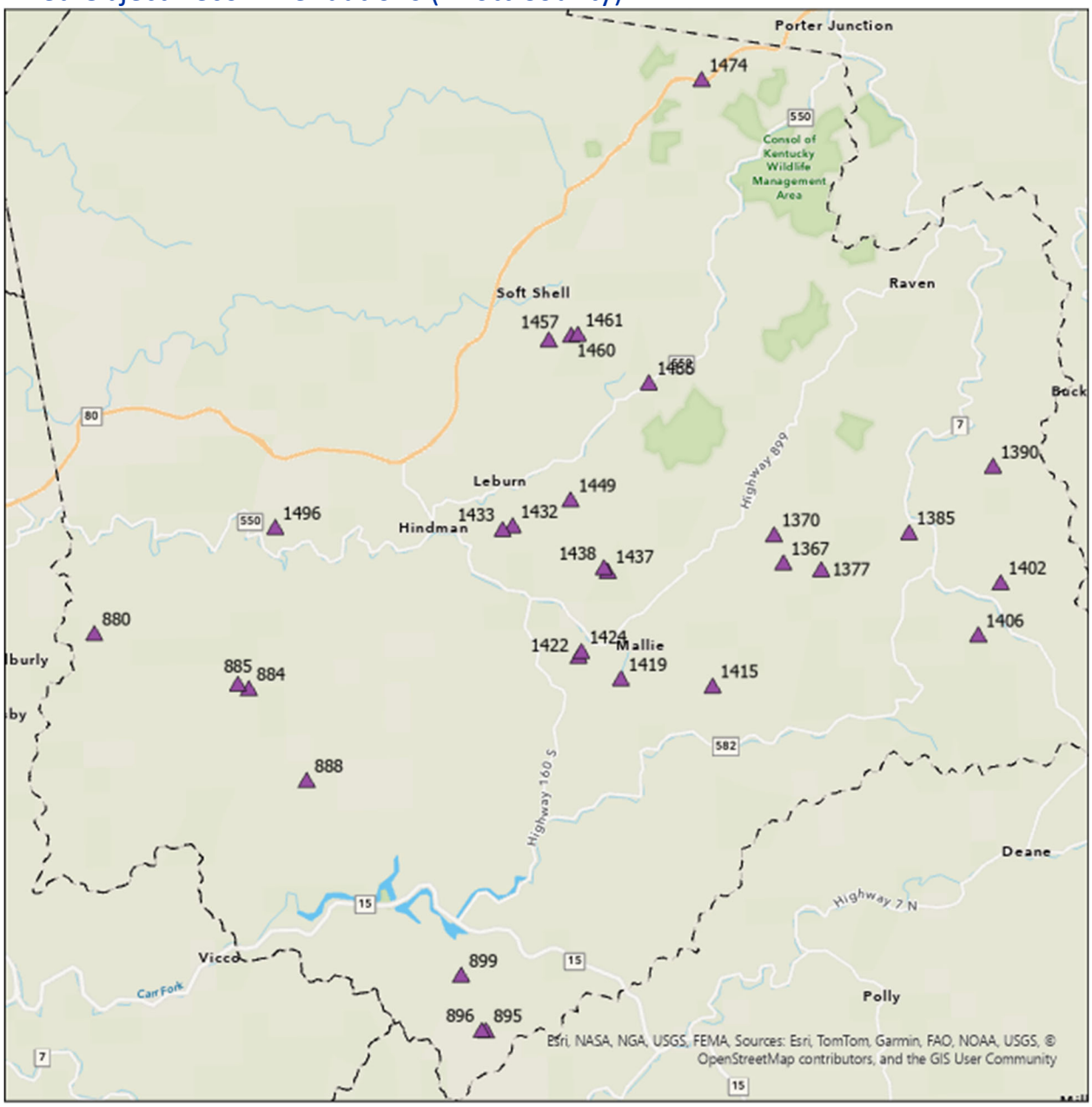


Exhibit Knott-F9: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
895	060-CR-1212 -000	DEFEATED CREEK RD	Fixed Object	Utility Pole	Single	3-5	--
1437	060-CR-1100 -000	UPPER MILL CREEK RD	Fixed Object	Utility Pole	Single	3-5	--
1460	060-CR-1053 -000	WILEY FORK RD	Fixed Object	Utility Pole	Single	3-5	--
884	060-CR-1239 -000	CLEAR CREEK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1370	060-CR-1108 -000	HOLLYBUSH RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1422	060-CR-1158 -000	SAMS BR	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1432	060-CR-1200 -000	COMBS BRANCH RD	Fixed Object	Tree	Series	3-5	--
1457	060-CR-1053 -000	WILEY FORK RD	Fixed Object	Tree	Series	3-5	--
880	060-CR-1236 -000	COCKRELLS TRACE RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1367	060-CR-1108 -000	HOLLYBUSH RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1377	060-CR-1113 -000	HAWK RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1385	060-CR-1114 -000	MULLINS BRANCH RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1433	060-CR-1200 -000	COMBS BRANCH RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1449	060-CR-1193 -000	C HALL RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1466	060-CR-1064 -000	HUMMINGBIRD LN	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1496	060-CR-1250 -000	LICK BRANCH RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
885	060-CR-1239 -000	CLEAR CREEK RD	Fixed Object	Utility Pole	Series	3-5	--
888	060-CR-1225 -000	KELLY FORK RD	Fixed Object	Utility Pole	Series	3-5	--
896	060-CR-1212 -000	DEFEATED CREEK RD	Fixed Object	Utility Pole	Series	3-5	--
899	060-CR-1212 -000	DEFEATED CREEK RD	Fixed Object	Utility Pole	Series	3-5	--
1390	060-CR-1006 -000	DRY CREEK RD	Fixed Object	Utility Pole	Series	3-5	--
1419	060-CR-1155 -000	MALLIE RD	Fixed Object	Utility Pole	Series	3-5	--
1424	060-CR-1158 -000	SAMS BR	Fixed Object	Utility Pole	Series	3-5	--
1438	060-CR-1100 -000	UPPER MILL CREEK RD	Fixed Object	Utility Pole	Series	3-5	--
1461	060-CR-1053 -000	WILEY FORK RD	Fixed Object	Utility Pole	Series	3-5	--
1402	060-CR-1117 -000	BATES BRANCH RD	Fixed Object	Utility Pole	Series	>5	--
1406	060-CR-1119 -000	PUNCHEON RD	Fixed Object	Utility Pole	Series	>5	--
1415	060-CR-1134 -000	MALLET FORK RD	Fixed Object	Utility Pole	Series	>5	--
1474	060-CR-1037 -000	ROCK FORK RD	Fixed Object	Utility Pole	Series	>5	--

Exhibit Knott-F10: Fixed Object Recommendations

Guardrail Recommendations (Knott County)



Exhibit Knott-F11: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
1373	060-CR-1108 -000	HOLLYBUSH RD	Guardrail	Good	Maybe	All_	--
1404	060-CR-1117 -000	BATES BRANCH RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1445	060-CR-1100 -000	UPPER MILL CREEK RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1475	060-CR-1037 -000	ROCK FORK RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1477	060-CR-1037 -000	ROCK FORK RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1478	060-CR-1037 -000	ROCK FORK RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met

Exhibit Knott-F12: Guardrail Recommendations

APPENDIX F: LEE COUNTY

Lee County Overview

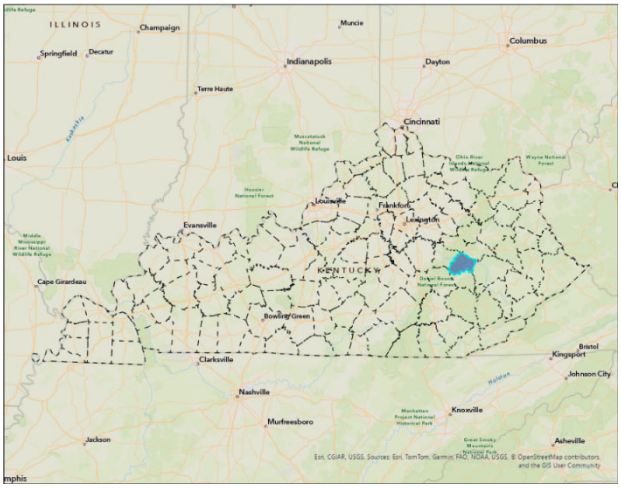


Exhibit Lee-1: Location Map

Key Information Table Lee County	
Population	6,751
Population in Underserved Communities	58%
Fatalities (All Roads)	29
Fatalities (County Roads)	4
Fatality rate per 100,000 persons	429.57
County Road Mileage	312.0
City Road Mileage	15.0
State Road Mileage	123.0
Total Mileage	**450.0**

Exhibit Lee-2: Key Information

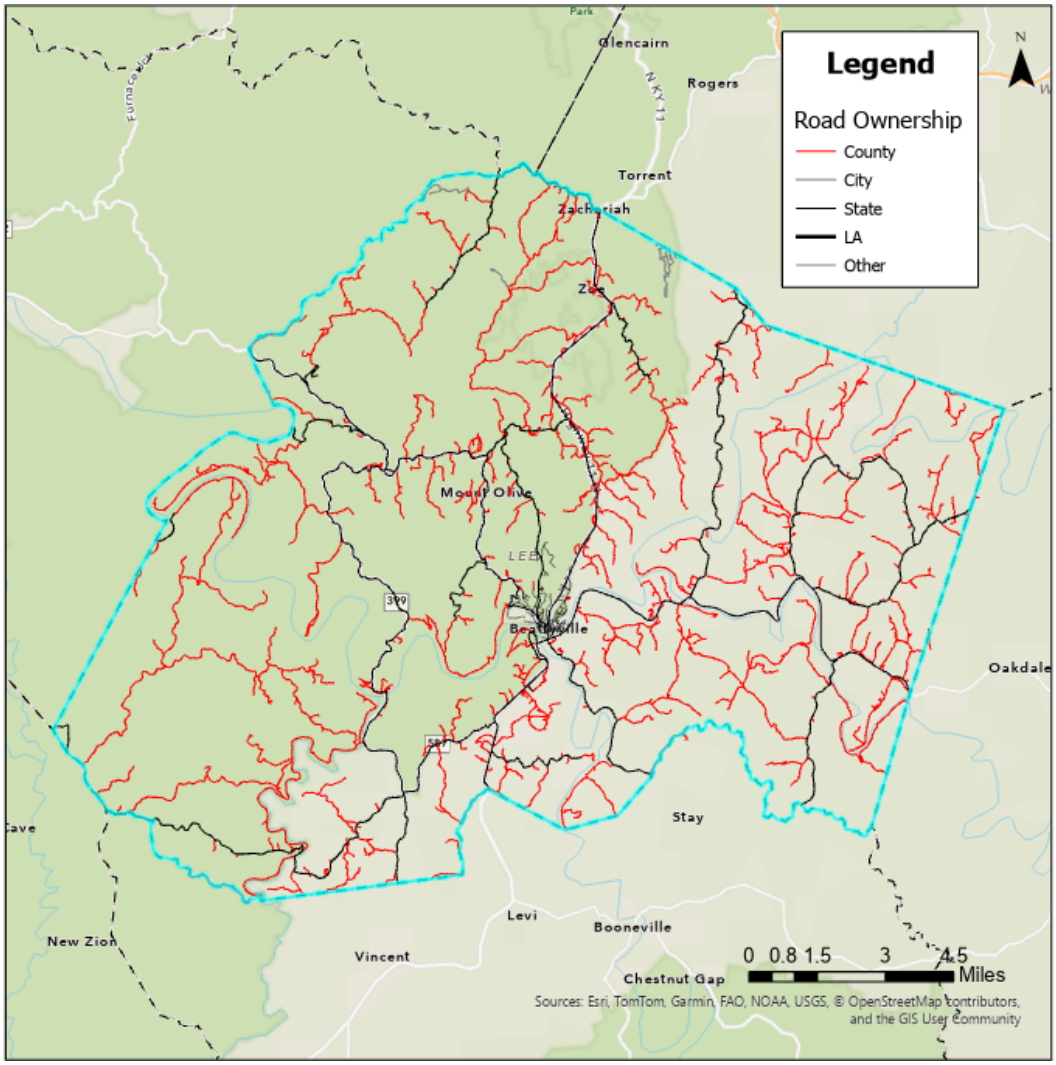


Figure Lee-3: Map of County Roadways

Crash Analysis

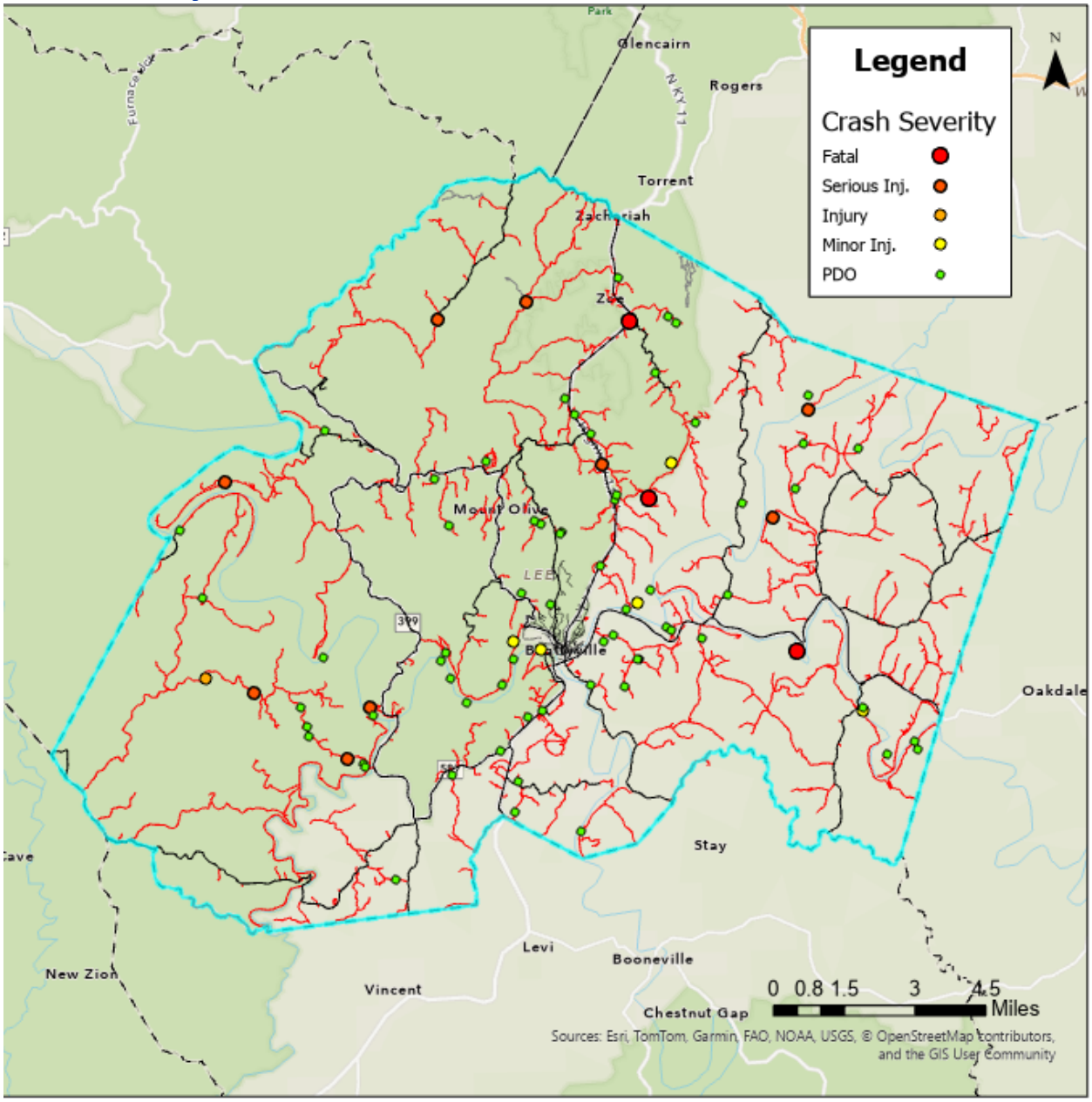
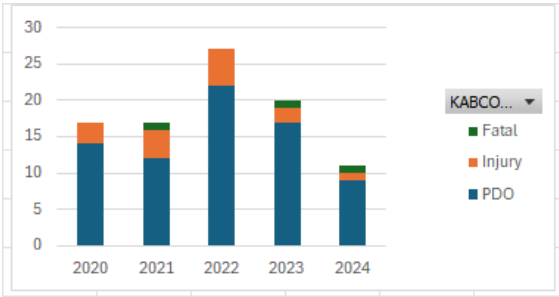


Figure Lee-4: Map of County Road Crashes



Year	Property Damage Only	Injury	Fatal	Total
2020	14	3	0	**17**
2021	12	4	1	**17**
2022	22	5	0	**27**
2023	17	2	1	**20**
2024	9	1	1	**11**

Table Lee-5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	0	0	6	6
Backing	0	0	13	13
Head On	0	3	5	8
Opposing Left Turn	0	0	1	1
Rear End	0	0	1	1
Rear To Rear	0	0	1	1
Sideswipe-Opposit	0	3	13	16
Sideswipe-Same D	0	0	2	2
Single Vehicle	3	9	32	44
Total	**3**	**15**	**74**	**92**

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

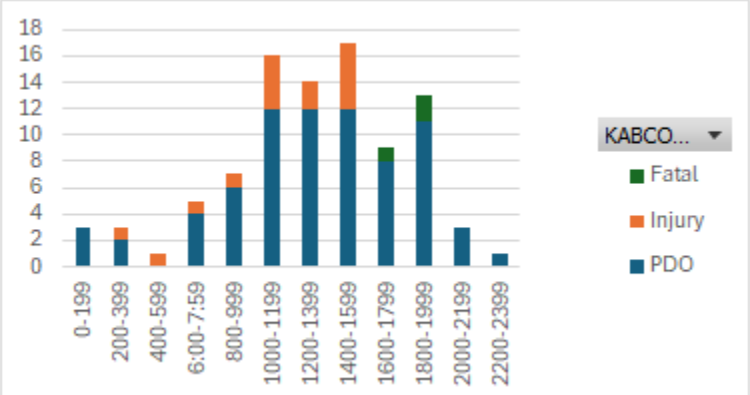


Figure Lee-7: Crashes and Severity by Time of Day

Focus Roadways

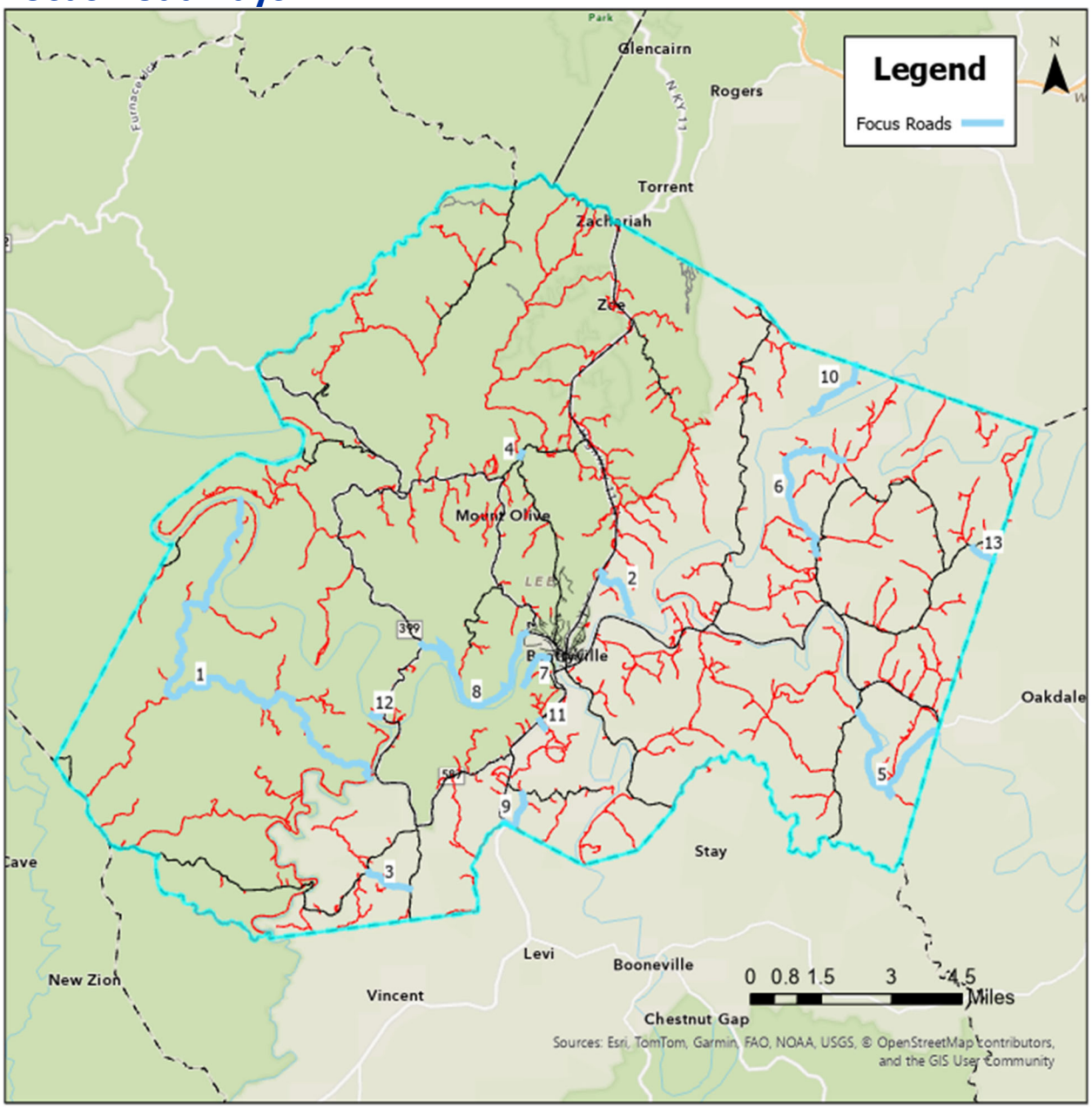


Exhibit Lee-8: Focus Roads

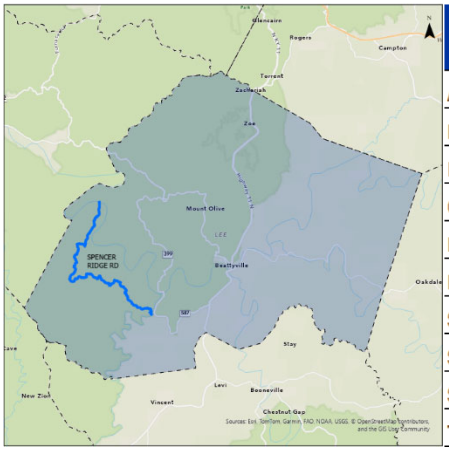
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Lee												
065-CR-1244 -000	11.90	Lee	Kentucky River	SPENCER RIDGE RD	3	0	6	10.00	0.69	16.7%	16.7%	1
065-CR-1135 -000	4.21	Lee	Kentucky River	MILL BRANCH SCHOOL RD	1	1	3	7.62	0.20	11.1%	27.8%	1
065-CR-1200 -000	4.92	Lee	Kentucky River	WHITE ASH RD	1	0	6	4.29	0.10	5.6%	33.3%	1
065-CR-1003 -000	1.43	Lee	Kentucky River	ROCK OF AGES RD	1	0	2	3.33	0.47	5.6%	50.0%	1
065-CR-1049 -000	1.56	Lee	Kentucky River	SANDY RIDGE RD	1	0	1	3.10	0.09	5.6%	72.2%	1
065-CR-1250G -000	0.20	Lee	Kentucky River	WEST RAILROAD ST	1	0	0	2.86	0.08	5.6%	88.9%	1
065-CR-1216 -000	1.00	Lee	Kentucky River	DELVINTA RD	0	0	1	0.24	2.60	0.0%	100.0%	1
065-CR-1396 -000	0.10	Lee	Kentucky River	DOGWOOD LN	0	0	0	0.00	2.59	0.0%	100.0%	1
065-CR-1210 -000	0.99	Lee	Kentucky River	CAUDILL RD	0	0	1	0.24	0.27	0.0%	100.0%	1
065-CR-1020 -000	3.70	Lee	Kentucky River	ABNER FLAT RD	0	0	1	0.24	0.24	0.0%	100.0%	1
065-CR-1102B -000	0.20	Lee	Kentucky River	BOWLES SUBDIVISION	0	0	0	0.00	0.12	0.0%	100.0%	1

Exhibit Lee-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Spencer Ridge Rd (065-CR-1244 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	1	0	0	**1**
BACKING	2	0	0	**2**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	1	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	3	2	0	**5**
Total	**7**	**3**	**0**	**10**

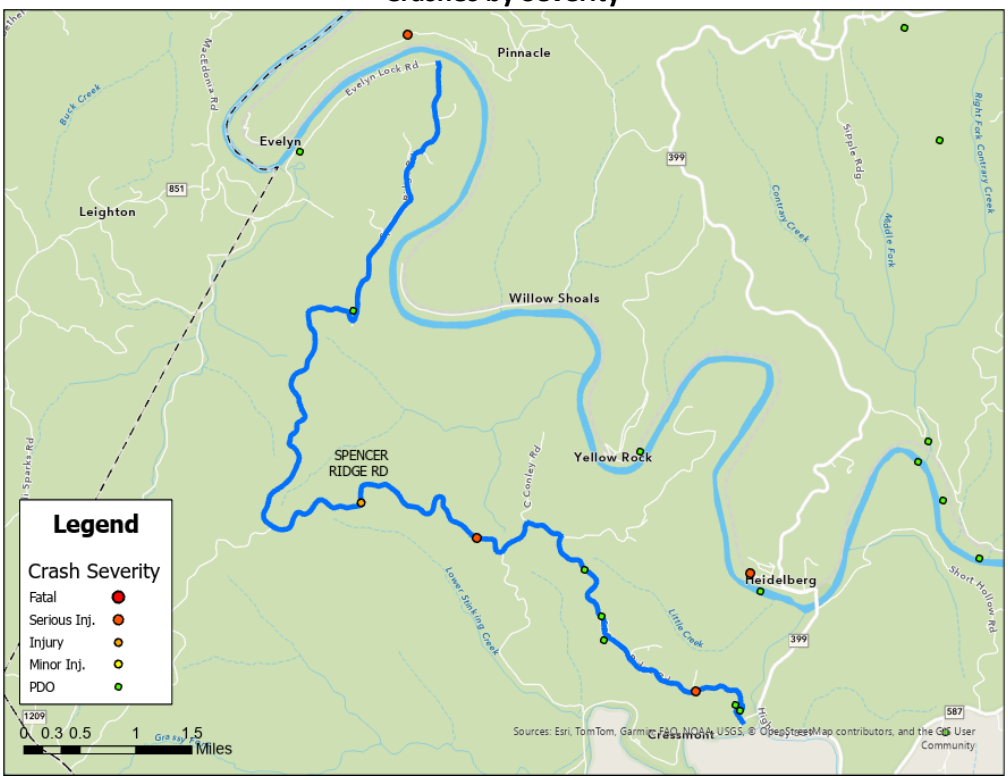
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
065-CR-1244 -000	SPENCER RIDGE RD	15	1-Very Good	RHR 7 - <5 ft high injury	40-60
065-CR-1244 -000	SPENCER RIDGE RD	10	4-Poor	RHR 4 - 5-10 ft ~ recoverable	40-60

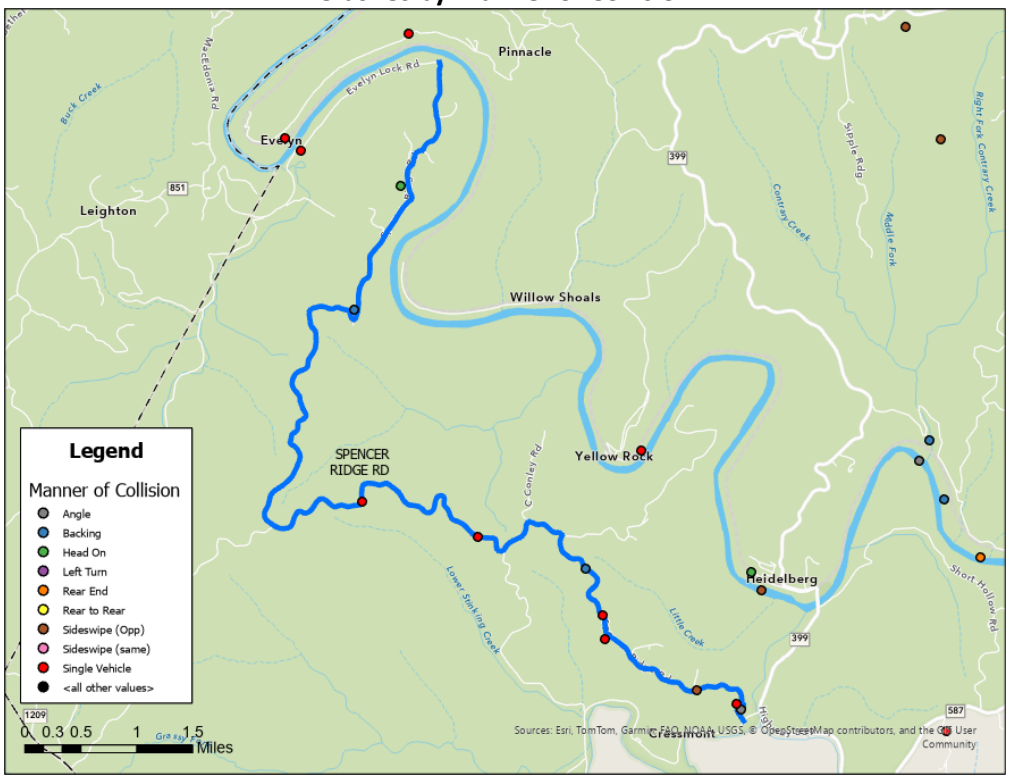
Roadway Typical Section



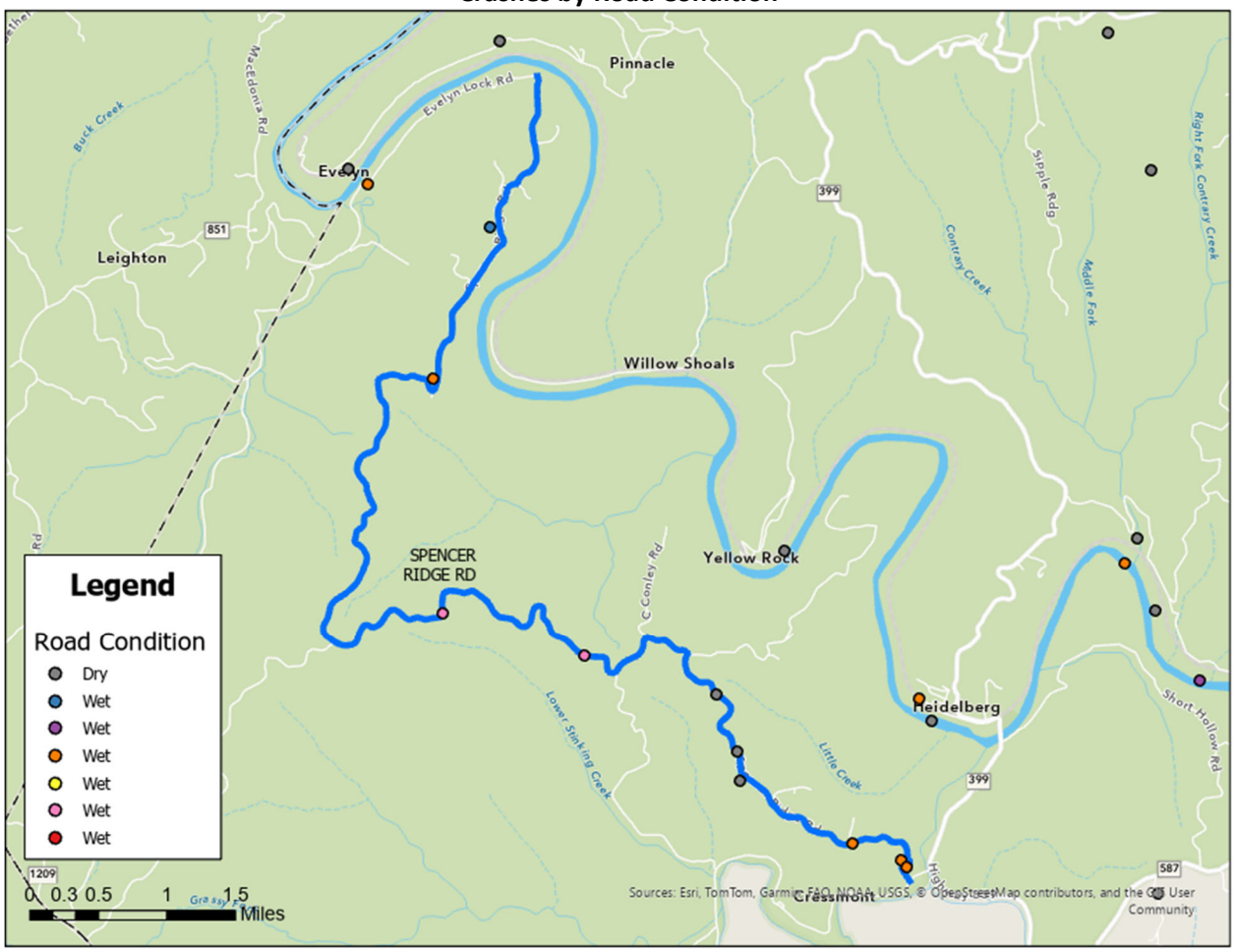
Crashes by Severity



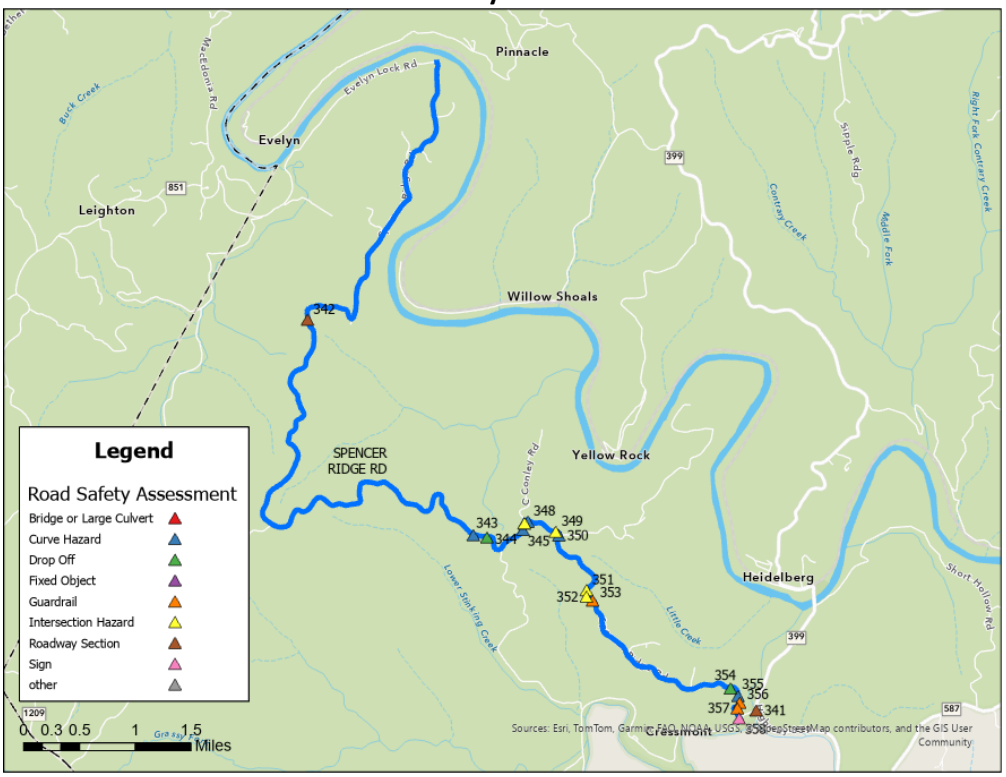
Crashes by Manner of Collision



Crashes by Road Condition



Road Safety Assessment



Recommendations

Seven out of ten crashes on the roadway have been identified as due to wet, snow or icy road conditions. It is recommended that the roadways be reviewed for both drainage and pavement friction. The curvey horizontal alignment of the roadway may make it a candidate for high friction surface treatment.

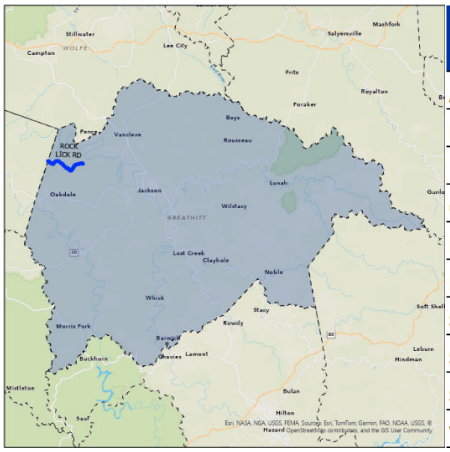
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgelin[1]	Curve Signin
342	065-CR-1244 -000	SPENCER RIDGE RD	15	1-Very Good	RHR 7 - <5 ft high injury	40-60	✓		✓
343	065-CR-1244 -000	SPENCER RIDGE RD	10	4-Poor	RHR 4 - 5-10 ft ~ recoverable	40-60	✓		✓

Recommendations (*continued*)

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
345	065-CR-1244 -000	SPENCER RIDGE RD	Drop Off	1-3	>10	--	Install Guardrail
347	065-CR-1244 -000	SPENCER RIDGE RD	Drop Off	1-3	>10	--	Install Guardrail
355	065-CR-1244 -000	SPENCER RIDGE RD	Drop Off	0-1	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
354	065-CR-1244 -000	SPENCER RIDGE RD	Guardrail	Good	Maybe	Some	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.
357	065-CR-1244 -000	SPENCER RIDGE RD	Guardrail	Poor	No	None	Remove
358	065-CR-1244 -000	SPENCER RIDGE RD	Guardrail	Poor	No	None	Remove
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
348	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar	
350	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar	
352	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Obscured on approach, Intersection Skew, Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar	
353	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Obscured on approach, Intersection Skew, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
344	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
346	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
349	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
351	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
356	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation

Mill Branch School Rd (065-CR-1135 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	1	0	0	**1**
Total	**1**	**0**	**0**	**1**

General Roadway Conditions

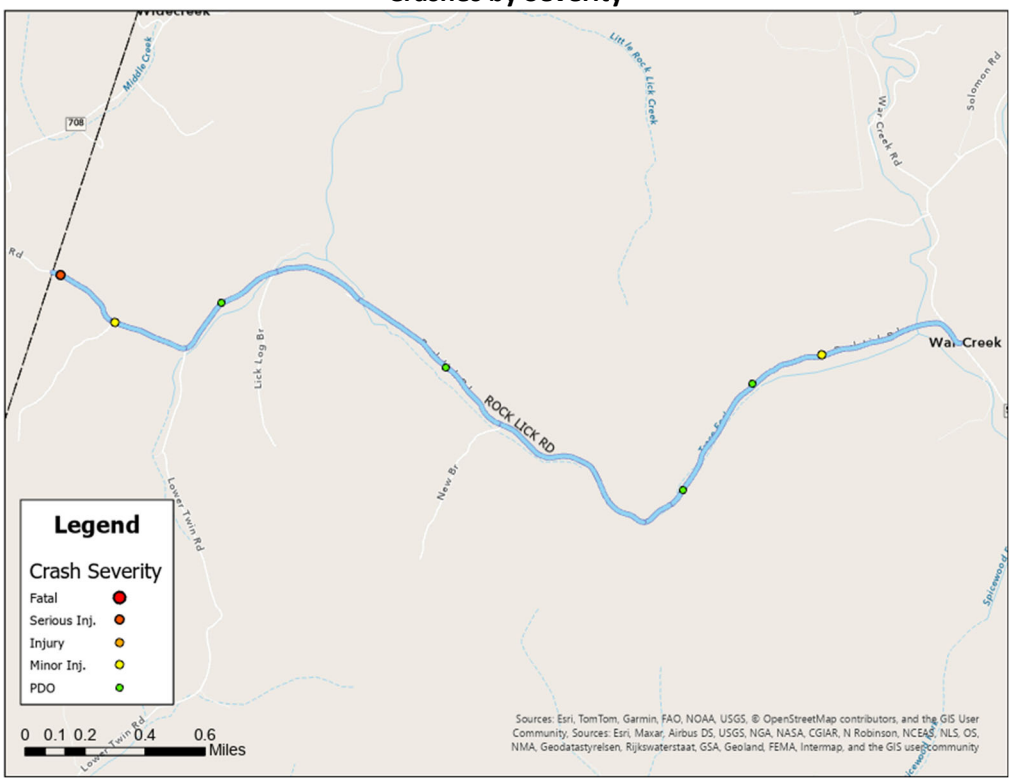
RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
065-CR-1135 -000	MILL BRANCH SCHOOL RD	10	1-Very Good	RHR 5 - 5- 10 ft non-recoverable	60-80
065-CR-1135 -000	MILL BRANCH SCHOOL RD	10	3-Fair	RHR 5 - 5- 10 ft non-recoverable	60-80
065-CR-1135 -000	MILL BRANCH SCHOOL RD	14	3-Fair	RHR 5 - 5- 10 ft non-recoverable	20-40

Roadway Typical Section

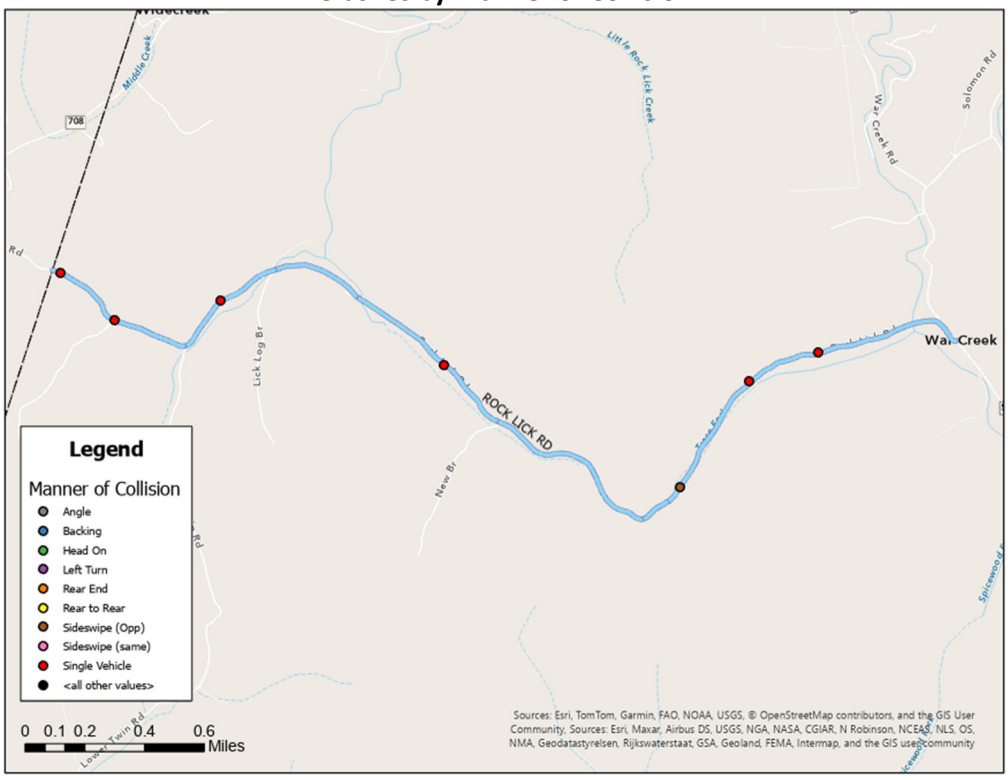




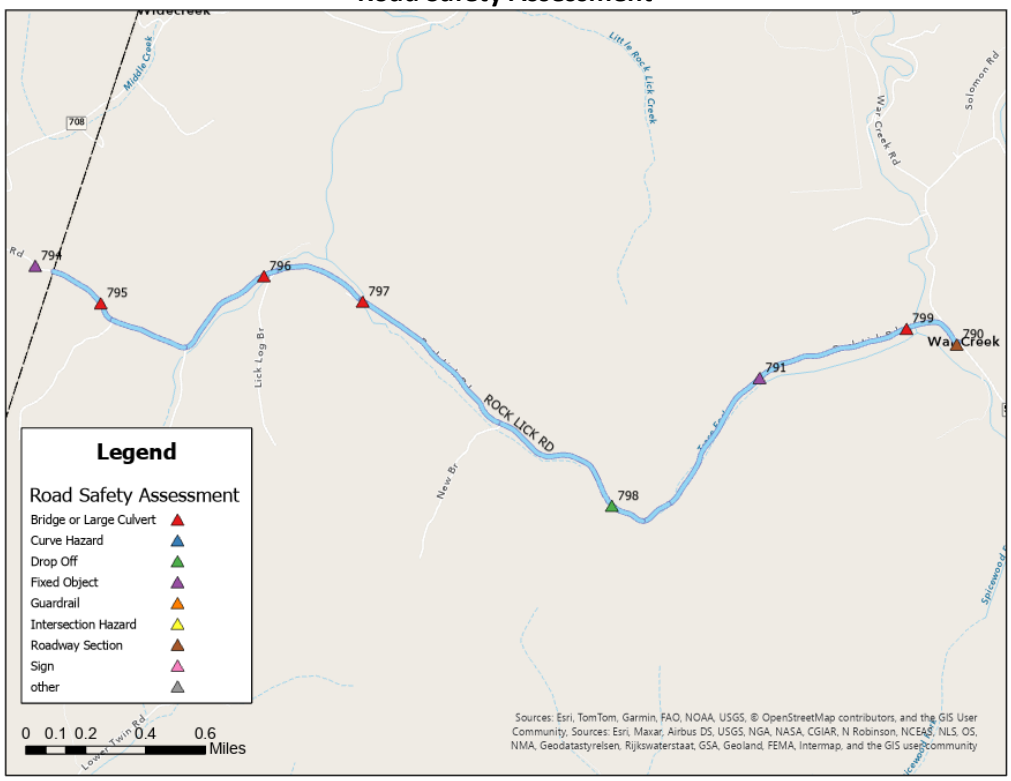
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
384	065-CR-1135 -000	MILL BRANCH SCHOOL RD	10	1-Very Good	RHR 5 - 5- 10 ft non-recoverable	60-80	✓		✓
424	065-CR-1135 -000	MILL BRANCH SCHOOL RD	10	3-Fair	RHR 5 - 5- 10 ft non-recoverable	60-80	✓	✓	✓
433	065-CR-1135 -000	MILL BRANCH SCHOOL RD	14	3-Fair	RHR 5 - 5- 10 ft non-recoverable	20-40	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
386	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	--	Install Guardrail
388	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	--	Install Guardrail
392	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	1-3	>10	--	Install Guardrail
397	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	2-5	--	Shoulderering
399	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	>10	--	Install Guardrail
406	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	5-10	--	Shoulderering
414	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	>10	--	Install Guardrail
420	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
383	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
389	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
393	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
400	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Other; Fence	Series	0-1	Consider Removal or Relocation

Recommendations (continued)

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
401	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
402	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
407	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
408	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Poor	No	None	Remove
409	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
410	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
415	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
417	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
418	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
419	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
421	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
422	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
427	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
428	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
429	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	No	None	Remove
430	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
431	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
432	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met

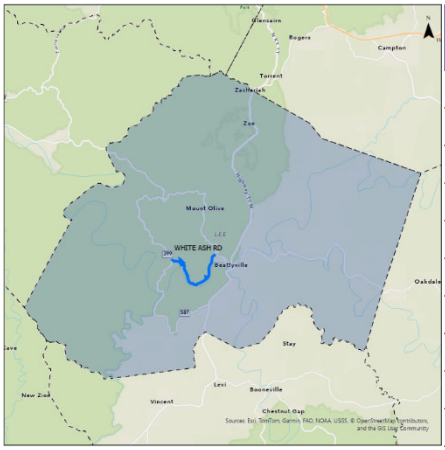
Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation	Recommendation	
405	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar	

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
411	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Bridge or Large Culvert	15	other	other	--
412	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Bridge or Large Culvert	15	0	0	Install Object Markers

Point ID	RT_UNIQUE	Road Name	Issue Type	Vegetation	--	Comments	Recommendation
382	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Intersection in Curve	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar
385	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
387	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
390	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
391	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
394	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
395	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
396	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
398	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Yes	--	Curve Obscured	Add Curve Warning Sign; Clear Vegetation
403	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
404	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
411	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
416	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
423	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
425	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
426	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Yes	--	vegetation, Curve Obscured	Add Curve Warning Sign; Clear Vegetation

White Ash Rd (065-CR-1200 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	1	0	0	**1**
BACKING	2	0	0	**2**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	1	0	0	**1**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	3	2	0	**5**
Total	**9**	**2**	**0**	**11**

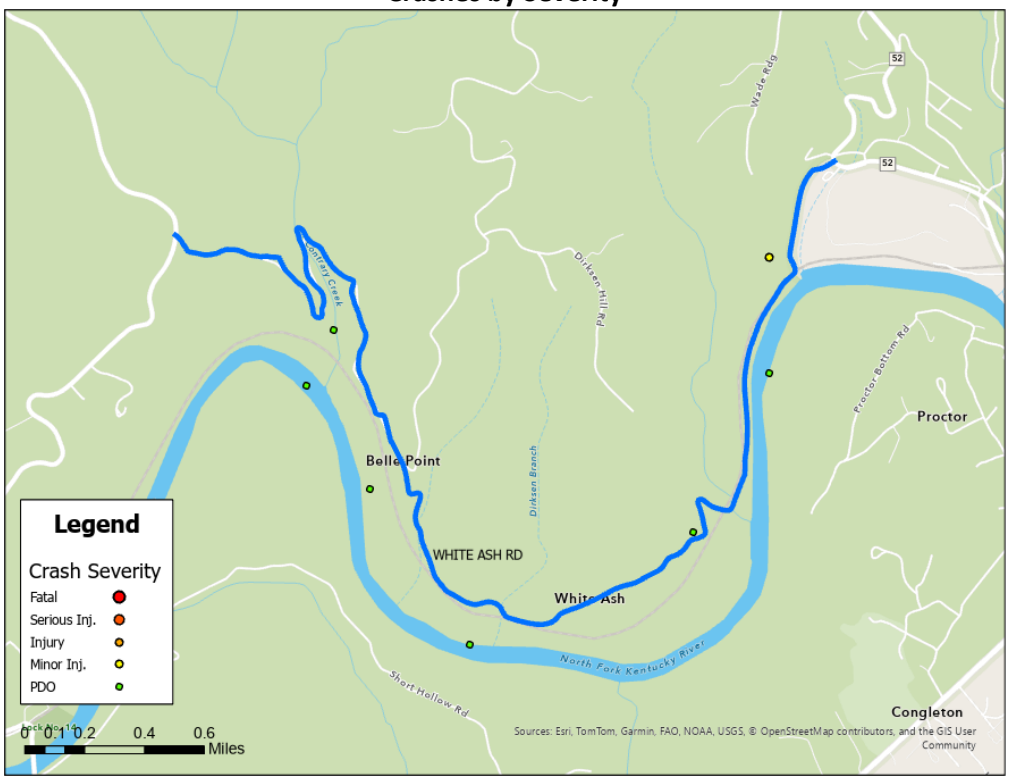
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
065-CR-1200 -000	WHITE ASH RD	15	1-Very Good	RHR 7 - <5 ft high injury	40-60
065-CR-1200 -000	WHITE ASH RD	15	5-Very Poor	RHR 6 - <5 ft non-recoverable	60-80
065-CR-1200 -000	WHITE ASH RD	15	4-Poor	RHR 3 - >10 ft	60-80
065-CR-1200 -000	WHITE ASH RD	15	1-Very Good	RHR 7 - <5 ft high injury	20-40

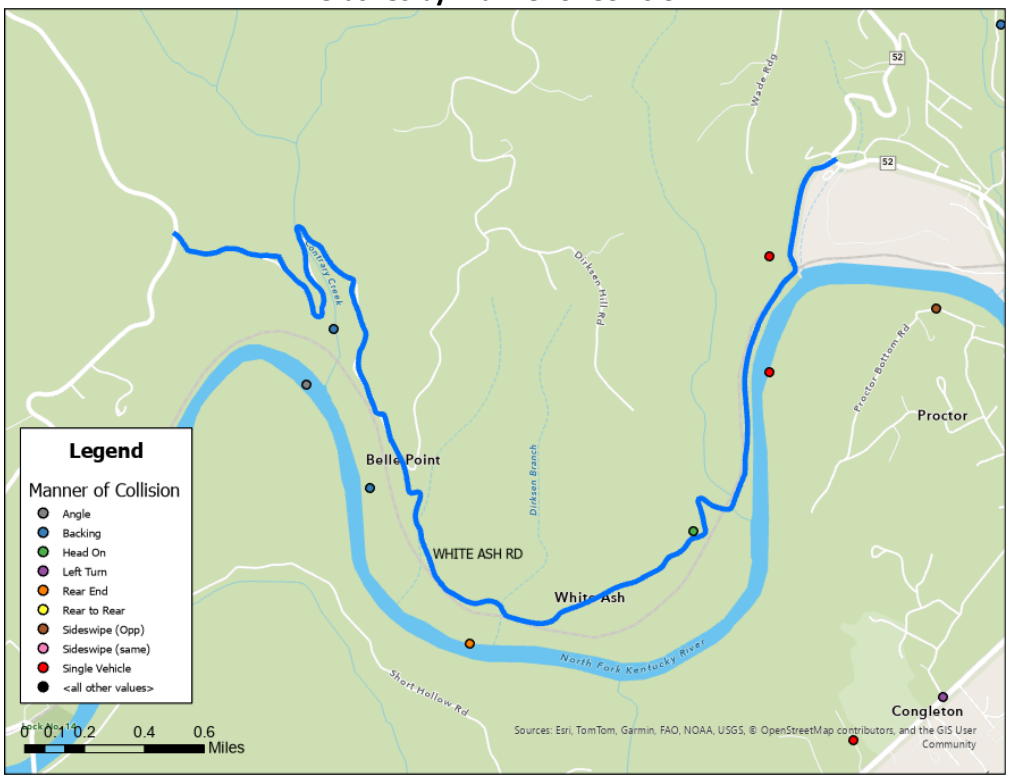
Roadway Typical Section



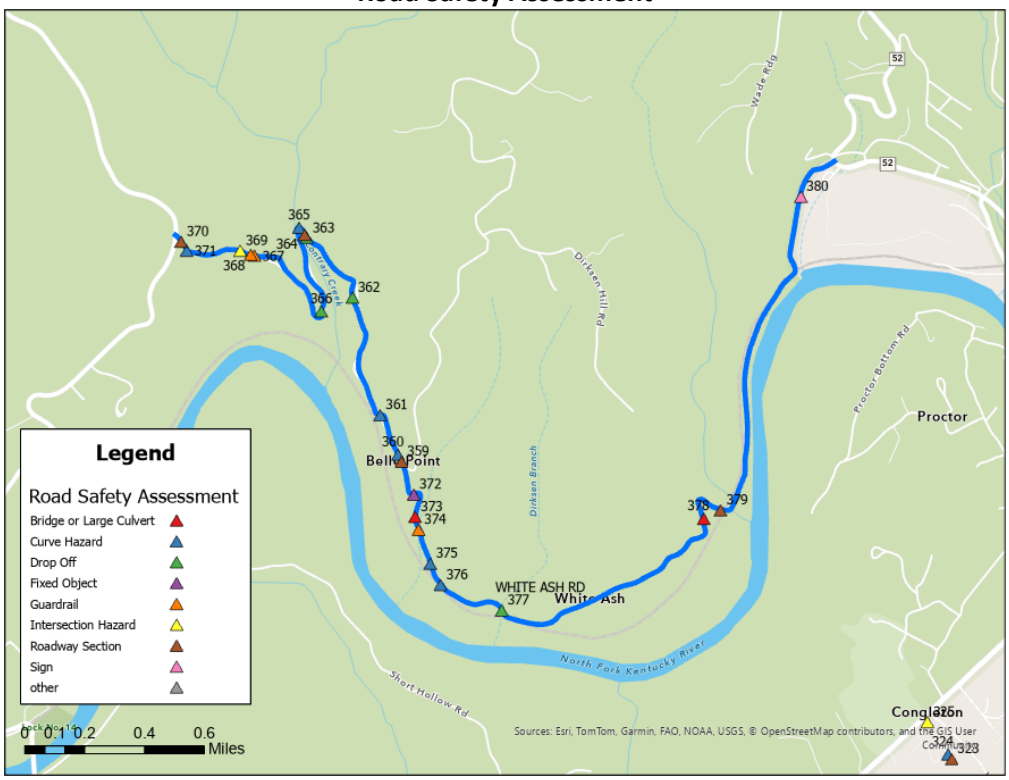
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



Recommendations

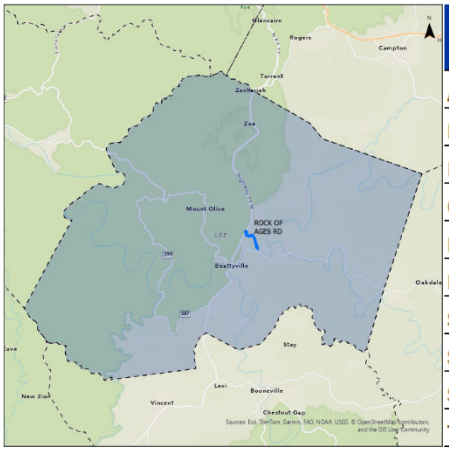
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
360	065-CR-1200 -000	WHITE ASH RD	15	1-Very Good	RHR 7 - <5 ft high injury	40-60	✓	✓	✓
365	065-CR-1200 -000	WHITE ASH RD	15	5-Very Poor	RHR 6 - <5 ft non-recoverable	60-80	✓	✓	✓
371	065-CR-1200 -000	WHITE ASH RD	15	4-Poor	RHR 3 - >10 ft	60-80	✓	✓	✓
380	065-CR-1200 -000	WHITE ASH RD	15	1-Very Good	RHR 7 - <5 ft high injury	20-40	✓	✓	✓

Recommendations (*continued*)

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
363	065-CR-1200 -000	WHITE ASH RD	Drop Off	1-3	2-5	--	Shouldering / Repair if Possible; Install Object Marker
364	065-CR-1200 -000	WHITE ASH RD	Drop Off	1-3	>10	--	Install Guardrail
367	065-CR-1200 -000	WHITE ASH RD	Drop Off	1-3	>10	--	Install Guardrail
378	065-CR-1200 -000	WHITE ASH RD	Drop Off	0-1	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
373	065-CR-1200 -000	WHITE ASH RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
368	065-CR-1200 -000	WHITE ASH RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
369	065-CR-1200 -000	WHITE ASH RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
375	065-CR-1200 -000	WHITE ASH RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
370	065-CR-1200 -000	WHITE ASH RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
373	065-CR-1200 -000	WHITE ASH RD	Bridge or Large Culvert	25	0	0	Install Object Markers
378	065-CR-1200 -000	WHITE ASH RD	Bridge or Large Culvert	15	0	0	Install Object Markers
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
361	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
362	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
366	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
372	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
376	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
377	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation

Rock Of Ages Rd (065-CR-1003 -000)

Road Location Map and Crash History

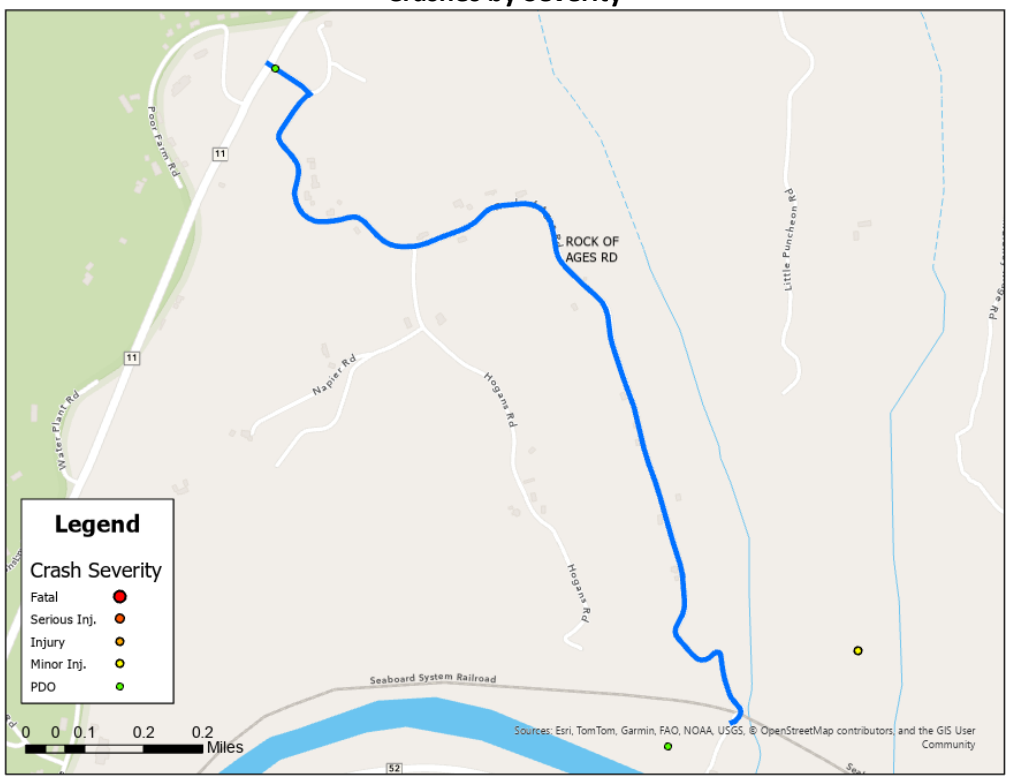


Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	1	0	0	**1**
BACKING	0	0	0	**0**
HEAD ON	0	1	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	1	0	0	**1**
SINGLE VEHICLE	0	0	0	**0**
Total	**2**	**1**	**0**	**3**

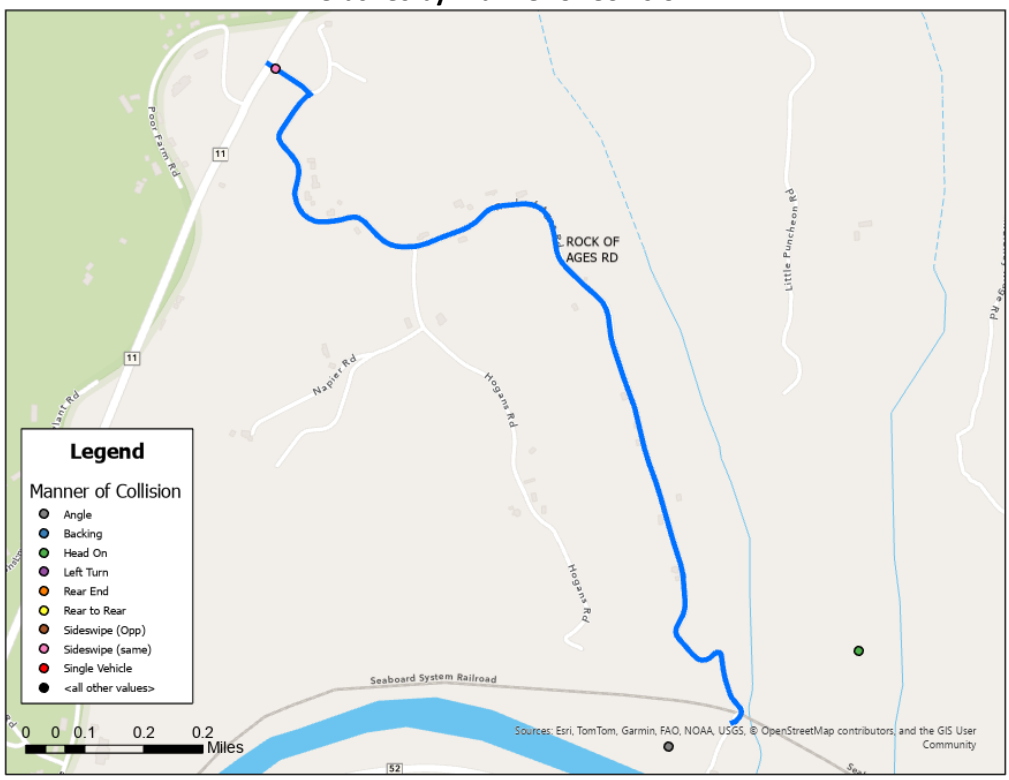
General Roadway Conditions
NOT COLLECTED

Roadway Typical Section
NOT COLLECTED

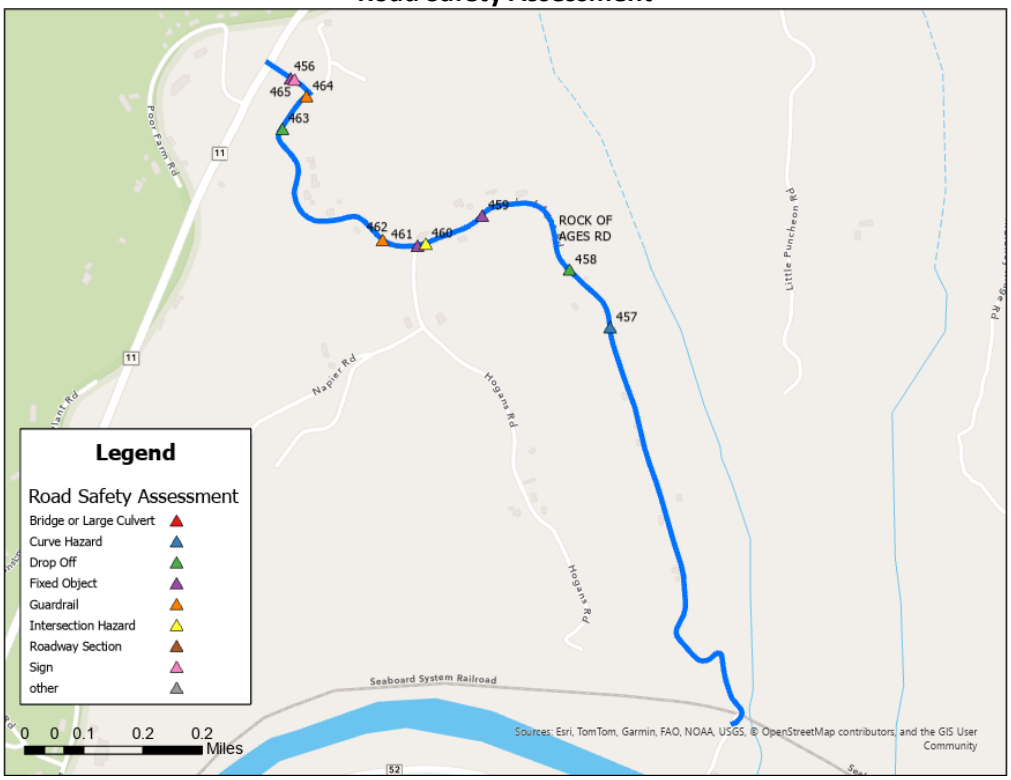
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment

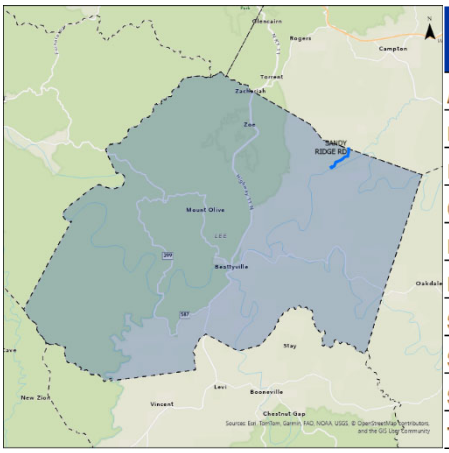


Recommendations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
459	065-CR-1003 -000	ROCK OF AGES RD	Drop Off	1-3	>10	--	Install Guardrail
464	065-CR-1003 -000	ROCK OF AGES RD	Drop Off	0-1	5-10	--	Shoulderering
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
457	065-CR-1003 -000	ROCK OF AGES RD	Fixed Object	Utility Pole	Series	3-5	--
460	065-CR-1003 -000	ROCK OF AGES RD	Fixed Object	Other; Fire hydrant	Single	1-3	Install Type 2 Object Marker
462	065-CR-1003 -000	ROCK OF AGES RD	Fixed Object	Other; Fire hydrant	Single	3-5	Install Type 2 Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
463	065-CR-1003 -000	ROCK OF AGES RD	Guardrail	Good	Yes	None	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
465	065-CR-1003 -000	ROCK OF AGES RD	Guardrail	Good	Yes	All_	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
461	065-CR-1003 -000	ROCK OF AGES RD	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
458	065-CR-1003 -000	ROCK OF AGES RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation

Sandy Ridge Rd (065-CR-1049 -000)

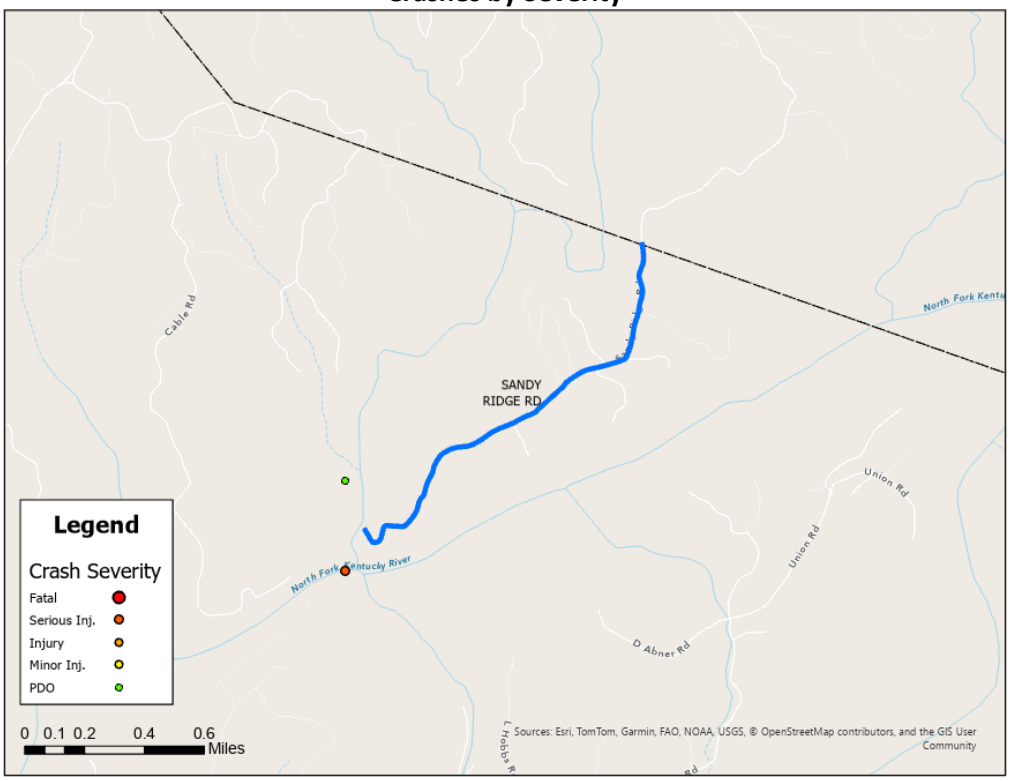
Road Location Map and Crash History



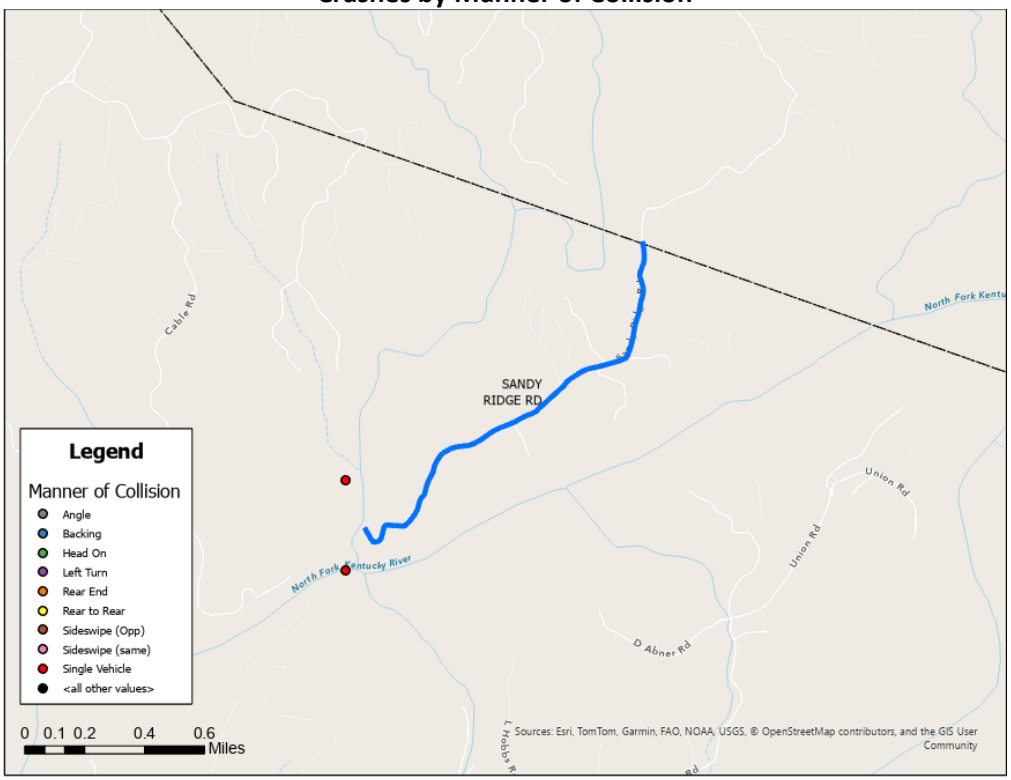
Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	1	1	0	**2**
Total	**1**	**1**	**0**	**2**

Road Safety Assessment data was not collected on this roadway

Crashes by Severity



Crashes by Manner of Collision



Other Roadways

General Roadway Conditions and Recommendations (Lee County)



Exhibit Lee-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
342	065-CR-1244 -000	SPENCER RIDGE RD	15	1	7	40-60	Gravel road at end	✓		✓	
343	065-CR-1244 -000	SPENCER RIDGE RD	10	4	4	40-60	Where blacktop meets gravel	✓		✓	
433	065-CR-1135 -000	MILL BRANCH SCHOOL RD	14	3	5	20-40		✓	✓	✓	
424	065-CR-1135 -000	MILL BRANCH SCHOOL RD	10	3	5	60-80		✓	✓	✓	
380	065-CR-1200 -000	WHITE ASH RD	15	4	2	20-40		✓	✓	✓	
360	065-CR-1200 -000	WHITE ASH RD	15	1	4	40-60		✓	✓	✓	
365	065-CR-1200 -000	WHITE ASH RD	15	1	7	60-80		✓	✓	✓	
371	065-CR-1200 -000	WHITE ASH RD	15	1	7	60-80		✓	✓	✓	
338	065-CR-1250G -000	WEST RAILROAD ST	10	3	3	20-40		✓	✓	✓	
340	065-CR-1250G -000	WEST RAILROAD ST	10	2	3	20-40		✓	✓	✓	
336	065-CR-1216 -000	DELVINTA RD	18	3	5	40-60		✓			
1141	065-CR-1210 -000	CAUDILL RD	16	3	3	20-40		✓			
467	065-CR-1396 -000	DOGWOOD LN	12	1	6	60-80		✓			
324	065-CR-1102B -000	BOWLES SUBDIVISION	10	4	1	40-60		✓			

Exhibit Lee-F2: General Roadway Recommendations

Bridge / Culvert Recommendations (Lee County)

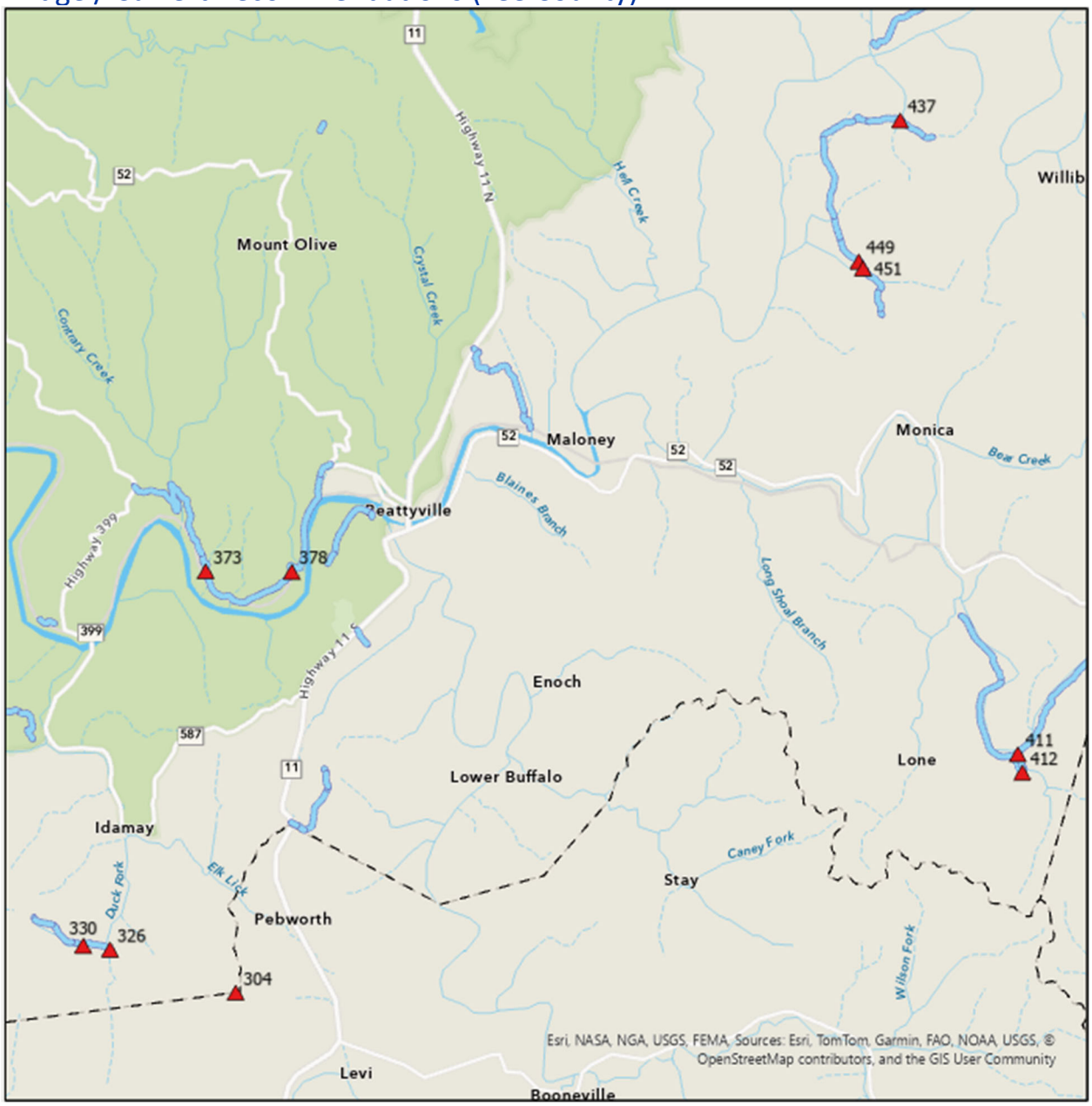


Exhibit Lee-F3: Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Hazard	Bridge Width	Guard Presen	Object Marker	Recommendation
437	065-CR-1020 -000	ABNER FLAT RD	Bridge or Large Culvert	15	4	0	--
449	065-CR-1020 -000	ABNER FLAT RD	Bridge or Large Culvert	18	2	0	--
451	065-CR-1020 -000	ABNER FLAT RD	Bridge or Large Culvert	15	4	0	--
326	065-CR-1216 -000	DELVINTA RD	Bridge or Large Culvert	20	0	0	Install Object Markers
330	065-CR-1216 -000	DELVINTA RD	Bridge or Large Culvert	20	0	0	Install Object Markers
411	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Bridge or Large Culvert	15	other	other	--
412	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Bridge or Large Culvert	15	0	0	Install Object Markers
304	095-CR-1315 -000	QUILLIN RD	Bridge or Large Culvert	14	0	0	Install Object Markers
373	065-CR-1200 -000	WHITE ASH RD	Bridge or Large Culvert	25	0	0	Install Object Markers
378	065-CR-1200 -000	WHITE ASH RD	Bridge or Large Culvert	15	0	0	Install Object Markers

Exhibit Lee-F4: Bridge / Culvert Recommendations

Curve Recommendations (Lee County)

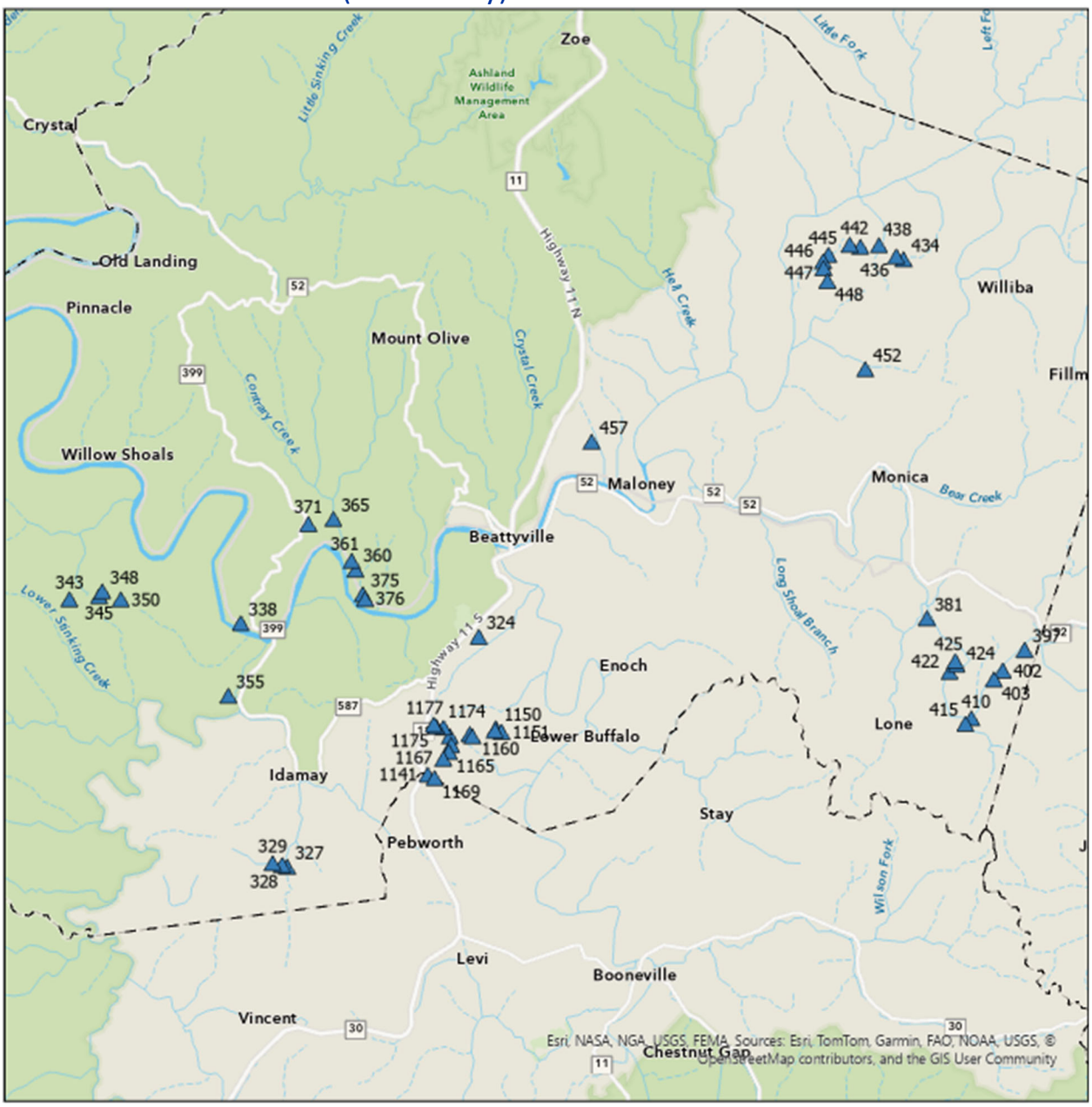


Exhibit Lee-F5: Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
457	065-CR-1003 -000	ROCK OF AGES RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
434	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
436	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
438	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
440	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured, vegetation	No	Add Curve Warning Sign; Clear Vegetation
442	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
445	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
446	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
447	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
448	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Intersection in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar
452	065-CR-1020 -000	ABNER FLAT RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
324	065-CR-1102B -000	BOWLES SUBDIVISION	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
381	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Intersection in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar
397	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
402	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
403	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
410	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
415	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
422	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
424	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
425	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
360	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
361	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
365	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
371	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
375	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
376	065-CR-1200 -000	WHITE ASH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1141	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1148	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1150	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1151	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1155	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1160	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1163	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1164	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1165	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1167	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1169	065-CR-1210 -000	CAUDILL RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1174	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1175	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Entrance in Curve, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
1177	065-CR-1210 -000	CAUDILL RD	Curve Hazard	Entrance in Curve, Curve Obscured	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
327	065-CR-1216 -000	DELVINTA RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
328	065-CR-1216 -000	DELVINTA RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
329	065-CR-1216 -000	DELVINTA RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
343	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
345	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
348	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
350	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
355	065-CR-1244 -000	SPENCER RIDGE RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
338	065-CR-1250G -000	WEST RAILROAD ST	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation

Exhibit Lee-F5: Curve Recommendations

Roadside Drop Off Recommendations (Lee County)

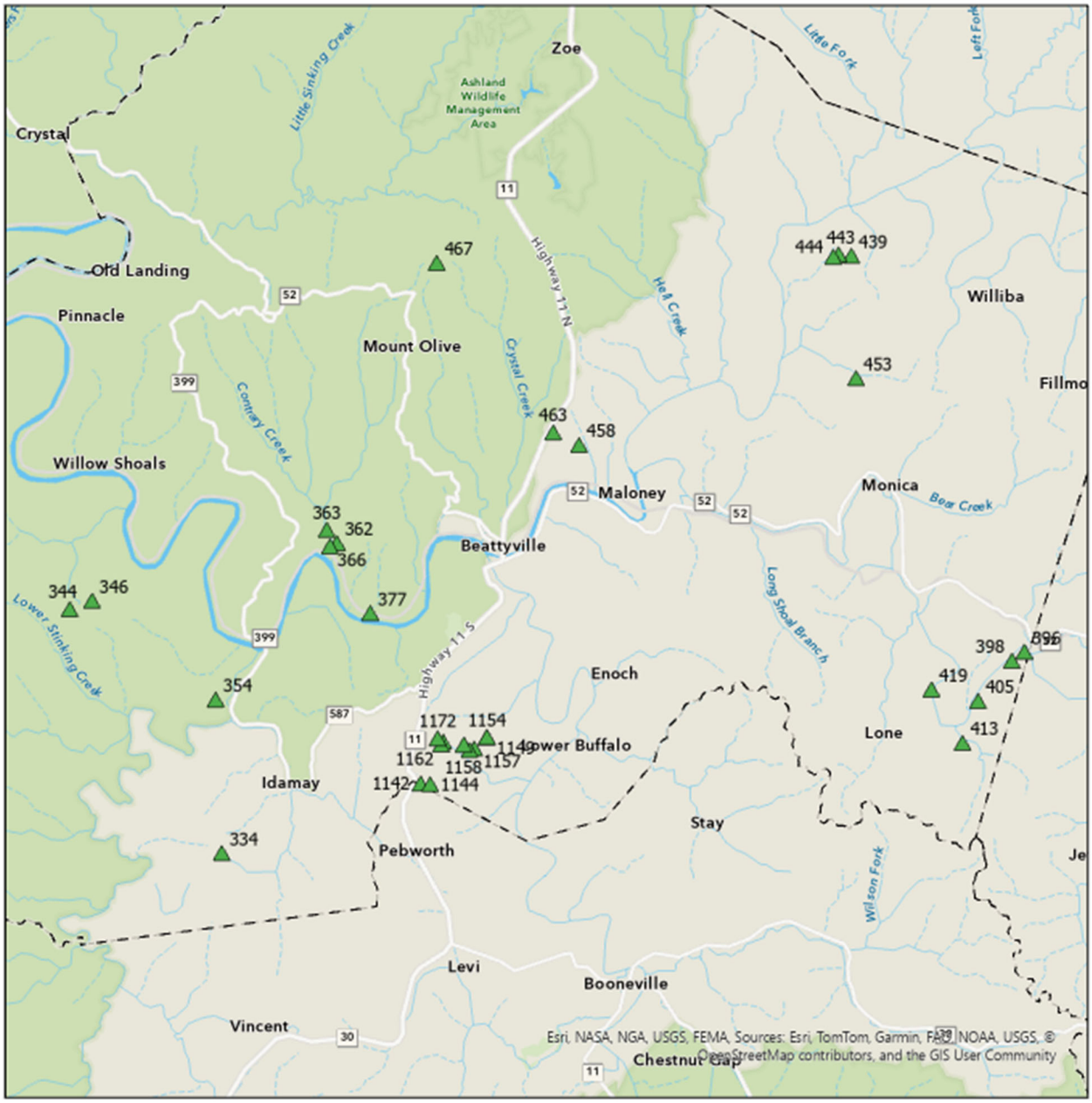


Exhibit Lee-F7: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
439	065-CR-1020 -000	ABNER FLAT RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
443	065-CR-1020 -000	ABNER FLAT RD	Drop Off	3-5	>10	Install Guardrail
444	065-CR-1020 -000	ABNER FLAT RD	Drop Off	3-5	>10	Install Guardrail
453	065-CR-1020 -000	ABNER FLAT RD	Drop Off	1-3	>10	Install Guardrail
1142	065-CR-1210 -000	CAUDILL RD	Drop Off	1-3	>10	Install Guardrail
1144	065-CR-1210 -000	CAUDILL RD	Drop Off	0-1	>10	Install Guardrail
1147	065-CR-1210 -000	CAUDILL RD	Drop Off	0-1	>10	Install Guardrail
1149	065-CR-1210 -000	CAUDILL RD	Drop Off	0-1	>10	Install Guardrail
1154	065-CR-1210 -000	CAUDILL RD	Drop Off	0-1	>10	Install Guardrail
1157	065-CR-1210 -000	CAUDILL RD	Drop Off	0-1	>10	Install Guardrail
1158	065-CR-1210 -000	CAUDILL RD	Drop Off	3-5	>10	Install Guardrail
1159	065-CR-1210 -000	CAUDILL RD	Drop Off	1-3	>10	Install Guardrail
1162	065-CR-1210 -000	CAUDILL RD	Drop Off	0-1	>10	Install Guardrail
1172	065-CR-1210 -000	CAUDILL RD	Drop Off	0-1	>10	Install Guardrail
334	065-CR-1216 -000	DELVINTA RD	Drop Off	1-3	>10	Install Guardrail
467	065-CR-1396 -000	DOGWOOD LN	Drop Off	0-1	>10	Install Guardrail
396	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	2-5	Shoulderering
398	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	>10	Install Guardrail
405	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	5-10	Shoulderering
413	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	>10	Install Guardrail
419	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Drop Off	0-1	>10	Install Guardrail
458	065-CR-1003 -000	ROCK OF AGES RD	Drop Off	1-3	>10	Install Guardrail
463	065-CR-1003 -000	ROCK OF AGES RD	Drop Off	0-1	5-10	Shoulderering
344	065-CR-1244 -000	SPENCER RIDGE RD	Drop Off	1-3	>10	Install Guardrail
346	065-CR-1244 -000	SPENCER RIDGE RD	Drop Off	1-3	>10	Install Guardrail
354	065-CR-1244 -000	SPENCER RIDGE RD	Drop Off	0-1	>10	Install Guardrail
362	065-CR-1200 -000	WHITE ASH RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
363	065-CR-1200 -000	WHITE ASH RD	Drop Off	1-3	>10	Install Guardrail
366	065-CR-1200 -000	WHITE ASH RD	Drop Off	1-3	>10	Install Guardrail
377	065-CR-1200 -000	WHITE ASH RD	Drop Off	0-1	>10	Install Guardrail

Exhibit Lee-F8: Roadside Drop Off Recommendations

Fixed Object Recommendations (Lee County)

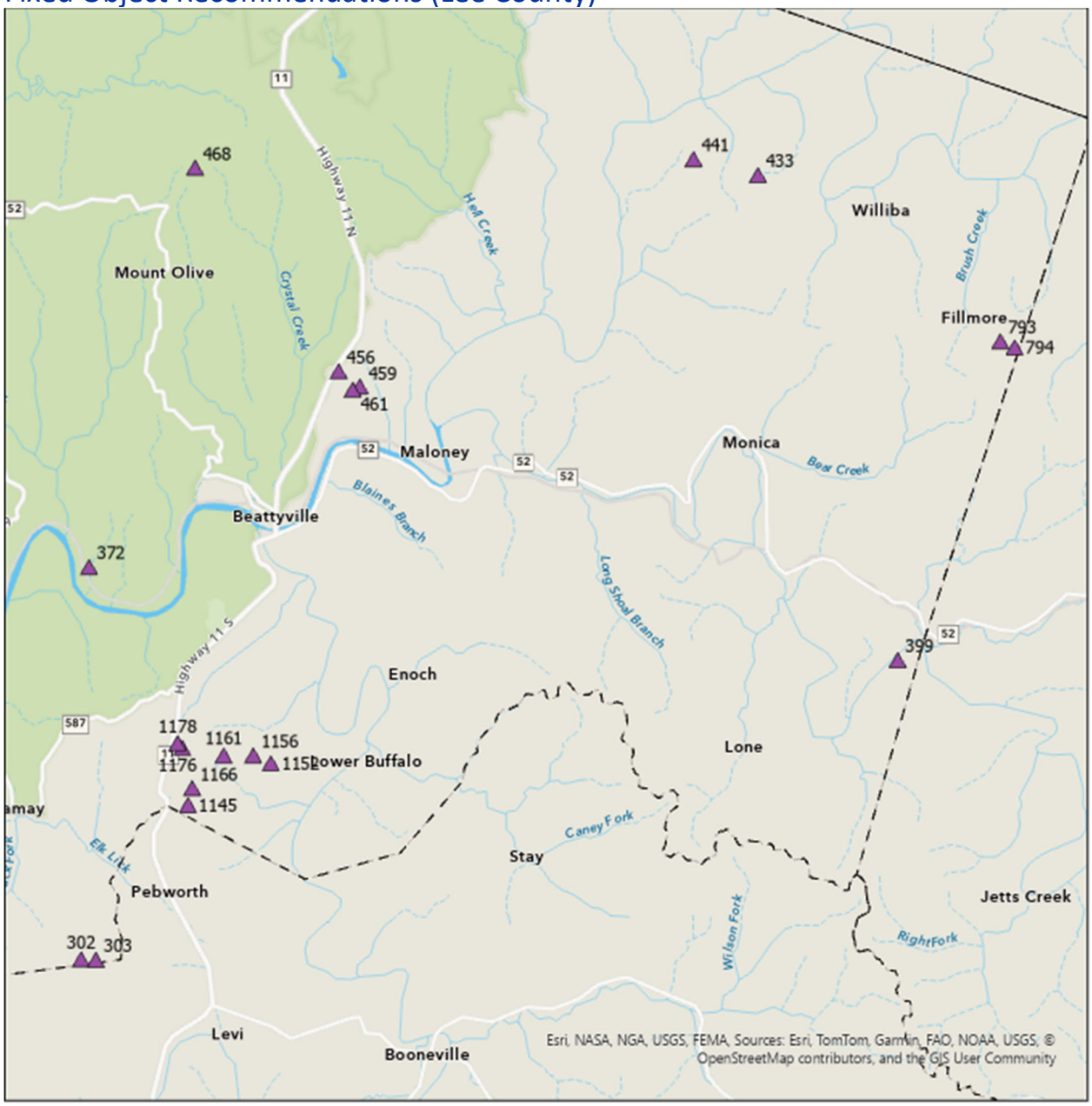


Exhibit Lee-F9: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
1145	065-CR-1210 -000	CAUDILL RD	Fixed Object	Other; Brick Mailbox	Single	0-1	See Policy Recommendations
459	065-CR-1003 -000	ROCK OF AGES RD	Fixed Object	Other; Fire hydrant	Single	1-3	Install Type 2 Object Marker
461	065-CR-1003 -000	ROCK OF AGES RD	Fixed Object	Other; Fire hydrant	Single	3-5	Install Type 2 Object Marker
1176	065-CR-1210 -000	CAUDILL RD	Fixed Object	Tree	Single	3-5	--
1166	065-CR-1210 -000	CAUDILL RD	Fixed Object	Utility Pole	Single	3-5	--
303	095-CR-1315 -000	QUILLIN RD	Fixed Object	Utility Pole	Single	>5	--
1161	065-CR-1210 -000	CAUDILL RD	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
372	065-CR-1200 -000	WHITE ASH RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
433	065-CR-1020 -000	ABNER FLAT RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
1156	065-CR-1210 -000	CAUDILL RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
399	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Fixed Object	Other; Fence	Series	0-1	Consider Removal or Relocation
302	095-CR-1315 -000	QUILLIN RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
441	065-CR-1020 -000	ABNER FLAT RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
794	065-CR-1035 -000	ROCKLICK RD	Fixed Object	Tree	Series	3-5	--
1152	065-CR-1210 -000	CAUDILL RD	Fixed Object	Tree	Series	3-5	--
1178	065-CR-1210 -000	CAUDILL RD	Fixed Object	Tree	Series	3-5	--
468	065-CR-1396 -000	DOGWOOD LN	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
456	065-CR-1003 -000	ROCK OF AGES RD	Fixed Object	Utility Pole	Series	3-5	--
793	065-CR-1035 -000	ROCKLICK RD	Fixed Object	Utility Pole	Series	3-5	--

Exhibit Lee-F10: Fixed Object Recommendations

Guardrail Recommendations (Lee County)

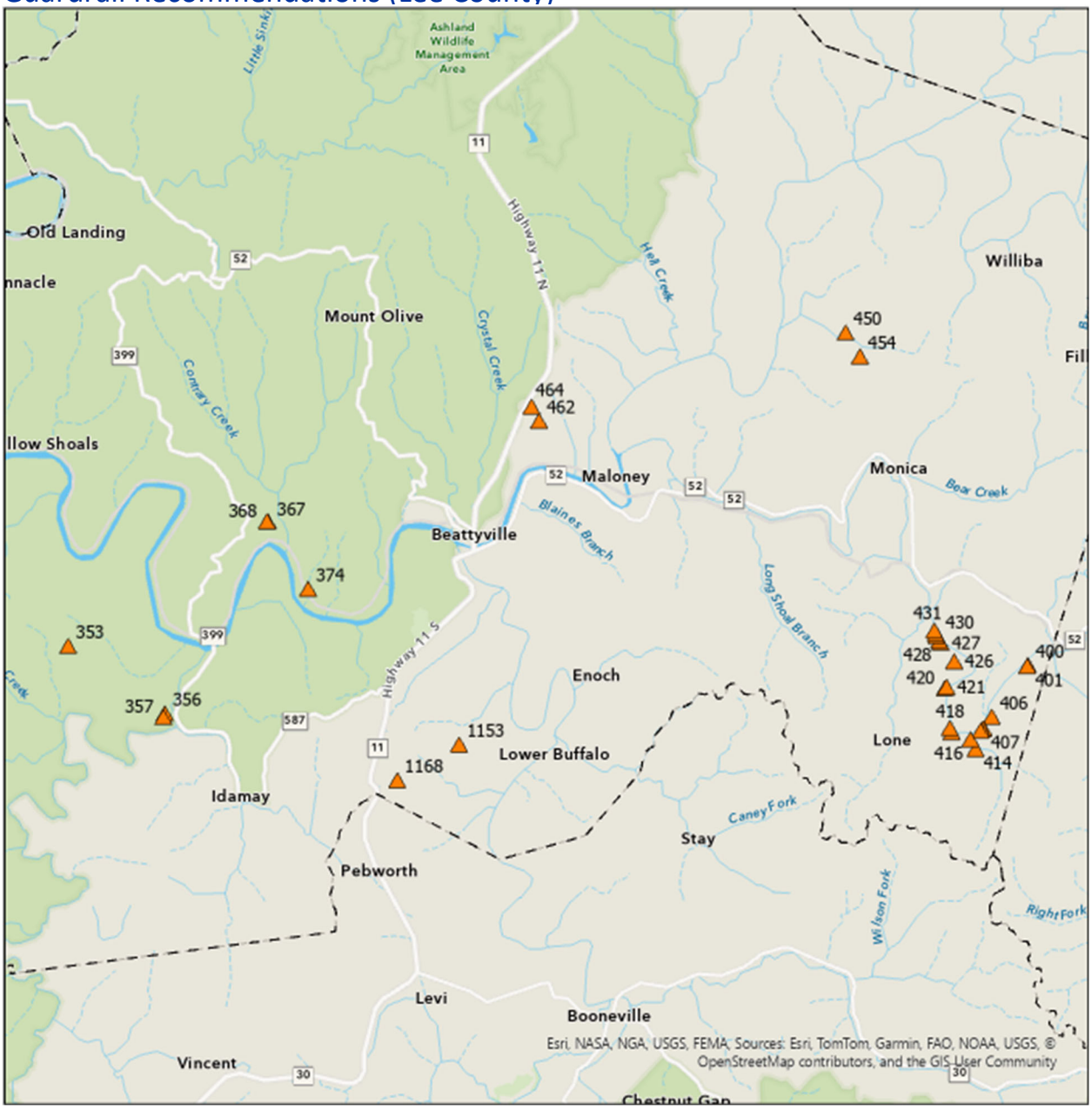


Exhibit Lee-F11: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
353	065-CR-1244 -000	SPENCER RIDGE RD	Guardrail	Good	Maybe	Some	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.
356	065-CR-1244 -000	SPENCER RIDGE RD	Guardrail	Poor	No	None	Remove
357	065-CR-1244 -000	SPENCER RIDGE RD	Guardrail	Poor	No	None	Remove
367	065-CR-1200 -000	WHITE ASH RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
368	065-CR-1200 -000	WHITE ASH RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
374	065-CR-1200 -000	WHITE ASH RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
400	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
401	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
406	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
407	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Poor	No	None	Remove
408	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
409	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
414	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
416	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
417	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
418	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
420	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met
421	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
426	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
427	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
428	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	No	None	Remove
429	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
430	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
431	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
450	065-CR-1020 -000	ABNER FLAT RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
454	065-CR-1020 -000	ABNER FLAT RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
462	065-CR-1003 -000	ROCK OF AGES RD	Guardrail	Good	Yes	None	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
464	065-CR-1003 -000	ROCK OF AGES RD	Guardrail	Good	Yes	All_	--
1153	065-CR-1210 -000	CAUDILL RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1168	065-CR-1210 -000	CAUDILL RD	Guardrail	Fair	Yes	None	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment

Exhibit Lee-F12: Guardrail Recommendations

Intersection Recommendations (Lee County)



Exhibit Lee-F13: Intersection Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Blocked by Vegetatio	Recommendation
325	065-CR-1102B -000	BOWLES SUBDIVISION	Intersection Hazard	Intersection Obscured on approach, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
331	065-CR-1216 -000	DELVINTA RD	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
333	065-CR-1216 -000	DELVINTA RD	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
347	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
349	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
351	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Obscured on approach, Intersection Skew, Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar
352	065-CR-1244 -000	SPENCER RIDGE RD	Intersection Hazard	Intersection Obscured on approach, Intersection Skew, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
369	065-CR-1200 -000	WHITE ASH RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
404	065-CR-1135 -000	MILL BRANCH SCHOOL RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
460	065-CR-1003 -000	ROCK OF AGES RD	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
1143	065-CR-1210 -000	CAUDILL RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar
1170	065-CR-1210 -000	CAUDILL RD	Intersection Hazard	Intersection Obscured on approach, Intersection Skew, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
1171	065-CR-1210 -000	CAUDILL RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection, Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar

Exhibit Lee-F14: Intersection Recommendations

Other Recommendations (Lee County)

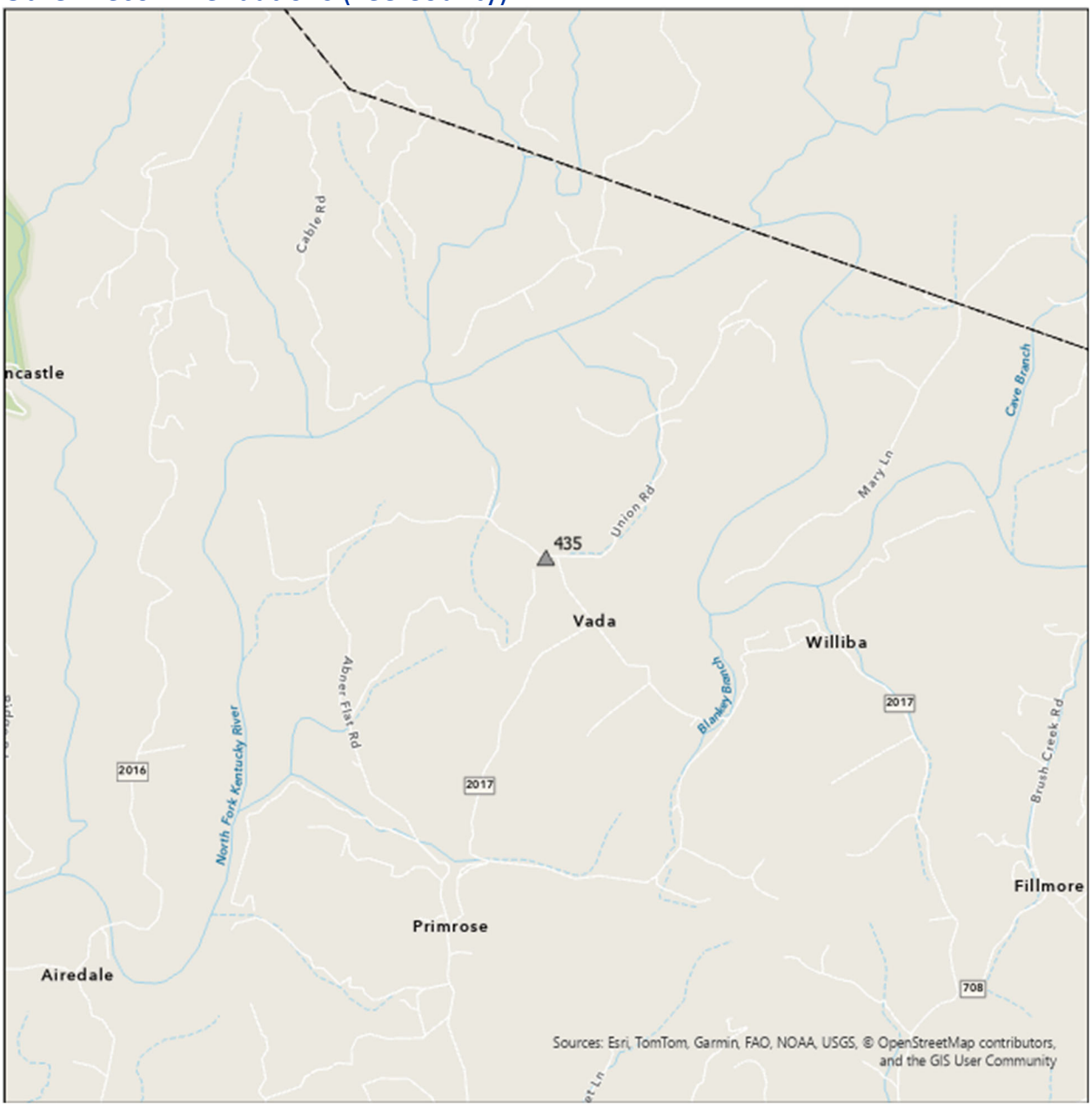


Exhibit Lee-F15: Other Item Locations

Point ID	RT_UNIQUE	RD_NAME	Issue Type	Description	Recommendation
435	065-CR-1020 -000	ABNER FLAT RD	other	Blind hill obstructed	Install Warning Sign "Hill Blocks View"

Exhibit Lee-F16: Other Item Recommendations

APPENDIX G: LESLIE COUNTY

Leslie County Overview

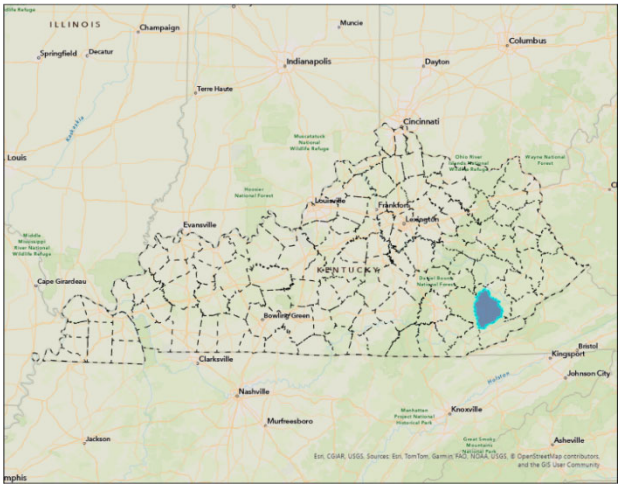


Exhibit Leslie-1: Location Map

Key Information Table Leslie County	
Population	10,472
Population in Underserved Communities	48%
Fatalities (All Roads)	29
Fatalities (County Roads)	4
Fatality rate per 100,000 persons	276.93
County Road Mileage	336.0
City Road Mileage	3.0
State Road Mileage	178.0
Total Mileage	**518.0**

Exhibit Leslie-2: Key Information

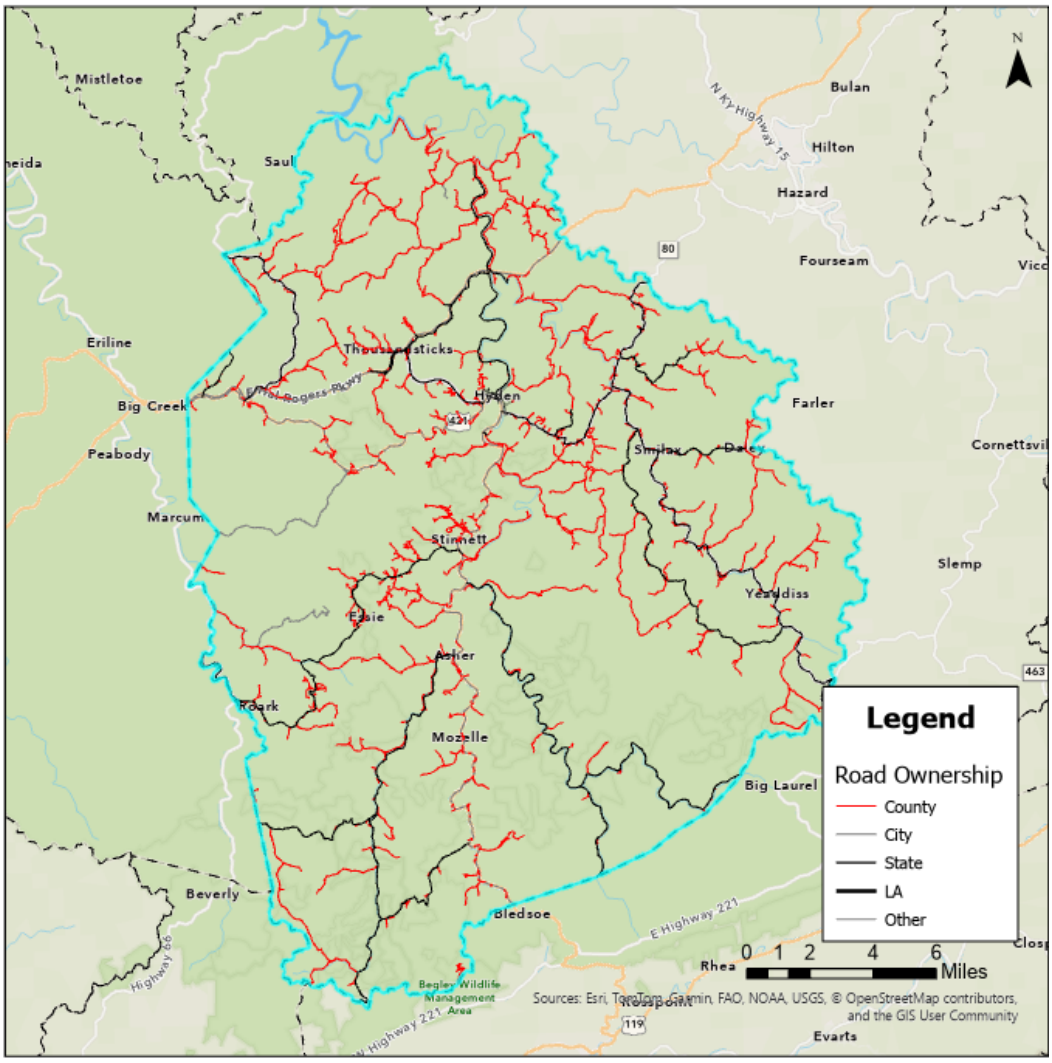


Figure Leslie-3: Map of County Roadways

Crash Analysis

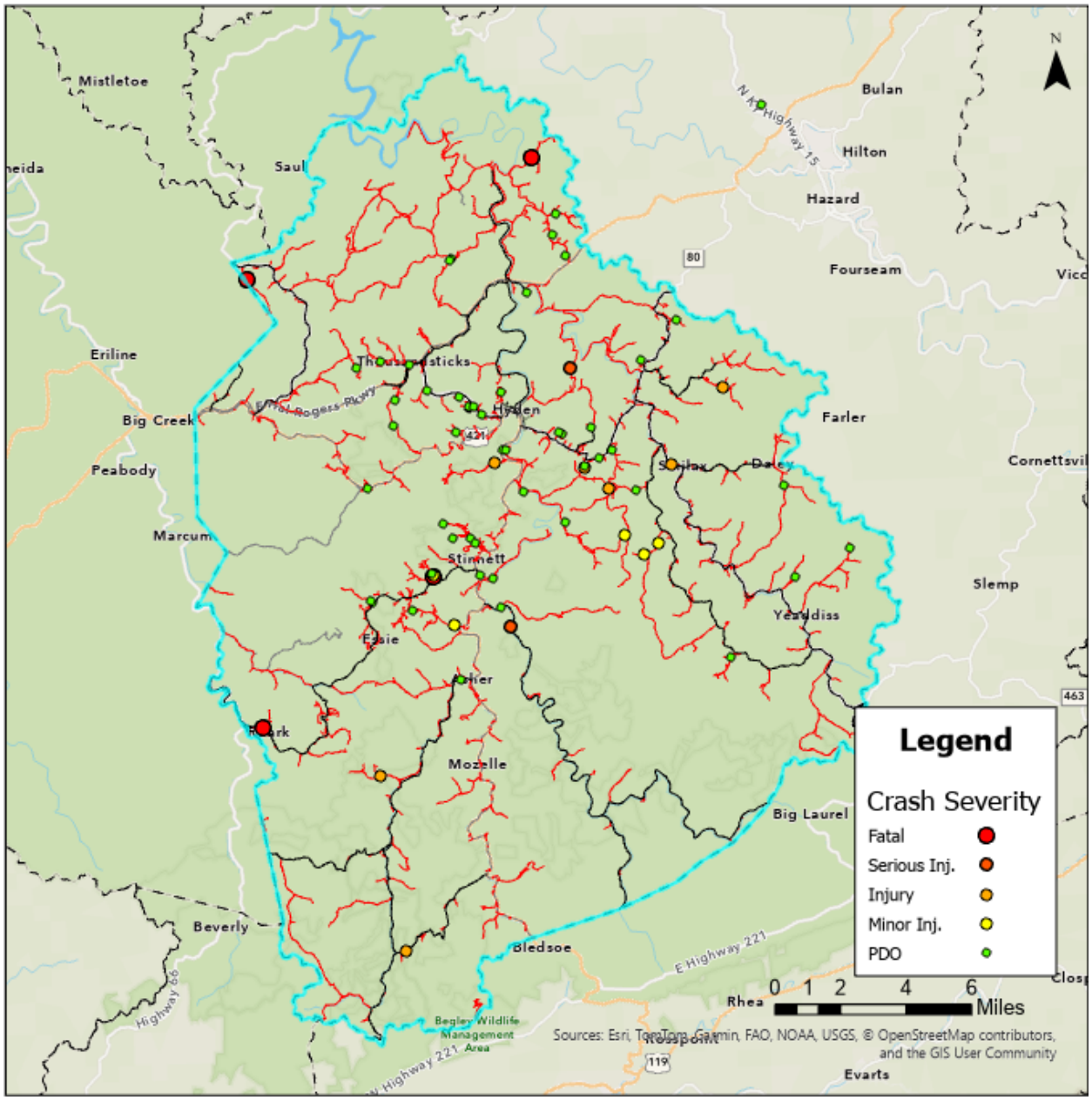
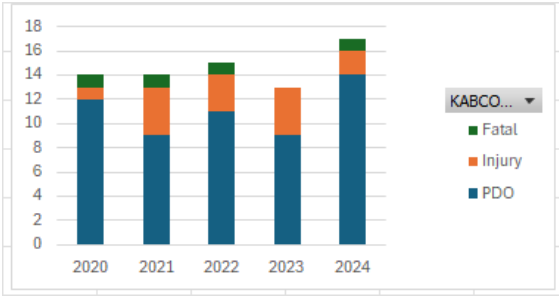


Figure Leslie-4: Map of County Road Crashes



Year	Property Damage Only	Injury	Fatal	Total
2020	12	1	1	**14**
2021	9	4	1	**14**
2022	11	3	1	**15**
2023	9	4	0	**13**
2024	14	2	1	**17**

Figure Leslie-5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	0	0	4	4
Backing	0	0	14	14
Head On	0	2	12	14
Opposing Left Turn	0	0	1	1
Rear End	0	0	4	4
Rear To Rear	0	0	1	1
Sideswipe-Opposit	1	3	7	11
Sideswipe-Same D	0	0	4	4
Single Vehicle	3	9	8	20
Total	**4**	**14**	**55**	**73**

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

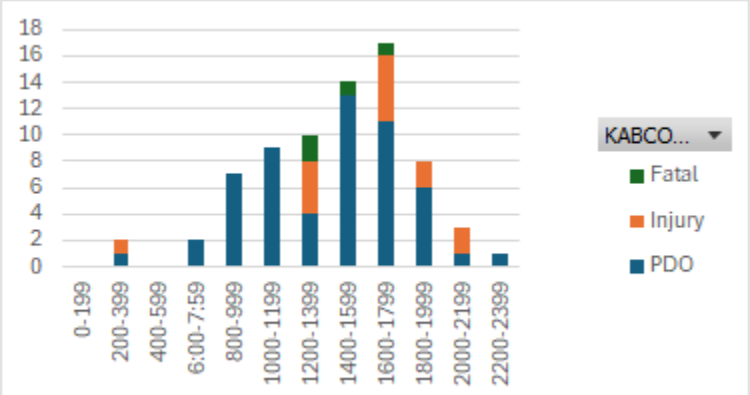


Exhibit Leslie-7: Crashes and Severity by Time of Day

Focus Roadways

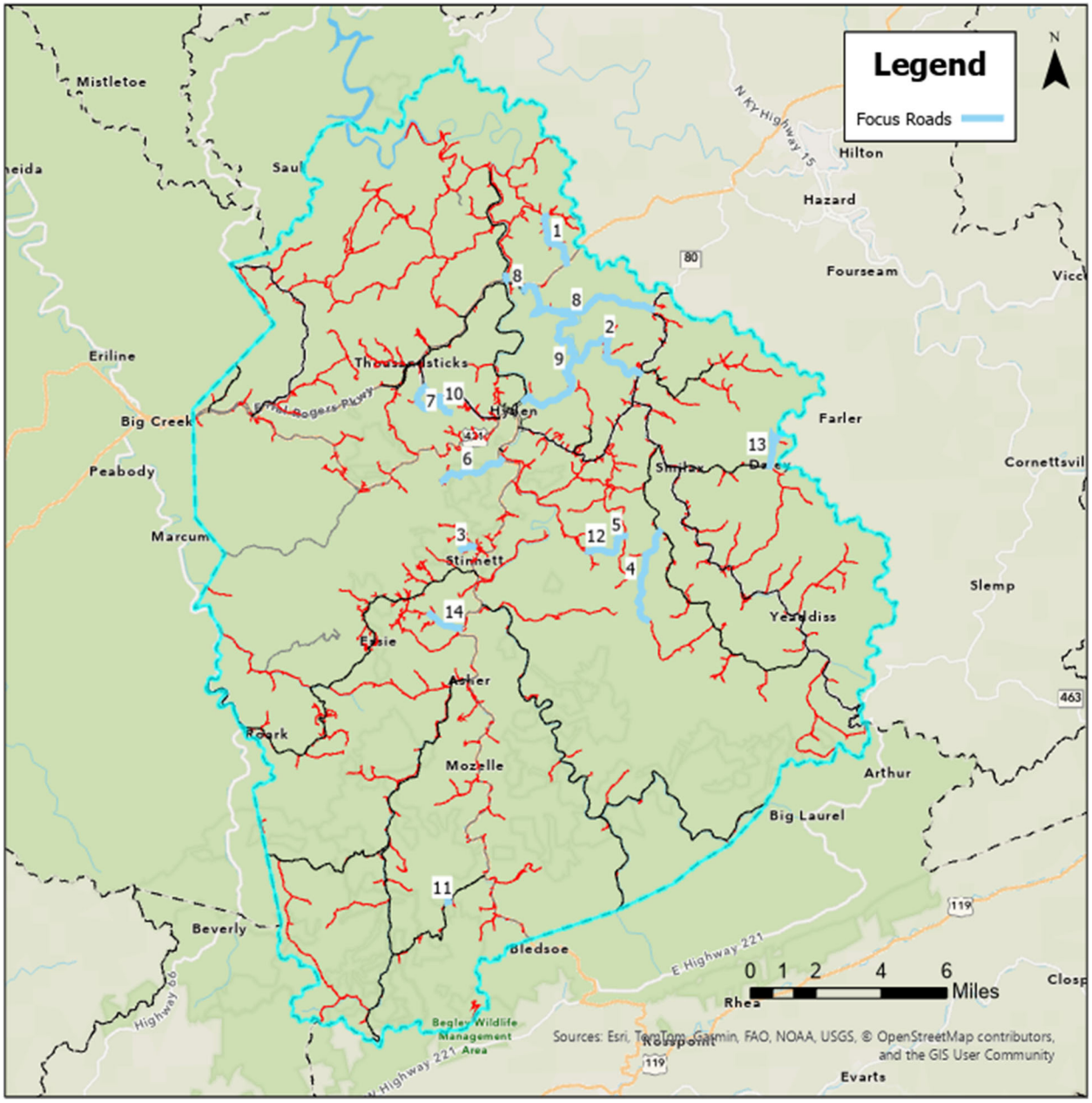


Exhibit Leslie-8: Focus Roads

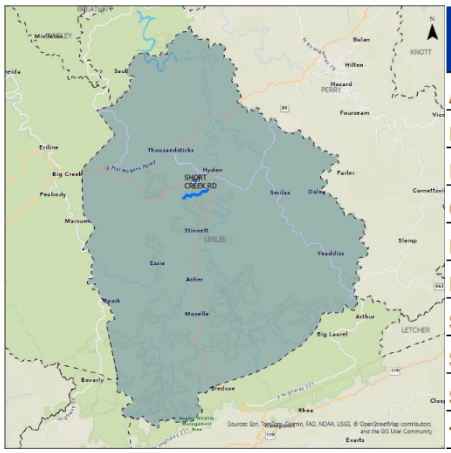
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Leslie												
066-CR-1302 -000	2.13	Leslie	Kentucky River	SHORT CREEK RD	1	0	0	4.06	0.88	5.6%	38.9%	1
066-CR-1051 -000	5.95	Leslie	Kentucky River	OWLS NEST RD	1	0	0	4.06	0.20	5.6%	61.1%	1
066-CR-1528 -000	3.20	Leslie	Kentucky River	COON CREEK RD	1	0	0	4.06	0.07	5.6%	72.2%	1
066-CR-1041 -000	2.03	Leslie	Kentucky River	PLEASANT VALLEY RD	0	0	2	0.63	2.76	0.0%	100.0%	1
066-CR-1306 -000	0.96	Leslie	Kentucky River	THOUSANDSTICKS BRANCH RD	0	0	1	0.31	0.39	0.0%	100.0%	1
066-CR-1040 -000	5.47	Leslie	Kentucky River	LOWER MCINTOSH RD	0	0	1	0.31	0.25	0.0%	100.0%	1
066-CR-1034 -000	3.21	Leslie	Kentucky River	DOWN CUTSHIN CREEK RD	0	0	0	0.00	0.51	0.0%	100.0%	1
066-CR-1335 -000	0.39	Leslie	Kentucky River	JIM HOLLOW RD	0	0	0	0.00	0.16	0.0%	100.0%	1
066-CR-1216 -000	0.13	Leslie	Kentucky River	VERMONT DR	0	0	0	0.00	0.05	0.0%	100.0%	1
066-CR-1102 -000	1.33	Leslie	Kentucky River	NEBRASKA RD	0	0	0	0.00	0.04	0.0%	100.0%	1

Exhibit Leslie-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Short Creek Rd (066-CR-1302 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**0**	**1**	**0**	**1**

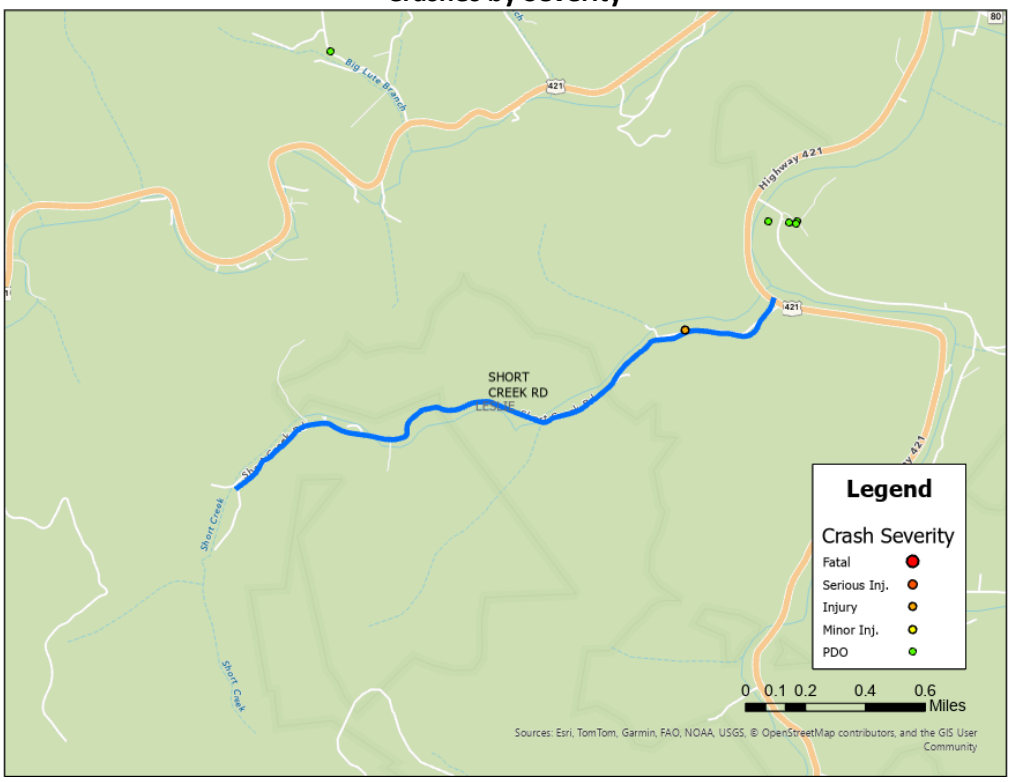
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
066-CR-1302 -000	SHORT CREEK RD	10	3-Fair	RHR 5 - 5- 10 ft non-recoverable	60-80

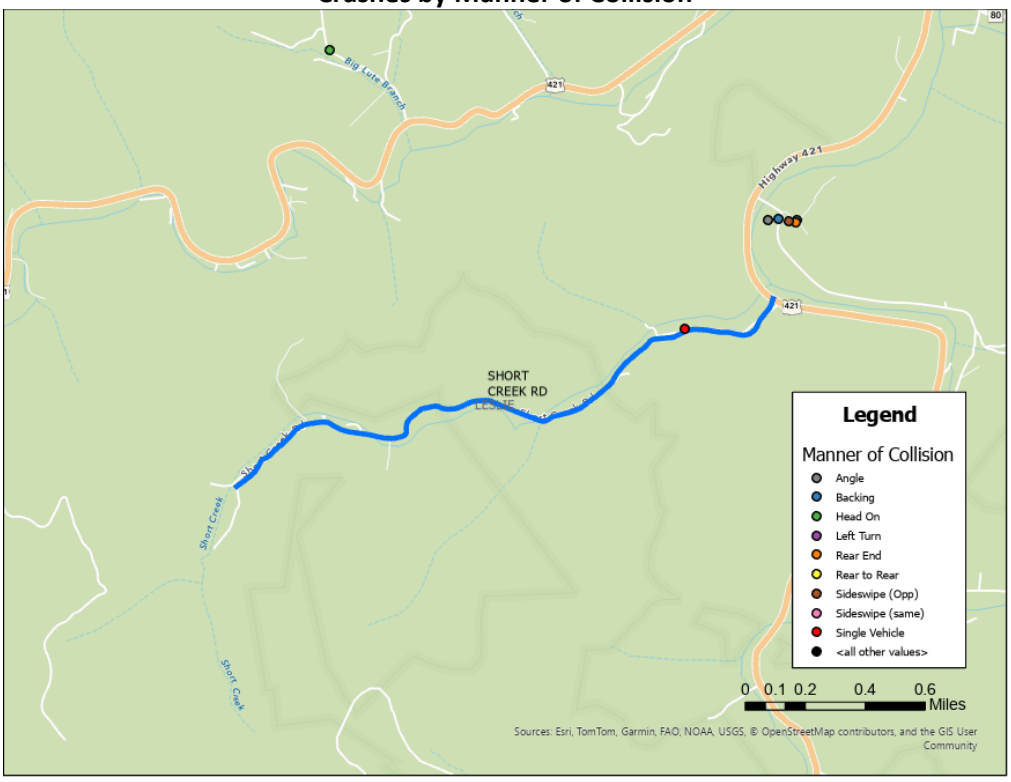
Roadway Typical Section



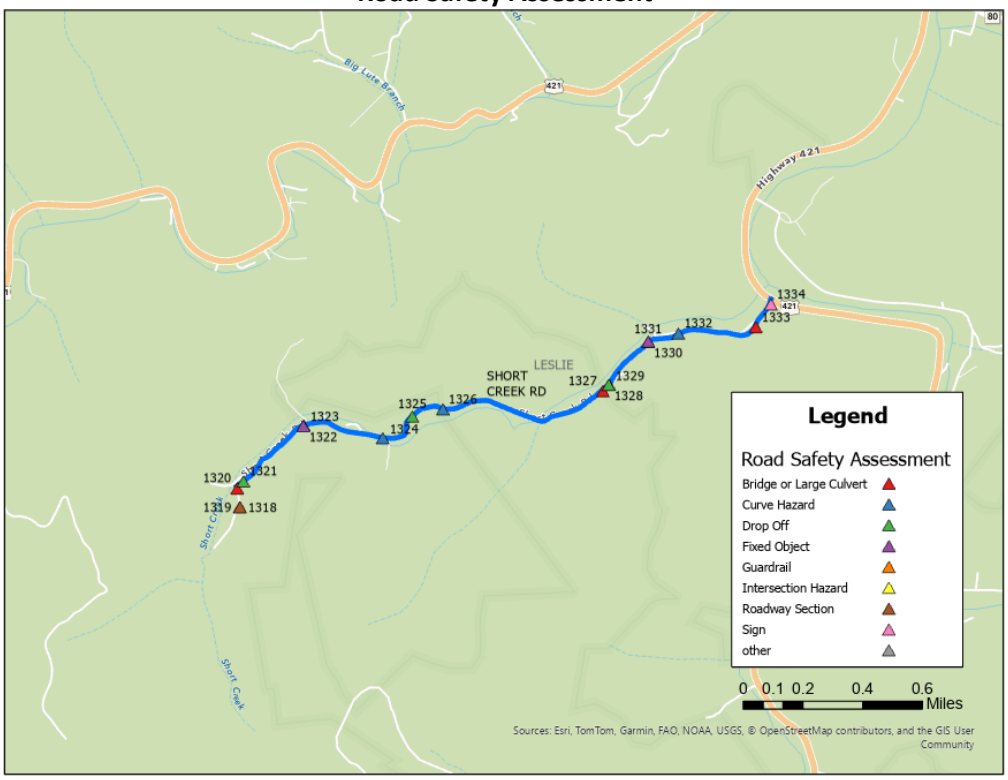
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



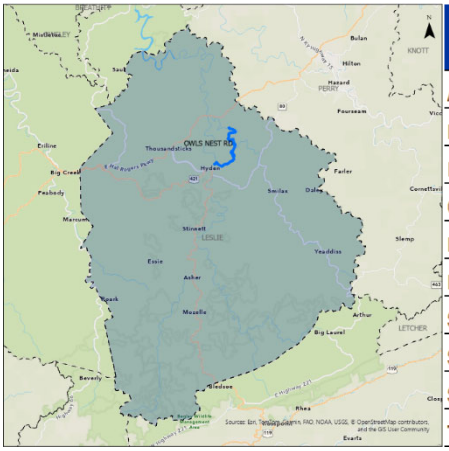
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline1	Curve Signin
1319	066-CR-1302 -000	SHORT CREEK RD	10	3-Fair	RHR 5 - 5- 10 ft non-recoverable	60-80	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1322	066-CR-1302 -000	SHORT CREEK RD	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
1326	066-CR-1302 -000	SHORT CREEK RD	Drop Off	1-3	>10	--	Install Guardrail
1329	066-CR-1302 -000	SHORT CREEK RD	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1323	066-CR-1302 -000	SHORT CREEK RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
1332	066-CR-1302 -000	SHORT CREEK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
1320	066-CR-1302 -000	SHORT CREEK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1327	066-CR-1302 -000	SHORT CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1333	066-CR-1302 -000	SHORT CREEK RD	Bridge or Large Culvert	14	4	0	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
1320	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Yes	--	vegetation, Curve Obscured	Add Curve Warning Sign; Clear Vegetation
1324	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1325	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1327	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1330	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation, Entrance in Curve	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
1331	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1333	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Yes	--	Curve Obscured	Add Curve Warning Sign; Clear Vegetation

Owls Nest Rd (066-CR-1051 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**0**	**1**	**0**	**1**

General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
066-CR-1051 -000	OWLS NEST RD	10	2-Good	RHR 6 - <5 ft non-recoverable	60-80
066-CR-1051 -000	OWLS NEST RD	14	4-Poor	RHR 3 - >10 ft	40-60

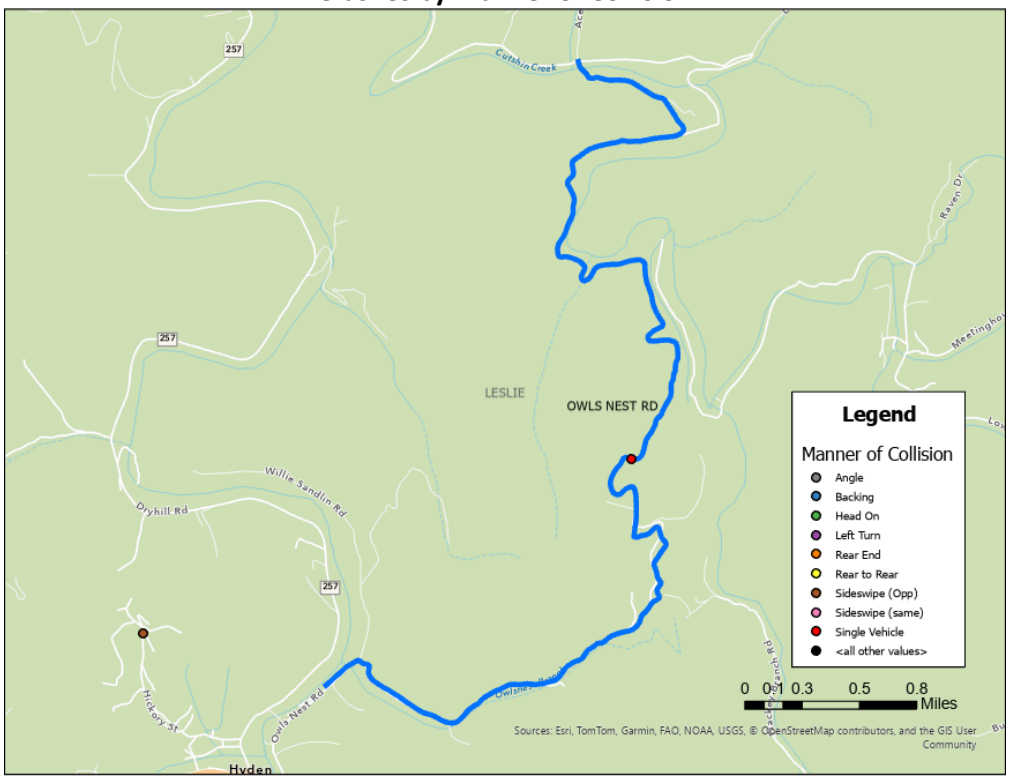
Roadway Typical Section



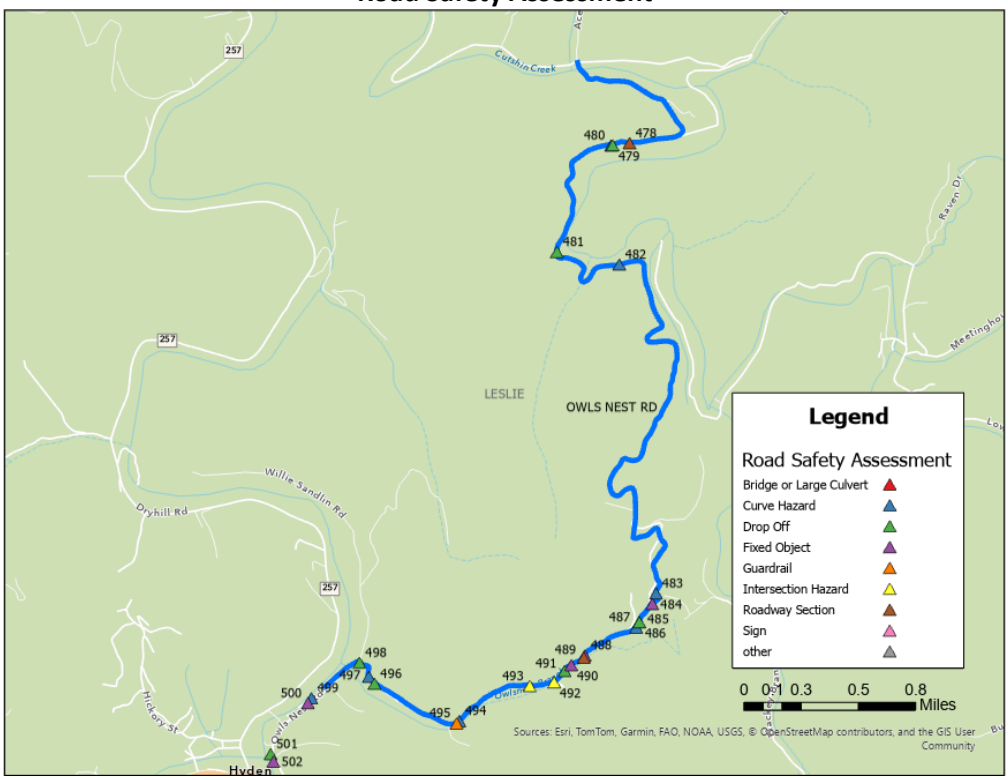
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



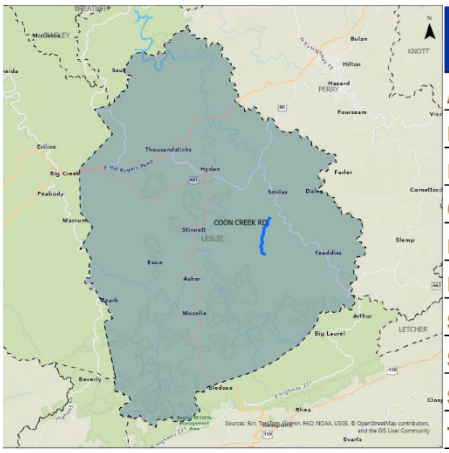
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Shoulde	Edgeline[1]	Curve Signin
479	066-CR-1051 -000	OWLS NEST RD	10	2-Good	RHR 6 - <5 ft non-recoverable	60-80	✓		✓
490	066-CR-1051 -000	OWLS NEST RD	14	4-Poor	RHR 3 - >10 ft	40-60	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
480	066-CR-1051 -000	OWLS NEST RD	Drop Off	0-1	>10	--	Install Guardrail
482	066-CR-1051 -000	OWLS NEST RD	Drop Off	0-1	>10	--	Install Guardrail
486	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	--	Install Guardrail
492	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	--	Install Guardrail
497	066-CR-1051 -000	OWLS NEST RD	Drop Off	0-1	>10	--	Install Guardrail
499	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	--	Install Guardrail
502	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
485	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
489	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Other; Retaining wall	Single	0-1	Install Type 2 Object Marker
491	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
501	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
502	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Utility Pole	Series	0-1	Install Type 2 Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
496	066-CR-1051 -000	OWLS NEST RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
493	066-CR-1051 -000	OWLS NEST RD	Intersection Hazard	Intersection Skew	Yes	Evaluate for Stop Bar; Clear vegetation	
494	066-CR-1051 -000	OWLS NEST RD	Intersection Hazard	Intersection Skew, Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
481	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
483	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
484	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
487	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
488	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
495	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
498	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Yes	--	Curve Obscured	Add Curve Warning Sign; Clear Vegetation
500	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation

Coon Creek Rd (066-CR-1528 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	1	0	0	**1**
Total	**2**	**0**	**0**	**2**

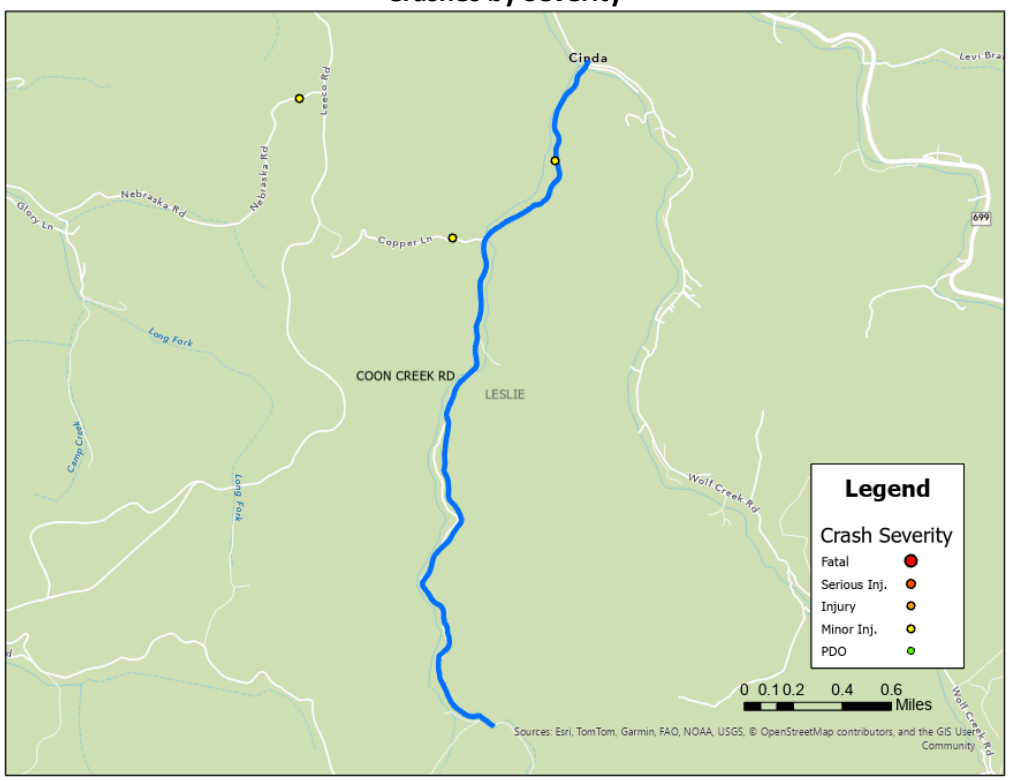
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
066-CR-1528 -000	COON CREEK RD	12	3-Fair	RHR 7 - <5 ft high injury	60-80
066-CR-1528 -000	COON CREEK RD	10	2-Good	RHR 6 - <5 ft non-recoverable	60-80

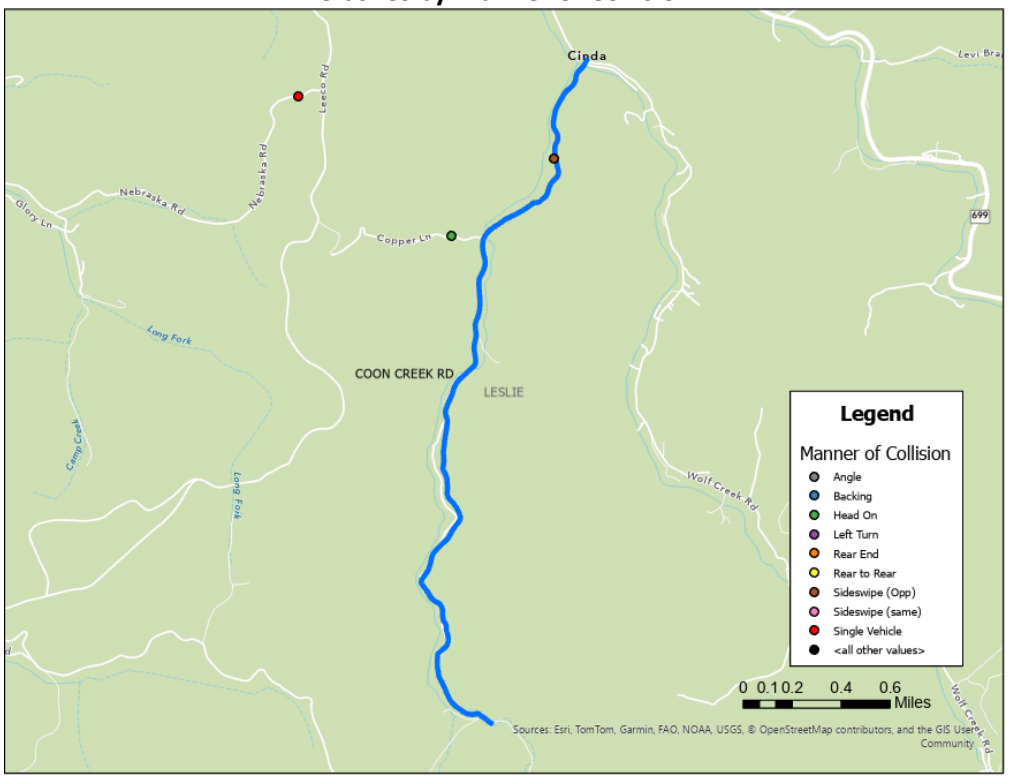
Roadway Typical Section



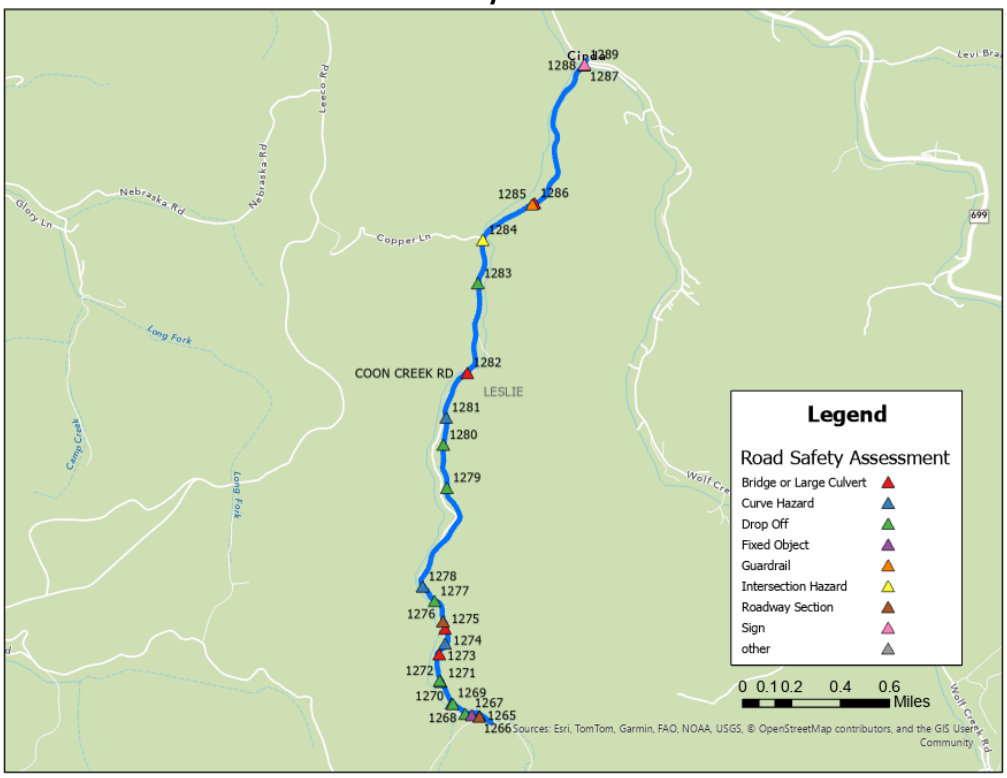
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



Recommendations

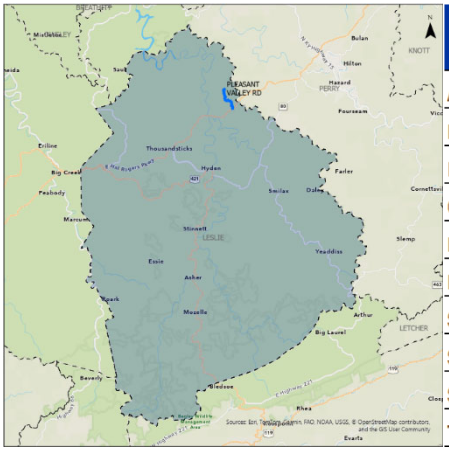
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
1266	066-CR-1528 -000	COON CREEK RD	12	3-Fair	RHR 7 - <5 ft high injury	60-80	✓		✓
1277	066-CR-1528 -000	COON CREEK RD	10	2-Good	RHR 6 - <5 ft non-recoverable	60-80	✓	✓	✓

Recommendations (*continued*)

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1269	066-CR-1528 -000	COON CREEK RD	Drop Off	1-3	>10	--	Install Guardrail
1270	066-CR-1528 -000	COON CREEK RD	Drop Off	1-3	>10	--	Install Guardrail
1273	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	--	Install Guardrail
1278	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	--	Install Guardrail
1280	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	--	Install Guardrail
1281	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	--	Install Guardrail
1284	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	5-10	--	Shoulderering
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1268	066-CR-1528 -000	COON CREEK RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
1286	066-CR-1528 -000	COON CREEK RD	Guardrail	Good	Yes	Some	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
1288	066-CR-1528 -000	COON CREEK RD	Guardrail	Good	Yes	Some	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
1285	066-CR-1528 -000	COON CREEK RD	Intersection Hazard	Intersection Skew, Intersection Obscured on approach, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
1273	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1275	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1282	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1286	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	12	4	0	--
1288	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	15	4	0	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
1267	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation, Entrance in Curve	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
1271	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1272	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Yes	--	vegetation, Curve Obscured	Add Curve Warning Sign; Clear Vegetation
1275	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
1279	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Yes	--	vegetation, Curve Obscured	Add Curve Warning Sign; Clear Vegetation
1282	066-CR-1528 -000	COON CREEK RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign

Pleasant Valley Rd (066-CR-1041 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	1	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	0	0	**0**
Total	**0**	**1**	**0**	**1**

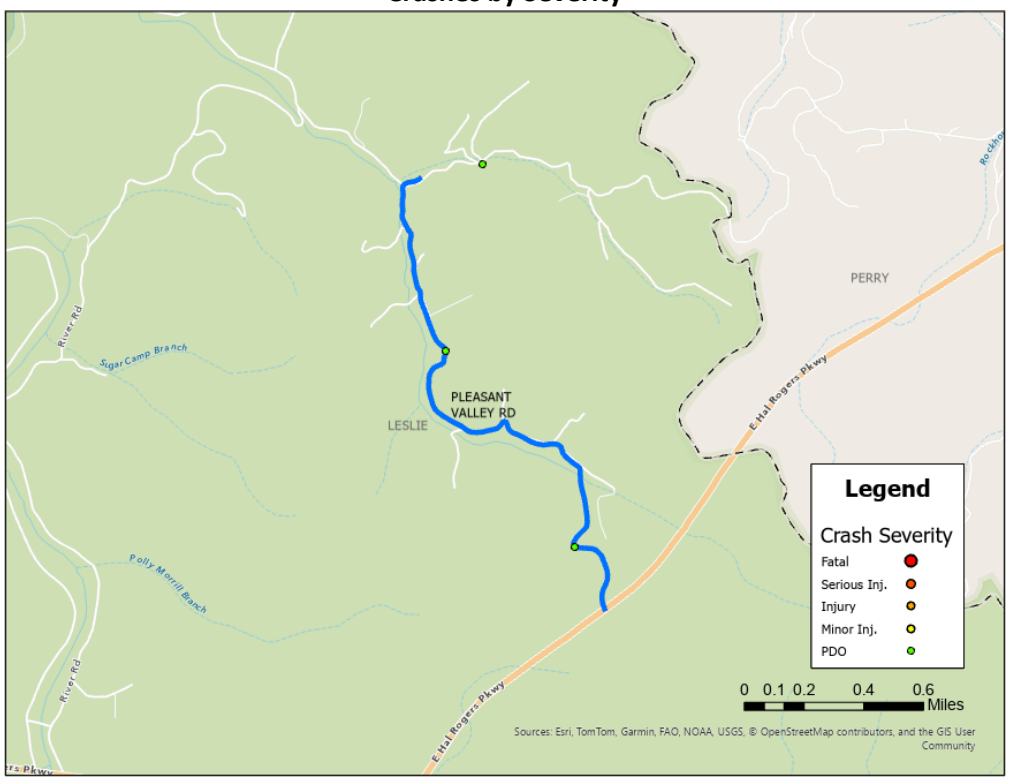
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
066-CR-1041 -000	PLEASANT VALLEY RD	13	3-Fair	RHR 4 - 5-10 ft marginally	40-60

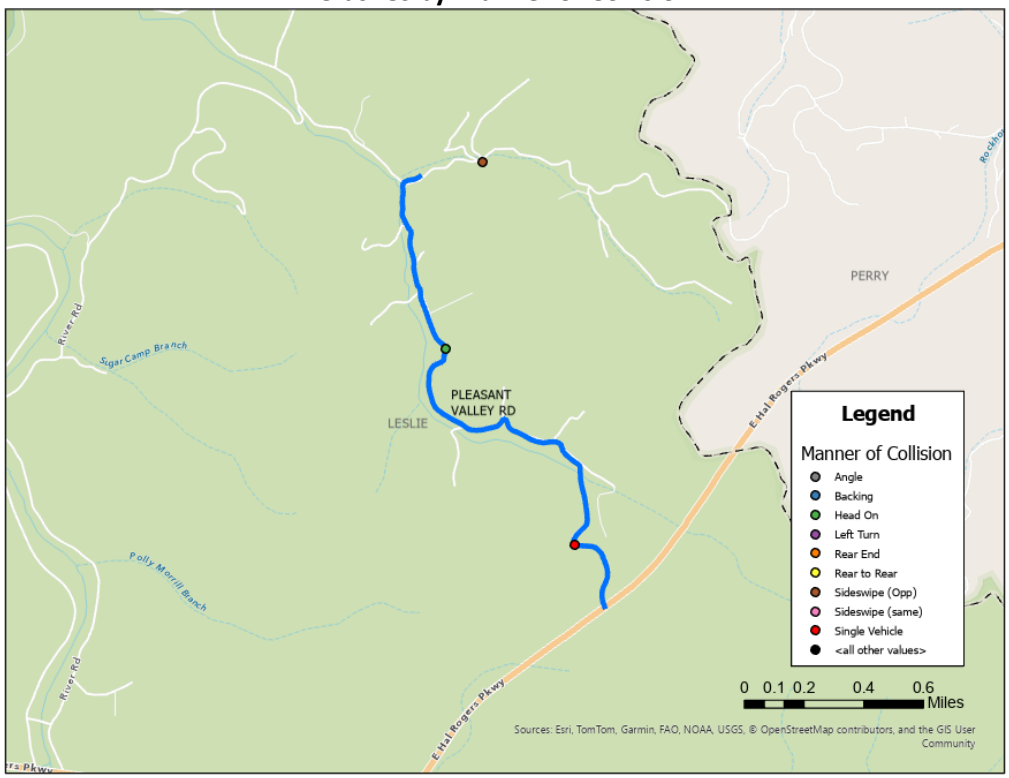
Roadway Typical Section



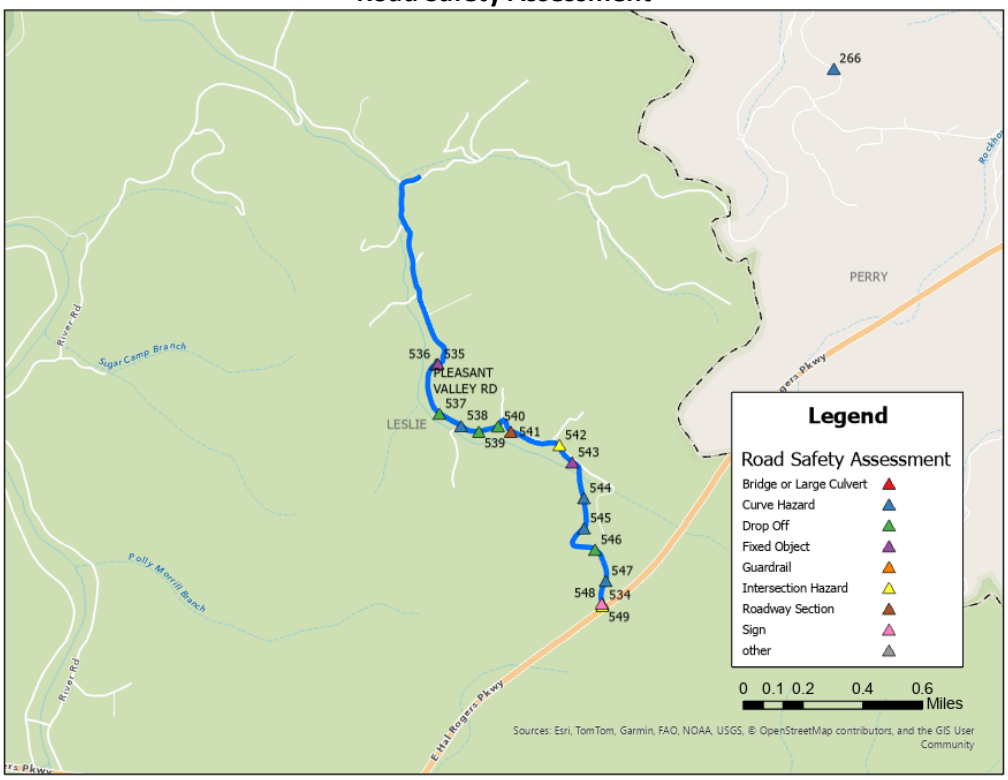
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



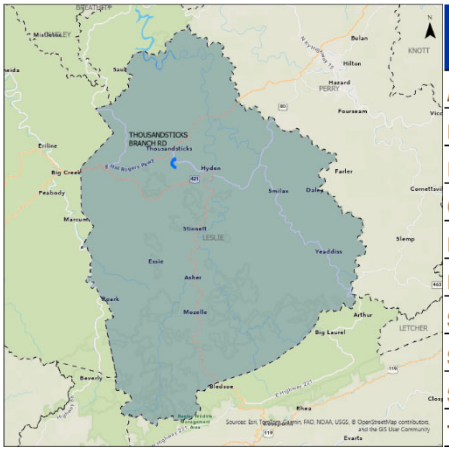
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
542	066-CR-1041 -000	PLEASANT VALLEY RD	13	3-Fair	RHR 4 - 5-10 ft marginally	40-60	✓		

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
538	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	1-3	2-5	--	Shouldering / Repair if Possible; Install Object Marker
540	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	1-3	>10	--	Install Guardrail
541	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	0-1	>10	--	Install Guardrail
547	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	1-3	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
536	066-CR-1041 -000	PLEASANT VALLEY RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
544	066-CR-1041 -000	PLEASANT VALLEY RD	Fixed Object	Other; Fence posts	Series	3-5	Remove
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
543	066-CR-1041 -000	PLEASANT VALLEY RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection, Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation	
550	066-CR-1041 -000	PLEASANT VALLEY RD	Intersection Hazard	Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
535	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
537	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
539	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
545	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
546	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	No	--	Curve Obscured, Entrance in Curve	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
548	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign

Thousandsticks Branch Rd (066-CR-1306 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	1	0	0	**1**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	0	0	**0**
Total	**1**	**0**	**0**	**1**

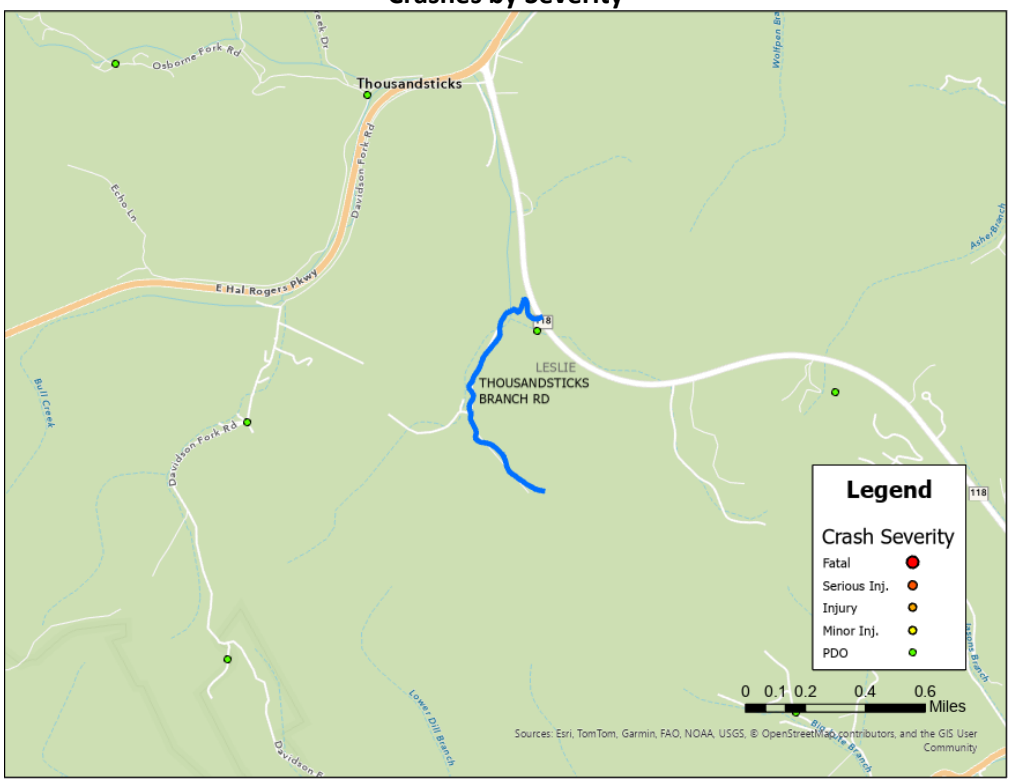
General Roadway Conditions

NOT COLLECTED

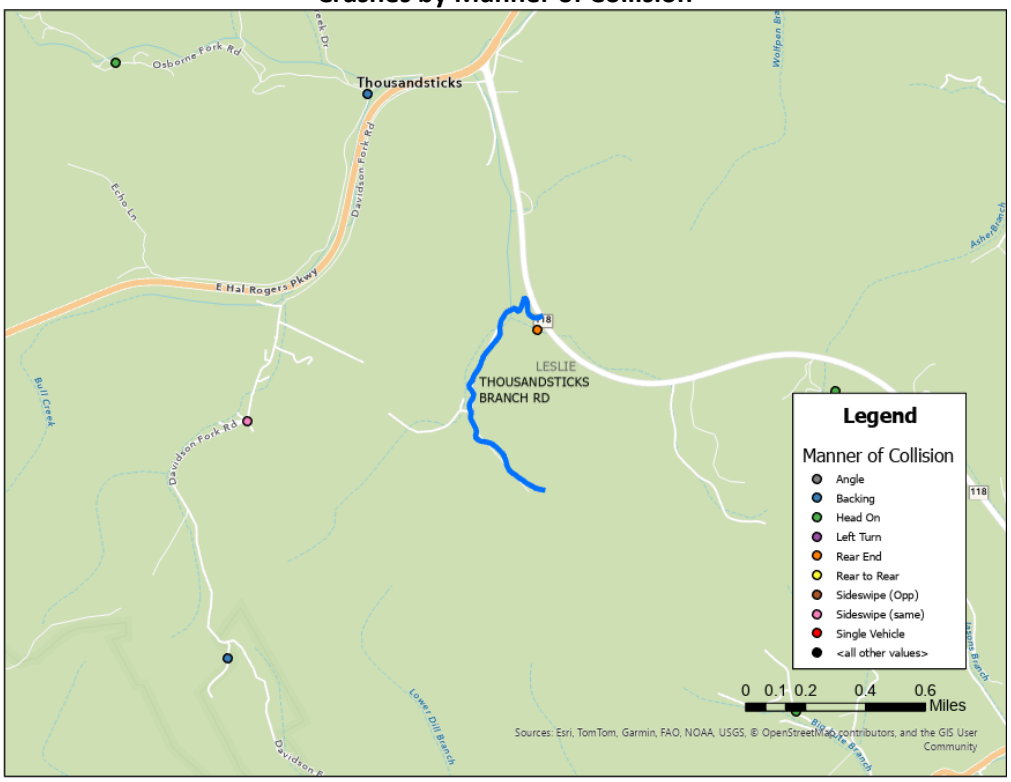
Roadway Typical Section

NOT COLLECTED

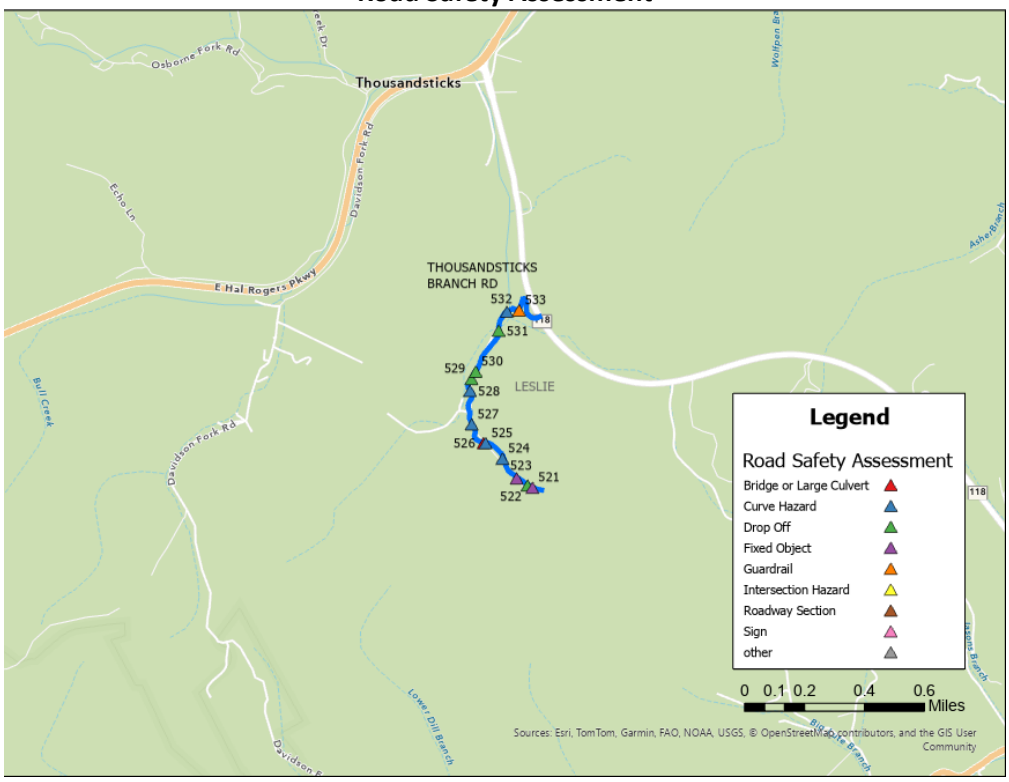
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



Recommendations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
523	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	>10	--	Install Guardrail
530	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	>10	--	Install Guardrail
531	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	>10	--	Install Guardrail
532	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	2-5	--	Shoulderering
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
522	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Fixed Object	Other; Retaining Wall	Series	0-1	Install Type 3 Object Marker
524	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Fixed Object	Tree	Series	3-5	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
534	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Guardrail	Fair	Yes	Some	Evaluate end treatments
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
526	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Bridge or Large Culvert	15	0	0	Install Object Markers
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
525	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
526	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
528	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
529	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
533	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation

Other Roadways

General Roadway Conditions and Recommendations (Leslie County)

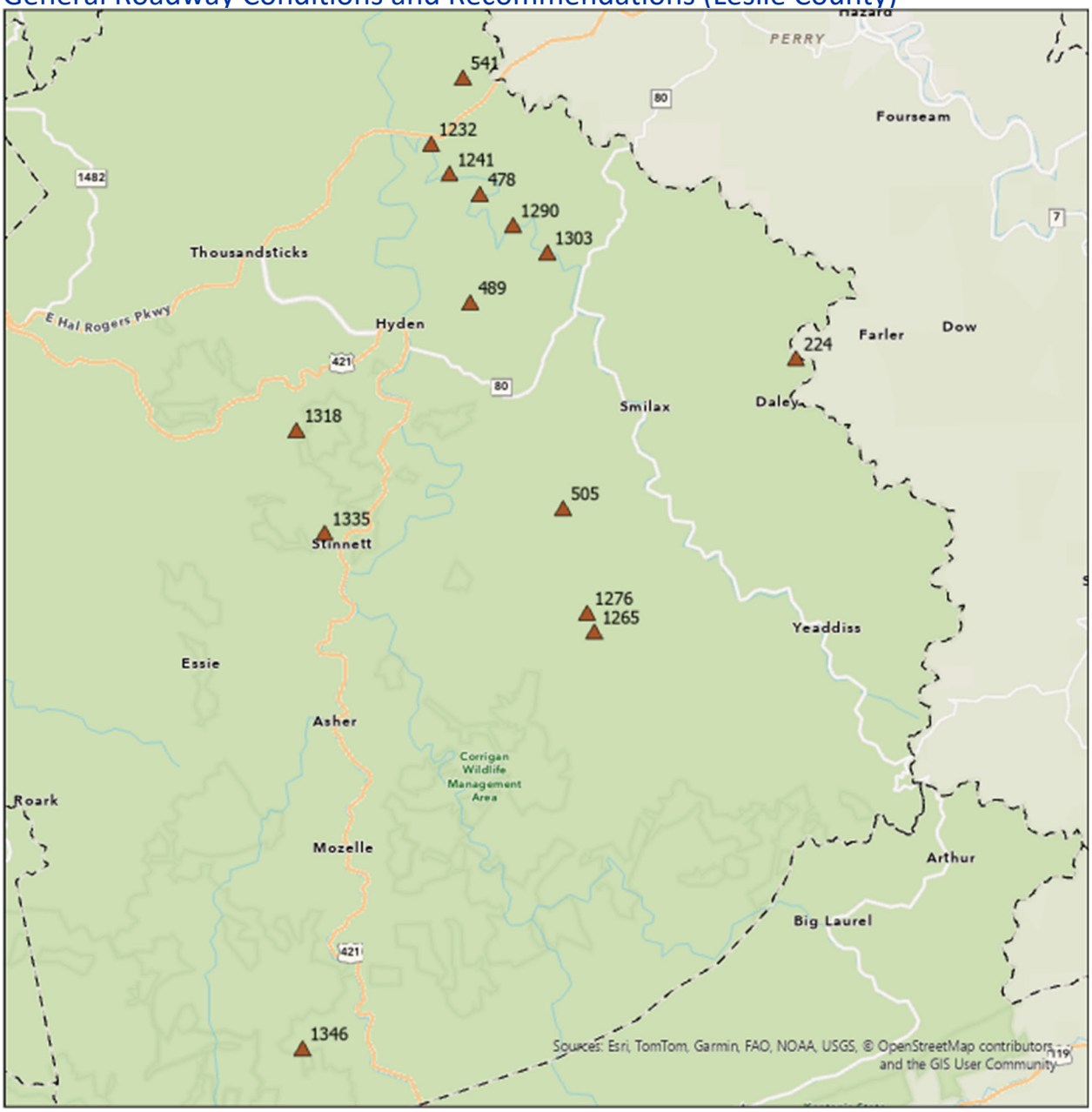


Exhibit Leslie-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
1319	066-CR-1302 -000	SHORT CREEK RD	10	3	5	60-80		✓	✓	✓	
490	066-CR-1051 -000	OWLS NEST RD	14	1	3	40-60		✓	✓	✓	
479	066-CR-1051 -000	OWLS NEST RD	10	1	5	60-80	Gravel section	✓		✓	
1266	066-CR-1528 -000	COON CREEK RD	12	1	5	60-80	Gravel section	✓		✓	
1277	066-CR-1528 -000	COON CREEK RD	10	2	6	60-80		✓	✓	✓	
506	066-CR-1423 -000	GREG WELLS DR	10	1	4	80-100		✓	✓	✓	
1233	066-CR-1040 -000	LOWER MCINTOSH RD	14	1	4	60-80	Gravel	✓			
542	066-CR-1041 -000	PLEASANT VALLEY RD	13	3	4	40-60		✓			
225	066-CR-1018 -000	DALEY RD	12	4	3	40-60		✓			
1291	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	10	3	5	60-80		✓			
1304	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	10	3	5	60-80	Trees need trimmed over road	✓			Trim Vegetation
1336	066-CR-1335 -000	JIM HOLLOW RD	10	3	5	60-80		✓			
1347	066-CR-1216 -000	VERMONT DR	10	3	4	20-40		✓			
1242	066-CR-1040 -000	LOWER MCINTOSH RD	10	2	5	60-80		✓			

Exhibit Leslie-F2: General Roadway Recommendations

Bridge / Culvert Recommendations (Leslie County)

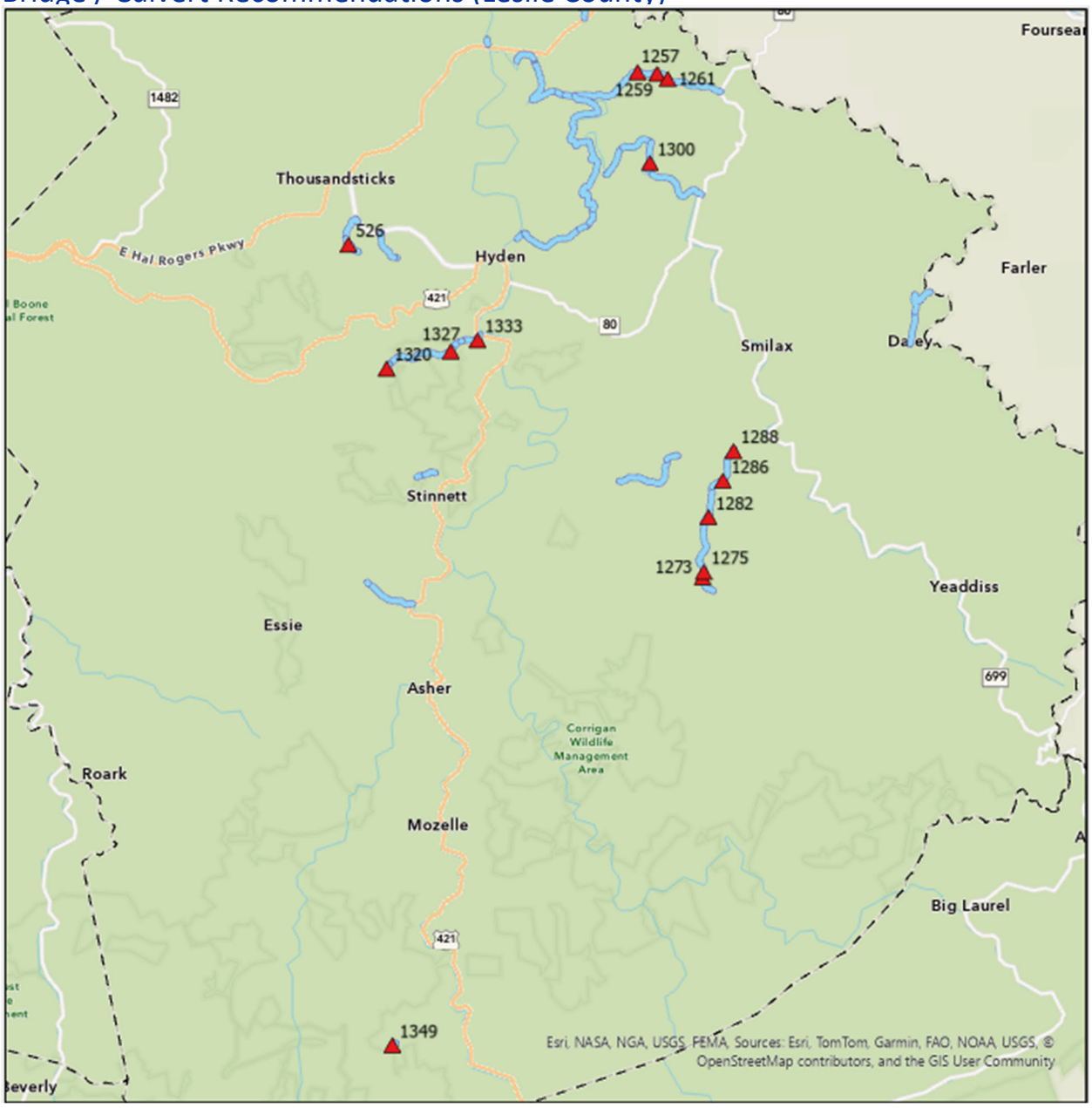


Exhibit Leslie-F3: Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Hazard	Bridge Width	Guard Presen	Object Marker	Recommendation
1273	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1275	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1282	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1286	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	12	4	0	--
1288	066-CR-1528 -000	COON CREEK RD	Bridge or Large Culvert	15	4	0	--
1300	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1257	066-CR-1040 -000	LOWER MCINTOSH RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1259	066-CR-1040 -000	LOWER MCINTOSH RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1261	066-CR-1040 -000	LOWER MCINTOSH RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1320	066-CR-1302 -000	SHORT CREEK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1327	066-CR-1302 -000	SHORT CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1333	066-CR-1302 -000	SHORT CREEK RD	Bridge or Large Culvert	14	4	0	--
526	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1349	066-CR-1216 -000	VERMONT DR	Bridge or Large Culvert	10	0	0	Install Object Markers

Exhibit Leslie-F4: Bridge / Culvert Recommendations

Curve Recommendations (Leslie County)

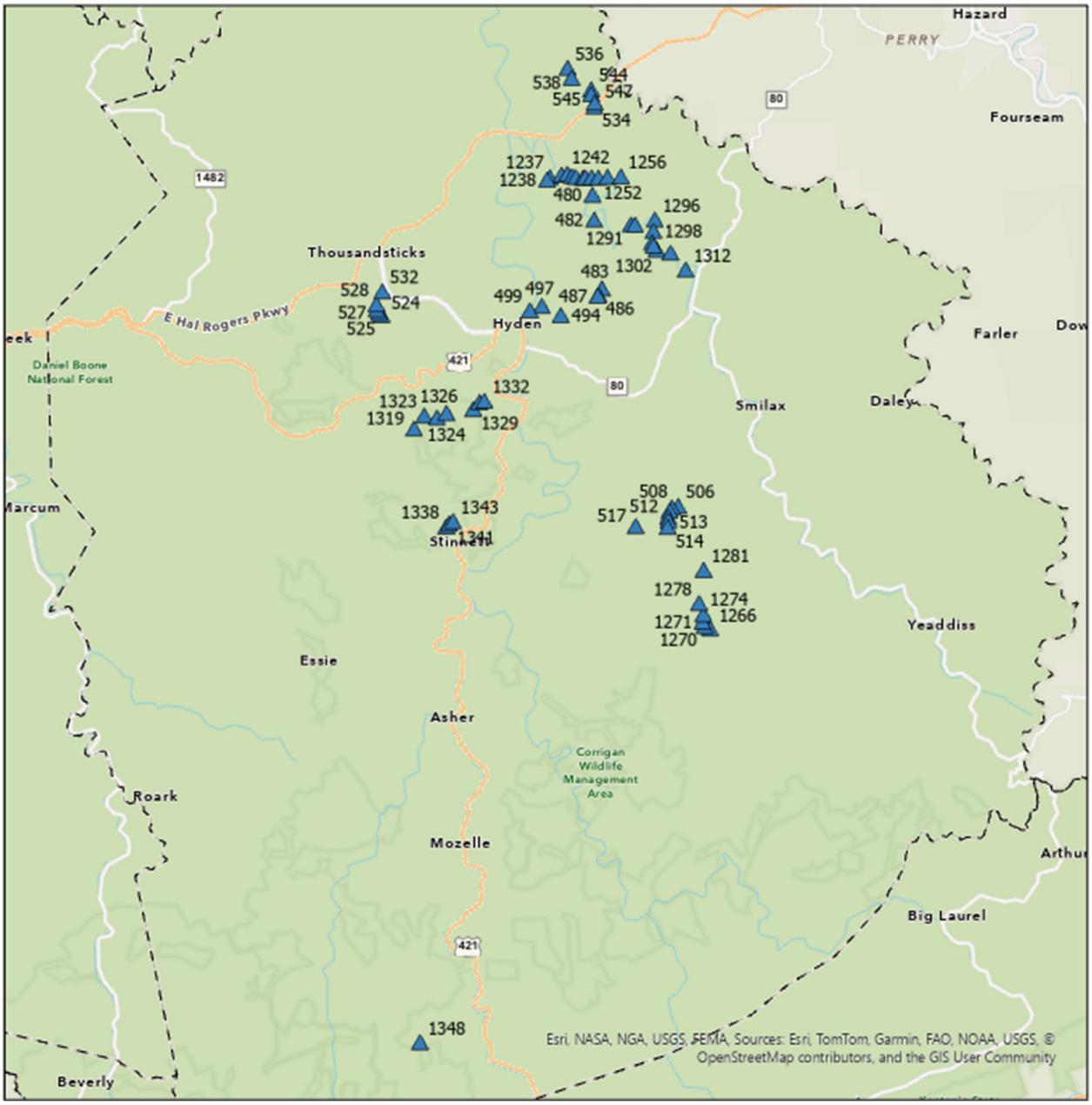


Exhibit Leslie-F5: Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
1291	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1293	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1296	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	Entrance in Curve, Intersection in Curve, Curve Obscured	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar; Clear Vegetation
1298	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	Entrance in Curve, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
1301	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1302	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	Entrance in Curve, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
1304	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1312	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1317	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1237	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1238	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1240	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1242	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1243	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1245	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1248	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1249	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Entrance in Curve, vegetation, Curve Obscured	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
1250	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1252	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1254	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured, Entrance in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
1256	066-CR-1040 -000	LOWER MCINTOSH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
534	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
536	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
538	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
544	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
545	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	Curve Obscured, Entrance in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
547	066-CR-1041 -000	PLEASANT VALLEY RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
480	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
402	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
483	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
486	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
487	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
494	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
497	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
499	066-CR-1051 -000	OWLS NEST RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
512	066-CR-1102 -000	NEBRASKA RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
513	066-CR-1102 -000	NEBRASKA RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
514	066-CR-1102 -000	NEBRASKA RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
517	066-CR-1102 -000	NEBRASKA RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1348	066-CR-1216 -000	VERMONT DR	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1319	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1323	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1324	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1326	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1329	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Curve Obscured, vegetation, Entrance in Curve	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
1330	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1332	066-CR-1302 -000	SHORT CREEK RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
524	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
525	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
527	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
528	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
532	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1338	066-CR-1335 -000	JIM HOLLOW RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1341	066-CR-1335 -000	JIM HOLLOW RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1343	066-CR-1335 -000	JIM HOLLOW RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
506	066-CR-1423 -000	GREG WELLS DR	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
508	066-CR-1423 -000	GREG WELLS DR	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
510	066-CR-1423 -000	GREG WELLS DR	Curve Hazard	vegetation, Curve Obscured	No	Add Curve Warning Sign
1266	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Curve Obscured, vegetation, Entrance in Curve	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
1270	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1271	066-CR-1528 -000	COON CREEK RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1274	066-CR-1528 -000	COON CREEK RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1278	066-CR-1528 -000	COON CREEK RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1281	066-CR-1528 -000	COON CREEK RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign

Exhibit Leslie-F6: Curve Recommendations

Roadside Drop Off Recommendations (Leslie County)

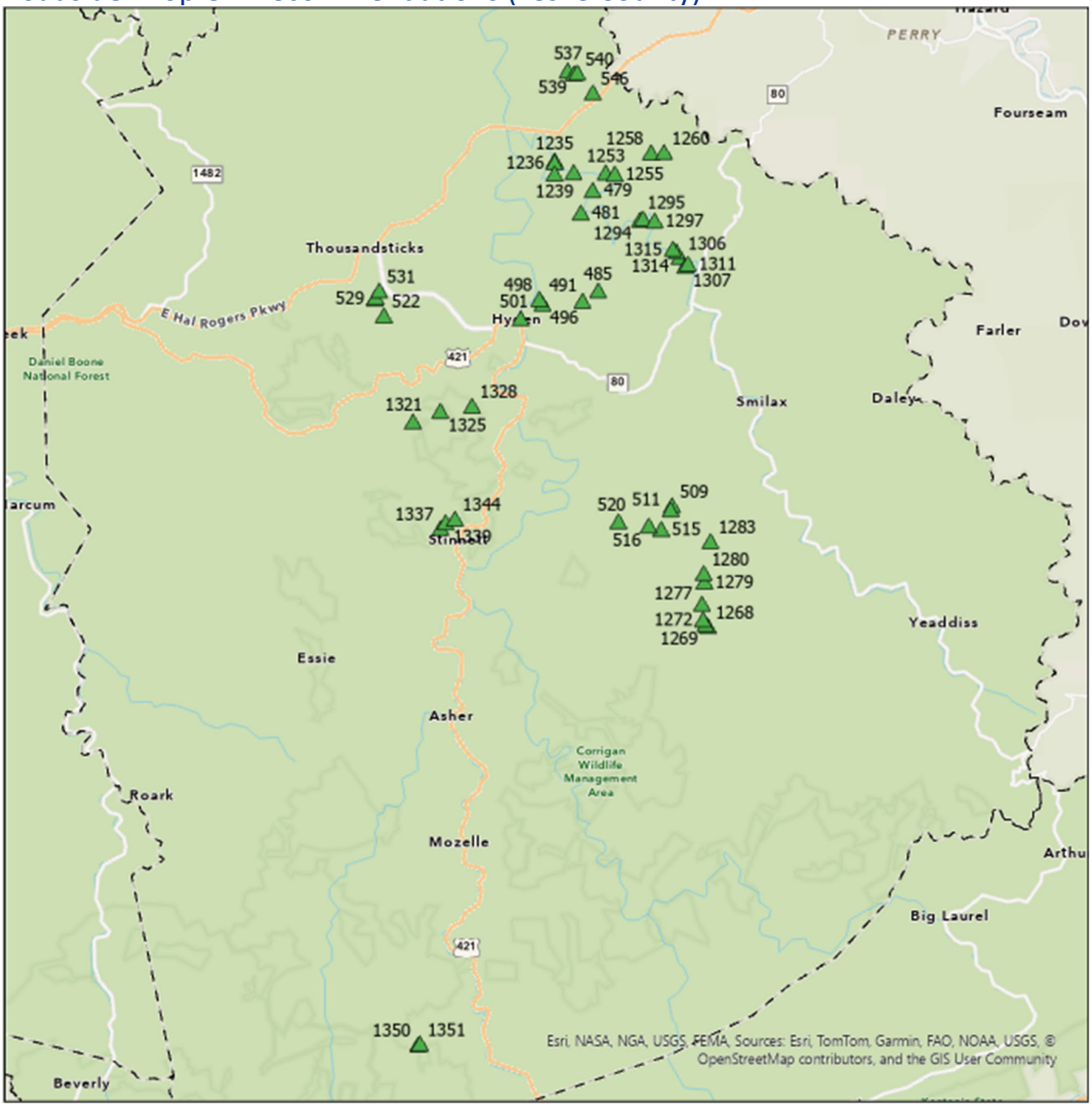


Exhibit Leslie-F7: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
1268	066-CR-1528 -000	COON CREEK RD	Drop Off	1-3	>10	Install Guardrail
1269	066-CR-1528 -000	COON CREEK RD	Drop Off	1-3	>10	Install Guardrail
1272	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	Install Guardrail
1277	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	Install Guardrail
1279	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	Install Guardrail
1280	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	>10	Install Guardrail
1283	066-CR-1528 -000	COON CREEK RD	Drop Off	0-1	5-10	Shoulderering
1294	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	1-3	>10	Install Guardrail
1295	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	1-3	>10	Install Guardrail
1297	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	0-1	>10	Install Guardrail
1306	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	0-1	5-10	Shoulderering
1307	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	3-5	>10	Install Guardrail
1311	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	0-1	>10	Install Guardrail
1314	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	0-1	>10	Install Guardrail
1315	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Drop Off	0-1	5-10	Shoulderering
509	066-CR-1423 -000	GREG WELLS DR	Drop Off	1-3	>10	Install Guardrail
1337	066-CR-1335 -000	JIM HOLLOW RD	Drop Off	0-1	>10	Install Guardrail
1339	066-CR-1335 -000	JIM HOLLOW RD	Drop Off	0-1	2-5	Shoulderering
1344	066-CR-1335 -000	JIM HOLLOW RD	Drop Off	0-1	5-10	Shoulderering
1235	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	3-5	>10	Install Guardrail
1236	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
1239	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible
1244	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible
1253	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	1-3	>10	Install Guardrail
1255	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	0-1	>10	Install Guardrail
1258	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	0-1	5-10	Shoulderering
1260	066-CR-1040 -000	LOWER MCINTOSH RD	Drop Off	0-1	>10	Install Guardrail
511	066-CR-1102 -000	NEBRASKA RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
515	066-CR-1102 -000	NEBRASKA RD	Drop Off	0-1	2-5	Shoulderering
516	066-CR-1102 -000	NEBRASKA RD	Drop Off	0-1	>10	Install Guardrail
520	066-CR-1102 -000	NEBRASKA RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible
479	066-CR-1051 -000	OWLS NEST RD	Drop Off	0-1	>10	Install Guardrail
481	066-CR-1051 -000	OWLS NEST RD	Drop Off	0-1	>10	Install Guardrail
485	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	Install Guardrail
491	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	Install Guardrail
496	066-CR-1051 -000	OWLS NEST RD	Drop Off	0-1	>10	Install Guardrail
498	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	Install Guardrail
501	066-CR-1051 -000	OWLS NEST RD	Drop Off	1-3	>10	Install Guardrail
537	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
539	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	1-3	>10	Install Guardrail
540	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	0-1	>10	Install Guardrail
546	066-CR-1041 -000	PLEASANT VALLEY RD	Drop Off	1-3	>10	Install Guardrail
1321	066-CR-1302 -000	SHORT CREEK RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
1325	066-CR-1302 -000	SHORT CREEK RD	Drop Off	1-3	>10	Install Guardrail
1328	066-CR-1302 -000	SHORT CREEK RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
522	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	>10	Install Guardrail
529	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	>10	Install Guardrail
530	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	>10	Install Guardrail
531	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Drop Off	0-1	2-5	Shoulderering
1350	066-CR-1216 -000	VERMONT DR	Drop Off	0-1	5-10	Shoulderering
1351	066-CR-1216 -000	VERMONT DR	Drop Off	0-1	>10	Install Guardrail

Exhibit Leslie-F8: Roadside Drop Off Recommendations

Fixed Object Recommendations (Leslie County)

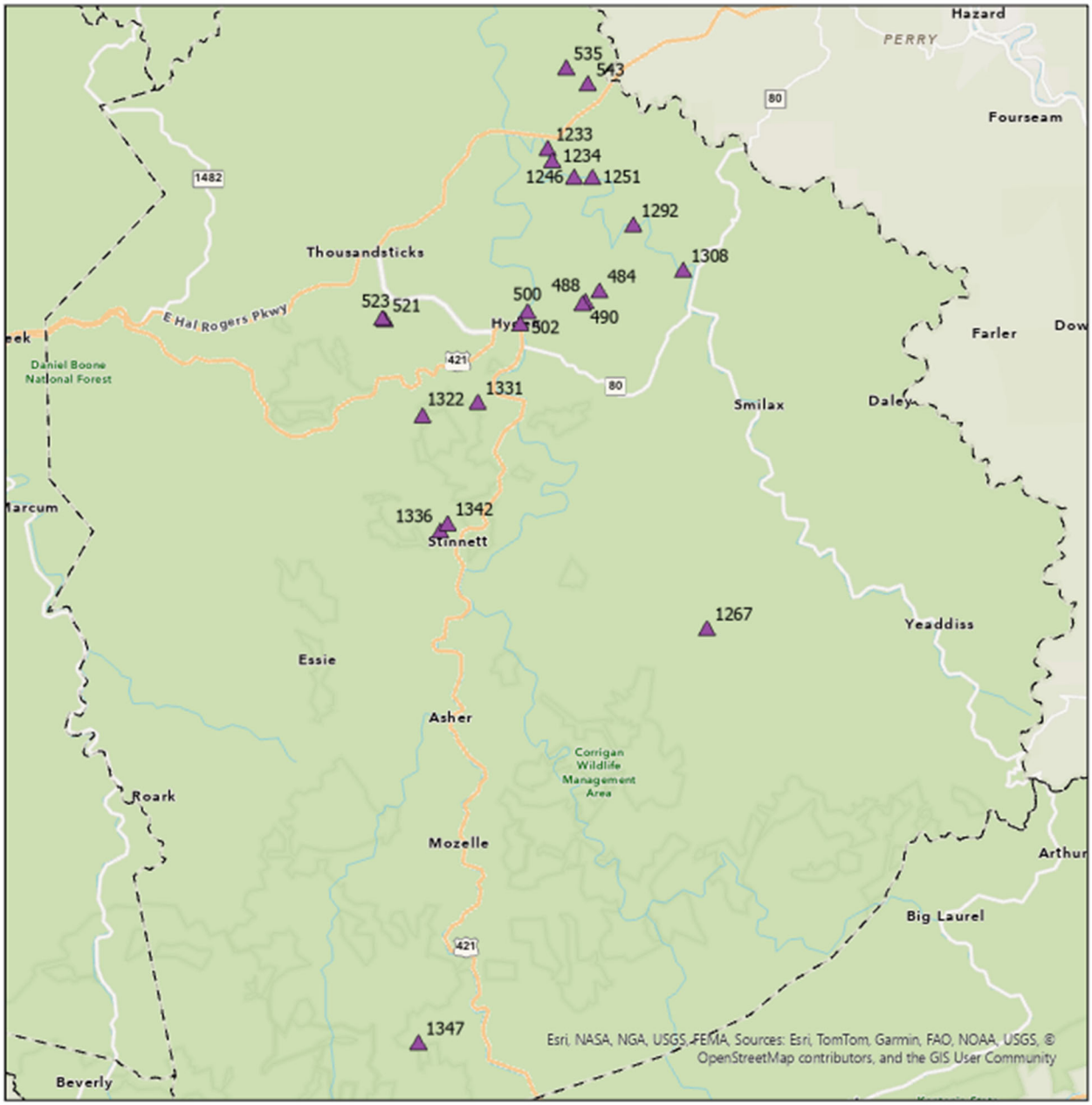


Exhibit Leslie-F9: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
488	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Other; Retaining wall	Single	0-1	Install Type 2 Object Marker
1251	066-CR-1040 -000	LOWER MCINTOSH RD	Fixed Object	Tree	Single	0-1	Remove
1336	066-CR-1335 -000	JIM HOLLOW RD	Fixed Object	Tree	Single	0-1	Remove
1267	066-CR-1528 -000	COON CREEK RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
1322	066-CR-1302 -000	SHORT CREEK RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
484	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
543	066-CR-1041 -000	PLEASANT VALLEY RD	Fixed Object	Other; Fence posts	Series	3-5	Remove
521	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Fixed Object	Other; Retaining Wall	Series	0-1	Install Type 3 Object Marker
535	066-CR-1041 -000	PLEASANT VALLEY RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1331	066-CR-1302 -000	SHORT CREEK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
523	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Fixed Object	Tree	Series	3-5	--
1308	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Fixed Object	Tree	Series	3-5	--
1234	066-CR-1040 -000	LOWER MCINTOSH RD	Fixed Object	Tree	Series	>5	--
1246	066-CR-1040 -000	LOWER MCINTOSH RD	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
1342	066-CR-1335 -000	JIM HOLLOW RD	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
1347	066-CR-1216 -000	VERMONT DR	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
490	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
500	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1233	066-CR-1040 -000	LOWER MCINTOSH RD	Fixed Object	Utility Pole	Series	3-5	--
1292	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Fixed Object	Utility Pole	Series	>5	--
502	066-CR-1051 -000	OWLS NEST RD	Fixed Object	Utility Pole	Series	0-1	Install Type 2 Object Marker

Exhibit Leslie-F10: Fixed Object Recommendations

Guardrail Recommendations (Leslie County)

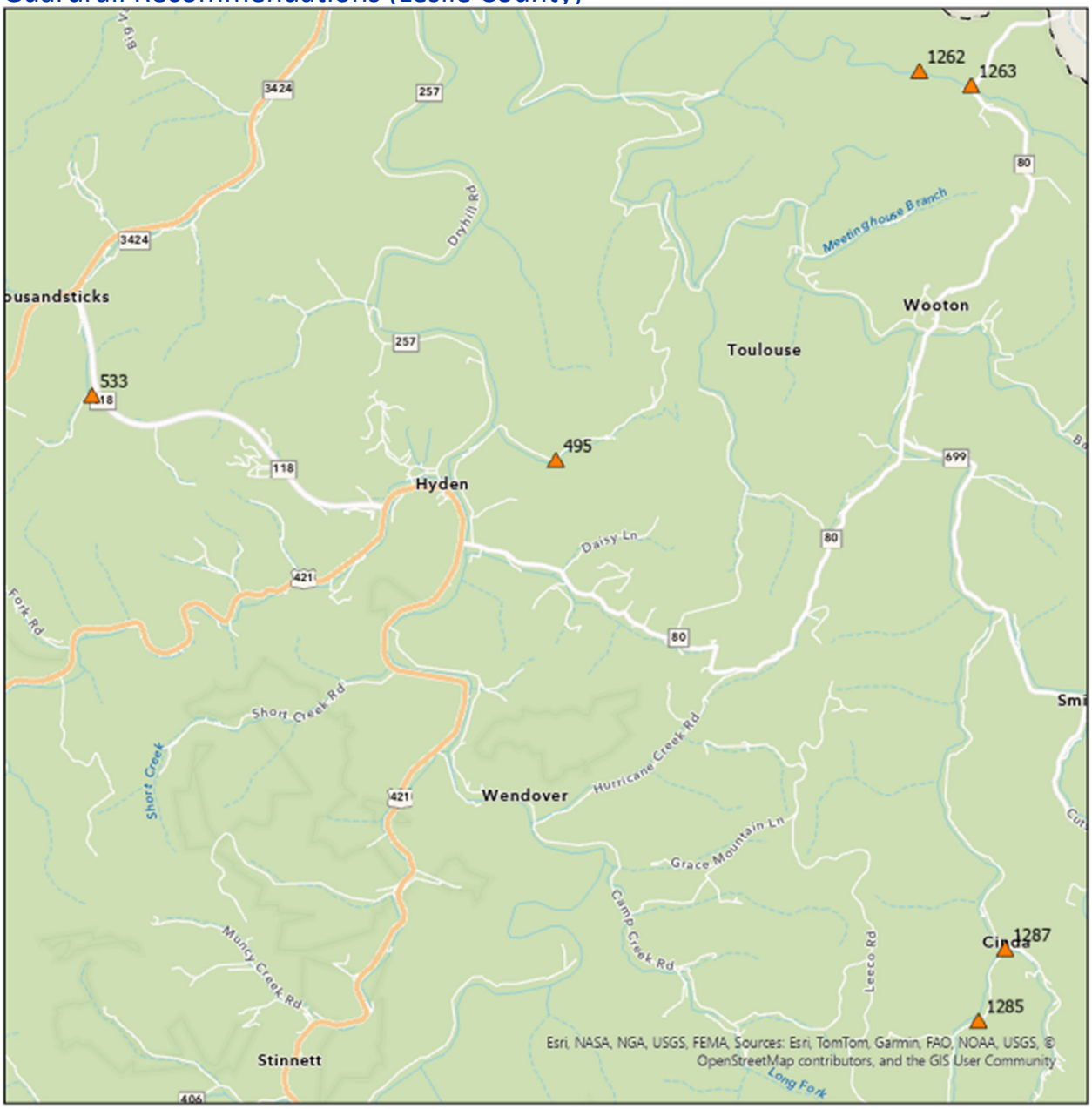


Exhibit Leslie-F11: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
495	066-CR-1051 -000	OWLS NEST RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
533	066-CR-1306 -000	THOUSANDSTICKS BRANCH RD	Guardrail	Fair	Yes	Some	Evaluate end treatments
1262	066-CR-1040 -000	LOWER MCINTOSH RD	Guardrail	Poor	No	None	Remove
1263	066-CR-1040 -000	LOWER MCINTOSH RD	Guardrail	Fair	Yes	Some	Evaluate end treatments
1285	066-CR-1528 -000	COON CREEK RD	Guardrail	Good	Yes	Some	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
1287	066-CR-1528 -000	COON CREEK RD	Guardrail	Good	Yes	Some	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment

Exhibit Leslie-F12: Guardrail Recommendations

Intersection Recommendations (Leslie County)

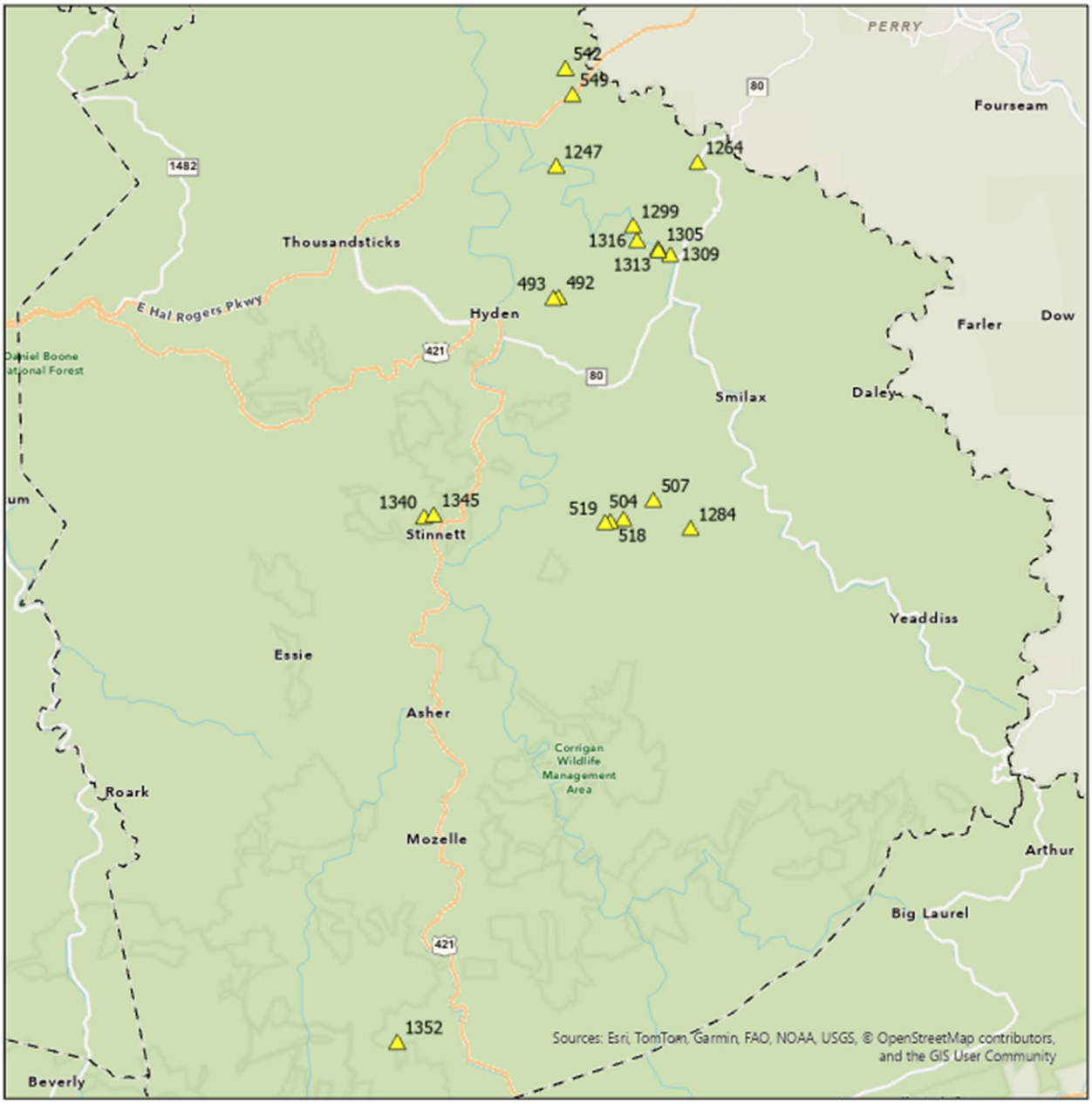


Exhibit Leslie-F13: Intersection Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Blocked by Vegetatio	Recommendation
492	066-CR-1051 -000	OWLS NEST RD	Intersection Hazard	Intersection Skew	Yes	Evaluate for Stop Bar; Clear vegetation
493	066-CR-1051 -000	OWLS NEST RD	Intersection Hazard	Intersection Skew, Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
504	066-CR-1102 -000	NEBRASKA RD	Intersection Hazard	Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
507	066-CR-1423 -000	GREG WELLS DR	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
518	066-CR-1102 -000	NEBRASKA RD	Intersection Hazard	Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
519	066-CR-1102 -000	NEBRASKA RD	Intersection Hazard	Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach
542	066-CR-1041 -000	PLEASANT VALLEY RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection, Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
549	066-CR-1041 -000	PLEASANT VALLEY RD	Intersection Hazard	Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
1247	066-CR-1040 -000	LOWER MCINTOSH RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection, Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
1264	066-CR-1040 -000	LOWER MCINTOSH RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
1284	066-CR-1528 -000	COON CREEK RD	Intersection Hazard	Intersection Skew, Intersection Obscured on approach, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
1299	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Intersection Hazard	Insufficient Sight Distance at Intersection, Intersection Skew, Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
1305	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Intersection Hazard	Intersection Obscured on approach, Insufficient Sight Distance at Intersection, Intersection Skew	No	Install Intersection Ahead / Stop Ahead Sign on Approach
1309	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Intersection Hazard	Intersection Obscured on approach, Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach
1313	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
1316	066-CR-1034 -000	DOWN CUTSHIN CREEK RD	Intersection Hazard	Intersection Skew, Intersection Obscured on approach, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
1340	066-CR-1335 -000	JIM HOLLOW RD	Intersection Hazard	Intersection Skew, Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar
1345	066-CR-1335 -000	JIM HOLLOW RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
1352	066-CR-1216 -000	VERMONT DR	Intersection Hazard	Insufficient Sight Distance at Intersection, Intersection Skew, Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach

Exhibit Leslie-F14: Intersection Recommendations

APPENDX H: LETCHER COUNTY

Letcher County Overview

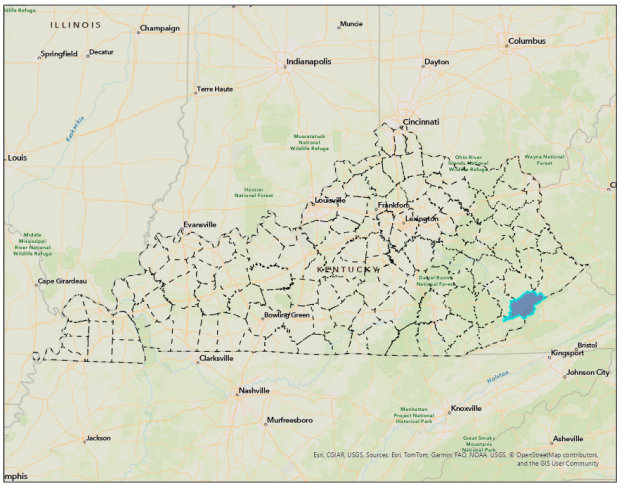


Exhibit Letcher-1: Location Map

Key Information Table Letcher County	
Population	22,676
Population in Underserved Communities	22%
Fatalities (All Roads)	29
Fatalities (County Roads)	4
Fatality rate per 100,000 persons	127.89
County Road Mileage	383.0
City Road Mileage	55.0
State Road Mileage	264.0
Total Mileage	**701.0**

Exhibit Letcher-2: Key Information

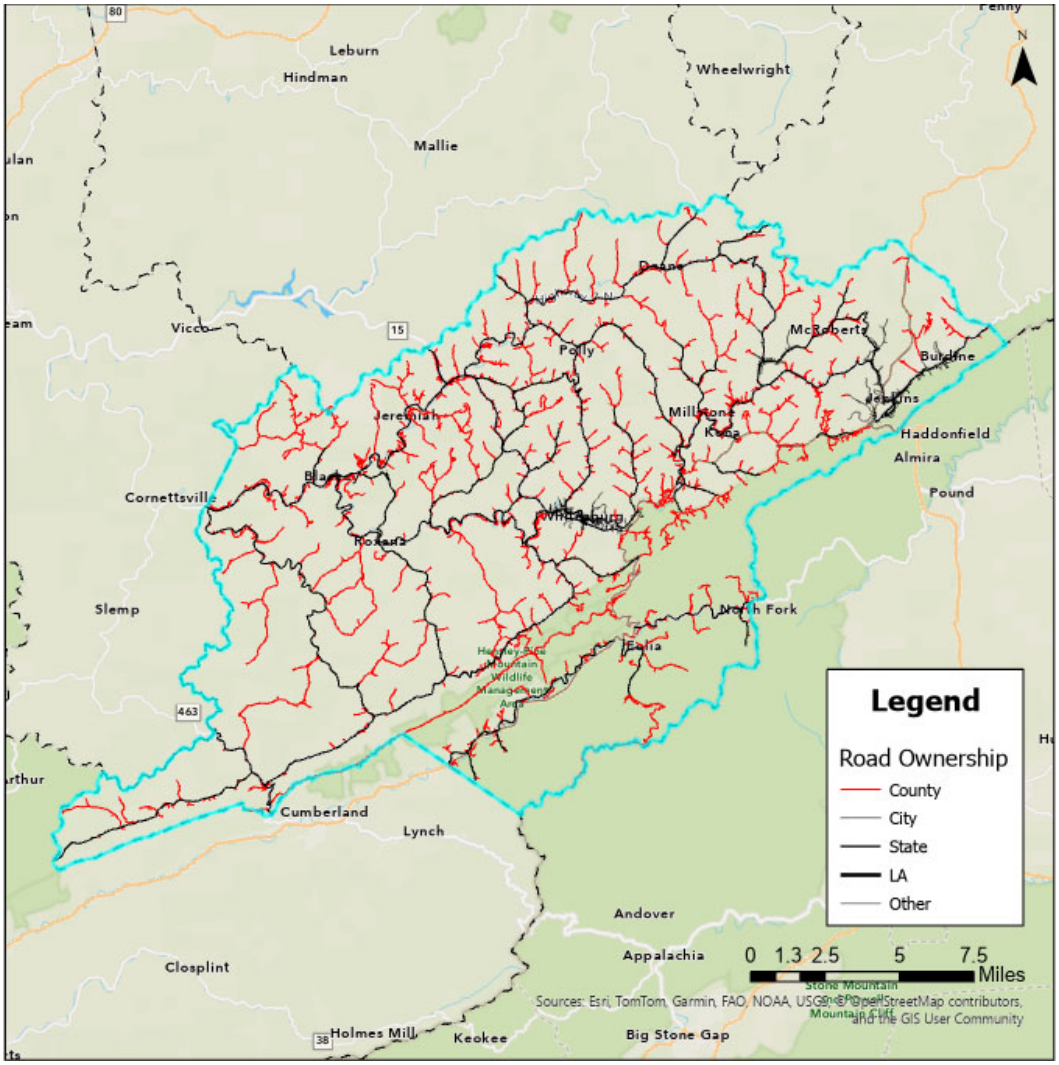


Exhibit Letcher-3: Map of County Roadways

Crash Analysis

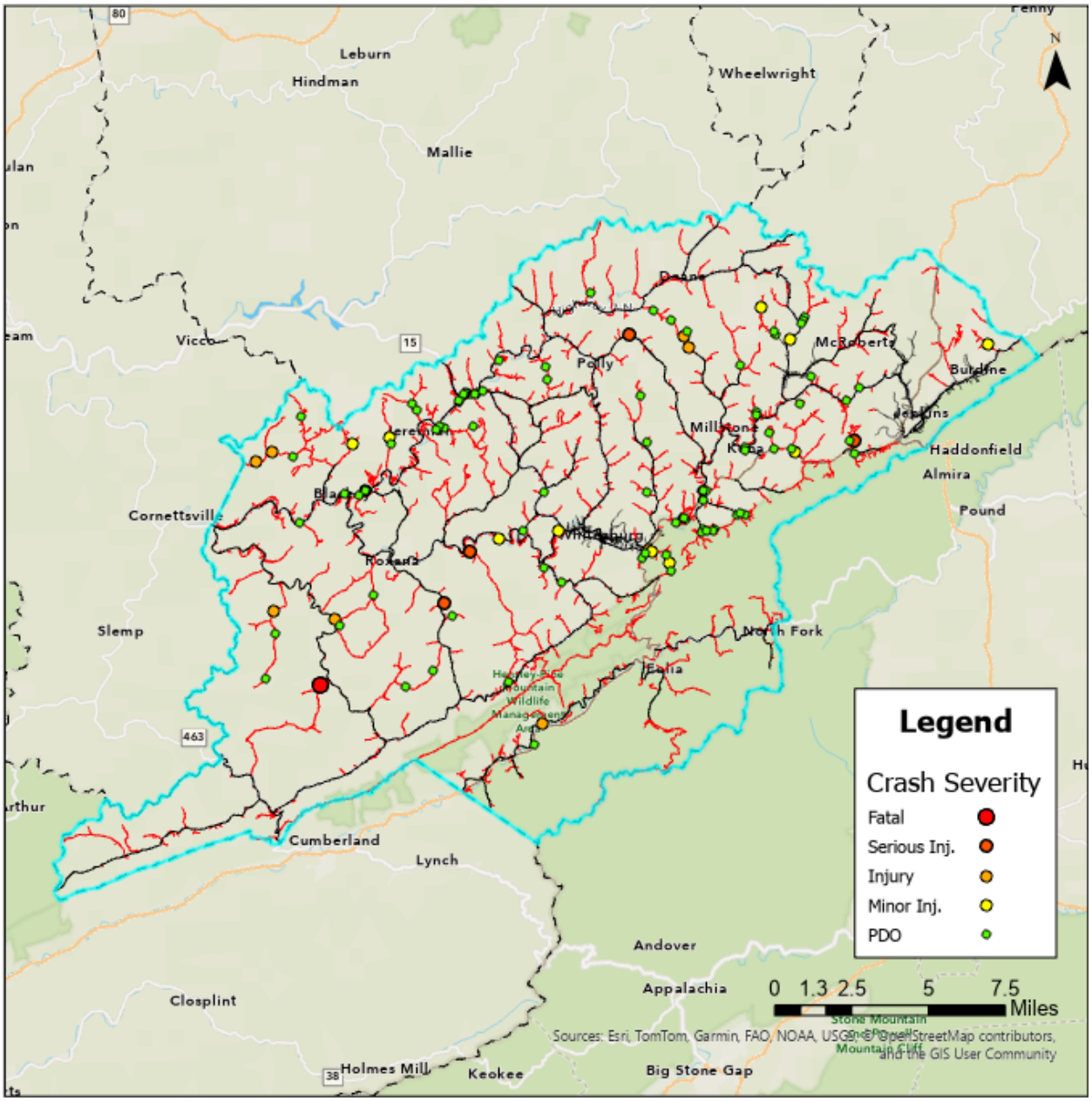
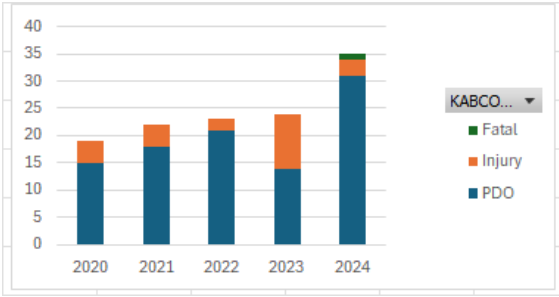


Exhibit Letcher-4: Map of County Road Crashes



Year	Property Damage Only	Injury	Fatal	Total
2020	15	4	0	**19**
2021	18	4	0	**22**
2022	21	2	0	**23**
2023	14	10	0	**24**
2024	31	3	1	**35**

Exhibit Lextcher-5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	0	2	8	10
Backing	0	1	24	25
Head On	0	2	9	11
Opposing Left Turn	0	0	0	0
Rear End	0	2	6	8
Rear To Rear	0	0	0	0
Sideswipe-Opposit	0	1	17	18
Sideswipe-Same D	0	0	7	7
Single Vehicle	1	15	28	44
Total	**1**	**23**	**99**	**123**

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

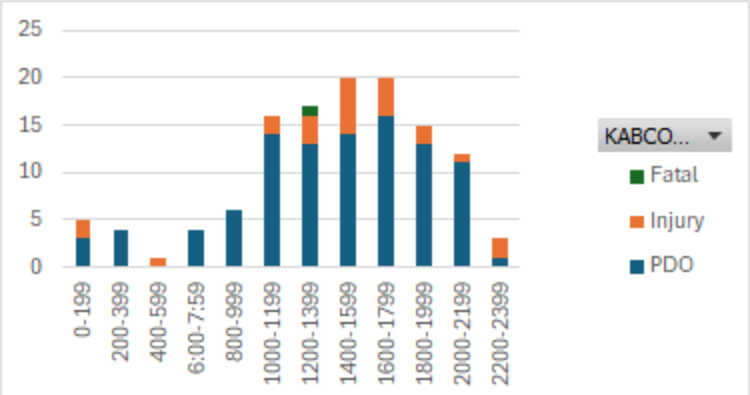


Figure Letcher-7: Crashes and Severity by Time of Day

Focus Roadways

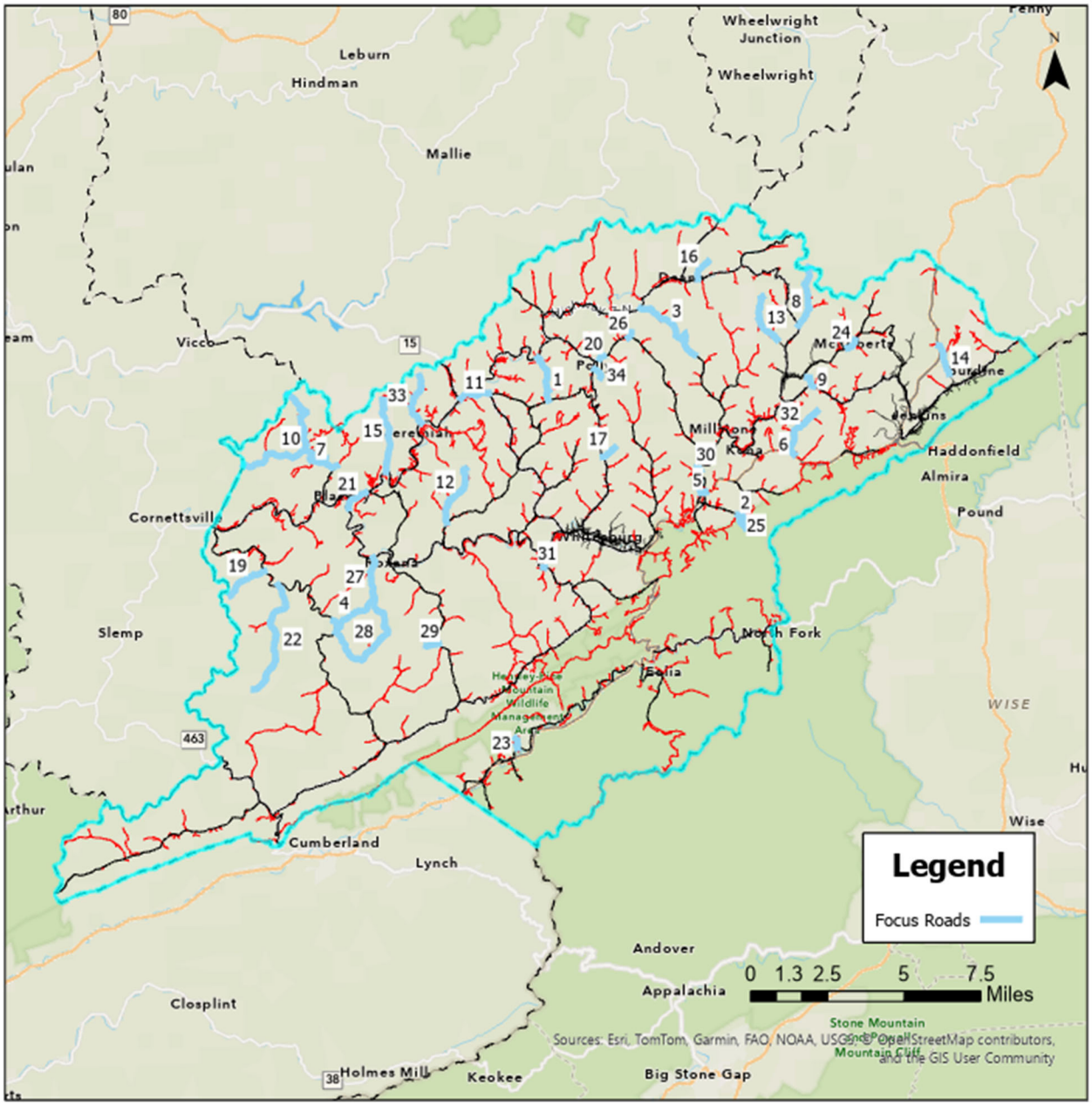


Exhibit Letcher-8: Focus Roads

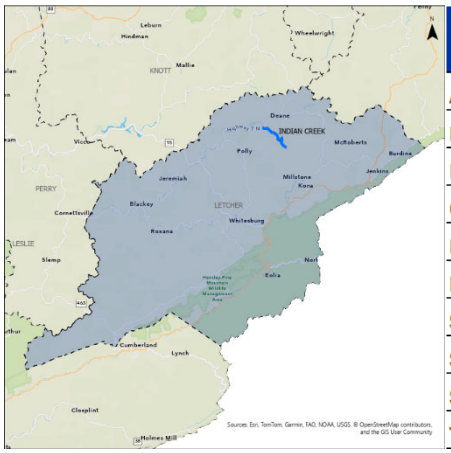
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Letcher												
067-CR-1020 -000	3.07	Letcher	Kentucky River	INDIAN CREEK	2	0	3	6.94	1.69	8.3%	20.8%	1
067-CR-1367 -000	4.88	Letcher	Kentucky River	BULL CREEK	2	0	2	6.67	0.66	8.3%	29.2%	1
067-CR-1222 -000	2.12	Letcher	Kentucky River	SOUTH EAST RD	1	0	2	3.61	1.30	4.2%	33.3%	1
067-CR-1262 -000	4.26	Letcher	Kentucky River	TURKEY CREEK	1	0	2	3.61	0.21	4.2%	41.7%	1
067-CR-1359 -000	0.83	Letcher	Kentucky River	WOODROCK RD	1	0	2	3.61	0.14	4.2%	45.8%	1
067-CR-1798 -000	1.02	Letcher	Kentucky River	ISOM DR	0	0	12	3.33	0.33	0.0%	45.8%	1
067-CR-1129 -000	0.16	Letcher	Kentucky River	WILLOW DR	0	0	3	0.83	2.78	0.0%	45.8%	1
067-CR-1063 -000	1.80	Letcher	Kentucky River	GOOSE CREEK	1	0	1	3.33	0.26	4.2%	50.0%	1
067-CR-1354 -000	2.68	Letcher	Kentucky River	CARBON GLOW RD	1	0	1	3.33	0.17	4.2%	62.5%	1
067-CR-1821 -000	0.24	Letcher	Kentucky River	J D DR	1	0	0	3.06	0.08	4.2%	87.5%	1
067-CR-1875 -031	0.01	Letcher	Kentucky River	HUMMING BIRD LN X	0	0	0	0.00	2.50	0.0%	100.0%	1
067-CR-1097 -000	1.02	Letcher	Kentucky River	JOES BR	0	0	0	0.00	1.83	0.0%	100.0%	1
067-CR-1065 -000	2.25	Letcher	Kentucky River	YONTS FRK	0	0	3	0.83	0.87	0.0%	100.0%	1
067-CR-1319 -000	1.57	Letcher	Kentucky River	LOW GAP BR	0	0	3	0.83	0.72	0.0%	100.0%	1
067-CR-1074 -000	0.42	Letcher	Kentucky River	HAYMOND HL RD	0	0	1	0.28	1.06	0.0%	100.0%	1
067-CR-1166 -000	0.50	Letcher	Kentucky River	PINE CREEK	0	0	2	0.56	0.49	0.0%	100.0%	1
067-CR-1361 -000	1.59	Letcher	Kentucky River	HIGHWAY 3408	0	0	0	0.00	0.86	0.0%	100.0%	1
067-CR-1309 -000	2.19	Letcher	Kentucky River	JOHNSON FRK	0	0	0	0.00	0.60	0.0%	100.0%	1
067-CR-1261 -000	1.49	Letcher	Kentucky River	LONG BR	0	0	0	0.00	0.27	0.0%	100.0%	1
067-CR-1238 -000	0.36	Letcher	Kentucky River	ELKINS BR	0	0	0	0.00	0.21	0.0%	100.0%	1
067-CR-1473 -000	0.38	Letcher	Kentucky River	BAND MILL	0	0	0	0.00	0.17	0.0%	100.0%	1
067-CR-1168 -000	0.48	Letcher	Kentucky River	CAROUSEL DR	0	0	0	0.00	0.17	0.0%	100.0%	1
067-CR-1258 -000	4.27	Letcher	Kentucky River	BIG BR	0	0	0	0.00	0.11	0.0%	100.0%	1
067-CR-1056 -000	0.70	Letcher	Kentucky River	APPLETREE BR	0	0	0	0.00	0.11	0.0%	100.0%	1
067-CR-1247 -000	0.42	Letcher	Kentucky River	CARRION BR	0	0	0	0.00	0.07	0.0%	100.0%	1

Exhibit Letcher-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Indian Creek (067-CR-1020 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	1	0	**2**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	2	1	0	**3**
Total	**3**	**2**	**0**	**5**

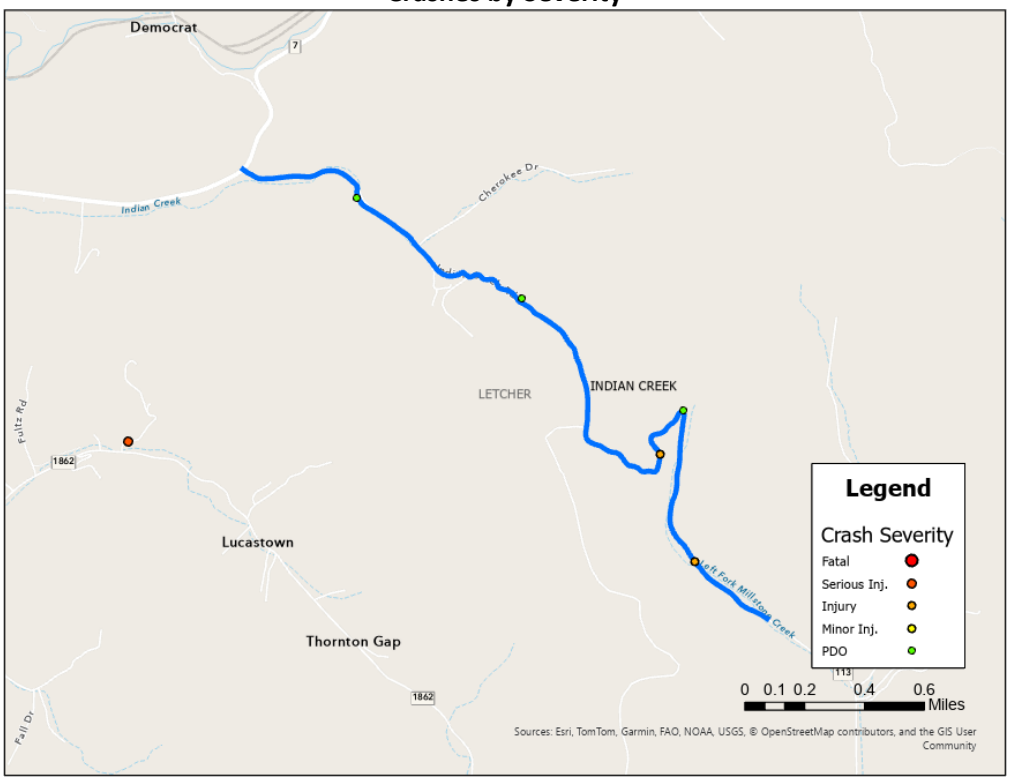
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
067-CR-1020 -000	INDIAN CREEK	12	3-Fair	RHR 5 - 5 - 10 ft non-recoverable	60-80

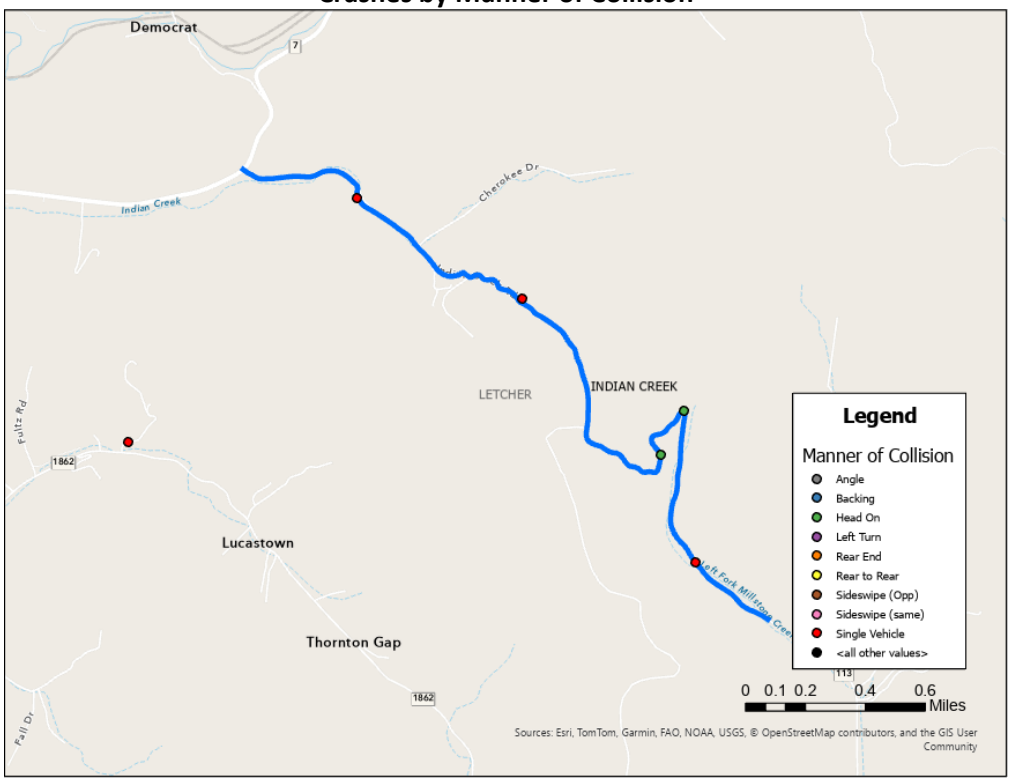
Roadway Typical Section



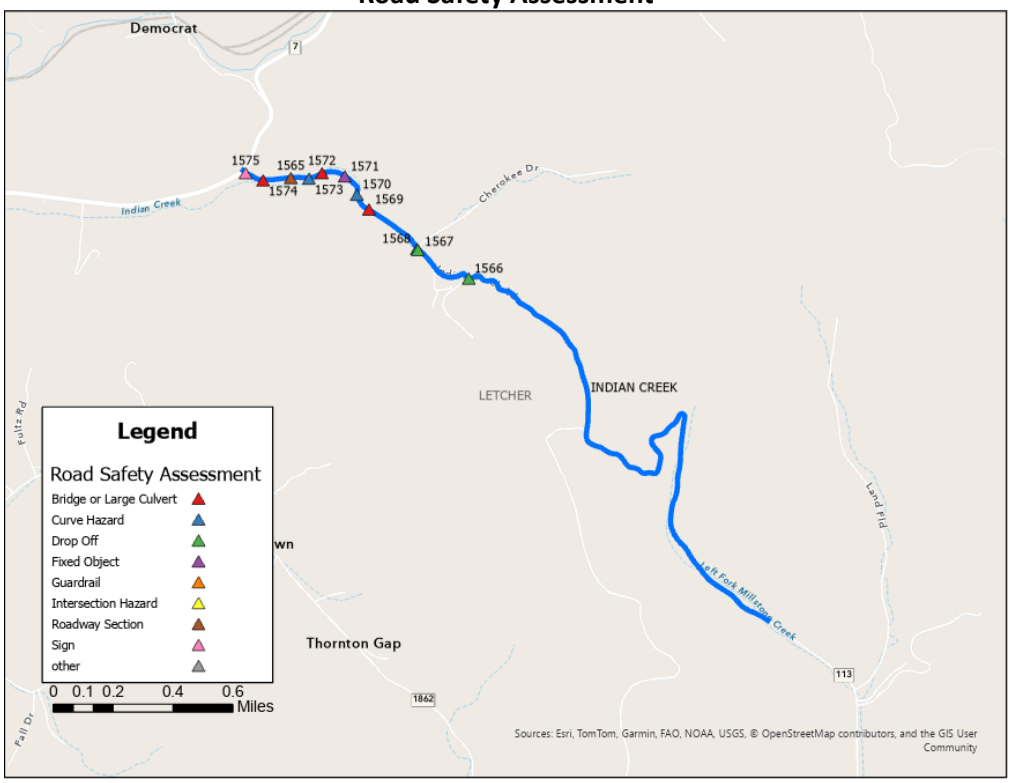
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline1	Curve Signin
1566	067-CR-1020 -000	INDIAN CREEK	12	3-Fair	RHR 5 - 5- 10 ft non-recoverable	60-80	✓	✓	✓

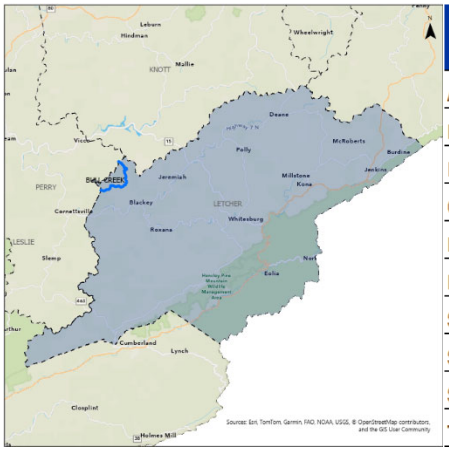
Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1567	067-CR-1020 -000	INDIAN CREEK	Drop Off	1-3	>10	--	Install Guardrail
1568	067-CR-1020 -000	INDIAN CREEK	Drop Off	0-1	5-10	--	Shoulderering
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1572	067-CR-1020 -000	INDIAN CREEK	Fixed Object	Tree	Series	3-5	--

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
1569	067-CR-1020 -000	INDIAN CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers
1572	067-CR-1020 -000	INDIAN CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers
1574	067-CR-1020 -000	INDIAN CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers

Point ID	RT_UNIQUE	Road Name	Issue Type	Vegetation	--	Comments	Recommendation
1569	067-CR-1020 -000	INDIAN CREEK	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
1571	067-CR-1020 -000	INDIAN CREEK	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1574	067-CR-1020 -000	INDIAN CREEK	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation

Bull Creek (067-CR-1367 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	1	0	**1**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	2	0	0	**2**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**2**	**2**	**0**	**4**

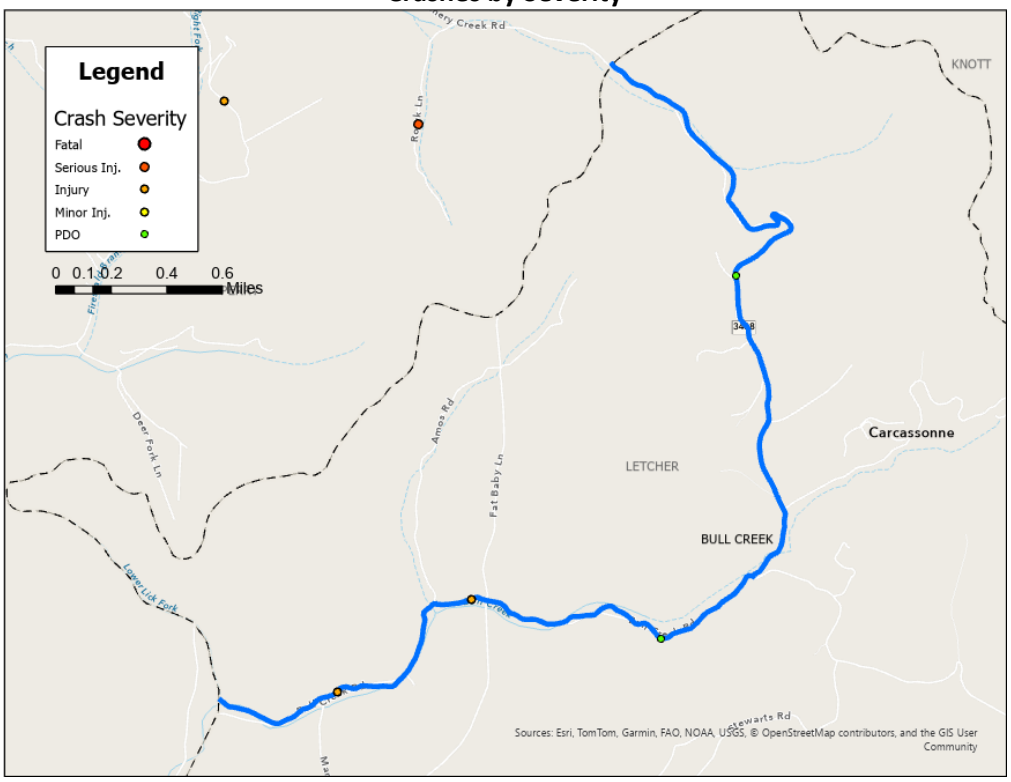
General Roadway Conditions

NOT COLLECTED

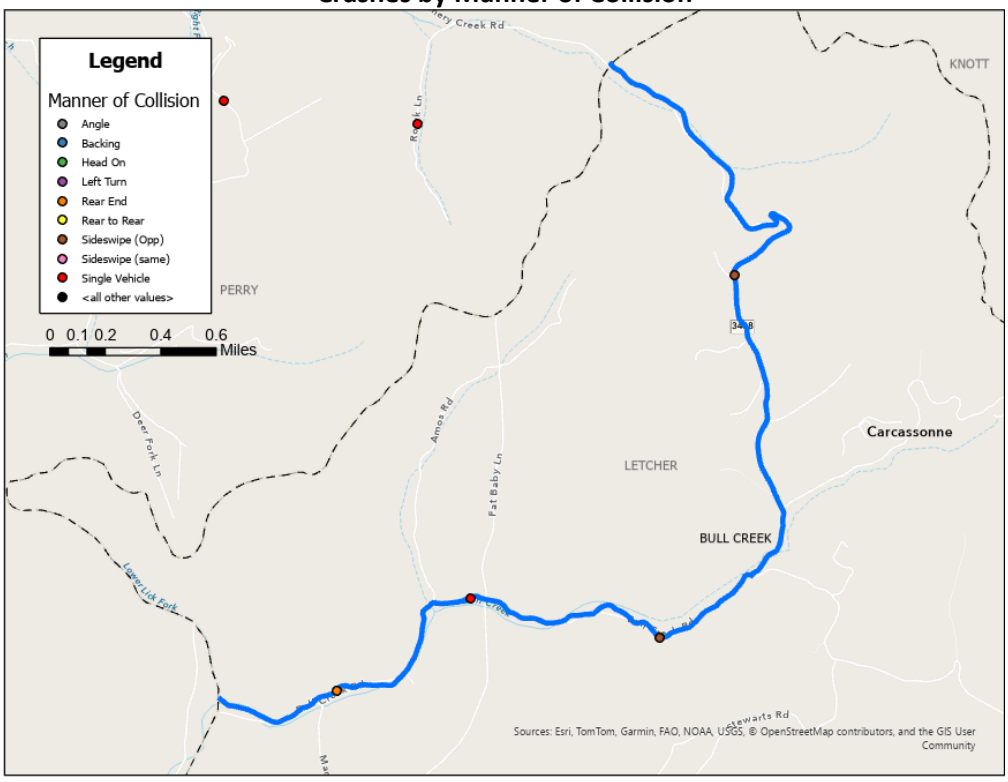
Roadway Typical Section

NOT COLLECTED

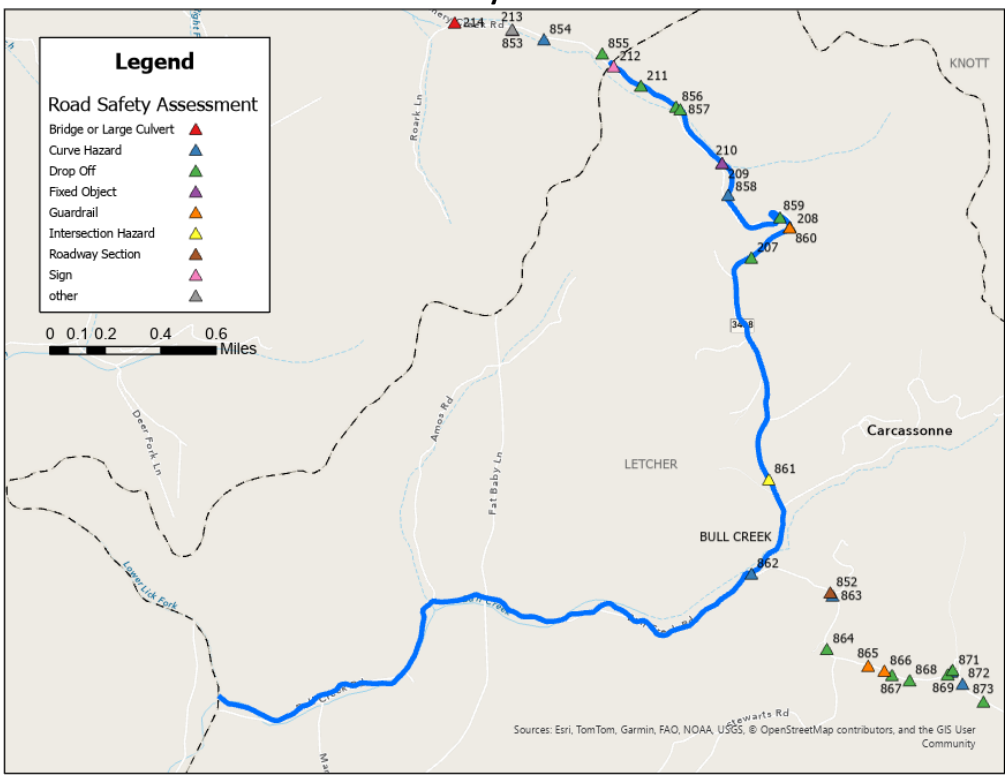
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment

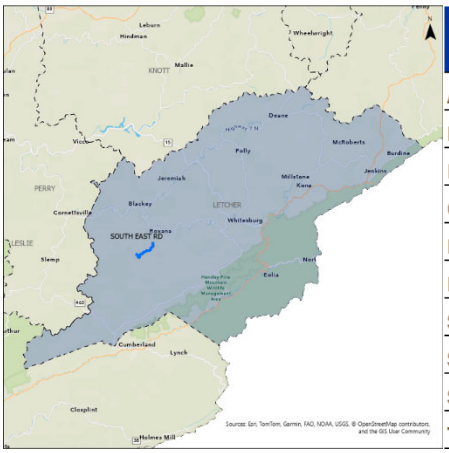


Recommendations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
208	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	--	Install Guardrail
209	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	--	Install Guardrail
210	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	--	Install Guardrail
212	067-CR-1367 -000	BULL CREEK	Drop Off	1-3	>10	--	Install Guardrail
857	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	5-10	--	Shoulderering
858	067-CR-1367 -000	BULL CREEK	Drop Off	1-3	>10	--	Install Guardrail
860	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
211	067-CR-1367 -000	BULL CREEK	Fixed Object	Utility Pole	Series	3-5	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
861	067-CR-1367 -000	BULL CREEK	Guardrail	Fair	Maybe	All_	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
862	067-CR-1367 -000	BULL CREEK	Intersection Hazard	Intersection Obscured on approach, Intersection Skew, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
859	067-CR-1367 -000	BULL CREEK	Curve Hazard	Yes	--	Entrance in Curve, Curve Obscured, vegetation	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
863	067-CR-1367 -000	BULL CREEK	Curve Hazard	Yes	--	Curve Obscured	Add Curve Warning Sign; Clear Vegetation

South East Rd (067-CR-1222 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	1	0	0	**1**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**2**	**1**	**0**	**3**

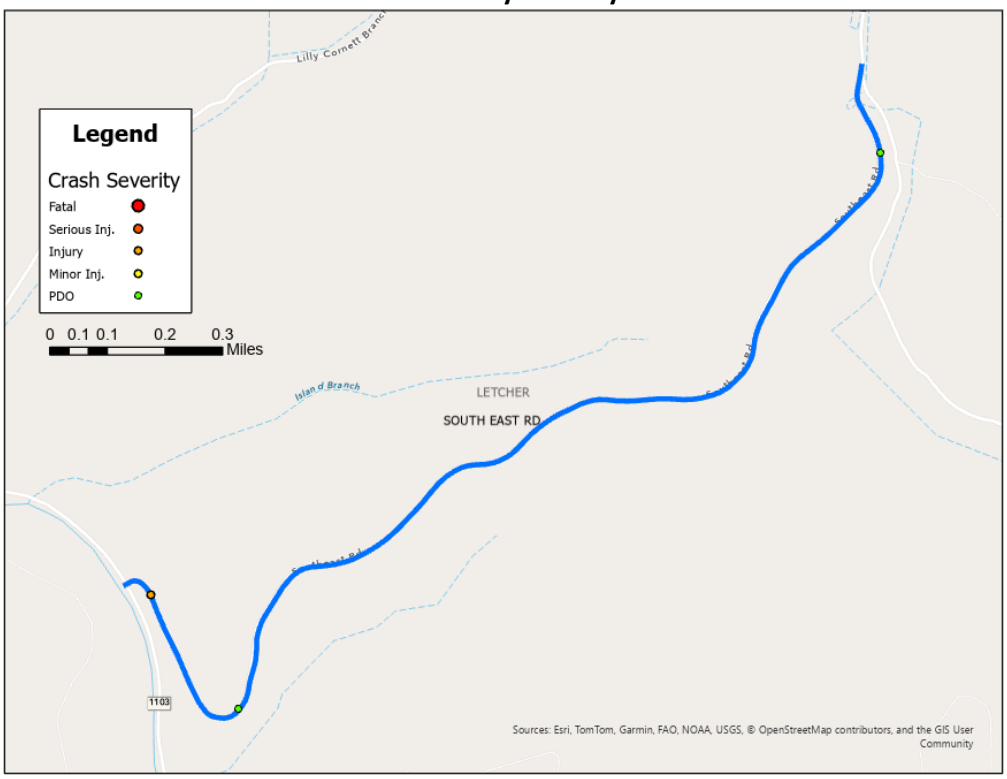
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (f	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
067-CR-1222 -000	SOUTH EAST RD	16	4-Poor	RHR 2 - >20 ft	40-60

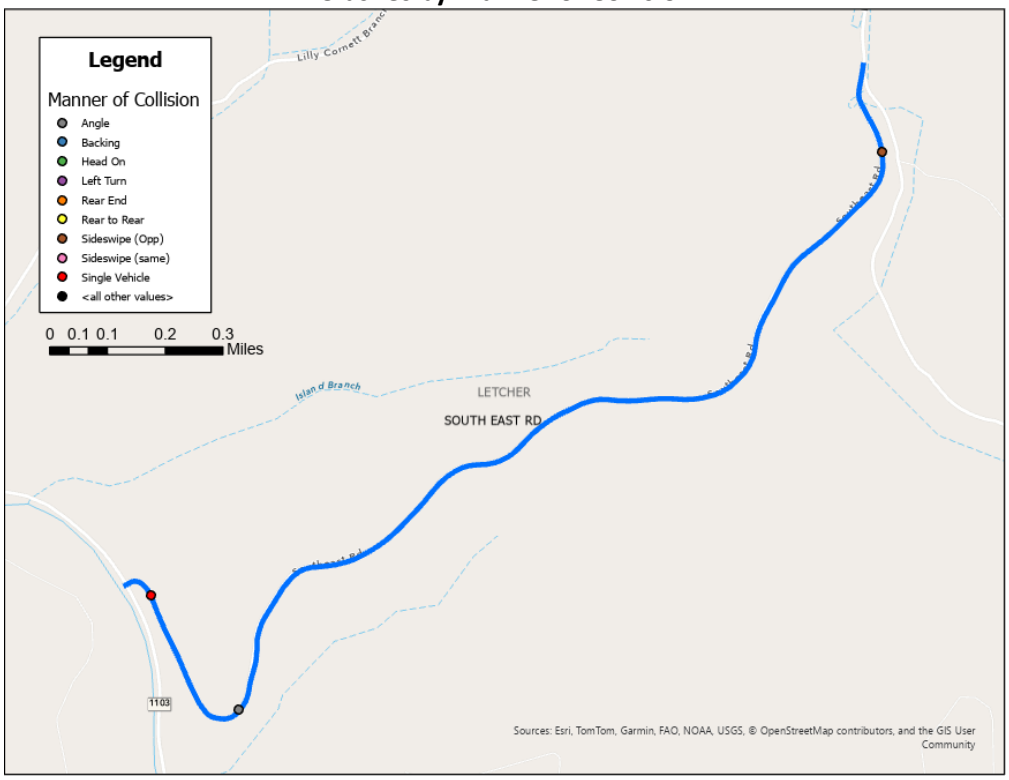
Roadway Typical Section



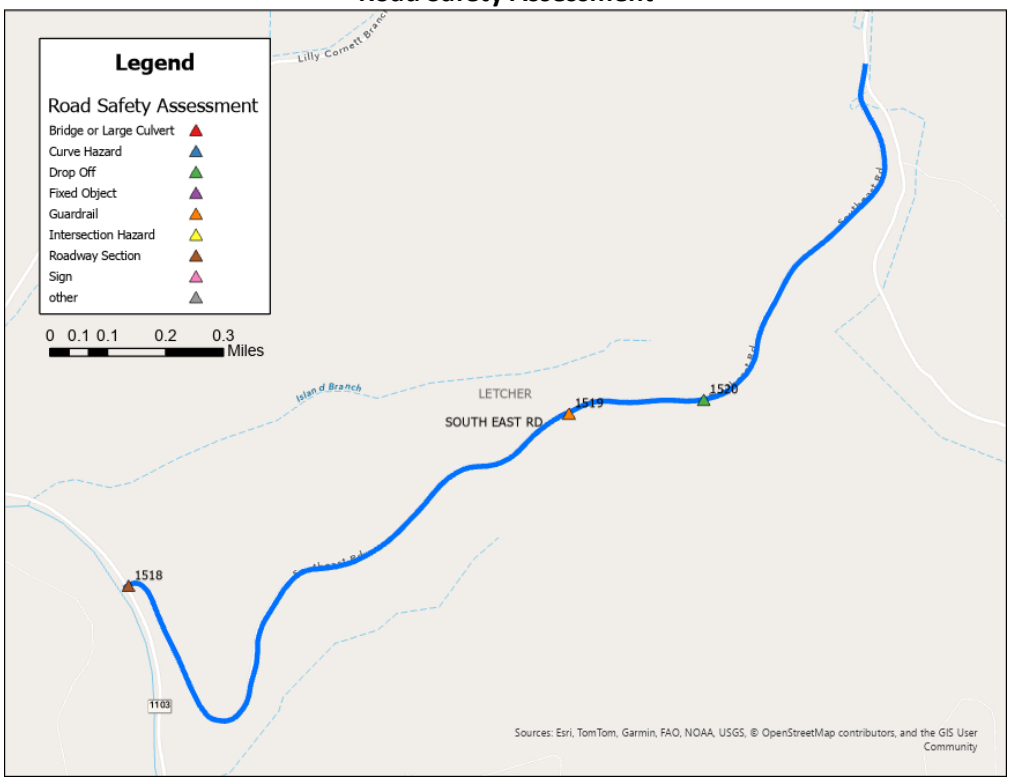
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



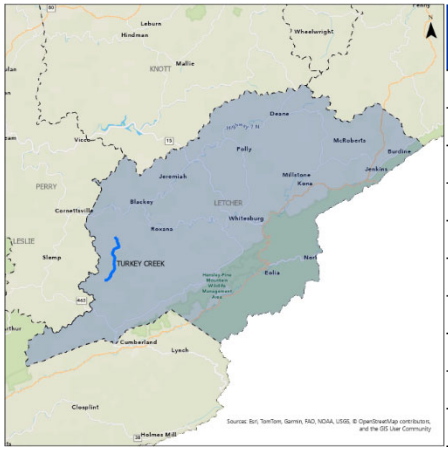
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
1519	067-CR-1222 -000	SOUTH EAST RD	16	4-Poor	RHR 2 - >20 ft	40-60	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1521	067-CR-1222 -000	SOUTH EAST RD	Drop Off	>5	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
1520	067-CR-1222 -000	SOUTH EAST RD	Guardrail	Good	Maybe	All_	--

Turkey Creek (067-CR-1262 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	1	0	**1**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	1	0	0	**1**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	0	0	**0**
Total	**2**	**1**	**0**	**3**

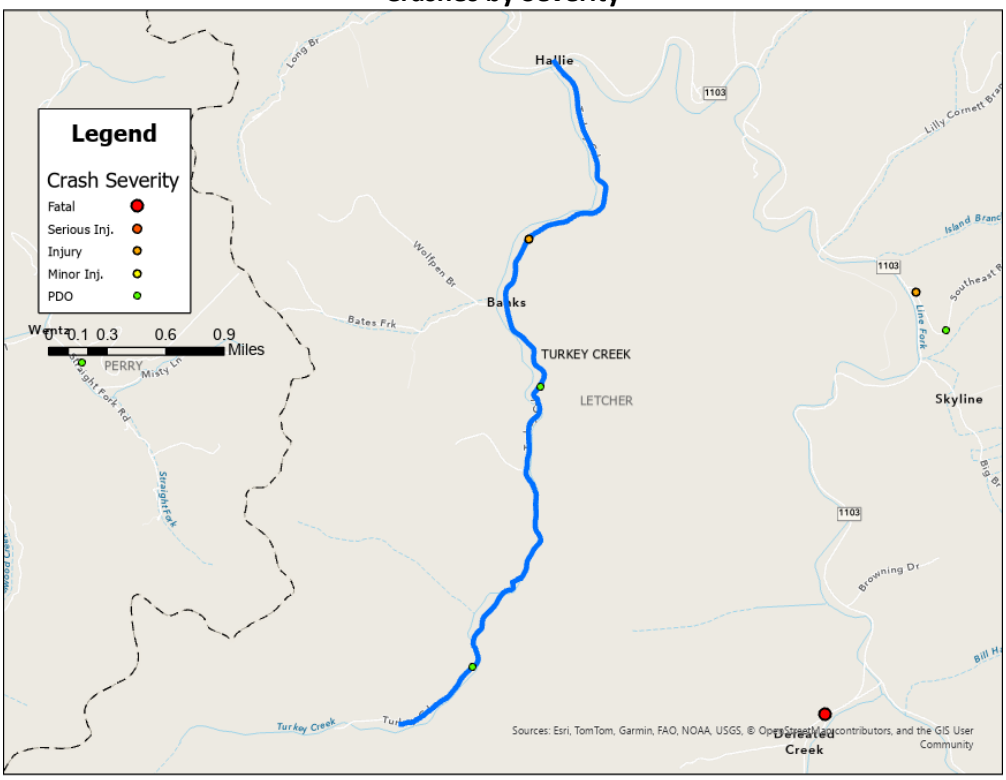
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (f	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
067-CR-1262 -000	TURKEY CREEK	12	3-Fair	RHR 3 - > 10 ft	60-80

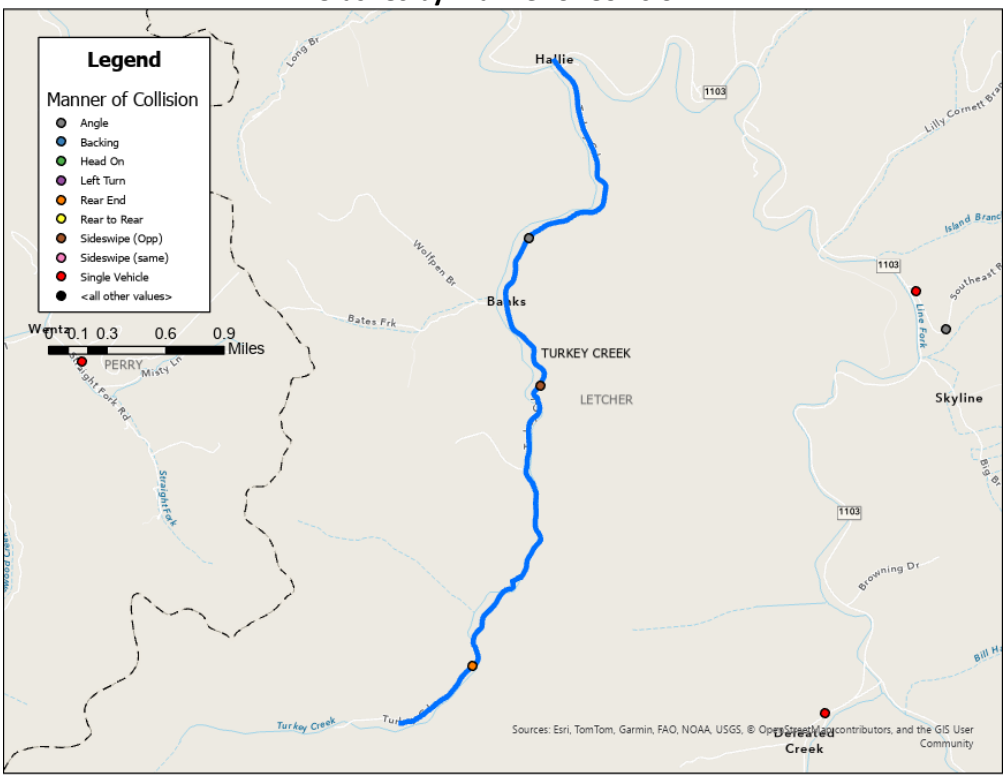
Roadway Typical Section



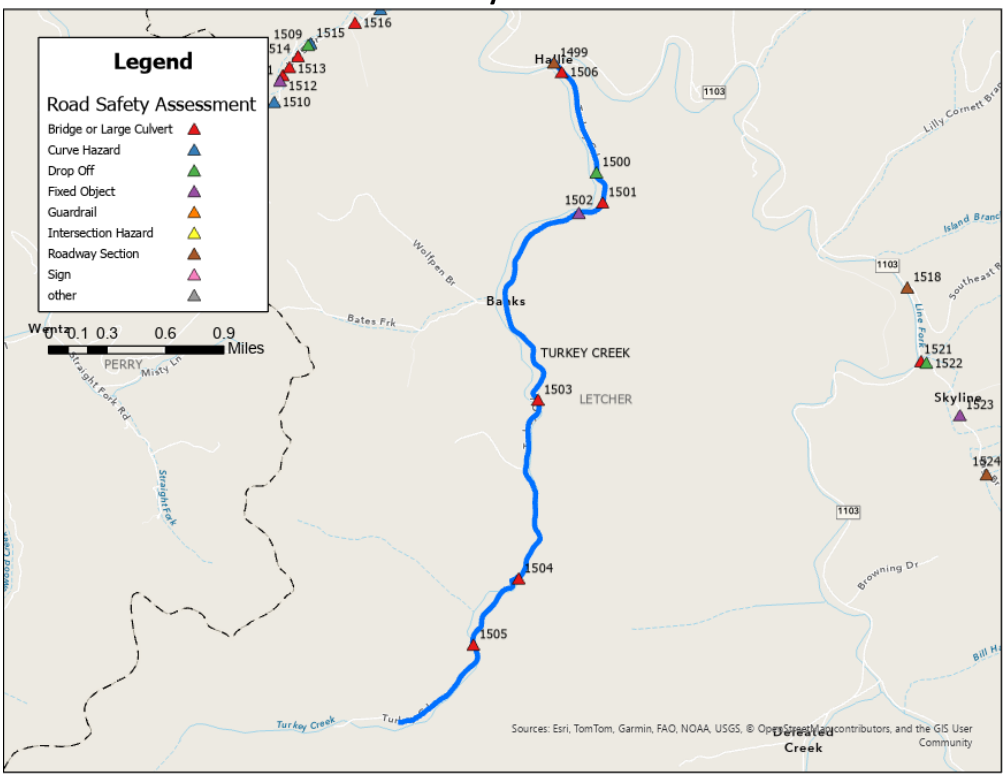
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



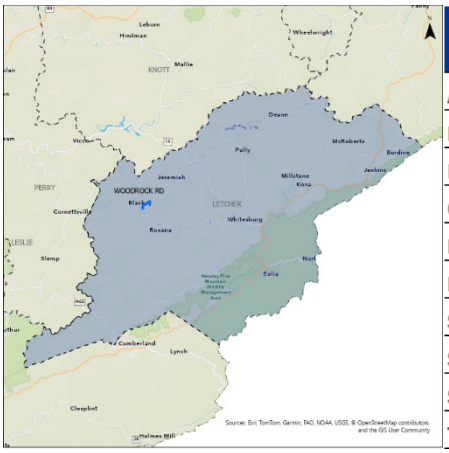
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
1500	067-CR-1262 -000	TURKEY CREEK	12	3-Fair	RHR 3 ->10 ft	60-80	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1501	067-CR-1262 -000	TURKEY CREEK	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1503	067-CR-1262 -000	TURKEY CREEK	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
1501	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers
1503	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	8	0	0	New bridge being built. Temporary culvert.
1504	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	8	0	0	Install Object Markers
1505	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	8	0	0	Install Object Markers
1506	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	1	4	0	--

Woodrock Rd (067-CR-1359 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	1	1	0	**2**
Total	**2**	**1**	**0**	**3**

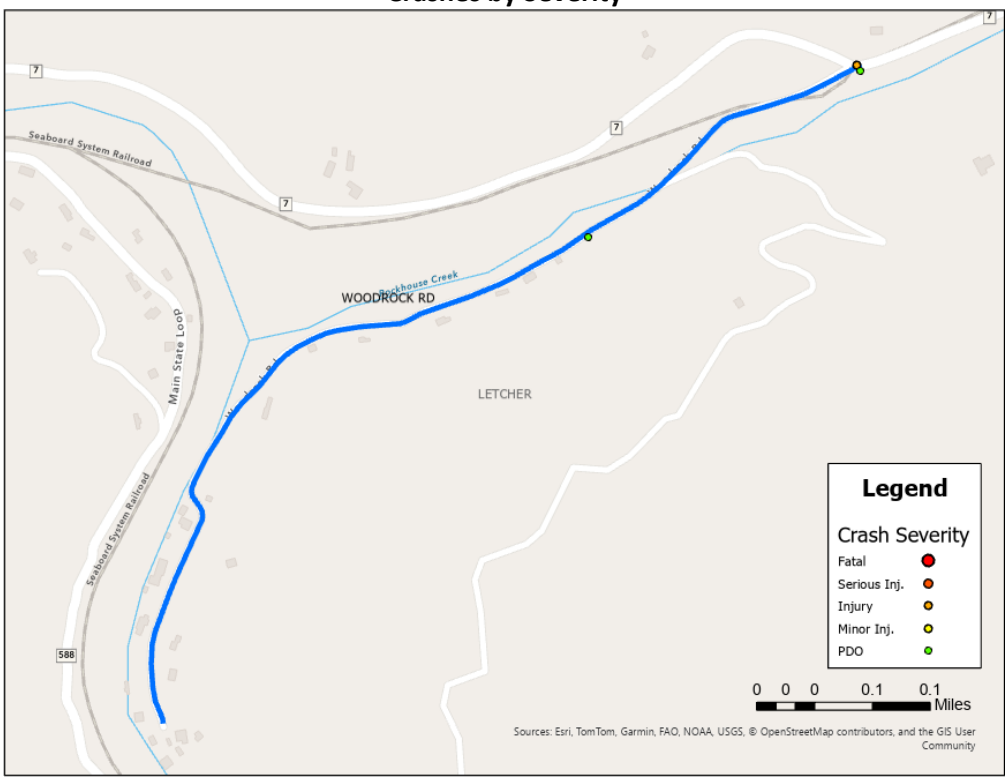
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
067-CR-1359 -000	WOODROCK RD	14	3-Fair	RHR 4 - 5-10 ft ~ recoverable	40-60

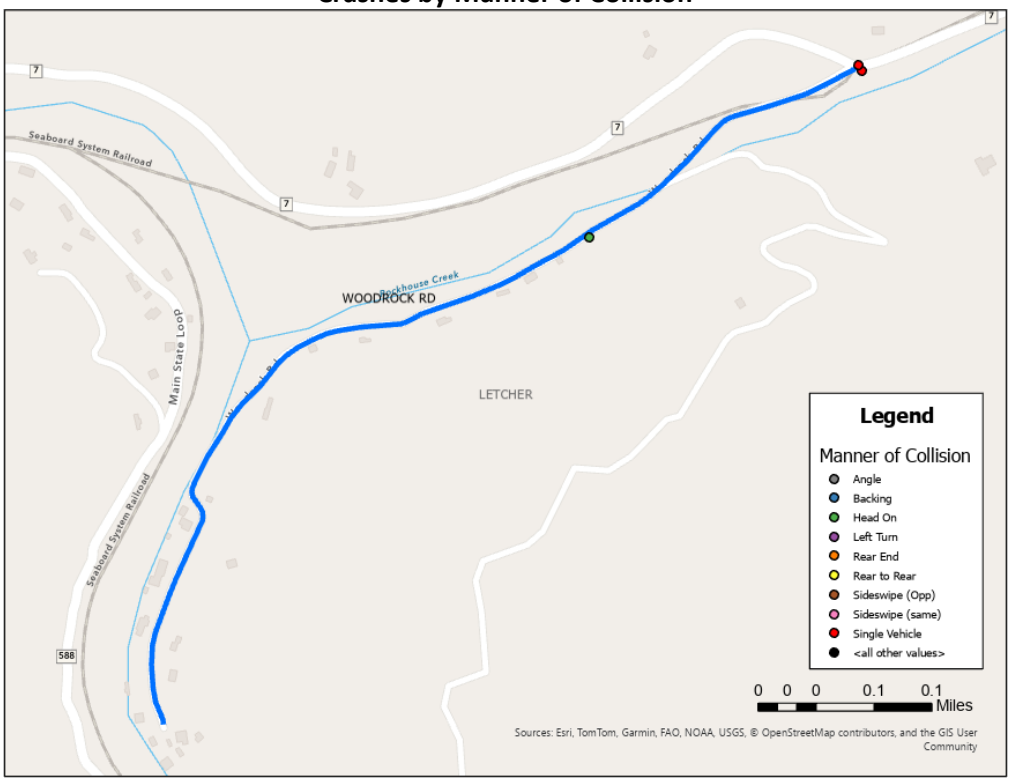
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



Recommendations

Investigate skewed intersection approach at KY 7. Evaluate dual stop sign postings, stop bar placement, or installation of dotted line through intersection.

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
837	067-CR-1359 -000	WOODROCK RD	14	3-Fair	RHR 4 - 5-10 ft ~ recoverable	40-60	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
829	067-CR-1359 -000	WOODROCK RD	Drop Off	0-1	>10	--	Install Guardrail
831	067-CR-1359 -000	WOODROCK RD	Drop Off	0-1	>10	--	Install Guardrail
833	067-CR-1359 -000	WOODROCK RD	Drop Off	3-5	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
826	067-CR-1359 -000	WOODROCK RD	Fixed Object	Other; Fence	Series	0-1	Consider Removal or Relocation
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
830	067-CR-1359 -000	WOODROCK RD	Guardrail	Poor	No	None	Remove
832	067-CR-1359 -000	WOODROCK RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
928	067-CR-1359 -000	WOODROCK RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
835	067-CR-1359 -000	WOODROCK RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection, Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
833	067-CR-1359 -000	WOODROCK RD	Bridge or Large Culvert	12	4	0	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
824	067-CR-1359 -000	WOODROCK RD	Curve Hazard	Yes	--	vegetation, Curve Obscured	Add Curve Warning Sign; Clear Vegetation
825	067-CR-1359 -000	WOODROCK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation, Entrance in Curve	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
827	067-CR-1359 -000	WOODROCK RD	Curve Hazard	Yes	--	vegetation, Curve Obscured, Entrance in Curve	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
828	067-CR-1359 -000	WOODROCK RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation

Other Roadways

General Roadway Conditions and Recommendations (Letcher County)

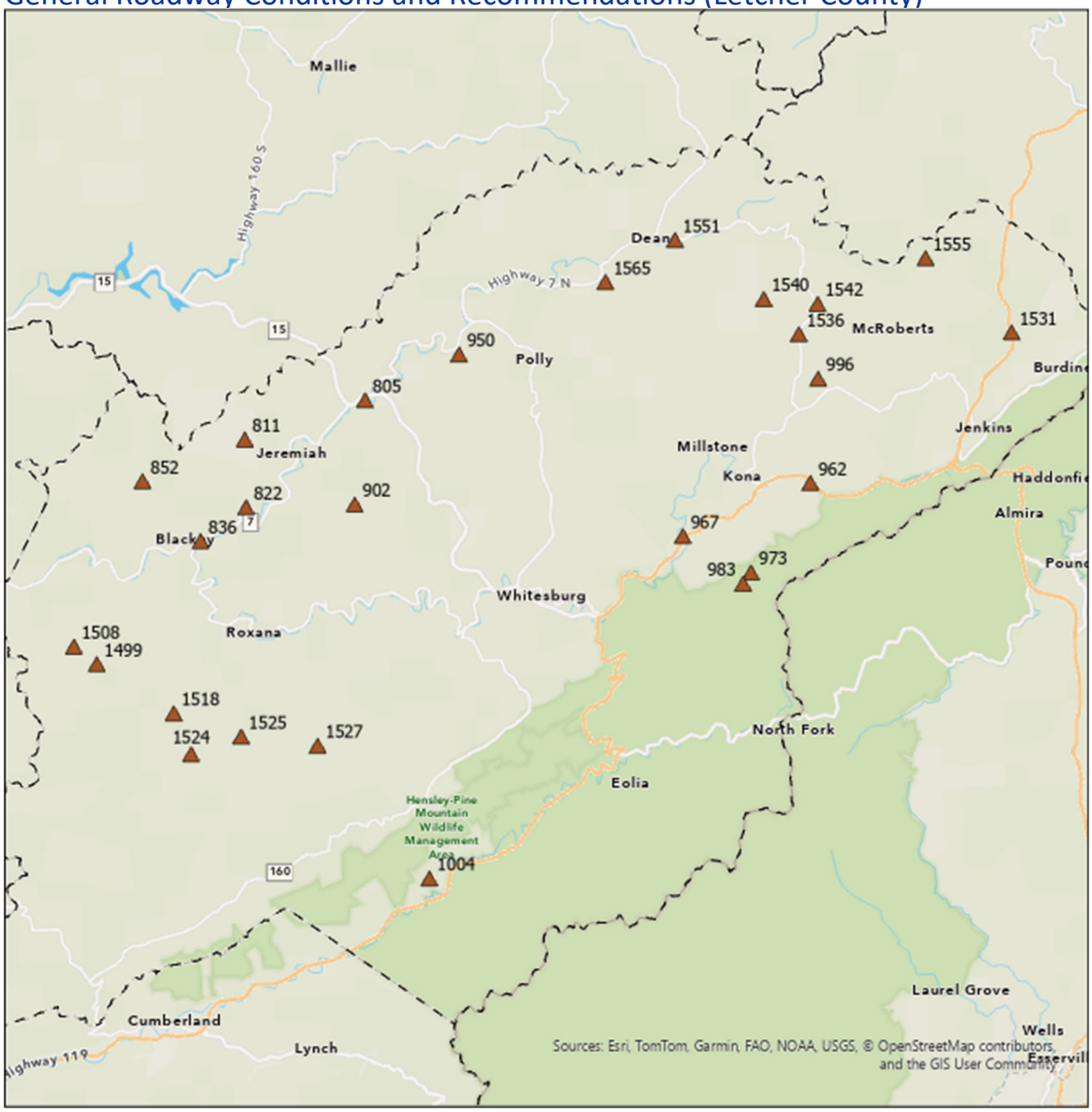


Exhibit Letcher-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
1566	067-CR-1020 -000	INDIAN CREEK	12	3	5	60-80		✓	✓	✓	
1519	067-CR-1222 -000	SOUTH EAST RD	16	3	4	40-60		✓	✓	✓	
1500	067-CR-1262 -000	TURKEY CREEK	12	3	5	60-80		✓	✓	✓	
806	067-CR-1798 -000	ISOM DR	16	4	2	20-40		✓	✓	✓	
837	067-CR-1359 -000	WOODROCK RD	14	4	5	40-60		✓	✓	✓	
968	067-CR-1129 -000	WILLOW DR	14	4	2	0-20		✓	✓	✓	
1537	067-CR-1063 -000	GOOSE CREEK	10	3	4	60-80		✓	✓	✓	
1541	067-CR-1063 -000	GOOSE CREEK	10	1	6	80-100		✓	✓	✓	
812	067-CR-1354 -000	CARBON GLOW RD	10	4	3	40-60		✓	✓	✓	
823	067-CR-1354 -000	CARBON GLOW RD	10	2	6	40-60		✓	✓	✓	
853	067-CR-1361 -000	HIGHWAY 3408	12	3	5	40-60		✓			
963	067-CR-1875 -031	HUMMING BIRD LN X	10	4	2	0-20		✓			
903	067-CR-1309 -000	JOHNSON FRK	10	3	6	60-80		✓			
951	067-CR-1319 -000	LOW GAP BR	10	3	4	60-80		✓			
974	067-CR-1166 -000	PINE CREEK	10	3	6	20-40		✓			
984	067-CR-1168 -000	CAROUSEL DR	10	3	6	40-60		✓			
1509	067-CR-1261 -000	LONG BR	10	3	5	60-80		✓			
1532	067-CR-1097 -000	JOES BR	10	3	4	80-100		✓			
1543	067-CR-1065 -000	YONTS FRK	10	3	6	60-80		✓			
1552	067-CR-1056 -000	APPLETREE BR	10	3	6	60-80		✓			
1556	067-CR-1473 -000	BAND MILL	10	3	5	40-60		✓			
997	067-CR-1074 -000	HAYMOND HL RD	10	2	6	60-80		✓			
1005	067-CR-1238 -000	ELKINS BR	10	2	4	40-60		✓			
1525	067-CR-1258 -000	BIG BR	10	2	6	60-80		✓			
1526	067-CR-1258 -000	BIG BR	10	1	7	80-100	Dirt road	✓			
1528	067-CR-1247 -000	CARRION BR	10	1	6	80-100		✓			

Exhibit Letcher-F2: General Roadway Recommendations

Bridge / Culvert Recommendations (Letcher County)

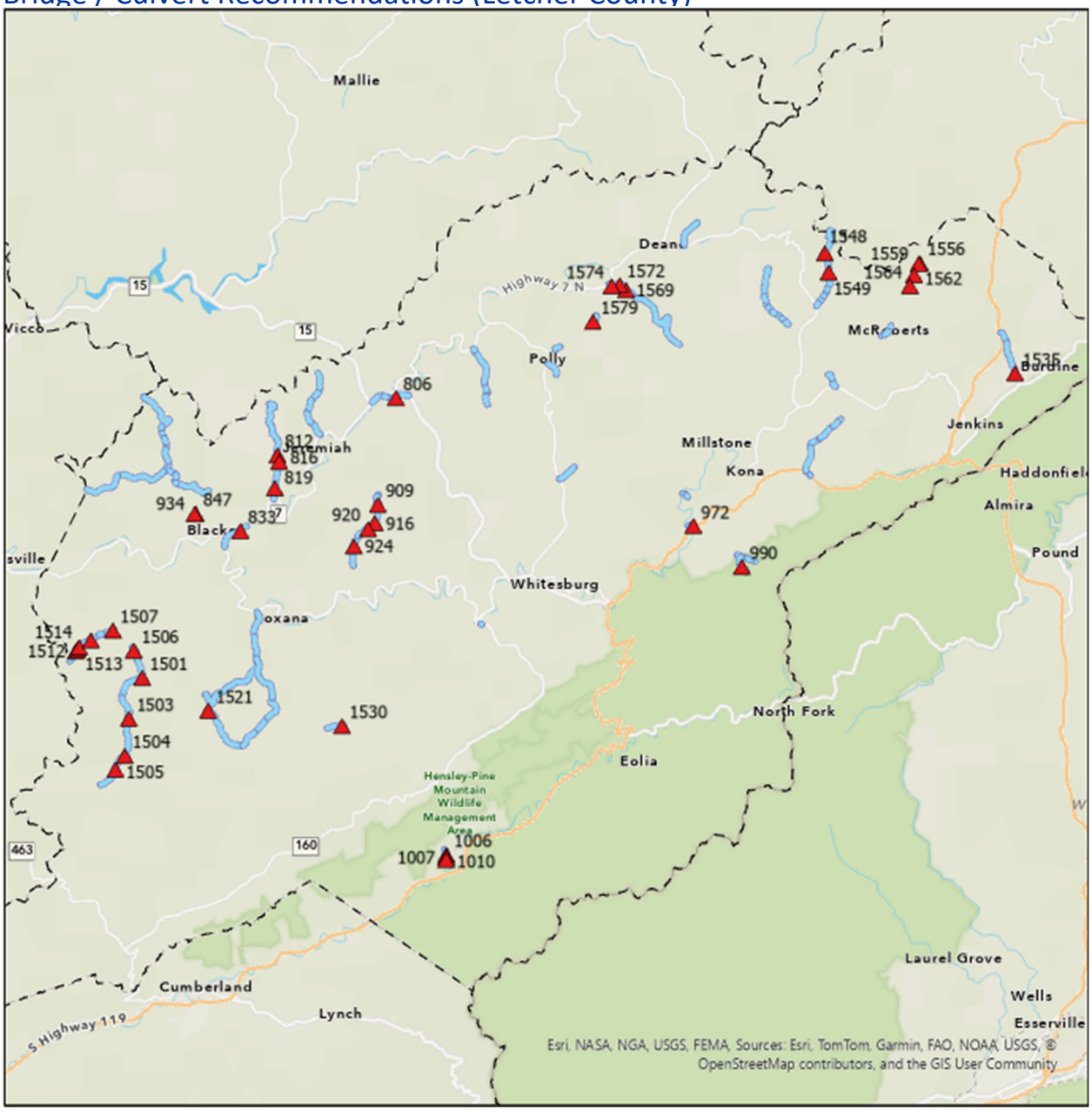


Exhibit Letcher-F3: Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Hazard	Bridge Width	Guard Presen	Object Marker	Recommendation
1556	067-CR-1473 -000	BAND MILL	Bridge or Large Culvert	12	0	0	Install Object Markers
1559	067-CR-1473 -000	BAND MILL	Bridge or Large Culvert	10	0	0	Install Object Markers
1562	067-CR-1473 -000	BAND MILL	Bridge or Large Culvert	10	0	0	Install Object Markers
1564	067-CR-1473 -000	BAND MILL	Bridge or Large Culvert	10	0	0	Install Object Markers
1521	067-CR-1258 -000	BIG BR	Bridge or Large Culvert	8	0	0	Install Object Markers
812	067-CR-1354 -000	CARBON GLOW RD	Bridge or Large Culvert	16	0	0	Install Object Markers
816	067-CR-1354 -000	CARBON GLOW RD	Bridge or Large Culvert	16	0	0	Install Object Markers
819	067-CR-1354 -000	CARBON GLOW RD	Bridge or Large Culvert	16	0	0	Install Object Markers
990	067-CR-1168 -000	CAROUSEL DR	Bridge or Large Culvert	20	0	2	Install Object Markers
1530	067-CR-1247 -000	CARRION BR	Bridge or Large Culvert	1	0	0	Install Object Markers
1006	067-CR-1238 -000	ELKINS BR	Bridge or Large Culvert	14	0	0	Install Object Markers
1007	067-CR-1238 -000	ELKINS BR	Bridge or Large Culvert	14	0	0	Install Object Markers
1010	067-CR-1238 -000	ELKINS BR	Bridge or Large Culvert	16	0	0	Install Object Markers
847	067-CR-1361 -000	HIGHWAY 3408	Bridge or Large Culvert	12	4	0	--
934	067-CR-1361 -000	HIGHWAY 3408	Bridge or Large Culvert	14	4	0	--
1569	067-CR-1020 -000	INDIAN CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers
1572	067-CR-1020 -000	INDIAN CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers
1574	067-CR-1020 -000	INDIAN CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers
806	067-CR-1798 -000	ISOM DR	Bridge or Large Culvert	18	4	2	--
1579	067-CR-1821 -000	J D DR	Bridge or Large Culvert	8	0	0	Install Object Markers
1535	067-CR-1097 -000	JOES BR	Bridge or Large Culvert	10	0	0	Install Object Markers
909	067-CR-1309 -000	JOHNSON FRK	Bridge or Large Culvert	16	0	0	Install Object Markers
916	067-CR-1309 -000	JOHNSON FRK	Bridge or Large Culvert	16	0	0	Install Object Markers
920	067-CR-1309 -000	JOHNSON FRK	Bridge or Large Culvert	16	0	0	Install Object Markers
924	067-CR-1309 -000	JOHNSON FRK	Bridge or Large Culvert	14	0	0	Install Object Markers
1507	067-CR-1261 -000	LONG BR	Bridge or Large Culvert	8	4	0	--
1512	067-CR-1261 -000	LONG BR	Bridge or Large Culvert	8	0	0	Install Object Markers
1513	067-CR-1261 -000	LONG BR	Bridge or Large Culvert	10	0	0	Install Object Markers
1514	067-CR-1261 -000	LONG BR	Bridge or Large Culvert	8	0	0	Install Object Markers
1516	067-CR-1261 -000	LONG BR	Bridge or Large Culvert	8	0	0	Install Object Markers
1501	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	10	0	0	Install Object Markers
1503	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	8	0	0	New bridge being built. Temporary culvert.
1504	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	8	0	0	Install Object Markers
1505	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	8	0	0	Install Object Markers
1506	067-CR-1262 -000	TURKEY CREEK	Bridge or Large Culvert	1	4	0	--
972	067-CR-1129 -000	WILLOW DR	Bridge or Large Culvert	16	4	0	--
833	067-CR-1359 -000	WOODROCK RD	Bridge or Large Culvert	12	4	0	--
1548	067-CR-1065 -000	YONTS FRK	Bridge or Large Culvert	8	0	0	Install Object Markers
1549	067-CR-1065 -000	YONTS FRK	Bridge or Large Culvert	I	0	0	Install Object Markers

Exhibit Letcher-F4: Bridge / Culvert Recommendations

Curve Recommendations (Letcher County)

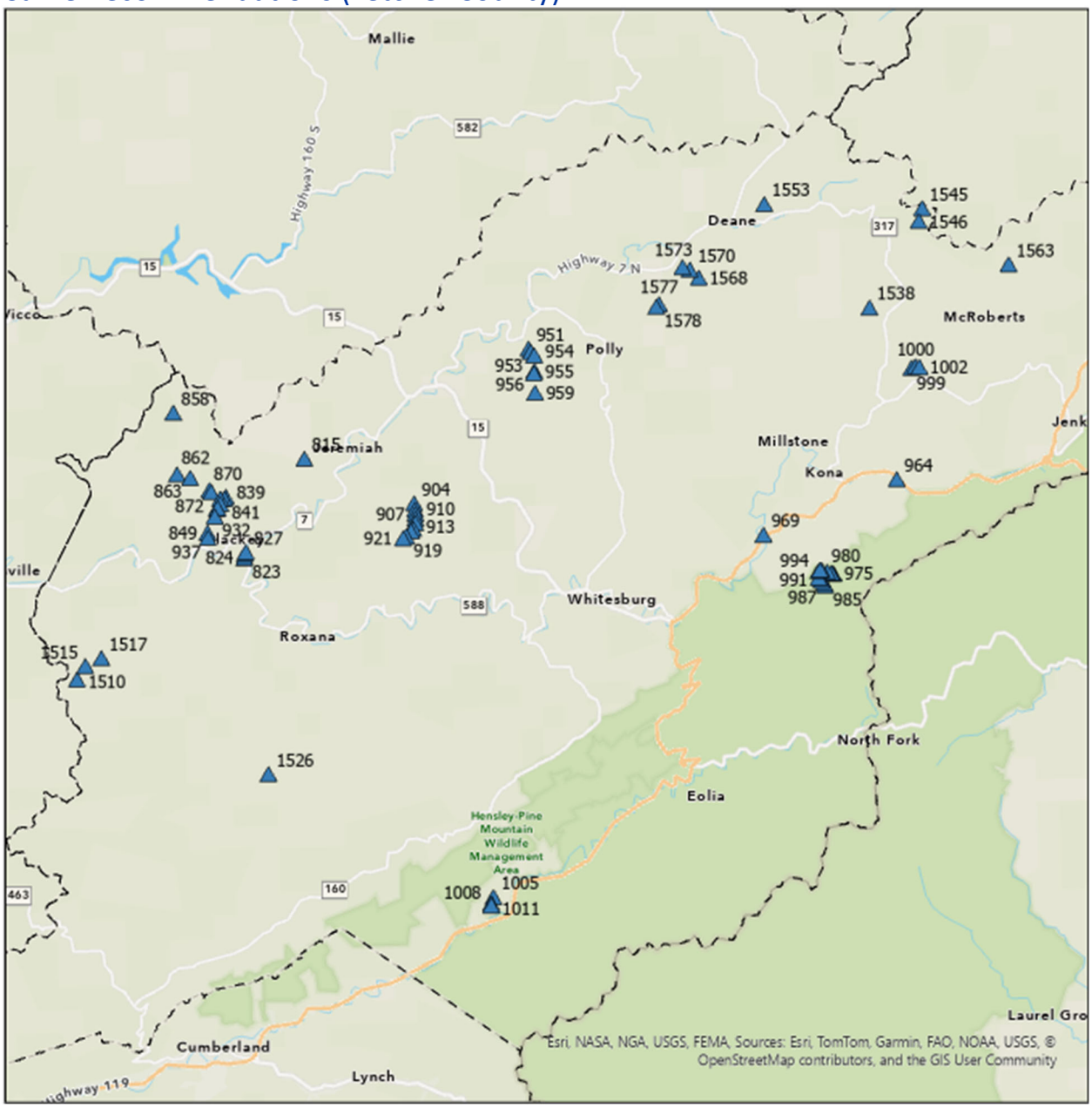


Exhibit Letcher-F5: Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
1568	067-CR-1020 -000	INDIAN CREEK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1570	067-CR-1020 -000	INDIAN CREEK	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1573	067-CR-1020 -000	INDIAN CREEK	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1553	067-CR-1056 -000	APPLETREE BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1538	067-CR-1063 -000	GOOSE CREEK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1545	067-CR-1065 -000	YONTS FRK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1546	067-CR-1065 -000	YONTS FRK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
999	067-CR-1074 -000	HAYMOND HL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1000	067-CR-1074 -000	HAYMOND HL RD	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
1002	067-CR-1074 -000	HAYMOND HL RD	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
969	067-CR-1129 -000	WILLOW DR	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
975	067-CR-1166 -000	PINE CREEK	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
977	067-CR-1166 -000	PINE CREEK	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
978	067-CR-1166 -000	PINE CREEK	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
980	067-CR-1166 -000	PINE CREEK	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
982	067-CR-1166 -000	PINE CREEK	Curve Hazard	Intersection in Curve, Curve Obscured, Entrance in Curve, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar; Clear Vegetation
985	067-CR-1168 -000	CAROUSEL DR	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
987	067-CR-1168 -000	CAROUSEL DR	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
989	067-CR-1168 -000	CAROUSEL DR	Curve Hazard	Curve Obscured, Entrance in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
991	067-CR-1168 -000	CAROUSEL DR	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
994	067-CR-1168 -000	CAROUSEL DR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
995	067-CR-1168 -000	CAROUSEL DR	Curve Hazard	Entrance in Curve, Intersection in Curve, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar
1005	067-CR-1238 -000	ELKINS BR	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
1008	067-CR-1238 -000	ELKINS BR	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1011	067-CR-1238 -000	ELKINS BR	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1526	067-CR-1258 -000	BIG BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1510	067-CR-1261 -000	LONG BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1515	067-CR-1261 -000	LONG BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1517	067-CR-1261 -000	LONG BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
904	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
907	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	Entrance in Curve, vegetation, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
910	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
912	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
913	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
914	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	Entrance in Curve, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
917	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	vegetation, Curve Obscured	No	Add Curve Warning Sign
919	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
921	067-CR-1309 -000	JOHNSON FRK	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
951	067-CR-1319 -000	LOW GAP BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
953	067-CR-1319 -000	LOW GAP BR	Curve Hazard	Curve Obscured, Entrance in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
954	067-CR-1319 -000	LOW GAP BR	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
955	067-CR-1319 -000	LOW GAP BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
956	067-CR-1319 -000	LOW GAP BR	Curve Hazard	Curve Obscured, Entrance in Curve, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
959	067-CR-1319 -000	LOW GAP BR	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
815	067-CR-1354 -000	CARBON GLOW RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
823	067-CR-1359 -000	WOODROCK RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
824	067-CR-1359 -000	WOODROCK RD	Curve Hazard	Curve Obscured, vegetation, Entrance in Curve	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
826	067-CR-1359 -000	WOODROCK RD	Curve Hazard	vegetation, Curve Obscured, Entrance in Curve	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
827	067-CR-1359 -000	WOODROCK RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
839	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
841	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
843	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
844	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
849	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
863	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
870	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
872	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
874	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
929	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
930	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
932	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
937	067-CR-1361 -000	HIGHWAY 3408	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
858	067-CR-1367 -000	BULL CREEK	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
862	067-CR-1367 -000	BULL CREEK	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1563	067-CR-1473 -000	BAND MILL	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1577	067-CR-1821 -000	J D DR	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1578	067-CR-1821 -000	J D DR	Curve Hazard	other; House	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
964	067-CR-1875 -031	HUMMING BIRD LN X	Curve Hazard	Intersection in Curve, Entrance in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar

Exhibit Letcher-F5: Curve Recommendations

Roadside Drop Off Recommendations (Letcher County)

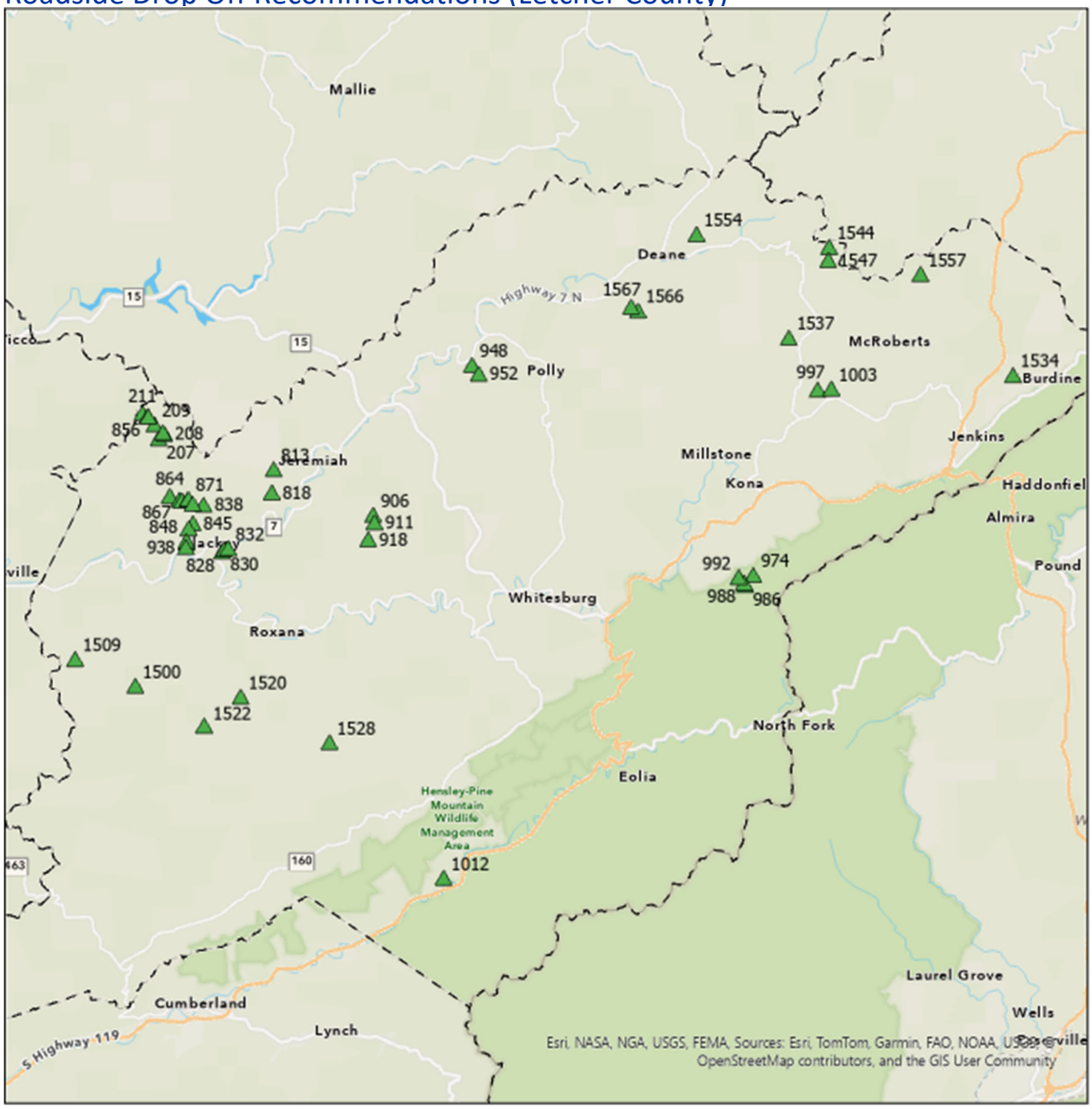


Exhibit Letcher-F7: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
1554	067-CR-1056 -000	APPLETREE BR	Drop Off	1-3	>10	Install Guardrail
1557	067-CR-1473 -000	BAND MILL	Drop Off	0-1	2-5	Shoulderering
1522	067-CR-1258 -000	BIG BR	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
207	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	Install Guardrail
208	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	Install Guardrail
209	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	Install Guardrail
211	067-CR-1367 -000	BULL CREEK	Drop Off	1-3	>10	Install Guardrail
856	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	5-10	Shoulderering
857	067-CR-1367 -000	BULL CREEK	Drop Off	1-3	>10	Install Guardrail
859	067-CR-1367 -000	BULL CREEK	Drop Off	0-1	>10	Install Guardrail
813	067-CR-1354 -000	CARBON GLOW RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
818	067-CR-1354 -000	CARBON GLOW RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
986	067-CR-1168 -000	CAROUSEL DR	Drop Off	0-1	>10	Install Guardrail
988	067-CR-1168 -000	CAROUSEL DR	Drop Off	1-3	>10	Install Guardrail
992	067-CR-1168 -000	CAROUSEL DR	Drop Off	0-1	>10	Install Guardrail
1528	067-CR-1247 -000	CARRION BR	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
1012	067-CR-1238 -000	ELKINS BR	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
1537	067-CR-1063 -000	GOOSE CREEK	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
997	067-CR-1074 -000	HAYMOND HL RD	Drop Off	0-1	>10	Install Guardrail
1003	067-CR-1074 -000	HAYMOND HL RD	Drop Off	0-1	>10	Install Guardrail
838	067-CR-1361 -000	HIGHWAY 3408	Drop Off	1-3	>10	Install Guardrail
845	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	5-10	Shoulderering
848	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	>10	Install Guardrail
850	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	>10	Install Guardrail
864	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	5-10	Shoulderering
867	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	>10	Install Guardrail
868	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	>10	Install Guardrail
869	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	>10	Install Guardrail
871	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	5-10	Shoulderering
873	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	2-5	Shoulderering
936	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	>10	Install Guardrail
938	067-CR-1361 -000	HIGHWAY 3408	Drop Off	0-1	>10	Install Guardrail
1566	067-CR-1020 -000	INDIAN CREEK	Drop Off	1-3	>10	Install Guardrail
1567	067-CR-1020 -000	INDIAN CREEK	Drop Off	0-1	5-10	Shoulderering
1534	067-CR-1097 -000	JOES BR	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
906	067-CR-1309 -000	JOHNSON FRK	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
911	067-CR-1309 -000	JOHNSON FRK	Drop Off	0-1	>10	Install Guardrail
918	067-CR-1309 -000	JOHNSON FRK	Drop Off	1-3	>10	Install Guardrail
1509	067-CR-1261 -000	LONG BR	Drop Off	1-3	>10	Install Guardrail
948	067-CR-1319 -000	LOW GAP BR	Drop Off	1-3	>10	Install Guardrail
952	067-CR-1319 -000	LOW GAP BR	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
974	067-CR-1166 -000	PINE CREEK	Drop Off	1-3	>10	Install Guardrail
1520	067-CR-1222 -000	SOUTH EAST RD	Drop Off	>5	>10	Install Guardrail
1500	067-CR-1262 -000	TURKEY CREEK	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
828	067-CR-1359 -000	WOODROCK RD	Drop Off	0-1	>10	Install Guardrail
830	067-CR-1359 -000	WOODROCK RD	Drop Off	0-1	>10	Install Guardrail
832	067-CR-1359 -000	WOODROCK RD	Drop Off	3-5	>10	Install Guardrail
1544	067-CR-1065 -000	YONTS FRK	Drop Off	1-3	>10	Install Guardrail
1547	067-CR-1065 -000	YONTS FRK	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker

Exhibit Letcher-F8: Roadside Drop Off Recommendations

Fixed Object Recommendations (Letcher County)

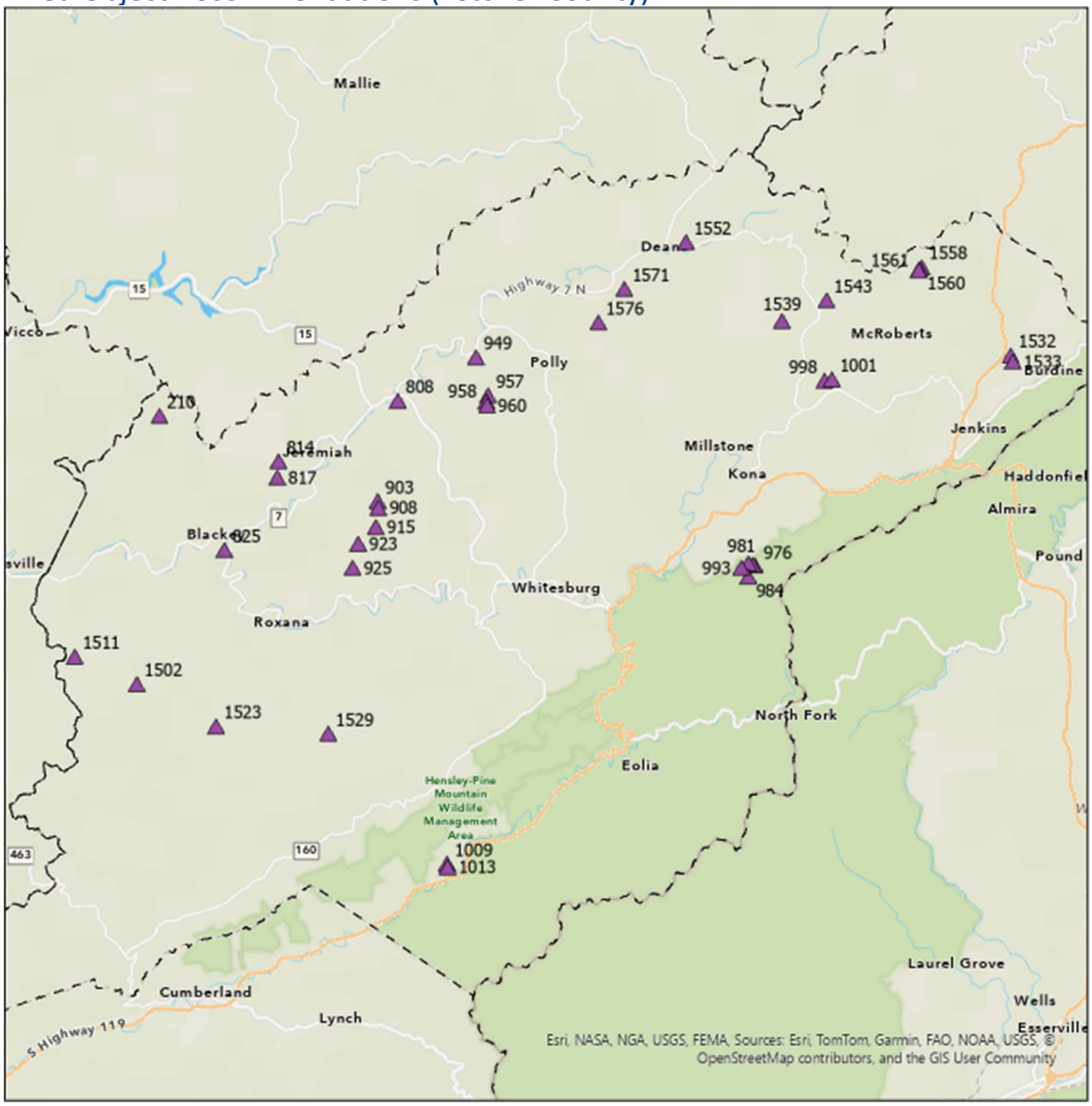


Exhibit Letcher-F9: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
808	067-CR-1798 -000	ISOM DR	Fixed Object	Other; Overhead bridge	Single	0-1	Install Type 3 Object Marker
817	067-CR-1354 -000	CARBON GLOW RD	Fixed Object	Other; Pole	Single	3-5	Remove
976	067-CR-1166 -000	PINE CREEK	Fixed Object	Tree	Single	1-3	Remove
903	067-CR-1309 -000	JOHNSON FRK	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
923	067-CR-1309 -000	JOHNSON FRK	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
957	067-CR-1319 -000	LOW GAP BR	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
958	067-CR-1319 -000	LOW GAP BR	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
960	067-CR-1319 -000	LOW GAP BR	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
915	067-CR-1309 -000	JOHNSON FRK	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
825	067-CR-1359 -000	WOODROCK RD	Fixed Object	Other; Fence	Series	0-1	Consider Removal or Relocation
1560	067-CR-1473 -000	BAND MILL	Fixed Object	Other; Fence Post	Series	1-3	Remove
979	067-CR-1166 -000	PINE CREEK	Fixed Object	Other; Wall	Series	3-5	--
814	067-CR-1354 -000	CARBON GLOW RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
908	067-CR-1309 -000	JOHNSON FRK	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
981	067-CR-1166 -000	PINE CREEK	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
984	067-CR-1168 -000	CAROUSEL DR	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
998	067-CR-1074 -000	HAYMOND HL RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1001	067-CR-1074 -000	HAYMOND HL RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1009	067-CR-1238 -000	ELKINS BR	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1511	067-CR-1261 -000	LONG BR	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1533	067-CR-1097 -000	JOES BR	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1552	067-CR-1056 -000	APPLETREE BR	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1558	067-CR-1473 -000	BAND MILL	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1571	067-CR-1020 -000	INDIAN CREEK	Fixed Object	Tree	Series	3-5	--
993	067-CR-1168 -000	CAROUSEL DR	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
925	067-CR-1309 -000	JOHNSON FRK	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
949	067-CR-1319 -000	LOW GAP BR	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1013	067-CR-1238 -000	ELKINS BR	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1502	067-CR-1262 -000	TURKEY CREEK	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1523	067-CR-1258 -000	BIG BR	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1529	067-CR-1247 -000	CARRION BR	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1532	067-CR-1097 -000	JOES BR	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1543	067-CR-1065 -000	YONTS FRK	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
1561	067-CR-1473 -000	BAND MILL	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
210	067-CR-1367 -000	BULL CREEK	Fixed Object	Utility Pole	Series	3-5	--
1539	067-CR-1063 -000	GOOSE CREEK	Fixed Object	Utility Pole	Series	3-5	--
1576	067-CR-1821 -000	J D DR	Fixed Object	Utility Pole	Series	0-1	Install Type 2 Object Marker

Exhibit Letcher-F10: Fixed Object Recommendations

Guardrail Recommendations (Letcher County)

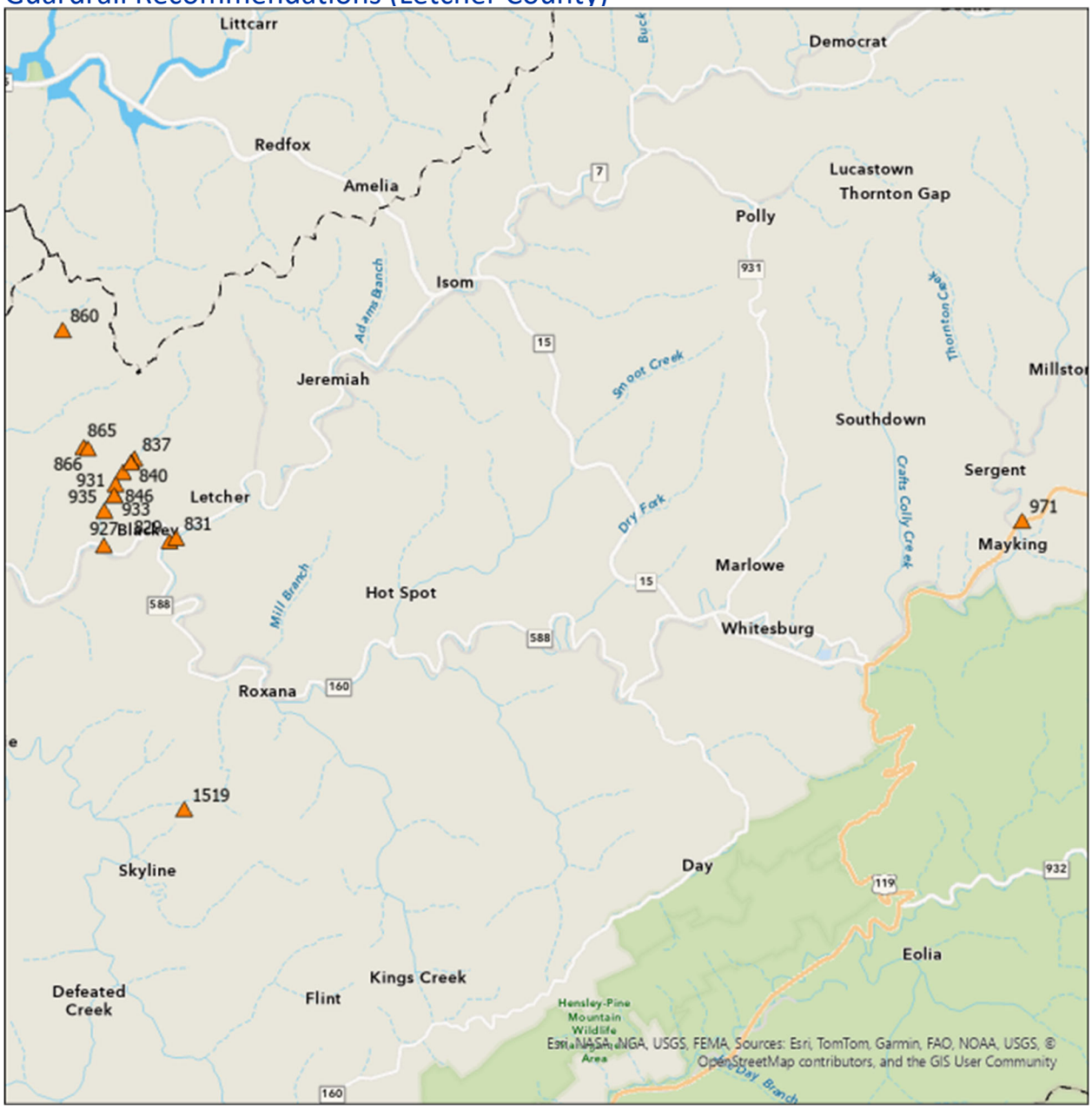


Exhibit Lecher-F11: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
829	067-CR-1359 -000	WOODROCK RD	Guardrail	Poor	No	None	Remove
831	067-CR-1359 -000	WOODROCK RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
837	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Good	Yes	All_	--
840	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Good	Yes	All_	--
842	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Good	Yes	All_	--
846	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Poor	Maybe	All_	Evaluate for Warrants; remove if not met
860	067-CR-1367 -000	BULL CREEK	Guardrail	Fair	Maybe	All_	--
865	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
866	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Poor	No	None	Remove
927	067-CR-1359 -000	WOODROCK RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
928	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Good	Yes	Some	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
931	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Fair	Yes	Some	Evaluate end treatments
933	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
935	067-CR-1361 -000	HIGHWAY 3408	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
971	067-CR-1129 -000	WILLOW DR	Guardrail	Fair	Yes	Some	Evaluate end treatments
1519	067-CR-1222 -000	SOUTH EAST RD	Guardrail	Good	Maybe	All_	--

Exhibit Letcher-F12: Guardrail Recommendations

Intersection Recommendations (Letcher County)

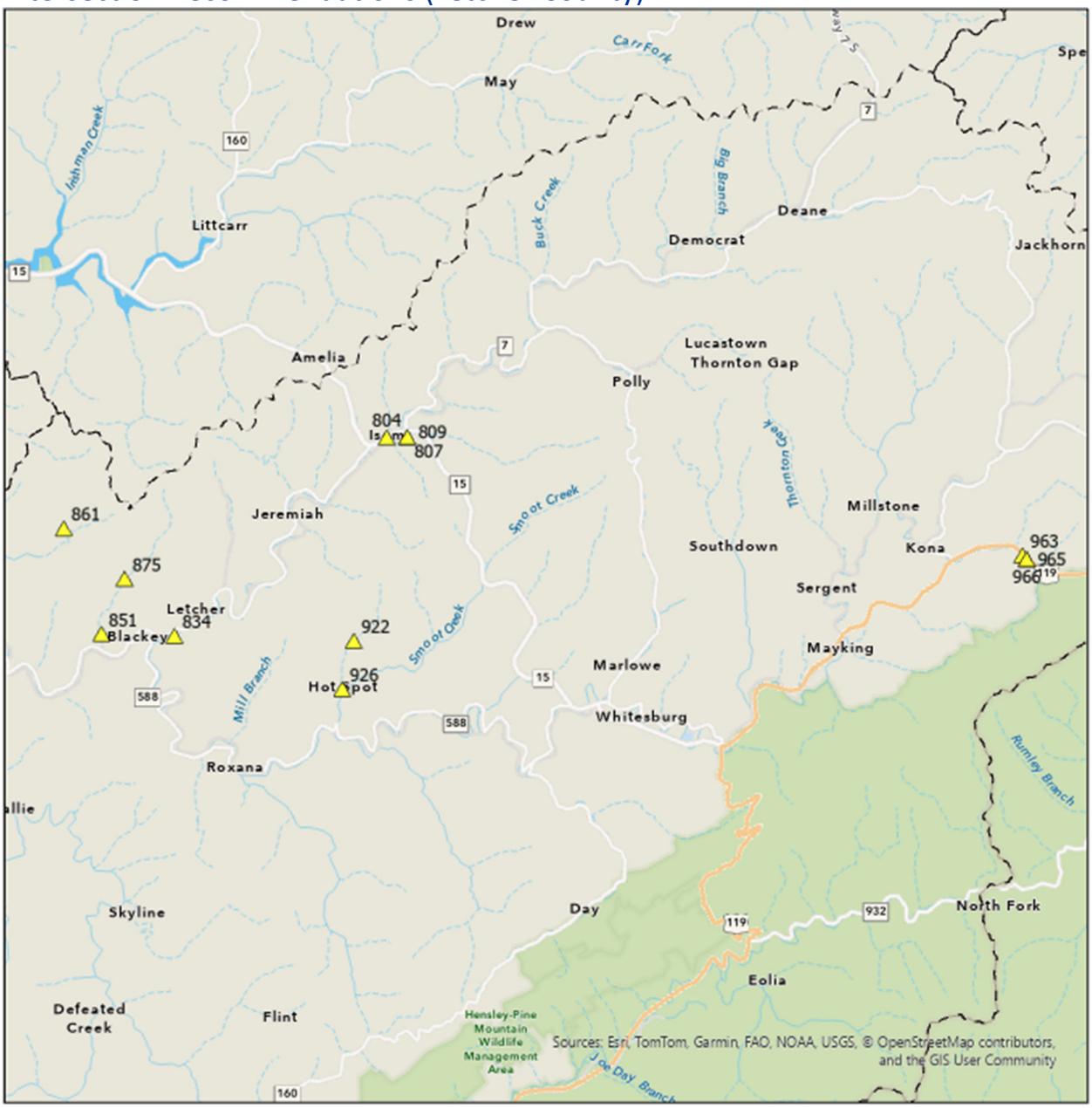


Exhibit Letcher-F13: Intersection Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Blocked by Vegetatio	Recommendation
804	067-CR-1798 -000	ISOM DR	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
807	067-CR-1798 -000	ISOM DR	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar
809	067-CR-1798 -000	ISOM DR	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
834	067-CR-1359 -000	WOODROCK RD	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection, Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar
851	067-CR-1361 -000	HIGHWAY 3408	Intersection Hazard	Intersection Obscured on approach, Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach
861	067-CR-1367 -000	BULL CREEK	Intersection Hazard	Intersection Obscured on approach, Intersection Skew, Insufficient Sight Distance at Intersection	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar; Clear vegetation
875	067-CR-1361 -000	HIGHWAY 3408	Intersection Hazard	Intersection Skew, Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar
922	067-CR-1309 -000	JOHNSON FRK	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
926	067-CR-1309 -000	JOHNSON FRK	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
963	067-CR-1875 -031	HUMMING BIRD LN X	Intersection Hazard	Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach
965	067-CR-1875 -031	HUMMING BIRD LN X	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
966	067-CR-1875 -031	HUMMING BIRD LN X	Intersection Hazard	Intersection Obscured on approach, Insufficient Sight Distance at Intersection	No	Install Intersection Ahead / Stop Ahead Sign on Approach

Exhibit Letcher-F14: Intersection Recommendations

Other Recommendations (Letcher County)



Exhibit Letcher-F15: Other Item Locations

Point ID	RT_UNIQUE	RD_NAME	Issue Type	Description	Recommendation
905	067-CR-1309 -000	JOHNSON FRK	other	Fence	--

Exhibit Letcher-F16: Other Item Recommendations

APPENDIX I: OWLSEY COUNTY

Owsley County Overview

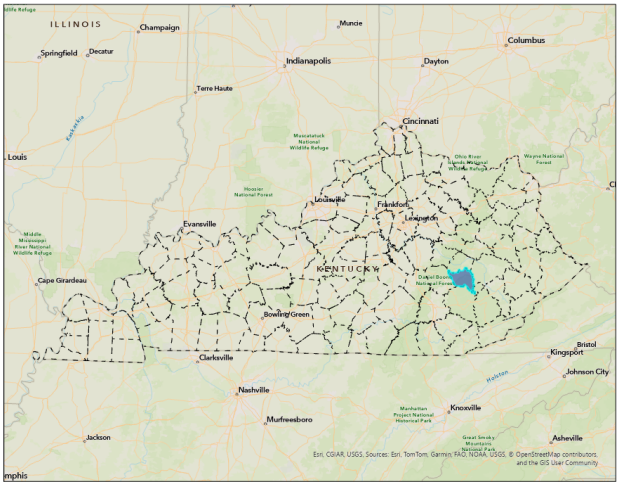


Exhibit Owsley-1: Location Map

Key Information Table Owsley County	
Population	4,463
Population in Underserved Communities	0%
Fatalities (All Roads)	29
Fatalities (County Roads)	4
Fatality rate per 100,000 persons	649.79
County Road Mileage	225.0
City Road Mileage	2.0
State Road Mileage	117.0
Total Mileage	**344.0**

Exhibit Owsley-2: Key Information

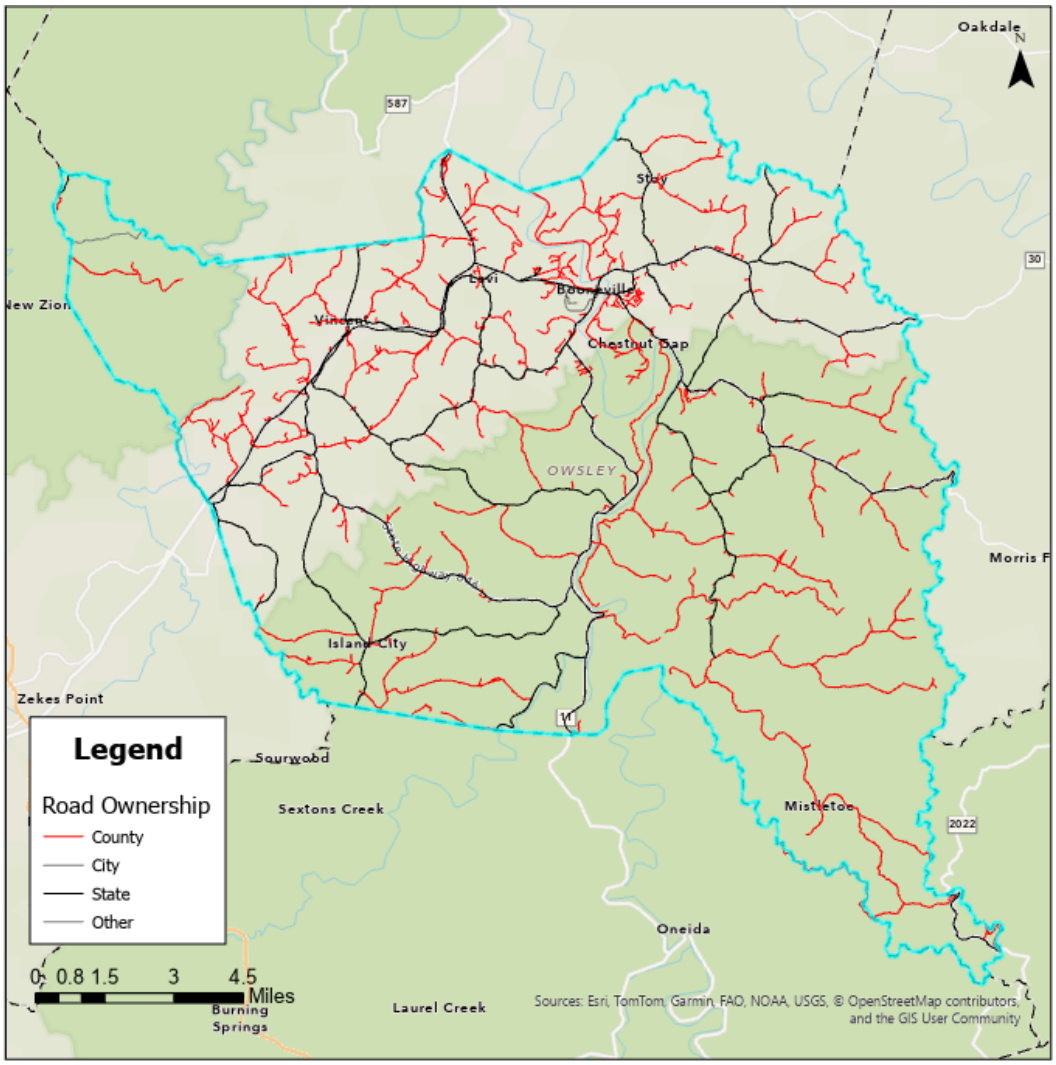
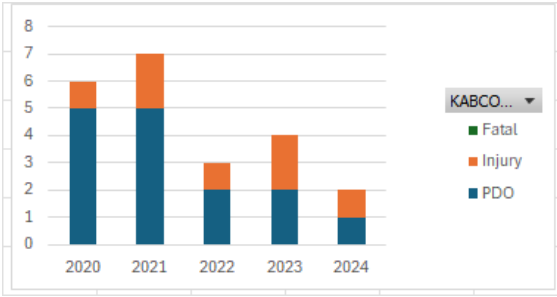


Figure Owsley-3: Map of County Roadways

Crash Analysis



Figure Owsley-4: Map of County Road Crashes



Year	Property Damage Only	Injury	Fatal	Total
2020	5	1	0	**6**
2021	5	2	0	**7**
2022	2	1	0	**3**
2023	2	2	0	**4**
2024	1	1	0	**2**

Table Owsley-5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	0	1	0	1
Backing	0	0	6	6
Head On	0	2	1	3
Opposing Left Turn	0	0	0	0
Rear End	0	0	0	0
Rear To Rear	0	0	0	0
Sideswipe-Opposit	0	1	5	6
Sideswipe-Same D	0	0	0	0
Single Vehicle	0	3	3	6
Total	**0**	**7**	**15**	**22**

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

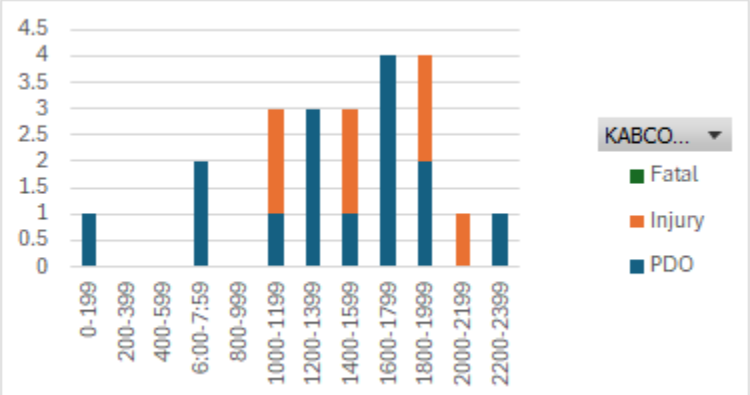


Exhibit Owsley-7: Crashes and Severity by Time of Day

Focus Roadways

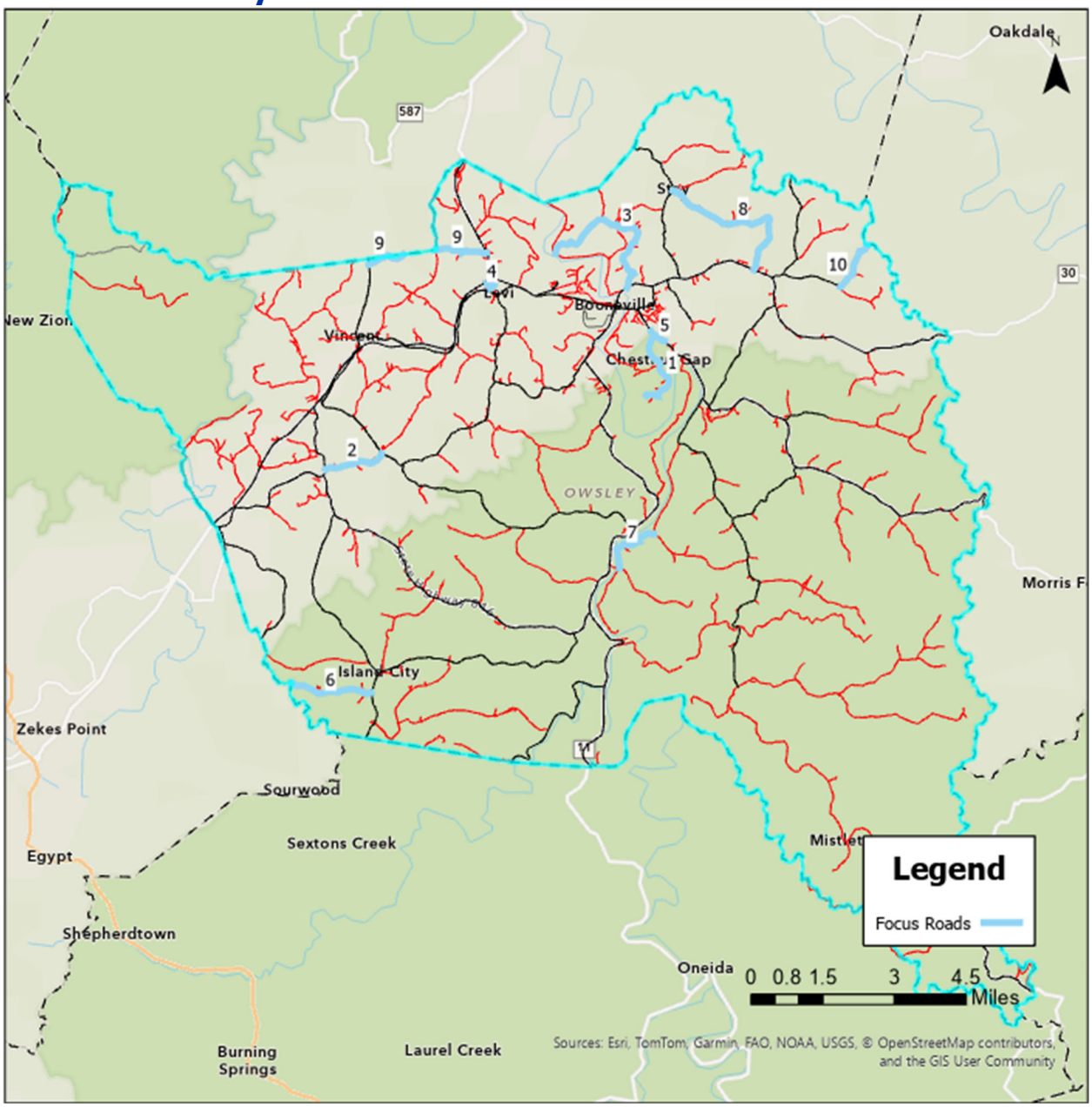


Exhibit Owsley-8: Focus Roads

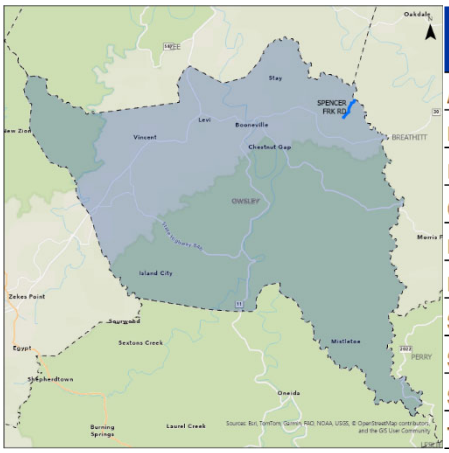
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Owsley												
095-CR-1031 -000	1.11	Owsley	Kentucky River	SPENCER FRK RD	1	0	1	10.00	0.08	14.3%	14.3%	1
095-CR-1003 -000	1.87	Owsley	Kentucky River	CHESTNUT GAP RD	1	0	0	9.17	0.59	14.3%	42.9%	1
095-CR-1015 -000	3.69	Owsley	Kentucky River	FISH CRK LOOP RD	1	0	0	9.17	0.41	14.3%	71.4%	1
095-CR-1325 -000	1.30	Owsley	Kentucky River	CHADWELL RD	0	0	0	0.00	2.69	0.0%	100.0%	1
095-CR-1026 -000	3.53	Owsley	Kentucky River	STRAIGHT FORK-ZEKE BR RD	0	0	0	0.00	0.24	0.0%	100.0%	1
095-CR-1315 -000	2.00	Owsley	Kentucky River	QUILLIN RD	0	0	0	0.00	0.22	0.0%	100.0%	1

Exhibit Owsley-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Spencer Fork Rd (095-CR-1031 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	1	1	0	**2**
Total	**1**	**1**	**0**	**2**

General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
095-CR-1031 -000	SPENCER FRK RD	12	3-Fair	RHR 3 - >10 ft	40-60

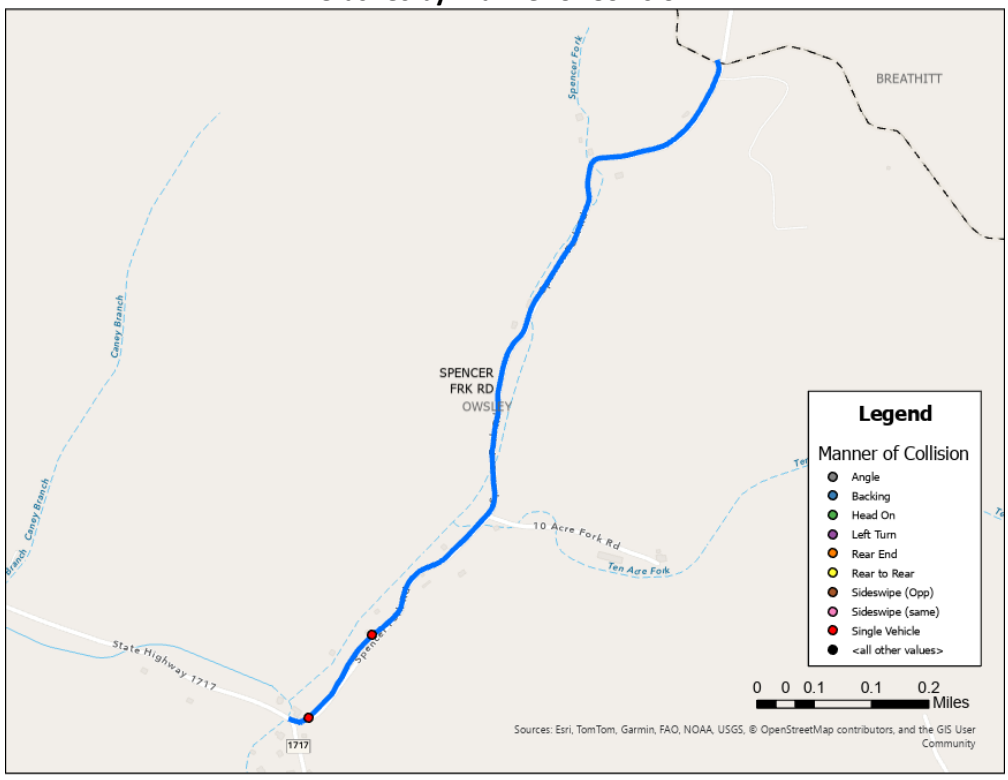
Roadway Typical Section



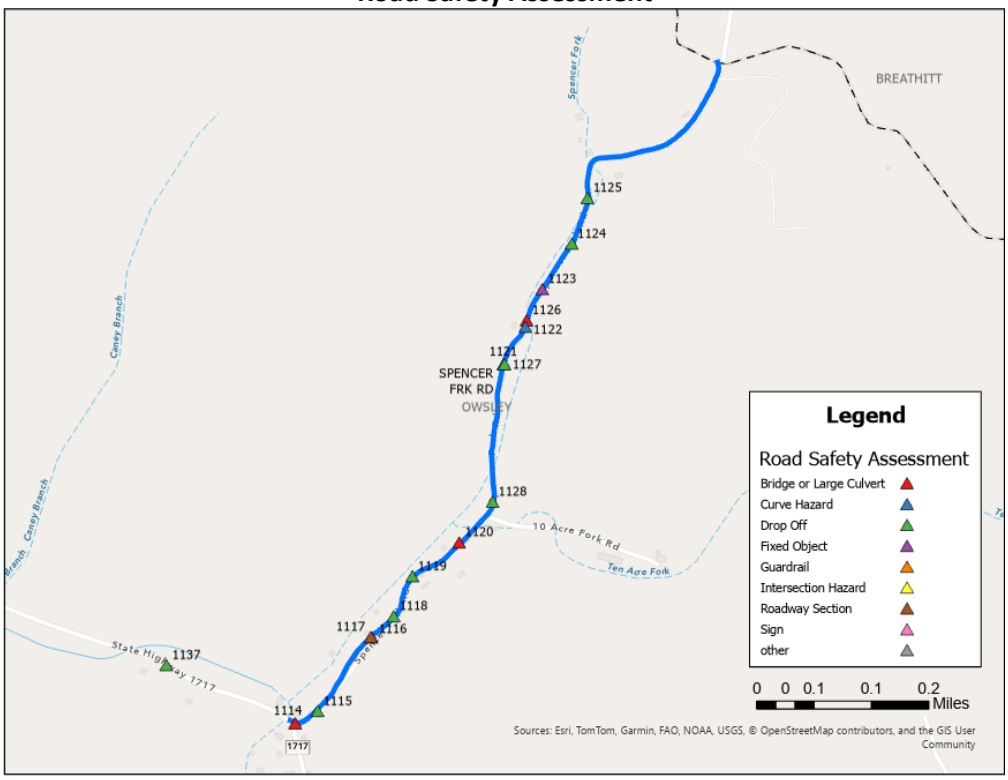
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
1118	095-CR-1031 -000	SPENCER FRK RD	12	3-Fair	RHR 3 - >10 ft	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1116	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	--	Shoulderering
1117	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	--	Shoulderering
1119	095-CR-1031 -000	SPENCER FRK RD	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
1120	095-CR-1031 -000	SPENCER FRK RD	Drop Off	1-3	2-5	--	Shouldering / Repair if Possible; Install Object Marker
1125	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	<2	--	Shoulderering
1126	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	--	Shoulderering
1128	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	--	Shoulderering
1129	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	2-5	--	Shoulderering
1137	095-CR-1031 -000	SPENCER FRK RD	Drop Off	3-5	5-10	--	Shouldering / Repair if Possible
1138	095-CR-1031 -000	SPENCER FRK RD	Drop Off	3-5	>10	--	Install Guardrail
1139	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	--	Shoulderering

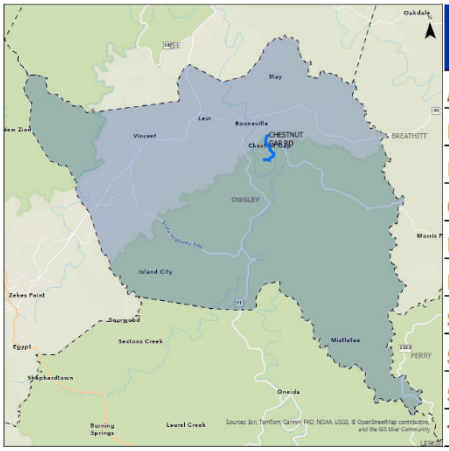
Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
1124	095-CR-1031 -000	SPENCER FRK RD	Fixed Object	Tree	Single	1-3	Remove

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
1114	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1120	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1126	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1135	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	25	0	0	Install Object Markers

Point ID	RT_UNIQUE	Road Name	Issue Type	Vegetation	--	Comments	Recommendation
1122	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	Yes	--	vegetation	Add Curve Warning Sign; Clear Vegetation
1123	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
1134	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
1135	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	Yes	--	Curve Obscured	Add Curve Warning Sign; Clear Vegetation

Chestnut Gap Rd (095-CR-1003 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	1	0	0	**1**
BACKING	0	0	0	**0**
HEAD ON	1	2	0	**3**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	1	0	0	**1**
SINGLE VEHICLE	1	0	0	**1**
Total	**4**	**2**	**0**	**6**

General Roadway Conditions

Not Collected

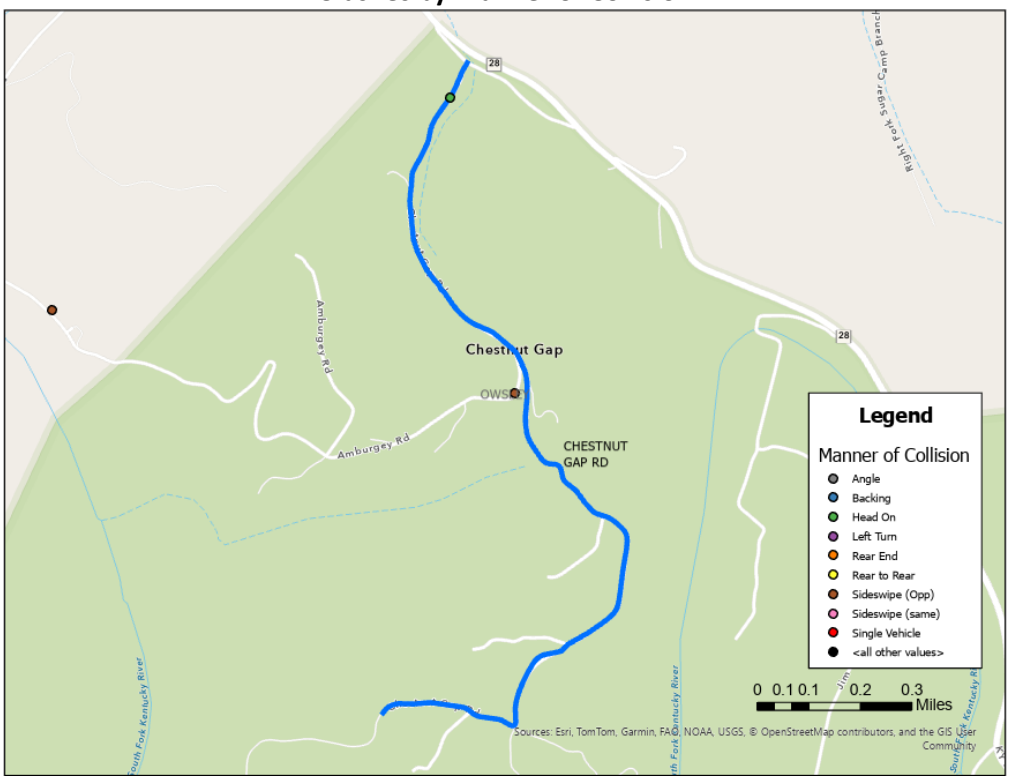
Roadway Typical Section

Not Collected

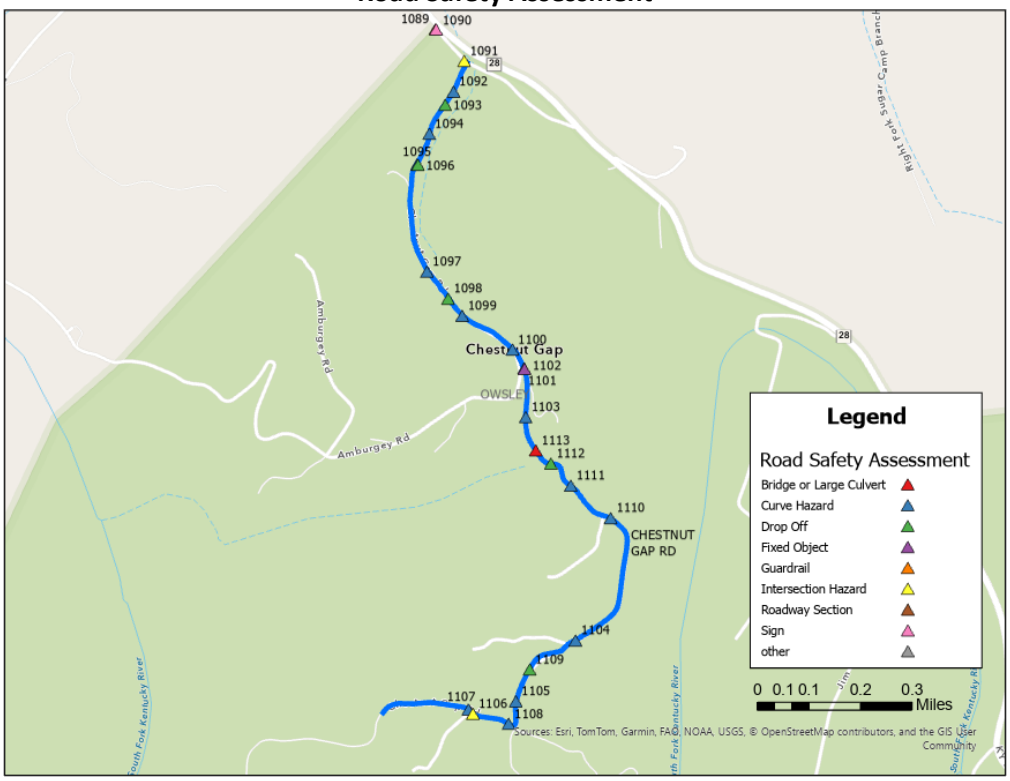
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment

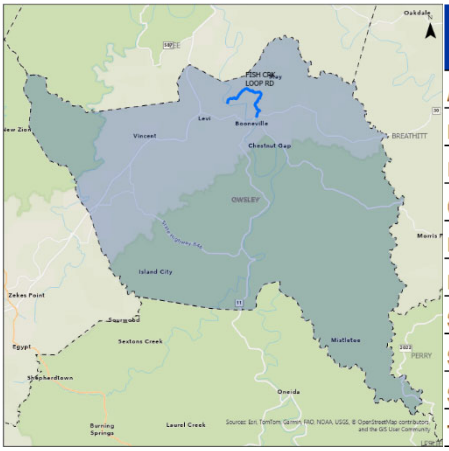


General Recommendations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
1094	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	0-1	5-10	--	Shouldering
1097	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	0-1	>10	--	Install Guardrail
1099	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	1-3	>10	--	Install Guardrail
1110	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	3-5	5-10	--	Shouldering / Repair if Possible
1113	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
1103	095-CR-1003 -000	CHESTNUT GAP RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
1107	095-CR-1003 -000	CHESTNUT GAP RD	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
1113	095-CR-1003 -000	CHESTNUT GAP RD	Bridge or Large Culvert	20	0	0	Install Object Markers
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
1093	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
1095	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured	Add Curve Warning Sign; Clear Vegetation
1096	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1098	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign
1100	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1101	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	No	--	Entrance in Curve, Curve Obscured	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
1102	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1104	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1105	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1106	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured	Add Curve Warning Sign; Clear Vegetation
1108	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1109	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1111	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation
1112	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Yes	--	Curve Obscured, vegetation	Add Curve Warning Sign; Clear Vegetation

Fish Creek Loop Rd (095-CR-1015 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	1	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	0	0	**0**
Total	**1**	**1**	**0**	**2**

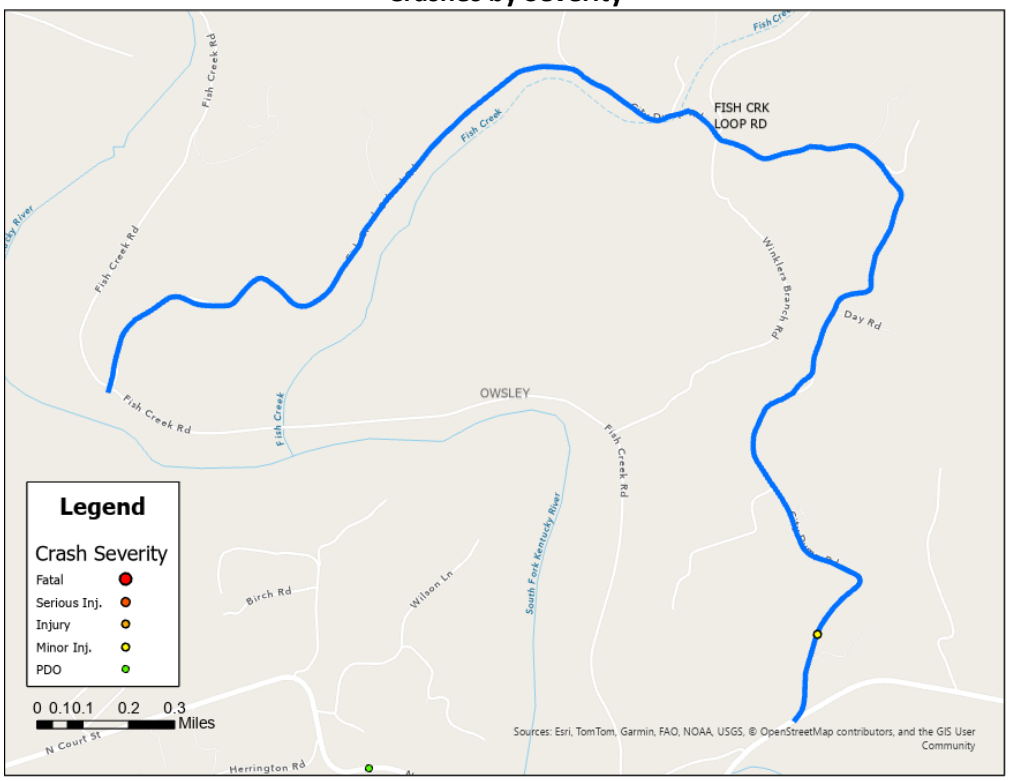
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (f	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
095-CR-1015 -000	FISH CRK LOOP RD	14	3-Fair	RHR 3 - >10 ft	40-60

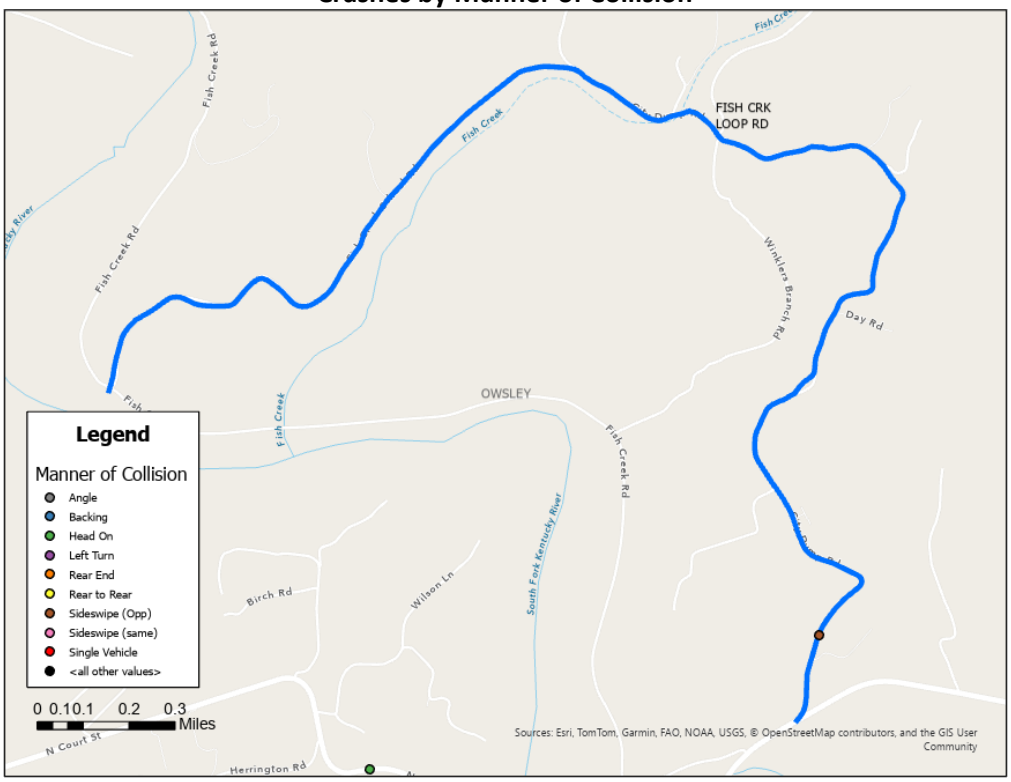
Roadway Typical Section



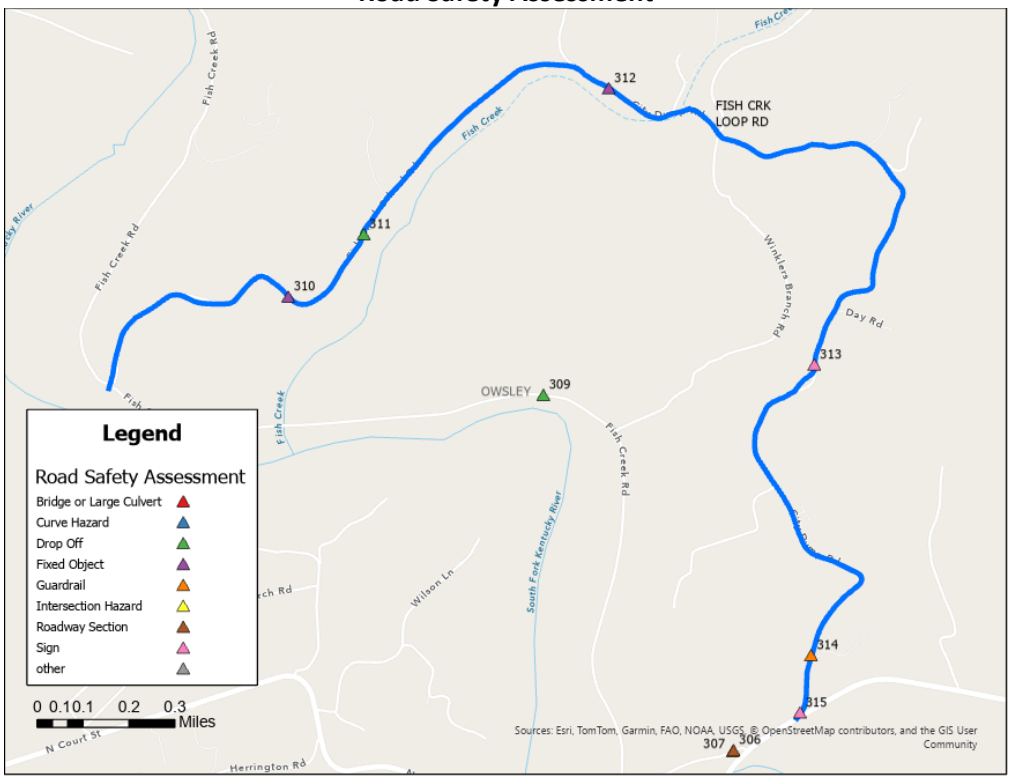
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



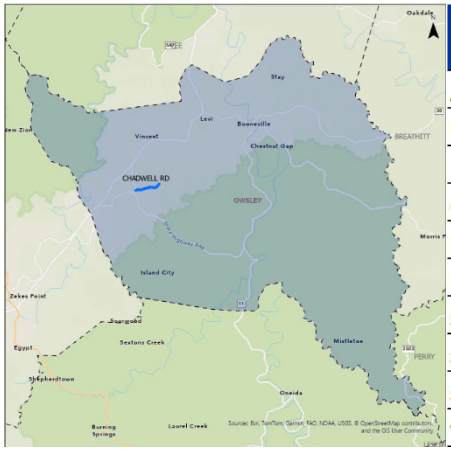
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Shoulde	Edgeline[1]	Curve Signin	Other Recommendations
307	095-CR-1015 -000	FISH CRK LOOP RD	14	3-Fair	RHR 3 - >10 ft	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
310	095-CR-1015 -000	FISH CRK LOOP RD	Drop Off	>5	>10	--	Install Guardrail
312	095-CR-1015 -000	FISH CRK LOOP RD	Drop Off	3-5	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
309	095-CR-1015 -000	FISH CRK LOOP RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
311	095-CR-1015 -000	FISH CRK LOOP RD	Fixed Object	Utility Pole	Series	3-5	--
313	095-CR-1015 -000	FISH CRK LOOP RD	Fixed Object	Utility Pole	Series	>5	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
308	095-CR-1015 -000	FISH CRK LOOP RD	Guardrail	Good	Maybe	All_	--
315	095-CR-1015 -000	FISH CRK LOOP RD	Guardrail	Good	Maybe	Some	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.

Chadwell Rd (095-CR-1325 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	2	0	0	**2**
Total	**2**	**0**	**0**	**2**

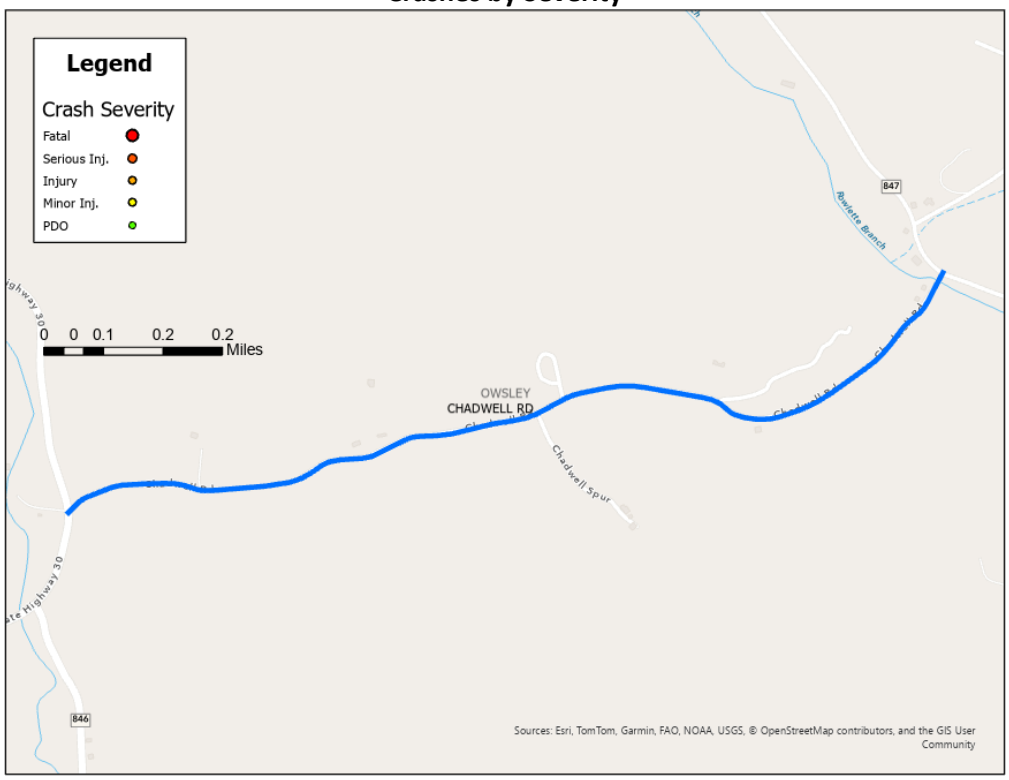
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
095-CR-1325 -000	CHADWELL RD	12	4-Poor	RHR 4 - 5-10 ft marginally	20-40

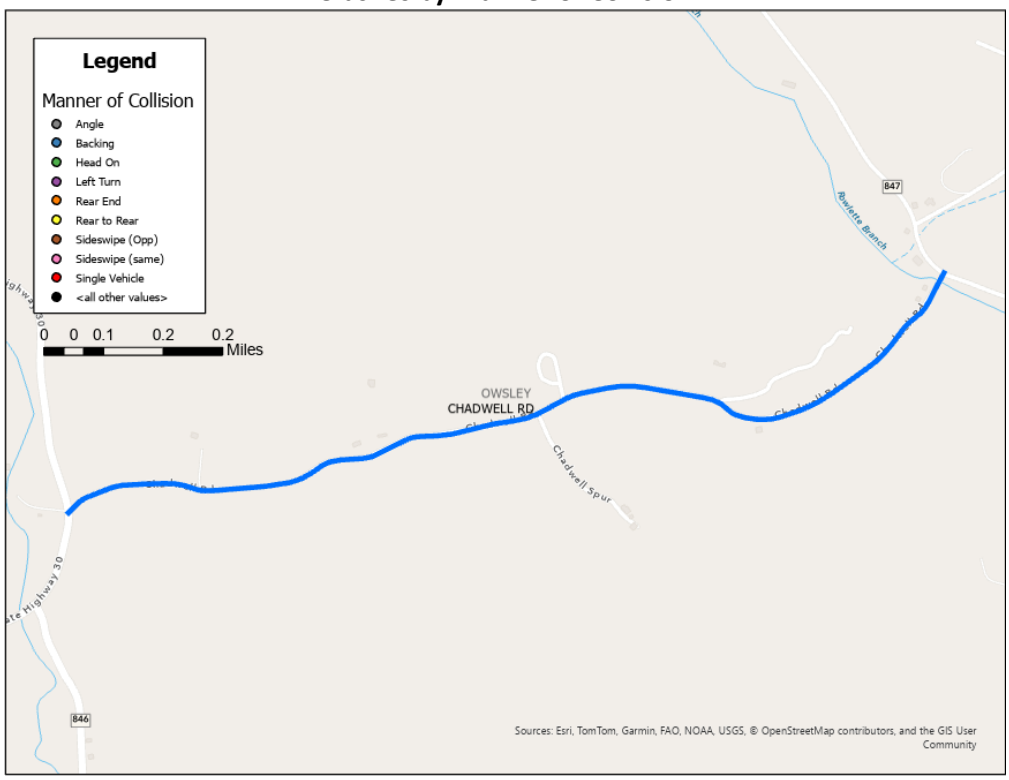
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

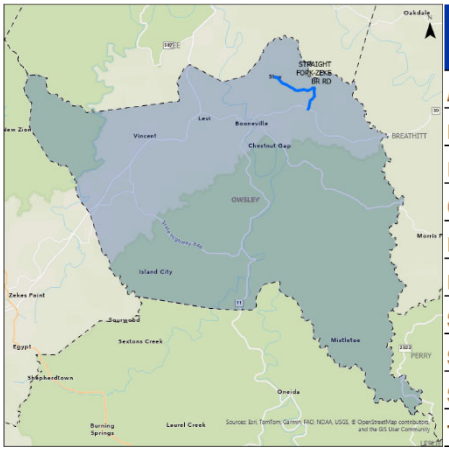
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
297	095-CR-1325 -000	CHADWELL RD	12	4-Poor	RHR 4 - 5-10 ft marginally	20-40	✓			

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
299	095-CR-1325 -000	CHADWELL RD	Fixed Object	Utility Pole	Series	>5	--

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
297	095-CR-1325 -000	CHADWELL RD	Bridge or Large Culvert	16	4	0	--

Straight Fork-Zeke Bridge Rd (095-CR-1026 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	0	0	**0**
Total	**1**	**0**	**0**	**1**

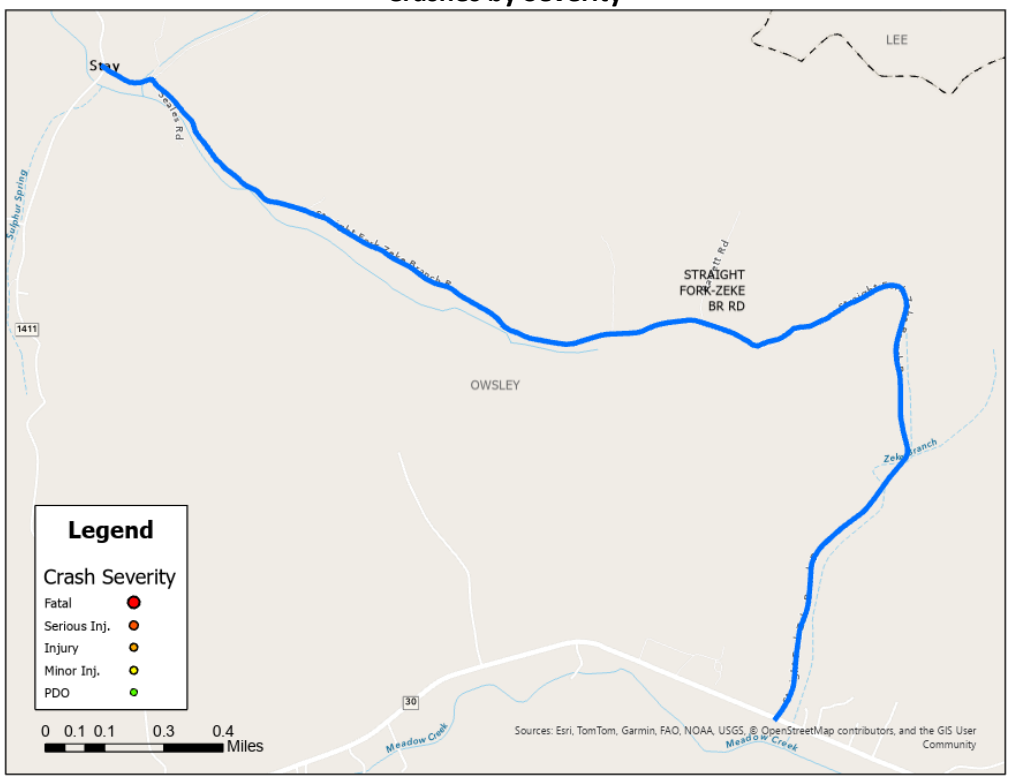
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (f	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	12	2-Good	RHR 5 - 5- 10 ft non-recoverable	60-80

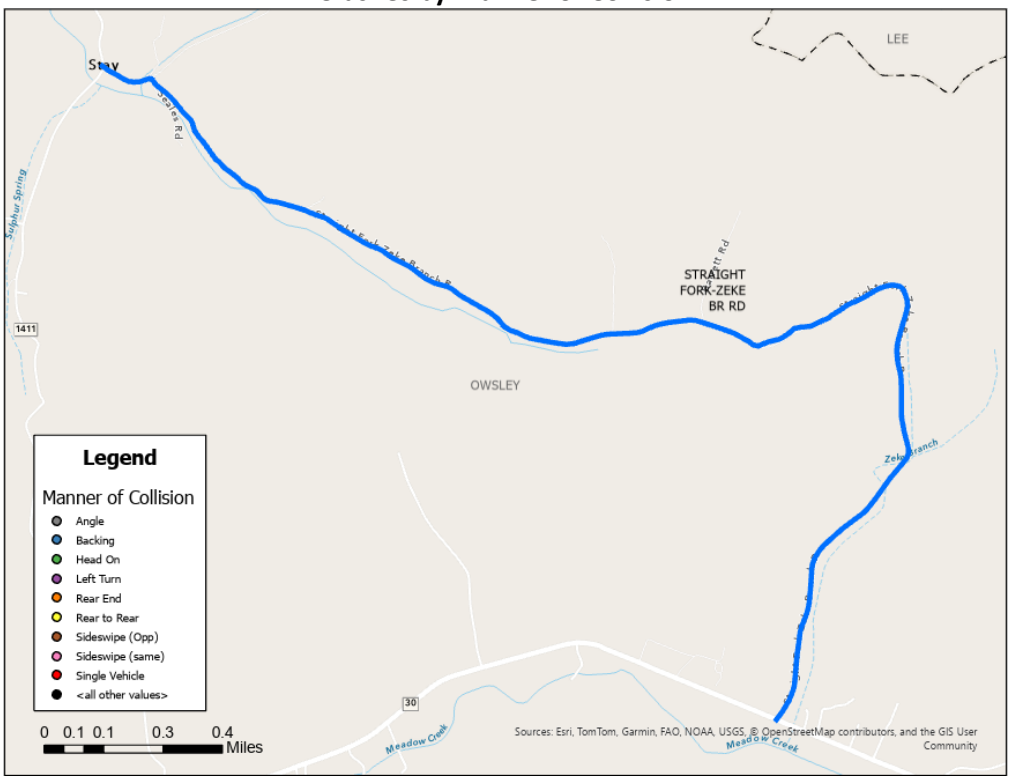
Roadway Typical Section



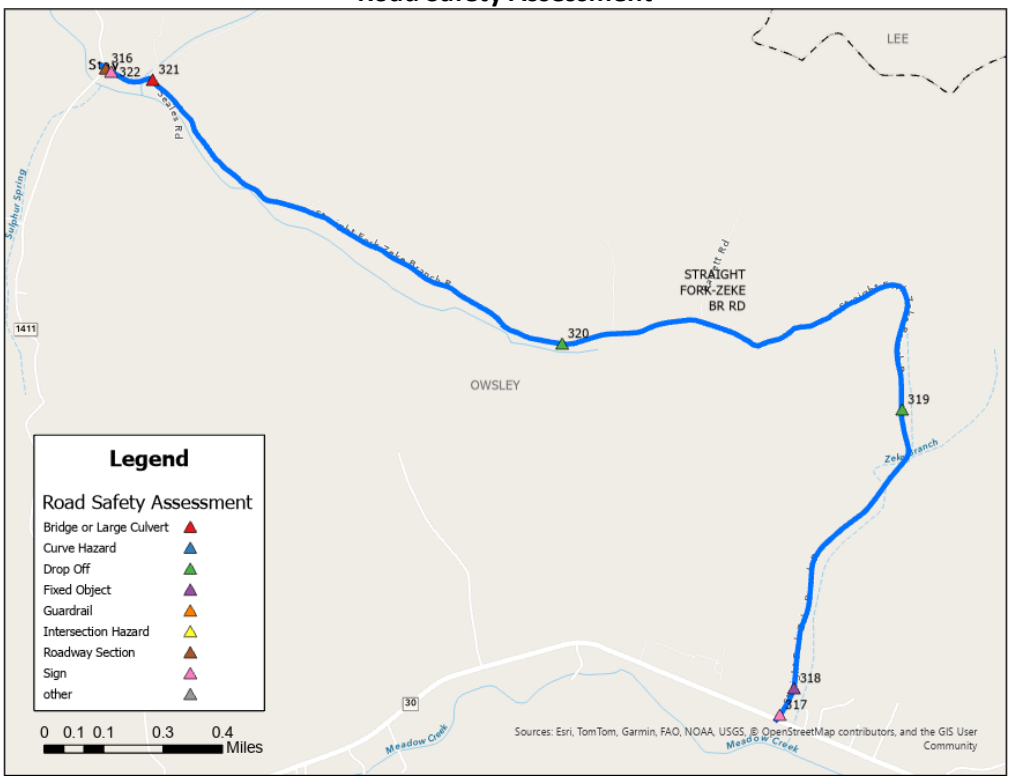
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline1	Curve Signin	Other Recommendations
317	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	12	2-Good	RHR 5 - 5- 10 ft non-recoverable	60-80	✓			

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
320	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Drop Off	3-5	>10	--	Install Guardrail
321	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Drop Off	1-3	>10	--	Install Guardrail
1132	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Drop Off	3-5	5-10	--	Shouldering / Repair if Possible
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
319	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Fixed Object	Utility Pole	Series	>5	--
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Comments**	**Vegetation**	**Recommendation**	
1140	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar	
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Bridge Width**	**Guardrail Present 1**	**OM Present1**	**Recommendation**
321	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Bridge or Large Culvert	20	0	0	Install Object Markers
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Vegetation**	**--**	**Comments**	**Recommendation**
1133	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Curve Hazard	No	--	Curve Obscured	Add Curve Warning Sign

Other Roadways

General Roadway Conditions and Recommendations (Owsley County)

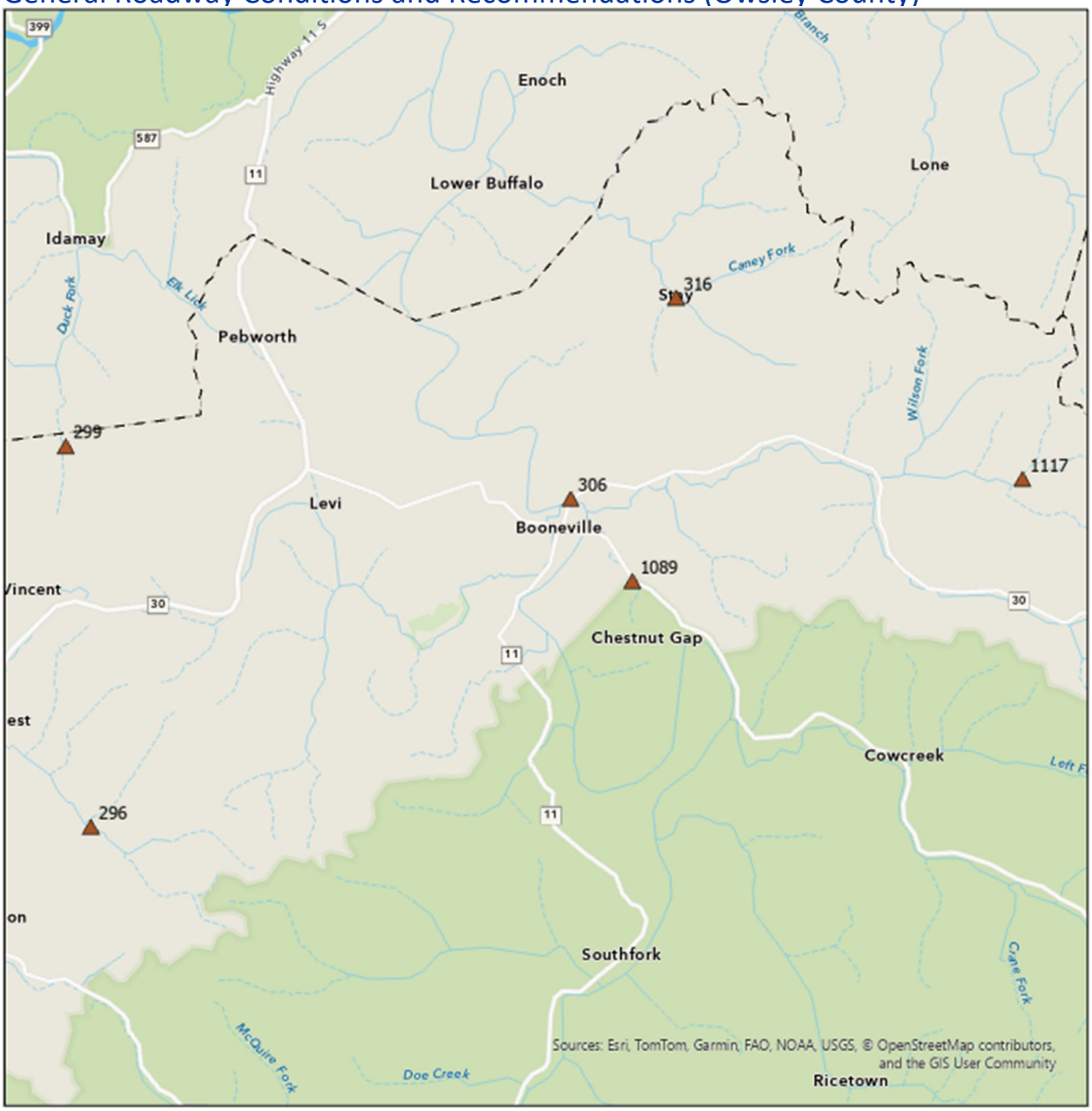


Exhibit Owsley-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
1118	095-CR-1031 -000	SPENCER FRK RD	12	3	3	40-60		✓	✓	✓	
307	095-CR-1015 -000	FISH CRK LOOP RD	14	3	6	40-60		✓	✓	✓	
1090	095-CR-1079 -000	CHESTNUT CIR RD	14	4	2	0-20		✓			
297	095-CR-1325 -000	CHADWELL RD	12	4	4	20-40		✓			
317	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	12	2	5	60-80		✓			
300	095-CR-1315 -000	QUILLIN RD	10	1	4	40-60		✓			

Exhibit Owsley-F2: General Roadway Recommendations

Bridge / Culvert Recommendations (Owsley County)

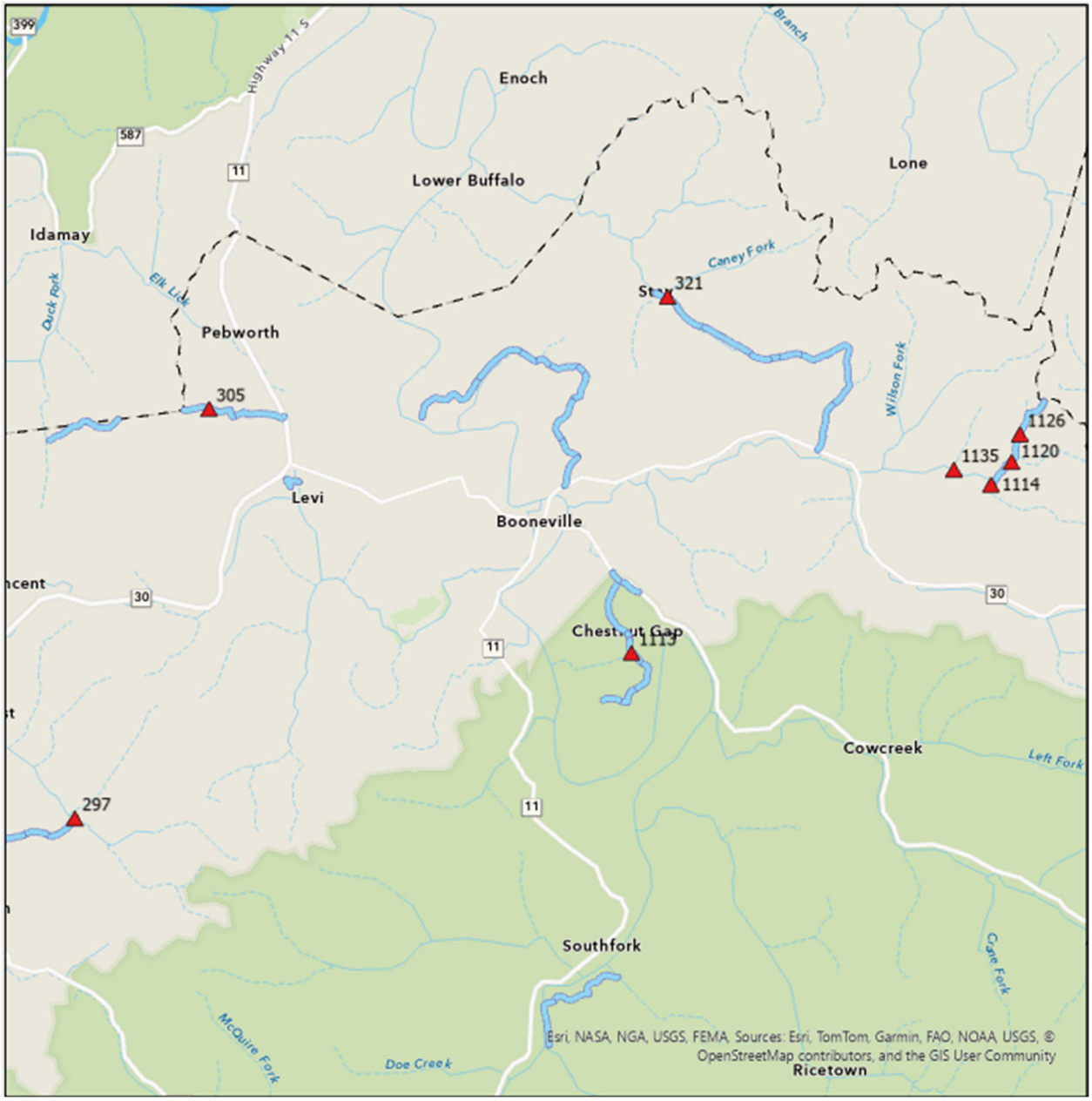


Exhibit Owsley-F3: Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Hazard	Bridge Width	Guard Presen	Object Marker	Recommendation
297	095-CR-1325 -000	CHADWELL RD	Bridge or Large Culvert	16	4	0	--
1113	095-CR-1003 -000	CHESTNUT GAP RD	Bridge or Large Culvert	20	0	0	Install Object Markers
305	095-CR-1315 -000	QUILLIN RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1114	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
1120	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1126	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	15	0	0	Install Object Markers
1135	095-CR-1031 -000	SPENCER FRK RD	Bridge or Large Culvert	25	0	0	Install Object Markers
321	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Bridge or Large Culvert	20	0	0	Install Object Markers

Exhibit Lee-F4: Bridge / Culvert Recommendations

Curve Recommendations (Owsley County)

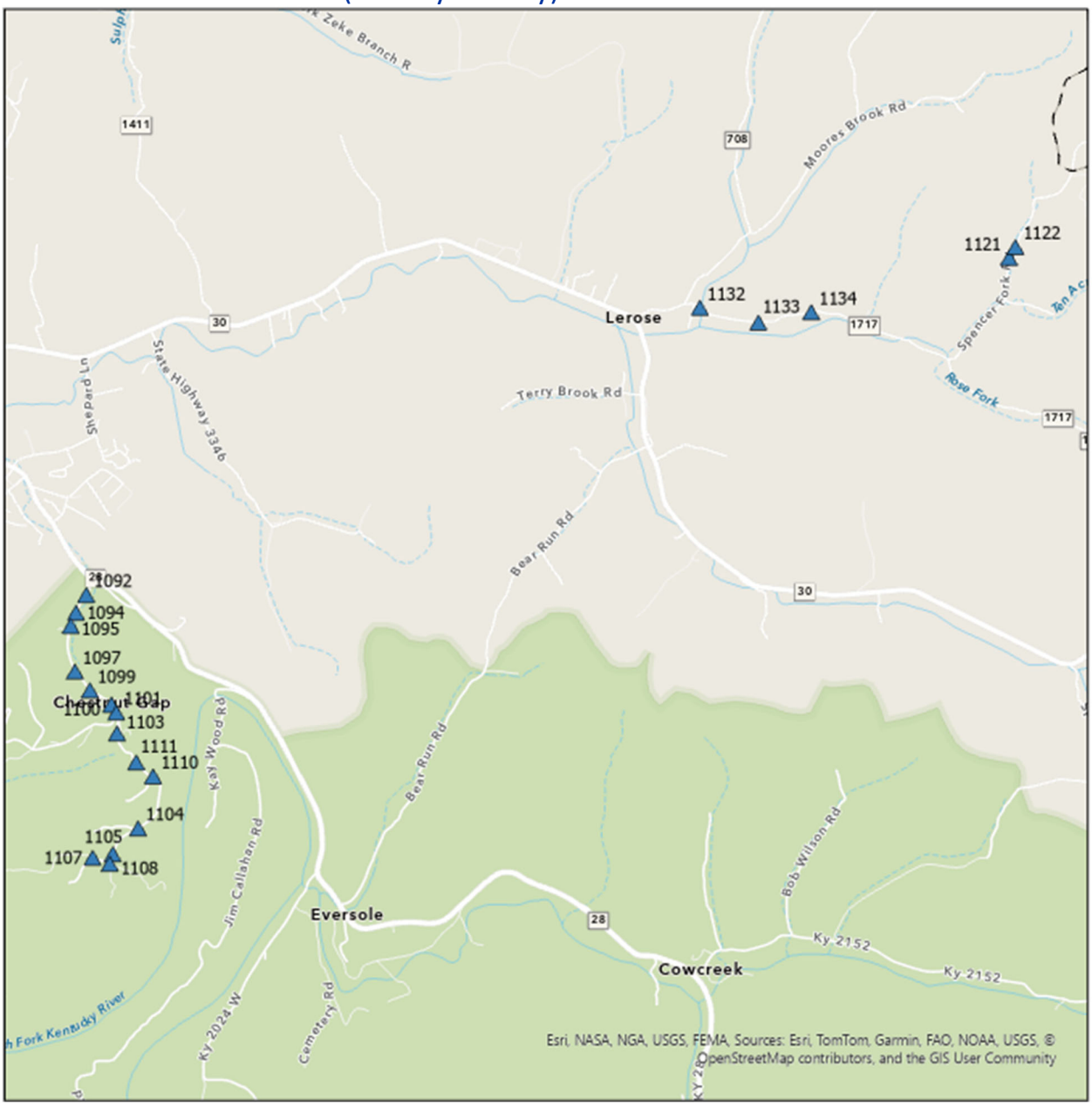


Exhibit Owsley-F5: Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
1092	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1094	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1095	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1097	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1099	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1100	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Entrance in Curve, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
1101	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1103	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1104	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1105	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
1107	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1108	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1110	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1111	095-CR-1003 -000	CHESTNUT GAP RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1132	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1121	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
1122	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1133	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
1134	095-CR-1031 -000	SPENCER FRK RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation

Exhibit Owsley-F5: Curve Recommendations

Roadside Drop Off Recommendations (Owsley County)

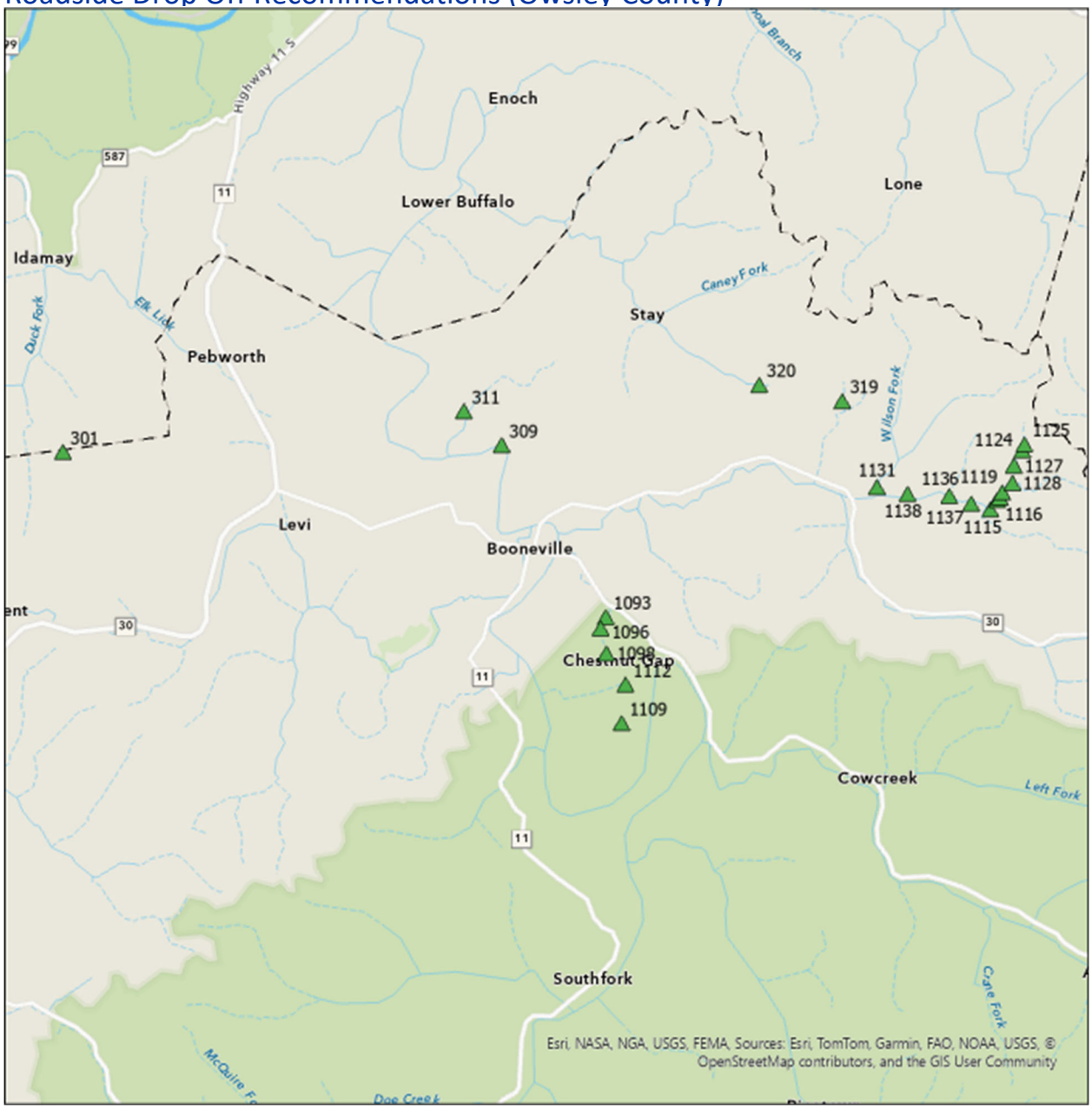


Exhibit Owsley-F7: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
1093	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	0-1	5-10	Shoulderering
1096	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	0-1	>10	Install Guardrail
1098	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	1-3	>10	Install Guardrail
1109	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible
1112	095-CR-1003 -000	CHESTNUT GAP RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
309	095-CR-1015 -000	FISH CRK LOOP RD	Drop Off	>5	>10	Install Guardrail
311	095-CR-1015 -000	FISH CRK LOOP RD	Drop Off	3-5	>10	Install Guardrail
301	095-CR-1315 -000	QUILLIN RD	Drop Off	3-5	>10	Install Guardrail
1115	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	Shoulderering
1116	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	Shoulderering
1118	095-CR-1031 -000	SPENCER FRK RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
1119	095-CR-1031 -000	SPENCER FRK RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
1124	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	<2	Shoulderering
1125	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	Shoulderering
1127	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	Shoulderering
1128	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	2-5	Shoulderering
1136	095-CR-1031 -000	SPENCER FRK RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible
1137	095-CR-1031 -000	SPENCER FRK RD	Drop Off	3-5	>10	Install Guardrail
1138	095-CR-1031 -000	SPENCER FRK RD	Drop Off	0-1	5-10	Shoulderering
319	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Drop Off	3-5	>10	Install Guardrail
320	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Drop Off	1-3	>10	Install Guardrail
1131	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible

Exhibit Owsley-F8: Roadside Drop Off Recommendations

Fixed Object Recommendations (Owsley County)

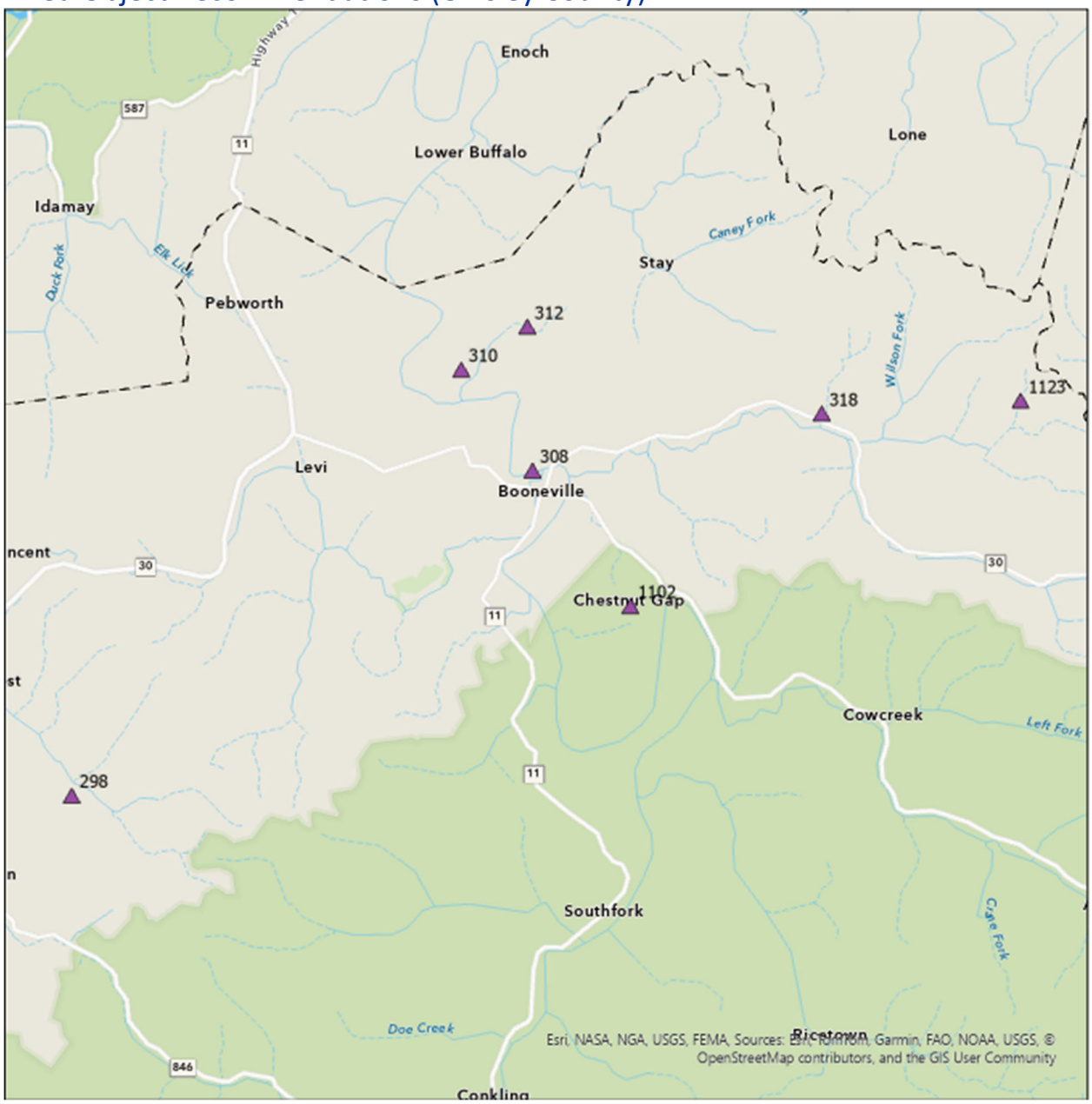


Exhibit Owsley-F9: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
1123	095-CR-1031 -000	SPENCER FRK RD	Fixed Object	Tree	Single	1-3	Remove
308	095-CR-1015 -000	FISH CRK LOOP RD	Fixed Object	Other; Fence	Series	3-5	See Policy Recommendations
1102	095-CR-1003 -000	CHESTNUT GAP RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
310	095-CR-1015 -000	FISH CRK LOOP RD	Fixed Object	Utility Pole	Series	3-5	--
298	095-CR-1325 -000	CHADWELL RD	Fixed Object	Utility Pole	Series	>5	--
312	095-CR-1015 -000	FISH CRK LOOP RD	Fixed Object	Utility Pole	Series	>5	--
318	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Fixed Object	Utility Pole	Series	>5	--

Exhibit Owsley-F10: Fixed Object Recommendations

Guardrail Recommendations (Owsley County)

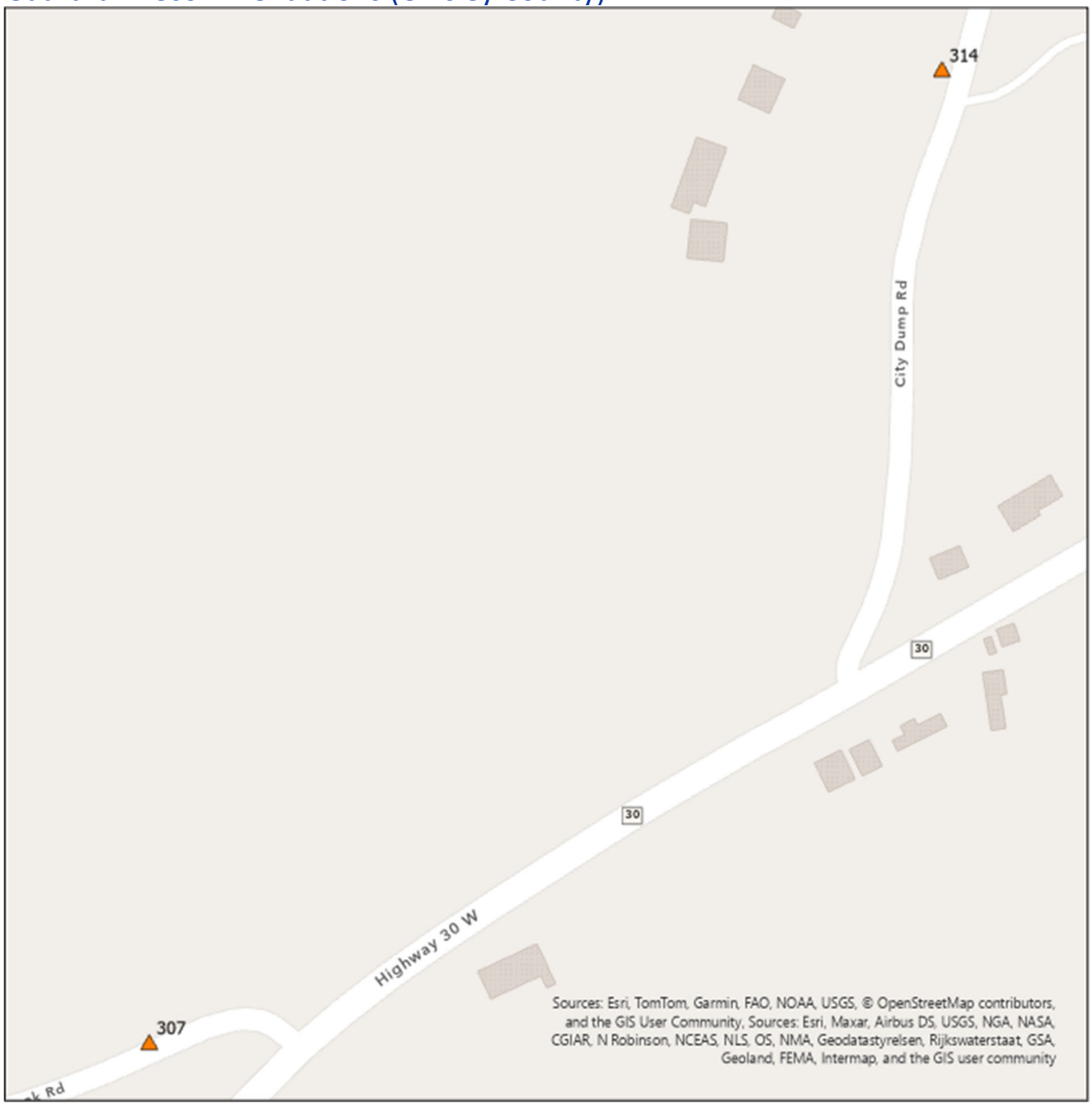


Exhibit Lee-F11: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
307	095-CR-1015 -000	FISH CRK LOOP RD	Guardrail	Good	Maybe	All_	--
314	095-CR-1015 -000	FISH CRK LOOP RD	Guardrail	Good	Maybe	Some	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.

Exhibit Lee-F12: Guardrail Recommendations

Intersection Recommendations (Owsley County)

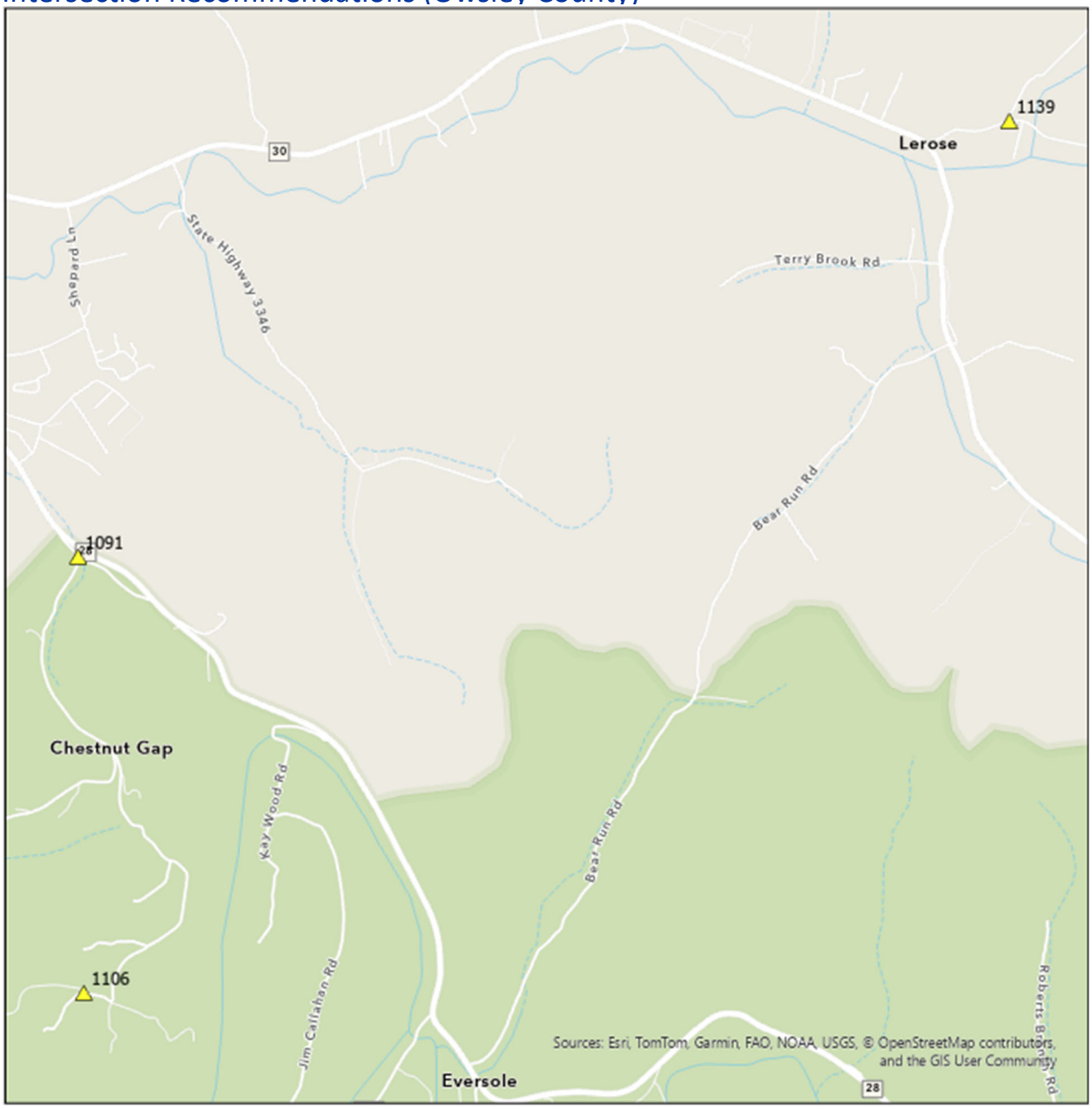


Exhibit Owsley-F13: Intersection Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Blocked by Vegetatio	Recommendation
1091	095-CR-1079 -000	CHESTNUT CIR RD	Intersection Hazard	Intersection Obscured on approach, Intersection Skew	No	Install Intersection Ahead / Stop Ahead Sign on Approach; Evaluate for Stop Bar
1106	095-CR-1003 -000	CHESTNUT GAP RD	Intersection Hazard	Intersection Obscured on approach	No	Install Intersection Ahead / Stop Ahead Sign on Approach
1139	095-CR-1026 -000	STRAIGHT FORK-ZEKE BR RD	Intersection Hazard	Intersection Skew	No	Evaluate for Stop Bar

Exhibit Owsley-F14: Intersection Recommendations

APPENDIX J: PERRY COUNTY

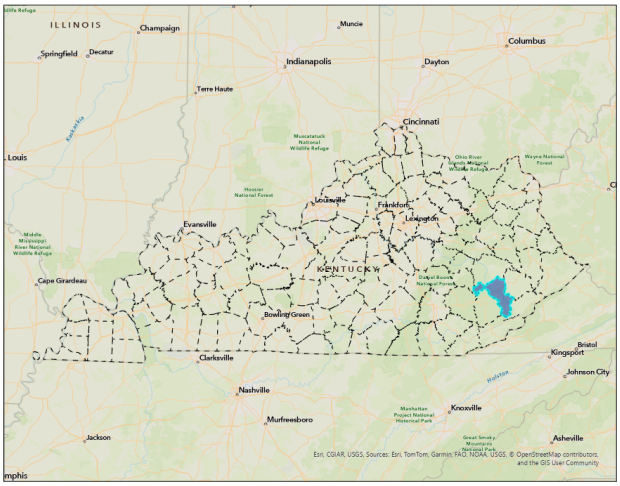


Exhibit Perry-1: Location Map

Key Information Table Perry County	
Population	26,917
Population in Underserved Communities	0%
Fatalities (All Roads)	29
Fatalities (County Roads)	4
Fatality rate per 100,000 persons	107.74
County Road Mileage	460.0
City Road Mileage	51.0
State Road Mileage	262.0
Total Mileage	**773.0**

Exhibit Perry-2: Key Information

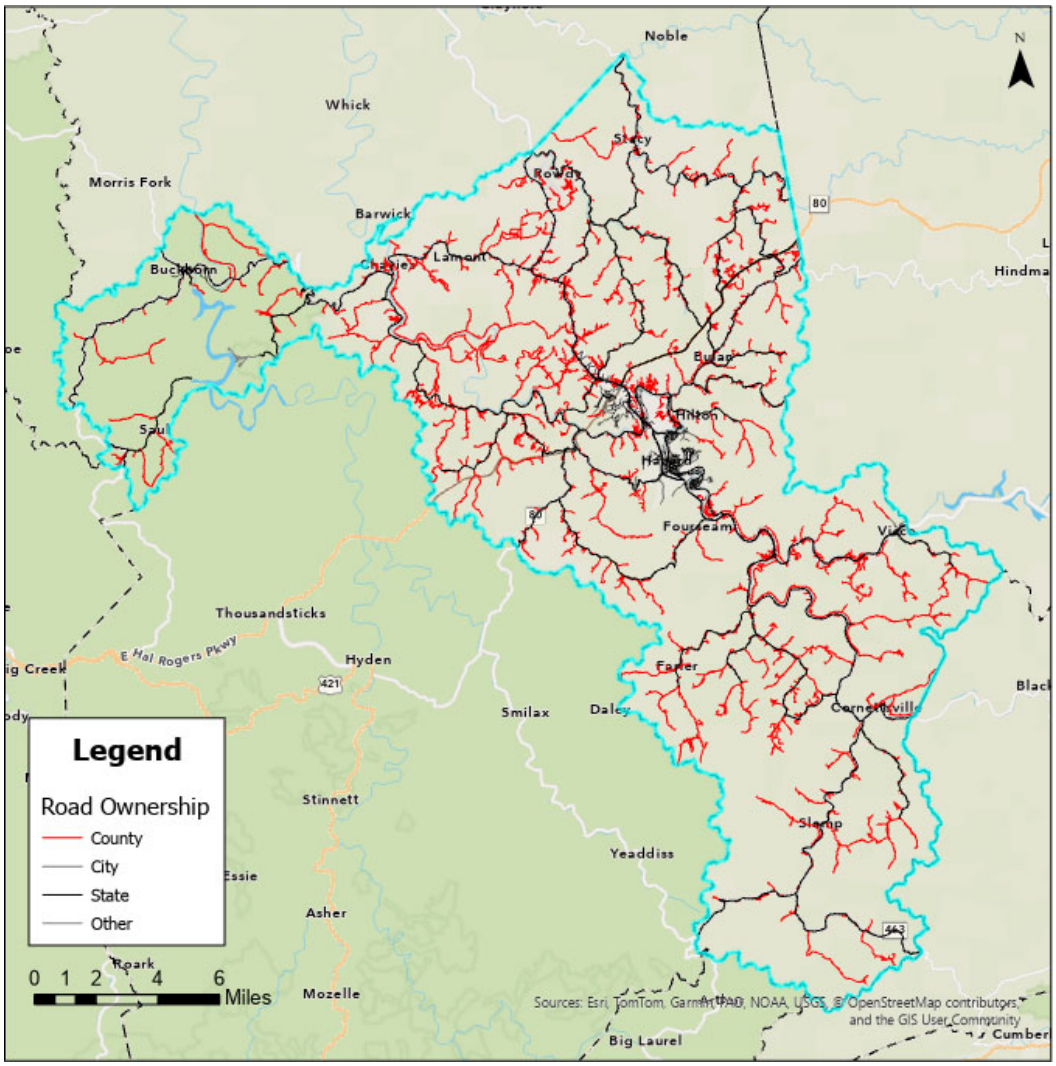


Figure Perry -3: Map of County Roadways

Crash Analysis

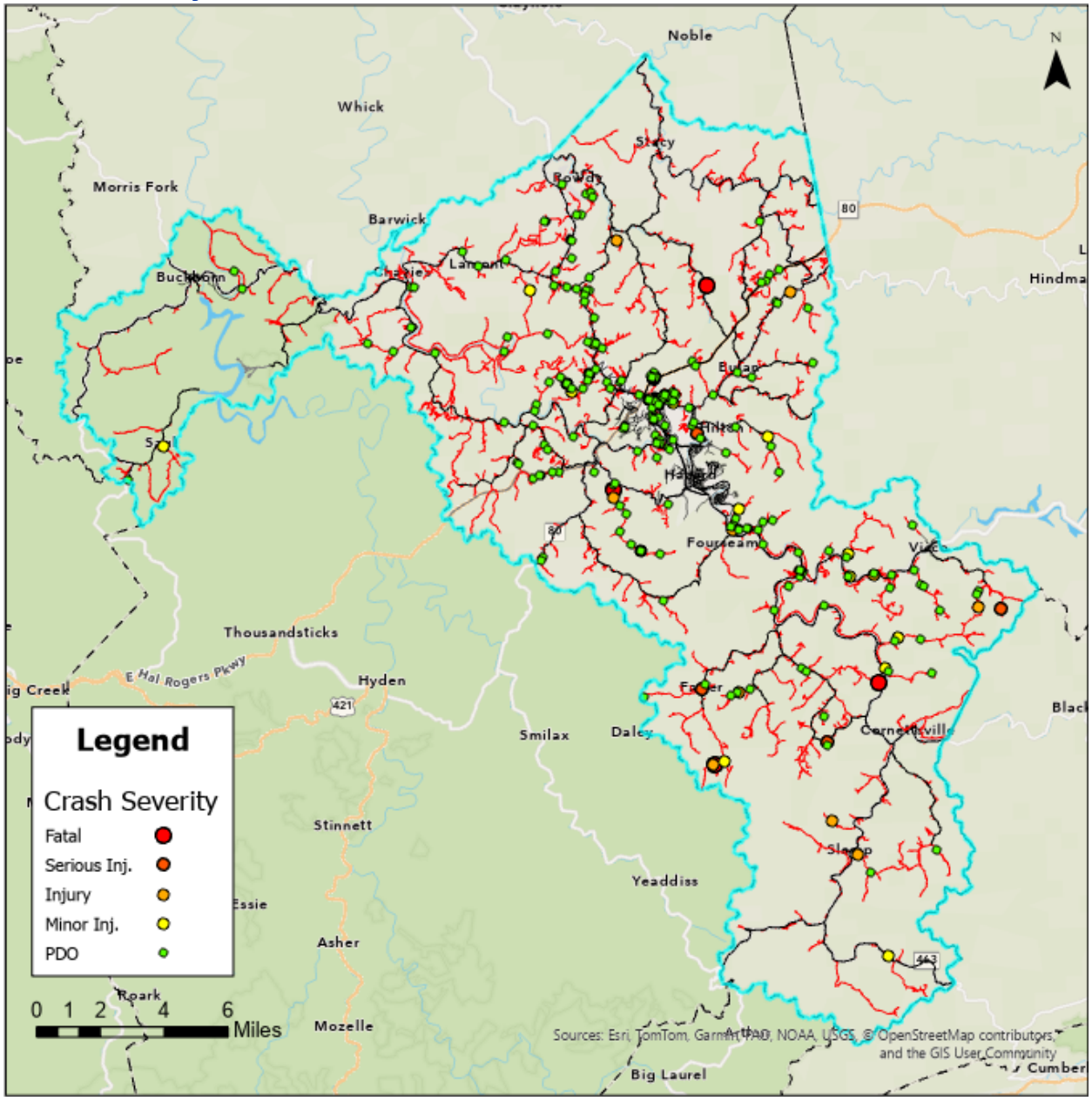
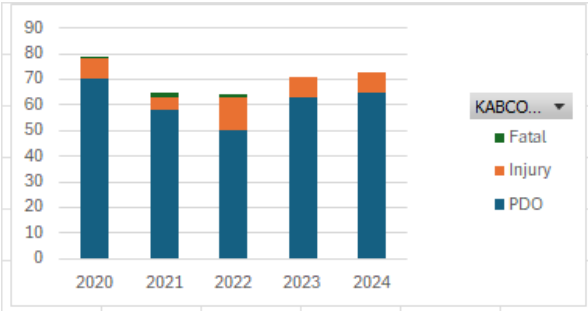


Figure Perry -4: Map of County Road Crashes



Year	Property Damage Only	Injury	Fatal	Total
2020	70	8	1	**79**
2021	58	5	2	**65**
2022	50	13	1	**64**
2023	63	8	0	**71**
2024	65	8	0	**73**

Exhibit Perry -5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	0	7	40	47
Backing	0	1	67	68
Head On	0	5	24	29
Opposing Left Turn	0	1	1	2
Rear End	0	3	37	40
Rear To Rear	0	0	3	3
Sideswipe-Opposit	0	2	37	39
Sideswipe-Same D	0	2	35	37
Single Vehicle	4	21	62	87
Total	**4**	**42**	**306**	**352**

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

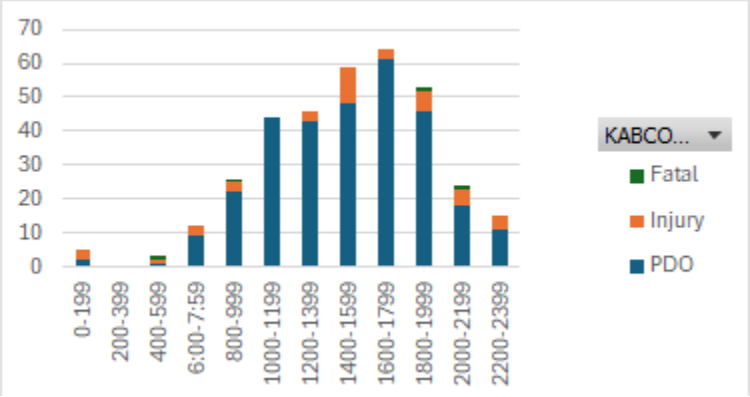


Figure Perry-7: Crashes and Severity by Time of Day

Focus Roadways

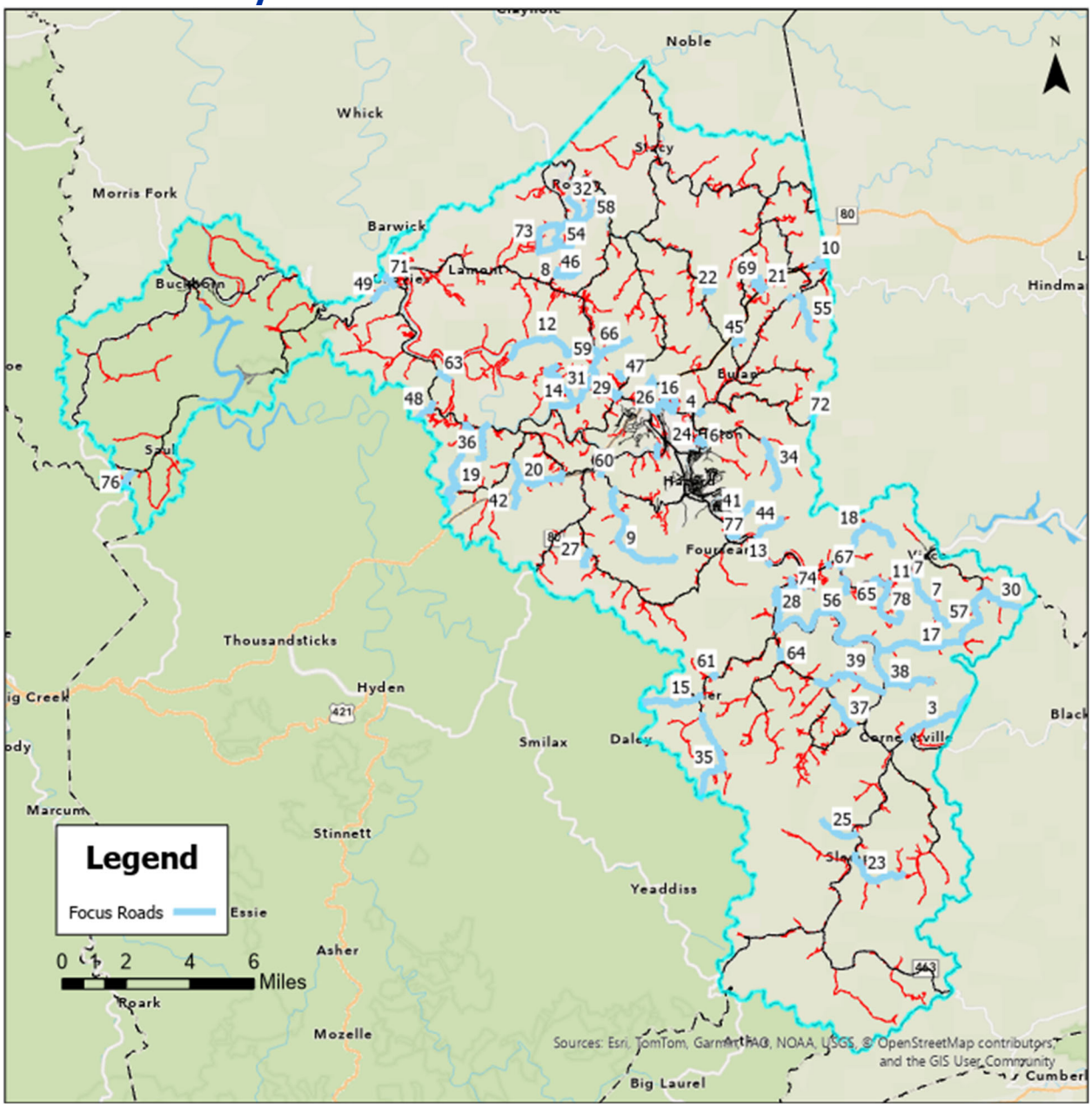


Exhibit Perry-8: Focus Roads

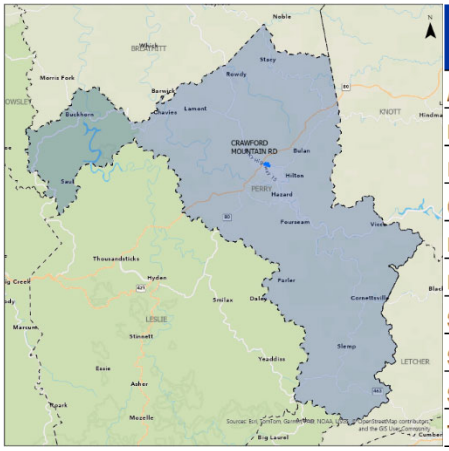
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Perry												
097-CR-1006 -000	0.62	Perry	Kentucky River	CRAWFORD MOUNTAIN RD	6	0	24	9.29	3.29	13.0%	13.0%	1
097-CR-1863 -000	0.37	Perry	Kentucky River	JUSTICE DR	3	0	48	7.50	0.49	6.5%	19.6%	1
097-CR-1210 -000	4.03	Perry	Kentucky River	BROWNS FORK RD	2	1	7	4.64	0.36	6.5%	26.1%	1
097-CR-1445 -000	0.30	Perry	Kentucky River	GRAND VUE PLZ	3	0	13	4.72	0.26	6.5%	32.6%	1
097-CR-1308 -000	1.90	Perry	Kentucky River	FLAT GAP RD	2	0	4	2.78	0.31	4.3%	37.0%	1
097-CR-1231 -000	3.25	Perry	Kentucky River	RIGHT FORK MACES CREEK RD	2	0	0	2.46	0.22	4.3%	41.3%	1
097-CR-1424 -000	0.13	Perry	Kentucky River	BONNYMAN CEM	0	0	0	0.00	2.52	0.0%	41.3%	1
097-CR-1096Q1-000	0.10	Perry	Kentucky River	HANCOOP DR	0	0	0	0.00	2.50	0.0%	41.3%	1
097-CR-1306 -000	2.11	Perry	Kentucky River	LOWER SECOND CREEK RD	1	0	5	1.63	0.71	2.2%	43.5%	1
097-CR-2234 -000	0.09	Perry	Kentucky River	BRASHEAR DR	0	0	0	0.00	2.23	0.0%	43.5%	1
097-CR-1376Q4-000	0.18	Perry	Kentucky River	GAMBILL DR	0	0	0	0.00	2.12	0.0%	43.5%	1
097-CR-1229 -000	2.26	Perry	Kentucky River	WELLS FORK RD	1	0	1	1.31	0.76	2.2%	45.7%	1
097-CR-1319 -000	3.55	Perry	Kentucky River	SAM CAMPBELL BRANCH RD	1	0	3	1.47	0.52	2.2%	47.8%	1
097-CR-1846 -030	0.01	Perry	Kentucky River	LITTLE BEAR LN X	0	0	0	0.00	1.86	0.0%	47.8%	1
097-CR-1122 -000	1.33	Perry	Kentucky River	RIGHT FORK MONTGOMERY RD	1	0	2	1.39	0.41	2.2%	50.0%	1
097-CR-1126 -000	2.46	Perry	Kentucky River	DYKES BRANCH RD	0	1	0	1.63	0.12	2.2%	52.2%	1
097-CR-1186 -000	0.01	Perry	Kentucky River	CARR DR	0	0	0	0.00	1.69	0.0%	52.2%	1
097-CR-1059 -000	0.22	Perry	Kentucky River	HARRIS BRANCH LN	0	1	0	1.63	0.06	2.2%	54.3%	1
097-CR-1161 -000	3.52	Perry	Kentucky River	BIG BRANCH RD	1	0	2	1.39	0.26	2.2%	58.7%	1
097-CR-1300 -000	2.15	Perry	Kentucky River	BRIAR FORK CIRCLE RD	0	0	8	0.63	1.00	0.0%	60.9%	1
097-CR-1510 -000	2.78	Perry	Kentucky River	FORT BRANCH RD	1	0	2	1.39	0.22	2.2%	65.2%	1
097-CR-1104 -000	2.86	Perry	Kentucky River	ACUP RD	1	0	1	1.31	0.24	2.2%	69.6%	1
097-CR-1020 -000	1.69	Perry	Kentucky River	UPPER SECOND CREEK RD	1	0	2	1.39	0.15	2.2%	71.7%	1
097-CR-1106 -000	0.54	Perry	Kentucky River	ARROWWOOD DR	1	0	1	1.31	0.11	2.2%	76.1%	1
097-CR-1143 -000	2.16	Perry	Kentucky River	BEE HIVE RD	1	0	1	1.31	0.09	2.2%	78.3%	1
097-CR-1109 -000	0.36	Perry	Kentucky River	DEFIANCE CIR	1	0	1	1.31	0.02	2.2%	82.6%	1
097-CR-1200 -000	0.79	Perry	Kentucky River	GREGORY BRANCH RD	1	0	0	1.23	0.10	2.2%	84.8%	1
097-CR-1623 -030	0.01	Perry	Kentucky River	CRAFT LN X	0	0	0	0.00	1.31	0.0%	84.8%	1
097-CR-1144 -000	1.22	Perry	Kentucky River	PUNCHEON CAMP RD	1	0	0	1.23	0.07	2.2%	87.0%	1
097-CR-1453Q1-000	0.04	Perry	Kentucky River	JARRETT LN	1	0	0	1.23	0.03	2.2%	91.3%	1
097-CR-1854 -030	0.01	Perry	Kentucky River	MILL BRANCH LN X	0	0	0	0.00	1.02	0.0%	100.0%	1
097-CR-1072Q1-000	0.34	Perry	Kentucky River	RIVERSIDE CEM	0	0	0	0.00	0.94	0.0%	100.0%	1
097-CR-1006 -021	0.04	Perry	Kentucky River	CRAWFORD MOUNTAIN RD Y	0	0	0	0.00	0.90	0.0%	100.0%	1
097-CR-2040 -000	0.44	Perry	Kentucky River	WATER WAY	0	0	0	0.00	0.86	0.0%	100.0%	1
097-CR-1815 -000	0.17	Perry	Kentucky River	JIMMY DARRELL WAY	0	0	0	0.00	0.85	0.0%	100.0%	1
097-CR-1369Q4-000	0.59	Perry	Kentucky River	TRUS JOIST LN	0	0	4	0.32	0.49	0.0%	100.0%	1
097-CR-1115 -000	2.17	Perry	Kentucky River	GEORGES BRANCH RD	0	0	4	0.32	0.44	0.0%	100.0%	1
097-CR-1128 -000	1.03	Perry	Kentucky River	CAMPBELL BRANCH RD	0	0	0	0.00	0.62	0.0%	100.0%	1
097-CR-1366Q4-000	1.24	Perry	Kentucky River	FLY BY HAZARD RD	0	0	2	0.16	0.41	0.0%	100.0%	1
097-CR-1365Q4-000	1.27	Perry	Kentucky River	WENDELL FORD TERMINAL RD	0	0	3	0.24	0.30	0.0%	100.0%	1
097-CR-1316 -000	0.76	Perry	Kentucky River	TRACE BRANCH RD	0	0	0	0.00	0.53	0.0%	100.0%	1
097-CR-1064 -000	0.59	Perry	Kentucky River	ENTERTAINMENT DR	0	0	0	0.00	0.45	0.0%	100.0%	1
097-CR-1011A -000	0.09	Perry	Kentucky River	AIRPORT GARDENS RD	0	0	1	0.08	0.30	0.0%	100.0%	1
097-CR-1120 -000	1.39	Perry	Kentucky River	MONTGOMERY CREEK RD	0	0	0	0.00	0.38	0.0%	100.0%	1
097-CR-1202 -000	1.02	Perry	Kentucky River	RACCOON CREEK RD	0	0	2	0.16	0.13	0.0%	100.0%	1
097-CR-1123 -000	7.44	Perry	Kentucky River	UPPER RIVER RD	0	0	2	0.16	0.09	0.0%	100.0%	1
097-CR-1329Q4-000	0.72	Perry	Kentucky River	COUCH LOOP	0	0	1	0.08	0.12	0.0%	100.0%	1
097-CR-1032 -000	1.55	Perry	Kentucky River	DWARF COMBS BR	0	0	1	0.08	0.11	0.0%	100.0%	1
097-CR-1038 -000	0.32	Perry	Kentucky River	HINER RD	0	0	0	0.00	0.17	0.0%	100.0%	1
097-CR-1301 -000	1.01	Perry	Kentucky River	HURRICANE BRANCH RD	0	0	0	0.00	0.13	0.0%	100.0%	1
097-CR-1004D -000	0.34	Perry	Kentucky River	ENGLE ST	0	0	1	0.08	0.05	0.0%	100.0%	1
097-CR-1311 -000	1.23	Perry	Kentucky River	LAUREL MOUNTAIN RD	0	0	0	0.00	0.12	0.0%	100.0%	1
097-CR-1670 -000	0.56	Perry	Kentucky River	POLLY HOLW	0	0	0	0.00	0.11	0.0%	100.0%	1
097-CR-1312 -000	3.60	Perry	Kentucky River	FORKED MOUTH BRANCH RD	0	0	0	0.00	0.11	0.0%	100.0%	1
097-CR-1772Q4-000	0.77	Perry	Kentucky River	SHADY RIDGE DR	0	0	0	0.00	0.07	0.0%	100.0%	1
097-CR-1133 -000	2.62	Perry	Kentucky River	BULL CREEK RD	0	0	0	0.00	0.07	0.0%	100.0%	1
097-CR-1429 -000	0.19	Perry	Kentucky River	HERALD HTS	0	0	0	0.00	0.07	0.0%	100.0%	1
097-CR-1267 -000	0.11	Perry	Kentucky River	BEARS LN	0	0	0	0.00	0.03	0.0%	100.0%	1
097-CR-1317 -000	0.37	Perry	Kentucky River	DEVIL SKULL RD	0	0	0	0.00	0.03	0.0%	100.0%	1

Exhibit Perry-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Crawford Mountain Rd (097-CR-1006 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	6	2	0	**8**
BACKING	1	0	0	**1**
HEAD ON	2	1	0	**3**
OPPOSING LEFT TURN	1	0	0	**1**
REAR END	8	2	0	**10**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	3	1	0	**4**
SINGLE VEHICLE	2	0	0	**2**
Total	**24**	**6**	**0**	**30**

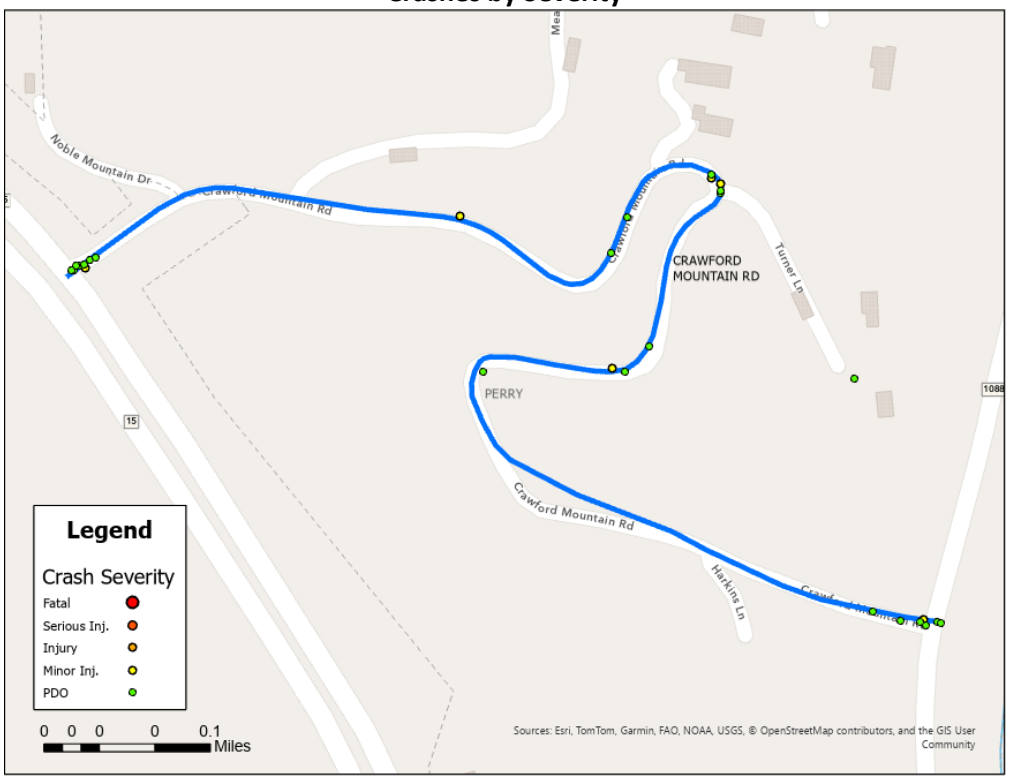
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (f	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
097-CR-1006 -000	CRAWFORD MOUNTAIN RD	15	3-Fair	RHR 6 - <5 ft non-recoverable	40-60
097-CR-1006 -000	CRAWFORD MOUNTAIN RD	14	3-Fair	RHR 6 - <5 ft non-recoverable	40-60

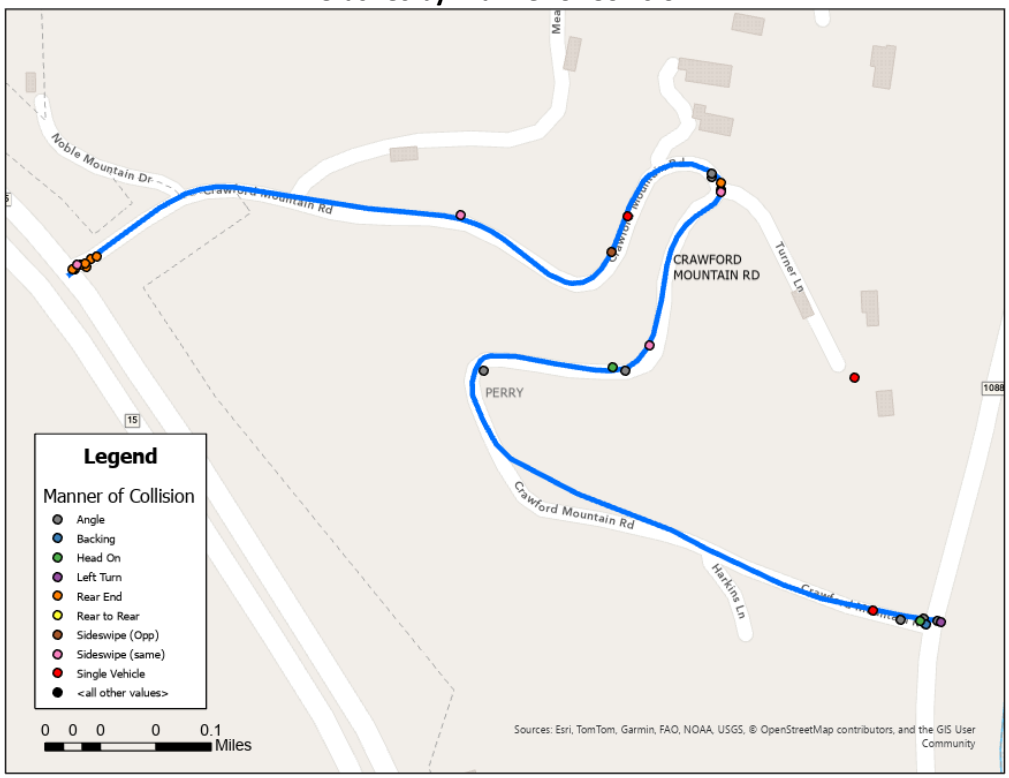
Roadway Typical Section



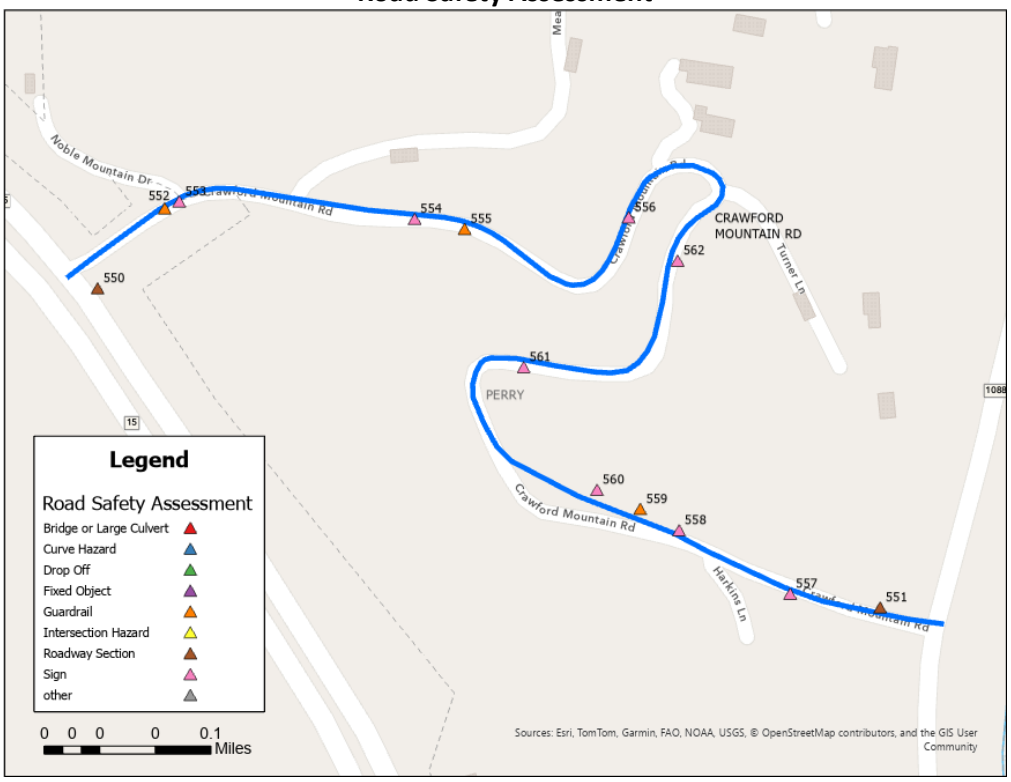
Crashes by Severity



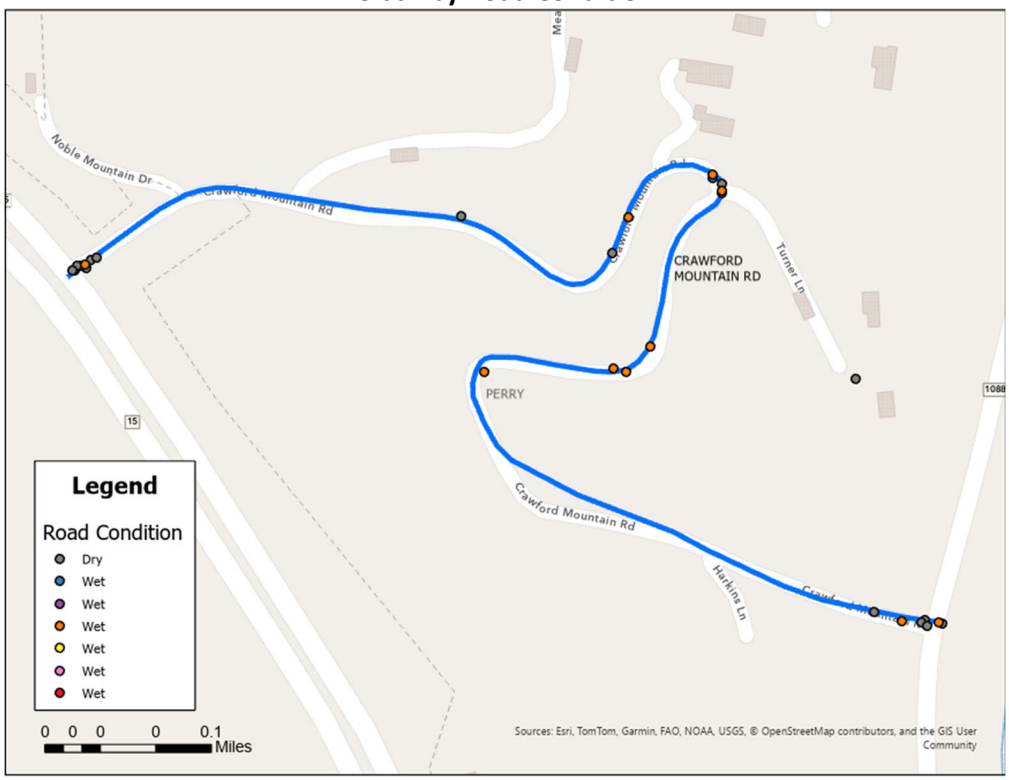
Crashes by Manner of Collision



Road Safety Assessment



Crash by Road Condition



Recommendations

Investigate intersections at KY 15, KY 1088 and Turner Lane.

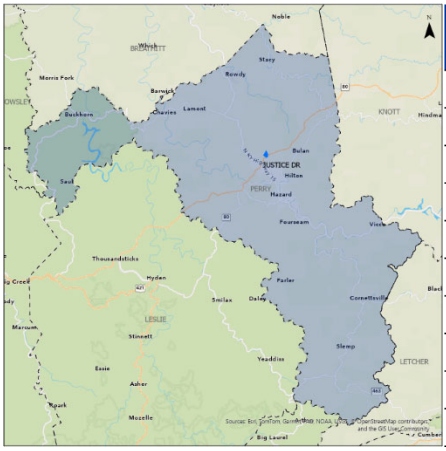
Majority of midblock crashes are related to wet weather. Investigate drainage and pavement friction. Horizontal alignment may make roadway a candidate for High Friction Surface Treatment.

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Shoulde	Edgeline[1]	Curve Signin	Other Recommendations
551	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	15	3-Fair	RHR 6 - <5 ft non-recoverable	40-60	✓	✓	✓	
552	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	14	3-Fair	RHR 6 - <5 ft non-recoverable	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
553	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	Guardrail	Poor	No	Some	Remove
556	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	Guardrail	Fair	No	Some	Remove
560	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	Guardrail	Poor	No	Some	Remove

Justice Dr (097-CR-1863 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	9	1	0	**10**
BACKING	8	0	0	**8**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	12	1	0	**13**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	1	0	0	**1**
SIDESWIPE-SAME DIR	16	0	0	**16**
SINGLE VEHICLE	1	1	0	**2**
Total	**48**	**3**	**0**	**51**

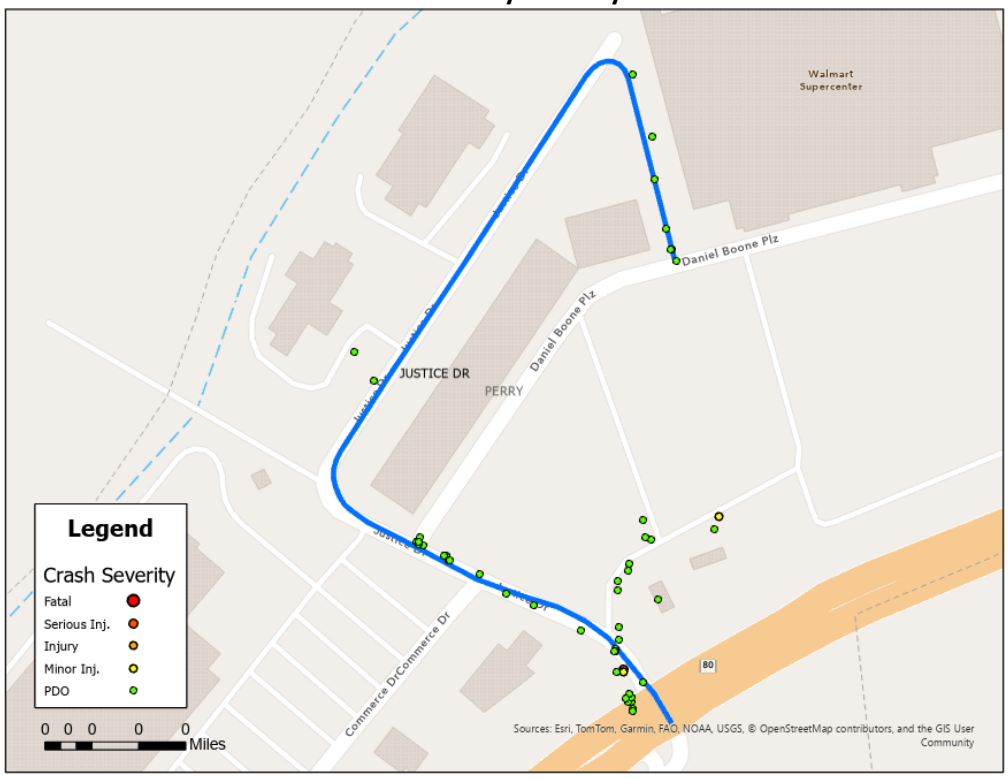
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
097-CR-1863 -000	JUSTICE DR	21	4-Poor	RHR 1 - > 20 ft	0-20
097-CR-1863 -000	JUSTICE DR	21	4-Poor	RHR 2 - >20 ft	0-20

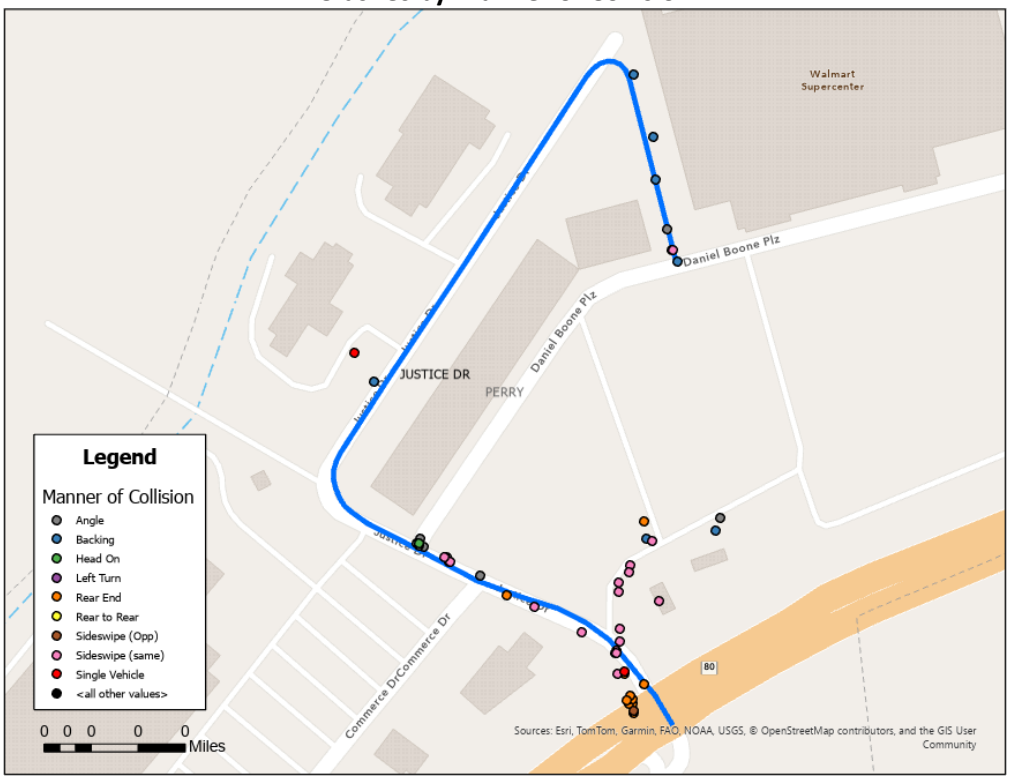
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



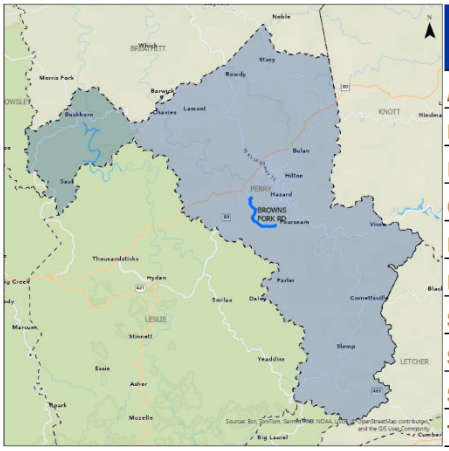
Recommendations

Investigate crashes at intersection of Justice Drive and KY 80.

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgelin	Curve Signin
57	097-CR-1863 -000	JUSTICE DR	21	4-Poor	RHR 1 - > 20 ft	0-20	✓		✓
58	097-CR-1863 -000	JUSTICE DR	21	4-Poor	RHR 2 - >20 ft	0-20	✓		✓

Browns Fork Rd (097-CR-1210 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	1	0	0	**1**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	4	0	0	**4**
SIDESWIPE-SAME DIR	1	0	0	**1**
SINGLE VEHICLE	1	2	1	**4**
Total	**7**	**2**	**1**	**10**

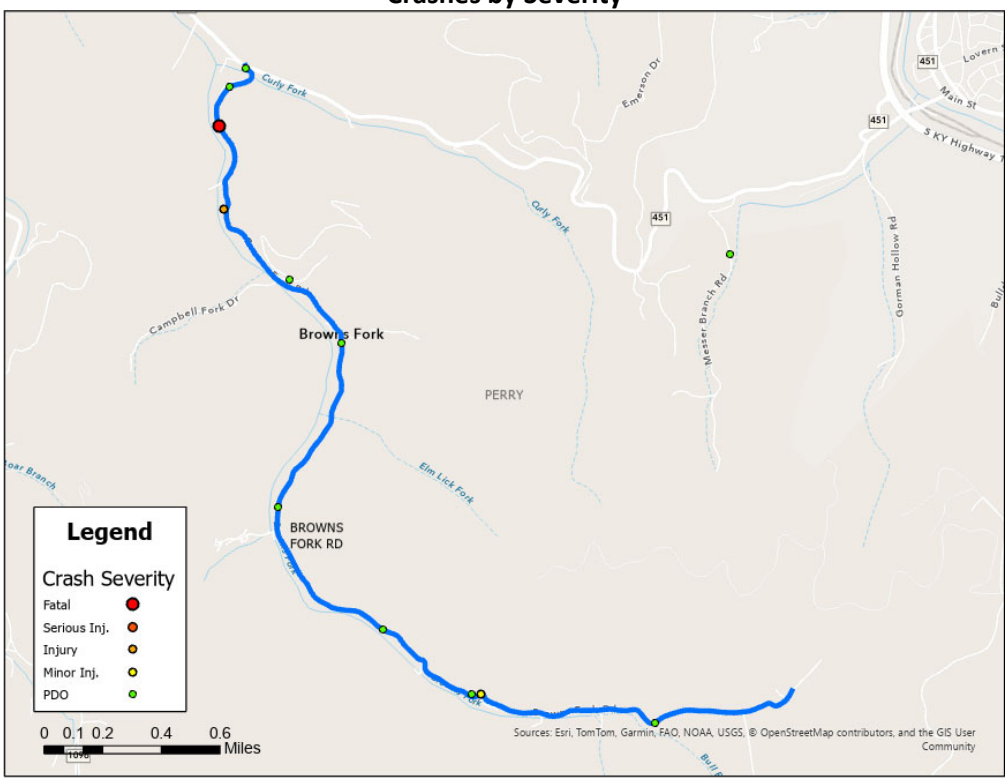
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
097-CR-1210 -000	BROWNS FORK RD	14	4-Poor	RHR 3 - >10 ft	20-40
097-CR-1210 -000	BROWNS FORK RD	10	4-Poor	RHR 3 - >10 ft	20-40

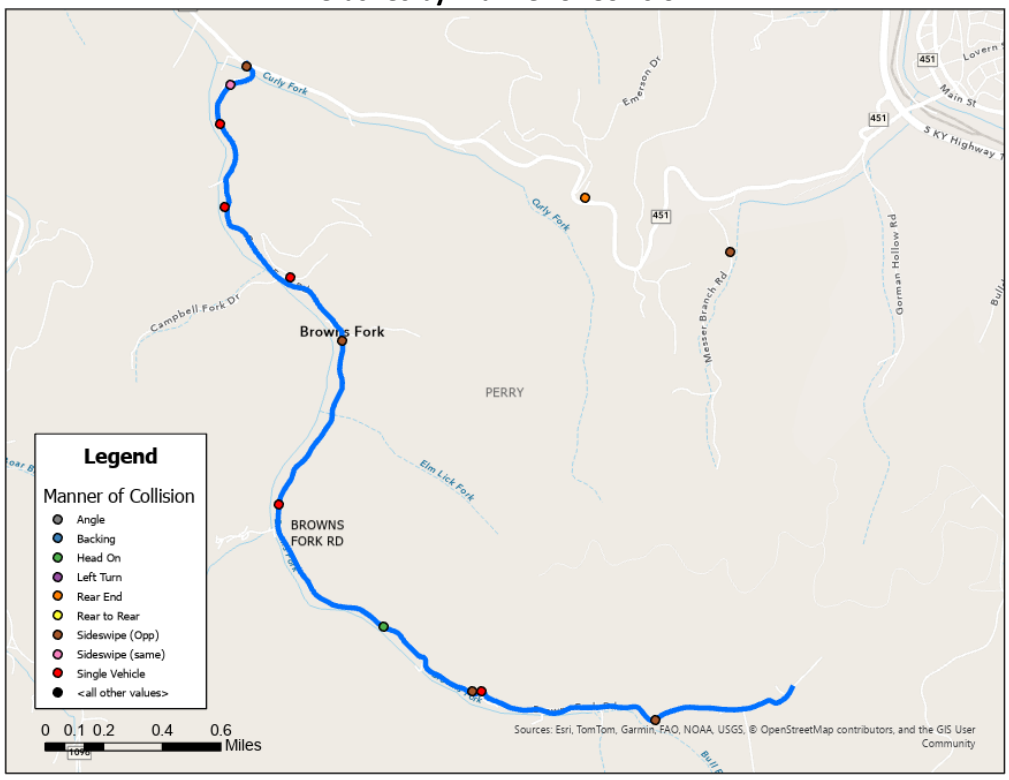
Roadway Typical Section



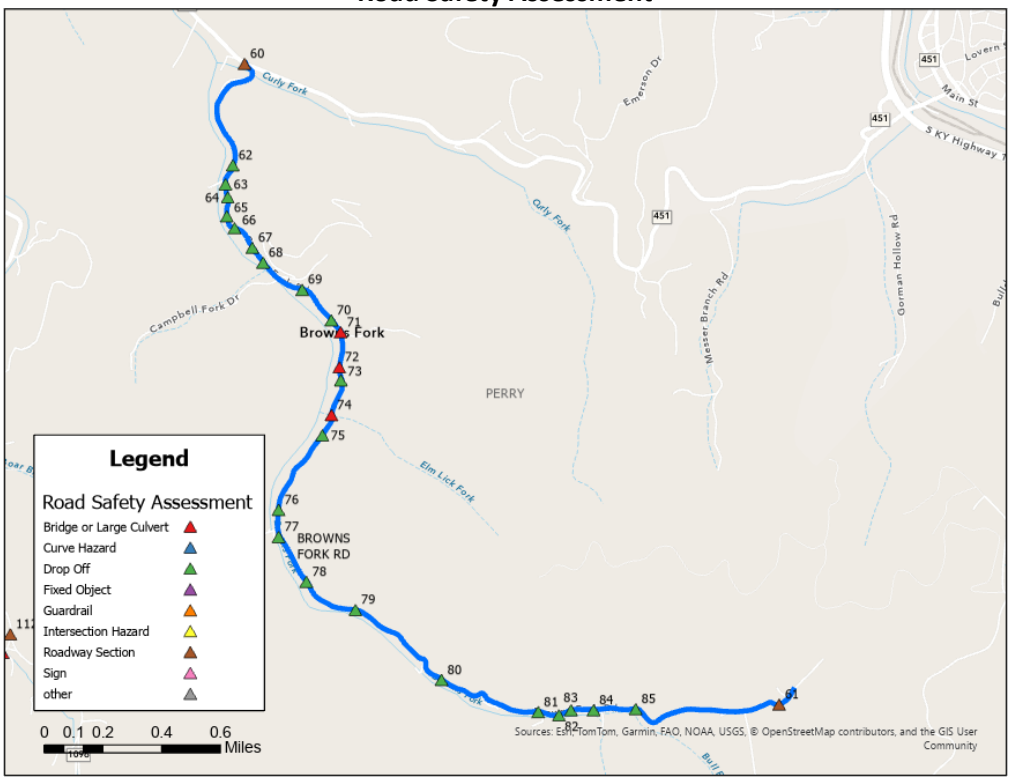
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

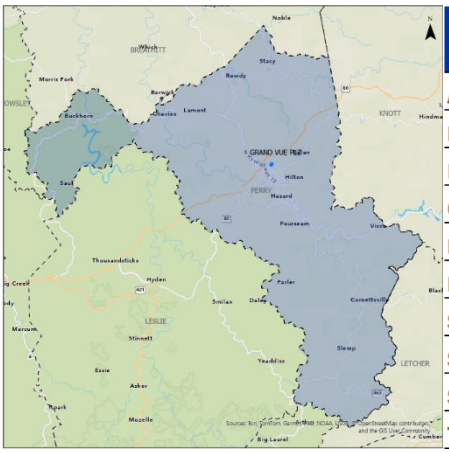
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline1	Curve Signin	Other Recommendations
61	097-CR-1210 -000	BROWNS FORK RD	14	4-Poor	RHR 3 - >10 ft	20-40	✓	✓	✓	Consider removing from county road maintenance
62	097-CR-1210 -000	BROWNS FORK RD	10	4-Poor	RHR 3 - >10 ft	20-40	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
63	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	2-5	--	Shouldering / Repair if Possible; Install Object Marker
64	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	--	Shoulderering
65	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	--	Shoulderering
66	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	--	Shoulderering
67	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	--	Shoulderering
68	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	>10	--	Install Guardrail
69	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	5-10	--	Shouldering / Repair if Possible; Install Object Marker
70	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	2-5	--	Shouldering / Repair if Possible; Install Object Marker
71	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	--	Shoulderering
74	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	--	Shoulderering
76	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	--	Shoulderering
77	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	--	Shoulderering
78	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	--	Shoulderering
79	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	>10	--	Install Guardrail
80	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	--	Shoulderering
81	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	>10	--	Install Guardrail
82	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	>10	--	Install Guardrail
83	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	--	Shoulderering
84	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	2-5	--	Shouldering / Repair if Possible; Install Object Marker
85	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	--	Shoulderering
86	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	--	Shoulderering

Point ID	RT_UNIQUE	Road Name	Issue Type	Bridge Width	Guardrail Present 1	OM Present1	Recommendation
71	097-CR-1210 -000	BROWNS FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
72	097-CR-1210 -000	BROWNS FORK RD	Bridge or Large Culvert	9	2	0	--
74	097-CR-1210 -000	BROWNS FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers

Grand Vue Plaza (097-CR-1445 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	4	1	0	**5**
BACKING	6	0	0	**6**
HEAD ON	0	1	0	**1**
OPPOSING LEFT TURN	0	1	0	**1**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	2	0	0	**2**
SINGLE VEHICLE	3	0	0	**3**
Total	**15**	**3**	**0**	**18**

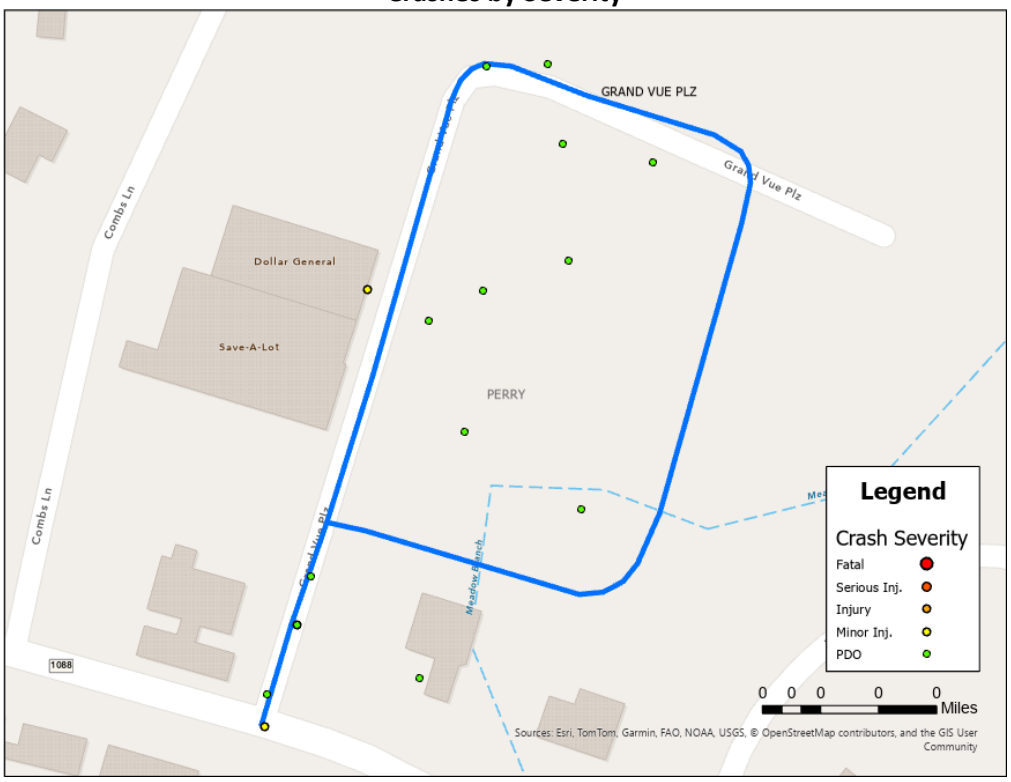
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
097-CR-1445 -000	GRAND VUE PLZ	20	3-Fair	RHR 4 - 5-10 ft ~ recoverable	0-20
097-CR-1445 -000	GRAND VUE PLZ	20	3-Fair	RHR 5 - 5- 10 ft non-recoverable	0-20

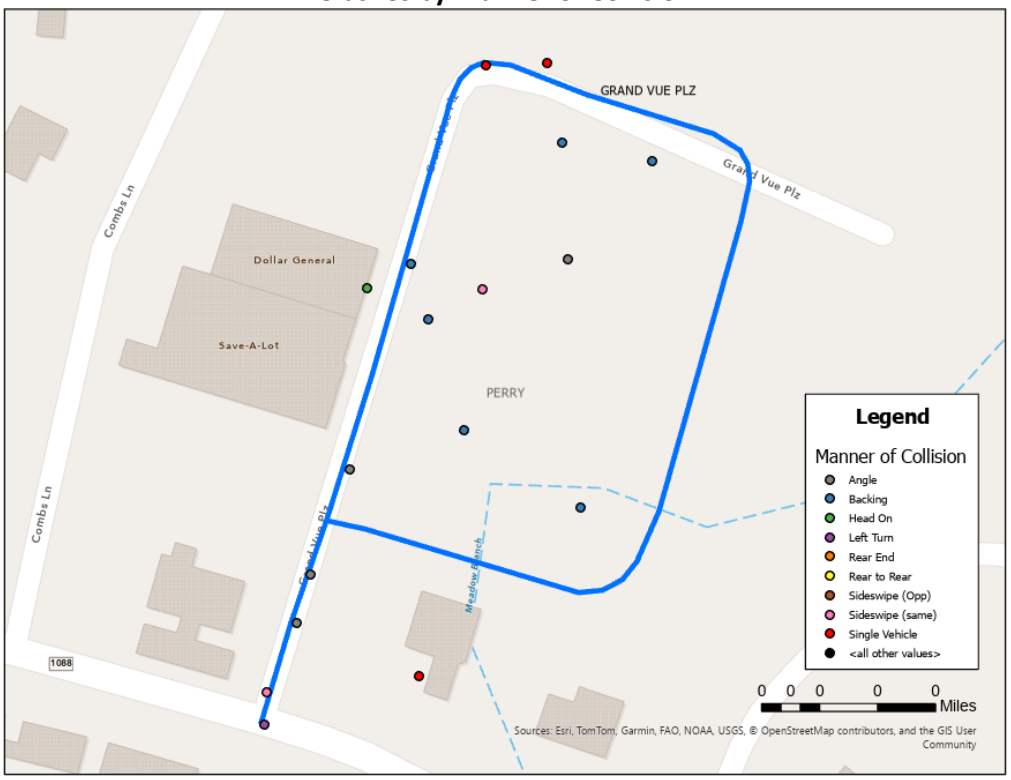
Roadway Typical Section



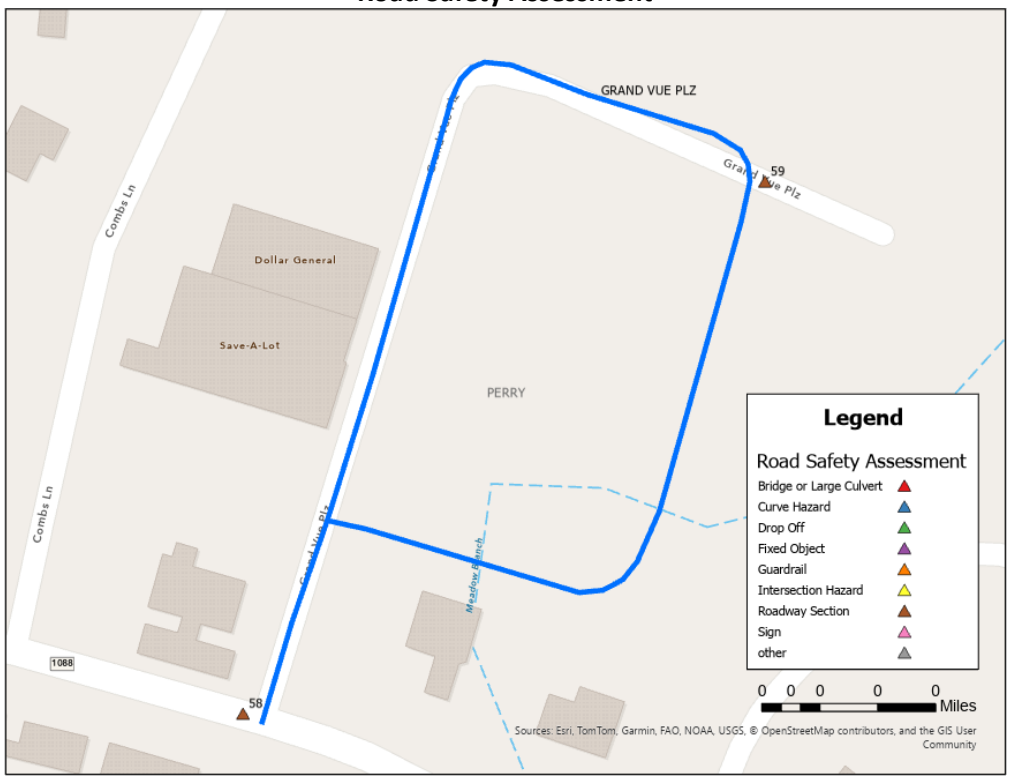
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment

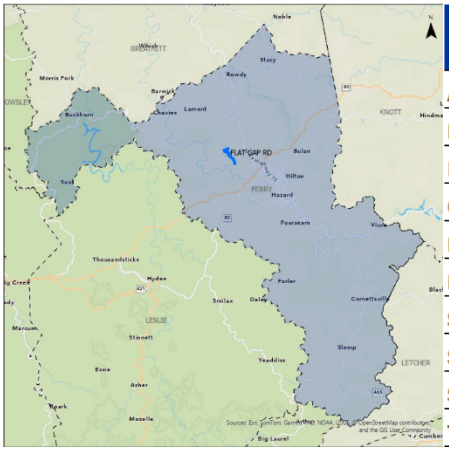


General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
59	097-CR-1445 -000	GRAND VUE PLZ	20	3-Fair	RHR 4 - 5-10 ft ~ recoverable	0-20				Consider removing from county road maintenance
60	097-CR-1445 -000	GRAND VUE PLZ	20	3-Fair	RHR 5 - 5- 10 ft non-recoverable	0-20				Consider removing from county road maintenance

Flat Gap Rd (097-CR-1308 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	1	0	0	**1**
BACKING	1	0	0	**1**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	3	1	0	**4**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**5**	**2**	**0**	**7**

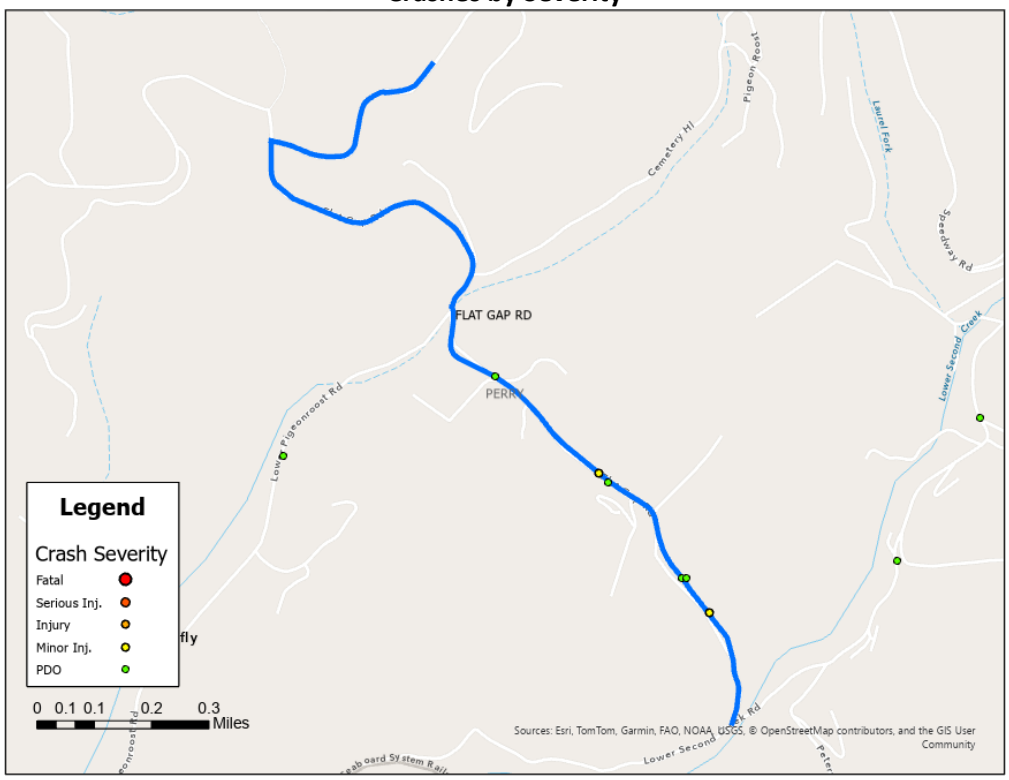
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
097-CR-1308 -000	FLAT GAP RD	14	3-Fair	RHR 2 - >20 ft	20-40
097-CR-1308 -000	FLAT GAP RD	10	3-Fair	RHR 6 - <5 ft non-recoverable	20-40
097-CR-1308 -000	FLAT GAP RD	10	3-Fair	RHR 5 - 5-10 ft non-recoverable	20-40

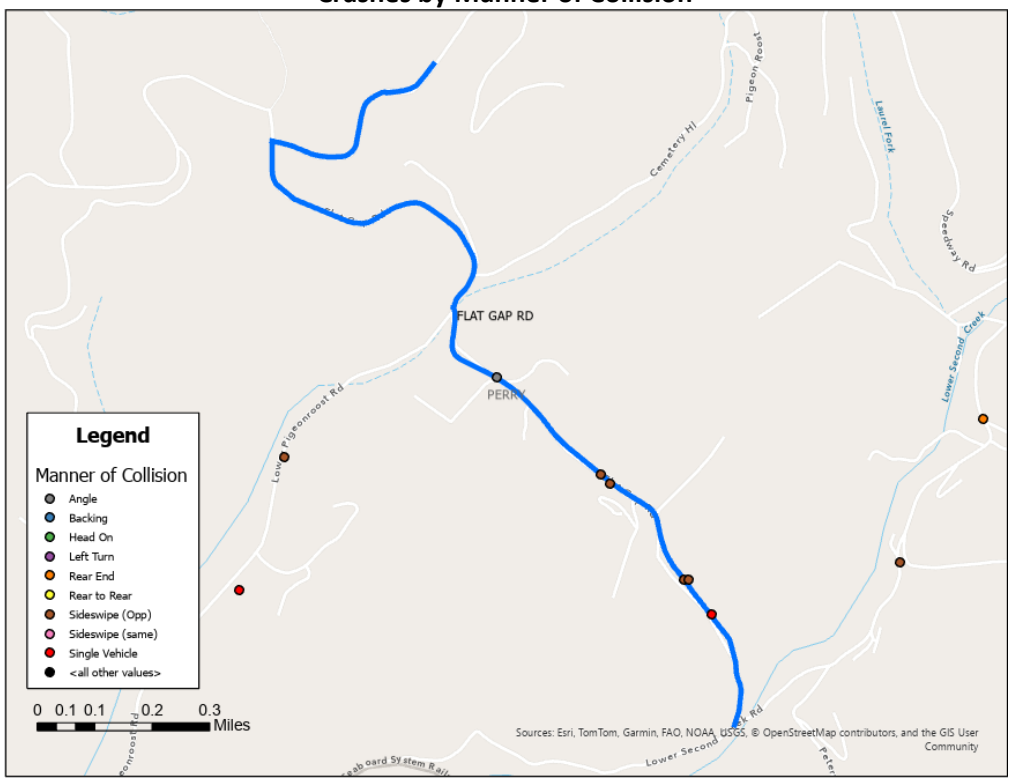
Roadway Typical Section



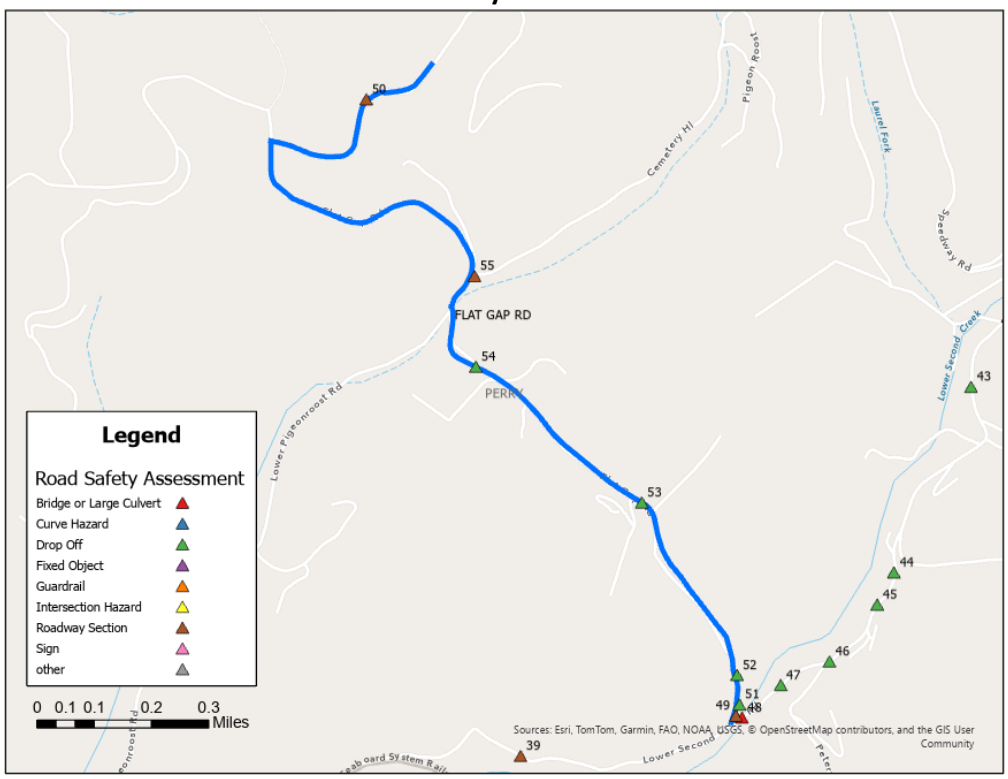
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
50	097-CR-1308 -000	FLAT GAP RD	14	3-Fair	RHR 2 - >20 ft	20-40	✓	✓	✓	
51	097-CR-1308 -000	FLAT GAP RD	10	3-Fair	RHR 6 - <5 ft non-recoverable	20-40	✓	✓	✓	
56	097-CR-1308 -000	FLAT GAP RD	10	3-Fair	RHR 5 - 5- 10 ft non-recoverable	20-40	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
52	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	--	Install Guardrail
53	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	--	Install Guardrail
54	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	--	Install Guardrail
55	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	--	Install Guardrail

Other Roadways

General Roadway Conditions and Recommendations (Perry County)

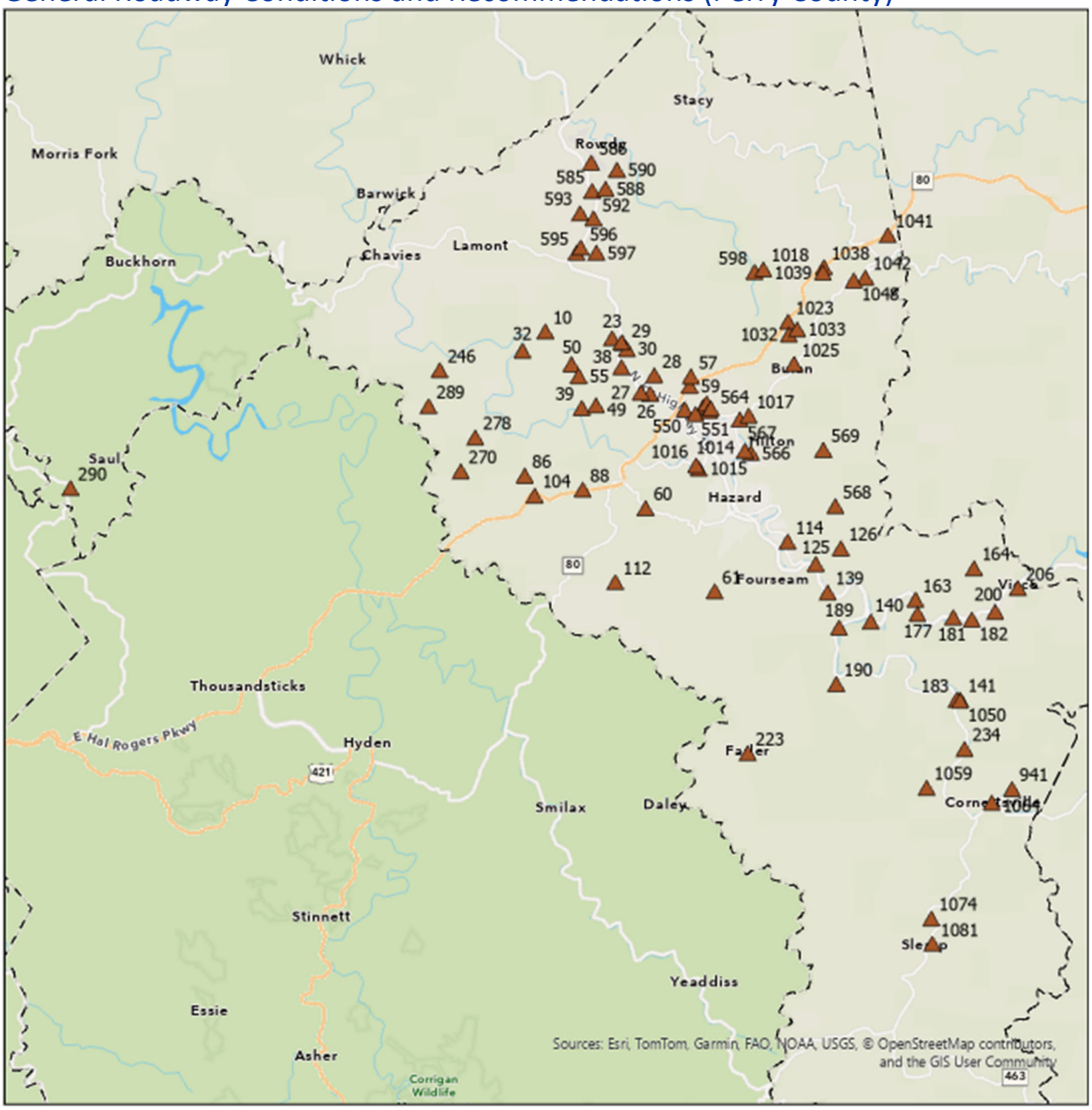


Exhibit Perry-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
551	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	15	3	6	40-60	Road has many pavement defects at top section. Shoulder missing, guardrail close.	✓	✓	✓	
552	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	14	3	6	40-60		✓	✓	✓	
57	097-CR-1863 -000	JUSTICE DR	21	4	1	0-20		✓		✓	Restripe roadway
58	097-CR-1863 -000	JUSTICE DR	21	4	2	0-20		✓		✓	Restripe roadway
61	097-CR-1210 -000	BROWNS FORK RD	14	4	3	20-40	Road blocked off at end.	✓	✓	✓	Consider removing from county road maintenance
62	097-CR-1210 -000	BROWNS FORK RD	10	4	3	20-40	Upper end single lane.	✓	✓	✓	
59	097-CR-1445 -000	GRAND VUE PLZ	20	4	1	0-20	parking lot				Consider removing from county road maintenance
60	097-CR-1445 -000	GRAND VUE PLZ	20	4	2	0-20	parking lot				Consider removing from county road maintenance
50	097-CR-1308 -000	FLAT GAP RD	14	4	3	20-40	Upper end is single lane.	✓	✓	✓	
51	097-CR-1308 -000	FLAT GAP RD	10	4	3	20-40		✓	✓	✓	
56	097-CR-1308 -000	FLAT GAP RD	10	3	2	20-40	Road is single lane.	✓	✓	✓	
28	097-CR-1424 -000	BONNYMAN CEM	18	4	2	0-20		✓	✓	✓	
568	097-CR-1096Q1-000	HANCOOP DR	16	3	5	40-60	Upper 30% of roadway is single lane with numerous no shoulder areas and drop offs. Also extensive patching and surface cracks.	✓	✓	✓	
1018	097-CR-1096Q1-000	HANCOOP DR	10	1	6	60-80	No pavement apparent. Numerous potholes. No shoulders.	✓	✓	✓	Consider converting to gravel roadway
39	097-CR-1306 -000	LOWER SECOND CREEK RD	16	3	3	20-40	Signal on upper end.	✓	✓	✓	
40	097-CR-1306 -000	LOWER SECOND CREEK RD	12	3	3	20-40		✓	✓	✓	
596	097-CR-1376Q4-000	GAMBILL DR	10	4	3	0-20	Single lane ends in cemetery.	✓		✓	
567	097-CR-2234 -000	BRASHEAR DR	10	3	6	40-60	No shoulder. Objects on edge of pavement.	✓	✓	✓	Remove roadside objects
224	097-CR-1229 -000	WELLS FORK RD	12	4	3	20-40		✓	✓	✓	
11	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	18	2	6	60-80	Broken pavement into large drop offs.	✓	✓	✓	Repair and Stabilize Roadway
24	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	18	2	6	60-80		✓	✓	✓	
33	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	17	3	3	20-40		✓	✓	✓	
32	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	16	3	3	20-40	No signage. Road width varies	✓	✓	✓	
1042	097-CR-1846 -030	LITTLE BEAR LN X	10	1	3	0-20	Gravel	✓	✓	✓	
183	097-CR-1186 -000	CARR DR	12	4	2	0-20		✓	✓	✓	
235	097-CR-1126 -000	DYKES BRANCH RD	10	4	3	40-60		✓	✓	✓	
599	097-CR-1059 -000	HARRIS BRANCH LN	10	4	6	20-40		✓	✓	✓	
1019	097-CR-1059 -000	HARRIS BRANCH LN	10	4	6	20-40		✓	✓	✓	
87	097-CR-1300 -000	BRIAR FORK CIRCLE RD	13	4	3	0-20	A lot of sections single lane.	✓	✓	✓	
89	097-CR-1300 -000	BRIAR FORK CIRCLE RD	13	4	3	0-20		✓	✓	✓	
184	097-CR-1510 -000	FORT BRANCH RD	13	4	4	20-40		✓	✓	✓	
1051	097-CR-1510 -000	FORT BRANCH RD	10	3	4	60-80		✓	✓	✓	
164	097-CR-1104 -000	ACUP RD	11	3	4	20-40	Last 25% is extremely rough and single lane. No signage.	✓		✓	
165	097-CR-1104 -000	ACUP RD	10	3	4	40-60		✓	✓	✓	
569	097-CR-1020 -000	UPPER SECOND CREEK RD	16	3	5	40-60		✓	✓	✓	
570	097-CR-1020 -000	UPPER SECOND CREEK RD	16	3	3	40-60	Break for change from single to two lanes.	✓	✓	✓	
178	097-CR-1106 -000	ARROWWOOD DR	10	4	3	40-60		✓	✓	✓	
1082	097-CR-1143 -000	BEE HIVE RD	12	4	6	20-40		✓	✓	✓	
182	097-CR-1109 -000	DEFIANCE CIR	10	4	3	20-40		✓	✓	✓	
115	097-CR-1200 -000	GREGORY BRANCH RD	10	3	3	20-40		✓	✓	✓	
140	097-CR-1623 -030	CRAFT LN X	10	2	3	40-60		✓	✓	✓	
1075	097-CR-1144 -000	PUNCHEON CAMP RD	10	3	4	60-80		✓	✓	✓	
1049	097-CR-1453Q1-000	JARRETT LN	10	4	3	0-20		✓	✓	✓	

Exhibit Perry-F2a: General Roadway Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
27	097-CR-1815 -000	JIMMY DARRELL WAY	18	4	2	0-20		✓			
191	097-CR-1123 -000	UPPER RIVER RD	18	4	4	20-40		✓			
593	097-CR-1369Q4-000	TRUS JOIST LN	18	4	2	0-20		✓			
594	097-CR-1369Q4-000	TRUS JOIST LN	18	4	2	0-20		✓			
30	097-CR-1064 -000	ENTERTAINMENT DR	18	3	4	20-40		✓			
31	097-CR-1064 -000	ENTERTAINMENT DR	18	3	4	40-60		✓			
586	097-CR-1365Q4-000	WENDELL FORD TERMINAL RD	16	4	4	0-20		✓			
587	097-CR-1365Q4-000	WENDELL FORD TERMINAL RD	16	4	4	0-20		✓			
591	097-CR-1366Q4-000	FLY BY HAZARD RD	16	4	5	0-20		✓			
1024	097-CR-1038 -000	HINER RD	16	4	3	40-60		✓			
1026	097-CR-1038 -000	HINER RD	16	4	3	40-60		✓			
564	097-CR-1011A -000	AIRPORT GARDENS RD	16	3	6	40-60	Parking lane intersects with roadway.				
565	097-CR-1011A -000	AIRPORT GARDENS RD	16	3	6	40-60		✓			
207	097-CR-1115 -000	GEORGES BRANCH RD	14	4	3	40-60		✓			
1039	097-CR-1854 -030	MILL BRANCH LN X	14	4	2	0-20		✓			
1040	097-CR-1415Q1-000	PINE VALLEY RD	14	4	2	0-20		✓			
190	097-CR-2040 -000	WATER WAY	12	4	2	0-20		✓			
201	097-CR-1115 -000	GEORGES BRANCH RD	12	4	3	60-80	No shoulders. No guardrails. No passing.	✓			Identify pulloff locations for passing
589	097-CR-1366Q4-000	FLY BY HAZARD RD	12	4	6	0-20	End of road narrows to one lane loop.	✓			
126	097-CR-1202 -000	RACCOON CREEK RD	12	3	5	40-60	Road is single lane last half of length. No shoulders for half.	✓			
1065	097-CR-1133 -000	BULL CREEK RD	12	1	6	60-80	Most of the road is gravel and dirt.	✓			
1033	097-CR-1038 -000	HINER RD	11	3	6	20-40		✓			
1016	097-CR-1004D -000	ENGLE ST	11	2	6	0-20	Many objects close to roadside. Single lane.	✓			
1017	097-CR-1004D -000	ENGLE ST	11	2	6	20-40	Single lane road. Ditch service required.	✓			
105	097-CR-1301 -000	HURRICANE BRANCH RD	10	4	3	40-60		✓			
1043	097-CR-1032 -000	DWARF COMBS BR	10	4	3	20-40		✓			
127	097-CR-1202 -000	RACCOON CREEK RD	10	3	3	40-60	No signage.	✓			
141	097-CR-1123 -000	UPPER RIVER RD	10	3	7	60-80	No guardrails. No signage. Narrow lanes with few passing section.	✓			Identify pulloff locations for passing
142	097-CR-1123 -000	UPPER RIVER RD	10	3	7	60-80		✓			
290	097-CR-1316 -000	TRACE BRANCH RD	10	3	5	40-60		✓			
1015	097-CR-1072Q1-000	RIVERSIDE CEM	10	3	6	0-20	Single lane road. Numerous headstones along roadway less than 5 ft				
1034	097-CR-1038 -000	HINER RD	10	3	6	20-40		✓			
1060	097-CR-1128 -000	CAMPBELL BRANCH RD	10	3	7	80-100		✓			
29	097-CR-1429 -000	HERALD HTS	10	2	7	80-100	Single lane. No shoulders.	✓			
113	097-CR-1670 -000	POLLY HOLW	10	2	3	20-40	Road extremely washed out in sections.	✓			Remove washout and stabilize road bed and drainage
247	097-CR-1317 -000	DEVIL SKULL RD	10	1	4	40-60		✓			
271	097-CR-1312 -000	FORKED MOUTH BRANCH RD	10	1	4	60-80	Pavement ends in section of road. Good portion is gravel	✓			
279	097-CR-1312 -000	FORKED MOUTH BRANCH RD	10	1	4	60-80	Starts back on blind hill with pavement	✓			
291	097-CR-1329Q4-000	COUCH LOOP	10	1	7	80-100	Entire route is gravel	✓			
597	097-CR-1772Q4-000	SHADY RIDGE DR	10	1	3	20-40	Pavement almost all gone, soil and stone.	✓			
598	097-CR-1772Q4-000	SHADY RIDGE DR	10	1	3	20-40		✓			
942	097-CR-1133 -000	BULL CREEK RD	10	1	5	60-80	No pavement for length of road.	✓			Consider converting to gravel roadway

Exhibit Perry-F2b: General Roadway Recommendations (continued)

Bridge / Culvert Recommendations (Perry County)

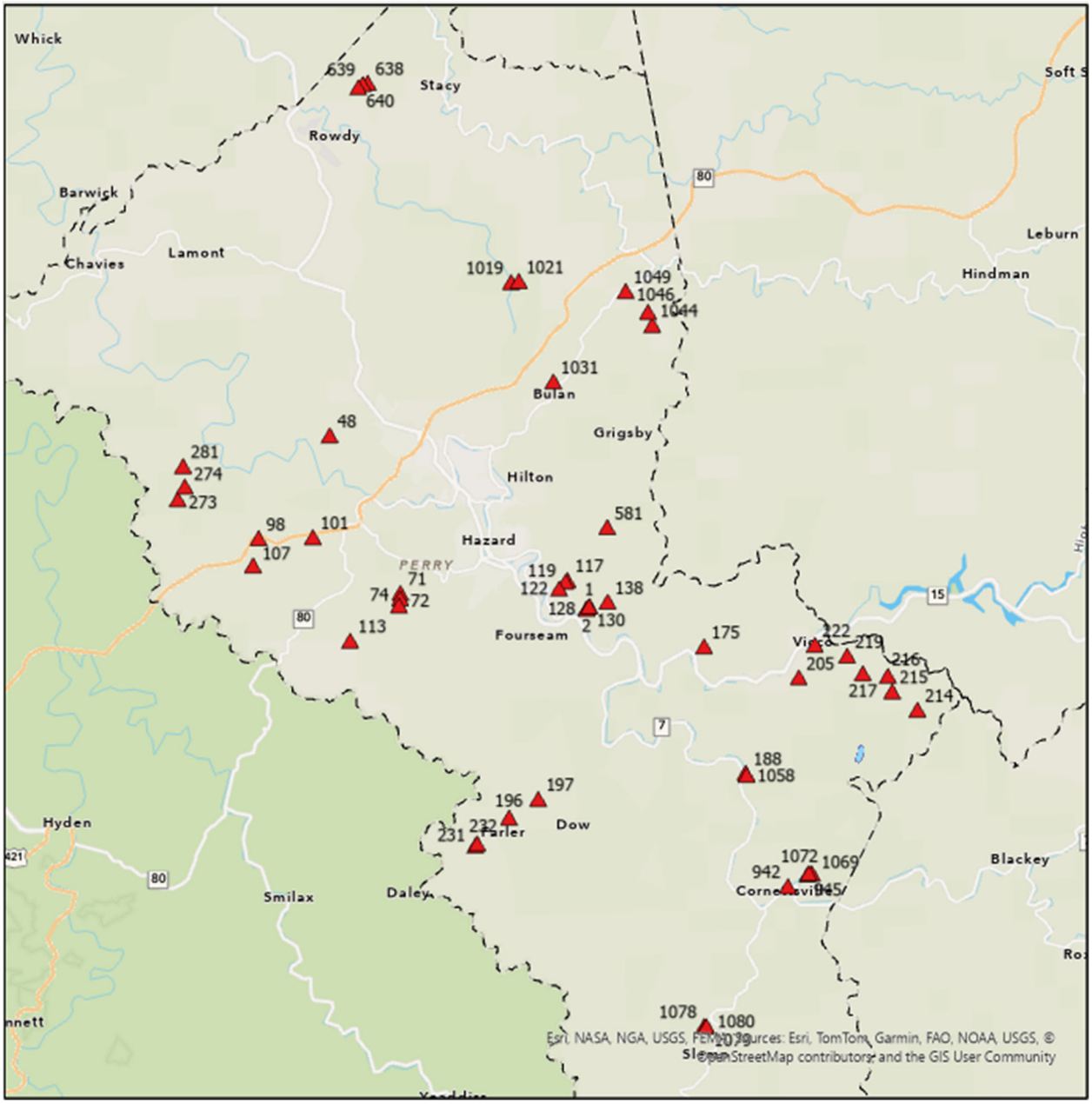


Exhibit Perry-F3: Bridge / Culvert Locations

Point ID	RT_UNIQUE	Road Name	Hazard	Bridge Width	Guard Presen	Object Marker	Recommendation
175	097-CR-1104 -000	ACUP RD	Bridge or Large Culvert	Acup Rd	0	1	Install Object Markers
197	097-CR-1267 -000	BEARS LN	Bridge or Large Culvert	18	4	0	--
98	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Bridge or Large Culvert	6	0	0	Install Object Markers
101	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Bridge or Large Culvert	16	4	0	--
71	097-CR-1210 -000	BROWNS FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
72	097-CR-1210 -000	BROWNS FORK RD	Bridge or Large Culvert	9	2	0	--
74	097-CR-1210 -000	BROWNS FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
942	097-CR-1133 -000	BULL CREEK RD	Bridge or Large Culvert	8	0	0	Curve hazard. Install Object Markers
945	097-CR-1133 -000	BULL CREEK RD	Bridge or Large Culvert	10	0	1	Install Object Markers
946	097-CR-1133 -000	BULL CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1069	097-CR-1133 -000	BULL CREEK RD	Bridge or Large Culvert	12ΓÇÖ	0	0	Install Object Markers
1072	097-CR-1133 -000	BULL CREEK RD	Bridge or Large Culvert	12ΓÇÖ	0	0	Install Object Markers
638	013-CR-1139 -000	COCKRELL FRK RD	Bridge or Large Culvert	6	0	0	Install Object Markers
639	013-CR-1139 -000	COCKRELL FRK RD	Bridge or Large Culvert	6	0	0	Install Object Markers
640	013-CR-1139 -000	COCKRELL FRK RD	Bridge or Large Culvert	6	0	0	Install Object Markers
1044	097-CR-1032 -000	DWARF COMBS BR	Bridge or Large Culvert	3	0	0	Install Object Markers
1046	097-CR-1032 -000	DWARF COMBS BR	Bridge or Large Culvert	8	0	0	Install Object Markers
273	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Bridge or Large Culvert	30	0	0	Install Object Markers
274	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Bridge or Large Culvert	30	0	0	Install Object Markers
281	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Bridge or Large Culvert	20	0	0	Install Object Markers
188	097-CR-1510 -000	FORT BRANCH RD	Bridge or Large Culvert	100	4	0	--
1058	097-CR-1510 -000	FORT BRANCH RD	Bridge or Large Culvert	12ΓÇÖ	0	0	Install Object Markers
205	097-CR-1115 -000	GEORGES BRANCH RD	Bridge or Large Culvert	16	4	4	--
222	097-CR-1115 -000	GEORGES BRANCH RD	Bridge or Large Culvert	40	4	3	--
117	097-CR-1200 -000	GREGORY BRANCH RD	Bridge or Large Culvert	4	0	0	Install Object Markers
119	097-CR-1200 -000	GREGORY BRANCH RD	Bridge or Large Culvert	3	0	0	Install Object Markers
122	097-CR-1200 -000	GREGORY BRANCH RD	Bridge or Large Culvert	1.5	0	0	Install Object Markers
1019	097-CR-1059 -000	HARRIS BRANCH LN	Bridge or Large Culvert	6	0	0	Install Object Markers
1021	097-CR-1059 -000	HARRIS BRANCH LN	Bridge or Large Culvert	2	0	0	Install Object Markers
1031	097-CR-1038 -000	HINER RD	Bridge or Large Culvert	5	2	0	--
107	097-CR-1301 -000	HURRICANE BRANCH RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1049	097-CR-1453Q1-000	JARRETT LN	Bridge or Large Culvert	8	0	0	Install Object Markers
48	097-CR-1306 -000	LOWER SECOND CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
214	097-CR-1120 -000	MONTGOMERY CREEK RD	Bridge or Large Culvert	6	0	0	Install Object Markers
215	097-CR-1120 -000	MONTGOMERY CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
216	097-CR-1120 -000	MONTGOMERY CREEK RD	Bridge or Large Culvert	20	4	0	--
113	097-CR-1670 -000	POLLY HOLW	Bridge or Large Culvert	10	4	0	--
1078	097-CR-1144 -000	PUNCHEON CAMP RD	Bridge or Large Culvert	14ΓÇÖ	0	0	Install Object Markers
1079	097-CR-1144 -000	PUNCHEON CAMP RD	Bridge or Large Culvert	10ΓÇÖ	0	0	Install Object Markers
1080	097-CR-1144 -000	PUNCHEON CAMP RD	Bridge or Large Culvert	10	0	0	Install Object Markers
1	097-CR-1202 -000	RACCOON CREEK RD	Bridge or Large Culvert	10	0	0	Install Object Markers
2	097-CR-1202 -000	RACCOON CREEK RD	Bridge or Large Culvert	12	0	0	Install Object Markers
128	097-CR-1202 -000	RACCOON CREEK RD	Bridge or Large Culvert	2	0	0	Install Object Markers
130	097-CR-1202 -000	RACCOON CREEK RD	Bridge or Large Culvert	6	0	0	Install Object Markers
138	097-CR-1202 -000	RACCOON CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
217	097-CR-1122 -000	RIGHT FORK MONTGOMERY RD	Bridge or Large Culvert	16	4	3	--
219	060-CR-1221 -000	SASSAFRAS CREEK RD	Bridge or Large Culvert	20	4	2	--
581	097-CR-1020 -000	UPPER SECOND CREEK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
196	097-CR-1229 -000	WELLS FORK RD	Bridge or Large Culvert	14	4	4	--
231	097-CR-1229 -000	WELLS FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers
232	097-CR-1229 -000	WELLS FORK RD	Bridge or Large Culvert	8	0	0	Install Object Markers

Exhibit Perry-F4: Bridge / Culvert Recommendations

Curve Recommendations (Perry County)

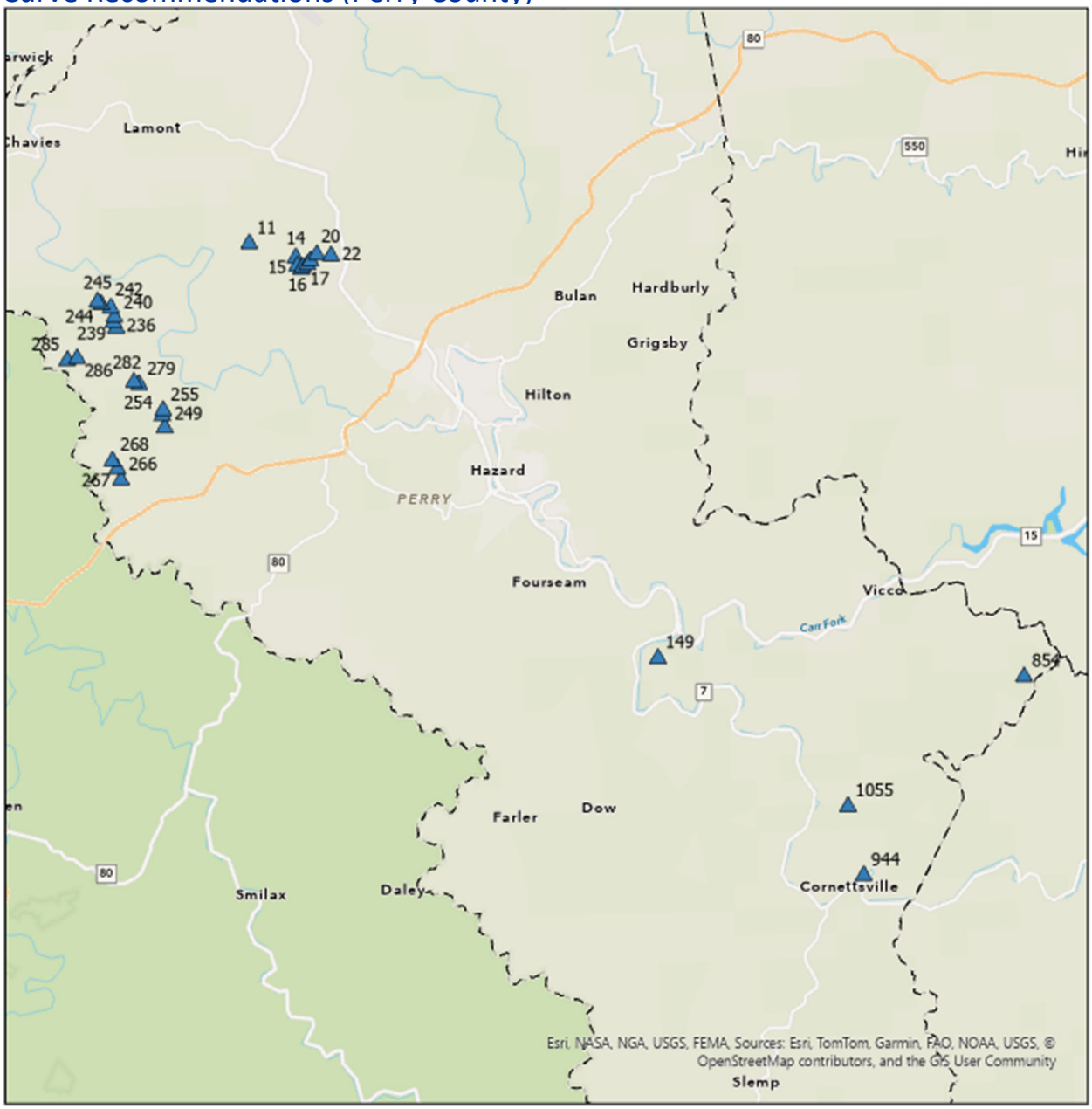


Exhibit Perry-F5: Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
854	097-CR-1120 -000	MONTGOMERY CREEK RD	Curve Hazard	Entrance in Curve, Curve Obscured, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
149	097-CR-1123 -000	UPPER RIVER RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
944	097-CR-1133 -000	BULL CREEK RD	Curve Hazard	Curve Obscured	No	Add Curve Warning Sign
249	097-CR-1311 -000	LAUREL MOUNTAIN RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
254	097-CR-1311 -000	LAUREL MOUNTAIN RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
255	097-CR-1311 -000	LAUREL MOUNTAIN RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
266	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
267	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
268	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
279	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
282	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
285	097-CR-1316 -000	TRACE BRANCH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
286	097-CR-1316 -000	TRACE BRANCH RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
236	097-CR-1317 -000	DEVIL SKULL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
239	097-CR-1317 -000	DEVIL SKULL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
240	097-CR-1317 -000	DEVIL SKULL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
242	097-CR-1317 -000	DEVIL SKULL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
244	097-CR-1317 -000	DEVIL SKULL RD	Curve Hazard	Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
245	097-CR-1317 -000	DEVIL SKULL RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
11	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
14	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
15	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
16	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
17	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	vegetation, Curve Obscured	Yes	Add Curve Warning Sign; Clear Vegetation
18	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
19	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation
20	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	Entrance in Curve, vegetation	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); Clear Vegetation;
22	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Curve Hazard	Entrance in Curve	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
1055	097-CR-1510 -000	FORT BRANCH RD	Curve Hazard	vegetation	Yes	Add Curve Warning Sign; Clear Vegetation

Exhibit Perry-F5: Curve Recommendations

Roadside Drop Off Recommendations (Perry County)

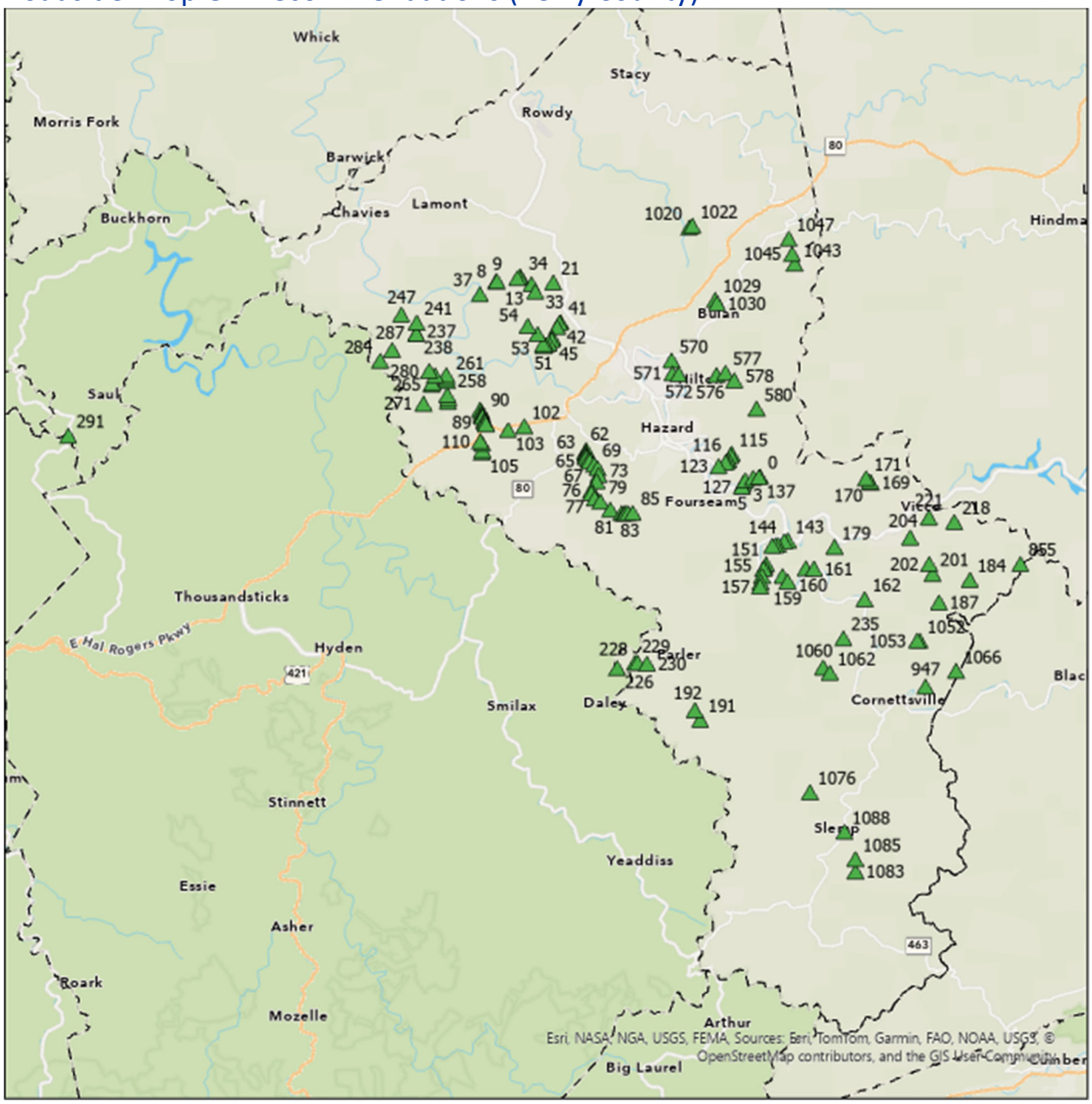


Exhibit Perry-F7: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
169	097-CR-1104 -000	ACUP RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
170	097-CR-1104 -000	ACUP RD	Drop Off	1-3	>10	Install Guardrail
171	097-CR-1104 -000	ACUP RD	Drop Off	1-3	>10	Install Guardrail
179	097-CR-1106 -000	ARROWWOOD DR	Drop Off	1-3	>10	Install Guardrail
1083	097-CR-1143 -000	BEE HIVE RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible
1085	097-CR-1143 -000	BEE HIVE RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
1088	097-CR-1143 -000	BEE HIVE RD	Drop Off	1-3	>10	Install Guardrail
184	097-CR-1161 -000	BIG BRANCH RD	Drop Off	1-3	>10	Install Guardrail
187	097-CR-1161 -000	BIG BRANCH RD	Drop Off	1-3	>10	Install Guardrail
89	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
90	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	0-1	2-5	Shoulderering
91	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	0-1	2-5	Shoulderering
93	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
94	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	0-1	2-5	Shoulderering
95	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	0-1	>10	Install Guardrail
96	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
97	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	0-1	>10	Install Guardrail
102	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	3-5	>10	Install Guardrail
103	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
62	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
63	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	Shoulderering
64	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	Shoulderering
65	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	Shoulderering
66	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	Shoulderering
67	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	>10	Install Guardrail
68	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
69	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
70	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	Shoulderering
73	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	Shoulderering
75	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	Shoulderering
76	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	Shoulderering
77	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	Shoulderering
78	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	>10	Install Guardrail
79	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	Shoulderering
80	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	>10	Install Guardrail
81	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	>10	Install Guardrail
82	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	2-5	Shoulderering
83	097-CR-1210 -000	BROWNS FORK RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
84	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	Shoulderering
85	097-CR-1210 -000	BROWNS FORK RD	Drop Off	0-1	5-10	Shoulderering
947	097-CR-1133 -000	BULL CREEK RD	Drop Off	1-3	>10	Install Guardrail
1066	097-CR-1133 -000	BULL CREEK RD	Drop Off	1-3	>10	Install Guardrail
1060	097-CR-1128 -000	CAMPBELL BRANCH RD	Drop Off	1-3	>10	Install Guardrail
1062	097-CR-1128 -000	CAMPBELL BRANCH RD	Drop Off	1-3	>10	Install Guardrail
291	097-CR-1329Q4-000	COUCH LOOP	Drop Off	1-3	>10	Install Guardrail
237	097-CR-1317 -000	DEVIL SKULL RD	Drop Off	0-1	>10	Install Guardrail
238	097-CR-1317 -000	DEVIL SKULL RD	Drop Off	0-1	>10	Install Guardrail
241	097-CR-1317 -000	DEVIL SKULL RD	Drop Off	0-1	>10	Install Guardrail
247	097-CR-1317 -000	DEVIL SKULL RD	Drop Off	0-1	2-5	Shoulderering
1043	097-CR-1032 -000	DWARF COMBS BR	Drop Off	0-1	>10	Install Guardrail
1045	097-CR-1032 -000	DWARF COMBS BR	Drop Off	0-1	2-5	Shoulderering
1047	097-CR-1032 -000	DWARF COMBS BR	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
235	097-CR-1126 -000	DYKES BRANCH RD	Drop Off	3-5	>10	Install Guardrail
51	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	Install Guardrail
52	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	Install Guardrail
53	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	Install Guardrail
54	097-CR-1308 -000	FLAT GAP RD	Drop Off	1-3	>10	Install Guardrail
265	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Drop Off	1-3	2-5	Shouldering / Repair if Possible; Install Object Marker
271	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Drop Off	0-1	2-5	Shoulderering
275	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Drop Off	0-1	>10	Install Guardrail
277	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Drop Off	0-1	>10	Install Guardrail

Exhibit Perry-F8: Roadside Drop Off Recommendations

Fixed Object Recommendations (Perry County)

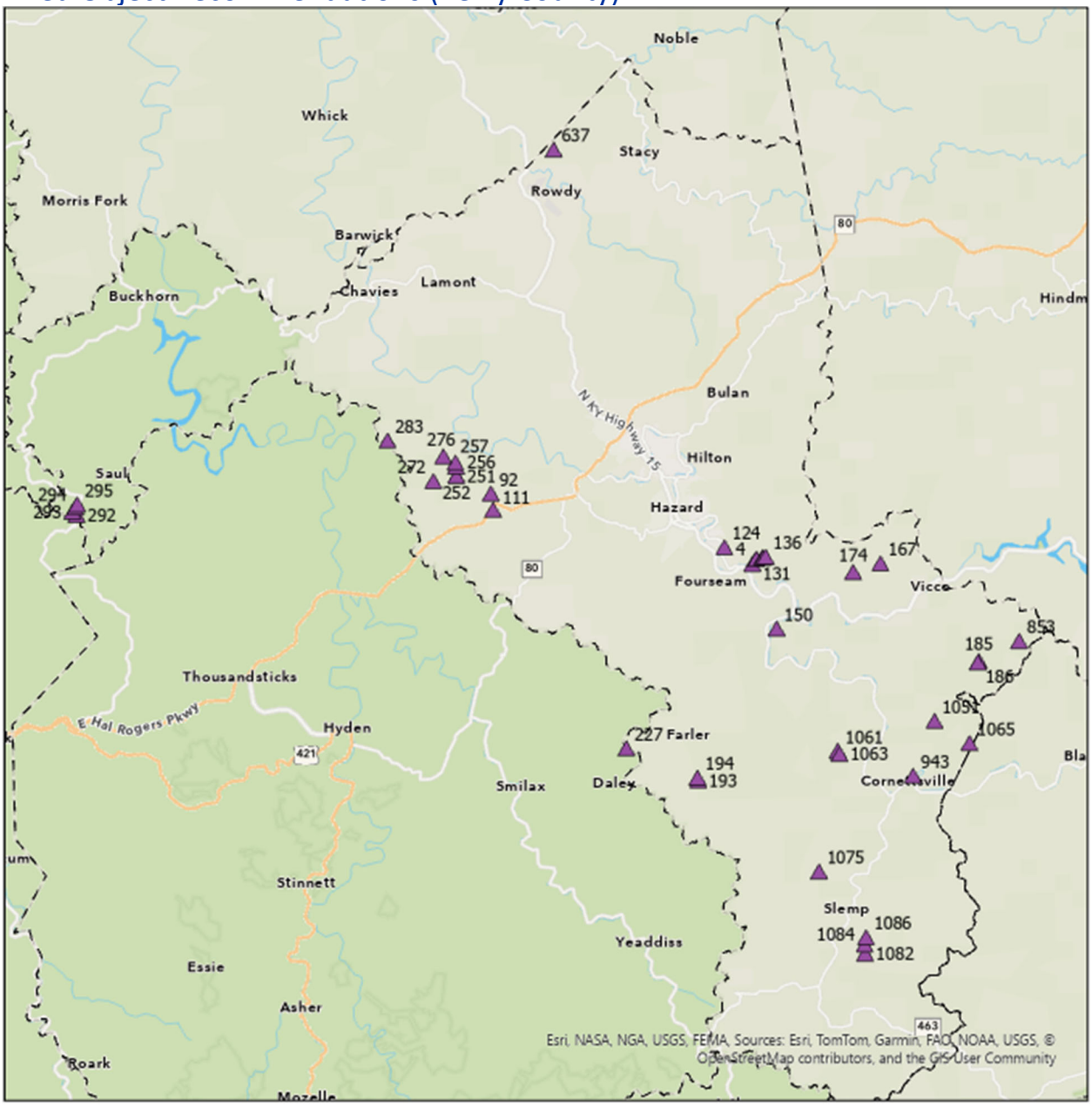


Exhibit Perry-F9: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
194	097-CR-1231 -000	RIGHT FORK MACES CREEK RD	Fixed Object	Other; Metal pole	Single	3-5	Remove
136	097-CR-1202 -000	RACCOON CREEK RD	Fixed Object	Other; Retention Wall	Single	1-3	Install Type 3 Object Marker
150	097-CR-1123 -000	UPPER RIVER RD	Fixed Object	Other; Rock	Single	0-1	Remove
276	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Fixed Object	Other; Rock	Single	0-1	Remove
92	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Fixed Object	Tree	Single	1-3	Remove
111	097-CR-1301 -000	HURRICANE BRANCH RD	Fixed Object	Tree	Single	3-5	--
251	097-CR-1311 -000	LAUREL MOUNTAIN RD	Fixed Object	Tree	Single	0-1	Remove
132	097-CR-1202 -000	RACCOON CREEK RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
174	097-CR-1104 -000	ACUP RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
1063	097-CR-1128 -000	CAMPBELL BRANCH RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
133	097-CR-1202 -000	RACCOON CREEK RD	Fixed Object	Utility Pole	Single	3-5	--
135	097-CR-1202 -000	RACCOON CREEK RD	Fixed Object	Utility Pole	Single	3-5	--
167	097-CR-1104 -000	ACUP RD	Fixed Object	Utility Pole	Single	3-5	--
185	097-CR-1161 -000	BIG BRANCH RD	Fixed Object	Utility Pole	Single	3-5	--
293	097-CR-1329Q4-000	COUCH LOOP	Fixed Object	Utility Pole	Single	3-5	--
1051	097-CR-1510 -000	FORT BRANCH RD	Fixed Object	Utility Pole	Single	3-5	--
1065	097-CR-1133 -000	BULL CREEK RD	Fixed Object	Utility Pole	Single	3-5	--
1086	097-CR-1143 -000	BEE HIVE RD	Fixed Object	Culvert Headwall	Series	3-5	Install Type 2 Object Marker
4	097-CR-1202 -000	RACCOON CREEK RD	Fixed Object	Other; Fence	Series	0-1	Consider Removal or Relocation
252	097-CR-1311 -000	LAUREL MOUNTAIN RD	Fixed Object	Other; Fence	Series	0-1	Consider Removal or Relocation
256	097-CR-1311 -000	LAUREL MOUNTAIN RD	Fixed Object	Other; Fence	Series	0-1	Consider Removal or Relocation
257	097-CR-1311 -000	LAUREL MOUNTAIN RD	Fixed Object	Other; Fence	Series	0-1	See Policy Recommendations
131	097-CR-1202 -000	RACCOON CREEK RD	Fixed Object	Other; Gabion Basket	Series	0-1	Install Type 2 Object Marker
124	097-CR-1200 -000	GREGORY BRANCH RD	Fixed Object	Other; Posts	Series	1-3	Remove
943	097-CR-1133 -000	BULL CREEK RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
1061	097-CR-1128 -000	CAMPBELL BRANCH RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
227	097-CR-1229 -000	WELLS FORK RD	Fixed Object	Tree	Series	3-5	--
1084	097-CR-1143 -000	BEE HIVE RD	Fixed Object	Tree	Series	3-5	--
292	097-CR-1329Q4-000	COUCH LOOP	Fixed Object	Tree	Series	>5	--
283	097-CR-1316 -000	TRACE BRANCH RD	Fixed Object	Tree	Series	0-1	Trim low branches and remove trees encroaching on roadway
295	097-CR-1329Q4-000	COUCH LOOP	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
186	097-CR-1161 -000	BIG BRANCH RD	Fixed Object	Utility Pole	Series	3-5	--
193	097-CR-1231 -000	RIGHT FORK MACES CREEK RD	Fixed Object	Utility Pole	Series	3-5	--
272	097-CR-1312 -000	FORKED MOUTH BRANCH RD	Fixed Object	Utility Pole	Series	3-5	--
294	097-CR-1329Q4-000	COUCH LOOP	Fixed Object	Utility Pole	Series	3-5	--
637	013-CR-1139 -000	COCKRELL FRK RD	Fixed Object	Utility Pole	Series	3-5	--
1082	097-CR-1143 -000	BEE HIVE RD	Fixed Object	Utility Pole	Series	>5	--
853	097-CR-1120 -000	MONTGOMERY CREEK RD	Fixed Object	Utility Pole	Series	0-1	Install Type 2 Object Marker
1075	097-CR-1144 -000	PUNCHEON CAMP RD	Fixed Object	Utility Pole	Series	0-1	Install Type 2 Object Marker

Exhibit Perry-F10: Fixed Object Recommendations

Guardrail Recommendations (Perry County)



Exhibit Perry-F11: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
24	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Guardrail	Good	Yes	None	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
40	097-CR-1306 -000	LOWER SECOND CREEK RD	Guardrail	Fair	Maybe	All_	--
99	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Guardrail	Good	Yes	All_	--
100	097-CR-1300 -000	BRIAR FORK CIRCLE RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
142	097-CR-1123 -000	UPPER RIVER RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
154	097-CR-1123 -000	UPPER RIVER RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
176	097-CR-1104 -000	ACUP RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
178	097-CR-1106 -000	ARROWWOOD DR	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
195	097-CR-1231 -000	RIGHT FORK MACES CREEK RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
198	097-CR-1267 -000	BEARS LN	Guardrail	Good	Yes	All_	--
199	097-CR-2219 -000	BOGUS HOLW	Guardrail	Good	Yes	Some	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
203	097-CR-1115 -000	GEORGES BRANCH RD	Guardrail	Poor	No	None	Remove
225	097-CR-1229 -000	WELLS FORK RD	Guardrail	Good	Maybe	Some	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.
259	097-CR-1311 -000	LAUREL MOUNTAIN RD	Guardrail	Fair	No	None	Remove
262	097-CR-1311 -000	LAUREL MOUNTAIN RD	Guardrail	Fair	No	None	Remove
552	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	Guardrail	Poor	No	Some	Remove
555	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	Guardrail	Fair	No	Some	Remove
559	097-CR-1006 -000	CRAWFORD MOUNTAIN RD	Guardrail	Poor	No	Some	Remove
574	097-CR-2234 -000	BRASHEAR DR	Guardrail	Good	Yes	All_	--
575	097-CR-2234 -000	BRASHEAR DR	Guardrail	Good	Maybe	Some	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.
579	097-CR-1020 -000	UPPER SECOND CREEK RD	Guardrail	Poor	No	Some	Remove
582	097-CR-1020 -000	UPPER SECOND CREEK RD	Guardrail	Good	Yes	All_	--
587	097-CR-1365Q4-000	WENDELL FORD TERMINAL RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1026	097-CR-1038 -000	HINER RD	Guardrail	Good	Yes	All_	--
1027	097-CR-1038 -000	HINER RD	Guardrail	Good	Yes	All_	--
1028	097-CR-1038 -000	HINER RD	Guardrail	Good	Yes	All_	--
1034	097-CR-1038 -000	HINER RD	Guardrail	Fair	Maybe	All_	--
1035	097-CR-1038 -000	HINER RD	Guardrail	Fair	Maybe	Some	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1036	097-CR-1038 -000	HINER RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1037	097-CR-1038 -000	HINER RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
1040	097-CR-1854 -030	MILL BRANCH LN X	Guardrail	Good	Yes	Some	Install appropriate end treatments/ Type 3 Object Markers may be used as temporary treatment
1056	097-CR-1510 -000	FORT BRANCH RD	Guardrail	Poor	Maybe	None	Evaluate for Warrants; remove if not met

Exhibit Perry-F12: Guardrail Recommendations

Intersection Recommendations (Perry County)

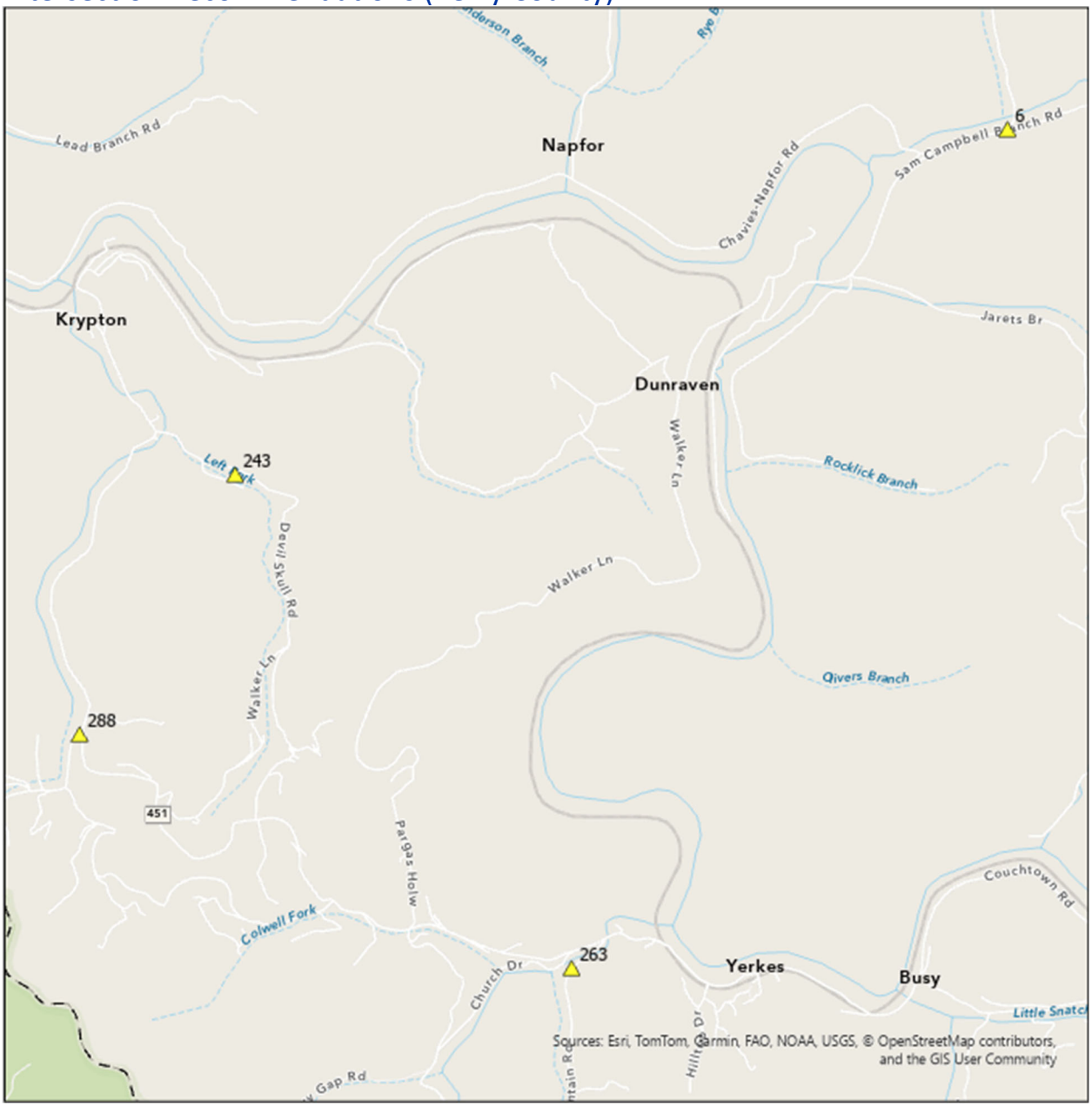


Exhibit Perry-F13: Intersection Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Blocked by Vegetatio	Recommendation
6	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	Intersection Hazard	Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
243	097-CR-1317 -000	DEVIL SKULL RD	Intersection Hazard	Insufficient Sight Distance at Intersection, Intersection Obscured on approach, Intersection Skew	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
263	097-CR-1311 -000	LAUREL MOUNTAIN RD	Intersection Hazard	Intersection Obscured on approach	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation
288	097-CR-1316 -000	TRACE BRANCH RD	Intersection Hazard	Intersection Obscured on approach, Insufficient Sight Distance at Intersection, Intersection Skew	Yes	Install Intersection Ahead / Stop Ahead Sign on Approach; Clear vegetation

Exhibit Perry-F14: Intersection Recommendations

Other Recommendations (Perry County)

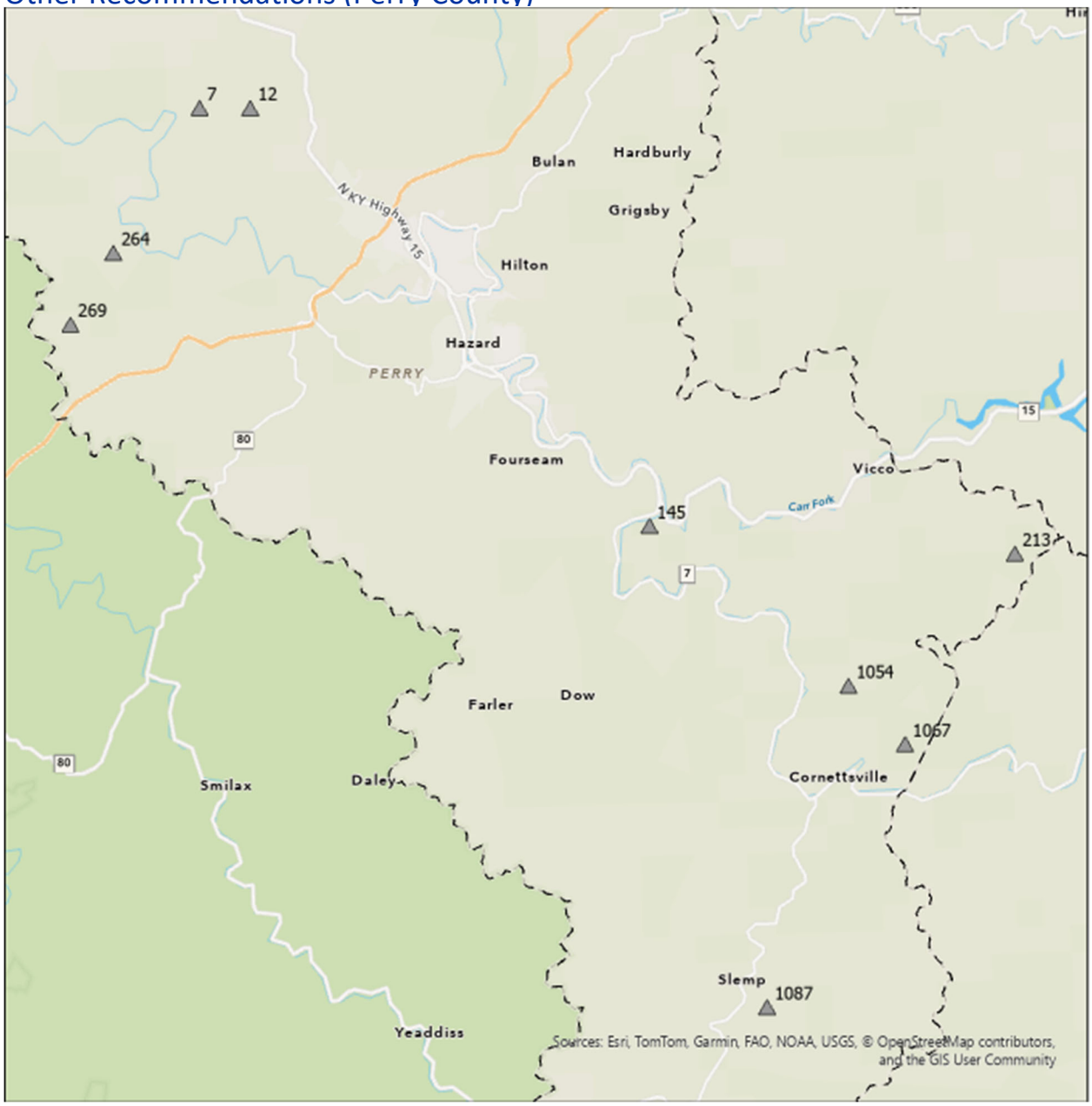


Exhibit Perry-F15: Other Item Locations

Point ID	RT_UNIQUE	RD_NAME	Issue Type	Description	Recommendation
7	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	other	Mountain wash off	Clear wash off; repair drainage to prevent wash off
12	097-CR-1319 -000	SAM CAMPBELL BRANCH RD	other	Lack of signage	Install Signs
145	097-CR-1123 -000	UPPER RIVER RD	other	Fallen rocks.	Clear rocks; evaluate hillside stabilization
213	097-CR-1120 -000	MONTGOMERY CREEK RD	other	Washout	Clear wash off; repair drainage to prevent wash off
264	097-CR-1312 -000	FORKED MOUTH BRANCH RD	other	No sign	Install Signs
269	097-CR-1312 -000	FORKED MOUTH BRANCH RD	other	Blind hill obstructed	Install Warning Sign "Hill Blocks View"
1054	097-CR-1510 -000	FORT BRANCH RD	other	Blind peak of road. Unable to see anything oncoming.	Install Warning Sign "Hill Blocks View"
1067	097-CR-1133 -000	BULL CREEK RD	other	No guardrail observed throughout the road.	Evaluate locations for Guardrail and Install if meets warrants
1087	097-CR-1143 -000	BEE HIVE RD	other	No guardrails observed along route.	Evaluate locations for Guardrail and Install if meets warrants

Exhibit Lee-F16: Other Item Recommendations

APPENDIX K: WOLFE COUNTY

Wolfe County Overview

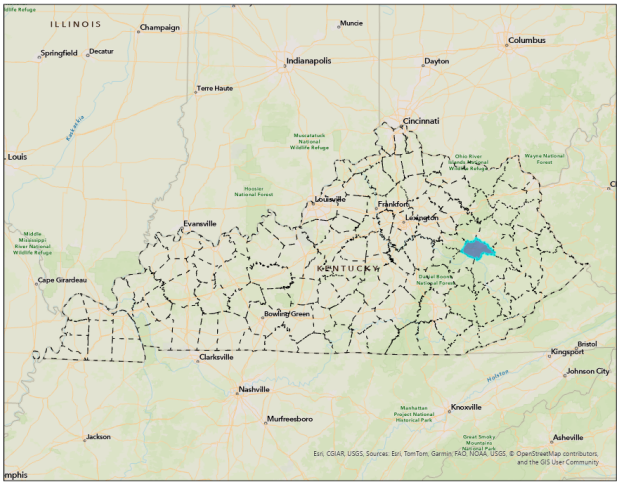


Exhibit Wolfe-1: Location Map

Key Information Table Wolfe County	
Population	7,223
Population in Underserved Communities	0%
Fatalities (All Roads)	0
Fatalities (County Roads)	0
Fatality rate per 100,000 persons	-
County Road Mileage	209.0
City Road Mileage	3.0
State Road Mileage	190.0
Total Mileage	**402.0**

Exhibit Wolfe-2: Key Information

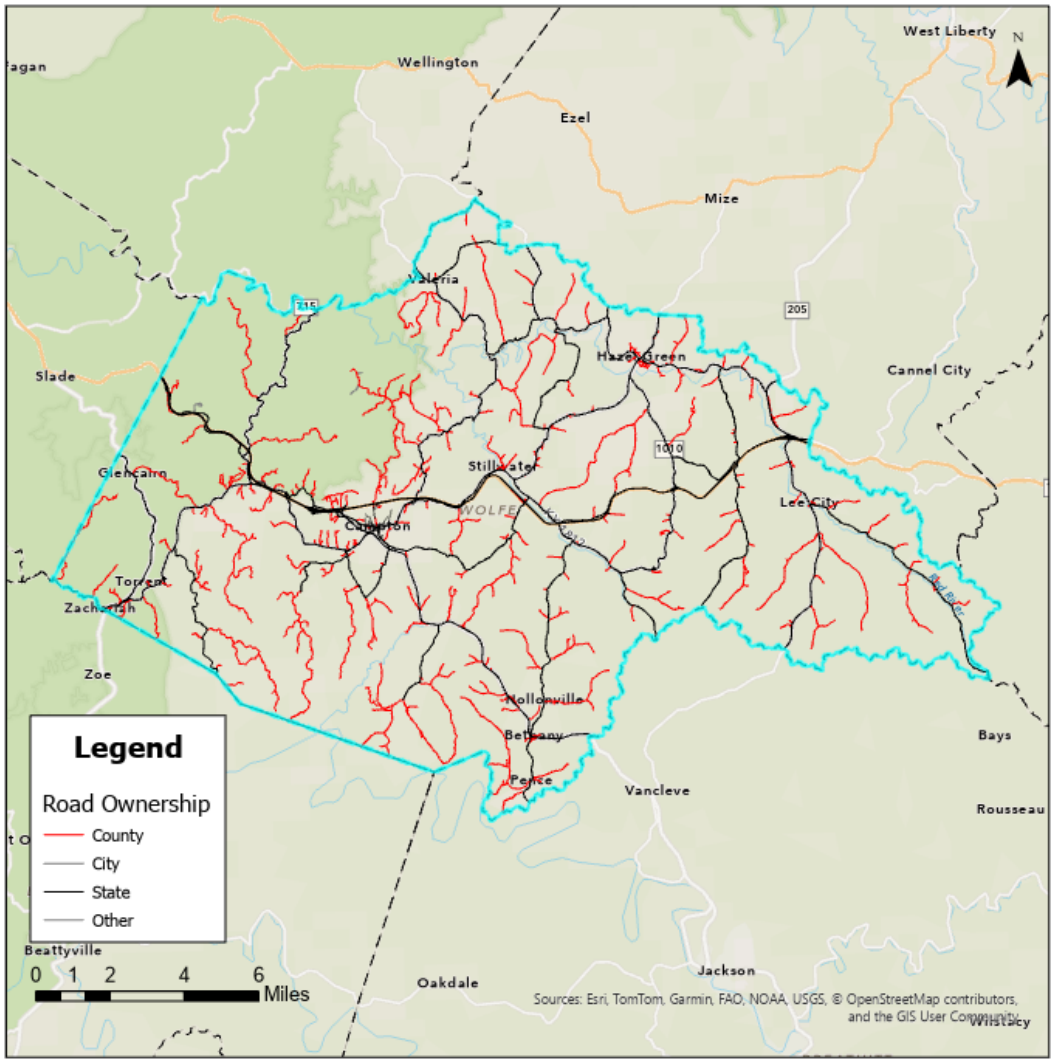


Figure Wolfe -3: Map of County Roadways

Crash Analysis

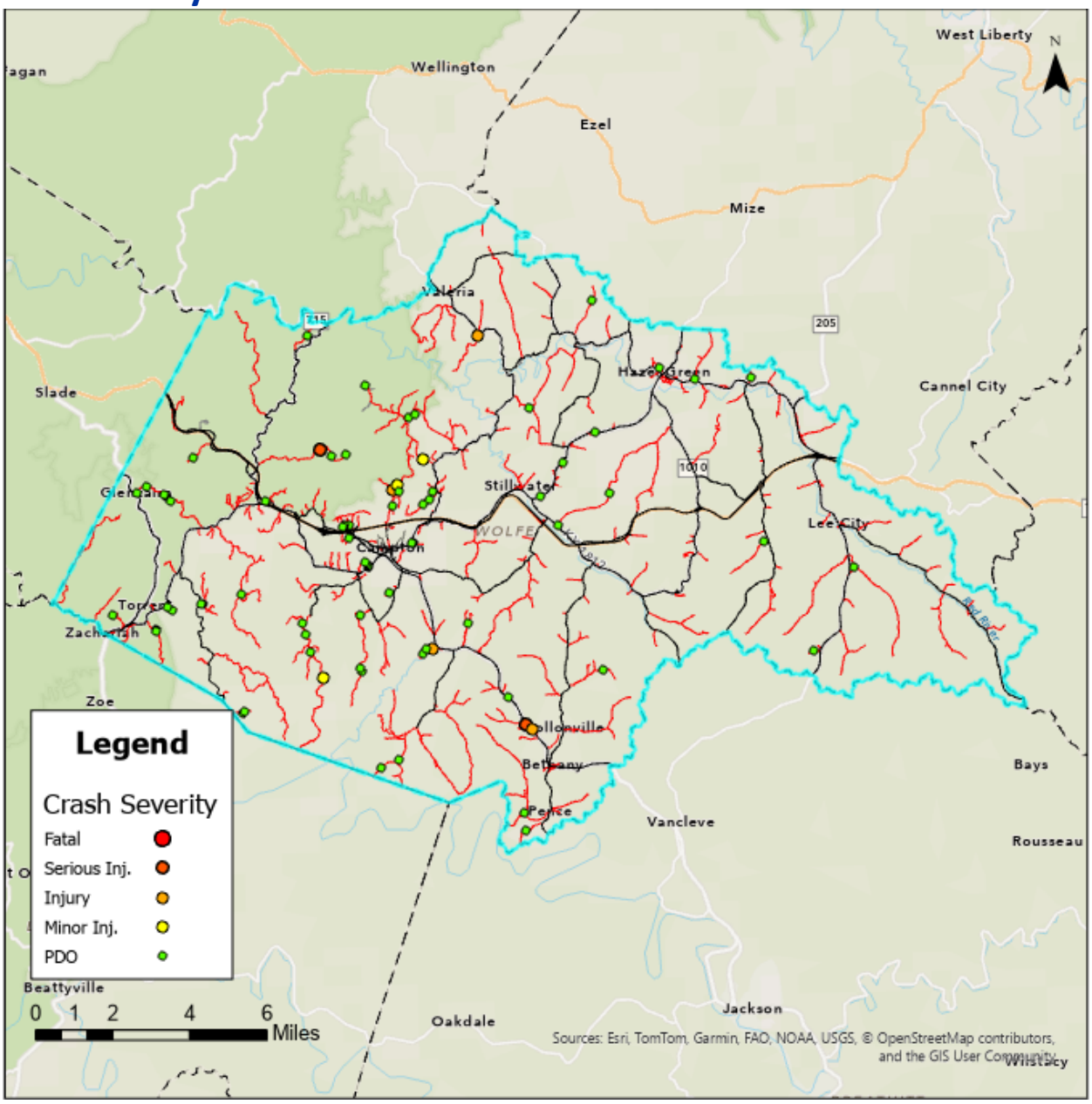
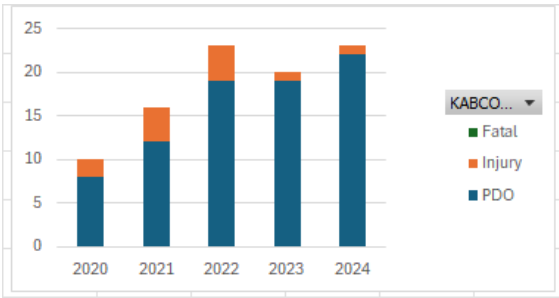


Figure Wolfe -4: Map of County Road Crashes

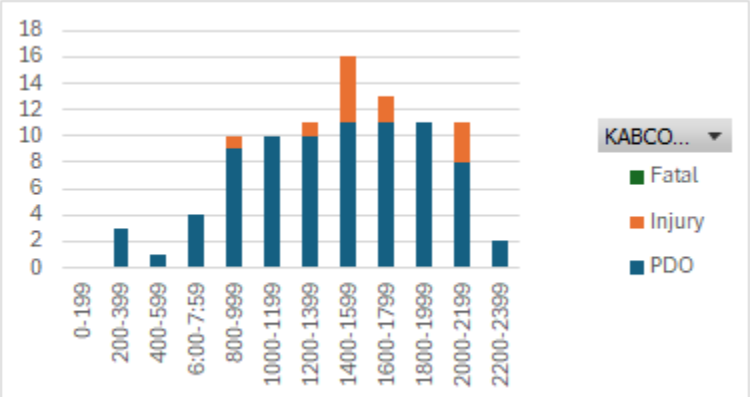


Year	Property Damage Only	Injury	Fatal	Total
2020	8	2	0	**10**
2021	12	4	0	**16**
2022	19	4	0	**23**
2023	19	1	0	**20**
2024	22	1	0	**23**

Figure Wolfe-5: Crash Distribution by Year

Crash Type	Fatal	Injury	Property Damage Only	Total
Angle	0	0	7	7
Backing	0	0	10	10
Head On	0	2	7	9
Opposing Left Turn	0	0	0	0
Rear End	0	0	1	1
Rear To Rear	0	0	1	1
Sideswipe-Opposit	0	2	16	18
Sideswipe-Same D	0	0	4	4
Single Vehicle	0	8	34	42
Total	**0**	**12**	**80**	**92**

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



ExhibitWofle-7: Crashes and Severity by Time of Day

Focus Roadways

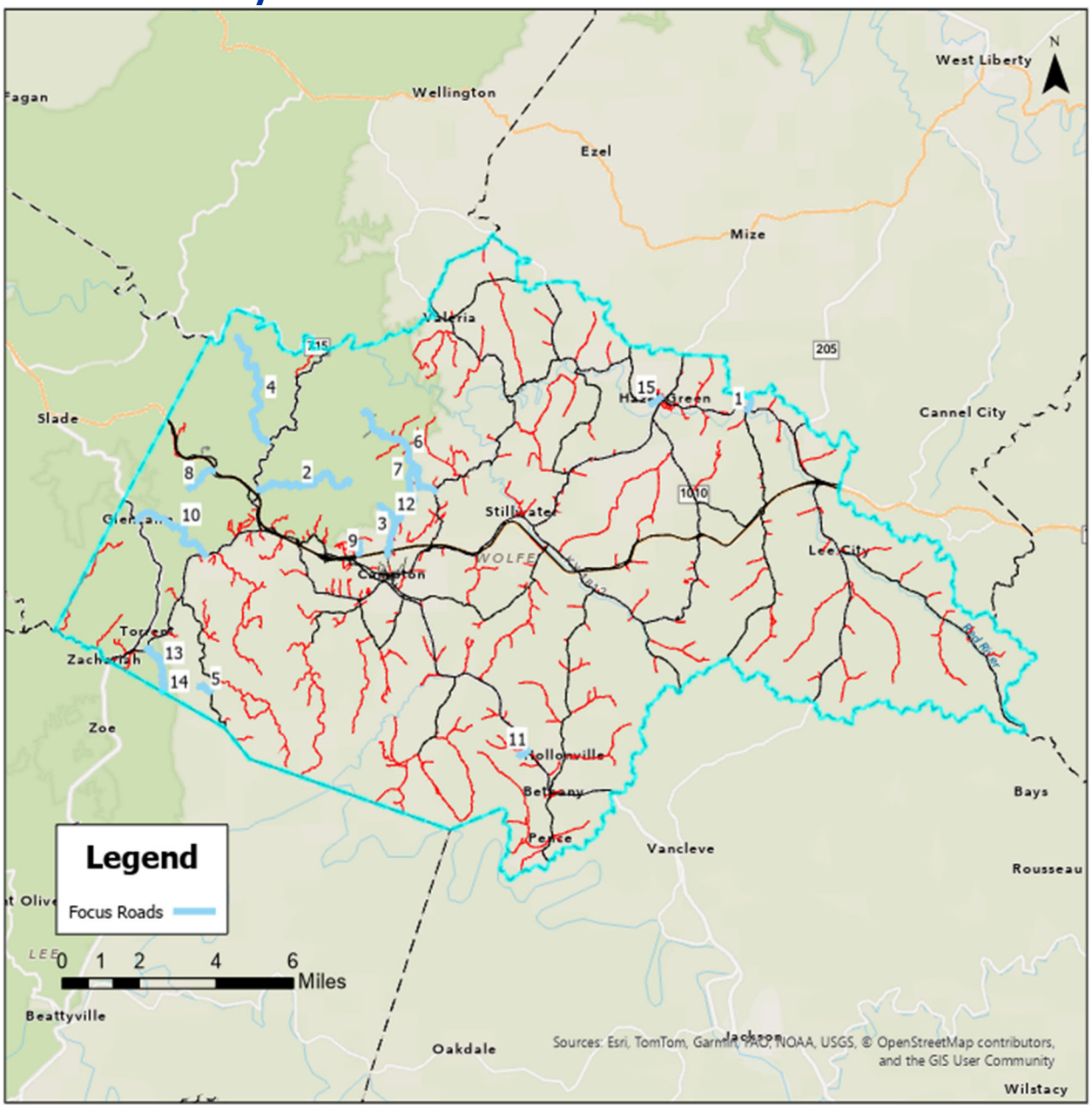


Exhibit Wolfe-8: Focus Roads

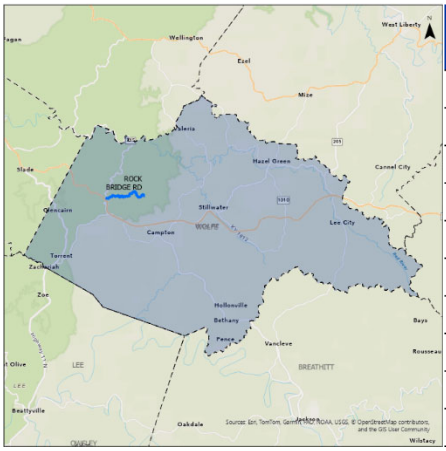
RT_UNIQUE	Length	County	ADD	Road Name	Injury Crash	Fatal Crash	PDO	Crash Score	Use Score	Percent Injury	Cumulative Injury/Fa	Focus Road
Wolfe												
119-CR-1326 -000	3.25	Wolfe	Kentucky River	ROCK BRIDGE RD	1	0	2	9.38	2.54	11.1%	11.1%	1
119-CR-1313 -000	3.48	Wolfe	Kentucky River	CALABOOSE RIDGE RD	1	0	1	8.75	0.97	11.1%	44.4%	1
119-CR-1314 -000	2.05	Wolfe	Kentucky River	HARVEST RIDGE RD	1	0	1	8.75	0.22	11.1%	55.6%	1
119-CR-1340 -000	0.73	Wolfe	Kentucky River	A J TAULBEE RD	1	0	0	8.13	0.44	11.1%	66.7%	1
119-CR-1148 -000	0.25	Wolfe	Kentucky River	HUNTING FORK LN	1	0	0	8.13	0.38	11.1%	77.8%	1
119-CR-1322 -000	2.70	Wolfe	Kentucky River	GLENCAIRN RD	0	0	5	3.13	2.61	0.0%	100.0%	1
119-CR-1015 -000	0.40	Wolfe	Kentucky River	REXVILLE RD	0	0	1	0.63	2.91	0.0%	100.0%	1
119-CR-1316 -000	3.75	Wolfe	Kentucky River	CHIMNEY TOP RD	0	0	0	0.00	2.17	0.0%	100.0%	1
119-CR-1331 -000	0.83	Wolfe	Kentucky River	BEAR BRANCH	0	0	1	0.63	1.25	0.0%	100.0%	1
119-CR-1321 -000	0.85	Wolfe	Kentucky River	MILLER RDG RD	0	0	1	0.63	0.29	0.0%	100.0%	1
119-CR-1285 -000	0.36	Wolfe	Kentucky River	GROVER BACK RD	0	0	0	0.00	0.06	0.0%	100.0%	1

Exhibit Wolfe-9: List of Focus Roadways

Recommended Improvements (Top 5 Roads)

Rock Bridge Rd (119-CR-1326 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	1	0	0	**1**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	3	1	0	**4**
Total	**4**	**1**	**0**	**5**

General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
119-CR-1326 -000	ROCK BRIDGE RD	14	1-Very Good	RHR 6 - <5 ft non-recoverable	40-60

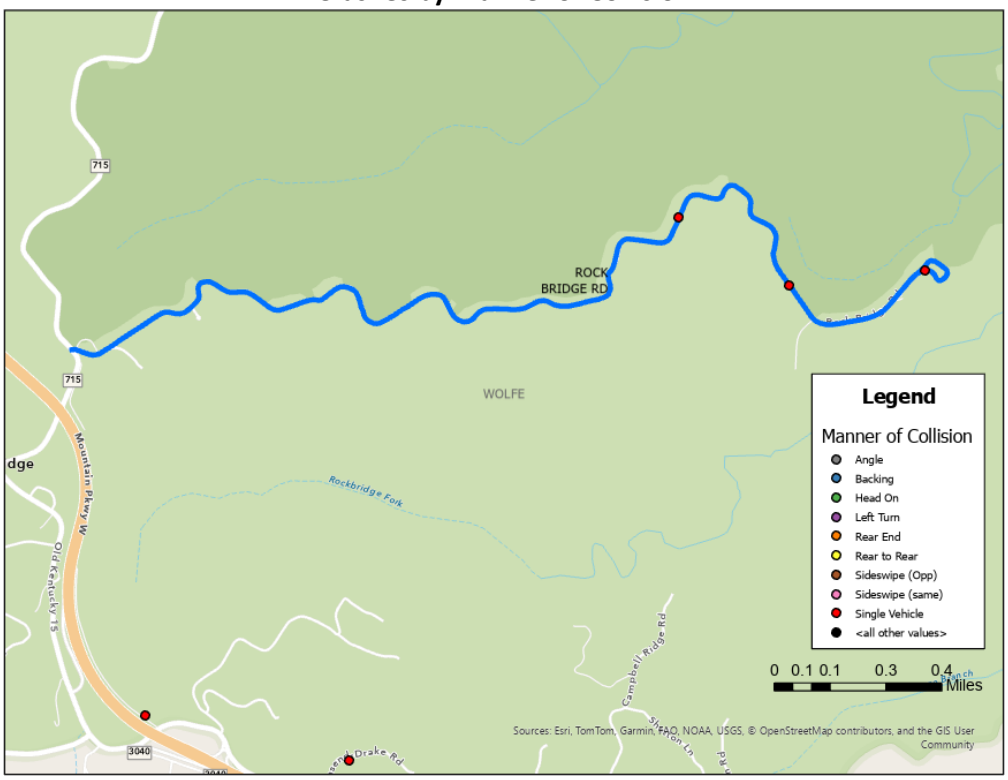
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



Recommendations

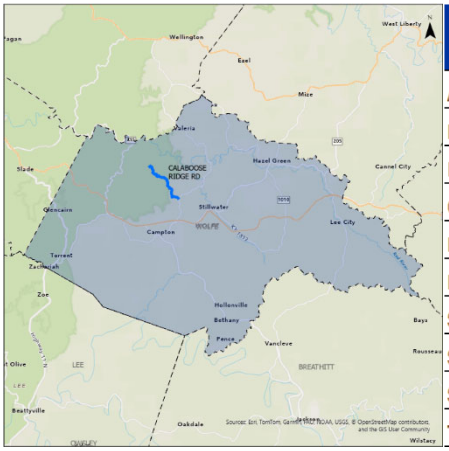
Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline	Curve Signin
630	119-CR-1326 -000	ROCK BRIDGE RD	14	1-Very Good	RHR 6 - <5 ft non-recoverable	40-60	✓	✓	✓

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
632	119-CR-1326 -000	ROCK BRIDGE RD	Drop Off	1-3	>10	--	Install Guardrail

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
631	119-CR-1326 -000	ROCK BRIDGE RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road

Calaboose Ridge Rd (119-CR-1313 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	1	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	1	0	0	**1**
Total	**1**	**1**	**0**	**2**

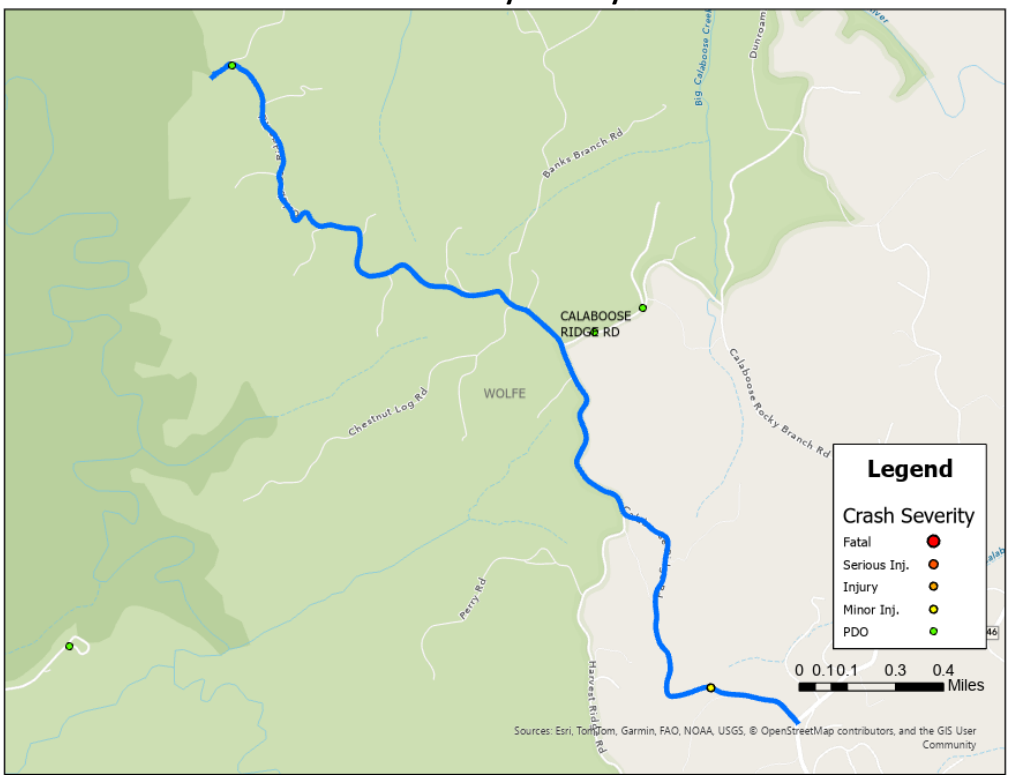
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
119-CR-1313 -000	CALABOOSE RIDGE RD	12	4-Poor	RHR 3 - >10 ft	60-80
119-CR-1313 -000	CALABOOSE RIDGE RD	10	4-Poor	RHR 2 - >20 ft	40-60

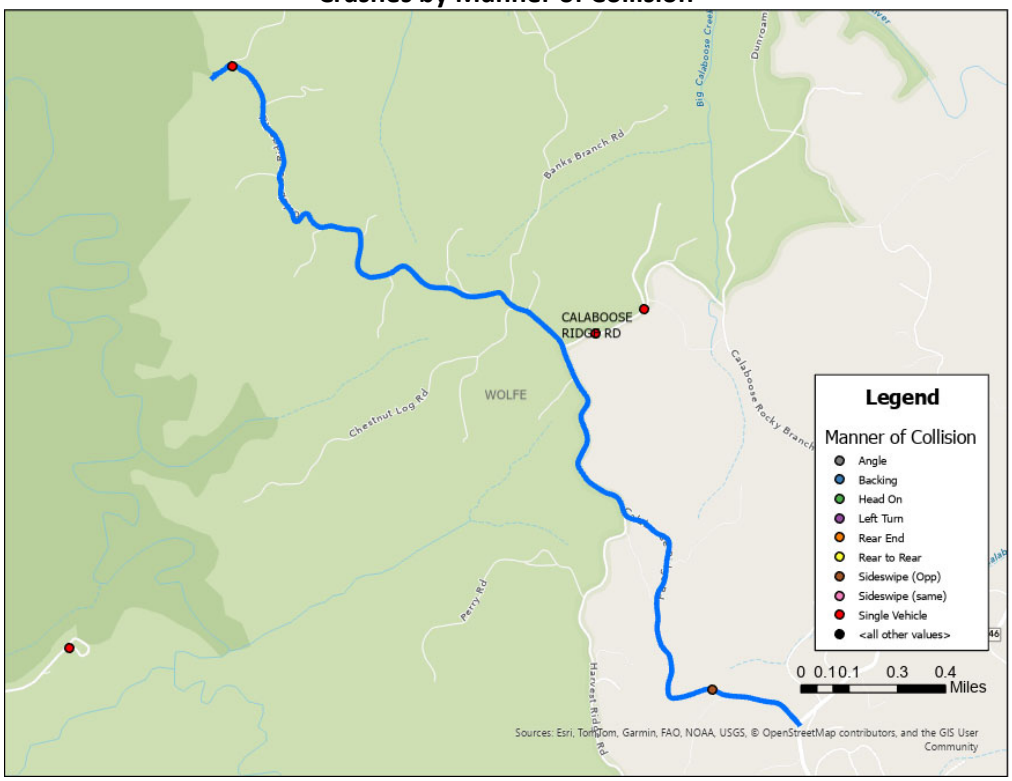
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



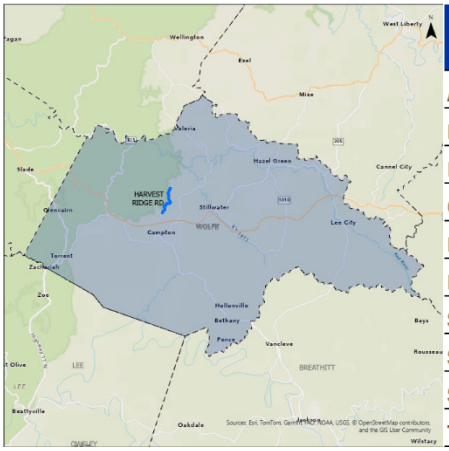
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
605	119-CR-1313 -000	CALABOOSE RIDGE RD	12	4-Poor	RHR 3 - >10 ft	60-80	✓	✓	✓	
606	119-CR-1313 -000	CALABOOSE RIDGE RD	10	4-Poor	RHR 2 - >20 ft	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
609	119-CR-1313 -000	CALABOOSE RIDGE RD	Drop Off	1-3	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
608	119-CR-1313 -000	CALABOOSE RIDGE RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
611	119-CR-1313 -000	CALABOOSE RIDGE RD	Guardrail	Good	Maybe	None	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.
Point ID	**RT_UNIQUE**	**RD_NAME**	**Issue Type**	**--**	**--**	**Description**	**Recommendation**
606	119-CR-1313 -000	CALABOOSE RIDGE RD	other	--	--	Unpaved section of road	Pave Roadway

Harvest Ridge Rd (119-CR-1314 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	1	1	0	**2**
Total	**1**	**1**	**0**	**2**

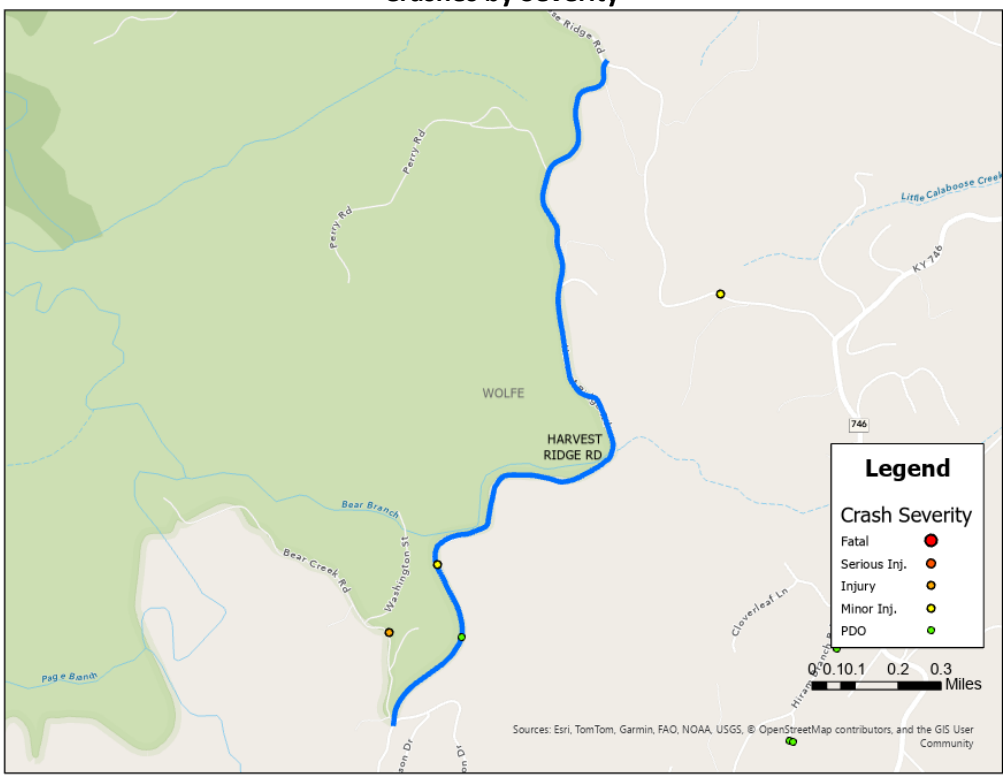
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
119-CR-1314 -000	HARVEST RIDGE RD	10	3-Fair	RHR 7 - <5 ft high injury	20-40
119-CR-1314 -000	HARVEST RIDGE RD	12	3-Fair	RHR 4 - 5-10 ft ~ recoverable	40-60

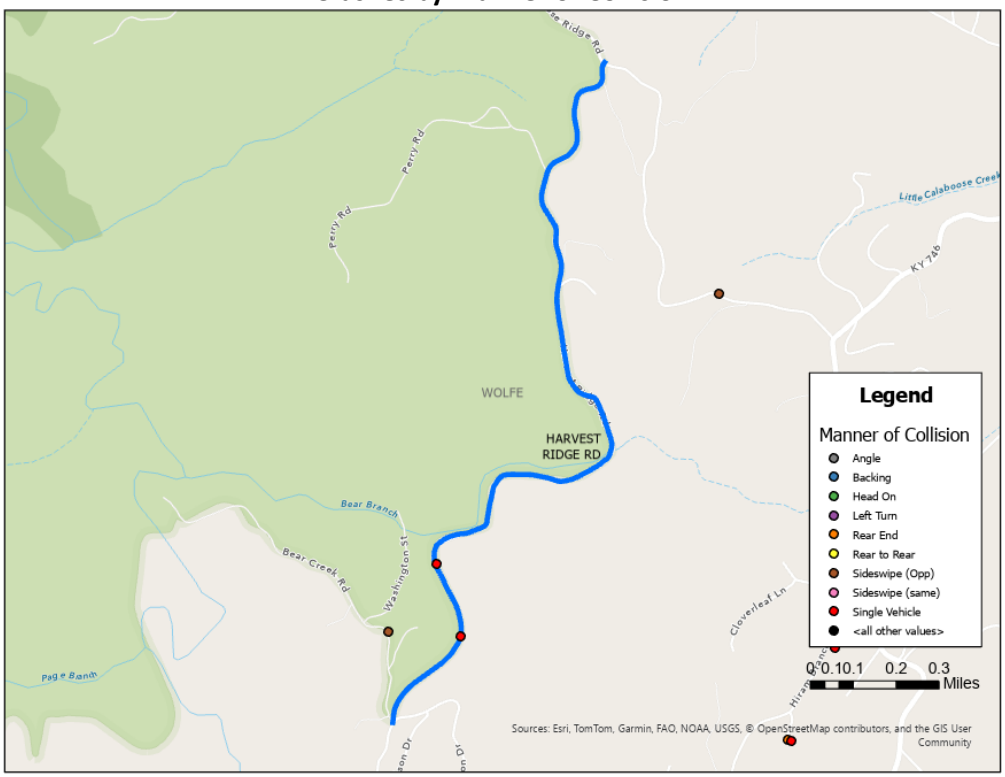
Roadway Typical Section



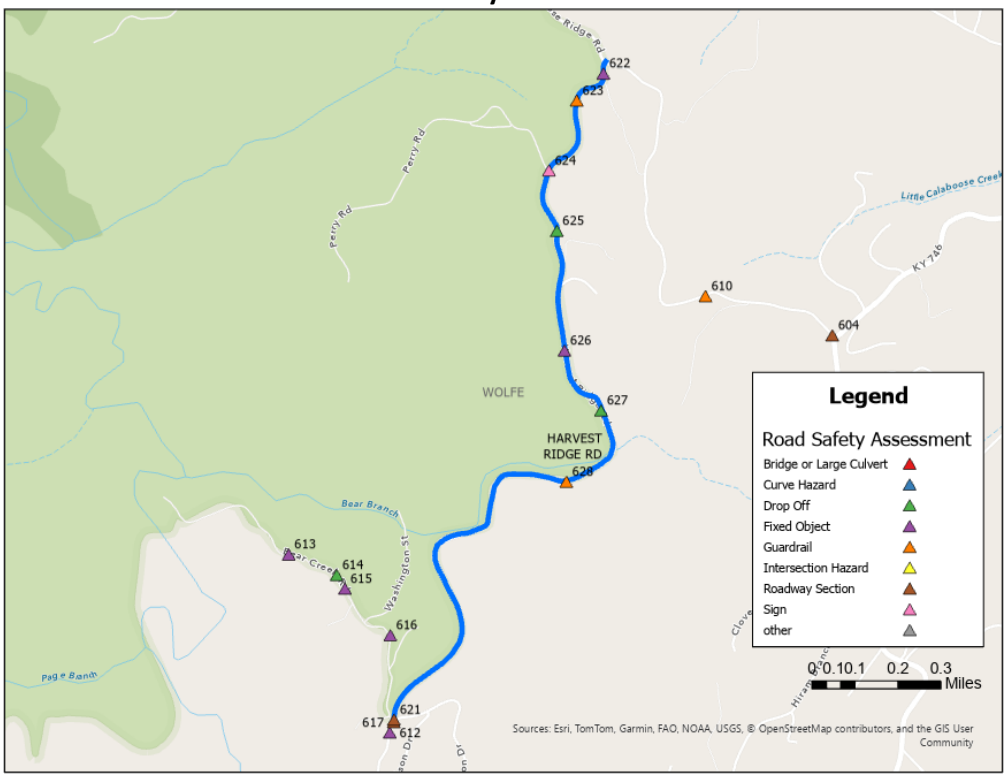
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



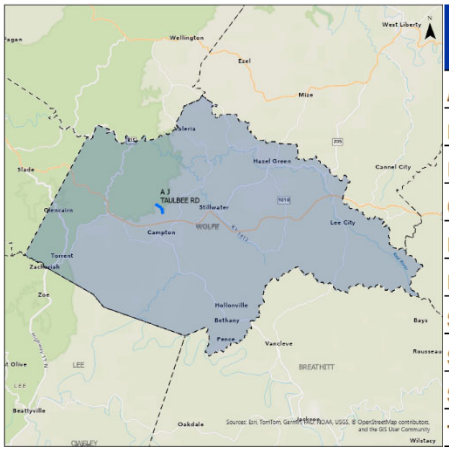
General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Shoulde	Edgeline[1]	Curve Signin	Other Recommendations
613	119-CR-1314 -000	HARVEST RIDGE RD	10	3-Fair	RHR 7 - <5 ft high injury	20-40	✓	✓	✓	
622	119-CR-1314 -000	HARVEST RIDGE RD	12	3-Fair	RHR 4 - 5-10 ft ~ recoverable	40-60	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
626	119-CR-1314 -000	HARVEST RIDGE RD	Drop Off	1-3	>10	--	Install Guardrail
628	119-CR-1314 -000	HARVEST RIDGE RD	Drop Off	1-3	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
623	119-CR-1314 -000	HARVEST RIDGE RD	Fixed Object	Utility Pole	Single	3-5	--
627	119-CR-1314 -000	HARVEST RIDGE RD	Fixed Object	Other; Hydrant	Single	>5	Install Type 2 Object Marker
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Condition**	**Meet Warrants**	**End Treatments**	**Recommendation**
624	119-CR-1314 -000	HARVEST RIDGE RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
629	119-CR-1314 -000	HARVEST RIDGE RD	Guardrail	Fair	No	None	Remove

A J Taulbee Rd (119-CR-1340 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	1	0	**1**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	0	0	**0**
Total	**0**	**1**	**0**	**1**

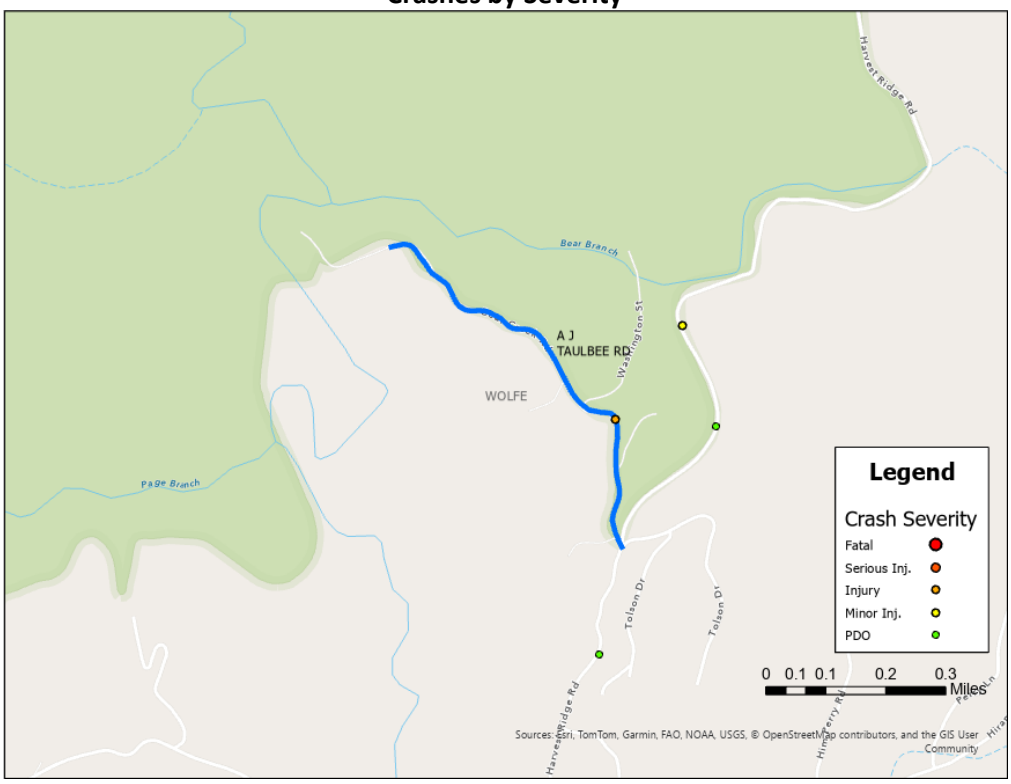
General Roadway Conditions

NOT COLLECTED

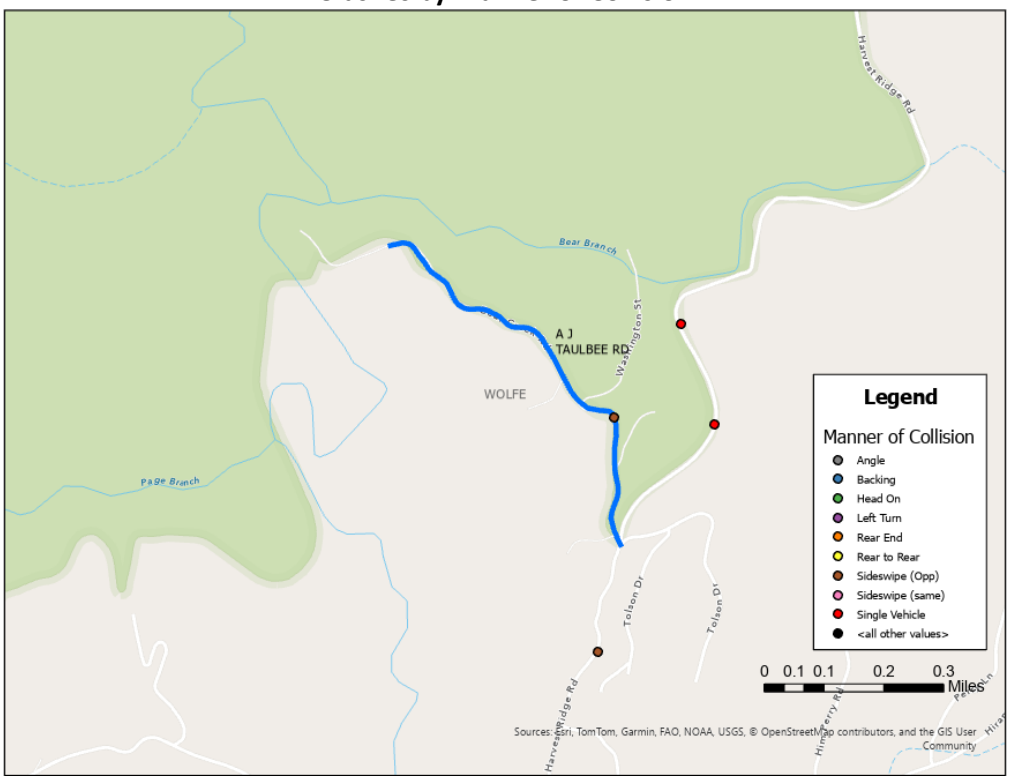
Roadway Typical Section

NOT COLLECTED

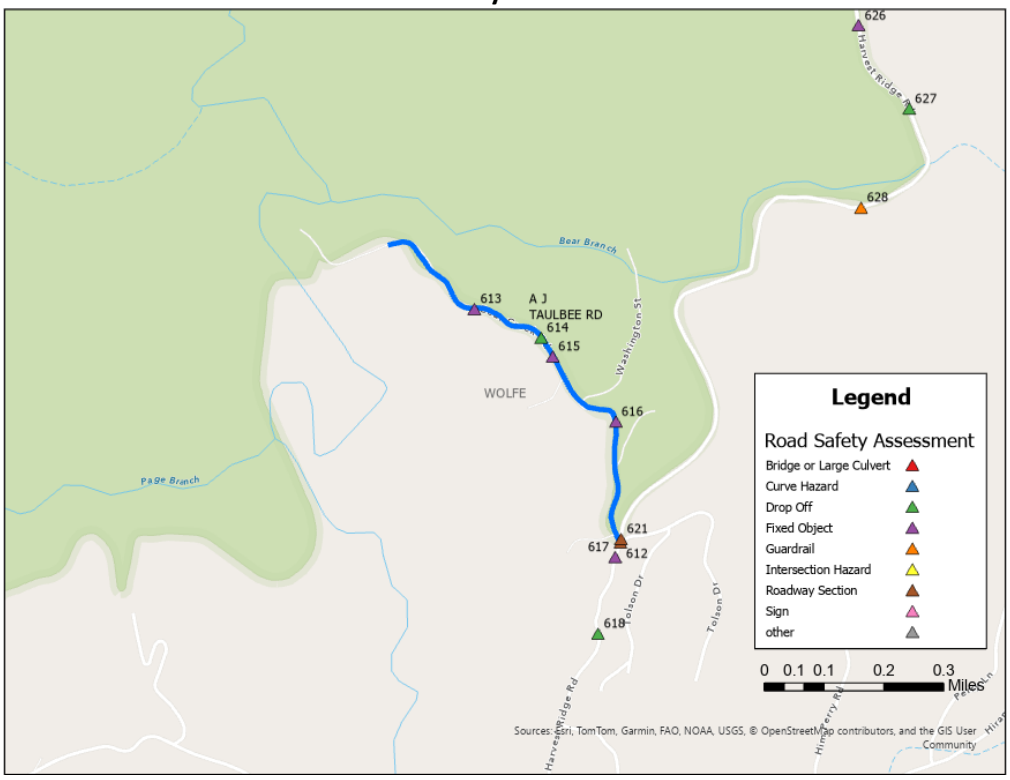
Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment

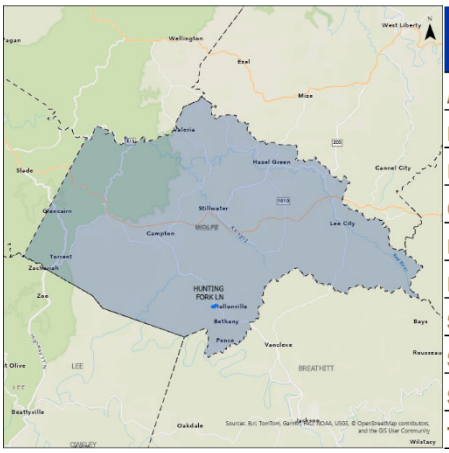


General Recommendations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	--	Recommendation
615	119-CR-1340 -000	A J TAULBEE RD	Drop Off	0-1	>10	--	Install Guardrail
Point ID	**RT_UNIQUE**	**Road Name**	**Issue Type**	**Object**	**Single / Series**	**Offset**	**Recommendation**
614	119-CR-1340 -000	A J TAULBEE RD	Fixed Object	Other; Flush Hydrant	Single	3-5	Install Type 2 Object Marker
616	119-CR-1340 -000	A J TAULBEE RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
617	119-CR-1340 -000	A J TAULBEE RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road

Hunting Fork Ln (119-CR-1148 -000)

Road Location Map and Crash History



Manner of Collision	Property Damage Only	Injury	Fatal	Total
ANGLE	0	0	0	**0**
BACKING	0	0	0	**0**
HEAD ON	0	0	0	**0**
OPPOSING LEFT TURN	0	0	0	**0**
REAR END	0	0	0	**0**
REAR TO REAR	0	0	0	**0**
SIDESWIPE-OPPOSITE	0	0	0	**0**
SIDESWIPE-SAME DIR	0	0	0	**0**
SINGLE VEHICLE	0	1	0	**1**
Total	**0**	**1**	**0**	**1**

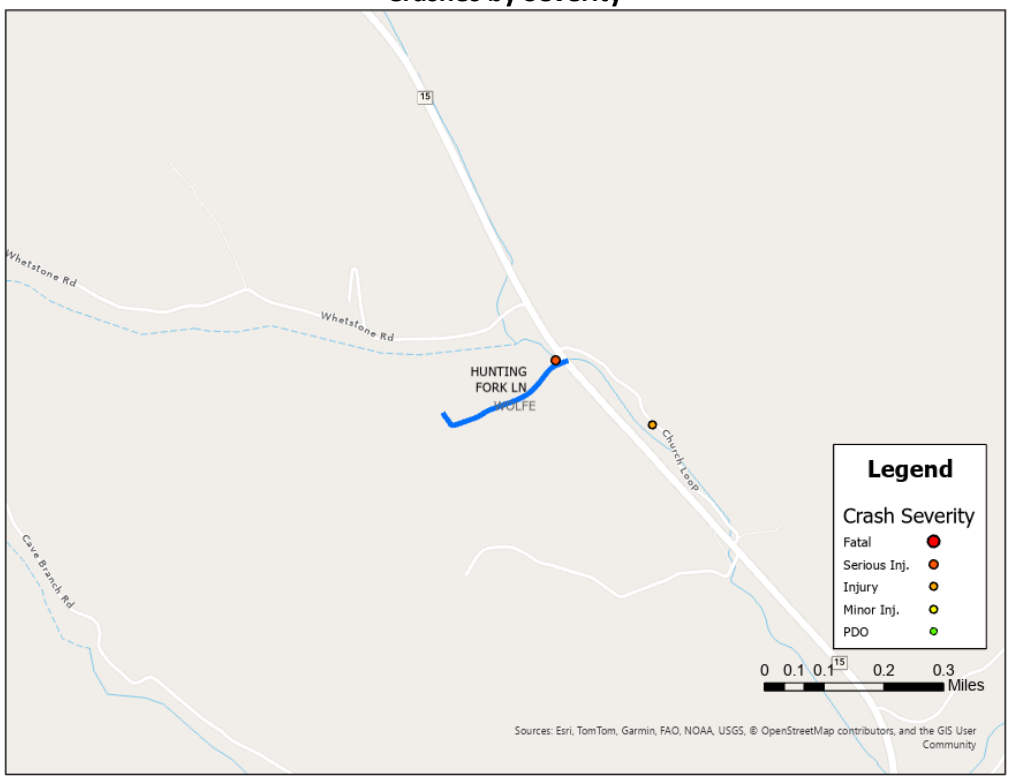
General Roadway Conditions

RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%
119-CR-1148 -000	HUNTING FORK LN	10	3-Fair	RHR 4 - 5-10 ft ~ recoverable	0-20

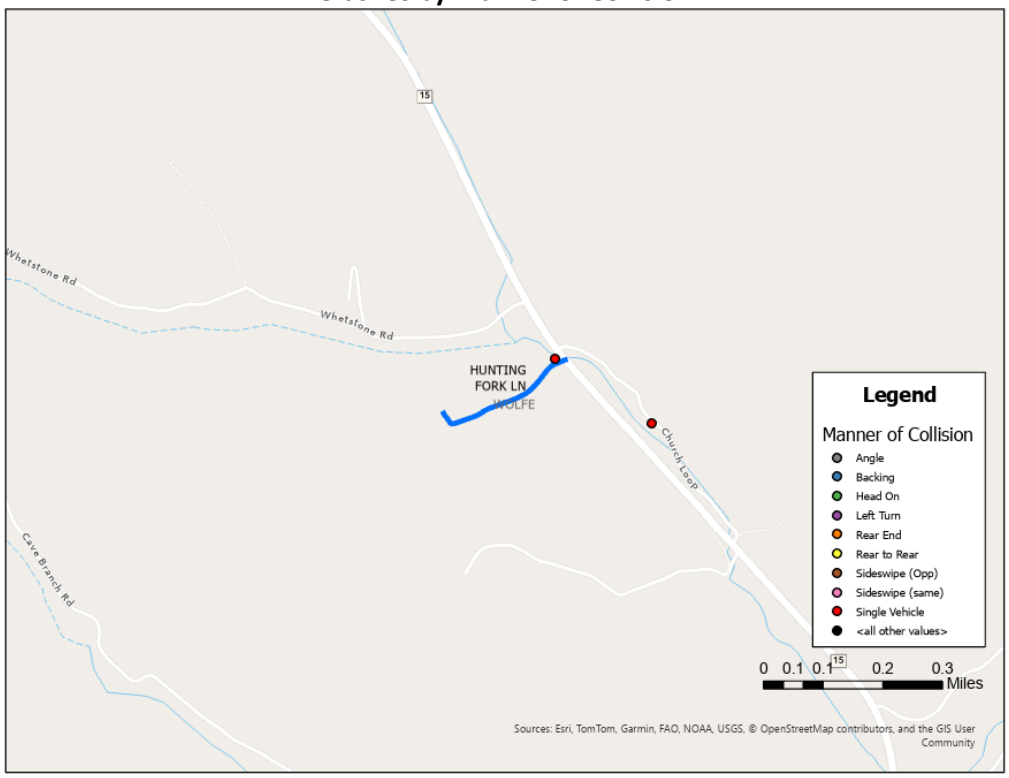
Roadway Typical Section



Crashes by Severity



Crashes by Manner of Collision



Road Safety Assessment



General Recommendations

Point ID	RT_UNIQUE	Road Name	Pavement Width (ft	Pavement Conditio	Roadside Hazard Rating	Shoulder Improve (%	Improve Should	Edgeline[1]	Curve Signin	Other Recommendations
789	119-CR-1148 -000	HUNTING FORK LN	10	3-Fair	RHR 4 - 5-10 ft ~ recoverable	0-20	✓	✓	✓	

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
790	119-CR-1148 -000	HUNTING FORK LN	Fixed Object	Utility Pole	Series	3-5	--

Other Roadways

General Roadway Conditions and Recommendations (Wolfe County)



Exhibit Wolfe-F1: General Roadway Conditions

Point ID	RT_UNIQUE	Road Name	Pavement Width	Pavement Condition	Roadside Hazard Rating	Shoulder/ Ditch Improvements (%)	Additional Comments	Improve Shoulder / Ditch	Edgeline[1]	Install Curve Alignment Signing	Other Recommendations
630	119-CR-1326 -000	ROCK BRIDGE RD	14	1	6	40-60		✓	✓	✓	
605	119-CR-1313 -000	CALABOOSE RIDGE RD	12	4	6	60-80		✓	✓	✓	
606	119-CR-1313 -000	CALABOOSE RIDGE RD	10	1	4	40-60		✓	✓	✓	
622	119-CR-1314 -000	HARVEST RIDGE RD	12	4	5	40-60		✓	✓	✓	
613	119-CR-1314 -000	HARVEST RIDGE RD	10	3	6	20-40	Characterizes first half of road	✓	✓	✓	
789	119-CR-1148 -000	HUNTING FORK LN	10	1	5	0-20		✓	✓	✓	
478	119-CR-1384 -000	RUSSEL DR	16	3	5	20-40		✓			
633	119-CR-1316 -000	CHIMNEY TOP RD	14	1	7	60-80		✓			
769	119-CR-1321 -000	MILLER RDG RD	12	4	3	0-20		✓			
777	119-CR-1322 -000	GLENCAIRN RD	12	4	6	20-40		✓			
774	119-CR-1322 -000	GLENCAIRN RD	12	3	4	40-60		✓			
612	119-CR-1331 -000	BEAR BRANCH	12	2	3	20-40		✓			
603	119-CR-1015 -000	REXVILLE RD	12	1	5	20-40	Large break in pavement, forcing one lane traffic.	✓			Repair and Stabilize Roadway
600	119-CR-1015 -000	REXVILLE RD	10	2	4	20-40		✓			
787	119-CR-1285 -000	GROVER BACK RD	10	1	3	0-20		✓			

Exhibit Wolfe-F2: General Roadway Recommendations

Curve Recommendations (Wolfe County)

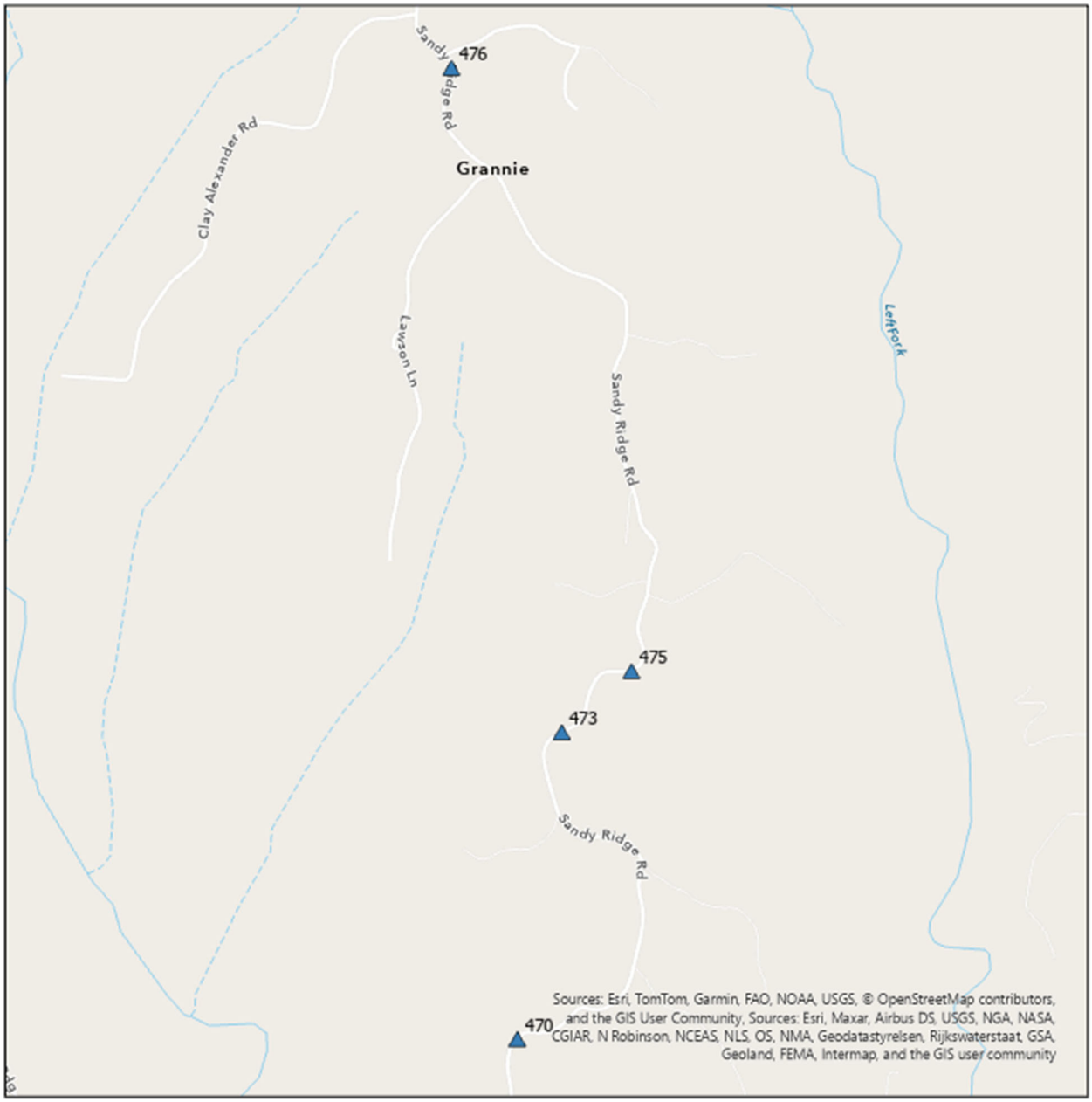


Exhibit Wolfe-F3: Focus Road Curves

Point ID	RT_UNIQUE	Road Name	Issue Type	Comments	Vegetation?	Recommendation
470	065-CR-1049 -000	SANDY RIDGE RD	Curve Hazard	Curve Obscured, vegetation, Intersection in Curve	Yes	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons); consider dotted line through intersection/stop bar; Clear Vegetation
473	065-CR-1049 -000	SANDY RIDGE RD	Curve Hazard	Curve Obscured, vegetation	No	Add Curve Warning Sign; Clear Vegetation
475	065-CR-1049 -000	SANDY RIDGE RD	Curve Hazard	Entrance in Curve, Curve Obscured	No	Add Curve Warning Sign and Curve Guidance (Large Arrow or Chevrons)
476	065-CR-1049 -000	SANDY RIDGE RD	Curve Hazard	Curve Obscured, vegetation	Yes	Add Curve Warning Sign; Clear Vegetation

Exhibit Wolfe-F4: Curve Recommendations

Roadside Drop Off Recommendations (Wolfe County)

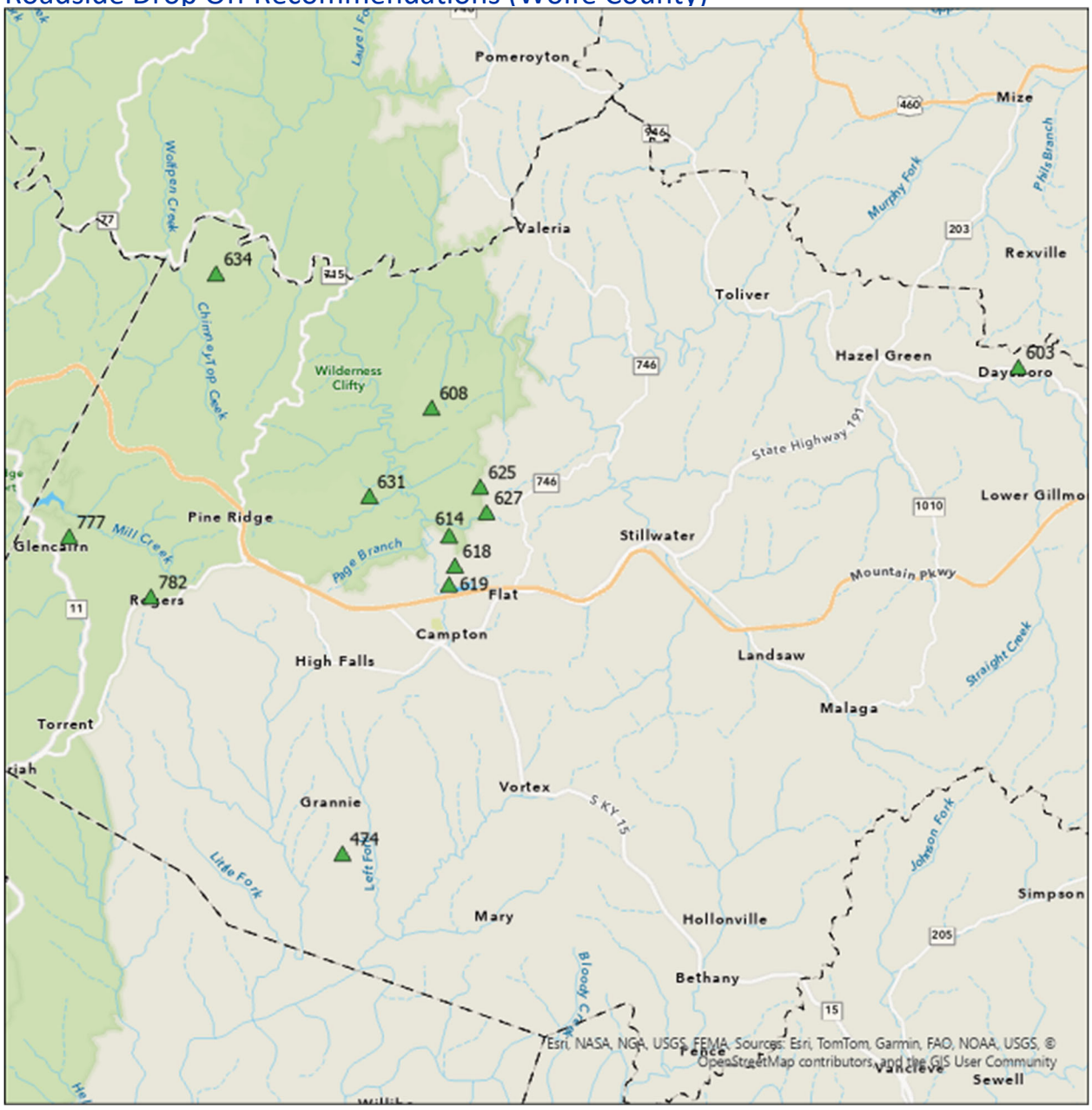


Exhibit Wolfe-F5: Roadside Drop Off Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Drop Off Offset	Drop Off Height	Recommendation
614	119-CR-1340 -000	A J TAULBEE RD	Drop Off	0-1	>10	Install Guardrail
618	119-CR-1331 -000	BEAR BRANCH	Drop Off	1-3	5-10	Shouldering / Repair if Possible; Install Object Marker
619	119-CR-1331 -000	BEAR BRANCH	Drop Off	1-3	>10	Install Guardrail
608	119-CR-1313 -000	CALABOOSE RIDGE RD	Drop Off	1-3	>10	Install Guardrail
634	119-CR-1316 -000	CHIMNEY TOP RD	Drop Off	3-5	>10	Install Guardrail
777	119-CR-1322 -000	GLENCAIRN RD	Drop Off	>5	>10	Install Guardrail
782	119-CR-1322 -000	GLENCAIRN RD	Drop Off	1-3	>10	Install Guardrail
625	119-CR-1314 -000	HARVEST RIDGE RD	Drop Off	1-3	>10	Install Guardrail
627	119-CR-1314 -000	HARVEST RIDGE RD	Drop Off	1-3	>10	Install Guardrail
600	119-CR-1015 -000	REXVILLE RD	Drop Off	>5	>10	Install Guardrail
603	119-CR-1015 -000	REXVILLE RD	Drop Off	3-5	5-10	Shouldering / Repair if Possible
631	119-CR-1326 -000	ROCK BRIDGE RD	Drop Off	1-3	>10	Install Guardrail
474	065-CR-1049 -000	SANDY RIDGE RD	Drop Off	1-3	>10	Install Guardrail

Exhibit Wolfe-F6: Roadside Drop Off Recommendations

Fixed Object Recommendations (Perry County)

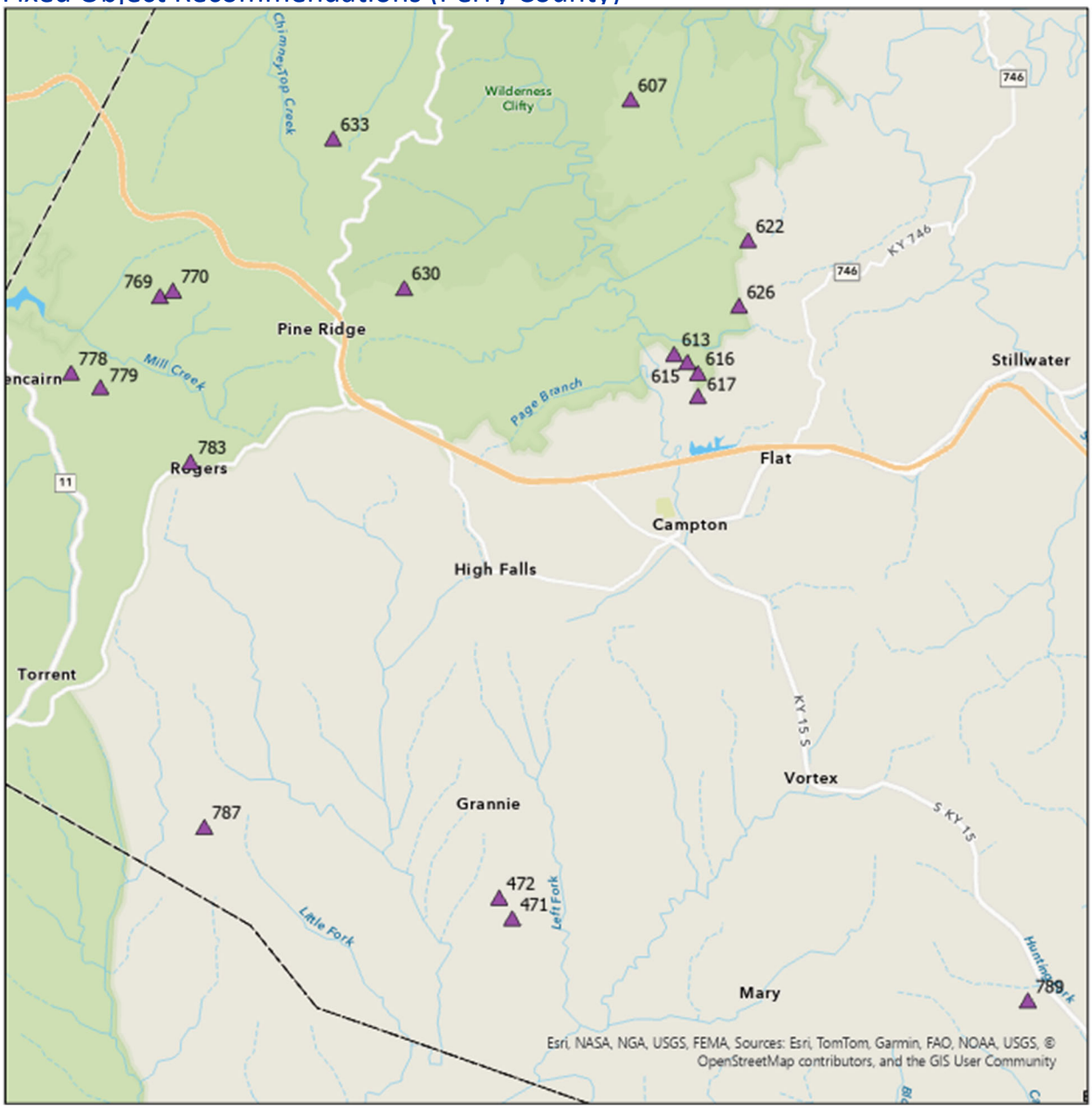


Exhibit Wolfe-F7: Fixed Object Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Object	Single / Series	Offset	Recommendation
613	119-CR-1340 -000	A J TAULBEE RD	Fixed Object	Other; Flush Hydrant	Single	3-5	Install Type 2 Object Marker
626	119-CR-1314 -000	HARVEST RIDGE RD	Fixed Object	Other; Hydrant	Single	>5	Install Type 2 Object Marker
778	119-CR-1322 -000	GLENCAIRN RD	Fixed Object	Utility Pole	Single	1-3	Install Type 2 Object Marker
622	119-CR-1314 -000	HARVEST RIDGE RD	Fixed Object	Utility Pole	Single	3-5	--
471	065-CR-1049 -000	SANDY RIDGE RD	Fixed Object	Other; Fence	Series	1-3	See Policy Recommendations
607	119-CR-1313 -000	CALABOOSE RIDGE RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
616	119-CR-1340 -000	A J TAULBEE RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
630	119-CR-1326 -000	ROCK BRIDGE RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
633	119-CR-1316 -000	CHIMNEY TOP RD	Fixed Object	Tree	Series	1-3	Trim low branches and remove trees < 1 ft from road
617	119-CR-1331 -000	BEAR BRANCH	Fixed Object	Tree	Series	3-5	--
770	119-CR-1321 -000	MILLER RDG RD	Fixed Object	Tree	Series	3-5	--
787	119-CR-1285 -000	GROVER BACK RD	Fixed Object	Tree	Series	3-5	--
472	065-CR-1049 -000	SANDY RIDGE RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
615	119-CR-1340 -000	A J TAULBEE RD	Fixed Object	Utility Pole	Series	1-3	Install Type 2 Object Marker
789	119-CR-1148 -000	HUNTING FORK LN	Fixed Object	Utility Pole	Series	3-5	--
769	119-CR-1321 -000	MILLER RDG RD	Fixed Object	Utility Pole	Series	>5	--
779	119-CR-1322 -000	GLENCAIRN RD	Fixed Object	Utility Pole	Series	>5	--
783	119-CR-1322 -000	GLENCAIRN RD	Fixed Object	Utility Pole	Series	>5	--

Exhibit Wolfe-F8: Fixed Object Recommendations

Guardrail Recommendations (Wolfe County)

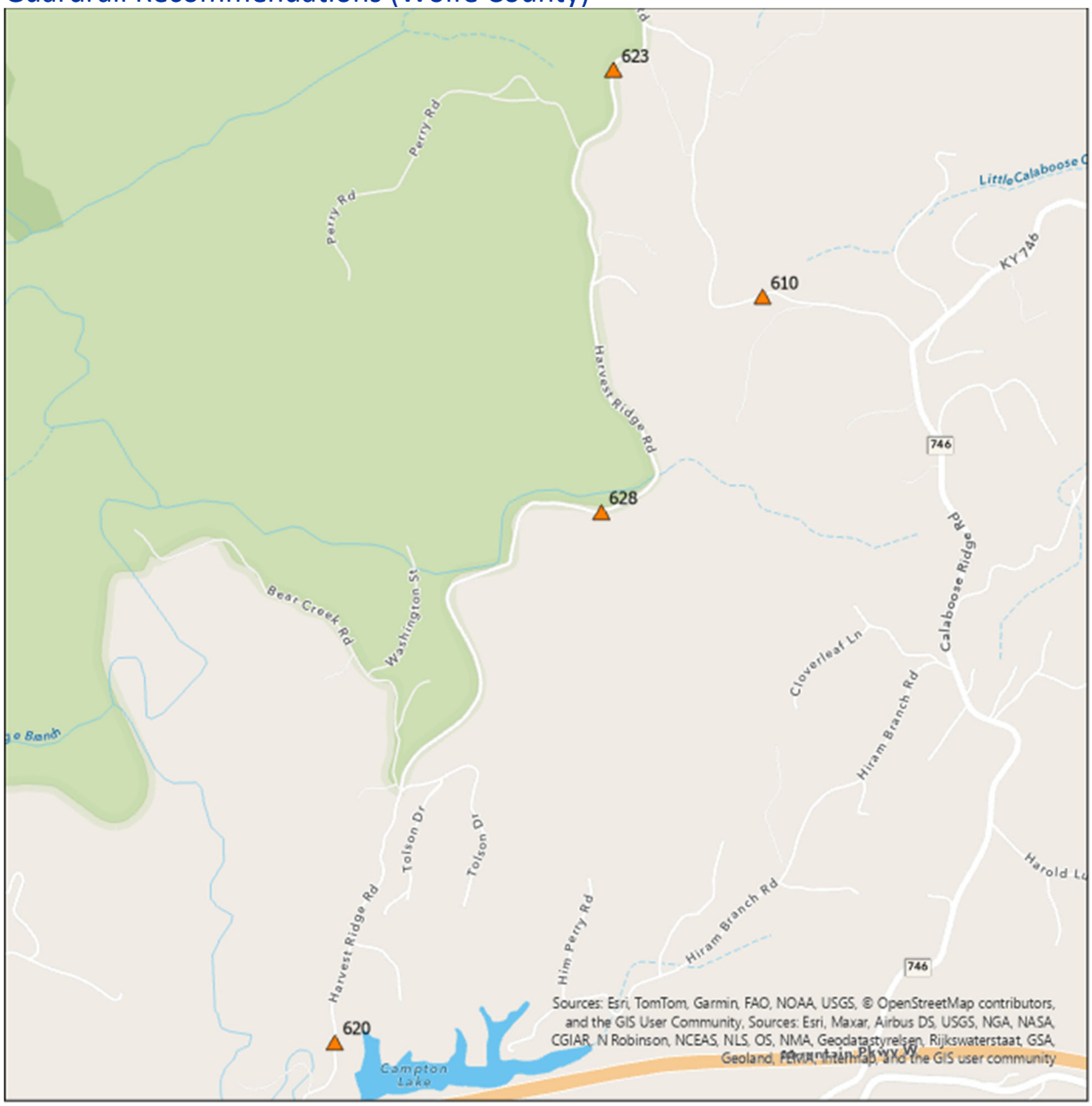


Exhibit Wolfe-F9: Guardrail Locations

Point ID	RT_UNIQUE	Road Name	Issue Type	Condition	Meet Warrants	End Treatments	Recommendation
610	119-CR-1313 -000	CALABOOSE RIDGE RD	Guardrail	Good	Maybe	None	Evaluate for Warrants; remove if not met, install appropriate end treatments if warranted; Type 3 Object markers be installed as a temporary measure.
620	119-CR-1331 -000	BEAR BRANCH	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
623	119-CR-1314 -000	HARVEST RIDGE RD	Guardrail	Fair	Maybe	None	Evaluate for Warrants; If met install appropriate end treatments; Type 3 Object Markers may be used if met
628	119-CR-1314 -000	HARVEST RIDGE RD	Guardrail	Fair	No	None	Remove

Exhibit Wolfe-F10: Guardrail Recommendations

Other Recommendations (Wolfe County)

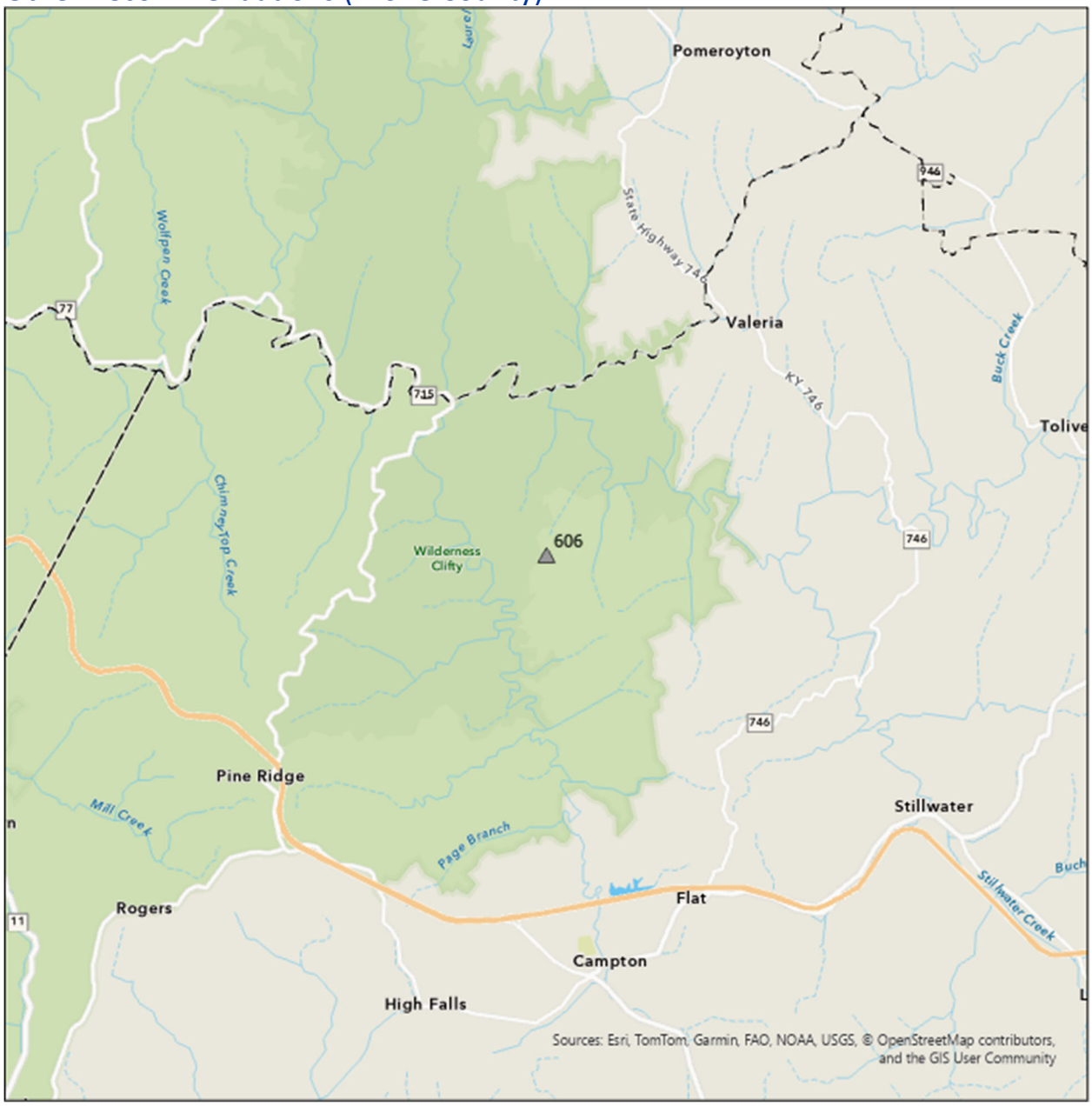


Exhibit Wolfe-F11: Other Item Locations

Point ID	RT_UNIQUE	RD_NAME	Issue Type	Description	Recommendation
606	119-CR-1313 -000	CALABOOSE RIDGE RD	other	Unpaved section of road	Pave Roadway

Exhibit Wolfe-F12: Other Item Recommendations