BATESVILLE PIKE

ROAD SAFETY AUDIT FINDINGS REPORT

July 2025

FINAL REPORT

METROPLAN
SMART PLANNING MAKES SMART PLACES.

SAFETY ACTION PLAN
CENTRAL ARKANSAS

This report was funded in part through grant(s) from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation. The views and opinions of the authors expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation.

Notice of Nondiscrimination

Metroplan complies with all civil rights provisions of the federal statutes and related authorities that prohibit discrimination in programs and activities receiving federal financial assistance. Therefore, Metroplan does not discriminate on the basis of race, sex, color, age, national origin, religion, disability, or income status, in admission or access to and treatment in Metroplan's programs and activities, as well as Metroplan's hiring or employment practices. Complaints of alleged discrimination and inquiries regarding Metroplan's nondiscrimination policies may be addressed to Sydney Dozier, Title VI/ADA/504 Coordinator, 501 West Markham Street, Suite B, Little Rock, AR 72201, (501) 372-3300, or the following e-mail address: sdozier@metroplan.org. (Hearing and speech impaired may dial 711.)

This notice is available upon request from the Title VI/ADA/504 Coordinator in large print, audiotape or braille.

Table of Contents

List of Tables

Introduction

Central Arkansas Safety Action Plan

Metroplan, the Metropolitan Planning Organization (MPO) for Central Arkansas, developed the Central Arkansas Safety Action Plan under the United States Department of Transportation (USDOT) Safe Streets and Roads for All (SS4A) Program. Adopted in November 2024, the Central Arkansas Safety Action Plan serves as the region's roadmap to ensure safe streets and roads for all travelers. The Safety Action Plan identifies key steps needed for Central Arkansas to achieve zero fatal and serious injuries on its roadways. The plan includes regional safety analysis and public engagement to identify safety issues, project and policy recommendations, and an implementation plan that prioritizes locations for deploying safety countermeasures.

The safety analysis, which reviewed historic crash data from 2018 through 2022, led to the development of a Regional High Injury Network (HIN). This HIN was created by selecting roadway segments and intersections with the highest density of fatal and serious injury crashes over the five-year analysis period. The HIN served as the basis for developing project recommendations and identifying locations for more detailed analysis and suggested improvements.

Following the completion of the Central Arkansas Safety Action Plan, Metroplan utilized the remaining funds from their SS4A grant to conduct road safety audits (RSAs) on roads in the four Metroplan counties. Metroplan staff collaborated with Pulaski County staff to select two corridors within Pulaski County for RSAs: Batesville Pike and Pratt Road. An 8.7-mile segment of Batesville Pike, between West Cleland Road and the North Little Rock city limit, was one of the corridors chosen for the study. The results of this RSA are provided in this report, while the Pratt Road RSA results are provided in a separate report focusing on Pratt Road.

Within the Batesville Pike study corridor, there are three segments with a high density of fatal and serious injury crashes, identified as part of the Region's HIN. These segments were combined for the RSA to form a continuous section of Batesville Pike for detailed analysis. It should be noted that four additional HIN segments are located on Batesville Pike north of the study corridor within Pulaski County. Kellogg Acres Road, which intersects Batesville Pike at the southern end of the study corridor, also has a HIN segment near Batesville Pike.

Throughout this document, "Batesville Pike" or "the study corridor" will refer to the 8.7-mile segment of Batesville Pike between West Cleland Road and the North Little Rock city limit, unless otherwise specified.

Road Safety Audit Process

An RSA is a formal safety examination of a transportation facility conducted by an independent, experienced, multidisciplinary RSA team. These teams are independent of the facility's owner and operator, adopting a proactive approach that identifies not only locations where crashes have occurred but also areas with potential crash risks. While RSAs involve formal safety examinations, it is important to note that they do not review compliance with standards.

The Batesville Pike RSA followed the 8-step RSA process as recommended by the FHWA and described in the *FHWA Road Safety Audit Guidelines* document (Publication FHWA-SA-06-06) and the *Road Safety Audit Toolkit for Federal Land Management Agencies and Tribal Governments* document (Publication FHWA-FLH-10-0011). A summary of the 8-step RSA process is provided in **Figure 1**.

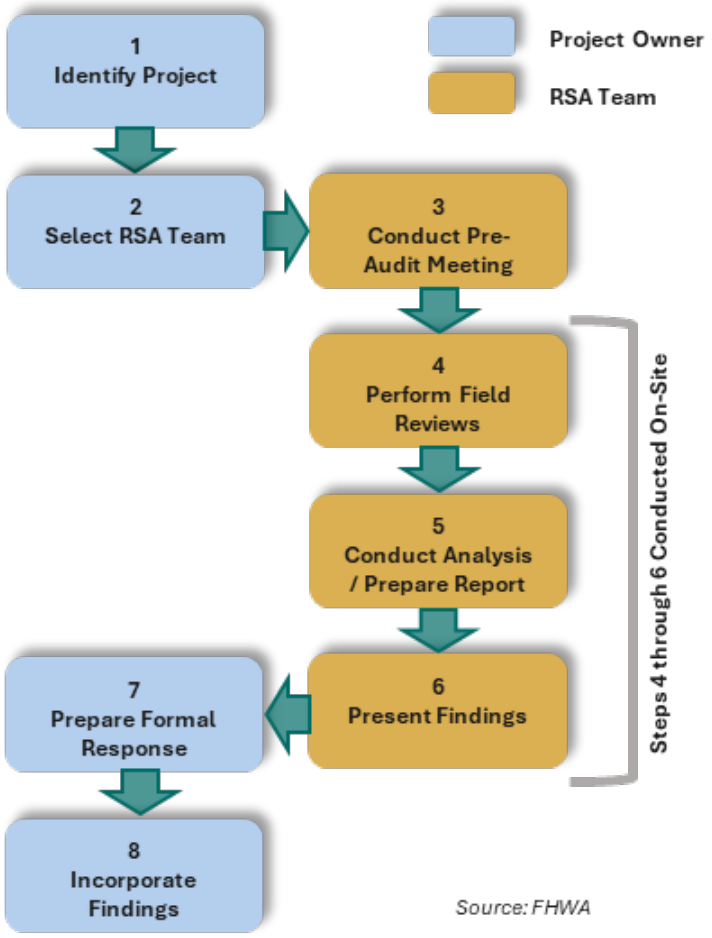


Figure 1: Road Safety Audit Process

The process assigns responsibility of the eight (8) steps to two (2) different groups: Project Owner and RSA team. The Project Owner for the Batesville Pike RSA is Pulaski County. A description of the eight (8) steps are as follows.

Step 1 – Identify Project: Three segments of Batesville Pike, between West Cleland Road and the North Little Rock city limit, are on the HIN in the Central Arkansas Safety Action Plan developed by Metroplan. Therefore, Metroplan and Pulaski County staff identified a need for an RSA on Batesville Pike in order to proactively improve safety.

Step 2 – Select RSA Team: The RSA team was selected by Pulaski County staff during the Pre-Audit meeting. The team included representatives from Metroplan, Pulaski County, and the project consultants.

Step 3 – Conduct Pre-Audit Meeting: A general project Pre-Audit meeting was conducted virtually on March 6, 2025. The purpose of this meeting was to discuss the general RSA process, exchange data, and identify participants to include in subsequent activities.

Step 4 – Perform Field Reviews: The field review included an examination of Batesville Pike, between West Cleland Road and the North Little Rock city limit. The RSA team conducted their field review on April 16, 2025. The project consultants also drove and created a video log of the corridor during both daytime and nighttime conditions.

Step 5 – Conduct Analysis/Prepare Report: Following the field review, the RSA team developed a set of observations to present to representatives of Metroplan and Pulaski County. The RSA team identified suggested corridor-wide safety improvements for Batesville Pike, in addition to improvements that applied to specific point locations along the corridor.

Step 6 – Present Findings: The observations and safety concerns that were identified during the RSA field review, as well as the additional suggested improvements developed by the consultant team after the field review, were presented to Metroplan and Pulaski County staff during a virtual RSA Initial Findings meeting conducted on April 29, 2025. The consultant team then created a written report of the findings and provided the report to Metroplan and Pulaski County.

Step 7 – Prepare Formal Response: A formal response to the RSA was not prepared by Pulaski County, however the written report was sent to the County and they were provided with an opportunity to review and comment on the report before it was finalized.

Step 8 – Incorporate Findings: The final step in the RSA process is for Pulaski County, as the owner of the project, to work towards implementing the agreed-upon suggested improvements from the RSA report in coordination with state and local partners.

Stakeholder Coordination

Pre-Audit Meeting

The Batesville Pike RSA began with a virtual Pre-Audit meeting on March 6, 2025. This meeting included members of the RSA Team, including representatives from Metroplan and Pulaski County. All meeting attendees are listed in **Table 1**.

Table 1: Pre-Audit Meeting Attendees

Agency	Representative(s)
Pulaski County	Matt Breckenridge Barry Hyde Travis Montgomery Shane Ramsey Tab Townsell
Metroplan	Hans Haustein
Kimley-Horn **(RSA Team Consultant)**	Tom Fowler Kate Reichard
Crafton Tull **(RSA Team Subconsultant)**	Dave Roberts
TEC **(RSA Team Subconsultant)**	Melissa Banks

The purpose of the Pre-Audit meeting was to brief Pulaski County staff that selected Batesville Pike for the RSA on the RSA process, as well as review the pre-audit crash data analyses, and obtain information from the County

staff to assist the RSA team in conducting the RSA, such as identifying other Pulaski County staff that should be included for the RSA field review. Pulaski County staff briefed the RSA team on a variety of topics that were useful in conducting the RSA, such as roadway geometry challenges like vertical and horizontal curves and skewed intersections, crash history, vehicular volume data, and bicycle tendencies.

Field Review

The Batesville Pike RSA field review was conducted on April 16, 2025. The RSA team began by meeting at the Pulaski County Road and Bridge Office to brief the Pulaski County staff on the RSA purpose, process, and benefits. The team also discussed pre-audit data analyses and obtained additional information from attendees to assist the RSA team in conducting the RSA. All field review participants are listed in **Table 2**.

Table 2: Field Review Participants

Agency	Representative(s)
Pulaski County	Matt Breckenridge* Shane Ramsey Tab Townsell
Metroplan	Hans Haustein
Kimley-Horn **(RSA Team Consultant)**	Tom Fowler Kate Reichard
TEC **(RSA Team Subconsultant)**	Finley Vinson

**Matt Breckenridge attended the pre-field review meeting held on the morning of the field review at the Pulaski County Road and Bridge Office.*

After the briefing, the RSA team went to the intersection of Batesville Pike and Kellogg Acres Road to begin observations of Batesville Pike. The RSA team then conducted observations from the south end of the study corridor to the north end, stopping at several key points along the way, such as the Jacksonville Cato Road intersection and a pull out within the 's' curve between Angel Lane and Greer Road. The RSA team members identified safety concerns, strengths, weaknesses, and possible improvements along Batesville Pike. Anecdotal experiences, traffic volume data, and past projects were discussed as well.

Initial Findings Recap

Upon completion of the RSA field review, the RSA team developed a set of identified observations and safety concerns to share with Metroplan and Pulaski County staff at the Initial Findings meeting. This meeting was conducted virtually on April 29, 2025. All meeting attendees are listed in **Table 3**.

Table 3: Initial Findings Meeting Attendees

Agency	Representative(s)
Pulaski County	Matt Breckenridge Barry Hyde Shane Ramsey Tab Townsell
Metroplan	Hans Haustein
Kimley-Horn **(RSA Team Consultant)**	Tom Fowler Kate Reichard
TEC **(RSA Team Subconsultant)**	Finley Vinson

During the Initial Findings meeting, the RSA team presented the list of observations and safety concerns identified during the RSA field review. Preliminary suggested safety countermeasures were also discussed with Metroplan and Pulaski County staff. This discussion allowed staff to provide feedback, ask questions, and suggest additional or alternative safety countermeasures.

Existing Conditions

General Roadway Characteristics

Batesville Pike, between West Cleland Road and the North Little Rock city limit, is an 8.7-mile corridor in northern Pulaski County. Throughout this document "Batesville Pike" or "the study corridor" will be referring to the segment of Batesville Pike between West Cleland Road and the North Little Rock city limit, unless otherwise noted. Batesville Pike is owned and maintained by Pulaski County.

Batesville Pike generally runs in the north-south direction, as shown in **Figure 2**, and is primarily surrounded by single family housing and small businesses, with some convenience stores located at major intersections. Batesville Pike provides a connection to the City of North Little Rock and State Highway 107. Batesville Pike becomes State Highway 89 east of State Highway 107, which connects to State Highway 5 and Interstate 57 in the City of Cabot.

Batesville Pike consists of two lanes, with one in each direction. The study corridor does not have a sidewalk or a bike lane along either side of the roadway, except for a small section of existing sidewalk at the north corner of Batesville Pike and Jacksonville Conway Road. There are no transit facilities along Batesville Pike.

The speed limit on Batesville Pike within the 8.7-mile study corridor changes several times in both directions. Posted speed limits and advisory speeds that were observed along the corridor in each direction are included in **Table 4**.

Figure 2: Batesville Pike Study Corridor Extents

Table 4: Posted Speed Limits and Advisory Speeds on Batesville Pike

Posted Speed	Sign Type	Location
Signage for Northbound Vehicles on Batesville Pike (from South to North)		
15 mph	Advisory Speed Right-Turn Warning Sign	North of City of North Little Rock City Limit
35 mph	Speed Limit Sign	North of Kellogg Acres Road
35 mph	Speed Limit Sign	South of Gamma Lane
35 mph	Speed Limit Sign	South of Angel Lane
20 mph	Advisory Speed Reverse Curve Warning Sign	North of Old Tom Box Road
20 mph	Advisory Speed Left-Turn Sign	Noth of Old Tom Box Road (Second Part of the Reverse Curve)
40 mph	Speed Limit Sign	Watson Road Intersection
20 mph	Advisory Speed Reverse Curve Warning Sign	South of Reverse Curve between Temple Drive and Watson Road
40 mph	Speed Limit Sign	North of Temple Drive
40 mph	Speed Limit Sign	North of Frenchman Mountain Road
40 mph	Speed Limit Sign	North of Fortson Road
40 mph	Speed Limit Sign	North of Jacksonville Conway Road
Signage for Southbound Vehicles on Batesville Pike (from North to South)		
40 mph	Speed Limit Sign	South of Sayles Road
40 mph	Speed Limit Sign	South of Lost Corner Road
40 mph	Speed Limit Sign	South of Republican Road
40 mph	Speed Limit Sign	South of Jacksonville Conway Road
40 mph	Speed Limit Sign	Between Jacksonville Conway Road and Fortson Road
40 mph	Speed Limit Sign	Between Fortson Road and Frenchman Mountain Road
40 mph	Speed Limit Sign	Between Frenchman Mountain Road and Bridge Creek Road
40 mph	Speed Limit Sign	South of Temple Drive
20 mph	Advisory Speed Reverse Curve Warning Sign	South of Temple Drive
40 mph	Speed Limit Sign	Between Reverse Curve South of Temple Drive and Watson Road
20 mph	Advisory Speed Reverse Curve Warning Sign	South of Watson Road
15 mph	Advisory Speed Right-Turn Warning Sign	North of Northview Road
35 mph	Speed Limit Sign	South of Northview Road
35 mph	Advisory Speed Curve Warning Sign	Middle of the Series of Curves Between Angel Lane and Greer Road
35 mph	Speed Limit Sign	South of Greer Road
35 mph	Speed Limit Sign	South of Jacksonville Cato Road
35 mph	Speed Limit Sign	South of Kellogg Acres Road
15 mph	Advisory Speed Left-Turn Warning Sign	North of City of North Little Rock City Limit

Average daily traffic (ADT) data provided by ARDOT's Interactive ADT Web App was analyzed along Batesville Pike, as well as along Jacksonville Cato Road. ADT counts were taken most recently in 2023, when approximately 2,400 vehicles were counted on Batesville Pike just south of the Frenchman Mountain Road intersection and 7,100 vehicles were counted on Batesville Pike between Jacksonville Cato Road and Kellogg Acres Road. Along Jacksonville Cato Road, approximately 1,500 vehicles were counted just west of Batesville Pike and 3,800 vehicles were counted just east of Batesville Pike.

Historic Crash Data

The Central Arkansas Safety Action Plan used 2018 through 2022 crash data to develop the HIN, as it was the most recent full five years of data at the time the development of the HIN began. For the Batesville Pike RSA, more recent crash data from 2019 through 2023 was analyzed. During this crash data analysis period, there were a total of 112 crashes along the 8.7-mile study corridor of Batesville Pike. Detailed crash diagram maps are included in

Appendix A.

Among the 2019 through 2023 crashes along Batesville Pike, one resulted in a fatal injury, seven resulted in suspected serious injuries, and 25 resulted in suspected or potential minor injuries. Approximately 65 percent of all crashes involved a single motor vehicle, including six of the serious injury crashes. Nearly all the single motor vehicle crashes were reported with a first harmful event related to running off the road and most of the single motor vehicle crashes were reported with the lighting condition as daylight. While most of the crashes of all severities are clustered along horizontal and vertical curves, five of the serious injury crashes occurred at relatively straight sections, only one of which occurred at night.

Existing Plans

Existing plans for future construction or safety improvements on Batesville Pike were not identified during the RSA study.

RSA Observations & Recommendations

Strengths

During the Batesville Pike RSA field review, several positive aspects of the study corridor were recognized by the RSA team and are worth noting. It is recommended that efforts be made to ensure these features continue to be strengths during future maintenance and operation of Batesville Pike and that these features are incorporated elsewhere along the study corridor and into the design and construction of new Pulaski County roads.

Sign Retroreflectivity

Almost all the roadway signage observed during the nighttime field review was retroreflective and easy to see. Several signs, primarily chevron and stop signs, had retroreflective tape on the sign posts to further increase driver awareness of the signs. Retroreflective roadway signage is essential for nighttime sign visibility, particularly along rural corridors with limited or no corridor lighting. An example of retroreflective chevron signs with

retroreflective tape on the posts along Batesville Pike for southbound vehicles approaching the curve near Old Tom Box Road is shown at night in **Figure 3**.

Figure 3: Retroreflective Chevrons at Night

Double-Posted Stop Signs

Most approaches to the all-way stop-controlled intersections along the study segment of Batesville Pike had double-posted stop signs, many of which also had double-posted STOP AHEAD warning signs in advance of the intersection. Double-posted stop signs increase driver awareness of the intersection's stop condition. This is particularly beneficial along rural roadways, where drivers tend to encounter fewer intersections and can travel at higher speeds and therefore may be less likely to stop if additional signage is not provided. An example of double-posted stop signs with retroreflective tape on the posts on the southbound approach of Batesville Pike to Jacksonville Conway Road is shown at night in **Figure 3**.

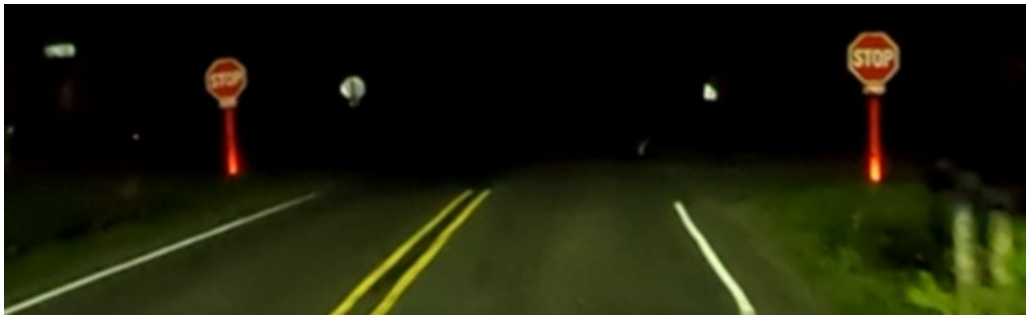


Figure 4: Double-Posted Stop Signs

Suggested Improvements

The RSA team identified suggested improvements based on the daytime and nighttime field reviews of Batesville Pike as well as discussions with the staff representing Metroplan and Pulaski County. Suggested improvements are provided for corridor-wide issues as well as specific locations along the study segment of Batesville Pike. The following information is provided for each of the 15 corridor-wide and location-specific suggested improvements in **Table 5**.

- **Location:** Location is defined as either a corridor-wide improvement which is applied to large parts or the entirety of the Batesville Pike RSA study segment, between West Cleland Road and the North Little Rock city limit, or a specific location along the study segment. For location-specific suggested improvements, road segment or intersection details are provided.

- **Observations:** A summary of the observations made by the RSA team and relevant crash data is provided for each suggested improvement.
- **Suggested Improvements:** Suggested improvements are provided for a range of implementation timeframes identified below. Generally, immediate suggested improvements are considered to be lower-cost countermeasures that address immediate safety issues, such as signing a sharp turn that requires a reduction in speed. Long-term suggested improvements are generally higher-cost improvements that may require additional capital programming or development of engineering plans, such as the reconfiguration of an intersection.
    - Immediate: Less than 1 year
    - Short-Term: 1 – 2 years
    - Mid-Term: 2 – 5 years
    - Long-Term: 5+ years
- **Cost Estimates for Suggested Improvements:** An opinion of probable cost for each suggested improvement is provided. The cost estimation methodology is described in the following section and a list of the unit costs for individual pay items used to develop the cost estimates is provided in **Appendix B**.
- **Photos:** Photos, when available, have been provided to assist the reader in visualizing the described observations and suggested improvements.
- **Conceptual Layouts:** A note is included in the recommendation table if a conceptual layout was developed for the recommendation. Conceptual layouts are included in **Appendix C**.

Table 5: Field Review Observations and Suggested Improvements

1. Retroreflective Object Markers

Location: Corridor-Wide

Observations

- Many of the culverts and bridges on Batesville Pike have objects on the right side of the road but not the left side, and several were missing object markers on both sides.
- Many of the mailboxes are also missing object markers.

Immediate Improvements

- Install object markers on both sides of all culverts and bridges in both directions on Batesville Pike.
- Add reflective object markers to all fixed objects, including mailboxes, along Batesville Pike.

Cost Estimate

Immediate: $26,600

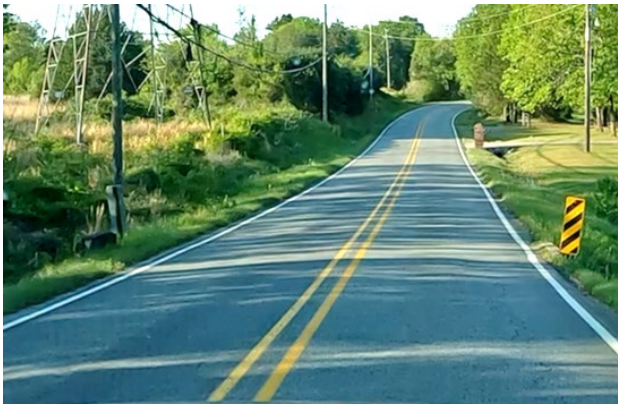


Figure 5: Object markers only on the right side of a culvert in both directions on Batesville Pike between Northview Road and Angel Lane.

2. Stop-Controlled Intersection Signage

Location: Corridor-Wide

Observations

- Pulaski County representatives noted that stop signs seem to come up faster than drivers might expect, particularly at night when drivers on dark rural highways may be more focused on the road and not on signage.
- Pulaski County representatives also noted they receive complaints about vehicles running stop signs on Batesville Pike.
- Several stop ahead warning signs are placed close to the stop sign and may not provide sufficient warning for vehicles to come to a comfortable stop in time. For example, the southbound approach to Jacksonville Conway Road has stop ahead warning signs located 180-feet in advance of the stop signs and the northbound approach to Jacksonville Cato has a stop ahead warning sign located 200-feet in advance of the stop sign. Although both signs are within MUTCD minimums for the posted speed, drivers that are speeding and drivers at night may feel the stop signs come up faster than expected.
- Several, but not all, approaches to all way stop-controlled intersections have stop signs double posted.
- Several, but not all, stop signs have reflective tape on the sign posts.
- Several stop signs have plaques stating 4-WAY, however ARDOT standard are to use plaques All WAY plaques.
- Some intersections with double posted signs only have a plaque under one sign rather than both signs.

Immediate Improvements

- Adjust location stop ahead warning signs are installed in advance of the stop sign so that drivers have more advanced notice of stop signs.
- Double-post stop signs at all stop-controlled approaches of intersections along Batesville Pike.
- Add an ALL WAY plaque under all stop signs at all-way stop intersections.
- Add reflective tape on all stop sign posts and consider adding reflective tape on key warning signs such as the stop ahead sign.
- Add STOP AHEAD pavement marking at the approaches to all stop-controlled intersections.
- Restripe stop bars and add STOP pavement marking at all stop-controlled intersections.

Cost Estimate

Immediate: $22,500

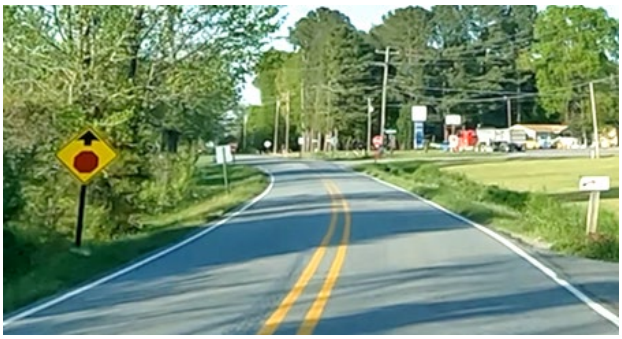


Figure 6: Stop ahead warning sign only exists on the left side of the northbound approach of Batesville Pike to Jacksonville Conway, but signs are double posted for the other three approaches to the intersection.

Figure 7: Stop ahead warning signs are double posted for the southbound approach of Batesville Pike to Jacksonville Conway and signs are located approximately 180-feet in advance of the intersection.

Figure 8: Double posted stop ahead warning signs and stop signs with red reflective tape on the sign posts located at the southbound approach of Batesville Pike to Republican Road.

3. Intersection Within Curve Warning Signage

Location: Corridor-Wide

Observations

- Many of the intersections along Batesville Pike are within horizontal and vertical curves, so approaching drivers on Batesville Pike may not see the intersection or anticipate vehicles pulling out of an intersection.
- A majority of the crashes within the Batesville Pike study area occurred within horizontal and vertical curves and many of the crashes were at intersections within the curves.

Immediate Improvements

- Post advance warning signs for intersections where approaching drivers have limited visibility of the intersection, particularly intersections within or adjacent to horizontal or vertical curves.

Cost Estimate

Immediate: $5,300

Note: The cost estimate assumes approximately eight signs per mile for 8.7-miles.

Figure 9: Intersection within curve near where no warning signs exist in advance of the intersection.

4. Intersection Lighting

Location: Corridor-Wide

Observations

- Intersections are not lit and on long dark stretches of the road drivers may not notice the stop-controlled intersection until they are close to the intersection.
- Over 1/3 of all crashes on Batesville Pike occurred between dusk and dawn.

Short-Term Improvements

- Install intersection lighting at all stop-controlled intersections

Cost Estimate

Short-Term: $280,000

Note: The cost estimate assumes lighting at four intersections.

Figure 10: Intersection of Batesville Pike and Kellogg Acres Road with some lighting present.

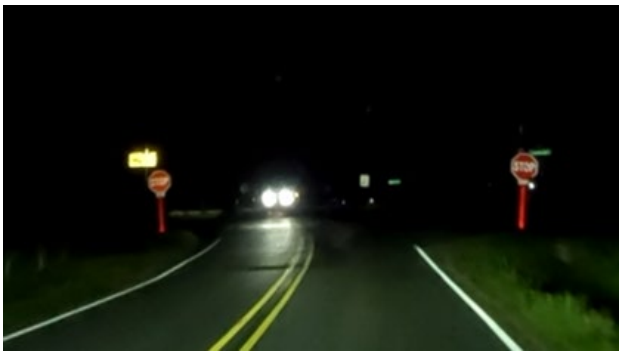


Figure 11: Intersection of Batesville Pike and Jacksonville Conway with no intersection lighting present.

5. Curve Warning Signage

Location: Corridor-Wide

Observations

- Many crashes along Batesville Pike occurred within horizontal and vertical curves.
- Most horizontal curves with chevron signs do not have chevron signs posted through the entire curve. Some curves need additional chevron signs at the start of the curve, some need additional signs at the end of the curve, and some need both.
- Several curve warning signs have advisory speed plaques with speeds that seemed too slow for the curve and may lead to drivers disregarding warnings.
  Example: The curve south of Kellogg Acres Road has an advisory speed of 15 mph but the RSA team drove it at 25 mph with a ball bank indicator showing the speed was not excessive.
- Several curve warning signs lack advisory speed plaques. However, a plaque may be necessary since the safe speed for the curve appears to be 5 mph or more below the posted speed.
- One curve warning advisory speed plaque for southbound vehicles on Batesville Pike north of Greer Road has an advisory speed that is too high. The advisory speed is 35 mph, but the ball bank indicator maxed out at 19 degrees when the RSA team drove this curve at 35 mph.

Short-Term Improvements

- Install chevrons along the outside of the entire curve for all horizontal curves on Batesville Pike.
- Conduct a speed study for all curves on Batesville Pike to determine the safe speed for each curve. Adjust the speeds on existing advisory speed plaques if necessary and add advisory speed plaques where the safe speed for the curve is 5 mph or more below the posted speed limit.
- Install reflective object markers along all guardrail in curves to improve visibility of the curve for drivers, particularly at night.

Cost Estimate

Short-Term: $66,400

Note: The cost estimate assumes approximately $40k for the speed study.

Figure 12: Chevron signs do not continue through the entire curve for vehicles on northbound Batesville Pike at the 90-degree curve near Northview Road.

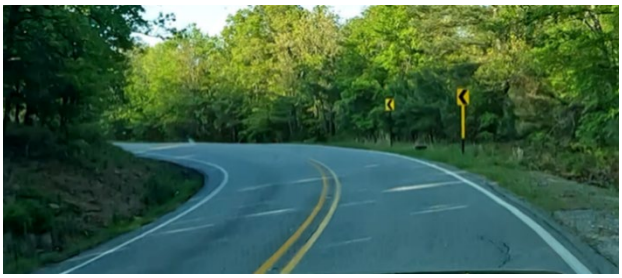


Figure 13: Chevron signs do not continue through the entire curve for northbound vehicles on Batesville Pike at the 'S' curve between Angel Lane and Greer Road.

Figure 14: RSA team's ball bank indicator maxed out at 19 while driving southbound on Batesville Pike at 35 mph around the curve north of Greer Road.

6. Wider Striping, Rumble Strips, and Shoulder

Location: Corridor-Wide

Observations

- Batesville Pike north of the RSA study corridor limits has 6-inch striping, centerline rumble strips, raised pavement markers in the center, and about 1 to 2-foot pavement buffers on each side. These features make the road feel safer and it is easier to follow the road during nighttime driving conditions.
- Run off the road crashes are common along Batesville Pike in the study corridor.
- A paved shoulder is not consistently present on both sides of the road along the entire study corridor.

Mid-Term Improvements

- Restripe the centerline and edge line with 6-inch pavement markings along the entire study corridor.
- Install raised reflective pavement markers along the centerline along the entire study corridor.
- Add centerline rumble strips along the entire study corridor.
- Where possible add pavement buffers along the shoulder of the entire study corridor.

Cost Estimate

Mid-Term: $1.307,200

Note: The cost estimate assumes approximately 4-miles of pavement buffer and 8.7-miles of all other improvements.

Figure 15: Pavement markings on Batesville Pike at night.

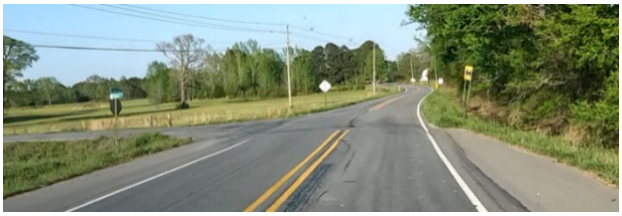


Figure 16: Paved shoulders exist on a section of Batesville Pike south of Fortson Road but not immediately north of Fortson Road.

7. Roundabout – Jacksonville Conway Road

Location: Jacksonville Conway Road Intersection

Observations

- The intersection of Batesville Pike and Jackson Conway Road creates a sharp 'X' with small radius turning movements.
- Pulaski County representatives noted concerns with speeding in this area and a desire to implement traffic calming countermeasures.

Mid-Term Improvements

- Replace the stop-controlled intersection with a roundabout.

Cost Estimate

Long-Term: $1,540,000

Figure 17: Aerial view of the Batesville Pike and Jacksonville Conway Road intersection.

8. Decommissioned Bridge

Location: South of Frenchman Mountain Road

Observations

- Object markers are posted along the northbound approach of Batesville Pike where the road used to span Leopard Creek, but they do not effectively block vehicles from driving on the decommissioned bridge.
- Red and white striped bollards are present on the roadway of the decommissioned bridge, and a road closed sign is on the shoulder, but it is not very visible, particularly for northbound traffic.

Immediate Improvements

- Extend object markers or install delineators along the entire edge of Batesville Pike where the pavement connects to the decommissioned bridge alignment. Replace road closed signs with larger ones to enhance visibility for approaching drivers, especially on the northbound approach.

Short-Term Improvements

- Remove pavement between Batesville Pike and the decommissioned bridge alignment.

Cost Estimate

Immediate: $4,500

Short-Term: $18,900

Note: The cost estimate assumes removal of approximate 450 SY of pavement.

Figure 18: Object markers posted along the northbound approach of Batesville Pike to the decommissioned bridge alignment, south of Frenchman Mountain Road.

Figure 19: Northbound approach of Batesville Pike realignment to the decommissioned bridge.

Figure 20: Southbound approach of Batesville Pike realignment to the decommissioned bridge.

9. Guardrail Gap

Location: 90-Degree Curve near Old Tom Box Road

Observations

- The guardrail along the outside of the 90-degree curve near Old Tom Box Road has a break at the apex of the curve. This break creates an unprotected section of road and is particularly concerning for southbound vehicles approaching the curve downhill.
- The guardrail break provides access to a driveway of a private residence. Pulaski County representatives have spoken to the property owner and offered to install a driveway that would provide alternate access from the property to Batesville Pike south of the curve; however, the owner did not accept the offer.
- Pulaski County will add rumble strips to the curve after planned pavement maintenance work is completed.

Short-Term Improvements

- Add additional guardrail to fill in the gap and provide the property owner with access to Batesville Pike at a point south of the curve. This improvement will require the approval of the property owner and may not be possible unless there is a change in property ownership.

Cost Estimate

Short-Term: $97,700

Note: The cost estimate includes approximate 250-feet of improved driveway.

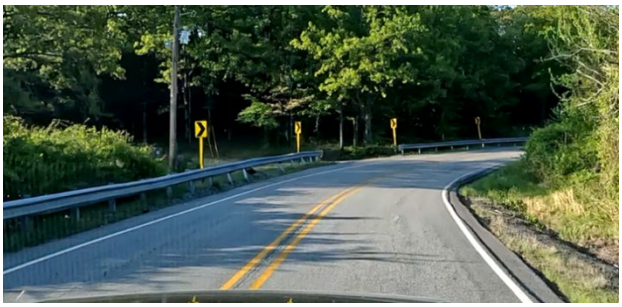


Figure 21: Northbound approach 90-degree curve near Old Tom Box Road with a break in the guardrail at the apex of the curve.

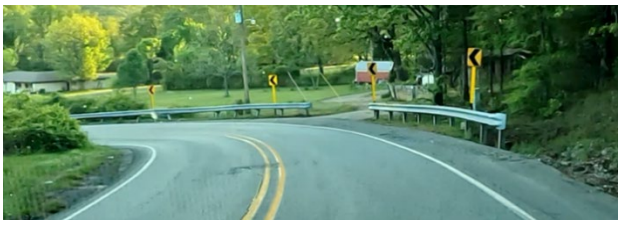


Figure 22: Southbound downhill approach to 90-degree curve near Old Tom Box Road with a break in the guardrail at the apex of the curve.

10. Curve Improvements Near Northview Road

Location: 90-Degree Curve near Northview Road

Observations

- Southbound vehicles on Batesville Pike were observed veering across the centerline while traveling through the 90-degree curve near Northview Road. The veering may be due to speeding despite it being 12% grade uphill and narrow lanes with a ditch on either side. Drivers may be trying to maintain speed up the hill through the curve and the ditch on the inside of the curve may make drivers swing wide through the turn to avoid getting too close to the edge of pavement.
- Chevron signs do not exist along the less severe curve at the northbound approach to a 90-degree curve just south of Northview Road.
- A curve warning sign for northbound vehicles has an advisory speed of 15 mph which seemed to be an excessively slow speed for the curve (RSA team members drove this curve as 25 mph which felt very comfortable). Advisory speeds that are too low could cause drivers to ignore other advisory speeds along the corridor.

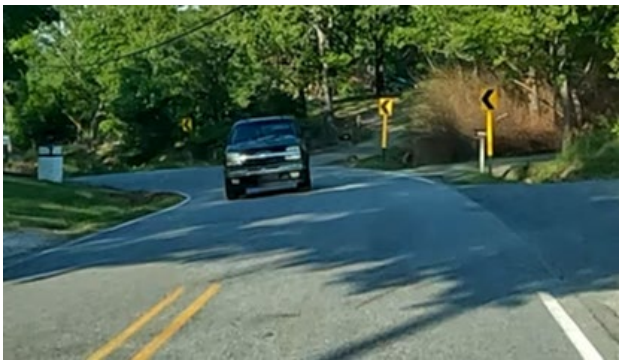


Figure 23: Southbound vehicle on Batesville Pike veering across the centerline while traveling through the 90-degree curve near Northview Road.

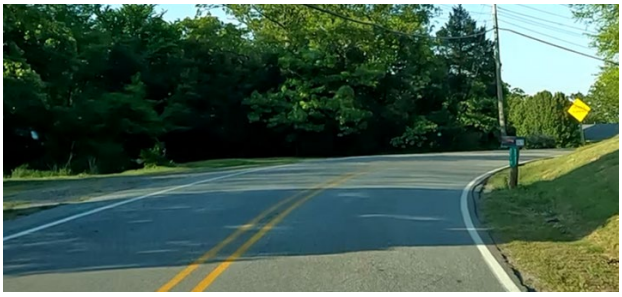


Figure 24: Chevron signs do not exist along the less severe curve at the northbound approach to a 90-degree curve just south of Northview Road.

Immediate Improvements

- Corridor-wide recommendation No. 5 regarding curve waring signage on Batesville Pike will address the chevron signing and advisory speed observations noted above.

Mid-Term Improvements

- Corridor-wide recommendation No. 6 regarding wider striping, rumble strips, and shoulders would likely address the issue with southbound vehicles veering across the centerline noted above. Centerline rumble strips at this location can alert a driver who is crossing the centerline and a paved buffer at the shoulder may make drivers feel more comfortable staying close to the inside of the curve.

Cost Estimate

Immediate: Cost Accounted for in Corridor-Wide Recommendation No. 5

Mid-Term: Cost Accounted for in Corridor-Wide Recommendation No. 6

11. Winding Road Warning Signage Near Angel Lane

Location: Series of Curves Between Angel Lane and Greer Road

Observations

- An existing left curve warning sign with no advisory speed plaque is posted on southbound Batesville Pike, just south of Angel Lane. Driving through this intersection at the posted speed with a ball bank indicator revealed the posted speed may be too high for this curve (ball bank indicator reached 16 degrees while traveling 35 mph).
- An advance left curve warning sign is posted on southbound Batesville Pike in a location where the road is starting to curve to the right. The left after the right is sharp and requires a reduced speed but there is no speed advisory plaque prior to the curve.
- No curve warning sign is posted for southbound vehicles approaching the left curve at the end of the series of curves between Angle Lane and Greer Road.

Immediate Improvements

- Add NEXT ½ MILE plaque under the southbound windy road warning sign on Batesville Pike.
- Change the left curve warning sign noted above to an 'S' curve with a speed advisory plaque.
- Add a curve warning sign prior to the last southbound left curve in the series of curves.

Cost Estimate

Immediate: $1,500

Figure 25: Winding road warning sign on southbound Batesville Pike prior to the series of curves.

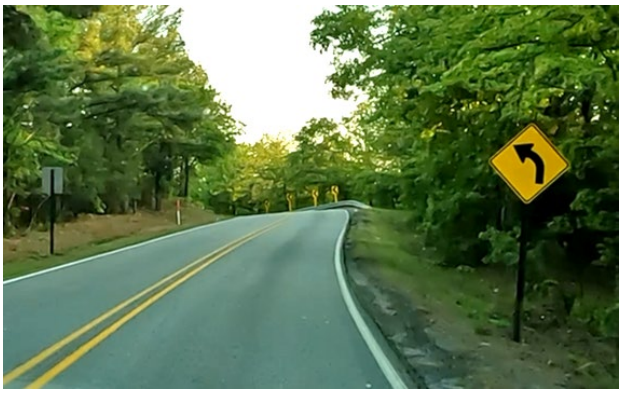


Figure 26: Left curve warning sign on southbound Batesville Pike just south of Angel Lane, however the road is curving right.

12. 'S' Curve Superelevation Near Angle Lane

Location: Series of Curves Between Angel Lane and Greer Road

Observations

- At points through the 'S' curve, the superelevation is sloped towards the outside of the curve due to the road switching directions back and forth multiple times within a short distance.

Mid-Term Improvements

- Regrade and repave superelevation as needed through the series of 'S' curves on Batesville Pike.

Long-Term Improvements

- Realign Batesville Pike through the 'S' curves to reduce the density and severity of the horizontal curves.

Cost Estimate

Mid-Term: $46,600

Long-Term: $1,400

Figure 27: The superelevation on northbound Batesville Pike is sloped towards the outside of the curve at the first left curve north of Greer Road.

13. Roundabout – Jacksonville Cato Road

Location: Jacksonville Cato Road Intersection

Observations

- The right-turn movement from westbound Jacksonville Cato onto northbound Batesville Pike has a very small radius and a steep drop off to a ditch on the inside of the curve.
- Pulaski County has conducted a signal warrant in the past at this location the intersection did not meet signal warrants.
- Pulaski County representatives noted that they would prefer a roundabout at this intersection to reduce crashes at the intersection and reduce speed along Batesville Pike.
- Pulaski County representatives noted that there are several drainage and utility conflicts surrounding the intersection.

Mid-Term Improvements

- Replace the stop-controlled intersection with a roundabout.

Cost Estimate

Mid-Term: $1,540,000

Figure 28: Intersection of Batesville Pike and Jacksonville Cato Road with a drainage ditch close to the edge of pavement at the northeast corner.

14. T-Intersection Signage at Kellogg Acres Road

Location: Kellogg Acres Road Intersection

Observations

- Stop sign height at the northbound approach of Batesville Pike to Kellogg Acres Road is 3-feet and 4-inches from top of pavement to bottom of sign and there is no stop bar at the stop sign.
- The RSA team observed northbound right-turning vehicles on Batesville Pike stopping and pulling out in front of southbound left-turning vehicles on Batesville Pike (which do not have a stop sign and therefore do not stop). There are MUTCD supplemental plaques for ONCOMING TRAFFIC DOES NOT STOP and TRAFFIC FROM RIGHT DOES NOT STOP, but there is no plaque that describes both scenarios. The CROSS TRAFFIC DOES NOT STOP plaque in the MUTCD addresses traffic from two directions, but it may not clearly convey that southbound traffic on Batesville Pike does not stop, as that traffic may appear to be oncoming rather than cross traffic.
- There are no intersection warning signs on any of the approaches to the intersection.
- There is not a double arrow sign for westbound Kellogg Acres Road traffic to indicate that it is a T-intersection, and vehicles must turn left or right.

Immediate Improvements

- Repost stop signs on northbound Batesville Pike at MUTCD required height.
- Seek approval from FHWA to post a non-standard plaque on the stop signs on northbound Batesville Pike for this unique traffic pattern with language such as ALL OTHER TRAFFIC DOES NOT STOP.
- Post a double-headed arrow sign (MUTCD W1-7) across from the Kellogg Acres Road approach to Batesville Pike to indicate a T-intersection.

Cost Estimate

Immediate: $2,100

Figure 29: Bottom of existing stop sign at the northbound approach of Batesville Pike to Kellogg Acres Road is posted at 3-feet and 4-inches above the surface of the pavement.

Figure 30: MUTCD standard supplemental plaques regarding oncoming and traffic from the right.

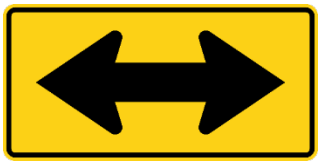


Figure 31: MUTCD W1-7 double-headed arrow for T-intersections.

15. T-Intersection Redesign at Kellogg Acres Road

Location: Kellogg Acres Road Intersection

Observations

- The heaviest traffic movements are the westbound right-turn movement from Kellogg Acres Road onto Batesville Pike and the southbound left-turn movement from Batesville Pike onto Kellogg Acres Road.
- Southbound vehicles on Batesville Pike and westbound vehicles on Kellogg Acres Road often take the curve at this intersection at high speeds.
- The existing centerline striping at the Kellogg Acres Road approach to Batesville Pike guides westbound vehicles to turn right onto Batesville Pike, requiring left- turn vehicles to take a sharp turn or cut across the Kellogg Acres Road centerline before it ends at the intersection.
- Northbound vehicles on Batesville Pike turning right onto Kellogg Acres Road were observed stopping then pulling out in front of southbound vehicles on Batesville Pike that were turning left onto Kellogg Acres Road.
- The existing intersection geometry and signage may lead northbound drivers on Batesville Pike, which has a stop sign, to think southbound vehicles on Batesville Pike turning onto Kellogg Acres Road also should stop. Although there were no fatal or serious injury crashes recorded during the five-year study period, the RSA team noted this intersection appears to have a high potential for a fatal or serious injury crash.
- Utilities exist at the southwest corner of the intersection.

Figure 32: Batesville Pike/Kellogg Acres Road intersection.

Figure 33: Kellogg Acres Road centerline stripe is curved to guide westbound vehicles approaching Batesville Pike to turn right.

Immediate Improvements

- Restripe the Batesville Pike centerline at the southbound approach to the curve to meet the Kellogg Acres Road centerline. This striping may make it clearer to northbound drivers on Batesville Pike that they are the minor approach and the only vehicles that stop. Add a stop bar in the northbound Batesville Pike lane.

Short-Term Improvements

- Realign the northbound approach of Batesville Pike to curve east and intersect the curve of Batesville Pike/Kellogg Acres Road near the apex of the curve. Add curb and gutter as shown in the concept in **Appendix C**. This option will better clarify to northbound drivers on Batesville Pike that they are the minor approach and the only vehicles that stop. *Note: This improvement should only be considered if the mid-term suggested improvements cannot be implemented in a timely manner.*

Mid-Term Improvements

- Construct a roundabout at the intersection of Batesville Pike and Kellogg Acres Road to reduce the potential for fatal and serious injury head-on and angle crashes.

Cost Estimate

Immediate: $3,000
Short-Term: $24,500
Mid-Term: $1,570,000

Note: Conceptual drawings of all recommended improvements have been included in ***Appendix C****.*

Cost Estimates

An opinion of probable cost was developed for each of the suggested improvements. Estimated quantities for developing costs were derived through a combination of observations from the RSA field review, reference to aerial imagery, and engineering judgement. The quantities that were used in the cost estimates are preliminary and are not based on engineering design. The RSA team relied on several guidance documents to develop quantities including the *FHWA Manual on Uniform Traffic Control* (MUTCD) as well as ARDOT standards.

The cost estimates provide Pulaski County with a planning level cost for high-level budgeting and should only be considered approximate. Cost estimates utilize unit pricing based on average unit costs seen on similar road and safety projects. These costs will vary based on local construction costs, size of the project, mobilization costs, and other factors. The unit costs for the pay items used for developing the cost estimates for each suggested improvement are presented in **Appendix B**.

An example of a cost estimate calculation worksheet that was prepared for one of the suggested improvements is provided in **Table 6**. To account for engineering, mobilization, traffic control, and other costs associated with construction, cost estimates were increased by 40 percent. The 40 percent factor used is inclusive of all costs beyond the unit cost used for the suggested improvement costed items.

Table 6: Example Cost Estimate for Suggested Improvement

Wider Striping, Rumble Strips, and Shoulders										
Itemized Recommendation Costs										
			Immediate		Short-Term		Mid-Term		Long-Term	
Improvement	**Unit**	**Unit Cost**	**Quantity**	**Cost**	**Quantity**	**Cost**	**Quantity**	**Cost**	**Quantity**	**Cost**
Convert 4" Striping to 6" Striping (2 lane)	Per Mile (Full Road Widt	$ 18,500		$ -		$ -	8.70	$ 160,950		$ -
Add Raised Reflective Pavement Markers Along Centerline	Per Mile	$ 260		$ -		$ -	8.70	$ 2,262		$ -
Add Longitudinal Rumble Strips	Per Mile	$ 1,200		$ -		$ -	8.70	$ 10,440		$ -
Add 4' Shoulder	Per Mile	$ 190,000		$ -		$ -	4.00	$ 760,000		$ -
Engineering, Mobilization, Traffic Control, Etc.	40%			$ -		$ -		$ 373,460		$ -
Recommendation Cost Summary										
Total Cost by Timeframe			**Immediate**		**Short-Term**		**Mid-Term**		**Long-Term**	
				$ -		**$ -**		**$ 1,307,200**		**$ -**
Total Recommendation Cost			**$**							**1,307,200**

A summary of all suggested improvement cost estimates is provided in **Table 7**. A view of the cost aggregated by type of cost (Signing, Pavement Markings and Striping, and Other) is provided in **Table 8**. This view is provided should the County want to address all signing or pavement marking and striping improvements through a corridor-wide type project.

Table 7: Summary of Suggested Improvement Cost Estimates by Timeframe

No.	Suggested Improvement	Cost Estimate by Implementation Timeframe			
		Immediate	Short-Term	Mid-Term	Long-Term
1	Retroreflective Object Makers	$26,600	-	-	-
2	Stop-Controlled Intersection Signage	$22,500	-	-	-
3	Intersection Within Curve Warning Signage	$5,300	-	-	-
4	Intersection Lighting	-	$263,200	-	-
5	Curve Warning Signage	-	$66,400	-	-
6	Wider Striping, Rumble Strips, and Shoulder	-	-	$1,307,200	-
7	Roundabout (Jacksonville Conway Road)	-	-	-	$1,540,000
8	Decommissioned Bridge (South of Frenchman Mountain Road)	$4,500	$18,900	-	-
9	Guardrail Gap (90-Degree Curve near Old Tom Box Road)	-	$97,700	-	-
10	Curve Improvements (90-Degree Curve near Northview Road)	NA	NA	NA	NA
11	Winding Road Warning Signage (Series of Curves between Angel Lane and Greer Road)	$1,500	-	-	-
12	S' Curve Superelevation (Series of Curves between Angel Lane and Greer Road)	-	-	$46,600	$1,400,000
13	Roundabout (Jacksonville Cato Road)	-	-	-	$1,540,000
14	T-Intersection Signage (Kellogg Acres Road)	$2,100	-	-	-
15	T-Intersection Redesign (Kellogg Acres Road)	$3,000	$24,500	$1,570,000	-

Table 8: Summary of Suggested Improvement Cost Estimates by Type

No.	Suggested Improvement	Cost Estimate by Type		
		Signing	Pavement Markings	Other
1	Retroreflective Object Makers	$26,600	-	-
2	Stop-Controlled Intersection Signage	$8,600	$13,900	-
3	Intersection Within Curve Warning Signage	$5,300	-	-
4	Intersection Lighting	-	-	$263,200
5	Curve Warning Signage	$24,400	-	$42,000
6	Wider Striping, Rumble Strips, and Shoulder	-	$228,500	$1,078,700
7	Roundabout (Jacksonville Conway Road)	-	-	$1,540,000
8	Decommissioned Bridge (South of Frenchman Mountain Road)	$4,500	-	$18,900
9	Guardrail Gap (90-Degree Curve near Old Tom Box Road)	-	-	$97,700
10	Curve Improvements (90-Degree Curve near Northview Road)	NA	NA	NA
11	Winding Road Warning Signage (Series of Curves between Angel Lane and Greer Road)	$1,500	-	-
12	S' Curve Superelevation (Series of Curves between Angel Lane and Greer Road)	-	-	$1,446,600
13	Roundabout (Jacksonville Cato Road)	-	-	$1,540,000
14	T-Intersection Signage (Kellogg Acres Road)	$2,100	-	-
15	T-Intersection Redesign (Kellogg Acres Road)	-	$7,200	$1,590,300

Prioritization

Suggested improvements are categorized as high, medium, or low priorities. Prioritization is based on the RSA team's assessment of each safety issue and the impact that the suggested improvements is expected to have on improving safety. Engineering judgement regarding the potential for future crash rate reduction and crash severity reduction were considered when prioritizing the suggested improvements.

While all the suggested improvements are considered important and expected to have a positive impact on safety, it is recommended that Pulaski County consider focusing on high priority recommendations first as they may yield the greatest impact on safety along Batesville Pike. **Table 9** organizes each suggested improvement by implementation priority (high, medium, or low). The County may use this prioritization if fiscal constraints and personnel availability prohibit the County from implementing all the suggested improvements in a timely manner.

Table 9: Summary of Suggested Improvement Priorities

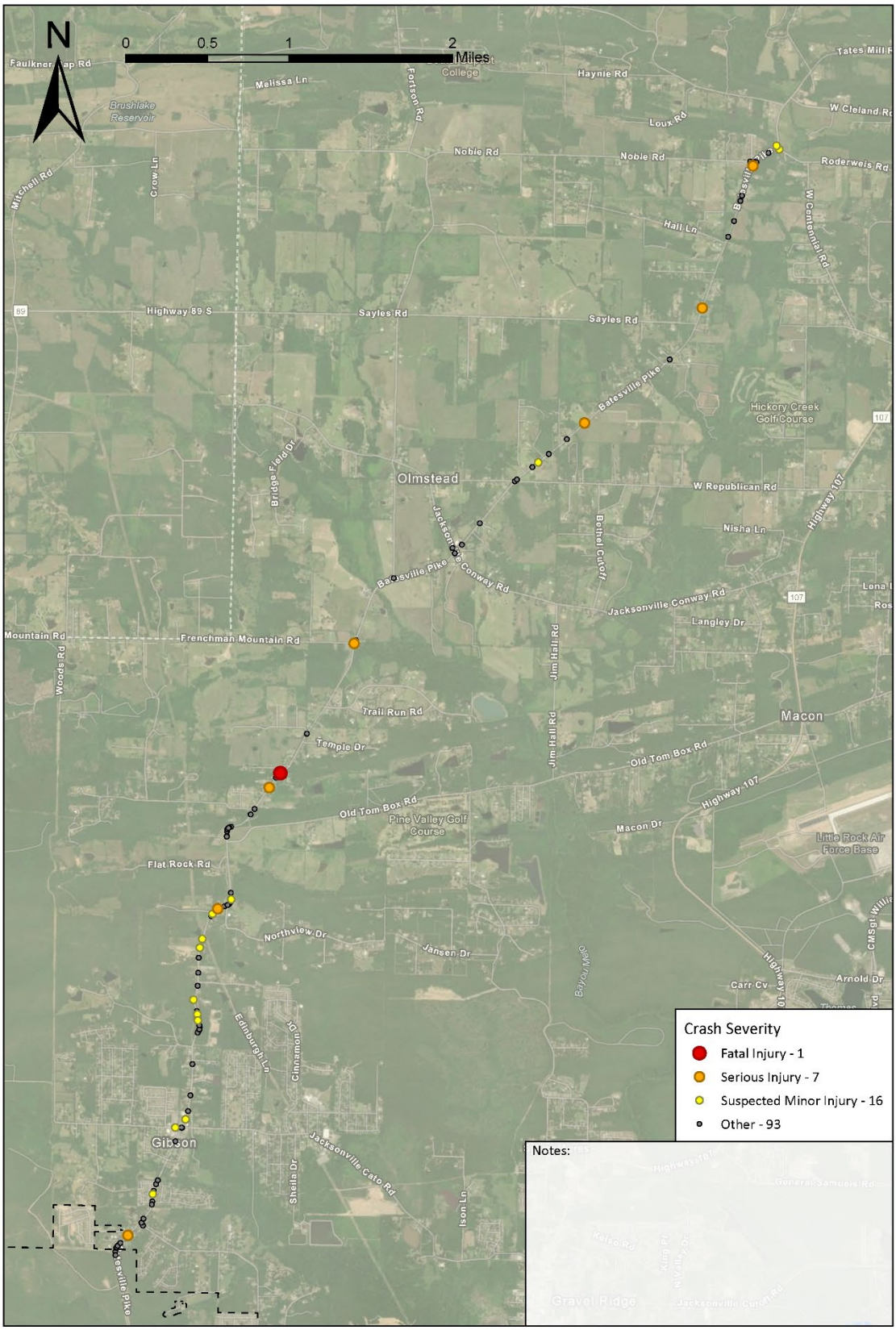
No.	Suggested Improvement	Improvement Timeframe
High Priority Suggested Improvements		
1	Retroreflective Object Makers	Immediate
3	Intersection Within Curve Warning Signage	Immediate
5	Curve Warning Signage	Short-Term
10	Curve Improvements (90-Degree Curve near Northview Road)	Immediate/Short-Term
11	Winding Road Warning Signage (Series of Curves between Angel Lane and Greer Road)	Immediate
14	T-Intersection Signage (Kellogg Acres Road)	Immediate
15	T-Intersection Redesign (Kellogg Acres Road)	Immediate/Short-Term/Mid-Term
Medium Priority Suggested Improvements		
2	Stop-Controlled Intersection Signage	Immediate
6	Wider Striping, Rumble Strips, and Shoulder	Mid-Term
12	'S' Curve Superelevation (Series of Curves between Angel Lane and Greer Road)	Mid-Term/Long-Term
Low Priority Suggested Improvements		
4	Intersection Lighting	Short-Term
7	Roundabout (Jacksonville Conway Road)	Mid-Term
8	Decommissioned Bridge (South of Frenchman Mountain Road)	Immediate/Short-Term
9	Guardrail Gap (90-Degree Curve near Old Tom Box Road)	Short-Term
13	Roundabout (Jacksonville Cato Road)	Mid-Term

Appendix A: Crash Diagram Maps

SITE: BATESVILLE PIKE

West Cleland Rd to North Little Rock City Limit/South of Kellog Acres Rd (8.7 Miles)

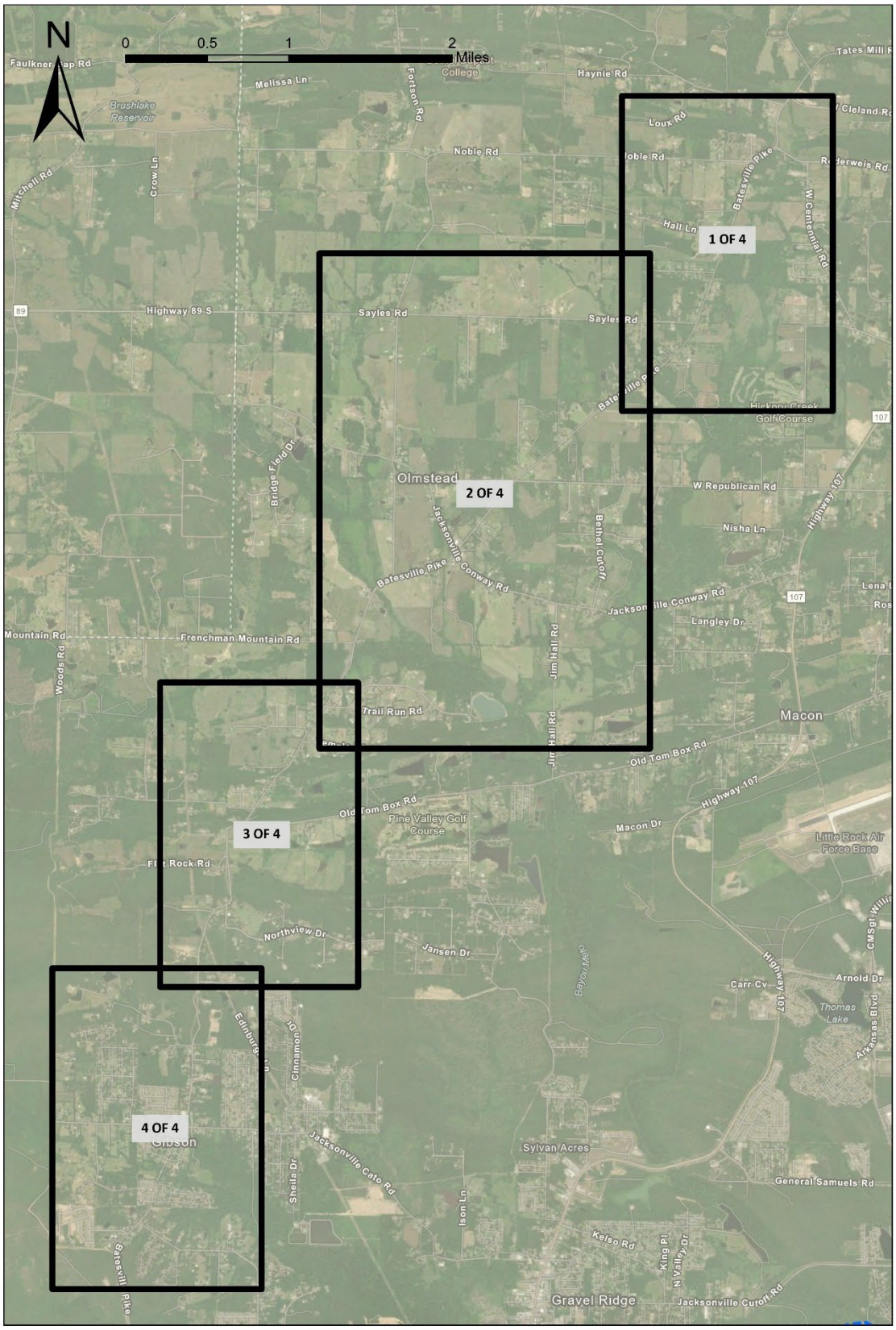
2019 - 2023 Crash Data: 8 KA Crash Count (112 Total Crash Count)



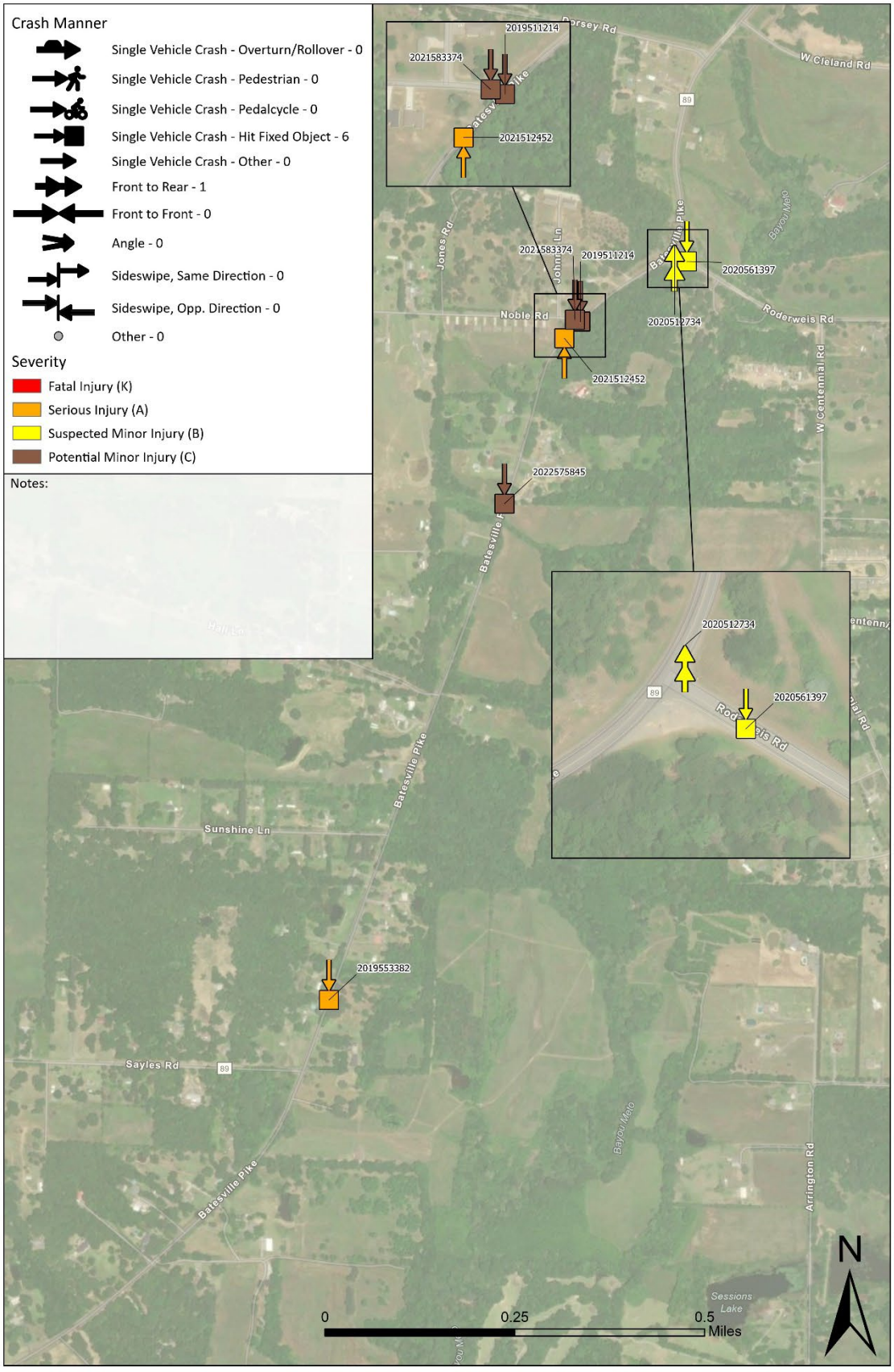
SITE: BATESVILLE PIKE

West Cleland Rd to North Little Rock City Limit/South of Kellog Acres Rd (8.7 Miles)

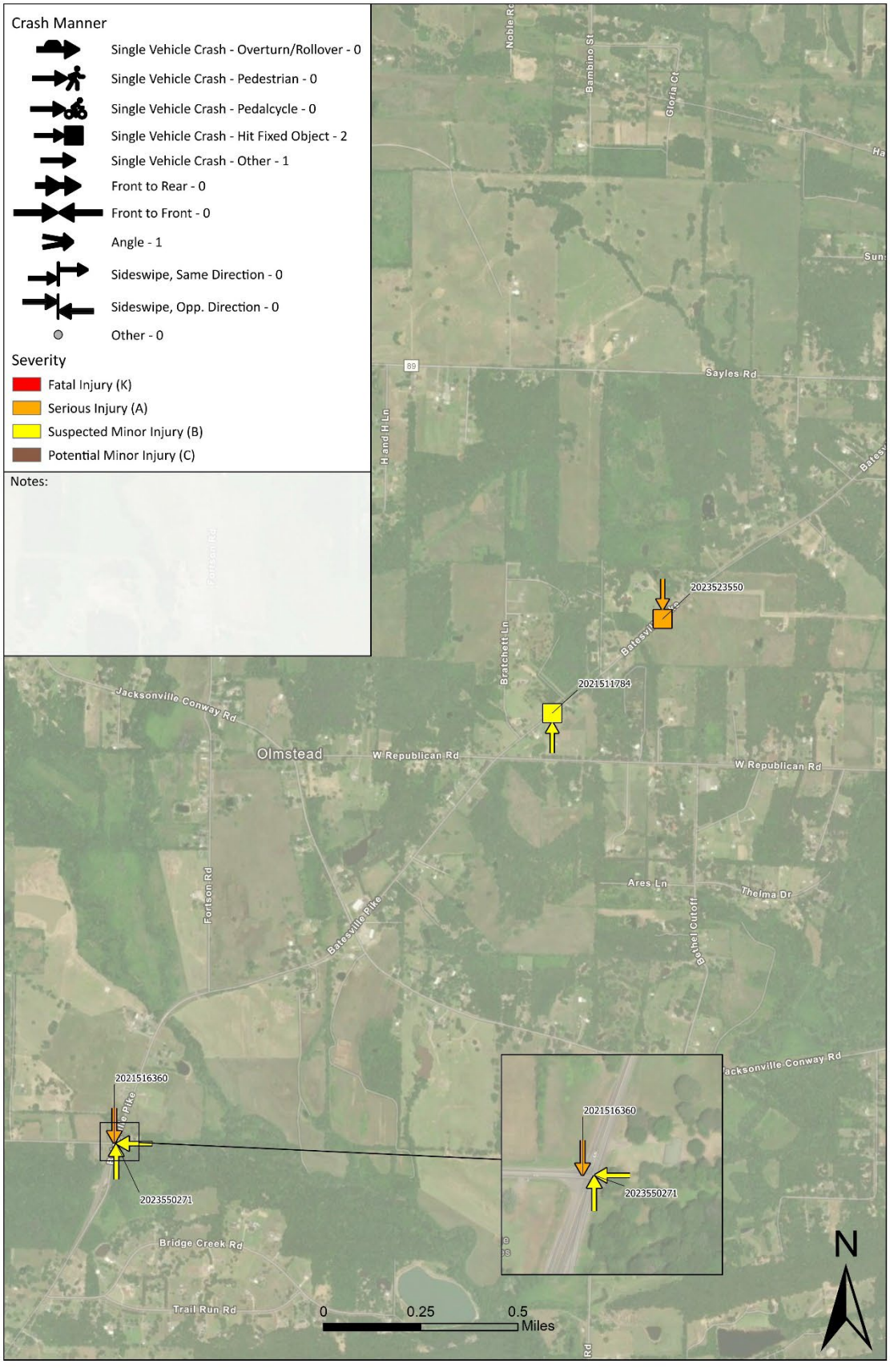
2019 - 2023 Crash Data: 8 KA Crash Count (112 Total Crash Count)



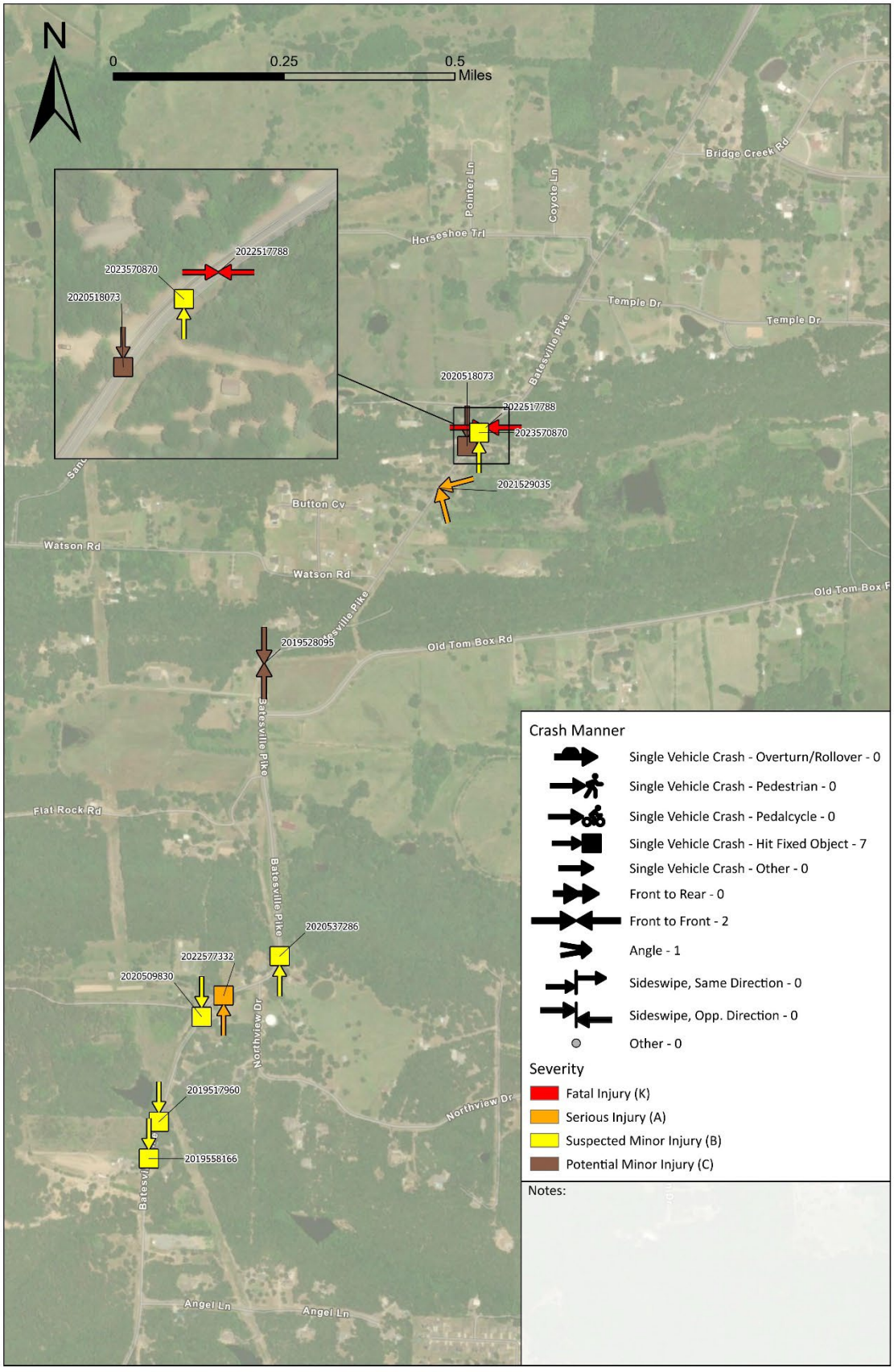
SITE: BATESVILLE PIKE (1 OF 4)



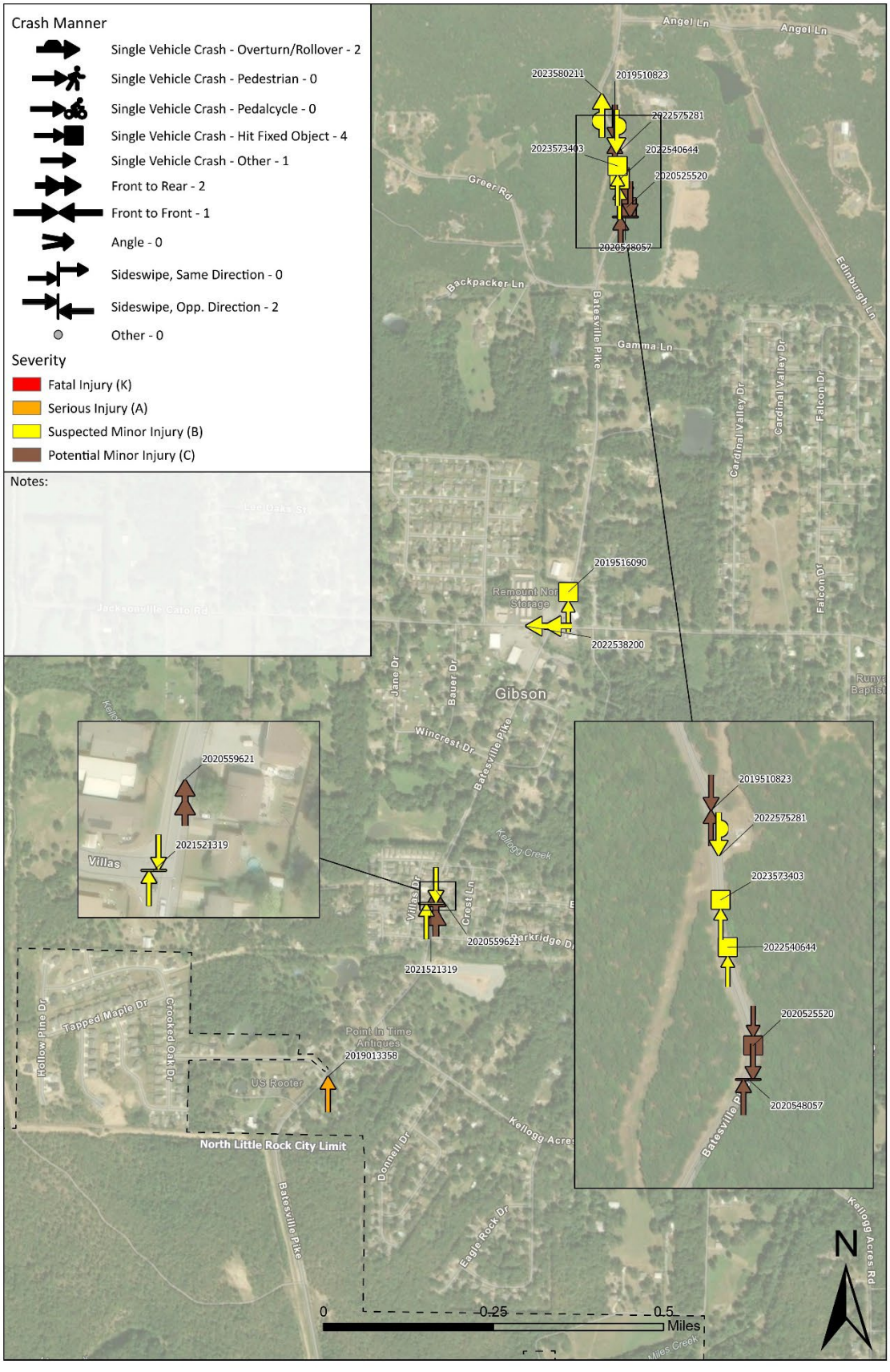
SITE: BATESVILLE PIKE (2 OF 4)



SITE: BATESVILLE PIKE (3 OF 4)



SITE: BATESVILLE PIKE (4 OF 4)



BATESVILLE PIKE

SUMMARY TABLE

2019-2023 Crash Data: 8 KA Crash Count (114 Total Crash Count)

Crash Severity	Crash Manner	Lighting Condition	Surface Condition
(K) FATAL INJURY - 1	SINGLE VEHICLE CRASH - 6 (75)	DAYLIGHT - 7 (71)	DRY - 5 (64)
(A) SUSPECTED SERIOUS INJURY - 7	FRONT-TO-REAR - 0 (12)	DAWN - 0 (2)	WET/WATER - 0 (47)
(B) SUSPECTED MINOR INJURY - (16)	FRONT-TO-FRONT - 1 (6)	DUSK - 0 (4)	SNOW - 0 (0)
(C) POTENTIAL MINOR INJURY - (9)	ANGLE - 1 (9)	DARK - LIGHTED - 0 (6)	SLUSH - 0 (0)
(O) NO APPARENT INJURY - (81)	SIDESWIPE, SAME DIRECTION - 0 (1)	DARK - NOT LIGHTED - 1 (27)	ICE/FROST - 0 (0)
	SIDESWIPE, OPP. DIRECTION - 0 (10)	DARK - OTHER/UNKNOWN - 0 (4)	UNKNOWN - 1 (3)
	OTHER - 0 (0)		

KABC Crash Detail Table

State Case Number	Crash Date	Crash Day	Crash Time*	Crash Severity	Crash Manner	Lighting Condion	Surface Condition
2019013358	2019-12-01	SUN	01:20	SUSPECTED SERIOUS INJURY	SINGLE VEHICLE CRASH - UNKNOWN	DAYLIGHT	DRY
2019510823	2019-03-07	THU	04:15	POTENTIAL MINOR INJURY	FRONT-TO-FRONT	DAYLIGHT	WET
2019511214	2019-03-10	SUN	10:05	POTENTIAL MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH CULVERT	DAYLIGHT	DRY
2019516090	2019-04-07	SUN	06:00	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH CULVERT	DARK - LIGHTED	WET
2019517960	2019-04-16	TUE	11:46	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH DITCH	DAYLIGHT	DRY
2019528095	2019-06-07	FRI	03:00	POTENTIAL MINOR INJURY	FRONT-TO-FRONT	DAYLIGHT	WET
2019553382	2019-10-19	SAT	08:27	SUSPECTED SERIOUS INJURY	SINGLE VEHICLE CRASH - COLLISION WITH DITCH	DARK - NOT LIGHTED	DRY
2019558166	2019-11-06	WED	06:12	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH OTHER FIXED OBJECT	DARK - NOT LIGHTED	WET
2020509830	2020-02-24	MON	09:00	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH DITCH	DAYLIGHT	WET
2020512734	2020-03-09	MON	09:16	SUSPECTED MINOR INJURY	FRONT-TO-REAR	DUSK	DRY
2020518073	2020-04-17	FRI	19:55	POTENTIAL MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH MAILBOX	DARK - NOT LIGHTED	WET
2020525520	2020-06-03	WED	17:40	POTENTIAL MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH TREE	DAYLIGHT	WET
2020537286	2020-08-02	SUN	10:20	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH DITCH	DAYLIGHT	DRY
2020548057	2020-09-22	TUE	11:40	POTENTIAL MINOR INJURY	SIDESWIPE, OPP. DIRECTION	DAYLIGHT	WET
2020559621	2020-11-13	FRI	16:52	POTENTIAL MINOR INJURY	FRONT-TO-REAR	DAYLIGHT	DRY
2020561397	2020-11-22	SUN	15:25	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH TREE	DAYLIGHT	DRY
2021511784	2021-03-05	FRI	15:20	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH DITCH	DAYLIGHT	DRY
2021512452	2021-03-09	TUE	09:00	SUSPECTED SERIOUS INJURY	SINGLE VEHICLE CRASH - COLLISION WITH DITCH	DAYLIGHT	DRY
2021516360	2021-03-28	SUN	13:00	SUSPECTED SERIOUS INJURY	SINGLE VEHICLE CRASH - UNKNOWN	DAYLIGHT	DRY
2021521319	2021-04-18	SUN	11:55	SUSPECTED MINOR INJURY	SIDESWIPE, OPP. DIRECTION	DAYLIGHT	DRY
2021529035	2021-05-20	THU	13:20	SUSPECTED SERIOUS INJURY	ANGLE	DAYLIGHT	WET
2021583374	2021-12-29	WED	08:55	POTENTIAL MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH TRAFFIC SIGN SUPPORT	DAWN	DRY
2022517788	2022-01-23	SUN	12:10	FATAL INJURY	FRONT-TO-FRONT	DAYLIGHT	UNKNOWN
2022538200	2022-06-24	FRI	18:02	SUSPECTED MINOR INJURY	FRONT-TO-REAR	DAYLIGHT	DRY
2022540644	2022-07-11	MON	19:30	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH TRAFFIC SIGN SUPPORT	DAYLIGHT	DRY
2022575281	2022-12-04	SUN	12:10	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - OVERTURN/ROLLOVER	DAYLIGHT	WET
2022575845	2022-11-28	MON	18:39	POTENTIAL MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH OTHER FIXED OBJECT	DARK - NOT LIGHTED	WET
2022577332	2022-12-14	WED	15:29	SUSPECTED SERIOUS INJURY	SINGLE VEHICLE CRASH - COLLISION WITH TREE	DAYLIGHT	WET
2023523550	2023-04-21	FRI	18:55	SUSPECTED SERIOUS INJURY	SINGLE VEHICLE CRASH - COLLISION WITH OTHER TRAFFIC BARRIER	DAYLIGHT	DRY
2023550271	2023-08-22	TUE	17:30	SUSPECTED MINOR INJURY	ANGLE	DAYLIGHT	DRY
2023570870	2023-11-15	WED	06:50	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH GUARDRAIL FENCE	DAWN	DRY
2023573403	2023-11-26	SUN	05:47	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - COLLISION WITH DITCH	DARK - NOT LIGHTED	WET
2023580211	2023-12-24	SUN	11:43	SUSPECTED MINOR INJURY	SINGLE VEHICLE CRASH - OVERTURN/ROLLOVER	DAYLIGHT	WET

**Note that some crashes were reported in military time and some crashes were reported using a 12-hour clock system without indicating AM or PM. Therefore, crashes with a time reported as 1300 and later can be assumed to be PM, but crashes with a time reported as earlier than 1300 may have occurred in the AM or PM. Please utilize the date and lighting condition columns to help determine if the crash occurred in the AM or PM.*

Appendix B: Unit Costs

Item	Unit Cost	Unit	Notes
Add/Improve Pavement Markings	$930	Per Approach Lane	
Convert 4-inch Striping to 6-inch Striping (2 lane)	$18,500	Per Mile (Full Road Width)	This cost estimate assumes two edge lines and centerline.
Add/Restripe Stop Bars	$230	Per Approach Lane	
Add In-Lane Pavement Marking	$390	Per Marking	This cost estimate may be used for "STOP AHEAD", share the road symbol, or lane use arrow in-lane pavement markings.
Add Raised Reflective Pavement Markers Along Centerline	$260	Per Mile	This cost estimate assumes the pavement markers are not for a two way left-turn lane but rather for a single yellow centerline stripe.
Enhance Curve Delineation	$750	Per 100-Feet of Curve	
Add Reflective Object Markers (small for mailboxes/poles)	$40	Per Marker	
Add Reflective Object Markers (large for culverts)	$150	Per Marker	
Add Reflective Object Markers on Guardrail	$120	Per 100-Feet	
Install Standard Sign	$470	Per Sign	This cost estimate includes signs such as no parking signs, warning signs, or speed limit signs.
Add Reflective Tape on Sign Post	$60	Per Sign	
Add Plaque Under Sign	$40	Per Plaque	An example of this is the "ALL-WAY" plaque used in conjunction with stop signs.
Pavement Repair	$290	Per Square Yard	
Remove Pavement	$30	Per Square Yard	
Add Longitudinal Rumble Strips	$1,200	Per Mile	This cost estimate assumes installation with fresh asphalt.
Add/Replace Guardrail	$90	Per Foot	
Add 4' Shoulder	$190,000	Per Mile	
Roundabout	$ 1,100,000 to 1,121,430	Per Intersection	This cost estimate assumes the installation of a 200-foot diameter roundabout on a State Highway.
Add Intersection Lighting	$47,000	Per Intersection	This cost estimate assumes the use of two existing utility poles for intersection lighting.
New Road Construction	$2,500,000	Per Mile	
Adjust Superelevation	$350,000	Per Mile	
Construct Curb and Gutter (only)	$250,000	Per Mile	This cost estimate does not include drainage or asphalt overlay.

Appendix C: Conceptual Layouts

GENERAL NOTES:
-REPOST STOP SIGN AT MUTCD REQUIRED HEIGHT
-ADD "ONCOMING TRAFFIC DOES NOT STOP" PLAQUE (W4-4bP) AND (W4-4aRP)
-INSTALL ADVANCE INTERSECTION WARNING SIGNS AT ALL APPROACHES TO THE INTERSECTION
-ADD DOUBLE-HEADED ARROW (W1-7) FOR THE APPROACH TO BATESVILLE PIKE COMING FROM KELLOGG ACRES

NORTH

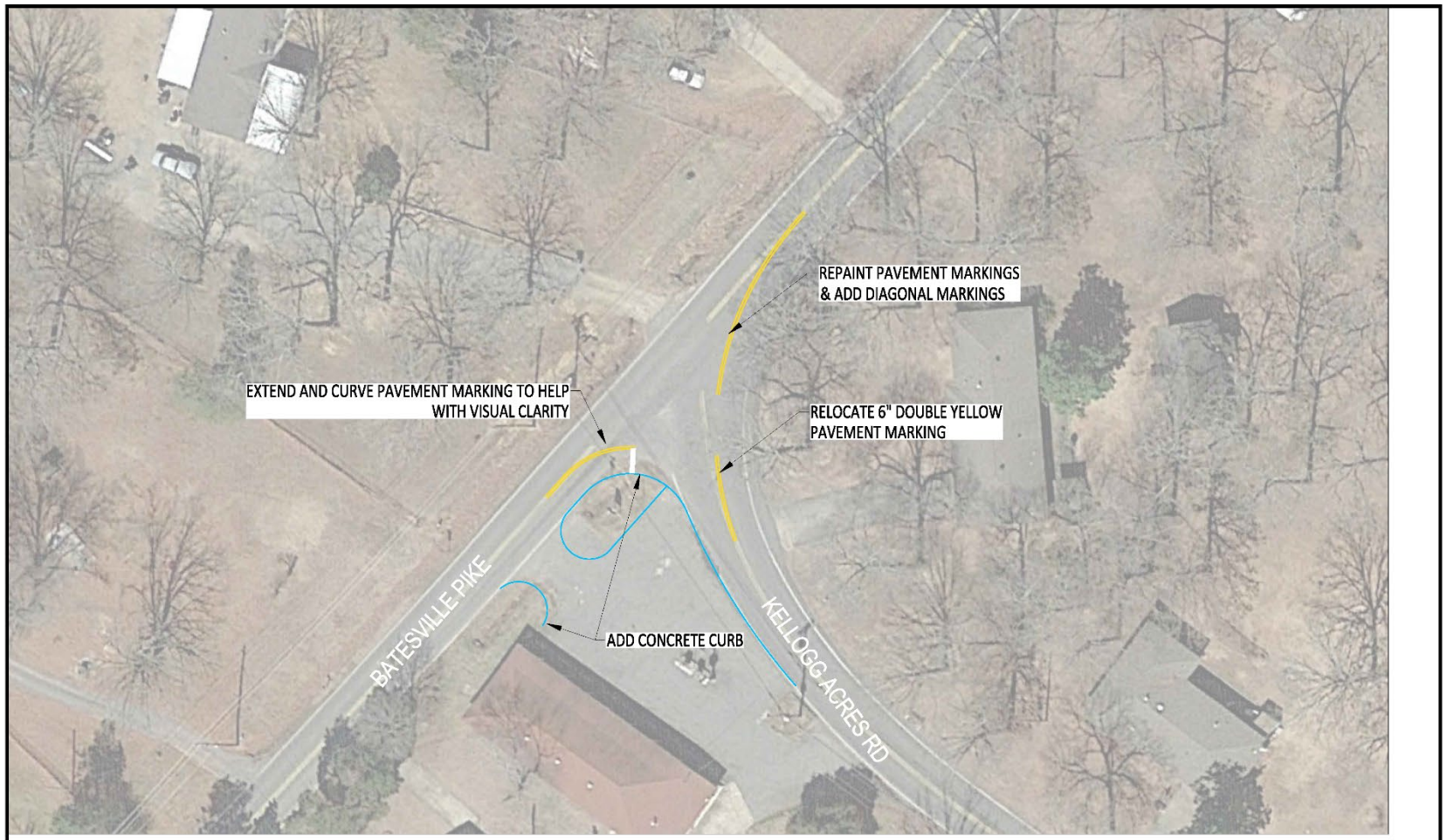
0 20 40 80 feet
SCALE: 1" = 20'

Crafton Tull

BATESVILLE PIKE & KELLOGG ACRES RD

L5.01

Conceptual Layout of the Immediate Suggested Improvements at Batesville Pike and Kellogg Acres Road



GENERAL NOTES:
-REPOST STOP SIGN AT MUTCD REQUIRED HEIGHT
-ADD "ONCOMING TRAFFIC DOES NOT STOP" PLAQUE (W4-4bP) AND (W4-4aRP)
-INSTALL ADVANCE INTERSECTION WARNING SIGNS AT ALL APPROACHES TO THE INTERSECTION
-ADD DOUBLE-HEADED ARROW (W1-7) FOR THE APPROACH TO BATESVILLE PIKE COMING FROM KELLOGG ACRES

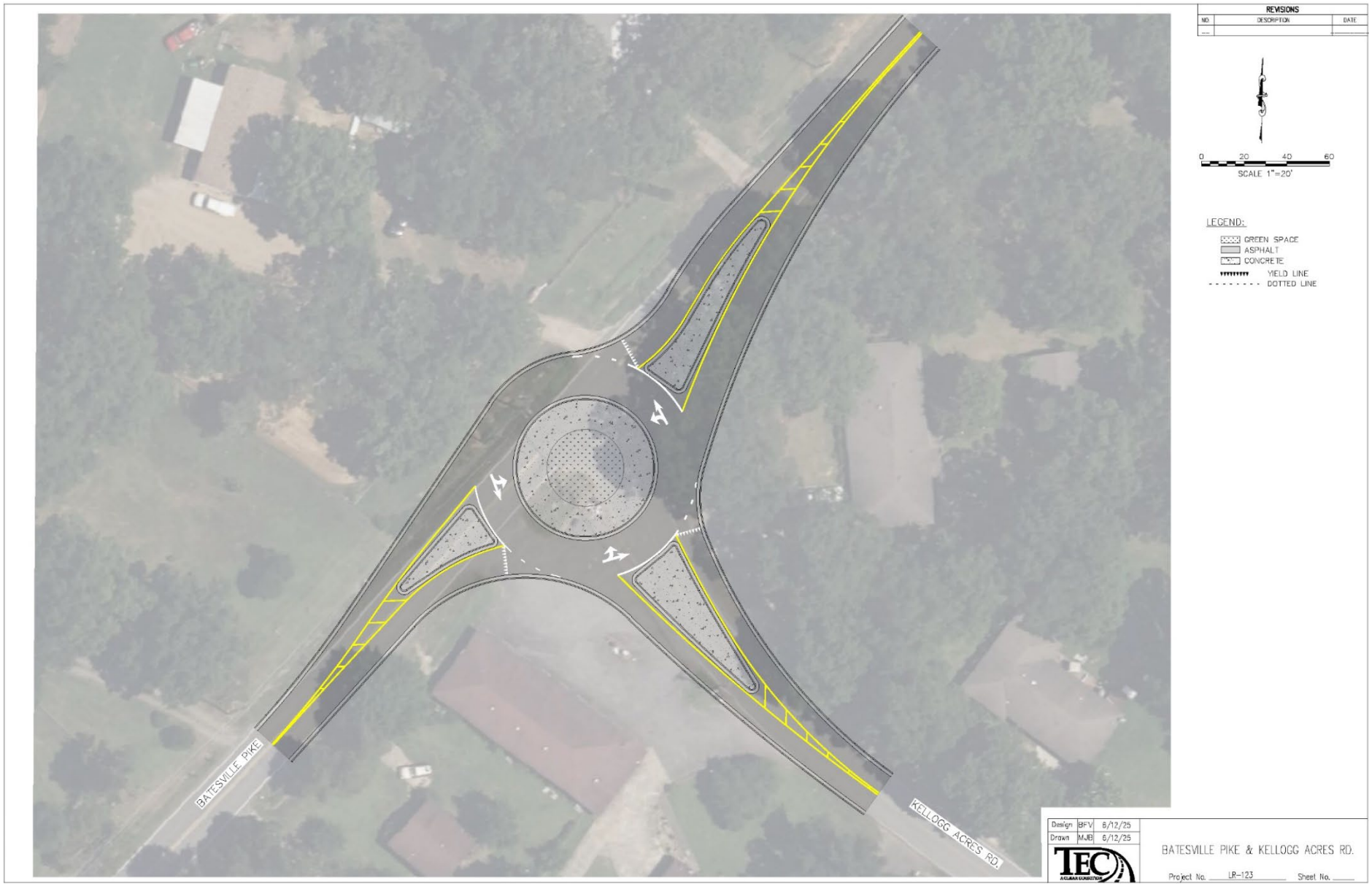
NORTH
0 20 40 60 feet
SCALE: 1" = 20'

Crafton Tull

BATESVILLE PIKE
& KELLOGG
ACRES RD

L5.03

Conceptual Layout of the Short-Term Suggested Improvements at Batesville Pike and Kellogg Acres Road



Conceptual Layout of the Mid-Term Suggested Improvements at Batesville Pike and Kellogg Acres Road