KENTUCKIANA REGIONAL SAFETY ACTION PLAN

*On the Road to Safety, Every Life Counts*

# Henry County, KY
# Safety Action Plan

**6/25/2025**

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# Contributors

## KENTUCKIANA REGIONAL PLANNING & DEVELOPMENT AGENCY (KIPDA)

| | |
|---|---|
| Andy Rush | Transportation Director |
| Mick Logsdon | Transportation Planner |
| Spencer Williams | Transportation Planner |

## HENRY COUNTY

| | |
|---|---|
| Scott Bates | Judge Executive |
| Theodore Bothur | EMS Deputy Director |
| Keith Perry | County Sheriff |
| Jason Stanley | County Planning & Zoning |

## AGENCY / ORGANIZATION

| | |
|---|---|
| Michael Webb | Kentucky State Police Captain |

# Introduction

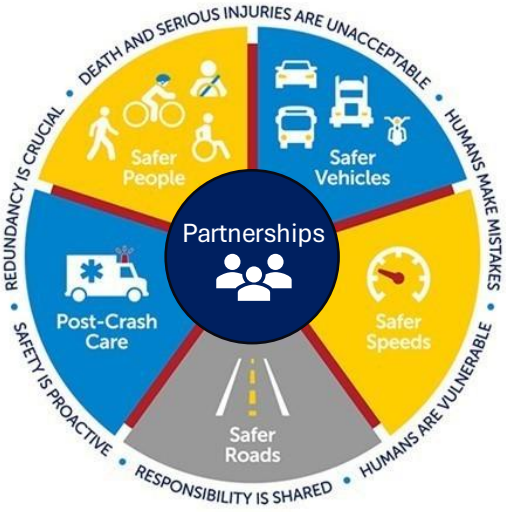
In 2023, in collaboration with the Kentuckiana Regional Planning & Development Agency (KIPDA) and 15 other participating cities and counties, Henry County applied for and successfully received a Safe Streets and Roads for All (SS4A) Action Plan Grant. The SS4A Action Plan Grant is a vital component of the broader federal SS4A initiative to improve road safety across the United States. The goal of the SS4A Program is to create a safer transportation network by supporting the development and implementation of comprehensive safety plans that are data-driven and community-focused.

Henry County is dedicated to working towards a goal of zero traffic deaths and serious injuries by 2050. Achieving this goal will require a clear focus on prioritizing safety for all road users. The Henry County Safety Action Plan addresses the seven important SS4A Program safety components. Each component is a chapter in the Safety Action Plan.

- Leadership Commitment and Goal Setting
- Planning Structure
- Safety Analysis
- Engagement and Collaboration
- Policy and Process Changes
- Strategy and Project Selections
- Progress and Transparency

## Safe System Approach

The Safe System Approach is a comprehensive approach based on the understanding that humans are fallible and make mistakes, but those mistakes should not result in fatalities or serious injuries. There are five broad impact areas for achieving this goal: **Safer People, Safer Vehicles, Safer Speeds, Safer Roads, and Post-Crash Care**. This approach significantly expands the traditional safety plan focus on roadway infrastructure. Six key principles undergird the approach.




## Safe System Key Principles

**Death and Serious Injuries are Unacceptable**: Every human life is invaluable, and ensuring safety is the highest priority.

**Humans Make Mistakes:** Recognizing that human error is inevitable, we design and manage our roads to be forgiving, mitigating the potential consequences of these errors to prevent serious harm.

**Humans are Vulnerable:** We design the roadway system to account for the biological limits the human body can tolerate in a crash.

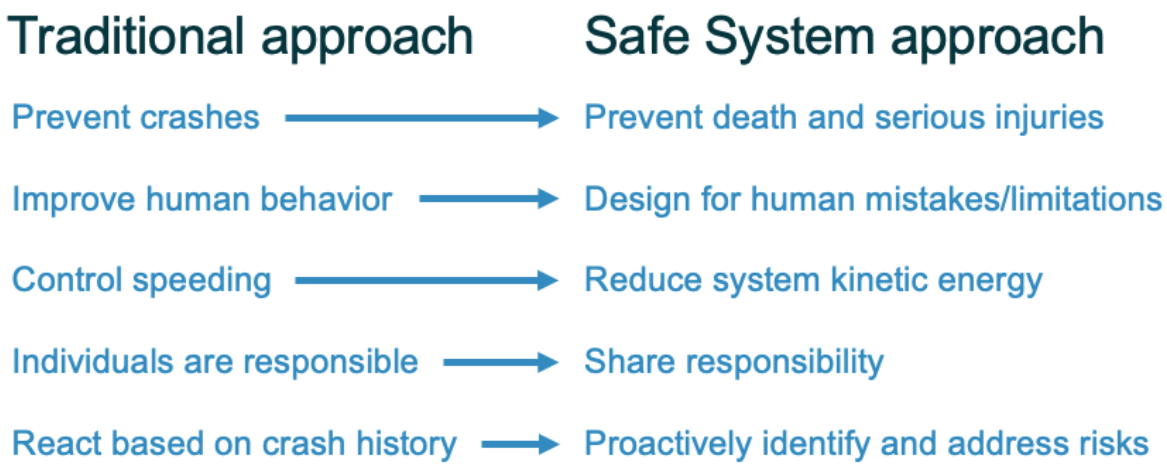
**Responsibility is Shared:** Preventing fatal and serious injuries is a shared responsibility. All stakeholders must work together to enhance road safety.

**Safety is Proactive:** Taking a proactive stance on safety means anticipating and addressing risks before they result in crashes. This involves identifying potential hazards and implementing measures to mitigate them.

**Redundancy is Crucial:** Embedding multiple layers of safety within the transportation system is important, so that if one layer fails, others can still protect people. This redundancy is vital for creating a resilient transportation network.

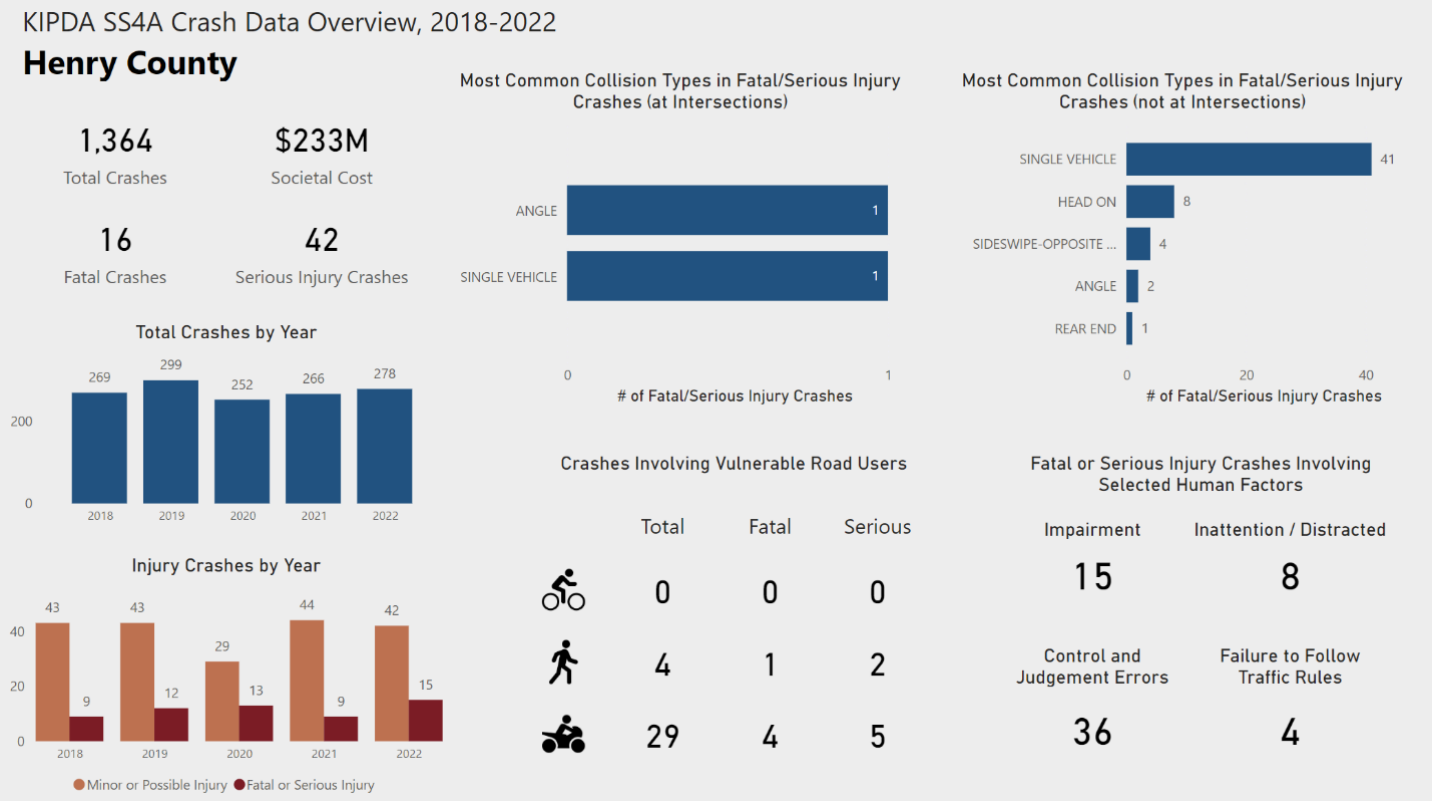
## Safe System Approach vs Traditional Approach

The traditional road safety approach often relies on all road users' perfect human behavior. It tends to react to crashes *after* they occur, focusing on individual accountability. In contrast, the Safe System Approach acknowledges that humans are fallible and will inevitably make mistakes. This approach builds a system designed to minimize the severity of crashes resulting from those errors. This shift from an individual-focused model to a system-centric one highlights all stakeholders' shared responsibilities. The comparative graphic illustrates this fundamental shift, showcasing how the Safe System Approach aims to create a safer, more forgiving transportation system.



# Overview

Henry County had 16 fatal crashes and 42 serious injury crashes during the five-year period from 2018 to 2022, for a total of 58. There were 1,364 total crashes during this time. The total societal cost of all crashes was $233 million (including economic and quality of life factors). The figure below provides an overview of the crash data.




Important safety findings for Henry County include:

- Fatal and serious injury crashes are spread across the county on state and local highways
- The highest density of all crash types occurs near the interchange of Pendleton Rd and I-71 and in Eminence and New Castle
- 42 of 58 fatal / serious injury crashes were single vehicle crashes
- 51 of 58 fatal / serious injury crashes involved a roadway departure
- 3 of 58 fatal / serious injury crashes involved a pedestrian or bicyclist
- 32 of 58 fatal / serious injury crashes involved a vehicle not under proper control
- 8 of 58 fatal / serious injury crashes involved driver inattention / distraction

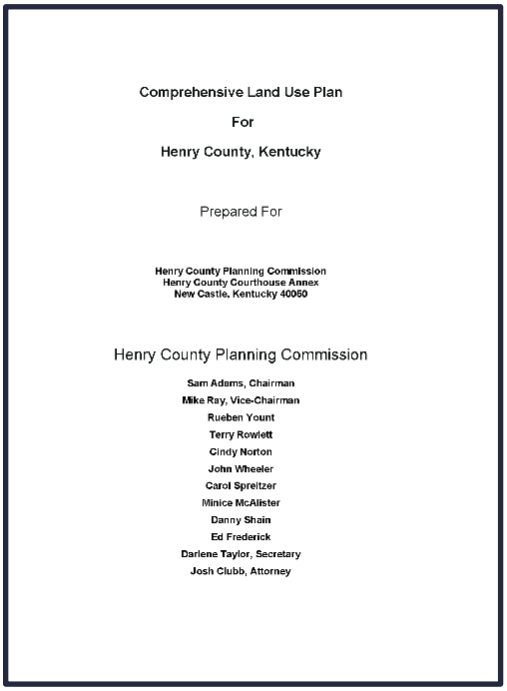
# 1. Leadership Commitment and Goal Setting

Henry County is dedicated to ensuring safety for all users on the County's streets and highways. It demonstrates this commitment by the resolution on the following page, which states that its leaders established "a goal of working towards zero traffic fatalities and serious injuries by the year 2050."

Henry County's commitment and leadership in implementing safety-focused projects, strategies, and policies are supported by current programs and policies.

The Henry County Comprehensive Land Use Plan was adopted in 2018 and is implemented through the coordinated efforts of the Henry County Planning Commission, local government officials, and community stakeholders.

Henry County is actively working towards becoming a safety-focused county through a series of transportation objectives outlined in its Comprehensive Land Use Plan. These objectives include creating new collector and arterial streets in urban areas, upgrading existing substandard rights-of-way and roads when new development presents opportunities, and constructing sidewalks to promote safe pedestrian movement through new residential subdivisions. Safety improvements at high crash locations should be addressed through enhancements such as intersection channelization and signals.


Comprehensive Land Use Plan

For

Henry County, Kentucky

Prepared For

Henry County Planning Commission
Henry County Courthouse Annex
New Castle, Kentucky 40050

Henry County Planning Commission

Sam Adams, Chairman
Mike Ray, Vice-Chairman
Rueben Yount
Terry Rowlett
Cindy Norton
John Wheeler
Carol Spreitzer
Minice McAlister
Danny Shain
Ed Frederick
Darlene Taylor, Secretary
Josh Clubb, Attorney

The County would like to see Highway 146 between New Castle and Pendleton enhanced for better road safety and economic development. Improvements are encouraged to the Gratz Bridge. Both I-71 interchanges are targeted for safety improvements, reflecting the County's commitment to creating a safer and more efficient transportation network.

# 620-12-2024-128

RESOLUTION NO _____

A RESOLUTION OF THE HENRY COUNTY FISCAL COURT IN SUPPORT OF VISION ZERO

WHEREAS, the Henry County Fiscal Court is utilizing a planning grant through the Safe Streets and Roads for All Program (SS4A) and coordinating with the Kentuckiana Regional Planning and Development Agency (KIPDA) to develop a safety action plan for Henry County Fiscal Court to analyze existing conditions, historical trends, systemic and specific needs and to identify projects and strategies to address identified problems; and

WHEREAS, a safety action plan is an eligibility requirement for implementation grants through the SS4A Program; and

WHEREAS, community commitment to an eventual goal of zero fatalities and serious injuries is an important component for USDOT consideration of an implementation grant through the SS4A program.

NOW, THEREFORE BE IT RESOLVED that the Henry County Fiscal Court hereby establishes a goal of working towards zero traffic fatalities and serious injuries by the year 2050.

Done this December 17, 2024 on a motion made by Esq. Frederick and seconded by Esq. Tingle

Members present voting in favor:

Esqs. Frederick, Hartlage, McManis, Shain, Fisher, Tingle

Members present voting against:

None

Scott Bates Henry County Judge Executive

ATTEST:

Denise Perry

Denise Perry

# 2. Planning Structure

The planning structure for the Henry County Safety Action Plan consisted of various committees, each playing a crucial role. The following describes these bodies and their collaborative efforts in the plan development.

## Regional Steering Committee

The Regional Steering Committee provided oversight and strategic direction for the Safety Action Plan development process. The Committee was composed of representatives from 16 local government agencies, including Henry County. It also included KIPDA and Regional Transportation Council (RTC) staff. Steering Committee meetings were held at key points to provide information and gather input and feedback. Topics covered during the meetings included:

- Purpose of safety action plans
- Data collection and safety analysis
- Identification of high crash highways and intersections
- Countermeasure identification and prioritization
- Documentation and implementation opportunities

## County Leadership Meetings and Plan Review

Meetings were held with county leadership at two key points during the plan development to receive and relay detailed input and feedback. The first meeting focused on presenting the initial data analysis and prioritization of needs, allowing county leadership to identify, confirm, and prioritize critical safety issues. The second meeting gave county leadership the opportunity to provide feedback on the draft High Injury Network (HIN) and potential safety countermeasures. These interactions allowed the unique concerns and priorities of Henry County to be adequately addressed in the plan.

The final Safety Action Plan was also reviewed by County leadership to provide feedback and yield a plan that is useful for moving Henry County forward toward a safer future.

## Safety Committee

The Safety Committee is the cornerstone of the planning structure, providing localized oversight and input into the plan. The Safety Committee also provides a means of continuing the safety planning and project implementation process in the future. The Committee consisted of a multidisciplinary team comprising key stakeholders from the community, including:

- Henry County
    - Fiscal Court
    - Sheriff's Office

    - Emergency Services
    - Planning and Zoning
- Kentuckiana Regional Planning & Development Agency (KIPDA)
- Kentucky State Police

The Safety Committee provided advice and feedback on the plan development and is intended to continue this advisory role as the plan moves into implementation and monitoring. The Committee provided input and feedback on potential safety needs and possible reactive and systemic safety countermeasures. Having many different perspectives and agencies in these meetings facilitates effective communication and results in a more effective safety action plan that better addresses the five elements of the Safe System Approach. A detailed review of the Safety Committee Meetings is provided in **4. Engagement and Collaboration.** The dialogue is expected to continue in the future, facilitated by RTC and KIPDA staff, as the plan is implemented, updated, and enhanced over time.

# 3. Safety Analysis

## Study Area

The study area for the safety analysis includes the entirety of Henry County, Kentucky, as shown in Figure 3-1. This study consists of all public streets and roads within the county, except Interstate 71 (I-71), parking lots, and privately owned facilities.

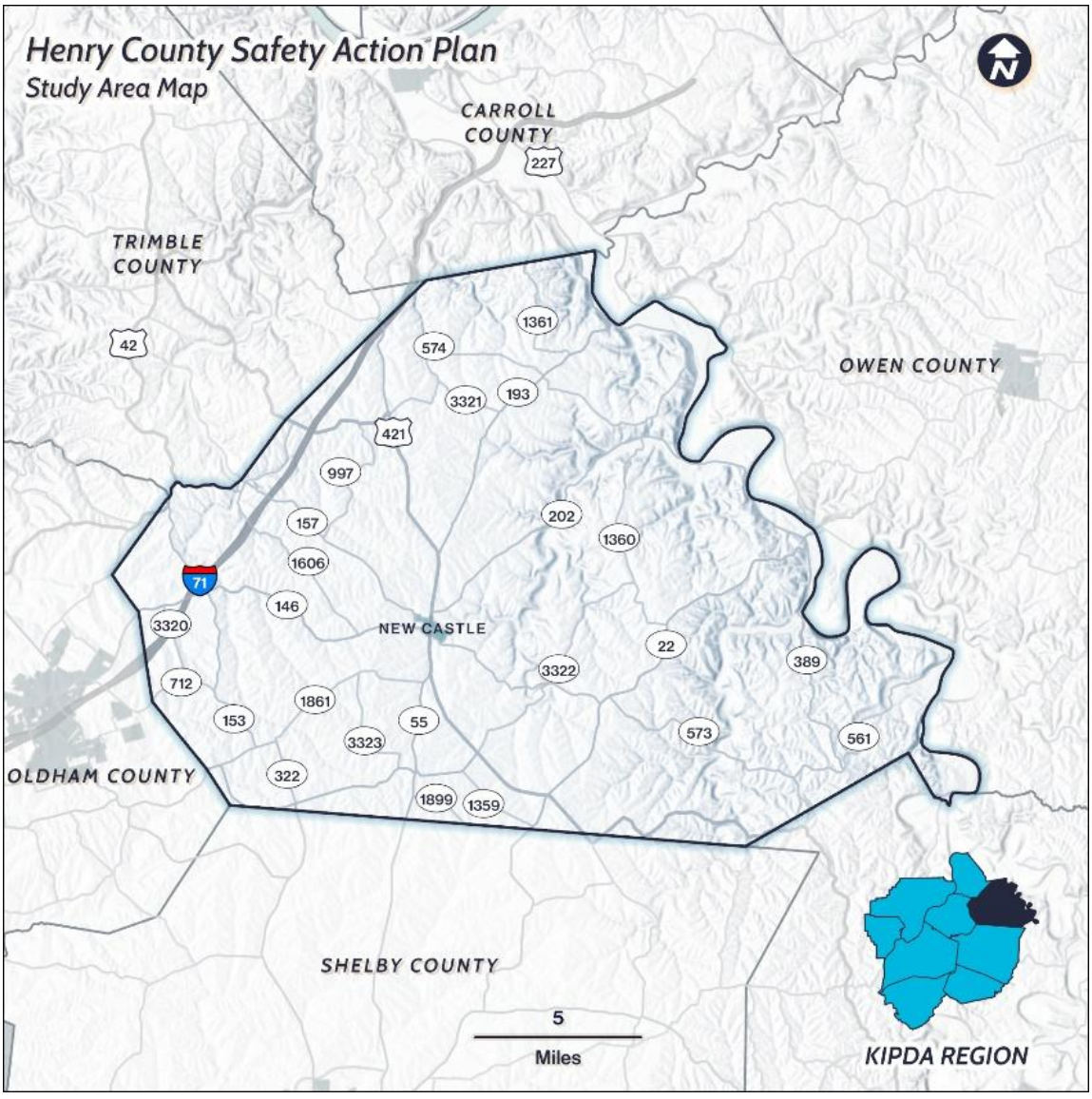



*Figure 3-1. Study Area*

## Crash Data

The safety analysis used the five years of crash data between 2018 and 2022. This period was selected based on the desire to study consistent crash trends over a consecutive perio d, the availability of data when the project started, and expectations regarding future funding application data requirements.

The project team obtained the crash data from the Kentucky State Police (KSP) Crash Database through a custom dataset provided by the Kentucky Transportation Cabinet (KYTC) in partnership with the Kentucky Transportation Center (KTC). This data is primarily collected by city, county, and state police department crash investigation teams when they complete a Kentucky Uniform Police Traffic Collision Report form. This form captures critical information about the crashes, including location, type, severity, individuals, and units involved, environmental factors, and the contributing factors of each crash. Departments enter this information into a database maintained by KSP.

The initial crash data included all crashes across Henry County from 2018 to 2022. The project team removed crashes on I-71 and those in parking lots from the dataset. Additionally, missing information could not link some crashes to the GIS roadway. After these adjustments, the final crash database used for the study was 1,364 crashes.

This report focuses on crash events based on the most severe injury sustained in each incident. Since the analysis is event-based rather than individual-based, a single crash involving multiple injuries is counted as one event, categorized by the highest severity level recorded. Pedestrian crashes involve at least one pedestrian and one motor vehicle. Similarly, bicycle crashes refer to crashes involving at least one bicycle and one motor vehicle. Vehicle crashes involve at least one vehicle and do not involve a pedestrian or a bicyclist.

KYTC provided geographic information system (GIS) files of roadway characteristics and traffic data for state-owned roadways, known as the Highway Information System (HIS) database. The crash data was joined with GIS information to create a crash database that facilitates detailed analyses to identify crash trends, areas of opportunity, and risk factors to assist in prioritizing projects .

### Crash Severity

The crash database provided by KYTC uses the KABCO Injury Classification Scale. The KABCO injury classification system categorizes traffic crash injuries into five levels: Fatal (K), Suspected Serious (A), Suspected Minor (B), Possible (C), and No Apparent Injury (O). The KABCO scale is the recommended best practice for individual injury reporting by the Model Minimum Uniform Crash Criteria (MMUCC), developed by the National Highway Traffic Safety Administration (NHTSA). KSP uses the KABCO scale and MMUCC during field data collection and reporting the injury severity of a crash. Crash severity is determined by the most severe injury occurring in the crash. For example, if a fatality occurs, the crash is classified as a “K” or fatal injury crash. The table below provides a breakdown of the crashes in Henry County by severity.

| Severity | MMUCC Severity Description | Crashes (2018-2022) | % |
|---|---|---|---|
| **K** | Fatal Injury | 16 | 1% |
| **A** | Suspected Serious Injury | 42 | 3% |
| **B** | Suspected Minor Injury | 130 | 10% |
| **C** | Possible Injury | 71 | 5% |
| **O** | No Apparent Injury | 1,105 | 81% |
| | **Total** | **1,364** | |

*Table 3-1. Crashes by Severity*

The figure below shows the location of all 1,364 crashes documented during the study period. The density of crashes is demonstrated with a gradient scale. The highest number of crashes occurred near Eminence and Pendelton during the study period.

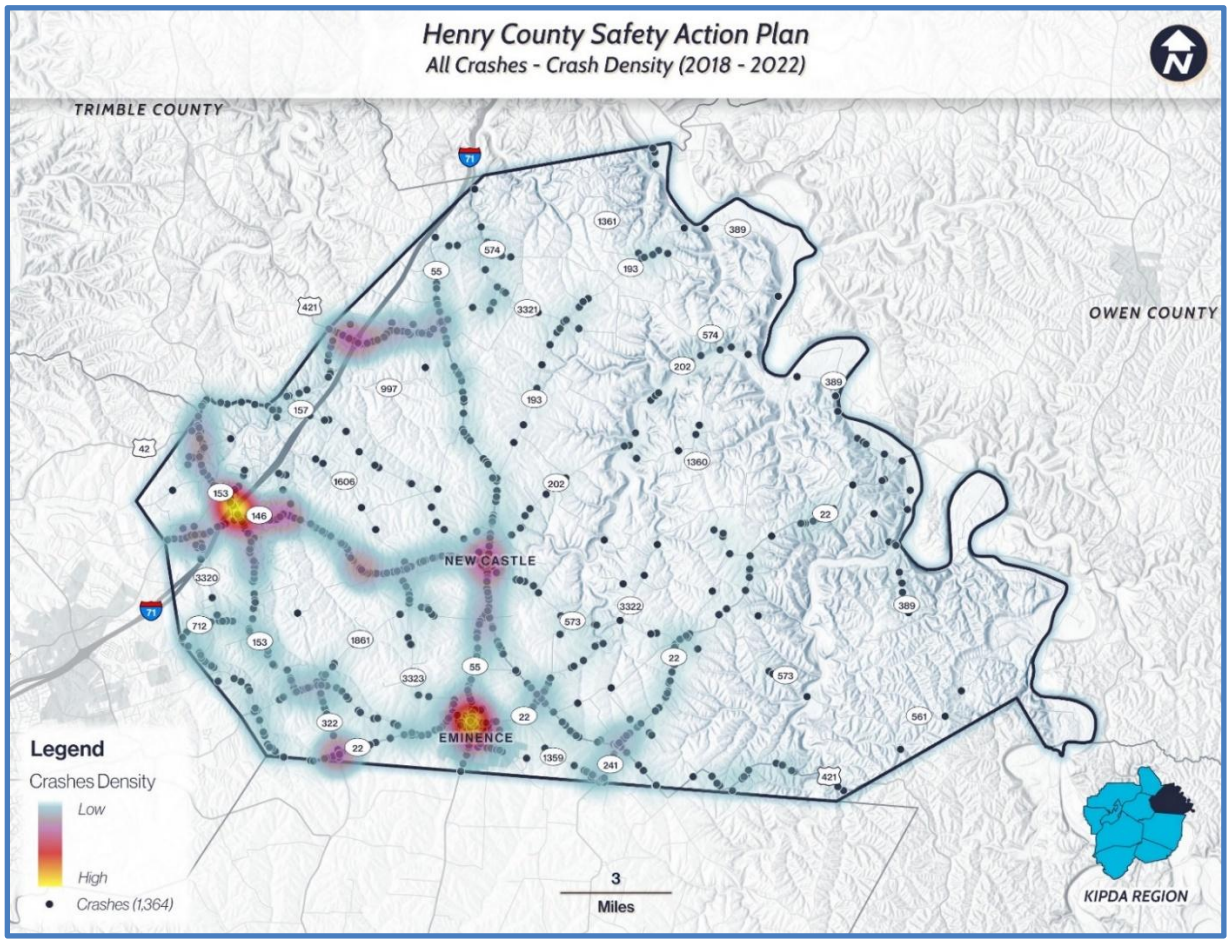



*Figure 3-2. Crash Density Map*

The figure below shows the locations of fatal and suspected serious injury crashes. These crashes are located throughout the county and are not clustered in the same manner as the lower-severity crashes.

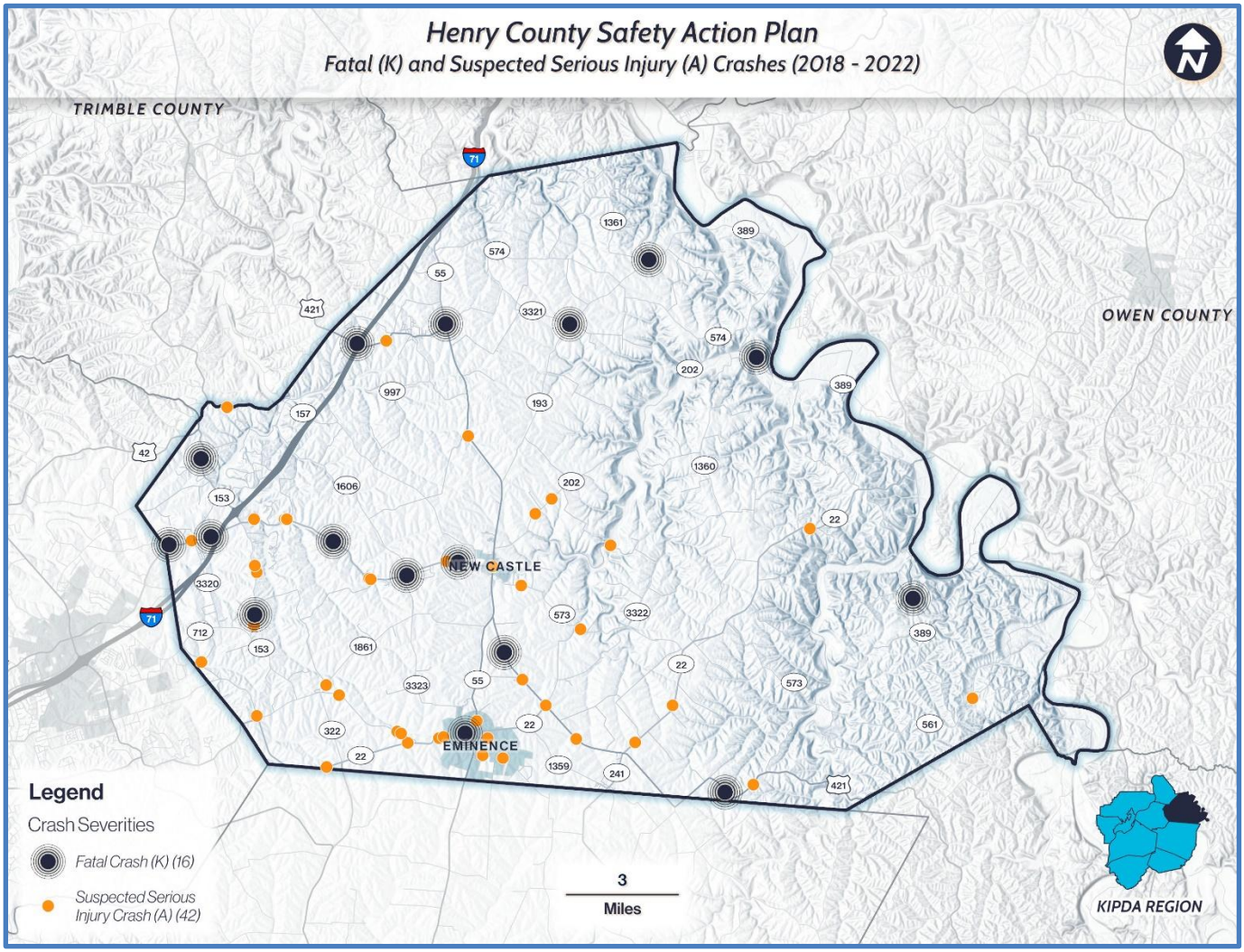



*Figure 3-3. Fatal and Suspected Serious Injury Crash Map*

## Crash Trends

The crash data has been examined considering a number of different factors to identify patterns and safety needs. This trend analysis also provides information about potential safety countermeasures and approaches that could be explored to address those needs.

### Annual Crash Trends

The 2018-2022 crash analysis period indicates that annual crashes remained relatively flat between 250 and 300 crashes per year. There was a higher occurrence of crashes in 2019, then a decrease in 2020. This is summarized in Figure 3-4. The COVID-19 pandemic greatly affected traffic patterns and crash reporting, especially low severity crashes. In early 2020 police operating procedures were modified to minimize potential exposure. Consequently, the reported number of crashes in 2020 is likely distorted, as crashes were underreported.

Figure 3-4 shows the trajectory of severe fatal (K) and suspected serious injury (A) crashes through the study period. The distribution of these crashes has largely increased year-over-year, not including a significant drop in 2021.

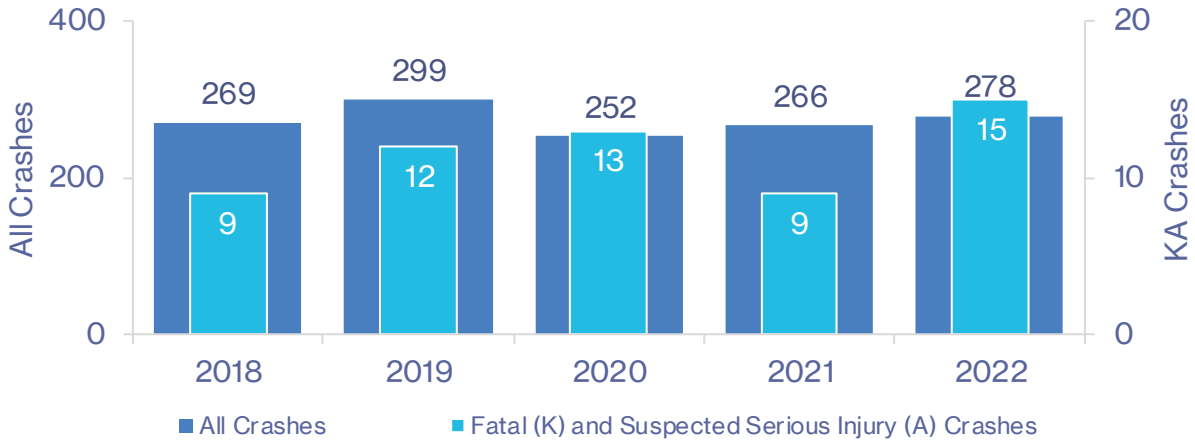



*Figure 3-4. Overall Crashes per Year*

## Crash Occurrence

***Month***

The following charts present the crashes by month over the 5-year study period. The monthly crash data shows notable variations in the severity of crashes throughout the year. While the total number of crashes is fairly consistent, July and September exhibit significantly higher percentages of fatal and serious injury crashes, with 17% each, despite accounting for only 8% and 9% of all crashes. In contrast, the months of February and November have crashes with lower severity rates of only 2% and 3% of fatal and serious injury crashes, despite contributing to 7% and 10% of all crashes. December also shows a spike in severity, with 12% of the severe crashes.

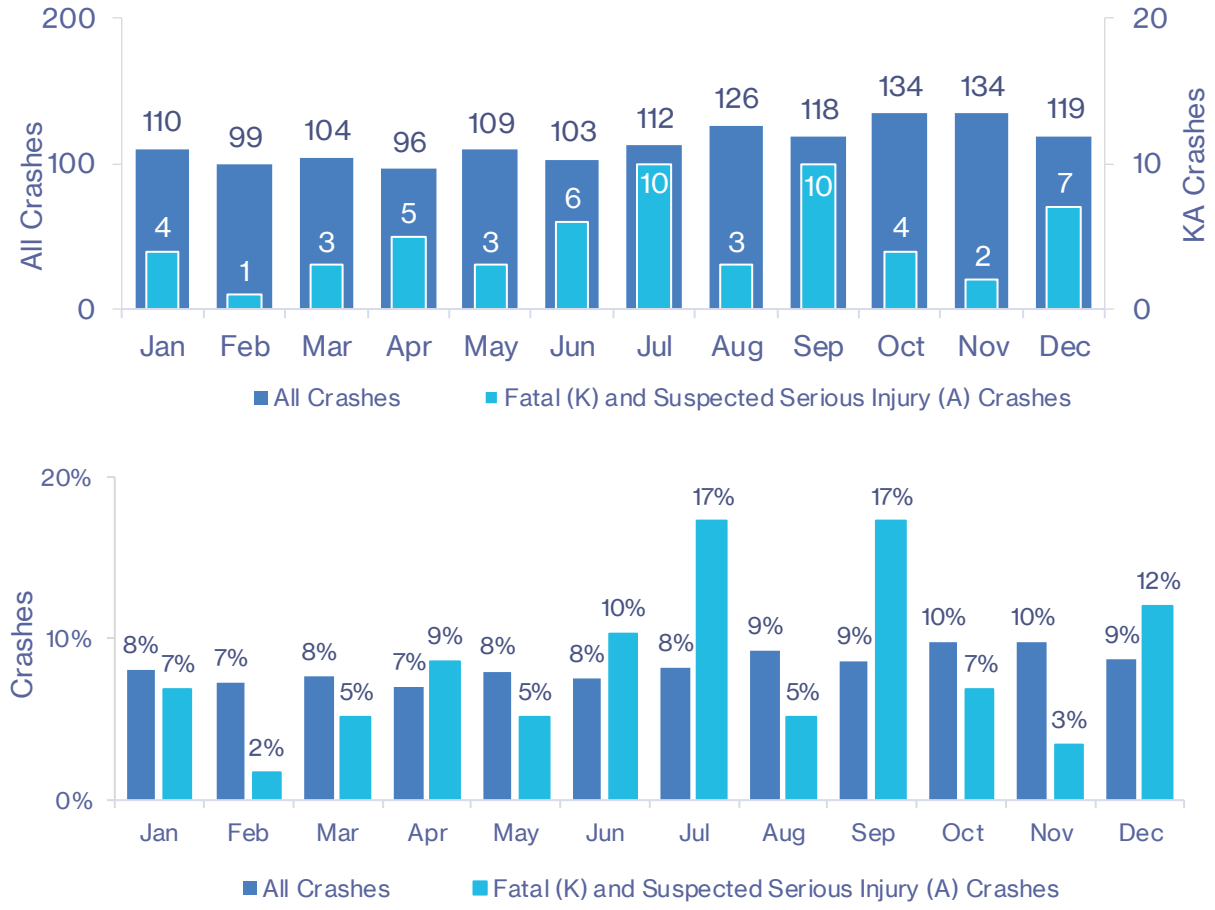



*Figure 3-5. Monthly Crash Breakdown*

***Day of Week***

As seen in Figure 3-6, crashes are relatively consistent across the weekdays with a notable peak on Friday, which accounts for the highest number of crashes (233 crashes). However, Friday does not have a higher than average number of severe crashes, with only seven severe crashes reported. In contrast, Sunday, with the lowest total number of crashes (164 crashes), has a disproportionately high number of fatal and suspected serious injury crashes (11).

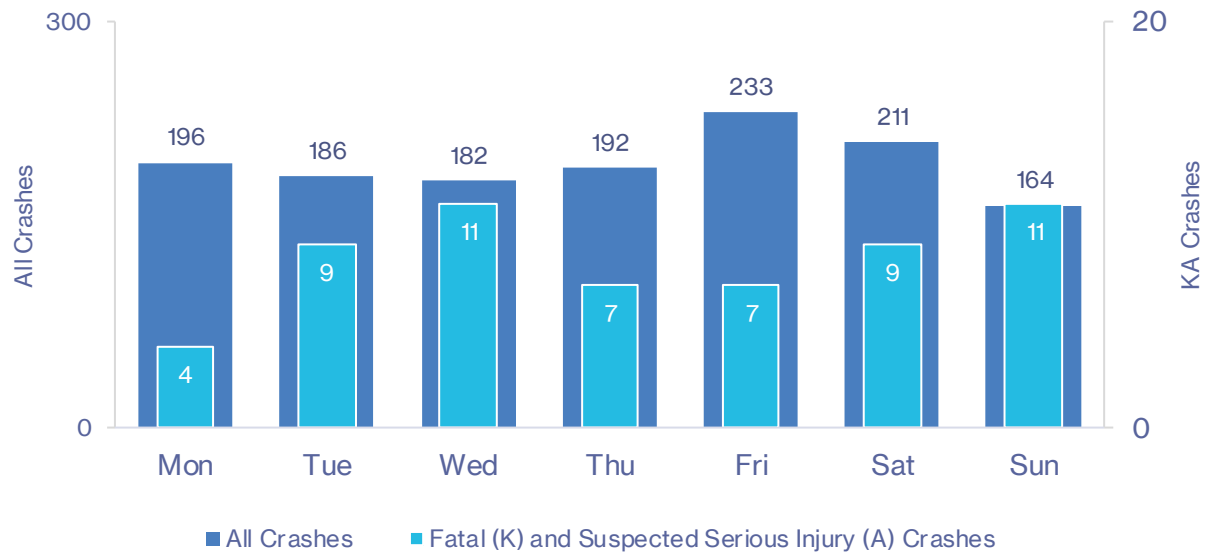



*Figure 3-6. Crashes by Day of Week*

***Time of Day***

The period between 3-6 pm experiences the highest number of crashes, with 293 crashes, accounting for 24% of all crashes, and 16 fatal and suspected serious injury crashes (which make up 28% of all fatal and suspected serious injury crashes). This indicates that both crash frequ ency and severity peak during this time period, typically characterized by the evening rush hour. In contrast, while the 6-9am and 9am-12pm periods also show a significant number of crashes (207 and 200, respectively), they result in few severe crashes, with only 6 and 7 fatal and suspected serious injury crashes during those timeframes. This suggest that while morning crashes are frequent, they tend to be less severe compared to those in the afternoon.

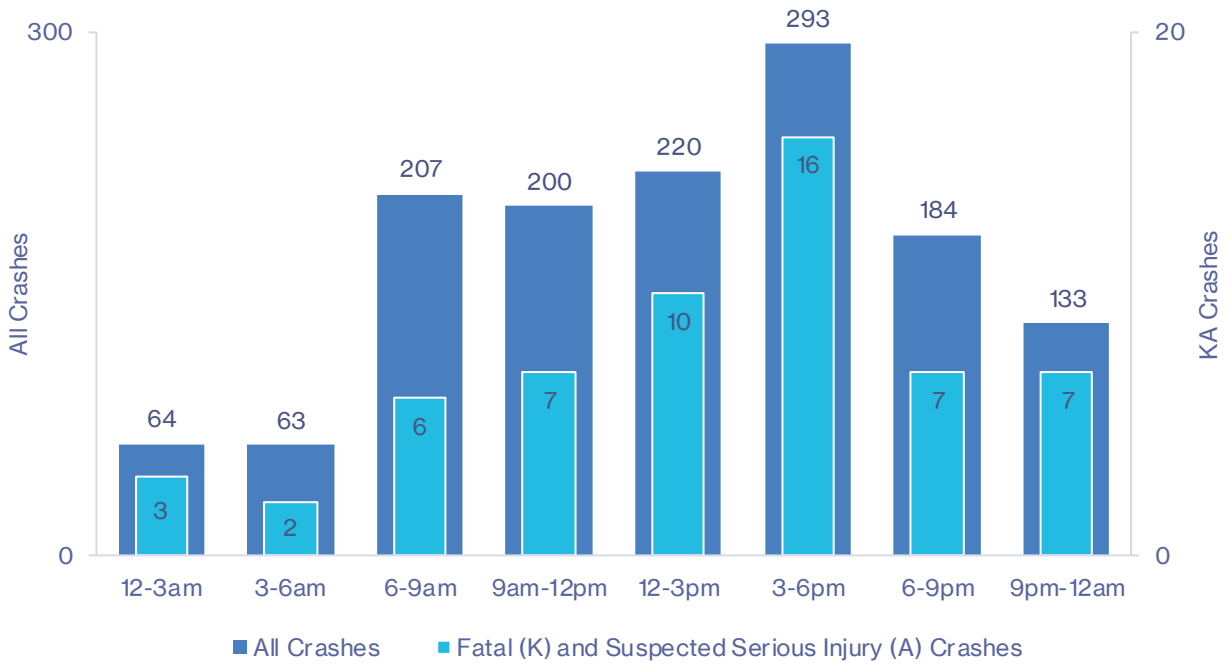



*Figure 3-7. Crashes by Time of Day*

## Manner of Collision

As shown in Figure 3-8, single vehicle crashes are both the most common and the most severe type of crash, accounting for 50% of all crashes and a striking 72% of fatal and suspected serious injury crashes. Head-on crashes, while only comprising 2% of all crashes, contribute to 14% of fatal and suspected serious injury crashes, demonstrating that they are disproportionately severe when they occur.

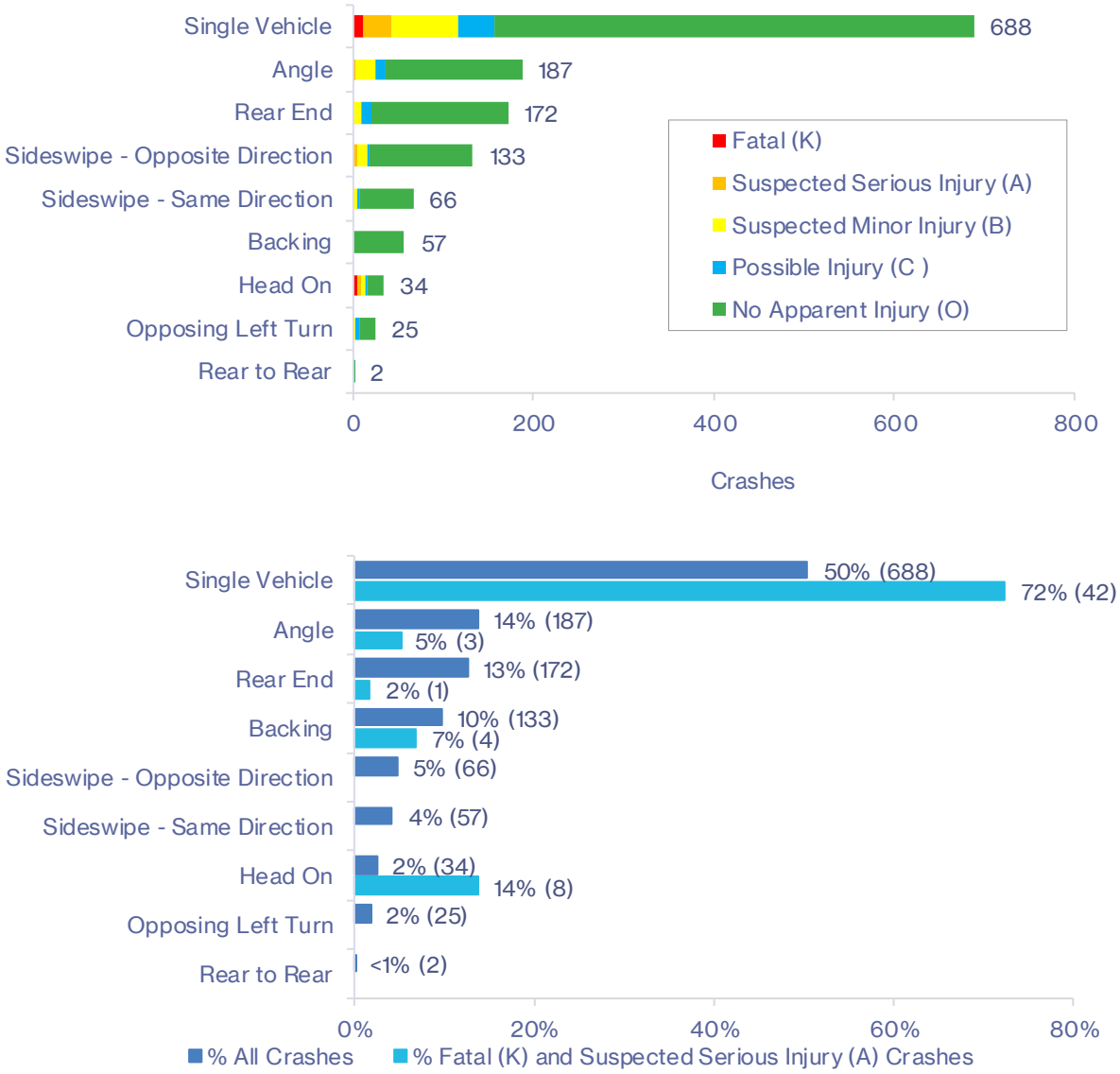



*Figure 3-8. Manner of Collision by Severity*

## Driver Behavior

Driver behavior is a shared responsibility and can be the determining factor in a crash. The actions and decisions made by drivers can significantly influence the likelihood and severity of crashes. Addressing key areas of concern, such as aggressive, distracted, and impaired driving, is essential for fostering a safer roadway environment.

### *Aggressive Driving*

Aggressive driving is generally defined as behavior by drivers that negatively impacts the safety of other motorists or pedestrians, contributing to crashes. Aggressive crashes are coded to have the following behaviors.

- Failure to yield to right of way
- Following too close
- Traveling too fast for conditions
- Disregarding traffic control
- Exceeding posted speed limit
- Improper passing
- Weaving in traffic

Crashes involving aggressive driving contribute disproportionately to fatal and suspected serious injury crashes compared to all crashes. While aggressive driving behaviors are present in 13% of all crashes, they account for 16% of crashes resulting in fatalities and severe injuries. This indicates a higher risk of severity associated with aggressive driving behaviors.

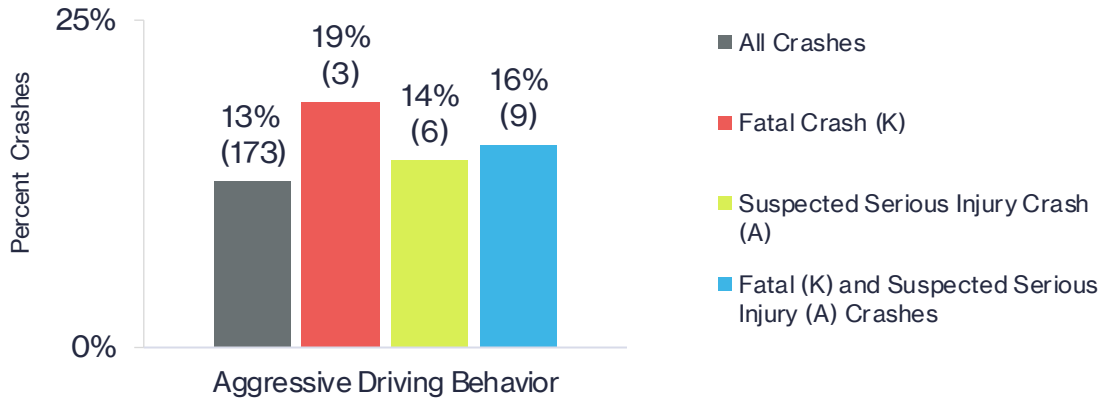



*Figure 3-9. Aggressive Driver Crashes by Severity*

Figure 3-10 illustrates the locations of the 173 crashes attributed to Aggressive Driving.

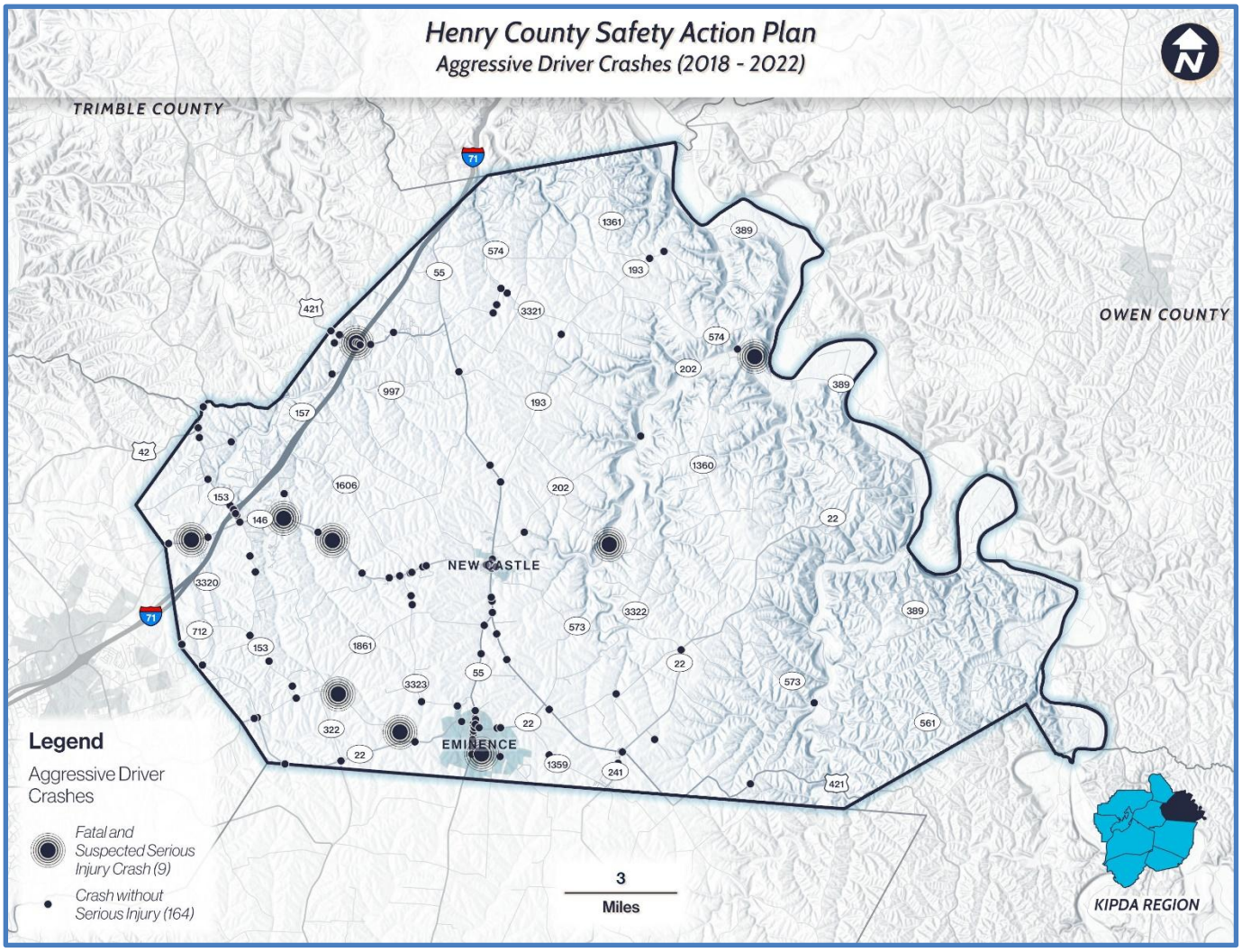



*Figure 3-10. Aggressive Driver Crashes*

***Distracted Driving***

Distracted driving refers to any activity by a vehicle operator that diverts their attention from the primary task of driving, thereby increasing the risk of a crash. The three main types of distracted driving involve drivers taking their eyes off the road, hands off the wheel, and mind away from driving. In Henry County, fatal and suspected serious injury crashes linked to distracted driving were consistent throughout the study period.

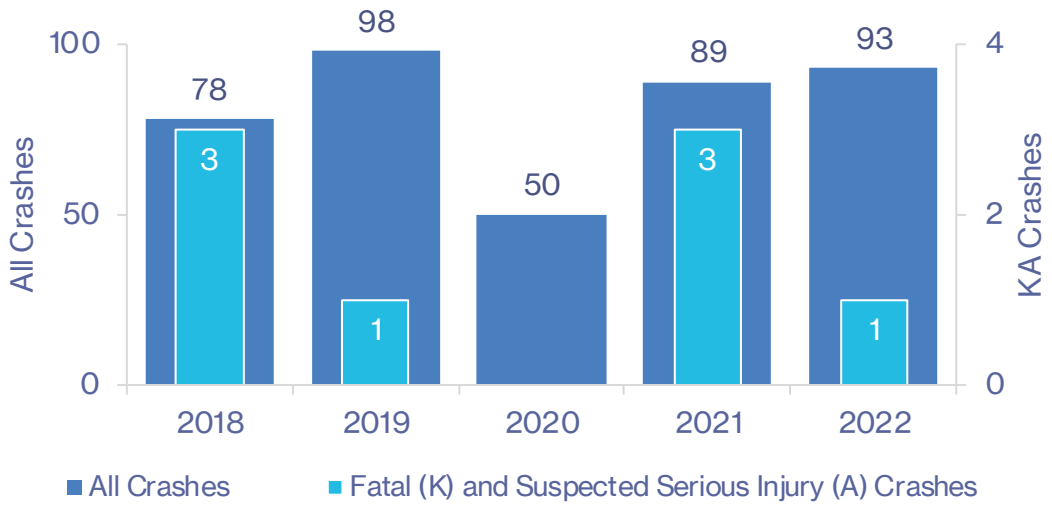



*Figure 3-11. Distracted Driver Crashes by Year*

In Henry County, 14% of fatal and suspected serious injury crashes were linked to distracted driving (see Figure 3-12). Figure *3-14* illustrates the location of crashes attributed to distracted driving.

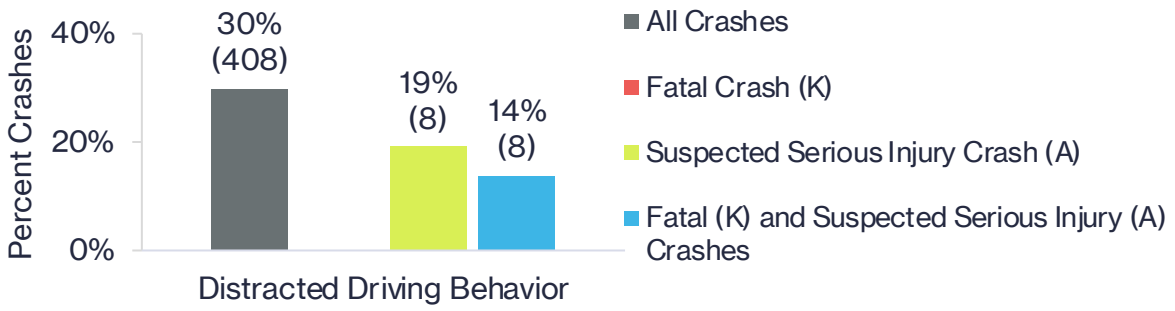



*Figure 3-12. Distracted Driver Crashes by Severity*

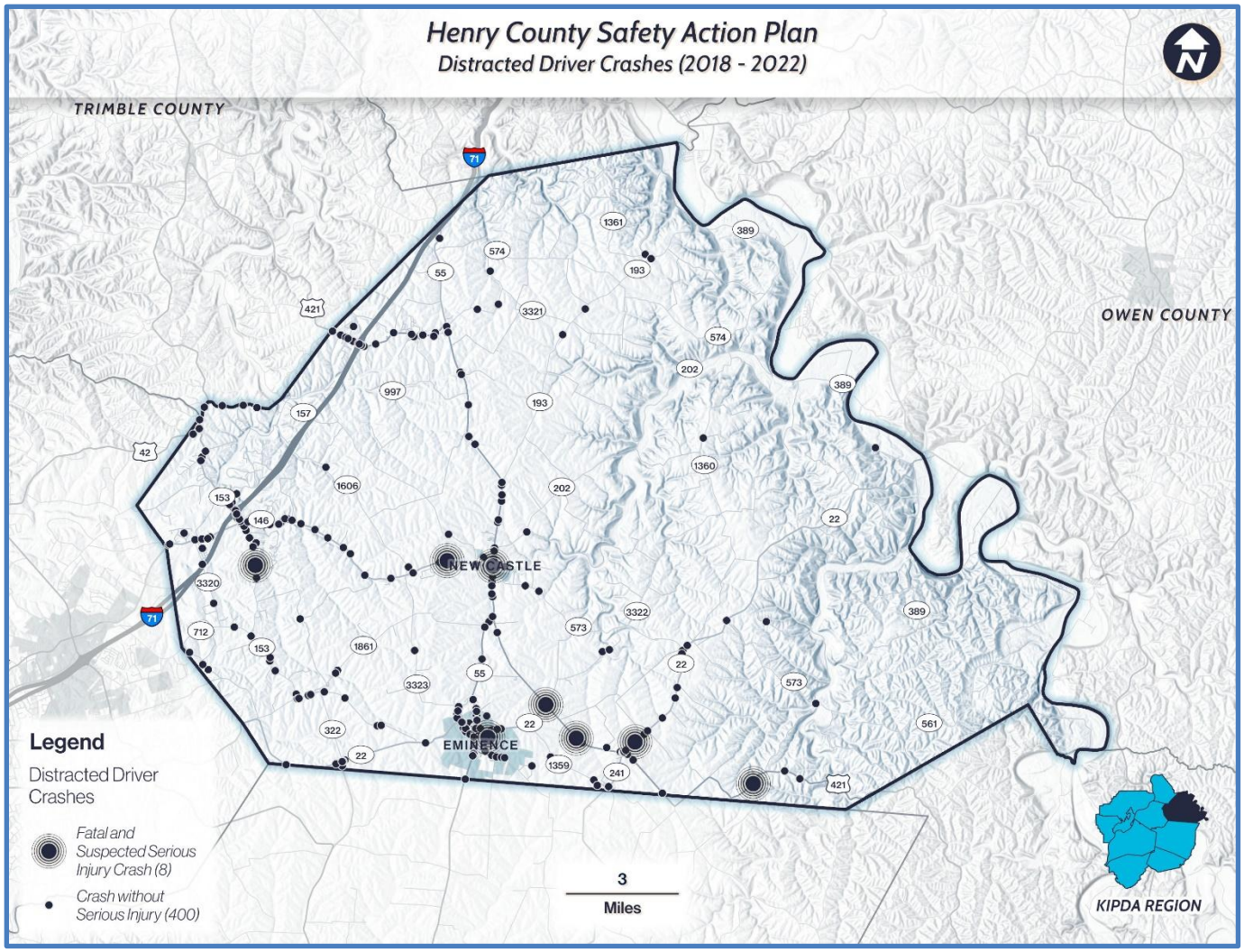



*Figure 3-13. Distracted Driver Crashes Map*

***Impaired Driving***

Impaired driving is recognized as driving a motor vehicle while under the influence of alcohol or narcotics. Impairment affects reaction time, judgement, and coordination, all of which are critical to safely operating a vehicle. In Henry County, impaired driving occurred relatively consistently during the study period.

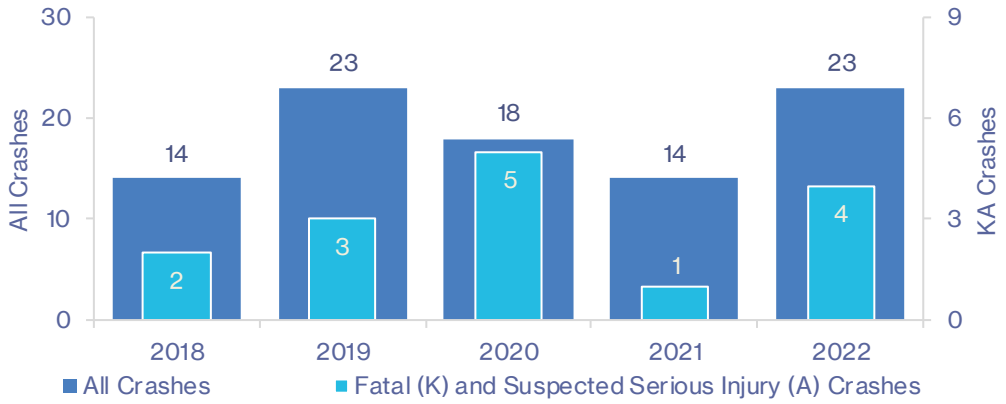



*Figure 3-14. Impaired Driver Crashes by Year*

While impaired driving behaviors are identified in only 7% of all crashes, they disproportionately contribute to more severe crashes. Impaired driving is involved in 26% of fatal and suspected serious injury crashes. This data highlights the heightened risk that impaired driving poses, as crashes involving impaired drivers are much more likely to result in fatal or serious injuries compared to non-impaired driving crashes. Figure 3-16 shows the locations of impaired driving crashes in the county.

Figure 3-1

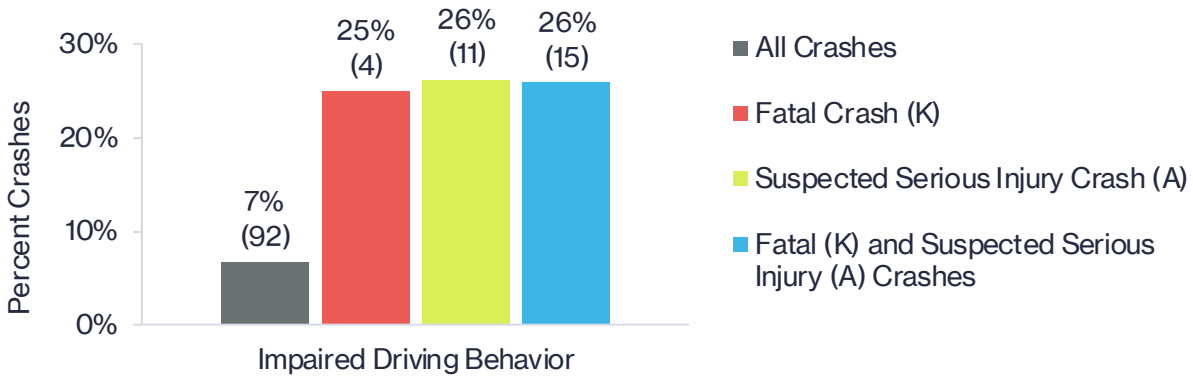



*Figure 3-15. Impaired Driver Crashes by Severity*

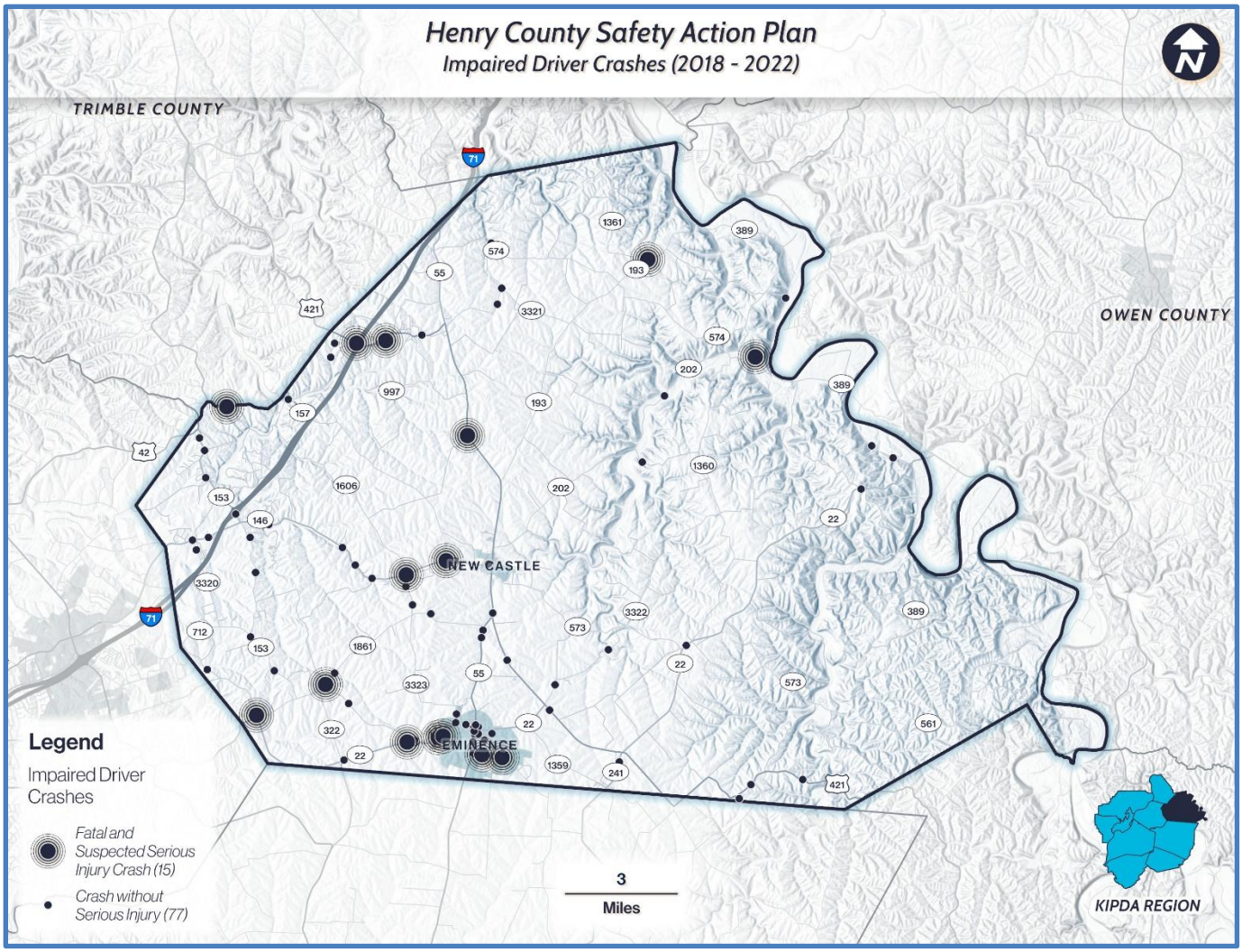



*Figure 3-16. Impaired Driver Crashes Map*

## Lighting Conditions

Roadway lighting is a safety factor that impacts visibility and reaction times. However, the documentation of lighting infrastructure is not comprehensive. The available crash data provides only anecdotal evidence regarding the lighting condition during a crash. Currently, there is no established infrastructure database detailing the presence and condition of street lighting, making it challenging to analyze the correlation between illumination and road safety.

The following chart illustrates that most crashes occur during daylight conditions, accounting for 63% of all crashes and 66% of fatal and suspected serious injury crashes. Crashes during non-daylight dark conditions make up 32% of all crashes and 33% of severe crashes, indicating that the distribution of crash severity is proportional between lighting conditions. However, the 32% of crashes occurring in non-daylight dark conditions is higher than the Federal Highway Administration's estimate that 25% of vehicle miles traveled (VMT) at night[1], suggesting that nighttime driving still carries a slightly elevated risk compared to daytime conditions.

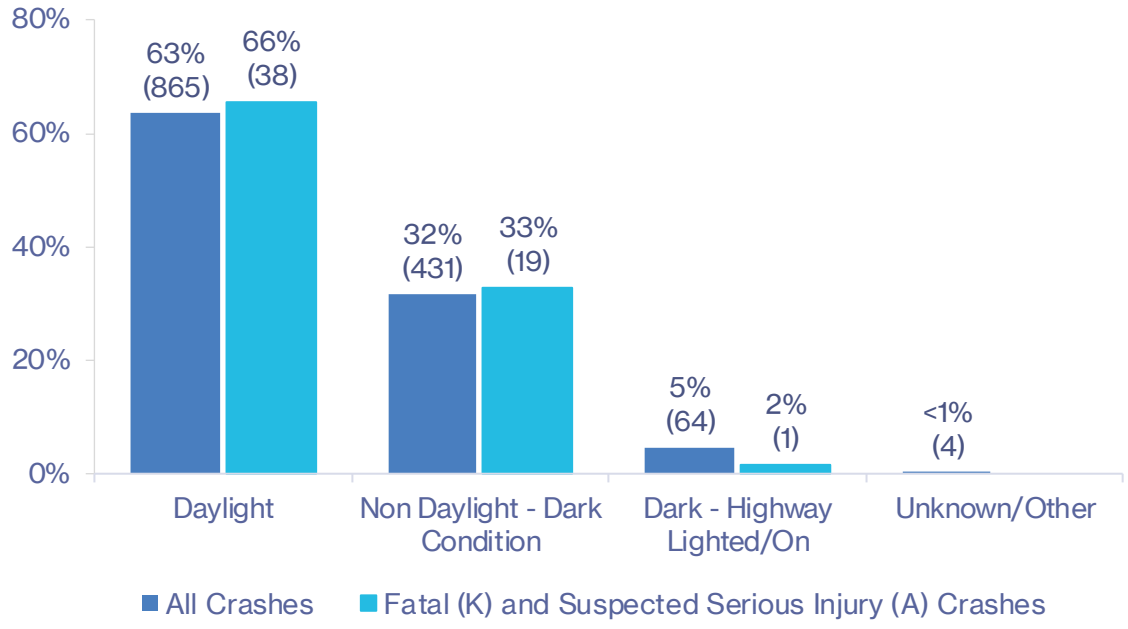



*Figure 3-17. Crashes by Light Condition*

[1] Federal Highway Administration, "Proven Safety Countermeasures: Lighting," FHWA-SA-21-50

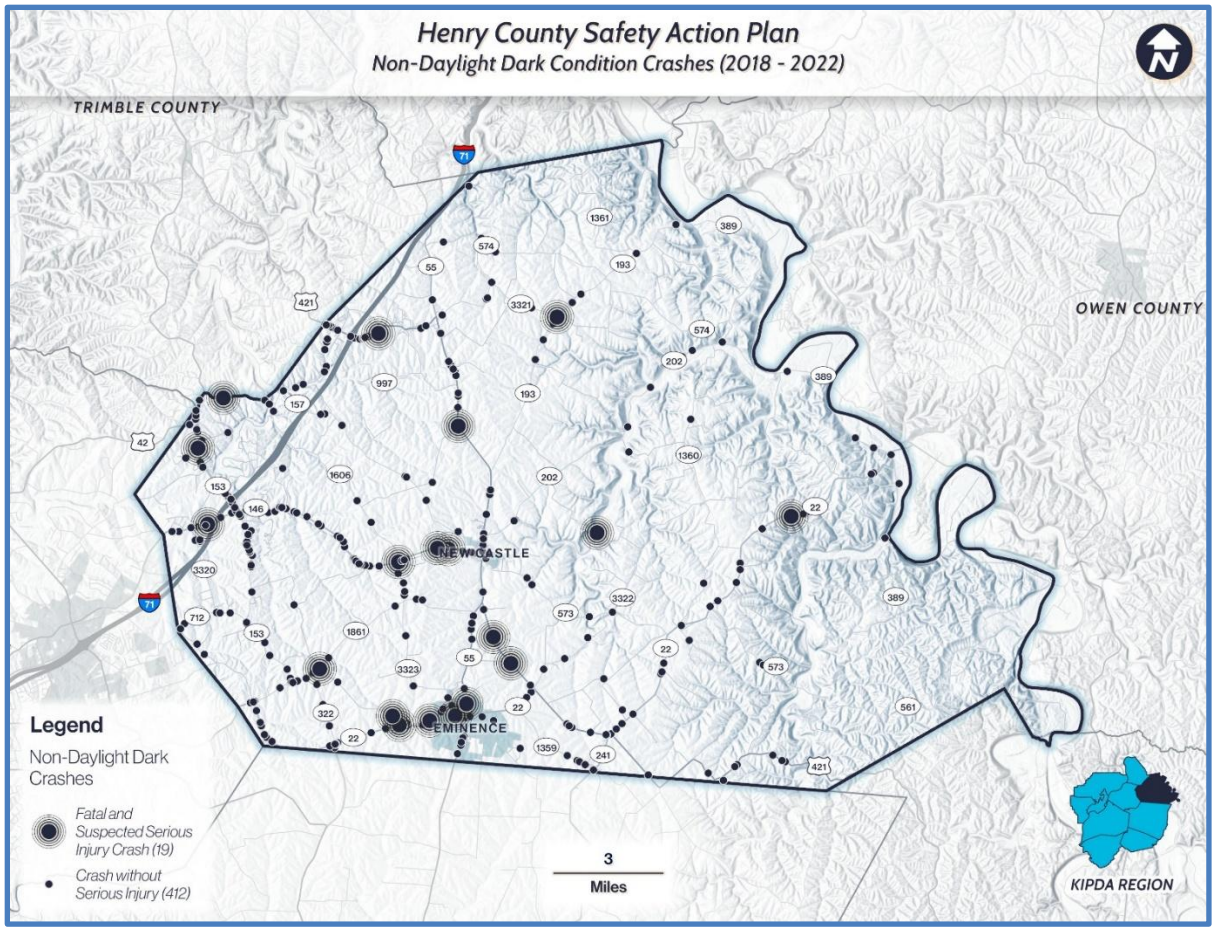



*Figure 3-18. Lighting Condition: Non-Daylight Dark Condition Crashes Map*

## Crashes by Locations

In the analysis, crashes were identified based on their location: intersections and segments. A significant majority – 69% of all crashes – occurred on roadway segments, which is expected considering Henry County is primarily a rural area. Furthermore, 79% of fatal and suspected serious injury crashes occurred on these segments.

| | Total Crashes | Fatal (K) and Suspected Serious Injury (A) Crashes |
|---|---|---|
| Intersections | 248 (31%) | 12 (21%) |
| Highway Segments | 936 (69%) | 46 (79%) |

*Figure 3-19. Crashes by Location*

## Roadway Departure Crashes

Roadway departure crashes occur when a vehicle crosses an edge line, a centerline, or leaves the traveled way. These crashes often lead to some of the most severe outcomes due to the increased risk of collision with fixed objects, overturning, or encountering unsafe roadside conditions. The inherent dangers of leaving the roadway contribute to higher rates of serious injuries and fatalities compare to other crash types.

The crash data indicates that roadway departure crashes are a significant contributor to severe outcomes. Although roadway departure crashes account for 55% of all crashes, they disproportionately represent a much higher percentage of fatal and serious injury crashes. Specifically, 88% of fatal and suspected serious injury crashes are related to roadway departures.

Figure 3-21 shows the locations of roadway departure crashes resulting in injuries or fatalities.

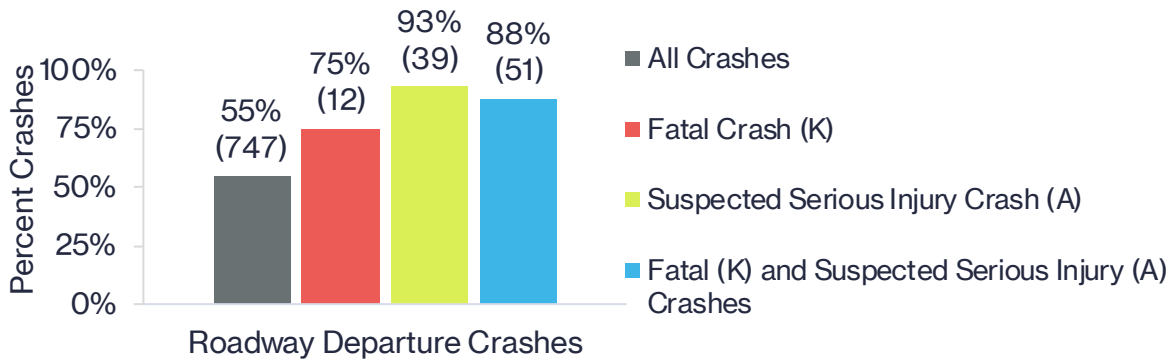



*Figure 3-20. Roadway Departure Crashes by Severity*

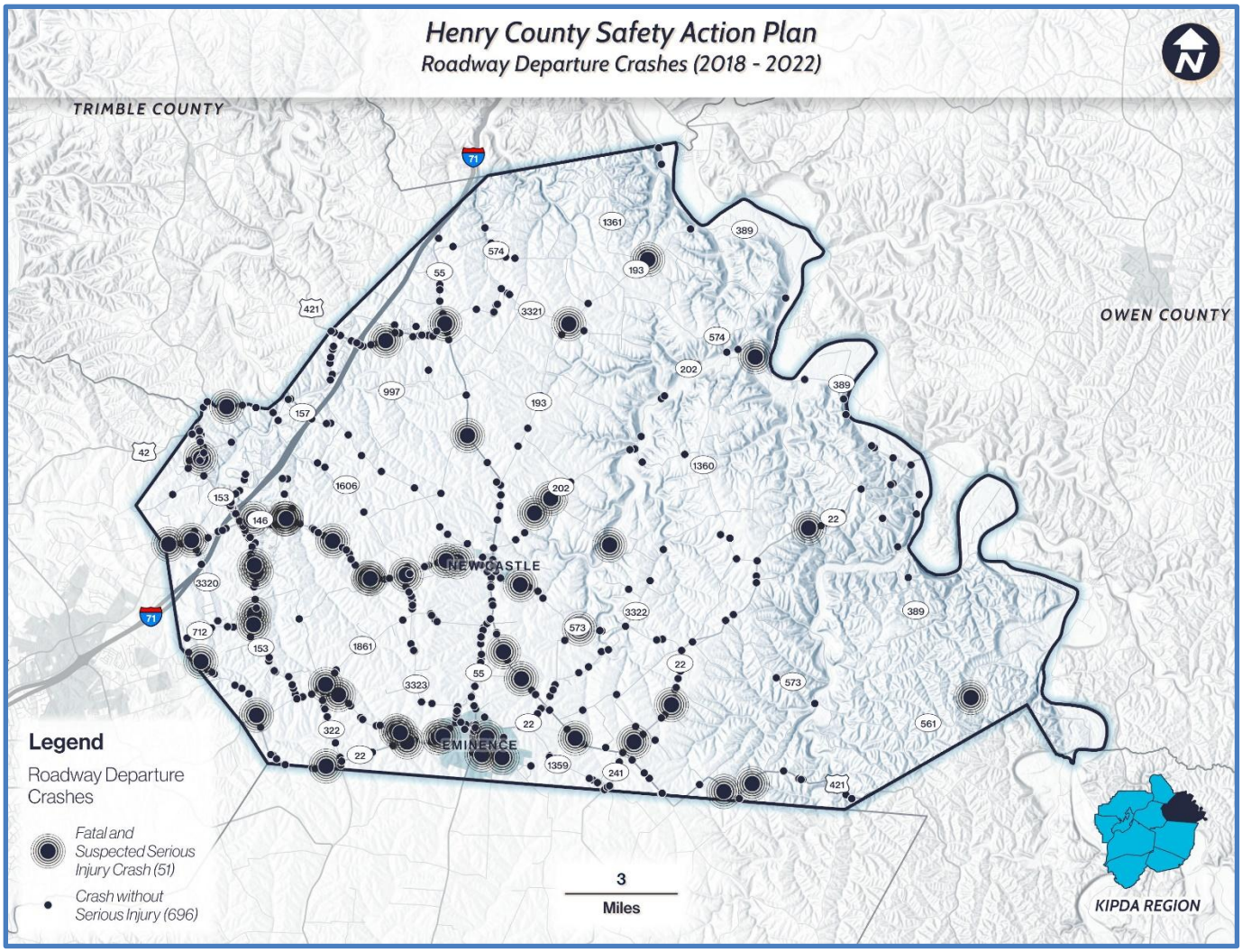



*Figure 3-21. Roadway Departure Crashes Map*

## Vulnerable Road Users

Vulnerable road user crashes, including pedestrian and bicyclist, are at a greater risk due to their lack of physical protection compared to motor vehicle occupants. These crashes typically result in more severe injuries and fatalities because they have little to no buffer between these users and the force of the collision. No bicycle crashes were reported during the study period.

### *Pedestrians*

Henry County is primarily rural with limited urban areas and has experienced a small number of pedestrian crashes, but the severity of these incidents is notable. There was one fatal pedestrian crash, which occurred along a rural roadway, along with two suspected serious injury crashes that took place in New Castle and Eminence. Although pedestrian crashes are relatively infrequent in the county, they tend to result in severe outcomes when they do occur. This highlights the need for continued emphasis on pedestrian safety.

Figure 3-22 shows the locations of pedestrian crashes.

| Severity | Description | Crashes | % |
|---|---|---|---|
| K | Fatal | 1 | 25% |
| A | Suspected Serious Injury | 2 | 50% |
| B | Suspected Minor Injury | - | - |
| C | Possible Injury | 1 | 25% |
| O | No Apparent Injury | - | - |
| | **TOTAL** | **4** | |

*Table 3-2 Pedestrian Crashes by Severity*

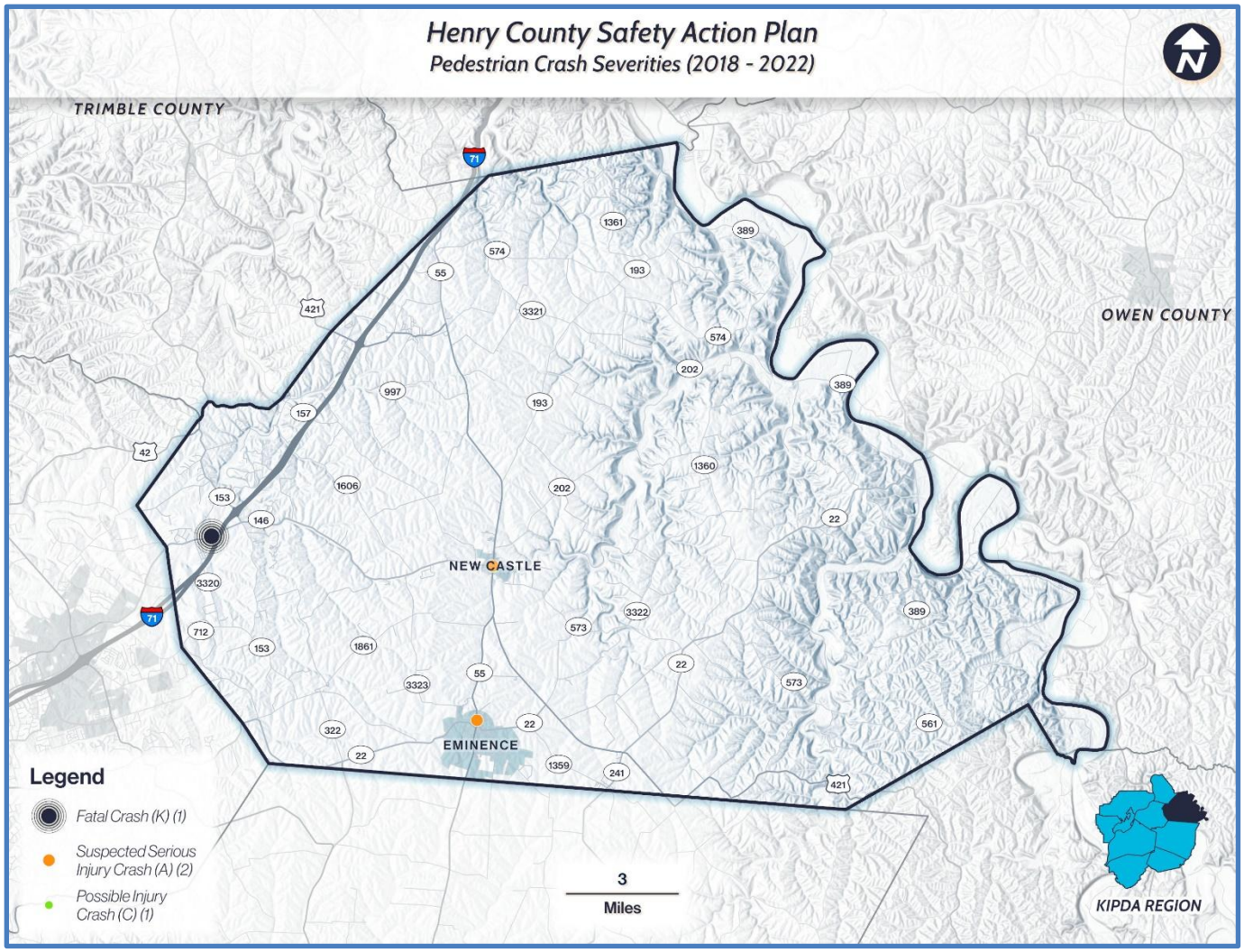



*Figure 3-22. Pedestrian Crash Map*

## Occupant Protection

Occupant Protection involves any device which is intended for protective use in a vehicle such as seatbelt, airbag, child safety seat or booster seat, which helps prevent death or serious injury in the event of a crash. The restraint crash data used for this study was based on all vehicle occupants restrained. If a single occupant was unrestrained, i.e. not wearing a seatbelt, then the crash was categorized as unrestrained.

In Henry County, the data shows a clear relationship between restraint usage and crash severity. Only 75% of the fatal crashes were occupants properly restrained, indicating that 25% of the fatal crashes involved at least one unrestrained occupant. Similarly, in suspected serious injury crashes, restraint usage dropped to 62%. Restraint usage improves with less severe crashes, rising to 85% for suspected minor injury crashes, 87% for possible injury crashes, and 97% for crashes with no apparent injury.

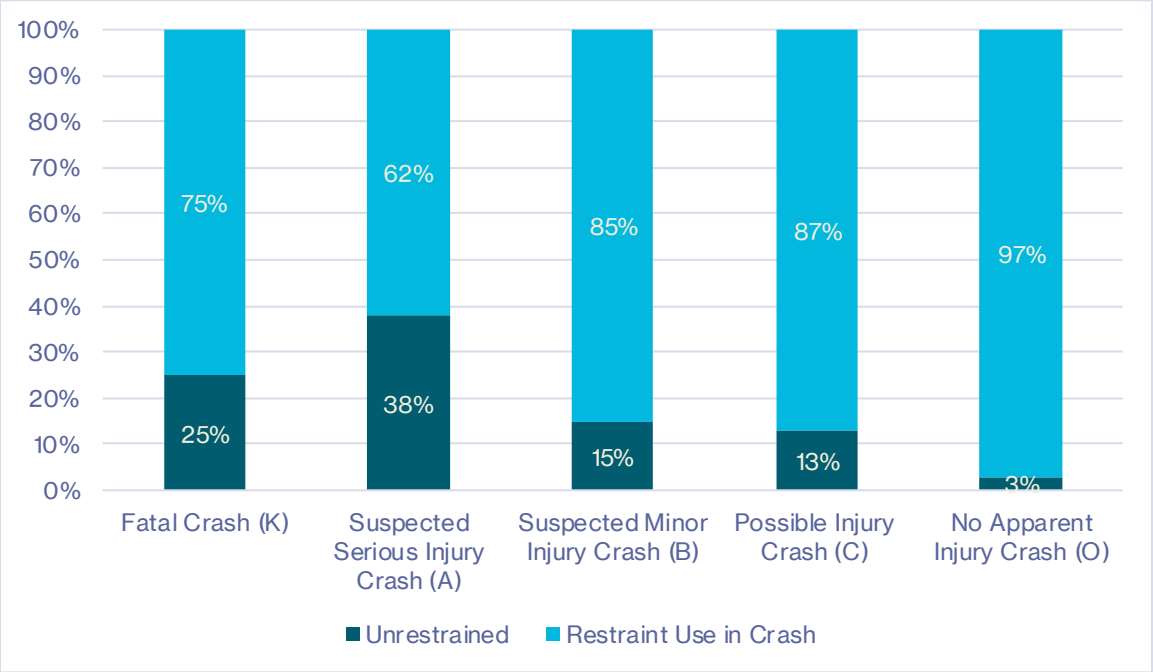



*Figure 3-23. Restraint Use in Crashes*

## Driver Age

Driver age can be a factor in severe crash occurrences. In Henry County, 21%of the severe crashes involved drivers in the 40 to 44 year old age group. This is unusual and does not match the 8% for all crashes for this age group. The 45 to 49 year old age group is surprising small for severe crashes. The spikes in severe crash percentages for older drivers compared to their contribution to overall crash severity are also apparent. Implementing countermeasures that better support older drivers is very important. This can include lighting and larger signs and wider markings. Both young drivers and older drivers could benefit from outreach and education programs.

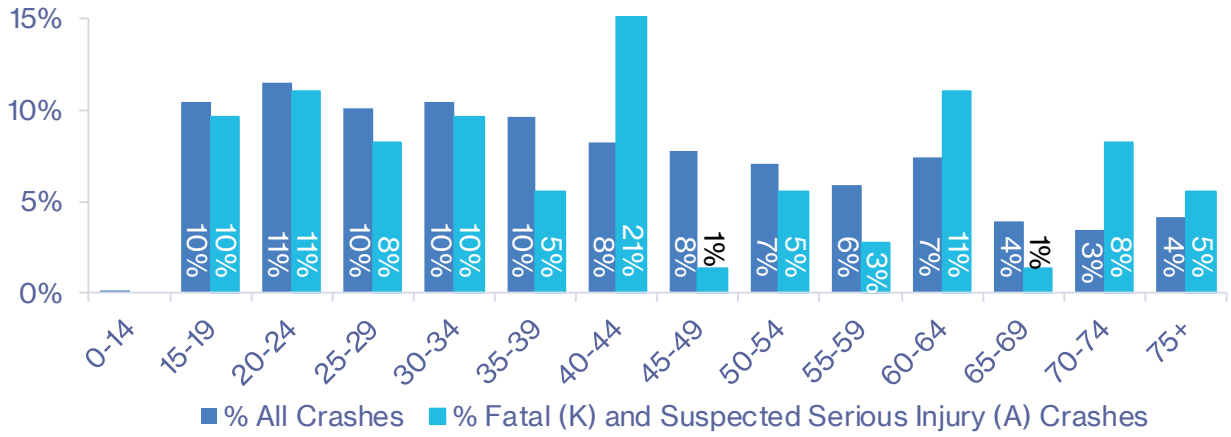



*Figure 3-24. Drivers Age and Crash Rates*

## Contributing Human Factors

Human factors play a significant role in crash occurrences, often tied to errors in judgment and risky behaviors. These factors include speeding, failing to yield, distractions, fatigue, and the influence of alcohol or drugs.

In Henry County, driving while Not Under Proper Control is the leading factor, contributing to 465 crashes, followed by Driver inattention (378 crashes) and misjudged clearance (111) crashes. Driving while Not Under Proper Control typically refers to situations where a driver loses control of their vehicle due to speeding, sudden maneuvers, or poor road conditions

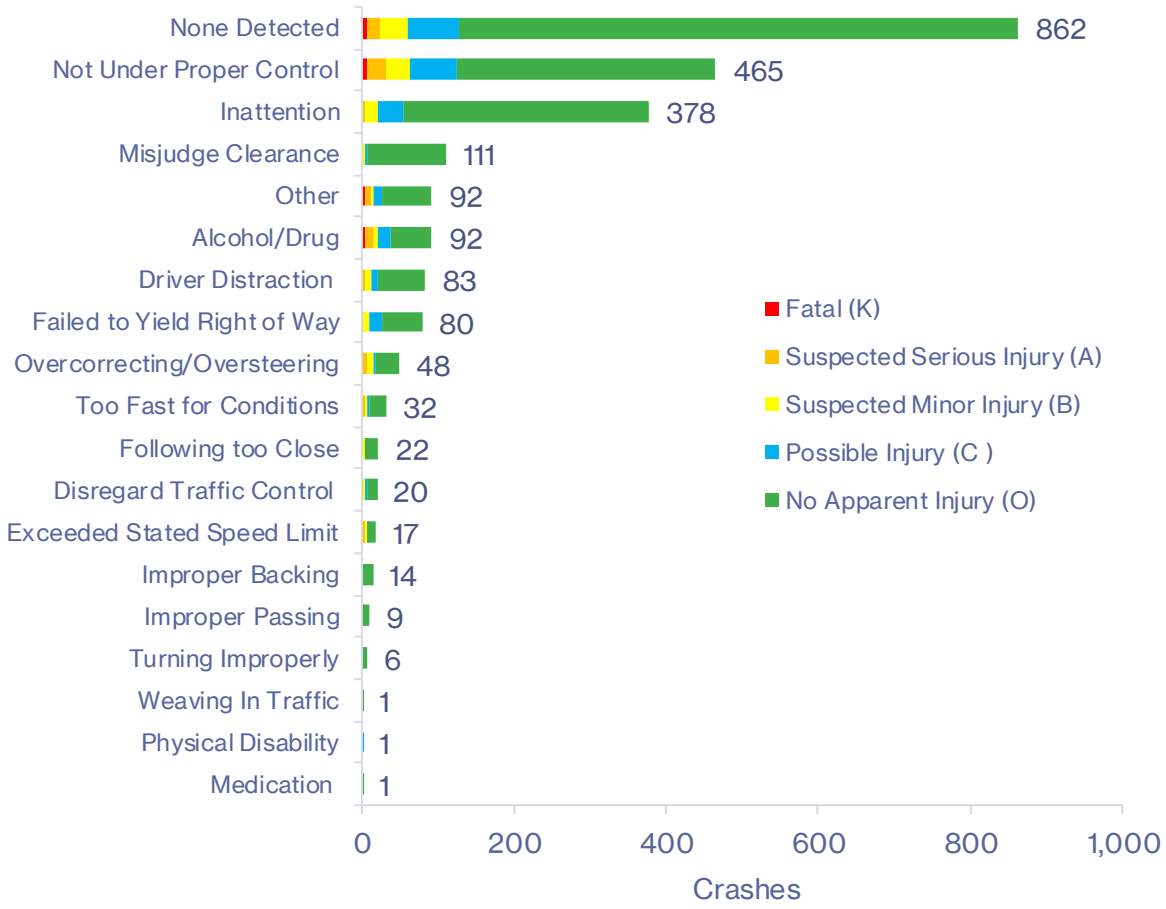



*Figure 3-25. Crashes by Human Factor*

Of the fatal and suspected serious injury crashes, 55% (32) were categorized as Not Under Proper Control. Alcohol and drug involvement contributed to 26% of fatal and suspected serious injury crashes.

Given the high proportion of severe single-vehicle crashes and drivers not having proper control a speed management program is recommended. This would be designed to encourage drivers to make better decisions regarding their speed in various conditions. It could include infrastructure, behavioral, educational, and enforcement elements. In addition, the County would benefit from efforts to address impaired drivers.

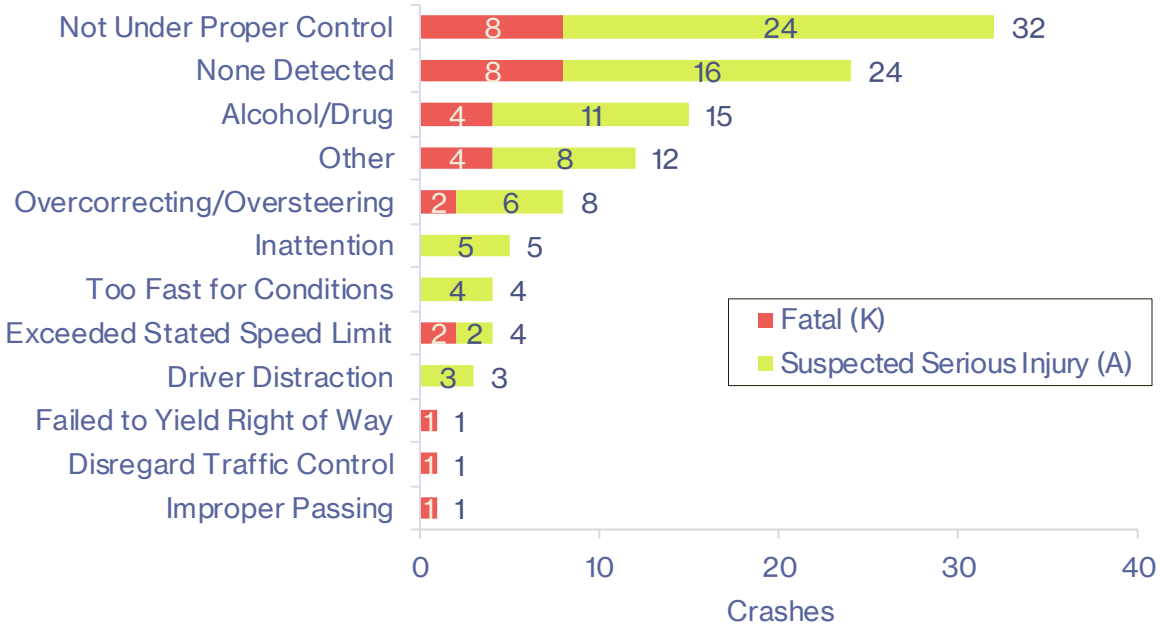



*Figure 3-26. Fatal and Suspected Serious Injury Crashes by Human Factor*

## Environmental and Roadway Conditions

Environmental roadway conditions do not appear to be a significant contributing factor to crash occurrence or severity. Adverse roadway conditions, defined as wet, snow, ice, or less common road conditions, make up a small portion of the overall crashes. Wet roads account for 21% of all crashes and 19% of fatal and suspected serious injury crashes, while icy conditions account for just 2% of all crashes and 3% of severe crashes. Snow, slush, standingwater, and other conditions combined account for less than 1% of all crashes with no associated severe outcomes. This suggests that most crashes in Henry County occur under typical dry conditions, with no clear pattern indicating that adverse environmental conditions play a substantial role in crash severity.

| Roadway Condition | All Crashes | | | Fatal and Suspected Serious Injury Crashes | |
|---|---|---|---|---|---|
| | # | % | | # | % |
| Dry | 1011 | 74% | | 45 | 78% |
| Wet | 284 | 21% | | 11 | 19% |
| Snow/Slush | 33 | 2% | | - | - |
| Ice | 27 | 2% | | 2 | 3% |
| Water (Standing or Moving) | 4 | <1% | | - | - |
| Sand-Mud-Dirt-Oil-Gravel | 3 | <1% | | - | - |
| Other | 2 | <1% | | - | - |

*Table 3-3 Crashes by Roadway Condition*

## High Injury Network

A High Injury Network (HIN) is a data-driven approach used to identify roadway segments that account for a disproportionate amount of a community's fatal and serious injury crashes. The HIN enables communities to concentrate their limited resources on improving safety along those high priority, dangerous corridors. Additionally, following the Safe System Approach, the HIN corresponds to the Safe Roads pillar. This pillar focuses on designing roadway environments to mitigate human mistakes and account for injury intolerances, to encourage safe behaviors, and to facilitate safe travel by the most vulnerable users.

The HIN provides a data-driven and focused list of corridors where a majority of the community's fatal and suspected serious injury crashes are occurring. The routes identified in the HIN will guide the development of strategies and project selection. These strategies and more information on the HIN can be found in Chapter 7. Strategy and Project Selection.

# 4. Engagement and Collaboration

A key component of the planning process is meaningful engagement with both the public and stakeholders. Throughout the development of this Safety Action Plan, engagement took various forms, allowing for a deeper understanding of current conditions, safety concerns, and challenges. These insights provide crucial context for the safety analysis. The following summarizes the community and stakeholder engagement completed for this Safety Action Plan.

## Community Engagement

### Steering Committee

The Steering Committee, comprised of diverse regional members, was the guiding force and planning structure for the Safety Action Plan development. The Safety Action Plan's development evolved through a series of Committee meetings.

The first meeting provided an overview of the Safe Streets for All (SS4A) program and plan components, an explanation of the safety analysis process, outline of the engagement process connection points and tools, an overview of considerations, and an overview of the project selection strategy and potential countermeasures. The second meeting reviewed detailed preliminary findings from the crash analysis. The project team identified focus areas based on feedback and local insights. Then, the project team guided the communities to adopt a Leadership Commitment resolution, setting a goal for each community to achieve the eventual goal of zero fatalities and serious injuries. The third meeting focused on the data collected from the public engagement to date and updates to the draft Safety Action Plan documents. During the fourth meeting, the discussions of the Committee centered on how the communities can use the Safety Action Plans, project identification, and potential improvements at the prioritized intersections and corridors on the High Injury Network (HIN).

### Stakeholder Meetings

Twice during the planning process, the project team held one-on-one meetings with key stakeholders in the community to discuss elements brought up during the overall steering committee meetings. Local community engagement with the Safety Action Plan provided invaluable local knowledge and insight.

***Meeting One***

In July 2024, the first meeting introduced the project and set expectations for the project team and local leadership. The meeting included a request for previous plans and initiatives for community safety and future commitment goals to safety. The project team informed Stakeholders that the team would form Safety Committees following the first stakeholder meeting. The project team then

provided a more extensive discussion of the currently available data, using it to facilitate a discussion focusing on local conflict areas.

***Meeting Two***

The second meeting, held in February 2025, focused on reviewing the crash analysis dashboard and getting feedback on the initial prioritized High Injury Network (HIN) segments and priority intersections. Data on the dashboard included the location of the crash, mode of transportation, directional analysis, manner of collision, roadway condition, light condition, and the updated human factor. The group then discussed edits to the presented HIN potential corridor strategies, priority intersections, and potential intersection strategies. There was discussion about ongoing and future KYTC projects in the County. There was also discussion about rural roads and bridges that needed to be considered for improvements. Other topics included current and planned KYTC six-year plan projects, speed transition zones on the approaches to Eminence and New Castle, and truck routes and safety issues.

## Safety Committee

The Henry County Safety Committee, comprised of community leaders, played a key role in the development of the Safety Action Plan. Participants provided valuable feedback and insights into existing safety issues and concerns through two safety committee meetings.

***Meeting One***

Five committee members attended the first meeting, which introduced the Safety Action Plan, its key components, and the Safe System Approach. The committee discussed historic crashes and brainstormed improvements for their local vehicular, pedestrian, and cyclist safety concerns. Data provided to the Committee included detailed crash maps organized by severity – including those for pedestrians and bicyclists – and intersection crash maps showing total and severe crashes. The committee's discussion focused on vehicular and pedestrian safety concerns, additional signage for existing facilities, and roadway markings. Other safety topics identified in the meeting included existing discussion of potential roundabouts or intersection improvements at Highway 22 and Lucas Rd (Hwy 322).


*Figure 4-1. Meeting One Brainstorming Exercise*

***Meeting Two***

Six committee members attended the second meeting. The Committee reviewed the draft prioritized HIN corridor segments, prioritized intersections, and potential safety countermeasures.

The data provided included a preliminary ranking for each intersection and HIN corridor. It also included descriptions of potential countermeasures with their expected safety impacts. The project team provided maps of the HIN corridors and intersections for reference. The committee provided their priorities for both the HIN and the intersection list. They also provided feedback on what improvements they thought would be most appropriate and beneficial. There were four activities designed to elicit this information.


*Figure 4-2. Meeting Two Handout: Potential Safety Countermeasures*

**Activity A: Prioritizing HIN Corridors** – There was discussion that segments 9 (Ballardsville Rd (KY-22)), segment 8 (Lake Jericho Rd (KY-153)) and segment 16 (Radcliff Rd) would be the local priority instead of the provided top priorities. Additionally, it was noted that segment 1 (Lagrange Rd (KY-146)) had recently upgraded that improved the route safety.

**Activity B: Potential Corridor Improvements** - Most participants noted that all recommendations were appropriate with only minor notes of the appropriateness of the lower ranked segments.

**Activity C: Prioritizing Intersections** – The committee expressed interest in prioritizing several intersections that they thought were critical even though they had not had a fatal or serious injury crash in the last five years. The crash data from the last five years had them ranked lower on the list. These locations have been highlighted in **Chapter 6. Strategy and Project Selection**. The committee also thought the safety issues at intersection 13 (Ballardsville Rd (KY-22) and Lucas Rd (KY-322)) and intersection 17 (N Main St (KY-55) and Elm St (KY-22)) should specifically be ranked higher.

**Activity D: Potential Intersection Safety Countermeasures** – Most participants noted that all approaches were appropriate for each intersection. However, varying opinions were discussed for utilizing roundabouts at three intersections. The committee also discussed the strong support for a roundabout at intersection 13 -- Ballardsville Rd (KY-22) and Lucas Rd (KY-322) and adding a traffic light at intersection 17 -- N Main St (KY-55) and Elm St (KY-22). These suggestions have been incorporated into **Chapter 6. Strategy and Project Selection**.

## Public Engagement

The project team and committees conducted public engagement for the Safety Action Plan through an interactive online map. Residents within the KIPDA Region, including Henry County, could provide input by identifying specific pedestrian, bicycle, or vehicle concerns on a map. Participants could add comments, images, and review or react to the contributions of others. This input offered valuable community perspectives on local safety issues.

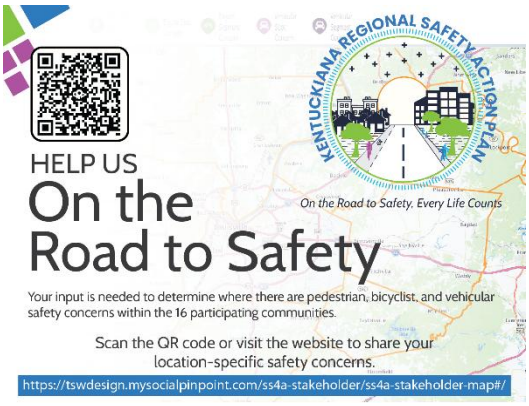



*Figure 4-3. Promotional Flyer for Community Survey*

The survey was available between July 9, 2024, and October 18, 2024. A total of 1,047 comments were collected for the entire region, with 1 1 comments located within Henry County. Figure 4-4 provides an example view of the engagement map and a summary of the responses within Henry County.

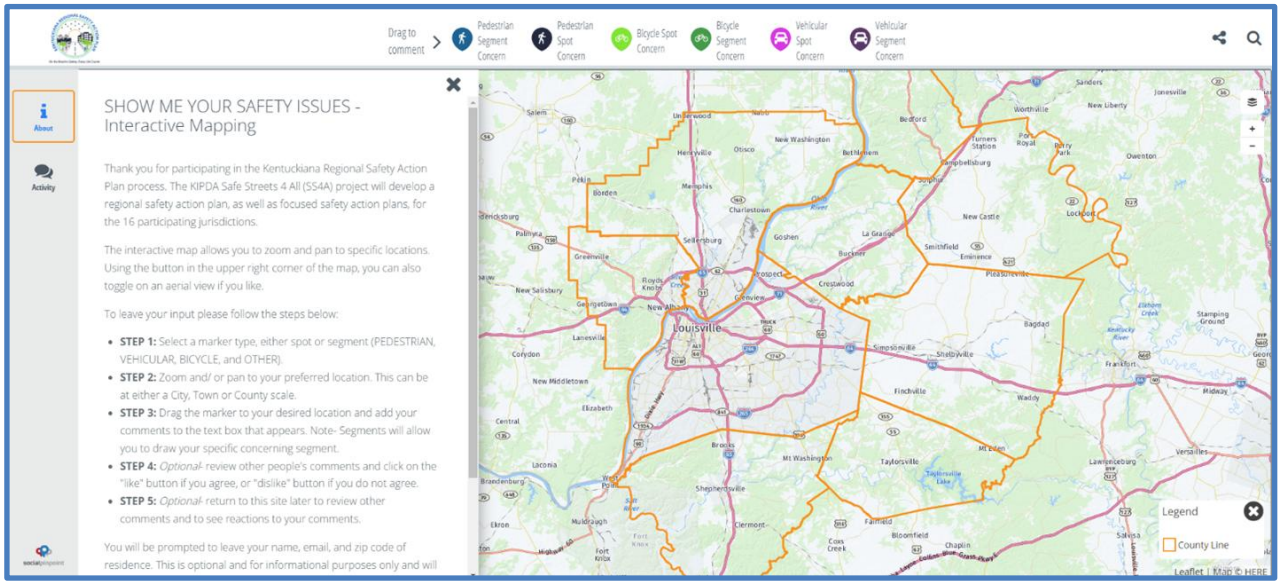



*Figure 4-4. Social Pinpoint Online Engagement*

**Vehicular Safety Concerns**

- Narrow roads
- Speed Limits
- Guardrails
- Interstate Access Points
- Pavement Conditions

**Pedestrian Safety Concerns**

- Adding sidewalks
- Adding crosswalks
- Crosswalk lighting and signalization

**Bicycle Safety Concerns**

- Pavement conditions
- Road crossings

The feedback collected from this platform played an integral role in identifying high-risk areas and shaping safety strategies so that the KIPDA Regional Safety Action Plan and the Henry County Safety Action Plan address the concerns and needs of the public. The project team compared comment locations to the fatalities (K) and suspected serious injuries (A) in the 2018-2022 crash data to compare public perception of safety and data-driven crash densities. The following map shows the crash locations (blue) with the public comments (yellow). The locations where these two colors overlap (green-toned areas) represent locations where the perception of a safety issue is consistent with where severe crashes have occurred (for example in downtown New Castle near the intersection of KY 146 and KY 55).

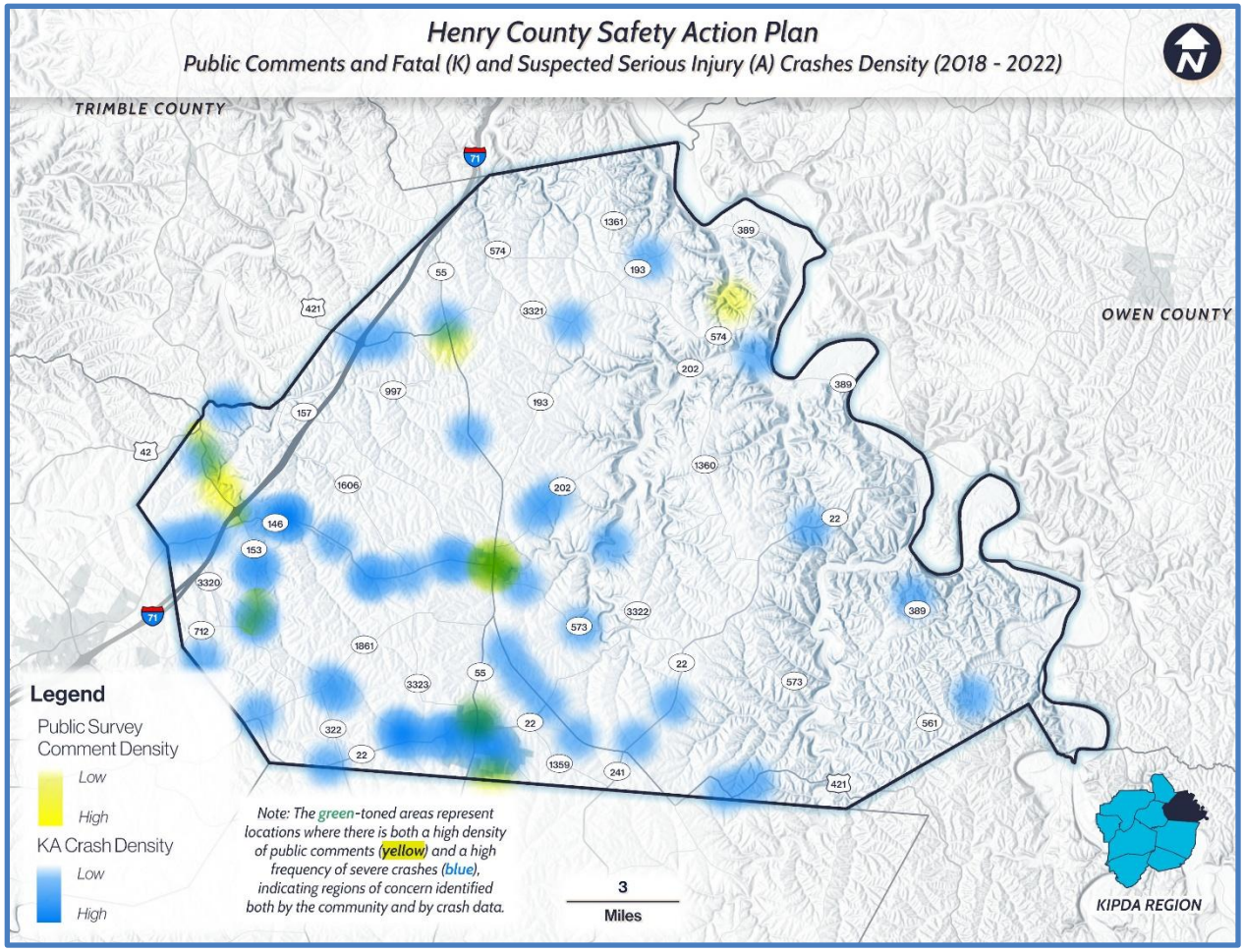



*Figure 4-5. Public Comments and High Severity Crash Density*

***Survey Two***

The project team and committees conducted a second public survey for the Safety Action Plan. Residents within the KIPDA Region, including Henry

County, could provide input on the results of the crash data analysis and potential countermeasures to improve safety in each community. Participants could provide opinions on if the identified recommended strategies and safety improvements were appropriate for each community. Links to additional information about the recommended strategies were included for reference.

The survey was available between April 1, 2025, and April 30, 2025. A total of 524 responses were collected for the entire region, with several responses relevant to Henry County. Based on this feedback, two of the highest ranked highways were KY 153 (Pendelton Road) near I-71 and KY 22 (Ballardsville Road). Roads not on the list that were noted included Point Pleasant Road and River Road. The KY 22 (Ballardsville Rd) and KY 322 (Lucas Rd) intersection received two comments since it was not on the top 10 survey list. It is 13th on the intersection list in **Chapter 6. Strategy and Project Selection**. The River Road/Port Royal Road intersection (a "Y" intersection) and the KY 146 (Lagrange Road) KY 157 (Sulphur Road) intersection were also noted. The second of these is on the High Injury Network in **Chapter 6. Strategy and Project Selection**.

Improvements that received the most support included highway and intersection lighting, shoulder treatments, and low-cost improvements at stop-controlled intersections. Crosswalk enhancements, rumble strips, and left-turn lanes also received considerable support.

## Active and Planned Projects

The transportation plans of all relevant stakeholders, including the Kentucky Transportation Cabinet Enacted Highway Plan (2024-2030) and KIPDA Transportation Improvement Program (TIP), as well as ongoing Henry County projects were coordinated to identify and document project overlaps and stages of project development. This collaborative effort is summarized in the following table and map highlighting the current projects with committed funds that are actively moving forward. Projects in the county that are listed in the Continuous Highway Analysis Framework (CHAF) are provided in Appendix A for reference.

| Map No. | KYTC Item (CHAF ID) | Route | Begin | End | Status | Description |
|---|---|---|---|---|---|---|
| 1 | 5-8822.00 | KY 389 | Drennon Rd | Henry Co. / Carroll Co. Line | Committed | Scoping / planning study for KY 389. |

*Table 4-1. Current Highway Plan Projects*

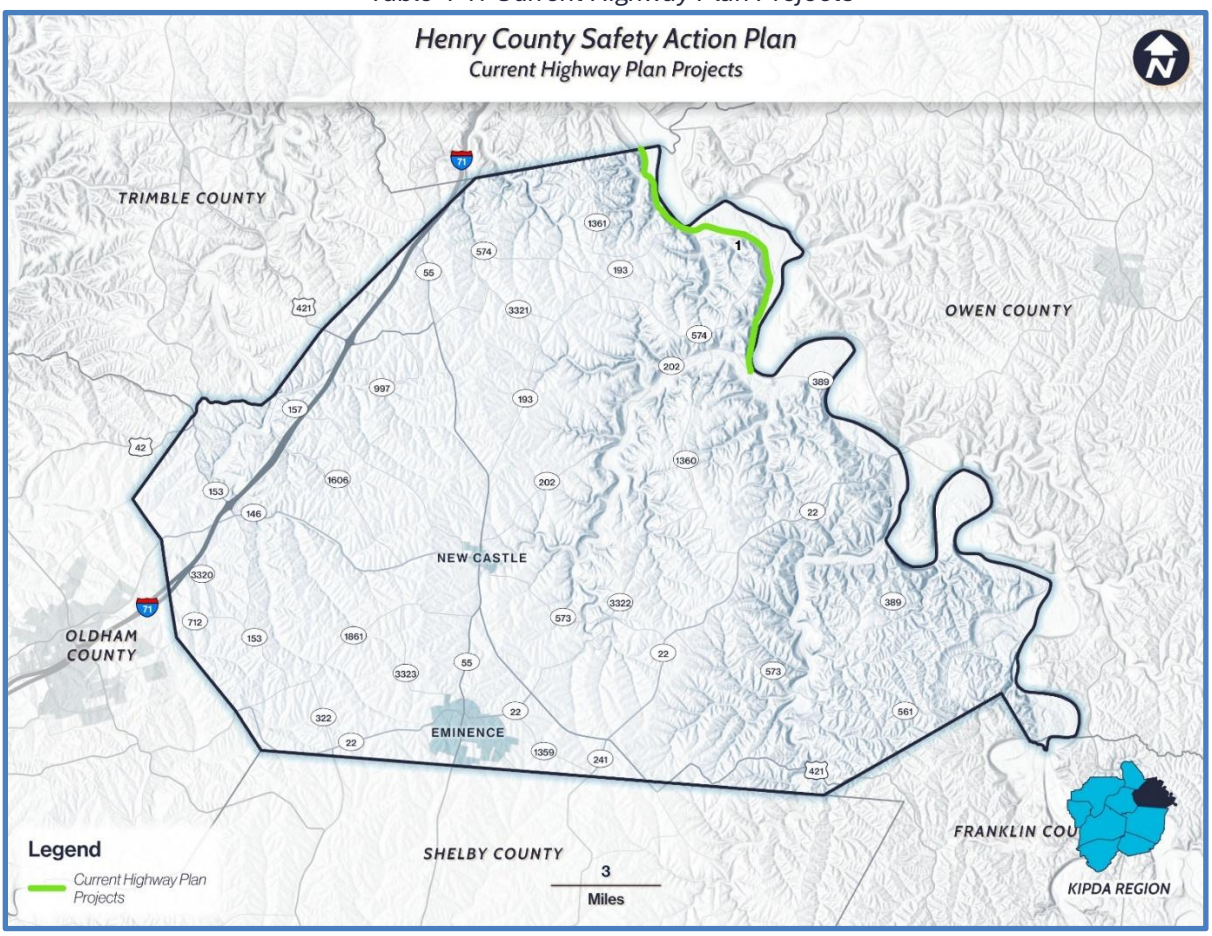



*Figure 4-6. Highway Plan Map*

## Community Considerations

The Safety Action Plan analyzed socio-economic and demographic data together with the crash data to determine if there are significant trends, findings, or considerations related to specific areas or communities within the county.

### Areas of Persistent Poverty

The Safe Streets and Roads for All 2025 Notice of Funding Opportunity defines Areas of Persistent Poverty based on the Infrastructure Investment and Jobs Act (IIJA, 49 U.S.C. 6702(a)(1)). It also states that this applies to the definition of Underserved Communities. Based on this definition, a project is located in an Area of Persistent Poverty if:

1. *The County in which the project is located consistently had greater than or equal to 20% of the population living in poverty in all three of the following datasets: (a) the 1990 decennial census, (b) the 2000 decennial census, and (c) the most recent (2021) Small Area Income Poverty Estimates; OR*
2. *The Census Tract in which the project is located has a poverty rate of at least 20% as measured by the 2014-2018 5-year data series available from the American Community Survey of the Bureau of the Census; OR*
3. *The project is located in any territory or possession of the United States.*

Portions of Henry County are within designated Areas of Persistent Poverty, as shown in Figure 4-7.

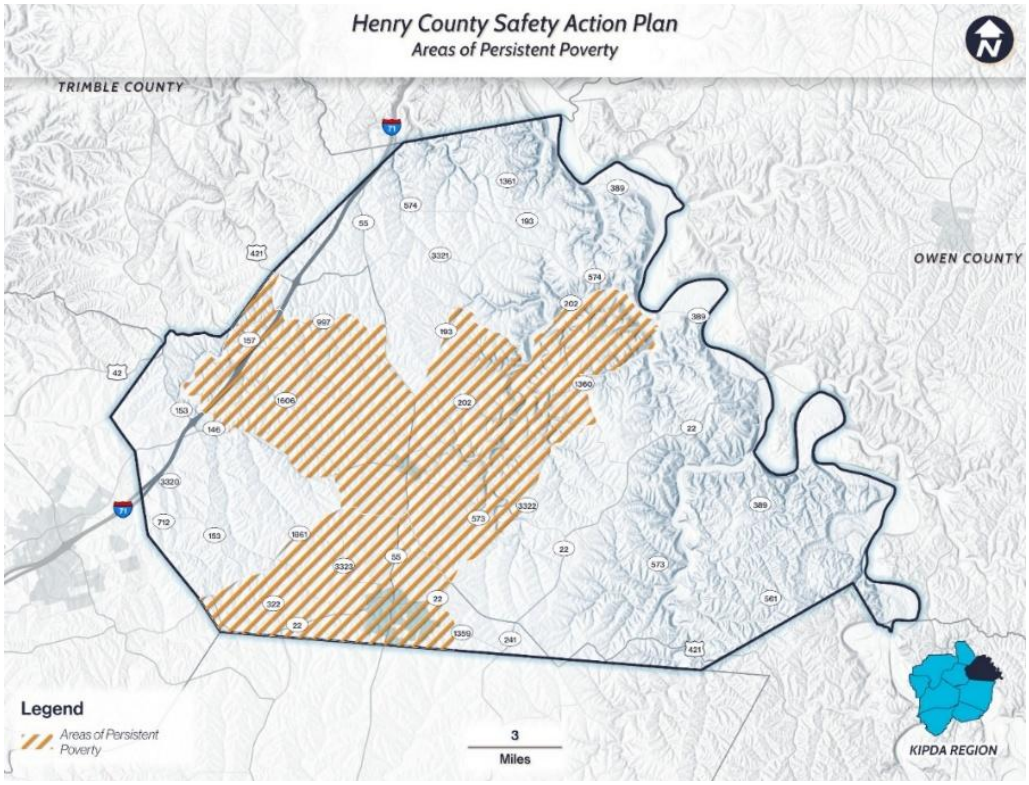



*Figure 4-7. Areas of Persistent Poverty*

## Community Demographic Summary

The following four populations were analyzed using the U.S. Census American Community Survey (ACS) data. The project team used the 2022 ACS five-year table.

### *Elderly Population*

Elderly population block groups were analyzed to aid in determining tailored roadway countermeasures. Pedestrian refuge islands, Leading Pedestrian Intervals (LPIs), and raised crosswalks are some of the many countermeasures that benefit the elderly population. This safety action plan categorizes the elderly population is determined as those aged 65 or older. Henry County has approximately 17.6% of all individuals who meet this definition.

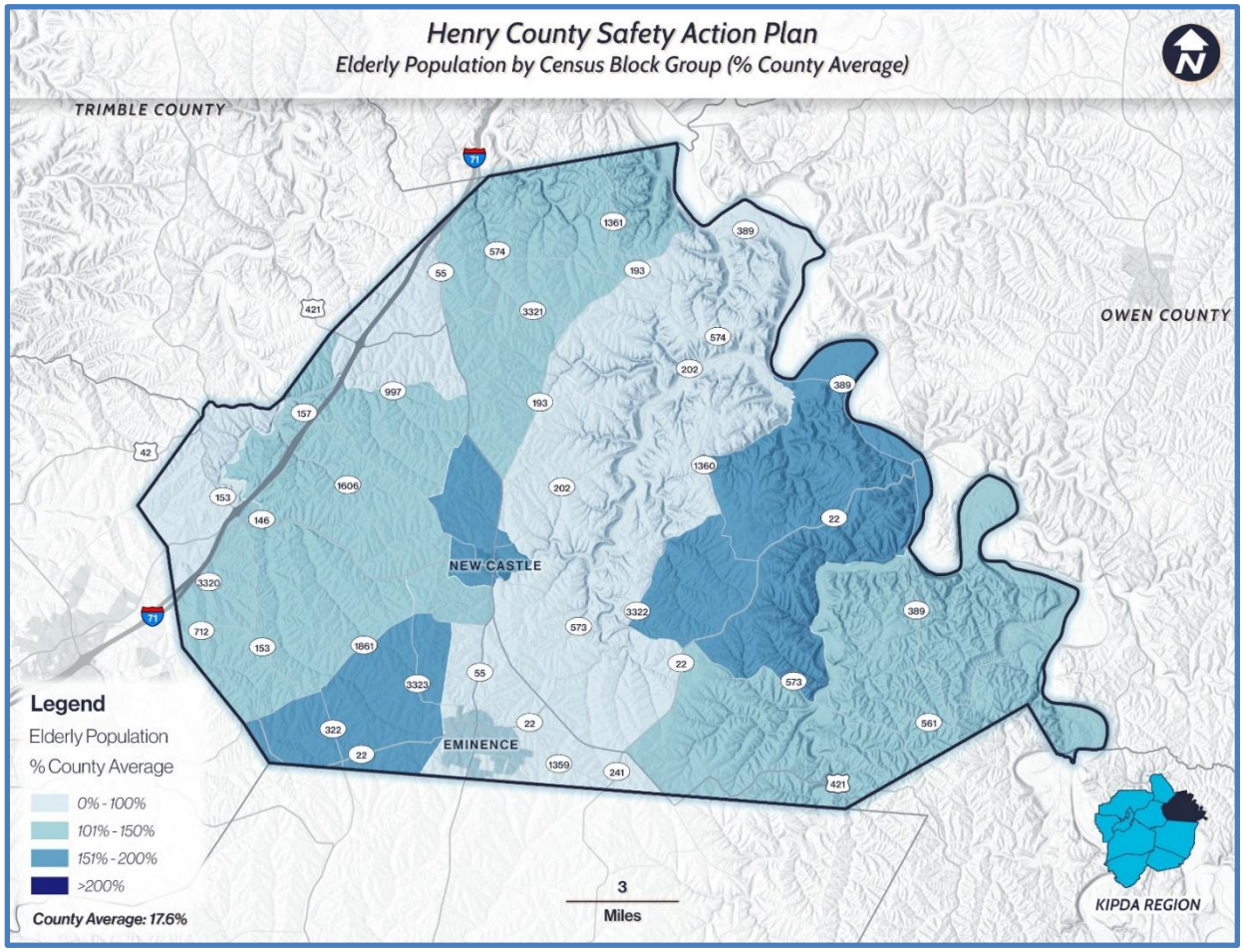



*Figure 4-8. Elderly Population by Census Block Group Map*

### *Population Impacted by Disability*

To help in determining certain roadway countermeasures, disability population block groups were analyzed. There are pedestrian safety countermeasures available that can support disabled populations. This safety action plan evaluates disabilities on a household-by-household basis. Any residence with one or more occupants with a disability meets the disability designation. Henry County has approximately 36.7% of all households that meet this definition.

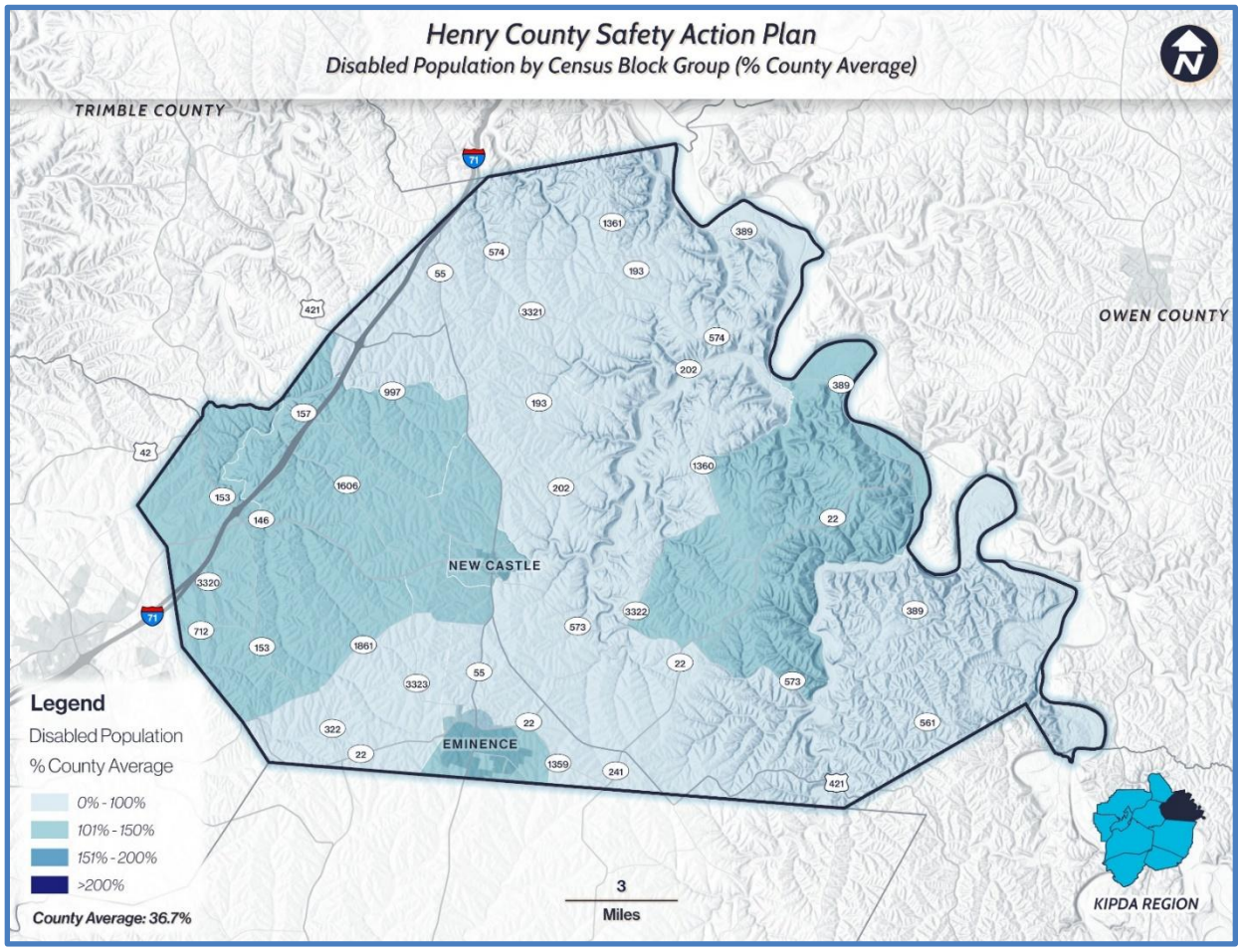



*Figure 4-9. Disabled Population by Census Block Group Map*

### *Population Experiencing Poverty*

The poverty population of Henry County includes individuals with incomes below the poverty level. Henry County has approximately 16.2% of all individuals who meet this definition.

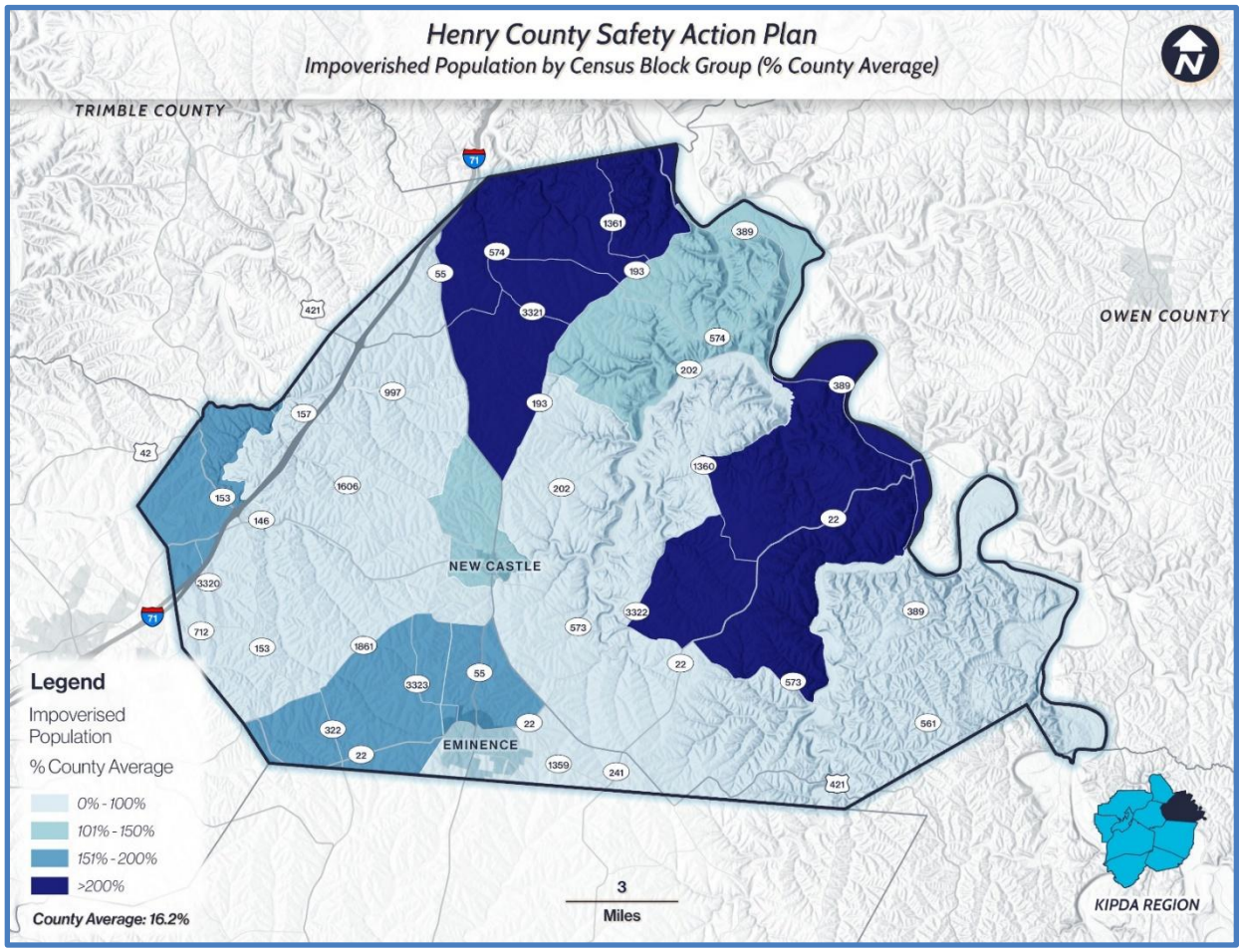



*Figure 4-10. Impoverished Population by Census Block Group Map*

### *Minority Population*

The minority population of Henry County encompasses all individuals who identify as non-white. Henry County has approximately 8.8% of all individuals who meet this definition.

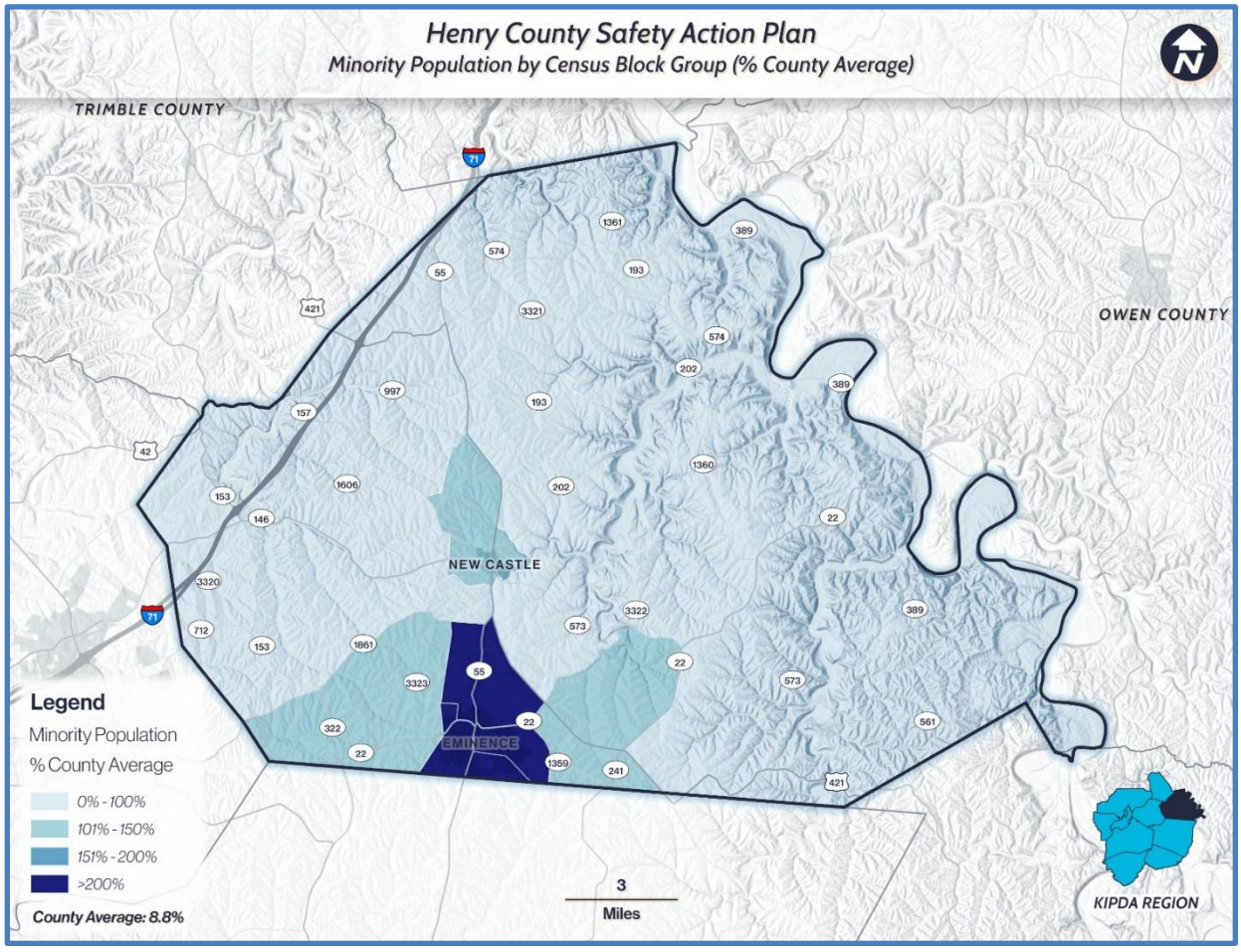



*Figure 4-11. Minority Population by Census Block Group Map*

## Incorporating Community Considerations Throughout the Safety Action Plan Process

Incorporating community considerations into the Henry County Safety Action Plan requires ongoing commitment, starting with project prioritization, development, and implementation.

***Project Prioritization, Development, and Implementation***

The demographic analysis can be compared to the crash trend maps to identify the parts of the Henry County community that experience a higher number of severe crashes. Projects and strategies can be tailored to address those identified safety needs in that specific part of the community. For example, many of the severe crashes occur in the southern part of the county in the vicinity of Eminence. This part of the county has been identified as an area of persistent poverty in accordance with the Federal guidelines.

Considerations for areas of persistent poverty can play a role in project prioritization and selection, alongside the severity of identified reactive and systemic safety issues. While prioritizing the most problematic intersections and corridors is imperative, subsequent project choices will be informed by the needs of underserved communities. Projects aligning with these considerations are identified by overlaying proposed project locations with areas of persistent poverty.

The maps on the previous pages highlight the Areas of Persistent Poverty Census Tracts concerning crash locations and the High Injury Network. **Chapter 6. Strategy and Project Selection** details the High Injury Network in Henry County.

It's essential to sustain engagement with the community as the plan transitions from development to implementation. Henry County, with support from the RTC, should maintain ongoing relations with the community and partner organizations identified in the Safety Action Plan throughout the implementation phase.

# 5. Policy and Process Changes

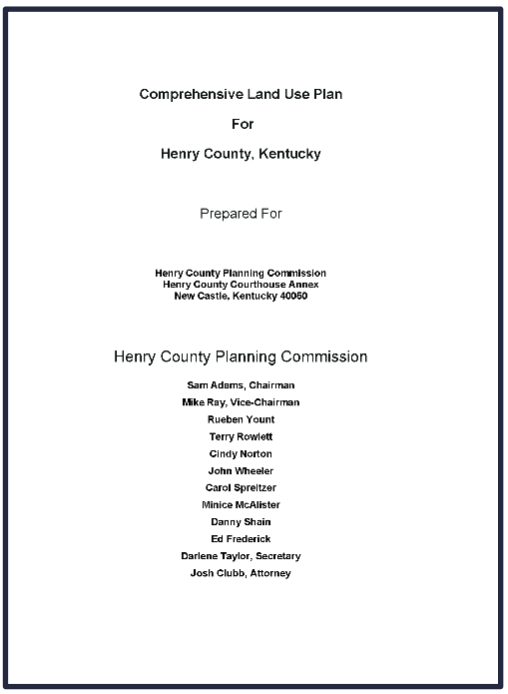
A comprehensive review of Henry County's existing policies, plans, guidelines, and standards has identified key opportunities to enhance transportation safety. The County aims to prioritize safety while creating a more inclusive and accessible transportation network for all users.

## Comprehensive Land Use Plan - 2018

Link: [Henry County Comprehensive Land Use Plan]

The Henry County Comprehensive Land Use Plan, adopted in 2018, provides a framework for the county's development. It emphasizes maintaining and improving existing infrastructure, creating a balanced transportation system supporting all travel modes, and integrating transportation planning with land use decisions to promote sustainable growth. The following are objectives related to transportation safety.

- The construction of sidewalks should provide for the safe movement of pedestrians through new residential subdivisions.
- New construction along arterial corridors should be facilitated by providing and encouraging service roads, designated crossovers, and control of access points.
- Utilize traffic and safety improvements in Eminence and improved access and safety at I-71 interchanges.
- Improve safety at locations with high crash rates.


Comprehensive Land Use Plan

For

Henry County, Kentucky

Prepared For

Henry County Planning Commission
Henry County Courthouse Annex
New Castle, Kentucky 40050

Henry County Planning Commission

Sam Adams, Chairman
Mike Ray, Vice-Chairman
Rueben Yount
Terry Rowlett
Cindy Norton
John Wheeler
Carol Spreitzer
Minice McAlister
Danny Shain
Ed Frederick
Darlene Taylor, Secretary
Josh Clubb, Attorney

The Comprehensive Land Use Plan includes a Transportation Plan that identifies problem locations in each incorporated area of Henry County and for the county as a whole. It recommends changes, improvements, or new construction to address the current limitations. The transportation plan includes strategies for areas that do not fully support pedestrian mobility, affecting the safety of all road users.

### Future Comprehensive Plan Considerations

**Implement Complete Streets Policies**: To improve how processes prioritize safety, the comprehensive plan for the county could recommend, develop, and adopt Complete Streets guidelines that support safety, connectivity, comfort, and accessibility for all users. These guidelines would be applied to

new and existing road projects, ensuring that the County designs streets to accommodate pedestrians, cyclists, motorists, and transit riders.

**Promote Safe and Accessible Transportation for All**: Promote transportation improvements that address the needs of all community members. Conduct periodic community-focused analyses to identify and mitigate transportation safety and access hot spots.

**Strengthen Public Engagement and Transparency**: Enhance public engagement processes by providing multiple avenues for community input, including online platforms, public meetings, focus groups, and surveys. Feedback should be incorporated into planning decisions and updates on progress should be regularly communicated to the public. Enhancing public engagement and transparency will build public trust and support.

## Subdivision Regulations

Link: Henry County Subdivision Regulations

The Henry County Subdivision Regulations, last amended in March 2021, govern land division and development within the county. The regulations include road design and construction standards, which promote safe and durable roadways, and guidelines for pedestrian infrastructure. Additionally, traffic impact studies for new developments may be required to assess potential effects on the existing transportation networks.

### Future Subdivision Regulation Considerations

**Traffic Calming Measures**: Consider updating regulations to include guidelines for traffic calming measures, such as roundabouts, speed humps, chicanes, and raised intersections and crosswalks in residential subdivisions to reduce vehicle speeds and enhance safety for pedestrians and bicyclists. Implementing traffic calming strategies will reduce the risk and severity of crashes.

**Pedestrian and Bicyclist Infrastructure**: Consider updating pedestrian and bicyclist infrastructure requirements for new developments within the county to promote safe access for all vulnerable road users. Sidewalks should meet accessibility standards and provide safe crossings at all intersections. Consider adding bike lanes or shared-use paths in all new developments and require connectivity to existing pedestrian and bicycle networks.

**Traffic Safety Analysis and Improvements:** Consider including language that requires a traffic safety analysis to demonstrate that the development or subdivision is not significantly impacting safety on nearby roads or intersections. Language could also be integrated into zoning and subdivision ordinances to provide for the analysis of, and recommendations for, potential countermeasures to address any potential impacts.

# 6. Strategy and Project Selection

The development of strategies and project selection is based on a comprehensive analysis of historical crash data, implementation of best practices, active engagement with stakeholders and the community, and an assessment of Areas of Persistent Poverty (APP) and Underserved Communities. The reactive approach involves a detailed examination of crash data by frequency, severity, and location to identify the areas needing improvement the most. The following sections detail the methodology for prioritizing projects and strategy selection.

## Prioritization

The County's goal is to eliminate fatal and serious injury crashes; therefore, crash severity is a critical factor in prioritizing projects and strategy selection. Comprehensive crash costs combine the economic cost of a crash and monetized pain and suffering. The Federal Highway Administration (FHWA) developed national crash costs to use as default crash unit values (Crash Costs for Highway Safety Analysis) that states and municipalities can adjust based on regional differences. Table 6-1 provides the comprehensive cost per crash adjusted to the KIPDA region as prescribed in the FHWA Crash Costs for Highway Safety Analysis.

| Severity | Severity Description | Comprehensive Cost Per Crash (2022 Dollars) |
|---|---|---|
| K | Fatal Injury | $10,175,024 |
| A | Suspected Serious Injury | $594,471 |
| B | Suspected Minor Injury | $182,274 |
| C | Possible Injury | $116,572 |
| O | No Apparent Injury | $12,220 |

*Table 6-1. KIPDA Comprehensive Crash Cost*

## Equivalent Property Damage Only Method

The Equivalent Property Damage Only (EPDO) is a method of weighting crashes by severity using the equivalent number of No Apparent Injury Crash costs, also called Property Damage Only (PDO) crash costs, to develop the weights. The following table shows the comprehensive costs and EPDO value breakdown by crash severity.

| Severity | Comprehensive Cost Per Crash (2022 Dollars) | EPDO Weighted Value |
|---|---|---|
| K | $10,175,024 | 833 |
| A | $594,471 | 49 |
| B | $182,274 | 15 |
| C | $116,572 | 10 |
| O | $12,220 | 1 |

*Table 6-2. KIPDA EPDO Crash Value*

As shown in the table above, the comprehensive cost of a fatal crash (K) compared to the other crash severities is significant. The EPDO method, however, may overly emphasize fatal crashes, potentially skewing focus towards areas with fewer crashes. To address this imbalance, analysts used a modified EPDO (MEPDO) approach to equally consider both fatal and suspected serious injury crashes by blending their values based on their comprehensive costs and frequency. The table below presents a breakdown of the MEPDO, providing a more balanced evaluation while maintaining a focus on fatal and suspected serious injury crashes. The crashes for the entire KIPDA region were used to calculate weighted average costs and MEPDO.

| Severity | Crashes | Comprehensive Cost Per Crash (2022 Dollars) | Severity | Weighted Average Costs | MEPDO Value |
|---|---|---|---|---|---|
| K | 618 | $10,175,024 | KA | $2,224,193 | 182 |
| A | 3,015 | $594,471 | | | |
| B | 12,841 | $182,274 | B | $182,274 | 15 |
| C | 11,770 | $116,572 | C | $116,572 | 10 |
| O | 113,611 | $12,220 | O | $12,220 | 1 |

** KA Cost = (618*$10,175,024+3,015*$594,471) / (618+3,015) = $2,224,193*

*** KA Value = $2,224,193 / $12,220 = 182*

*Table 6-3. KIPDA MEPDO Crash Value*

# Reactive Approach

## Methodology

The reactive approach for analyzing crashes includes joining the crash data with roadway data. KYTC provided a geographic information system (GIS) for roadway and traffic data files, known as the Highway Information System (HIS) database. HIS data includes roadway characteristics and traffic data for state-owned roadways. The crash data was joined with GIS information to facilitate detailed analysis by identifying the location of the crashes by road segment and intersection.

After joining the crashes to the roadway segments and intersections, the MEPDO method was applied to generate lists of prioritized intersections and corridors.

The lists are for planning purposes only. The intersections and corridors identified could potentially benefit from safety countermeasures; however, it is not necessary to make improvements in the listed order. In addition, there may be other high priority locally identified safety projects. Therefore, these lists provide high-level planning guidance for future agency consideration.

## Intersections

Enhancing safety at intersections is vital for promoting a Safe System approach. Evaluating roadway features such as geometrics and traffic operation and control is essential for eliminating fatal and serious injury crashes. Intersections are deliberate points of interaction where vehicles and non-motorized users converge, significantly impacting the overall safety performance of the transportation system. These conflict points are historically where fatal and serious injury crashes occur. Therefore, intersection projects present unique opportunities to incorporate Safe System principles into planning, design, and operational decisions. Improving intersections can play a significant role in eliminating fatal and serious injury crashes.

### *Prioritized Intersections*

Henry County experienced 12 fatal and suspected serious injury crashes at intersections, representing 21% of all fatal and suspected serious injury crashes. These crashes occurred at both signalized and unsignalized intersections. Both intersections contain multiple conflict points and offer significant opportunities to enhance safety for all users. MEPDO was calculated and ranked for each intersection.

Table 6-4 lists the top 20 intersections by MEPDO. These intersections account for all 12 fatal and suspected serious injury crashes at intersections. The remaining intersections tended to have higher numbers of crashes but with lower severities. The figures below present intersection crashes and the prioritized intersections based on MEPDO.

| Ranking | Intersection | K | A | B | C | O | KA | TOTAL | MEPDO |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Campbellsburg Rd (US-421) and I-71 Southbound Ramp | 1 | 0 | 2 | 1 | 3 | 1 | 7 | 224 |
| 2 | N Main St (KY-55) and Sulphur Ave (CS-2006) | 0 | 1 | 1 | 0 | 4 | 1 | 6 | 201 |
| 3 | Uncle Ed St (CS-2037) and Vernon St (CS-2034) | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 192 |
| 4 | S Main St (US-421) and Cross Main St (KY-146) | 0 | 1 | 0 | 0 | 7 | 1 | 8 | 189 |
| 5 | Main St (US-421) and Campbellsburg Rd (KY-55) | 1 | 0 | 0 | 0 | 2 | 1 | 3 | 184 |
| 6 | Elm St (KY-22) and Castle Hwy (US-421) | 0 | 1 | 0 | 0 | 2 | 1 | 3 | 184 |
| 7 | Port Royal Rd (KY-193) and Vance Rd (KY-1361) | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 182 |
| 8 | Port Royal Rd (KY-193) and Lacie Rd (KY-3321) | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 182 |
| 9 | Lagrange Rd (KY-146) and Marcee Ln (CR-1206) | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 182 |
| 10 | Lagrange Rd (KY-146) and Hieatt Ln (CR-1221) | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 182 |
| 11 | Sunnyside Rd (KY-1861) and Smithfield Cemetery Rd (PR-1211) | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 182 |
| 12 | Mulberry Pike (KY-1899) and Shelby St (CS-2044) | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 182 |
| 13 | Ballardsville Rd (KY-22) and Lucas Rd (KY-322) | 0 | 0 | 6 | 6 | 18 | 0 | 30 | 165 |
| 14 | Lagrange Rd (KY-146) and Safety-Kleen Recycling Dr (PV-1200) | 0 | 0 | 3 | 1 | 5 | 0 | 9 | 59 |
| 15 | Pendleton Rd (KY-153) and Southbound I-71 Ramp | 0 | 0 | 2 | 1 | 11 | 0 | 14 | 50 |
| 16 | Pendleton Rd (KY-153) and Northbound I-71 Ramp | 0 | 0 | 1 | 2 | 23 | 0 | 26 | 57 |
| 17 | N Main St (KY-55) and Elm St (KY-22) | 0 | 0 | 1 | 1 | 17 | 0 | 19 | 41 |
| 18 | Eminence Rd (KY-55) and 8th Eminence Cemetery Rd (PR-1208) | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 25 |
| 19 | S Main St (KY-55) and W Broadway (KY-22) | 0 | 0 | 0 | 1 | 13 | 0 | 14 | 23 |
| 20 | Smithfield Rd (KY-1861) and Lake Jericho Rd (KY-153) | 0 | 0 | 0 | 2 | 2 | 0 | 4 | 21 |

*Table 6-4. Prioritized Intersections by MEPDO*

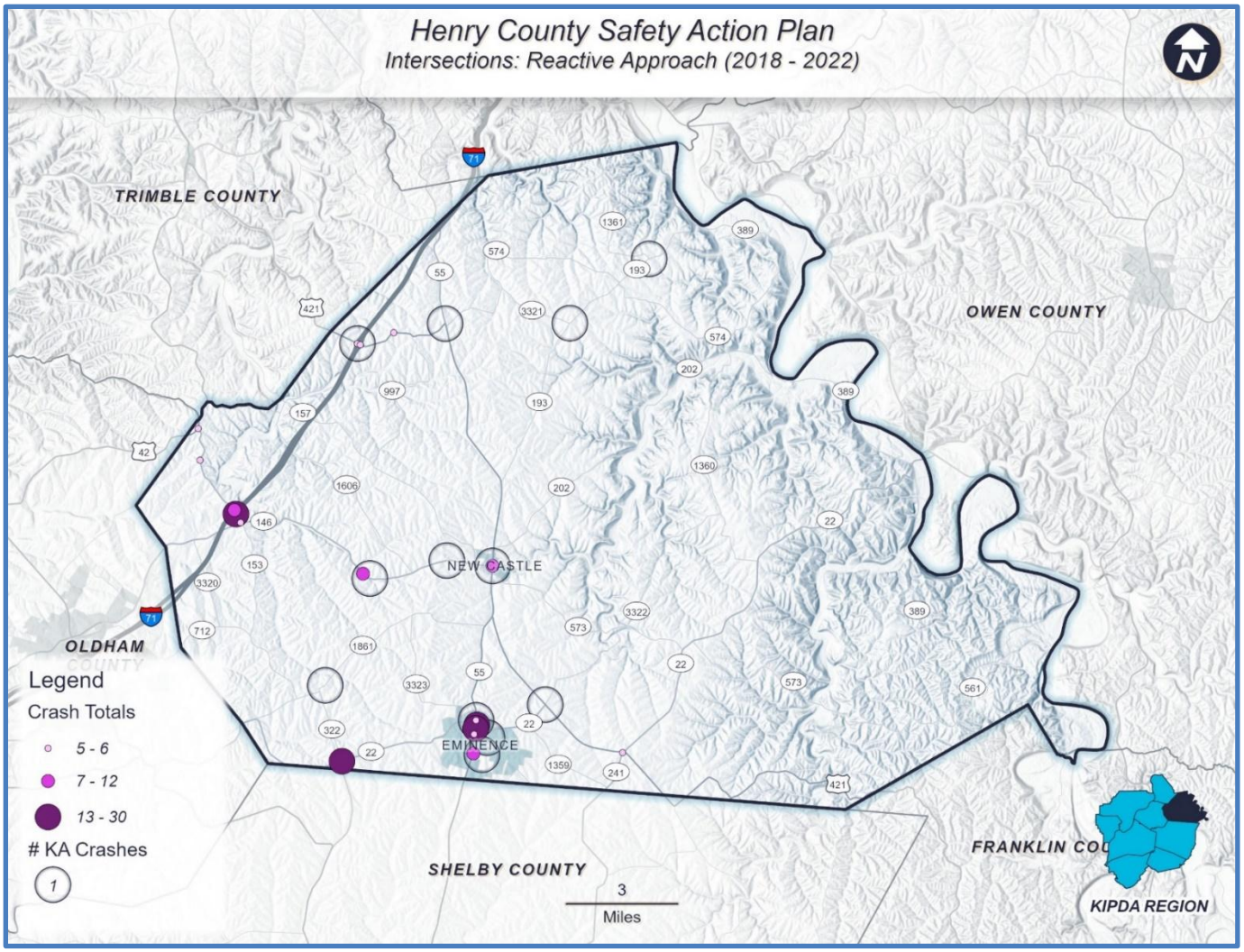



*Figure 6-1. Intersections: Reactive Approach Map*

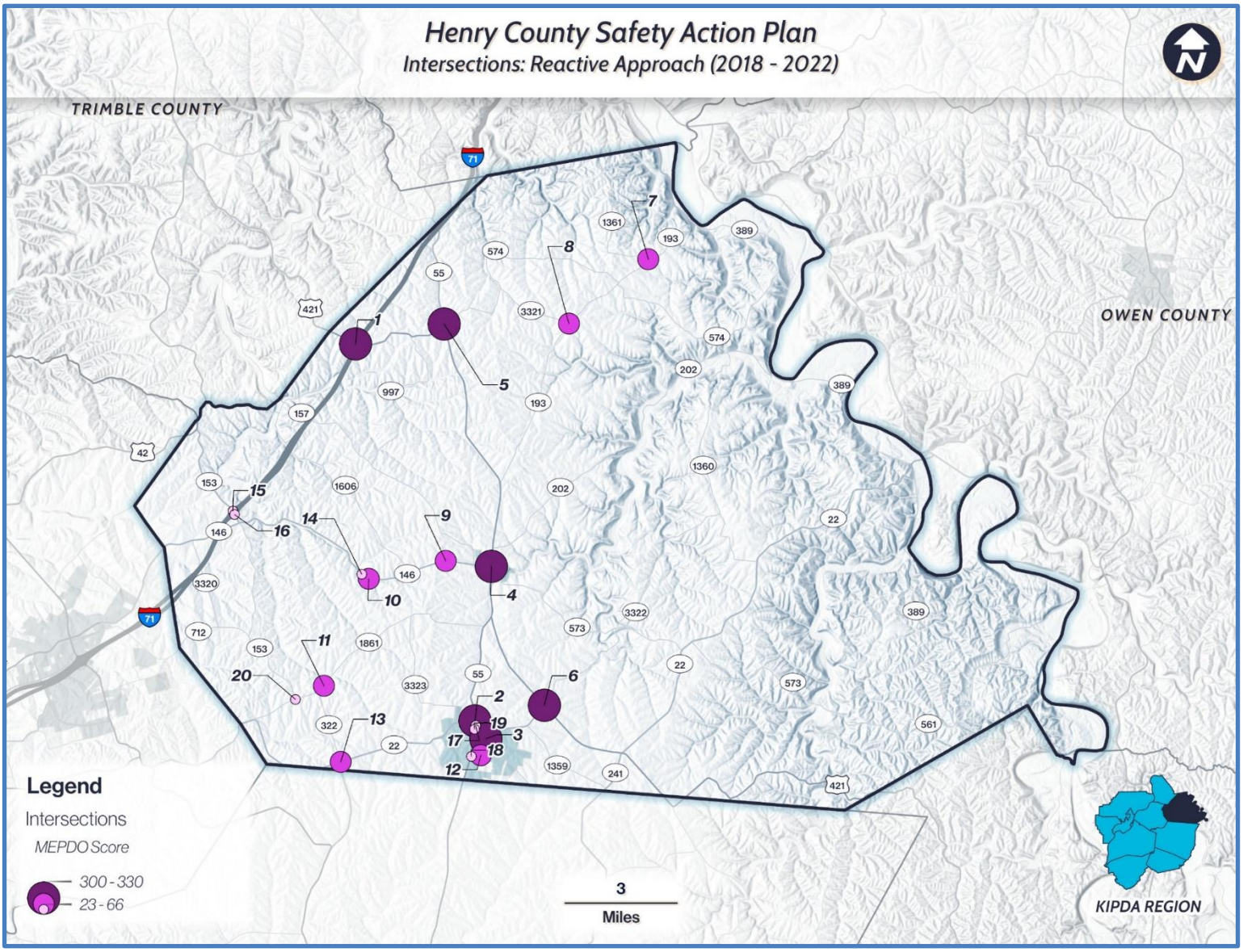



*Figure 6-2. Intersections Prioritized by MEPDO Map*

## High Injury Network and Prioritized Corridors

A High Injury Network (HIN) is a data-driven approach to identify roadway segments that experience a disproportionately high number of fatal and serious injury crashes. This approach enables communities to focus resources on improving safety along those high-priority corridors. Henry County's HIN was developed using detailed crash data analysis and GIS mapping to pinpoint corridors with the highest concentration of severe crashes. The following table and maps illustrate Henry County's HIN, highlighting its overlap with locations of fatal and serious injury crashes and prioritized intersections based on MEPDO analysis.

| Ranking | Route | Begin | End | Length (mile) | MEPDO | MEPDO/ mile |
|---|---|---|---|---|---|---|
| 1 | Lagrange Rd (KY-146) | Pendleton Rd (KY-153) | Lost Creek Dr | 4.63 | 1,688 | 365 |
| 2 | Pendleton Rd (KY-153) | Lagrange Rd (KY-146) | Foxboro Rd | 0.67 | 238 | 357 |
| 3 | N Main St (KY-55) | Elm St (KY-22) | MP 2.21 | 0.80 | 280 | 349 |
| 4 | Mulberry Pike (KY-1899) | N Main St (KY-55) | Hussey Copper Entrance | 1.17 | 398 | 340 |
| 5 | Campbellsburg Rd (US-421) | Masonic Cemetery Rd | Trimble County Line | 1.72 | 544 | 317 |
| 6 | Lagrange Rd (KY-146) | Oldham County Line | Pendleton Rd (KY-153) | 2.17 | 659 | 304 |
| 7 | Main St (US-421) | New Castle City Limit | Drennon Rd (KY-202) | 0.77 | 218 | 283 |
| 8 | Lake Jericho Rd (KY-153) | Old Jericho Rd (KY-712) | Lagrange Rd (KY-146) | 3.26 | 801 | 246 |
| 9 | Ballardsville Rd (KY-22) | McCoun Rd (KY-322) | Jim Doyle Rd | 2.95 | 723 | 245 |
| 10 | Lagrange Rd (KY-146) | Lost Creek Dr | Hill St | 2.72 | 623 | 229 |
| 11 | Giltner Rd | McCoun Rd (KY-322) | Ballardsville Rd (KY-22) | 3.01 | 581 | 193 |
| 12 | Pendleton Rd (KY-153) | Oakwood Cir | Brownsboro Rd (US-42) | 1.40 | 265 | 190 |
| 13 | Castle Hwy (US-421) | Hardin Ln | Elm St (KY-22) | 2.17 | 390 | 180 |
| 14 | Drennon Rd (KY-202) | Franklinton Rd (KY-1360) | River Rd (KY-389) | 1.42 | 198 | 139 |
| 15 | Castle Hwy (US-421) | Elm St (KY-22) | Eminence Rd (KY-55) | 2.83 | 386 | 136 |
| 16 | Radcliff Rd | Smithfield Rd (KY-1861) | Old Jericho Rd (KY-712) | 3.02 | 398 | 132 |
| 17 | Castle Hwy (US-421) | MP 4.85 | Shelby County Line | 1.41 | 186 | 132 |
| 18 | Port Royal Rd (KY-193) | Lacie Rd (KY-3321) | Vance Rd (KY-1361) | 2.80 | 368 | 131 |
| 19 | Drennon Rd (KY-202) | Campbellsburg Rd (US-421) | Batts Ln | 2.84 | 371 | 131 |
| 20 | Bethlehem Rd (KY-22) | MP 9.9 | Property Rd | 3.19 | 406 | 127 |
| 21 | S Property Rd (KY-573) | New Castle Ln | Puckett Ln | 2.99 | 380 | 127 |

*Table 6-5. Prioritized Corridors - High Injury Network*

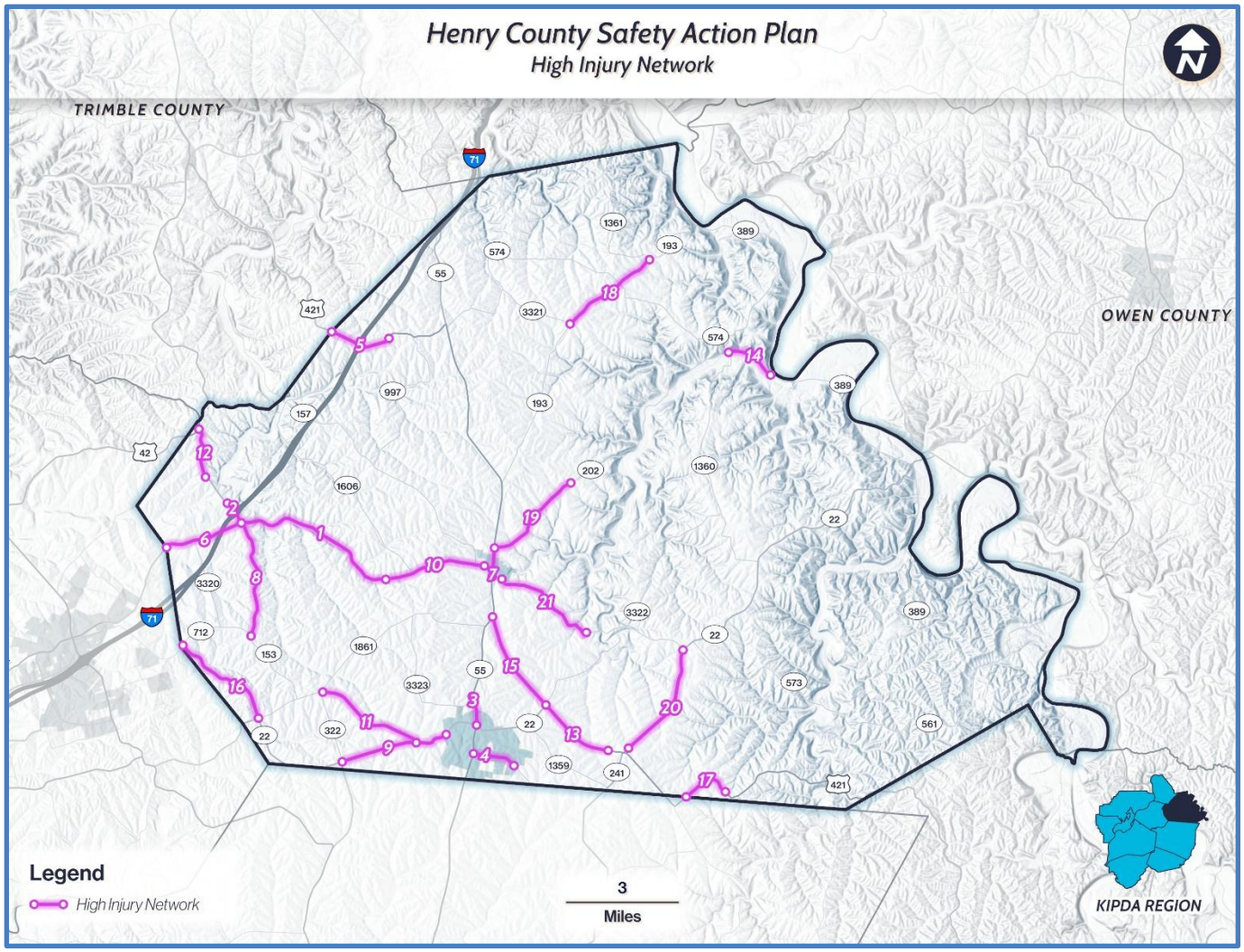



*Figure 6-3. High Injury Network*

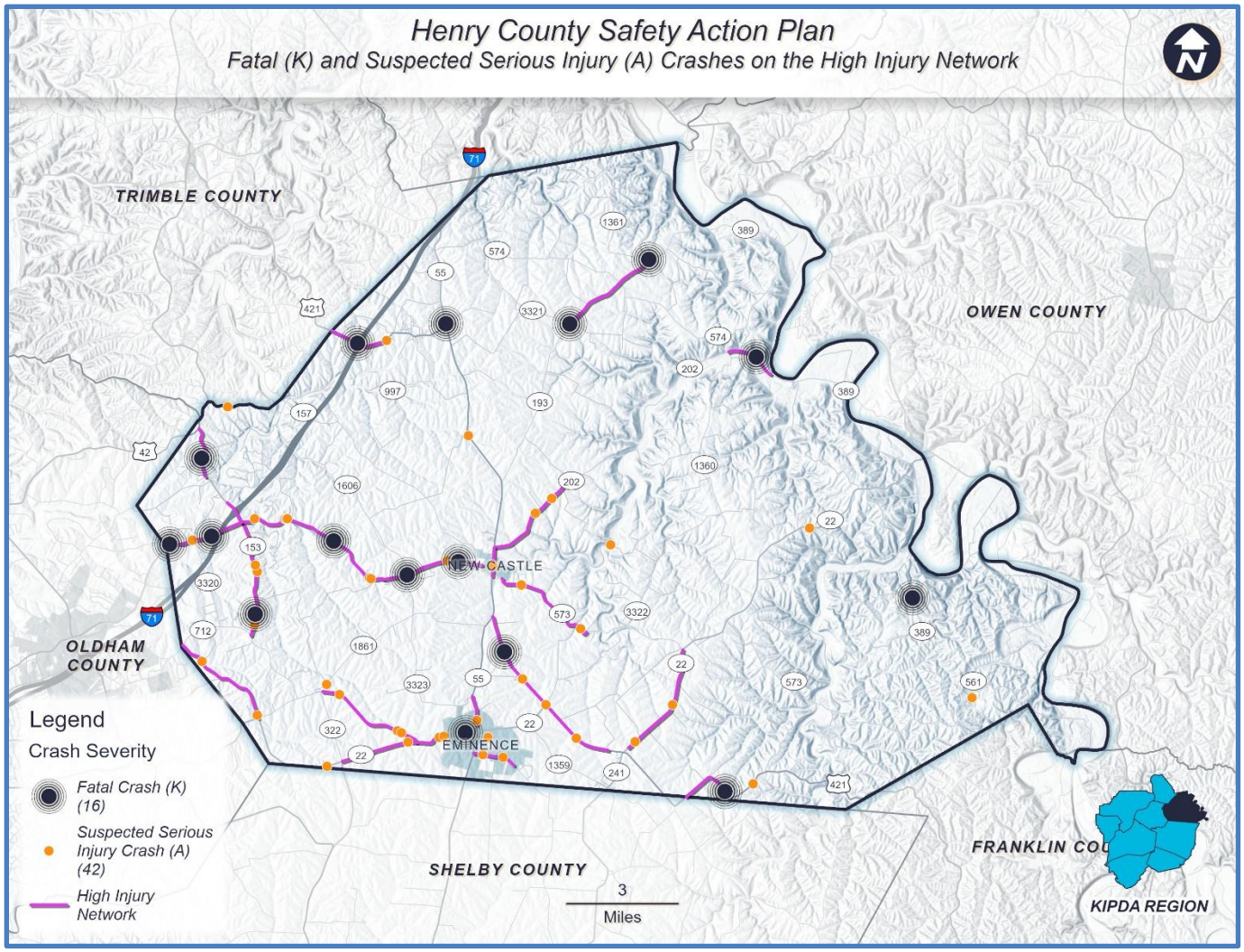



*Figure 6-4. High Injury Network and Fatal and Suspected Serious Injury Crashes*

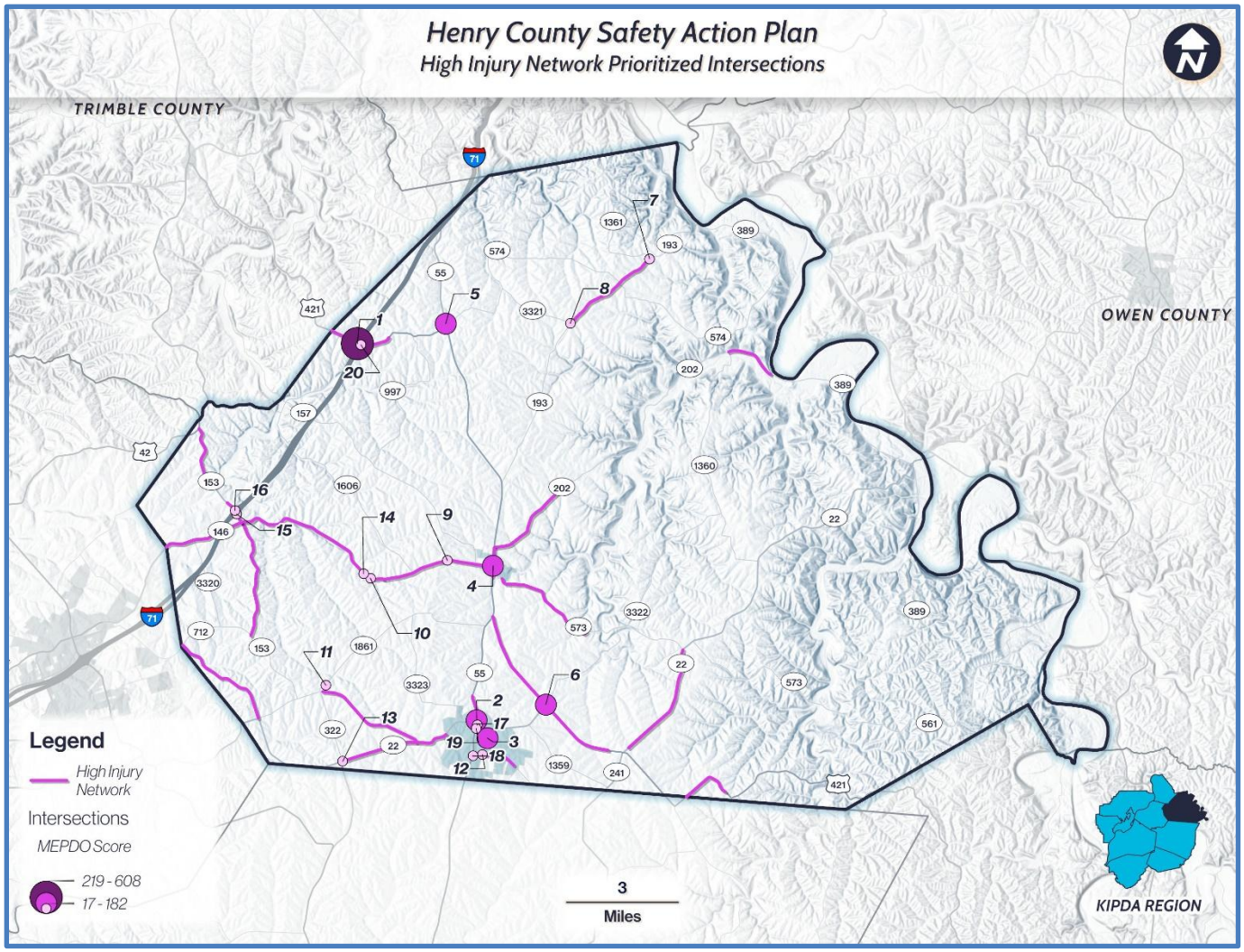



*Figure 6-5. High Injury Network and Prioritized Intersections*

## Project Selection

A comprehensive set of recommended strategies and safety improvements was developed for the top-ranked intersections and corridors within the HIN. The improvements are based on the results of the safety analysis, feedback from Safety Committee and the public, and are guided by the principles of the Safe System Approach.

### Proven Safety Countermeasures

The following tables present a selection of proven safety countermeasures designed to reduce crashes. These measures are informed by before-and-after crash data from case studies. The countermeasures are organized into roadway segment and intersection improvement tables. The countermeasures includes an image, a description of the countermeasure's safety benefits, estimated safety impact statistics, and a link for further information.

Countermeasures should be implemented as appropriate based on the prioritized project locations. Estimated cost ranges for safety countermeasures can be found in Appendix B. This appendix also includes a project implementation timeline reference chart, which provides high-level guidance on the time required to complete a range of potential safety improvement projects. Please refer to the notes on the chart during the development of project timelines.

Additional information on potential safety countermeasures can be found using these links:

**Proven Safety Countermeasures (Federal Highway Administration)**
https://highways.dot.gov/safety/proven-safety-countermeasures

**Innovative Intersections (Virginia Department of Transportation)**
https://www.vdot.virginia.gov/about/our-system/highways/innovative-intersections/virginia-icap/

**Federal Highway Administration Safety Programs**
Intersection Safety - https://highways.dot.gov/safety/intersection-safety/about
Roadway Departure Safety – https://highways.dot.gov/safety/RwD
Speed Management Safety - https://highways.dot.gov/safety/speed-management
Pedestrian and Bicycle Safety – https://highways.dot.gov/safety/pedestrian-bicyclist
Local and Rural Safety - https://highways.dot.gov/safety/local-rural
Safety Data Analysis and Tools - https://highways.dot.gov/safety/data-analysis-tools

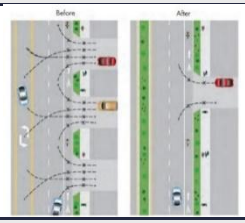
| Example Segment Countermeasures | | | | | | | |
|---|---|---|---|---|---|---|---|
| Countermeasure | Description | Safety Impact | Links | Countermeasure | Description | Safety Impact | Links |
| **Enhanced Delineation for Horizontal Curves** | | | | **Roadside Design Improvements at Curves** | | | |
|  | High visibility markings and delineators around curves provide drivers with better information about curves. | Severe crashes ↓15-18% | FHWA |  | Includes treatments that improve horizontal curves, giving drivers the opportunity to recover safely or reducing crash severity. | Single Vehicle or All Crashes ↓8-44% | FHWA |
| **Access Management (segment treatments)** | | | | **Medians and Pedestrian Refuge Islands** | | | |
|  | Reducing the number and proximity of access points to focus turning traffic to fewer locations. Reduces turning conflicts. | 2-lane Rural Road Crashes ↓5- 23% Urban Severe Crashes ↓25- 31% | FHWA |  | Provide curbed median between opposing travel lanes to provide separation, reduce left-turn risks, and improve pedestrian safety. | Ped Crashes ↓46-56% Vehicle Crashes ↓15% | FHWA and FHWA |
| **Roadway Reconfiguration (Right Sizing or Road Diet)** | | | | **Shoulder Treatment – Safety Edge** | | | |
|  | Often involves converting a 4-lane undivided road to a 3-lane road with 2 through lanes and a center two-way left-turn lane, which slows traffic and reduces conflicts. | All Crashes ↓19-47% | FHWA |  | Shoulder edge upgrades to improve recoverability for roadway departures. | Severe ↓11% Run-Off-Road ↓21% Head-On ↓19% | FHWA |
| **Dynamic Speed Feedback Signs** | | | | **Pavement Friction Management** | | | |
|  | Provide positive and negative feedback to drivers regarding their speed. | All Crashes ↓5% | FHWA (pg 5) FHWA Clearing house |  | High Friction Surface Treatment (HFST) can prevent roadway departure, intersection, and pedestrian-related crashes. | Severe Crashes at Curves ↓48% Crashes at Intersections ↓48% | FHWA |

*Table 6-6. Example Segment Countermeasures*

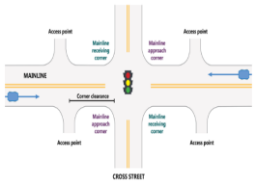
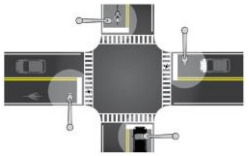
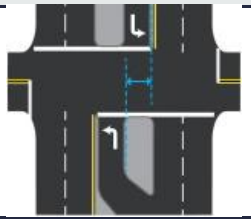
| Example Intersection Countermeasures | | | | | | | |
|---|---|---|---|---|---|---|---|
| Countermeasure | Description | Safety Impact | Links | | Countermeasure | Description | Safety Impact | Links |
| **Access Management (intersection treatments)** | | | | | **Intersection Lighting** | | | |
|  | This refers to the design and control of access points including intersections which can enhance safety for all modes. | 2-lane Rural Road Crashes ↓5- 23%<br>Urban Severe Crashes ↓25- 31% | FHWA | |  | Increased visibility at nighttime can improve safety for all modes of travel. | Nighttime Ped Injuries ↓42%<br>Nighttime Crashes ↓33-38% | FHWA |
| **Crosswalk Visibility Enhancement** | | | | | **Reflective Backplates** | | | |
|  | High-visibility crosswalks can reduce pedestrian injury crashes. | Pedestrian Injury Crashes ↓40% | FHWA | |  | Improve the visibility of the illuminated face of the signal by introducing a controlled-contrast background. | Total Crashes ↓15% | FHWA |
| **Low-Cost Countermeasures at Stop-Controlled Intersections** | | | | | **Modern Roundabouts (RAB)** | | | |
|  | Deploying a package of low-cost countermeasures, including enhanced signing and pavement markings increasing driver awareness. | Severe Crashes ↓10%<br>Night Crashes ↓15%<br>Rural Severe Crashes ↓27% | FHWA | |  | Converting an intersection (stop or signal) into a roundabout can slow traffic. It also minimizes conflicts and reduces crash severity. | 2-way Stop to RAB Severe Crashes ↓82%<br>Signal to RAB Severe Crashes ↓78% | FHWA |
| **Left and Right Turn Lanes** | | | | | **Positive Offset Left-Turn Lane** | | | |
|  | Left and right turn lanes provide physical separation between through traffic and turning traffic that is slowing or stopped. | Left Turn Lane ↓28-48%<br>Right Turn Lane ↓14-26% | FHWA | |  | Provides increased visibility for drivers turning left. It prevents opposing left turning vehicles from blocking sightlines. | Severe crashes ↓36% | FHWA |

*Table 6-7. Example Intersection Countermeasures*

## Potential Intersection Strategies

The following table lists the prioritized intersections based on their MEPDO values. Each intersection was evaluated for its existing condition. Relevant safety countermeasures were identified as potential improvements for each intersection.

| Intersections – Reactive Approach | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ranking | Intersection | Potential Countermeasures | | | | | | | | | | | |
| | | Roundabouts / Alternative Int. | Turn Lanes | Tighten Intersection | Reflective Backplates | Enhanced Striping | Enhanced Signing | Access Management | Lighting | Sight Distance Improvements | Pedestrian Enhancements | Re-Align Intersection | Speed Management |
| 1 | Campbellsburg Rd (US-421) and I-71 Southbound Ramp | X | X | | | X | X | | | | | | |
| 2 | N Main St (KY-55) and Sulphur Ave (CS-2006) | | | | X | X | X | | X | | X | | |
| 3 | Uncle Ed St (CS-2037) and Vernon St (CS-2034) | | | | | X | X | | X | X | | | X |
| 4 | S Main St (US-421) and Cross Main St (KY-146) | X | | X | X | X | X | | X | | | | |
| 5 | Main St (US-421) and Campbellsburg Rd (KY-55) | X | X | | X | X | X | | | X | | X | |
| 6 | Elm St (KY-22) and Castle Hwy (US-421) | X | X | | X | X | X | | X | | X | X | |
| 7 | Port Royal Rd (KY-193) and Vance Rd (KY-1361) | | X | | | X | X | | | X | | | |
| 8 | Port Royal Rd (KY-193) and Lacie Rd (KY-3321) | | X | | | X | X | | | X | | | |
| 9 | Lagrange Rd (KY-146) and Marcee Ln (CR-1206) | | | | | | X | | | | | | |
| 10 | Lagrange Rd (KY-146) and Hieatt Ln (CR-1221) | | | | | X | X | | | | | | |
| 11 | Sunnyside Rd (KY-1861) and Smithfield Cemetery Rd (PR-1211) | | | | | | X | | | | | X | |
| 12 | Mulberry Pike (KY-1899) and Shelby St (CS-2044) | | X | | | | X | X | | | | | X |
| 13 | Ballardsville Rd (KY-22) and Lucas Rd (KY-322) | X | | X | | | | | | | | | X |
| 14 | Lagrange Rd (KY-146) and Safety-Kleen Recycling Dr (PV-1200) | | | | | X | X | | | X | | | |
| 15 | Pendleton Rd (KY-153) and Southbound I-71 Ramp | X | X | | | X | X | | | | | | |

| Intersections – Reactive Approach | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ranking | Intersection | Potential Countermeasures | | | | | | | | | | | |
| | | Roundabouts / Alternative Int. | Turn Lanes | Tighten Intersection | Reflective Backplates | Enhanced Striping | Enhanced Signing | Access Management | Lighting | Sight Distance Improvements | Pedestrian Enhancements | Re-Align Intersection | Speed Management |
| 16 | Pendleton Rd (KY-153) and Northbound I-71 Ramp | X | X | | | X | X | | | | | | |
| 17 | N Main St (KY-55) and Elm St (KY-22) | X | X | X | | X | X | X | X | | X | | |
| 18 | Eminence Rd (KY-55) and 8th Eminence Cemetery Rd (PR-1208) | | | | | X | X | | | | | | X |
| 19 | S Main St (KY-55) and W Broadway (KY-22) | X | | X | X | X | X | | X | | X | | |
| 20 | Smithfield Rd (KY-1861) and Lake Jericho Rd (KY-153) | X | | | | X | X | | | | | | |

*Table 6-8. Potential Intersection Strategies*

## Potential High Injury Network Corridor Strategies

The table below presents potential safety improvement strategies for routes along the HIN. The list of improvements was developed using proven safety countermeasures aimed at reducing and eventually eliminating severe crashes. These routes can be further studied to guide implementation efforts. The table also highlights current improvements along Lagrange Road (KY-146), as well as the N Main Street (KY-55) corridor currently in the planning and design phases of future projects

| Rank | Route Name | Begin and End Limits | Length | Potential Project Strategies |
|---|---|---|---|---|
| 1* | Lagrange Rd (KY-146) | Pendleton Rd (KY-153) to Lost Creek Dr | 4.63 | Active Major Reconstruction Project |
| 2 | Pendleton Rd (KY-153) | Lagrange Rd (KY-146) to Foxboro Rd | 0.67 | Corridor management/driveway consolidation, alternative intersections at I-71 ramps, lighting |
| 3* | N Main St (KY-55) | Elm St (KY-22) to MP 2.21 | 0.80 | Active rehabilitation, overlay, and widening project |
| 4 | Mulberry Pike (KY-1899) | N Main St (KY-55) to Hussey Copper Entrance | 1.17 | Pedestrian facilities, enhanced signing and striping, turn lanes for commercial access point in curve |
| 5 | Campbellsburg Rd (US-421) | Masonic Cemetery Rd to Trimble County Line | 1.72 | Widen for centerline rumble strips, I-71 interchange improvements |
| 6 | Lagrange Rd (KY-146) | Oldham County Line to Pendleton Rd (KY-153) | 2.17 | Widen for centerline rumble strips, guardrail end treatments, tree trimming |
| 7 | Main St (US-421) | New Castle City Limit to Drennon Rd (KY-202) | 0.77 | Enhanced pedestrian facilities and crossings, innovative intersections, corridor lighting |
| 8 | Lake Jericho Rd (KY-153) | Old Jericho Rd (KY-712) to Lagrange Rd (KY-146) | 3.26 | Minor roadway widening for edgeline rumble strips, enhanced signing and striping, curve widening or realignment |
| 9 | Ballardsville Rd (KY-22) | McCoun Rd (KY-322) to Jim Doyle Rd | 2.95 | Alternative intersection at KY 322, enhanced signing and striping, curve widening or realignment |
| 10 | Lagrange Rd (KY-146) | Lost Creek Dr to Hill St | 2.72 | Widen for centerline rumble strips, guardrail end treatment improvements, curve widening or realignment |
| 11 | Giltner Rd (CR-1211) | McCoun Rd (KY-322) to Ballardsville Rd (KY-22) | 3.01 | Minor roadway widening for edgeline rumble strips, enhanced signing and striping, tree trimming |
| 12 | Pendleton Rd (KY-153) | Oakwood Cir to Brownsboro Rd (US-42) | 1.40 | Widen for centerline rumble strips, curve widening or realignment |
| 13 | Castle Hwy (US-421) | Hardin Ln to Elm St (KY-22) | 2.17 | Alternative intersection at KY 22 and KY 3322, pavement rehabilitation |
| 14 | Drennon Rd (KY-202) | Franklinton Rd (KY-1360) to River Rd (KY-389) | 1.42 | Minor widening for edgeline rumble strips, enhanced signing and striping, tree trimming |
| 15 | Castle Hwy (US-421) | Elm St (KY-22) to Eminence Rd (KY-55) | 2.83 | Widening for centerline rumble strips, guardrail end treatment improvements, alternative intersection at KY 55 |
| 16 | Radcliff Rd | Smithfield Rd (KY-1861) to Old Jericho Rd (KY-712) | 3.02 | Minor widening for edgeline rumble strips, enhanced signing and striping, tree trimming |
| 17 | Castle Hwy (US-421) | MP 4.85 to Shelby County Line | 1.41 | Curve widening or realignment, enhanced signing, widen for centerline rumble strips |
| 18 | Port Royal Rd (KY-193) | Lacie Rd (KY-3321) to Vance Rd (KY-1361) | 2.80 | Pavement rehabilitation, install edgeline rumble strips, enhanced signing, guardrail end treatments improvements |
| 19 | Drennon Rd (KY-202) | Campbellsburg Rd (US-421) to Batts Ln | 2.84 | Minor widening for edgeline rumble strips, enhanced signing and striping, curve widening or realignment |
| 20 | Bethlehem Rd (KY-22) | MP 9.9 to Property Rd | 3.19 | Widening for centerline rumble strips, enhanced signing, tree trimming |
| 21 | S Property Rd (KY-573) | New Castle Ln to Puckett Ln | 2.99 | Pedestrian facilities, minor widening for edgeline rumble strips, enhanced signing and striping, curve widening or realignment |

* Corridor currently under construction.

*Table 6-9. Potential Corridor Strategies*

## Systemic Approach and Strategies

The systemic approach to safety is a comprehensive strategy that identifies and addresses high-risk features across the entire roadway network, rather than focusing solely on specific crash locations, as in the reactive approach. By analyzing crash and roadway data, risk factors contributing to Henry County's roadway network were identified, with rural high speed intersections, roadway departure, and speed transition zones emerging as key areas of concern.

Systemic strategies involve implementing widespread improvements aimed at reducing both the likelihood and severity of crashes across an area, not just at specific locations. Systemic strategies proactively identify and mitigates potential hazards to prevent crashes.

### Strategy 1 – Rural Intersections Countermeasures

Assessing and improving signing and striping at rural intersections is a high priority. This could include installing oversize signs in advance of intersections. It also could involve maintenance or minor construction to improve sight distance. While they are much more costly, roundabouts in key locations across the county would reduce severe crashes. They would lower speeds while allowing many drivers to proceed without stopping on all four legs. They could ultimately change the culture of driving in the county.

### Strategy 2 – Roadway Departure Countermeasures

Consider minor widening of narrow roadways throughout the county. The additional paved width could be added to the lanes or shoulders as determined to be most appropriate. Rumble strips (edge and center) should also be added where possible. Center buffer areas should also be considered to reduce head-on crashes.

### Strategy 3 – Speed Transition Zones Countermeasures

The data in Henry County indicated safety challenges in the approaches to both Eminence and New Castle. The speed transition zones where drivers must decelerate from 55 mph or faster to 45 mph and then to 35 mph or slower can be difficult for drivers to navigate effectively. Often drivers maintain higher speeds well into these transition zones. Land uses change in these areas and conflicts increase. Therefore, it is important to explore and implement strategies to help drivers reduce their speeds more quickly and pay attention to the changing driving environment. There are many countermeasures that could be considered including but not limited to, more extensive signage, lighting, lane narrowing using pavement markings, transverse rumble strips, introducing horizontal or line of sight changes that alert drivers to the changing environment, roundabouts, community welcome signs, medians or short median islands, landscaping, and speed feedback signs.

## Safety Action Plan Implementation

This plan has documented and prioritized many safety challenges. Based on the data, agency / stakeholder input, and best practices, it has also identified potential strategies and projects that would address these challenges. The focus continues to be on reducing high-severity crashes across the community. This section outlines an initial action plan for deploying potential strategies, projects, and safety programs. The actions are proposed to be implemented in four time ranges: short-term (0-3 years); mid-term (4-6 years); long term (7+ years); and ongoing. They cover the main intervention categories: infrastructure, behavioral safety, operational safety, and policies/procedures.

The implementation of each project, strategy, or program is dependent on funding availability. It is also dependent on the support of all relevant agencies and the County's capacity to execute each action. In cases where the County does not have primary authority for implementing the action, they will need to play a supporting role.

| Timeframe | No | Project / Strategy / Program Description | Document Reference | Recommended First Step | Primary Category |
|---|---|---|---|---|---|
| **Short Term (0 to 3 years)** | 1 | Adopt Complete Street, Active Transportation and/or updated safety related zoning policies | Chapter 5 | Work with RTC/KIPDA to obtain model policies for adoption | Policy / Procedures |
| | 2 | Submit agreed on joint application for SS4A grant funding for one of top HIN segments | Chapter 6; Table 6-9 | Work with RTC/KYTC to identify and agree on a project and match funding | Infrastructure |
| | 3 | Begin outreach and education initiative with young and older drivers | Chapter 3 | Collaborate with school district, public agencies, and non-profits | Behavioral |
| | 4 | Implement initial low-cost Speed Management strategies | Chapters 3 and 6; Systemic Sec. | Work with law enforcement, RTC, and KYTC to identify key corridors | Operational |
| | 5 | Support targeted speed and traffic control enforcement | Chapter 3 | Work with law enforcement, RTC, and KYTC to identify key locations | Operational |
| **Mid Term (4 to 7 years)** | 6 | Implement easy to implement systemic infrastructure focused project | Chapters 3 and 6; Systemic Sec. | Work with RTC/KYTC to identify a promising project and funding | Infrastructure |
| | 7 | Implement high priority HIN segment project | Chapter 3 and Chapter 6 | Work with RTC/KYTC to identify a promising project and funding | Infrastructure |
| | 8 | Implement high priority intersection project | Chapter 3 and Chapter 6 | Work with RTC/KYTC to identify a promising project and funding | Infrastructure |
| | 9 | Implement safety focused local street/highway upgrades and maintenance | Chapter 3 and Chapter 6 | Use local funds to advance priority local projects / maintenance | Infrastructure |
| | 10 | Initiate countywide safety initiative; Consider focusing on rural highway speeds, rural to urban transition zones, seat belt usage, and impaired driving | Chapter 3 | Work with RTC/KIPDA and other counties to develop a multi-county outreach approach | Behavioral |
| **Long Term (8+ years)** | 11 | Implement additional systemic infrastructure focused projects (goal is one or more every five years) | Chapters 3 and 6; Systemic Sec. | Build long-term partnership with KYTC (District 5 and HSIP) to identify and address key systemic needs | Infrastructure |
| | 12 | Implement additional infrastructure projects on HIN (goal is one or more every five years) | Chapter 3 and Chapter 6 | Build long-term partnership with KYTC (District 5 and HSIP) to identify and address key HIN needs | Infrastructure |
| | 13 | Implement additional intersection infrastructure projects (goal is one or more every five years) | Chapter 3 and Chapter 6 | Build long-term partnership with KYTC (District 5 and HSIP) to identify and address key intersection needs | Infrastructure |
| | 14 | Implement additional safety focused local street/highway improvements (goal is one or more every five years) | Chapter 3 and Chapter 6 | Increase local funds to advance priority local projects / maintenance | Infrastructure |
| **Ongoing** | 15 | Continue Local Safety Meetings | Chapters 2 and 4 | Schedule quarterly meetings | Policy / Procedures |
| | 16 | Collaborate with RTC/KIPDA to monitor, assess, and publicly report progress | Chapter 7 | Coordinate with RTC/KIPDA to implement reporting plan | Policy / Procedures |
| | 17 | Continue building staff/agency knowledge regarding highway safety | Chapters 4, 5, and 6 | Coordinate with RTC/KIPDA to schedule annual sessions | Policy / Procedures |

*Table 6-10. Implementation Action Plan Timeline*

# 7. Progress and Transparency

Henry County with support from KIPDA and the RTC, is dedicated to the success of this Safety Action Plan. Effective communication, continuous monitoring, and evaluation are crucial to eliminating fatalities and serious injury crashes by 2050. Maintaining ongoing transparency through public accessibility and clear communication of outcome data is also essential.

The following chapter outlines the plan for measuring progress, maintaining transparency, and continuously incorporating feedback to enhance this road safety initiative.

## Safety Performance Measurement

Safety improvements are measured using community-wide performance metrics to assess progress. Additionally, project-specific performance is monitored to promote effective implementation and positive safety impacts. The following sections outline the annual public and accessible progress reporting structure and proposed metrics.

### Annual Safety Performance Measures

***Crash Severity***

The County and KIPDA expect to monitor the total number of crashes annually by crash severity: Fatal, Suspected Serious Injury, Suspected Minor Injury, Possible Injury, and No Apparent Injury. In addition, the crash rate for the total number of crashes would be estimated. The crash rate is the total number of crashes per vehicle miles traveled in the County.

***Fatal and Suspected Serious Injury Crashes***

Evaluating fatal and suspected serious injury crash trends is a key focus. Fatal and suspected serious injury crashes should be monitored annually. The measurement includes monitoring the total number of fatal and suspected serious injury crashes and the crash rate. The crash rate is the number of fatal and suspected serious injury crashes per vehicle miles traveled in the County annually.

***Vulnerable Road User Crashes***

Crashes involving vulnerable road users should be monitored annually, focusing on fatal and suspected serious injury crashes. Since a significant portion of severe crashes involve vulnerable road users, this metric is critical for assessing safety improvements.

***Community Focused***

The County and KIPDA expect to assess the above safety performance metrics by Census Tract to explore underlying factors contributing to crash trends. By comparing these metrics to county-wide results, patterns can be identified, allowing for tailored solutions and resources to meet the needs of different parts of the community. This approach aims to create a safer environment for all, by addressing concerns and promoting safety across the different parts of the community.

## Project-Specific Performance Measures

The safety action plan recommends improvements using both the reactive and systemic approaches. Monitoring focuses on project-specific improvements at prioritized signalized intersections, unsignalized intersections, and along the corridors identified on the High Injury Network. Key project-specific measures anticipated to be collected include:

***Safety Improvement Projects Implemented at Prioritized Locations***

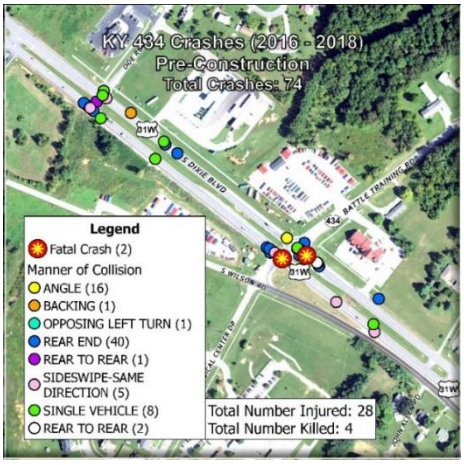
Performance measures track the number of safety-focused improvement projects constructed from the potential improvements listed in **Chapter 6. Strategy and Project Selection**. Annually, the total number of safety improvements implemented at the intersection and along the corridors identified on the HIN are measured.

***Crash Trends at Project Locations***

When a safety improvement project has been constructed, pre-construction and post-construction crash data are collected to document the realized crash reduction benefit. Crash trends are measured for each project specific-improvement and aid decision-makers in future safety improvement decisions. This performance measure tracks fatal and suspected serious injury crashes for each improvement project.

***Safety Studies and Design***

The status of safety studies and design plans are monitored annually. These studies and design plans, which include cost estimates, public engagement, NEPA documentation, and project readiness, move projects closer to construction and the ultimate goal of eliminating fatal and suspected serious injury crashes.



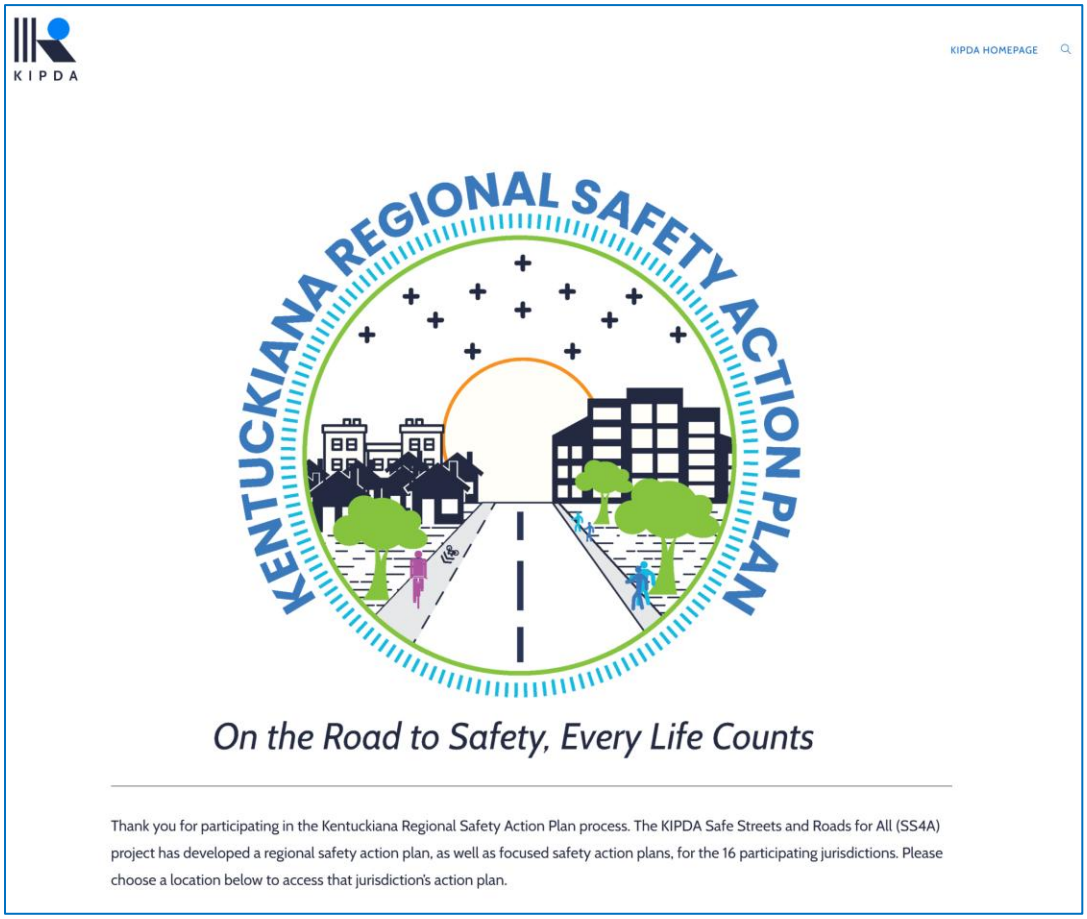


Geospatial representation of crash trends for specific projects is an effective method to demonstrate their impact to the community. Illustrating pre and post-construction crash data, with a focus on the decrease in fatal and suspected serious injury crashes, clearly communicates safety improvements.

**PRE-CONSTRUCTION** → **POST-CONSTRUCTION**

## Transparency

The development of the Safety Action Plan has been shared publicly with residents and other relevant stakeholders through the KIPDA website. The MPO utilized its website to engage the community and disseminate further resources, including maps, the Safe Streets and Roads for All Grant Program, and the Safe Systems Approach. The Henry County Safety Action Plan is posted publicly online at **SS4A – KIPDA Transportation**. The KIPDA website will continue to be the platform to engage the community and serve as a source of information and updates to the public.




## Feedback and Continuous Improvement

Creating the Safety Action Plan involved a collaborative effort with active community participation. The project team conducted comprehensive public surveys and facilitated stakeholder discussions through Stakeholder and Safety Committees. This engagement underscored the importance of continuous improvement in achieving safety goals. By advancing ongoing dialogue, feedback is used to assess the plan's efficacy and provides for regular plan amendments. This can help keep the Safety Action Plan relevant and effective in addressing community needs.

# Appendix A

# Continuous Highway Analysis Framework (CHAF) List

| CHAF | Highway Plan Project | Primary Route | Primary BMP | Primary EMP | Length | Project Description | Type of Work |
|---|---|---|---|---|---|---|---|
| IP20230133 | 05-80260.00/ 05-8300.00 | KY 146 | 5.33 | 6.8 | 1.5 | Major reconstruction of KY 146 between New Castle at US 421 and Pendleton at KY 153. Segment 1B: MP 5.33 to Lost Creek (1/2 mile east of Safety Kleen entrance) (portion of 05-8300.00) | Reconstruction |
| IP20150150 | 05-8820.00 | KY 55 | 1.408 | 2.21 | 0.802 | Rehabilitation-overlay and widening existing KY-55 from KY-22 to curve at MP 2.210 north of Eminence. Includes replacing existing curb and gutter and sidewalks, and relocation of impact utilities. (MP 1.408 to 2.210)(14CCN) | Minor Widening |
| IP20240040 | | KY 22 | 3.455 | 3.496 | 0.041 | Improve traffic operations at the KY 22 intersection with KY 322. | Improve Intersection |
| IP20150368 | 05-8820.00 | KY 389 | 13.16 | 21.791 | 8.631 | Scoping/planning study for KY-389 in Henry County from KY-202 (Drennon Road) north to Henry County/Carroll County line. (14CCN). | Scoping Study |
| IP20080186 | | KY 153 | 5.521 | 8.509 | 2.988 | Improve safety and address geometric deficiencies on KY 153 from KY 146 to US 42 (from Sligo to south of the I-71/KY 153 interchange). | Reconstruction |
| IP20150426 | 05-8300.10 | KY 146 | 6.8 | 9.8 | 3 | Major reconstruction of KY-146 between New Castle at US-421 and Pendleton at KY-153. Segment 2: Lost Creek (1/2 mile east of Safety Kleen entrance) to Main Street (US 421/KY 55). Mile point 6.8 to mile point 9.8. (12CCN)(14CCR) | Reconstruction |
| IP20150051 | 05-552.00 | I-71 | 24.727 | 28 | 3.273 | Improve safety and reduce congestion on I-71 from KY-53 to KY-153. | Major Widening |
| IP20110218 | | KY 55 | 0.737 | 1.4 | 0.663 | Improve safety and access along KY 55 from KY 1899 (Mulberry Pike) to KY 22 in Eminence. | Minor Widening |
| IP20080181 | | PF-9999 | | | | Provide new interchange on I-71 at KY 55 near Campbellsburg to improve access for Henry, Trimble and Carroll Counties. | New Interchange |

| CHAF | Highway Plan Project | Primary Route | Primary BMP | Primary EMP | Length | Project Description | Type of Work |
|---|---|---|---|---|---|---|---|
| IP20080185 | | KY 55 | 2.21 | 4.49 | 2.28 | Improve safety and address roadway deficiencies on KY 55 from just north of Cobb Road (past the curve) to US 421 north of Eminence. | Major Widening |
| IP20130004 | | I-71 | 34 | 38.086 | 4.086 | Improve safety and reduce congestion on I-71 from US 421 to the Henry County/Trimble County line. | Major Widening |
| IP20150049 | | KY 574 | 0.5 | 3.4 | 2.9 | Address safety and geometric issues on KY 574 just east of US 421 in Campbellsburg to Turner Station | Spot Improvement |
| IP20110217 | 05-572.00 | I-71 | 28 | 34 | 6 | Improve safety and reduce congestion on I-71 from KY 153 to US 421. | Major Widening |
| IP20110219 | | KY 22 | 7.42 | 8.995 | 1.575 | Improve safety and access on KY 22 from KY 55 (Main Street) to KY 1359 (Hillspring Road). | Minor Widening |
| IP20130005 | | KY 561 | 1.183 | 2.995 | 1.812 | Improve safety and address geometrics on KY 561 (Gest Road) from KY 573 (Woods Pike) to KY 389 (Harpers Ferry Road). | Minor Widening |
| IP20060242 | 05-8300.00 | KY 146 | 2.169 | 6.8 | 4.631 | Major reconstruction of KY-146 between New Castle at US-421 and Pendleton at KY-153. Segment 1: Pendleton Road (KY 153) to Lost Creek (1/2 mile east of Safety Kleen entrance). Mile point 2.1 to mile point 6.8. (06CCN)(08CCR)(10CCR)(12CCR)(14CCR)(18CCR) | Reconstruction |
| IP20130011 | 05-8821.00 | KY 241 | 0.094 | 1.147 | 1.053 | Improve drainage and install sidewalk along KY 241 in Pleasureville. (14CCN) | Bike/Ped Facility |
| IP20080182 | | US 421 | 0 | 5.481 | 5.481 | Improve safety and address geometrics on US 421 from Raisor Lane in Henry County to KY 561 (Gest Road) in Franklin County. | Major Widening |
| IP20080183 | | US 421 | 15.27 | 21.713 | 6.443 | Improve safety and address geometrics deficiencies on US 421 from just north of KY 202 to KY 55. | Reconstruction |
| IP20080184 | | KY 55 | 4.49 | 7.259 | 2.769 | Improve safety and address geometric deficiencies on KY 55 from US 421 to I-71 north of Campbellsburg. | Reconstruction |

# Appendix B

# Safety Countermeasure Cost Estimate Ranges

# and

# Project Implementation Timeline Reference Chart

## Planning Level Safety Countermeasure Cost Estimate Ranges

***Values are based on an assumed construction cost and percentages for all other categories***

***Results are for order of magnitude cost estimation only***

*6/12/2025*

**Notes:**

***Low Cost*** *Assumes Minimal Scope, Low Cost Approaches, and/or Ideal Conditions*

***High Cost*** *Assumes Full Scope and Several Project Challenges*

*All category and contingency percentages may need to be adjusted based on project size and complexity*

*(7%/yr compounded)*

| *Cost Percentages ==>* | | *5%* | *15%* | *20%* | *10%* | *12%* | | | *15%* | *50%* | | | *61%* | *61%* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Project** | **Unit** | **Planning** | **Design and Environmental Permitting** | **Right-of-Way** | **Utilities** | **Construction Inspection** | **Construction** | **Subtotal** | **Low Planning Level Contingency** | **High Planning Level Contingency** | **Low Total 2025 Cost** | **High Total 2025 Cost** | **Low Total 2032 Programming Cost** | **High Total 2032 Programming Cost** |
| Curve Realignment (moderate right-of-way/utilities) | Curve | $37,500 | $112,500 | $150,000 | $75,000 | $90,000 | $750,000 | $1,215,000 | $182,250 | $607,500 | $1,397,250 | $1,822,500 | $2,243,678 | $2,926,537 |
| Dynamic Speed Feedback Sign | Each | $1,250 | $3,750 | $5,000 | $2,500 | $3,000 | $25,000 | $40,500 | $6,075 | $20,250 | $46,575 | $60,750 | $74,789 | $97,551 |
| Enhanced Signing/Striping - Curves | Curve | $750 | $2,250 | $3,000 | $1,500 | $1,800 | $15,000 | $24,300 | $3,645 | $12,150 | $27,945 | $36,450 | $44,874 | $58,531 |
| Enhanced Signing/Striping - Intersection | Intersection | $1,500 | $4,500 | $6,000 | $3,000 | $3,600 | $30,000 | $48,600 | $7,290 | $24,300 | $55,890 | $72,900 | $89,747 | $117,061 |
| Enhanced Signing/Striping - Transition Zones | Location | $1,500 | $4,500 | $6,000 | $3,000 | $3,600 | $30,000 | $48,600 | $7,290 | $24,300 | $55,890 | $72,900 | $89,747 | $117,061 |
| Enhanced Striping - Highway | Mile | $1,000 | $3,000 | $4,000 | $2,000 | $2,400 | $20,000 | $32,400 | $4,860 | $16,200 | $37,260 | $48,600 | $59,831 | $78,041 |
| Guardrail Upgrades (minimal regrading) | 500 Feet | $1,500 | $4,500 | $6,000 | $3,000 | $3,600 | $30,000 | $48,600 | $7,290 | $24,300 | $55,890 | $72,900 | $89,747 | $117,061 |
| High Friction Surface Treatments ($40/sq yd) | Curve | $5,000 | $15,000 | $20,000 | $10,000 | $12,000 | $100,000 | $162,000 | $24,300 | $81,000 | $186,300 | $243,000 | $299,157 | $390,205 |
| Lighting - Highway (multilane) | Mile | $30,000 | $90,000 | $120,000 | $60,000 | $72,000 | $600,000 | $972,000 | $145,800 | $486,000 | $1,117,800 | $1,458,000 | $1,794,943 | $2,341,229 |
| Lighting - Intersection | Intersection | $3,750 | $11,250 | $15,000 | $7,500 | $9,000 | $75,000 | $121,500 | $18,225 | $60,750 | $139,725 | $182,250 | $224,368 | $292,654 |
| Pedestrian Enhancements (signs, striping, ADA, bulb outs) | Location | $5,000 | $15,000 | $20,000 | $10,000 | $12,000 | $100,000 | $162,000 | $24,300 | $81,000 | $186,300 | $243,000 | $299,157 | $390,205 |
| Pedestrian Enhancements (signs, striping, ADA, refuge) | Location | $2,500 | $7,500 | $10,000 | $5,000 | $6,000 | $50,000 | $81,000 | $12,150 | $40,500 | $93,150 | $121,500 | $149,579 | $195,102 |
| Positive Offset Left Turn Lanes | Each | $15,000 | $45,000 | $60,000 | $30,000 | $36,000 | $300,000 | $486,000 | $72,900 | $243,000 | $558,900 | $729,000 | $897,471 | $1,170,615 |
| Raised Median (no widening) | Sq Yards | $8 | $23 | $30 | $15 | $18 | $150 | $243 | $36 | $122 | $279 | $365 | $449 | $585 |
| Reflective Backplates (no signal rebuild) | Intersection | $1,250 | $3,750 | $5,000 | $2,500 | $3,000 | $25,000 | $40,500 | $6,075 | $20,250 | $46,575 | $60,750 | $74,789 | $97,551 |
| Reflective Backplates (with signal rebuild) | Intersection | $10,000 | $30,000 | $40,000 | $20,000 | $24,000 | $200,000 | $324,000 | $48,600 | $162,000 | $372,600 | $486,000 | $598,314 | $780,410 |
| Restricted Crossing U-Turn Crossing Intersection (un-signalized) | Location | $87,500 | $262,500 | $350,000 | $175,000 | $210,000 | $1,750,000 | $2,835,000 | $425,250 | $1,417,500 | $3,260,250 | $4,252,500 | $5,235,249 | $6,828,586 |
| Restricted Crossing U-Turn Crossing Intersection (signalized) | Location | $150,000 | $450,000 | $600,000 | $300,000 | $360,000 | $3,000,000 | $4,860,000 | $729,000 | $2,430,000 | $5,589,000 | $7,290,000 | $8,974,713 | $11,706,147 |
| Road Reconfiguration (Convert 4-lane to 3-lane, w/ resurfacing) | Mile | $25,000 | $75,000 | $100,000 | $50,000 | $60,000 | $500,000 | $810,000 | $121,500 | $405,000 | $931,500 | $1,215,000 | $1,495,785 | $1,951,024 |
| Roundabout (dual-lane) | Each | $120,000 | $360,000 | $480,000 | $240,000 | $288,000 | $2,400,000 | $3,888,000 | $583,200 | $1,944,000 | $4,471,200 | $5,832,000 | $7,179,770 | $9,364,918 |
| Roundabout (single lane) | Each | $50,000 | $150,000 | $200,000 | $100,000 | $120,000 | $1,000,000 | $1,620,000 | $243,000 | $810,000 | $1,863,000 | $2,430,000 | $2,991,571 | $3,902,049 |
| Rumble Strips - Center (no widening) | Mile | $1,000 | $3,000 | $4,000 | $2,000 | $2,400 | $20,000 | $32,400 | $4,860 | $16,200 | $37,260 | $48,600 | $59,831 | $78,041 |
| Rumble Strips - Edge (no widening, both sides) | Mile | $1,250 | $3,750 | $5,000 | $2,500 | $3,000 | $25,000 | $40,500 | $6,075 | $20,250 | $46,575 | $60,750 | $74,789 | $97,551 |
| Rural Re-Align Skewed Intersection (limited ROW/utilities) | Intersection | $37,500 | $112,500 | $150,000 | $75,000 | $90,000 | $750,000 | $1,215,000 | $182,250 | $607,500 | $1,397,250 | $1,822,500 | $2,243,678 | $2,926,537 |
| Rural to Urban Transition Zone Treatments (high-cost) | Location | $37,500 | $112,500 | $150,000 | $75,000 | $90,000 | $750,000 | $1,215,000 | $182,250 | $607,500 | $1,397,250 | $1,822,500 | $2,243,678 | $2,926,537 |
| Rural to Urban Transition Zone Treatments (low-cost) | Location | $12,500 | $37,500 | $50,000 | $25,000 | $30,000 | $250,000 | $405,000 | $60,750 | $202,500 | $465,750 | $607,500 | $747,893 | $975,512 |
| Shoulder Widening & Roadside Improvements (limited ROW/utilities) | Mile | $60,000 | $180,000 | $240,000 | $120,000 | $144,000 | $1,200,000 | $1,944,000 | $291,600 | $972,000 | $2,235,600 | $2,916,000 | $3,589,885 | $4,682,459 |
| Sidewalks - Highway (one side only) | Mile | $20,000 | $60,000 | $80,000 | $40,000 | $48,000 | $400,000 | $648,000 | $97,200 | $324,000 | $745,200 | $972,000 | $1,196,628 | $1,560,820 |
| Sidewalks - Intersection (includes ADA) | Intersection | $4,000 | $12,000 | $16,000 | $8,000 | $9,600 | $80,000 | $129,600 | $19,440 | $64,800 | $149,040 | $194,400 | $239,326 | $312,164 |
| Sight Distance Improvements (vegetation) | Intersection | $1,000 | $3,000 | $4,000 | $2,000 | $2,400 | $20,000 | $32,400 | $4,860 | $16,200 | $37,260 | $48,600 | $59,831 | $78,041 |
| Signal Timing - Cycle Length, Clearance and Leading Ped Intervals | Intersection | $500 | $1,500 | $2,000 | $1,000 | $1,200 | $10,000 | $16,200 | $2,430 | $8,100 | $18,630 | $24,300 | $29,916 | $39,020 |
| Signal Upgrade (may be required for protected left turn phasing) | Intersection | $10,000 | $30,000 | $40,000 | $20,000 | $24,000 | $200,000 | $324,000 | $48,600 | $162,000 | $372,600 | $486,000 | $598,314 | $780,410 |
| Tighten Intersection (small intersection, limited drainage) | Each | $17,500 | $52,500 | $70,000 | $35,000 | $42,000 | $350,000 | $567,000 | $85,050 | $283,500 | $652,050 | $850,500 | $1,047,050 | $1,365,717 |
| Tree Trimming | Linear Foot | $3 | $8 | $10 | $5 | $6 | $50 | $81 | $12 | $41 | $93 | $122 | $150 | $195 |
| Turn Lanes (one turn lane, 150 ft plus taper) | Each | $12,500 | $37,500 | $50,000 | $25,000 | $30,000 | $250,000 | $405,000 | $60,750 | $202,500 | $465,750 | $607,500 | $747,893 | $975,512 |
| Urban Re-Align Skewed Intersection (limited ROW/utilities) | Intersection | $75,000 | $225,000 | $300,000 | $150,000 | $180,000 | $1,500,000 | $2,430,000 | $364,500 | $1,215,000 | $2,794,500 | $3,645,000 | $4,487,356 | $5,853,073 |
| Access Management (Low Complexity) | Mile | $75,000 | $225,000 | $300,000 | $150,000 | $180,000 | $1,500,000 | $2,430,000 | $364,500 | $1,215,000 | $2,794,500 | $3,645,000 | $4,487,356 | $5,853,073 |
| *Adjusted Cost Percentages ==>* | | *3%* | *12%* | *20%* | *10%* | *10%* | | | *10%* | *35%* | | | *61%* | *61%* |
| Access Management (Moderate Complexity) | Mile | $120,000 | $480,000 | $800,000 | $400,000 | $400,000 | $4,000,000 | $6,200,000 | $620,000 | $2,170,000 | $6,820,000 | $8,370,000 | $10,951,430 | $13,440,391 |
| Access Management (High Complexity, Often Complete Rebuild)* | Mile | $300,000 | $1,200,000 | $2,000,000 | $1,000,000 | $1,000,000 | $10,000,000 | $15,500,000 | $1,550,000 | $5,425,000 | $17,050,000 | $20,925,000 | $27,378,574 | $33,600,977 |

**Project Implementation Timeline Reference Chart**
**6/23/2025**

**This chart is intended to provide high-level guidance on the time required to complete a range of potential safety improvement projects.**
1) The time required to secure funding for each phase (federal, state, or local) is not included. The time to execute federal grant agreements or other state or federal project agreements is also not included.
2) Time to procure planning, design, or other professional services should be added as required. Construction and inspection procurement are included if they can reasonably be accommodated during the pre-construction phases.
3) Local agencies should coordinate with state and KIPDA staff to estimate the time required for each task. This applies to local public agency (LPA) projects and includes projects using federal, state, and KIPDA funding.

To use this table, please determine the level of complexity for each phase of the project you are considering. For example, a project may be moderate with respect to planning, design, and construction, but complex with respect to right-of-way and utility coordination. This would likely result in a project that is somewhere between those two categories for the total project timeline.

| Level of Complexity for Each Phase | Planning | Preliminary Engineering and Environmental | Final Design | Right-of-Way (ROW) | Utility Coordination | Construction | Estimated Total Project Timeline |
|---|---|---|---|---|---|---|---|
| Simple | 3-6 months<br>Few alternatives<br>Limited or no public involvement<br>No anticipated controversy<br>No TIP/STIP issues | 6 - 9 months<br>Minimal design<br>No survey or geotech<br>NEPA CE (programmatic or low level) | 6 months<br>Minimal design effort | N/A<br>Within existing ROW | 3-6 months<br>Notification only<br>No relocations | 6 - 9 months<br><$500K<br>No phasing needed | 2 to 3 years |
| Moderate | 6–12 months<br>Several alternatives<br>Public involvement<br>May require TIP/STIP mods | 6–12 months<br>Straightforward design<br>Survey required<br>NEPA CE (with public input) | 6-12 months<br>Moderate design effort<br>Agency reviews | 6–12 months<br>Easements and/or minor acquisitions | 6-18 months<br>Relocations possible<br>Agreements possible | 6–12 months<br>$500K–$2M<br>Lane closures/phasing | 3 to 6.5 years |
| Complex | 12–18 months<br>Numerous alternatives<br>Public involvement<br>May require TIP/STIP mods<br>Multiple agencies involved | 12–18 months<br>Alternatives analysis<br>Extensive design (survey, traffic, geotech)<br>NEPA EA or CE (with public input) | 12-18 months<br>Major design effort<br>Extensive permitting<br>Environmental constraints | 12–24 months<br>Full ROW<br>Relocations/eminent domain | 12–18 months<br>Major relocations<br>Agreements required | 12–24 months<br>$2M+<br>Detours or complex staging | 6 to 10 years |

***Notes:***
*Schedule estimates assume all required project funding is available*
*NEPA = National Environmental Policy Act of 1969*
*CE = Categorical Exclusion*
*EA = Environmental Assessment*
*TIP/STIP = Transportation Improvement Program / State Transportation Improvement Program*