



*On the Road to Safety, Every Life Counts*

# **St. Matthews, 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

## ST. MATTHEWS

Rick Toni | Mayor, City of St. Matthews

Bernie Bowling | City Council, City of St. Matthews

Kenan Stratman | Public Works Director, City of St. Matthews

Col. Barry Wilkerson | Chief of Police, City of St. Matthews



# Introduction

In 2023, St. Matthews, in collaboration with the Kentuckiana Regional Planning & Development Agency (KIPDA) and 15 other participating cities and counties, 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.



St. Matthews 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. St. Matthews 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. Being proactive 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

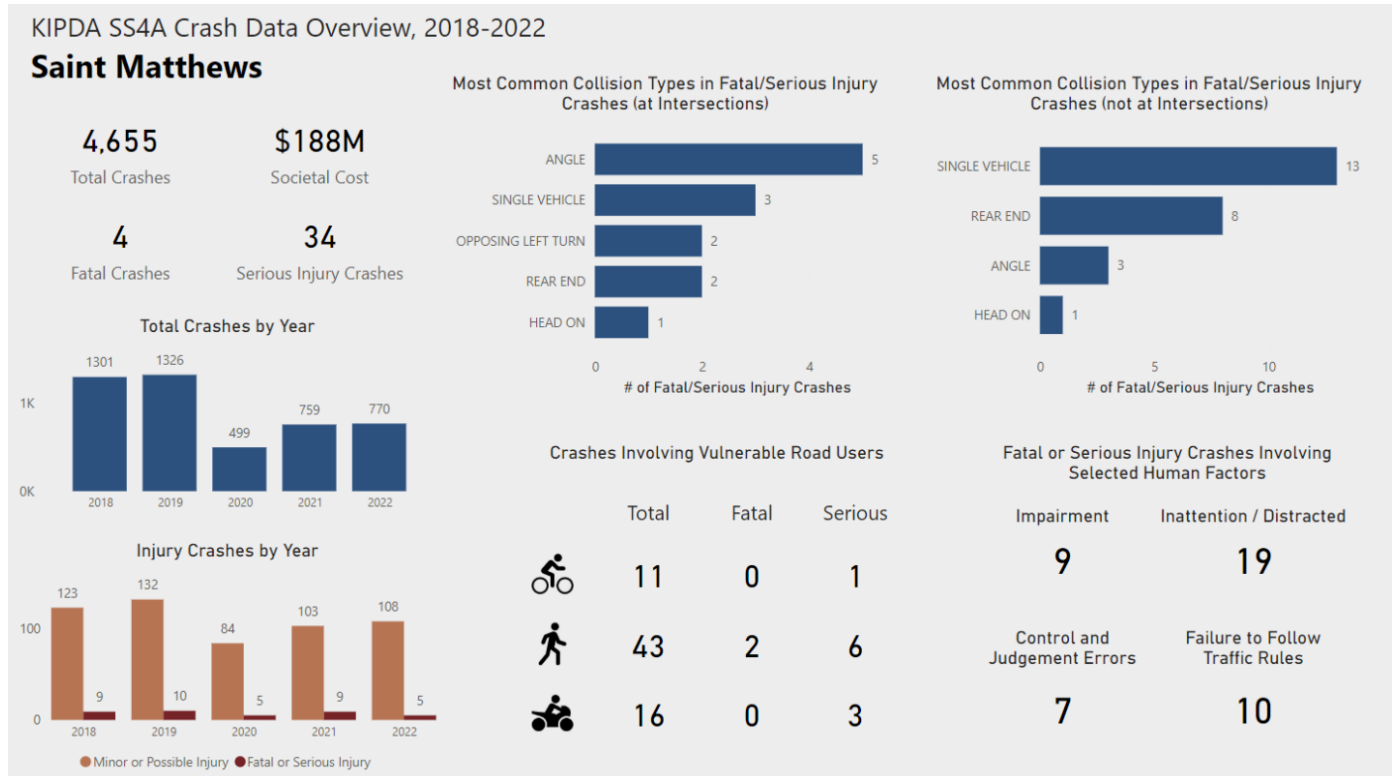
The traditional approach to road safety often relies on perfect human behavior from all road users and tends to react to crashes *after* they occur, focusing on individual accountability. In contrast, the Safe System Approach acknowledges that humans are fallible and will inevitably make mistakes. This 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 below illustrates this fundamental shift, showcasing how the Safe System Approach aims to create a safer, more forgiving transportation system.

Traditional approach	Safe System approach
Prevent crashes	Prevent death and serious injuries
Improve human behavior	Design for human mistakes/limitations
Control speeding	Reduce system kinetic energy
Individuals are responsible	Share responsibility
React based on crash history	Proactively identify and address risks



# Overview

St. Matthews had 4 fatal crashes and 34 serious injury crashes during the five-year period from 2018 to 2022, for a total of 38. There were 4,655 total crashes during this time. The total societal cost of all crashes was \$188 million (including economic and quality of life factors). The figure below provides an overview of the crash data.



Important safety findings for St. Matthews include:

- Fatal and serious injury crashes are concentrated along Shelbyville Rd, Breckenridge Ln, and Westport Rd
- The highest density of all crash types occurs at the interchange of Shelbyville Rd with I-264
- 16 of 38 fatal / serious injury crashes were single-vehicle crashes
- 9 of 38 fatal / serious injury crashes involved a pedestrian or bicyclist
- 7 of 38 fatal / serious injury crashes involved failure to yield right of way
- 19 of 38 fatal / serious injury crashes involved driver inattention / distraction



# 1. Leadership Commitment and Goal Setting

St. Matthews, with support from KIPDA, is dedicated to ensuring safety for all users on the City's streets and roads. As a participating jurisdiction in the KIPDA-led Safe Streets and Roads for All (SS4A) regional action plan, St. Matthews recognizes that traffic deaths and serious injuries are preventable, and that leadership is essential to achieving zero traffic fatalities and serious injuries by the year 2050.

The City of St. Matthews aligns its transportation safety goals with the Louisville Metro Comprehensive Plan, which advocates for a Safe System Approach to mobility. This approach acknowledges the inevitability of human error and focuses on designing streets that mitigate its consequences. The plan promotes context-sensitive street design, complete streets principles, and community-focused safety improvements.

St. Matthews also has several speed focused programs. This includes focused speed enforcement, but it also includes an electronic radar speed limit sign policy. They also have a policy on the installation of speed humps to control speeds on community streets.



## A RESOLUTION

by the

Louisville/Jefferson County KY-IN Metropolitan Planning Organization

### Concerning Approving the 2050 Vision Zero Resolution

**WHEREAS**, the KIPDA Transportation Policy Committee (TPC) has been designated by the Governors of both the State of Indiana and the Commonwealth of Kentucky as the Metropolitan Planning Organization responsible for the comprehensive, continuing, and cooperative transportation planning process for the Louisville/Jefferson County KY-IN Urbanized Area; and

**WHEREAS**, the KIPDA Transportation Policy Committee ("Policy Committee"), a committee of the KIPDA MPO, is the approval body for all transportation-related activities of the KIPDA MPO for the Planning Area under applicable U.S. Department of Transportation regulations; and

**WHEREAS**, Vision Zero is the simple yet ambitious idea that there is no acceptable number of traffic deaths and serious injuries on our roadways; and

**WHEREAS**, the Policy Committee recognizes that traffic deaths and serious injuries are not inevitable; and

**WHEREAS**, the 2025 Vision Zero Resolution is a required component of the Safe Streets and Roads for All (SS4A) Action Plan; and

**WHEREAS**, this Vision Zero Resolution aspires to reduce and eventually eliminate serious and fatal crashes; and

**WHEREAS**, the TPC is coordinating with the Kentucky Transportation Cabinet and Indiana Department of Transportation to develop safety action plans to analyze existing conditions, historical trends, systemic and specific needs and to identify projects and strategies to address identified problems; and

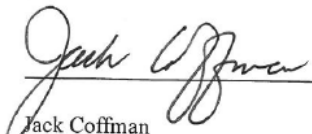
**WHEREAS**, a safety plan is an eligibility requirement for implementation grants through the SS4A program; and

**WHEREAS**, one of the primary goals of the TPC is to increase safety for all users of the transportation system;

**NOW THEREFORE, BE IT RESOLVED**, that the MPO Transportation Policy Committee (TPC) hereby establishes a goal of working towards zero traffic fatalities and serious injuries by the year 2050; and

**BE IT FURTHER RESOLVED**, that the MPO Transportation Policy Committee will plan and program projects that contribute to the accomplishment of said goal.

**ADOPTED THIS 27<sup>th</sup> DAY OF MARCH, 2025**



Jack Coffman  
Chairman, Transportation Policy Committee

1



## 2. Planning Structure

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

### Regional Steering Committee

The Regional Steering Committee provided oversight and strategic direction of the Safety Action Plan development process. The committee was composed of representatives from KIPDA, local government officials, and transportation planners. Steering Committee meetings were held at key points to provide information and gather input and feedback. These points included:

- Data Collection and safety analysis
- Countermeasure identification
- Countermeasure prioritization
- Review draft recommendations
- Review draft document

### St. Matthews Leadership Meetings and Plan Review

Meetings were held with city 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 city leadership to identify, confirm, and prioritize critical safety issues. The second meeting gave city 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 St. Matthews to be adequately addressed in the plan.

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

### Safety Committee Meetings

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:

- Mayors Office, City of St. Matthews
- Office of Public Works, City of St. Matthews
- City Council, City of St. Matthews
- St. Matthews Police Department
- Kentuckiana Regional Planning & Development Agency (KIPDA)



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 the 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 **Chapter 4. Engagement and Collaboration**. The dialogue is expected to continue in the future, facilitated by 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 St. Matthews, Kentucky, as shown below. This study includes all streets and roads within the city, with the exception that privately owned facilities, I-64, and I-264 are excluded.

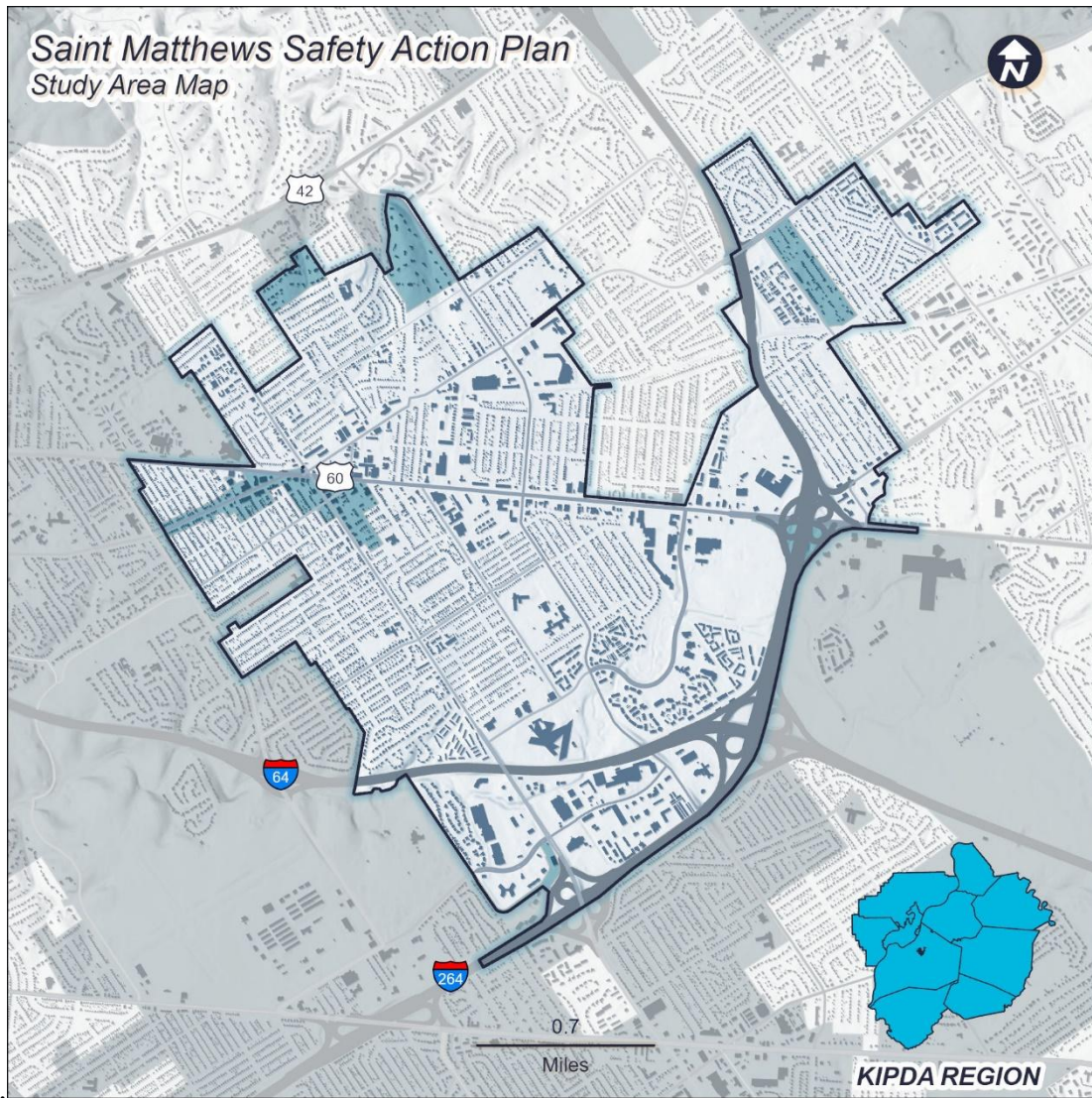


Figure 3-1: Study Area



## Crash Data

The safety analysis was conducted using 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 period, 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 collected from KYTC included crashes across St. Matthews from 2018 to 2022. Crashes located in parking lots were removed from the dataset. Additionally, some crashes could not be linked to the GIS roadway due to missing information. After these adjustments, the final crash database used for the study 4,655 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 bicycle.

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 St Matthews by severity.



Severity	MMUCC Severity Description	Crashes (2018-2022)	%
<b>K</b>	Fatal Injury	4	<1%
<b>A</b>	Suspected Serious Injury	34	1%
<b>B</b>	Suspected Minor Injury	199	4%
<b>C</b>	Possible Injury	351	8%
<b>O</b>	No Apparent Injury	4,067	87%
<b>Total</b>		<b>4,655</b>	

Table 3-1: Crashes by Severity



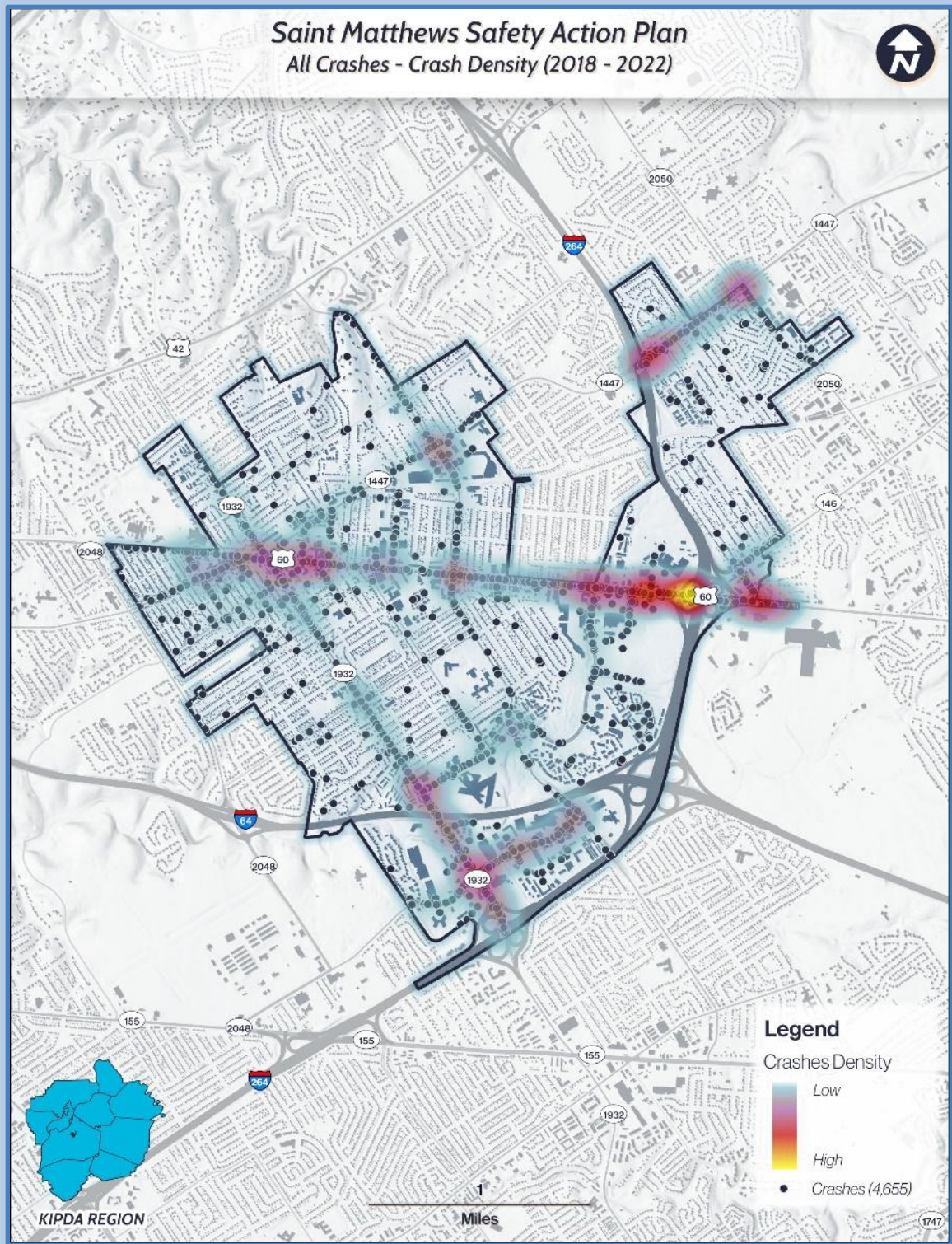


Figure 3-2: Crash Density Map



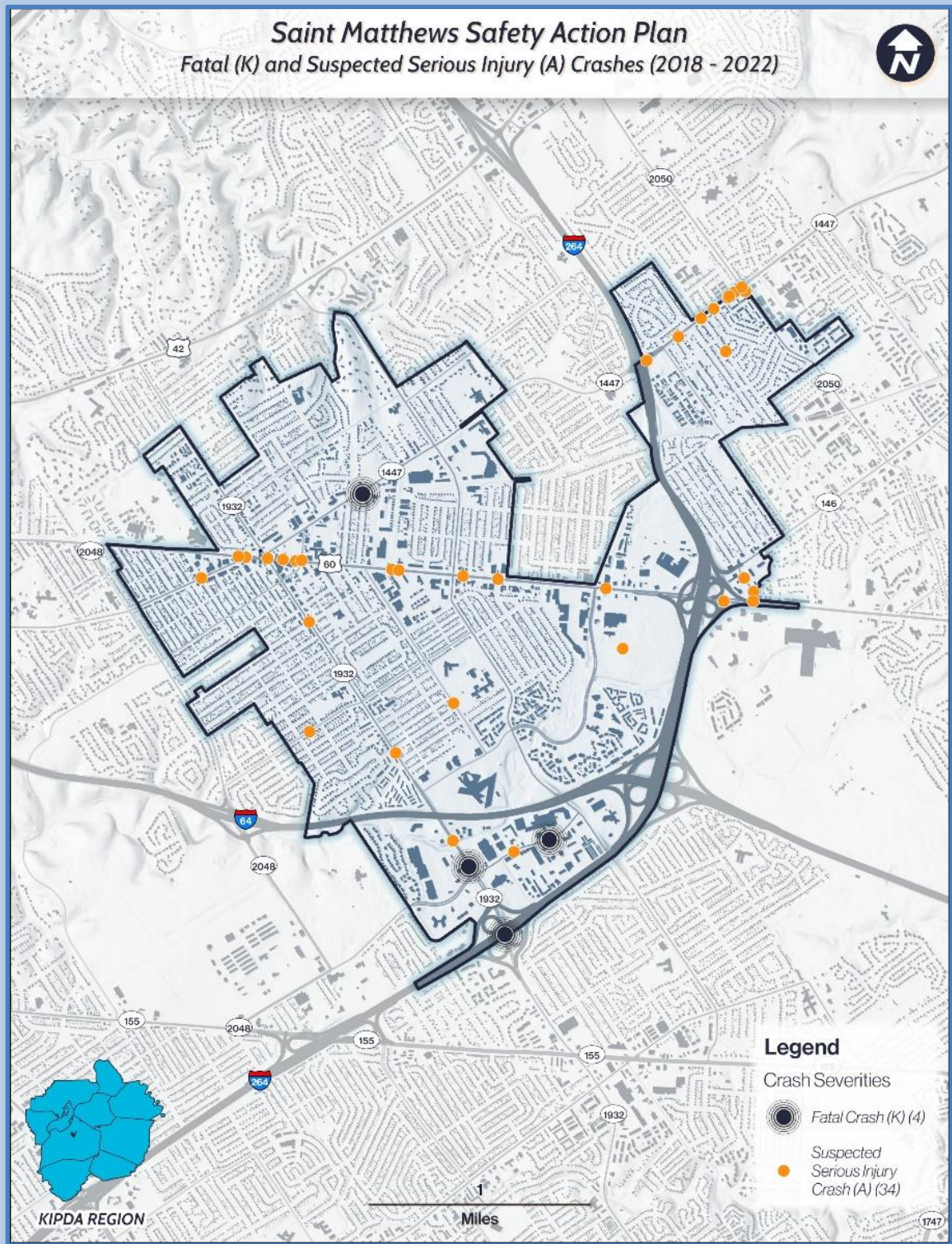


Figure 3-3: Fatal and Suspected Serious Injury Crash Map

## 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 for St. Matthews reveals a downward trend in the overall crashes over the five-year period, with a significant decrease in 2020. This is summarized below. The COVID-19 pandemic greatly affected traffic patterns and crash reporting. 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: Overall Crashes per Year

The figure shows that the fatal and suspected serious injury crashes remained relatively consistent during the study period.



## Crash Occurrence

### Month

The figure presents 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 December exhibit higher percentages of fatal and serious injury crashes, both accounting for 16% of severe crashes, despite representing only 7% and 10% of all crashes, respectively. In contrast, January and August have lower severity rates with only 3% of fatal and serious injury crashes, despite contributing to 8-9% of all crashes. It is also noteworthy that no fatal and suspected serious injury crashes were reported in November.

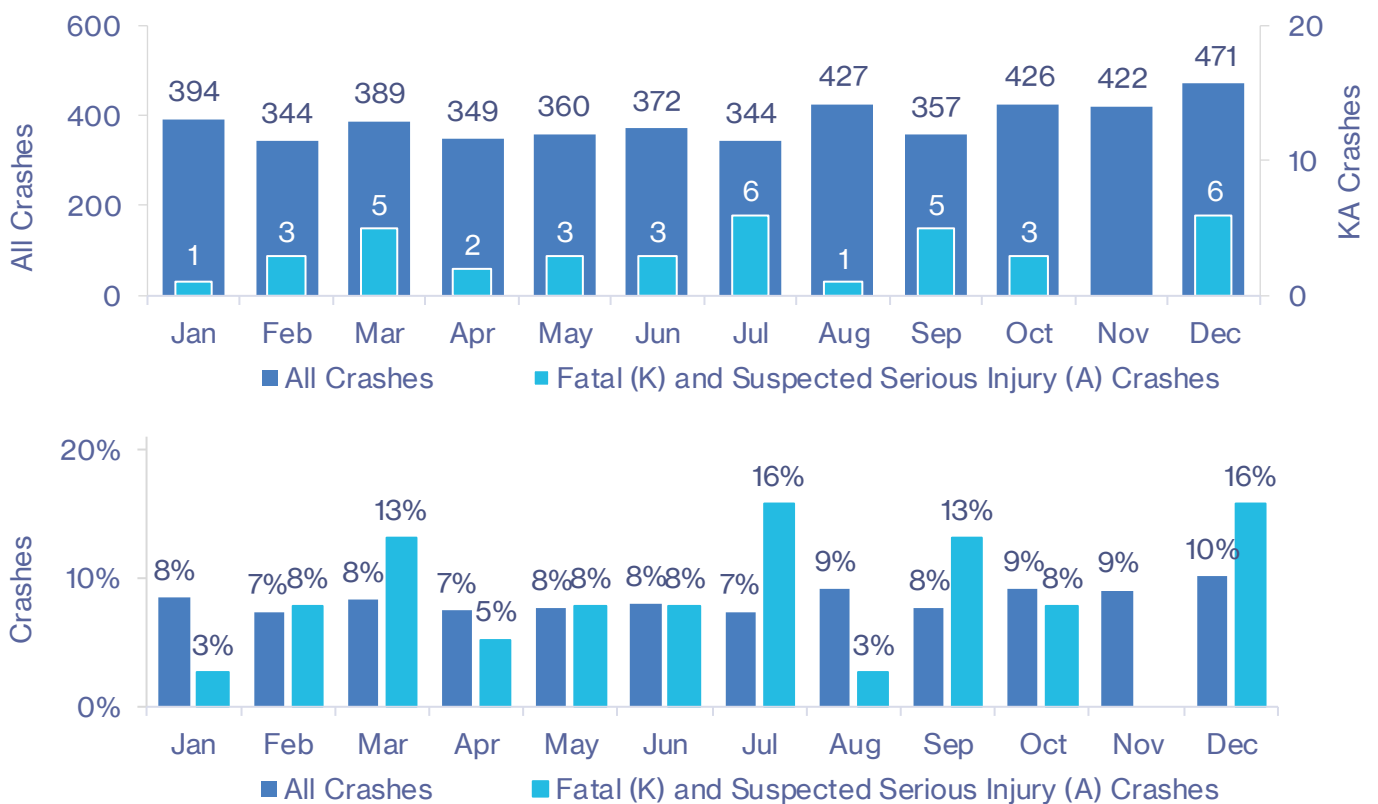


Figure 3-5: Monthly Crash Breakdown



### Day of Week

As seen below, crashes are largely flat across the weekdays with a slight peak on Fridays. Weekends have the lowest number of crashes, with Sunday having roughly 50% as many crashes as a typical weekday. The decrease in weekend crashes is most likely attributed to lower traffic exposure and non-existent peak period congestion, lowering the potential for crashes to occur. While Sunday has the fewest total crashes (392), it accounts for a disproportionately high number of fatal and suspected serious injury crashes (5), indicating that while fewer crashes occur on weekends, they tend to be more severe. Monday, with 682 total crashes – similar to other weekdays, has a relatively high number of severe crashes (9).

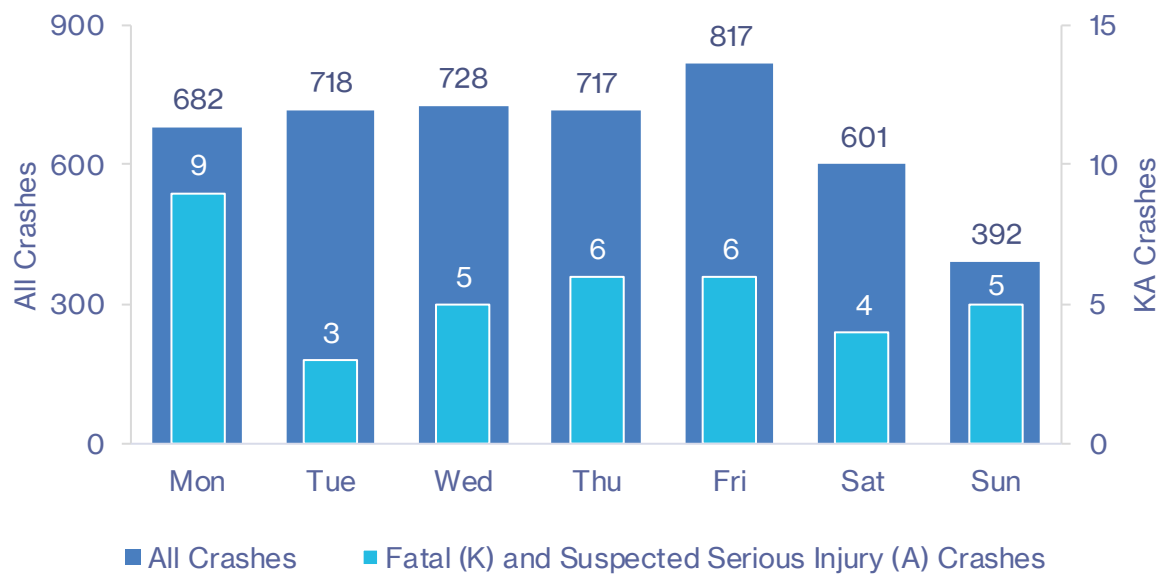


Figure 3-6: Crashes by Day of Week



### Time of Day

The period between 3-6pm experiences the highest number of crashes, with 1,369 crashes, accounting for 29% of all crashes, and 11 fatal and suspected serious injury crashes, representing 29% of all severe crashes. This indicates that both crash frequency and severity peak during this time period, typically characterized by the evening rush hour. Although the early morning periods between 12-6am account for a relatively low number of all crashes (150), they represent a high proportion of severe crashes. Specifically, 7 fatal and suspected serious injury crashes occurred during these hours, highlighting that while crashes are less frequent, they tend to result in more severe outcomes. The figure below details this data.

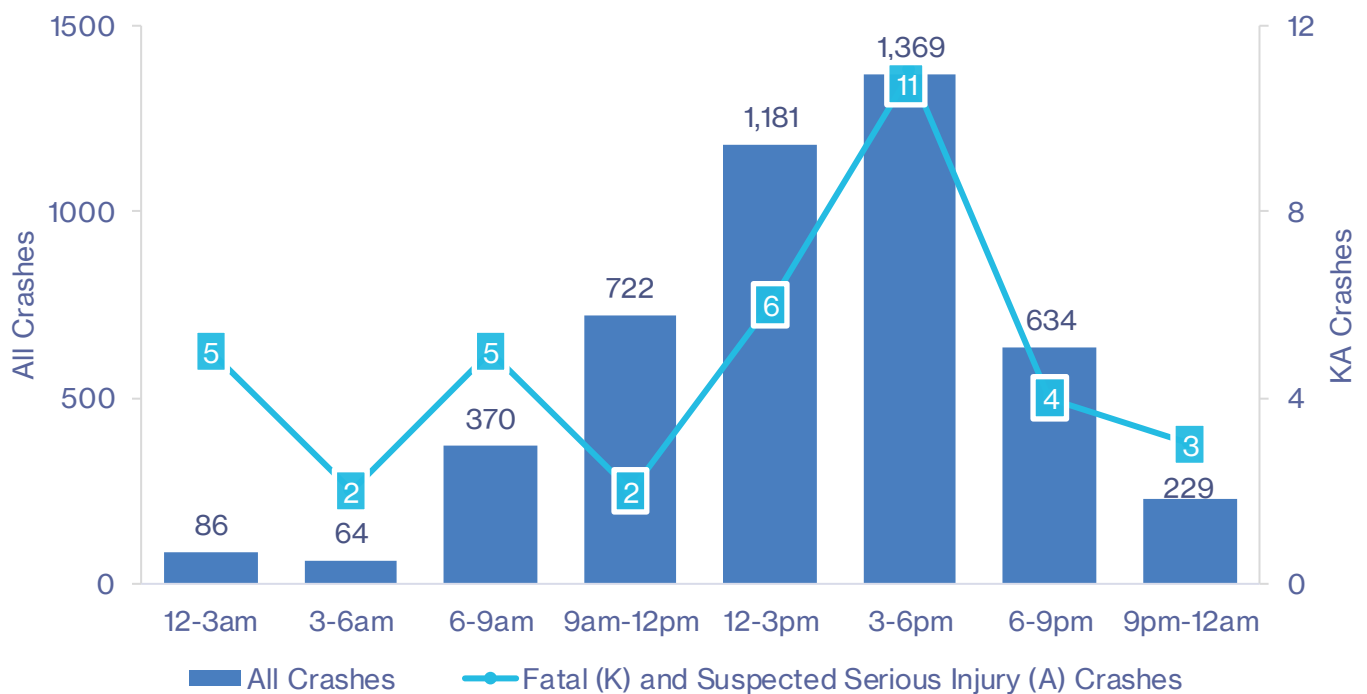


Figure 3-7: Crashes by Time of Day



## Manner of Collision

Rear end crashes are the most common crash, accounting for 54% of all crashes. However, rear-end crashes only account for 26% of fatal and suspected serious injury crashes. In contrast, single-vehicle crashes, which make up just 7% of all crashes, account for the highest proportion of severe crashes at 42%.

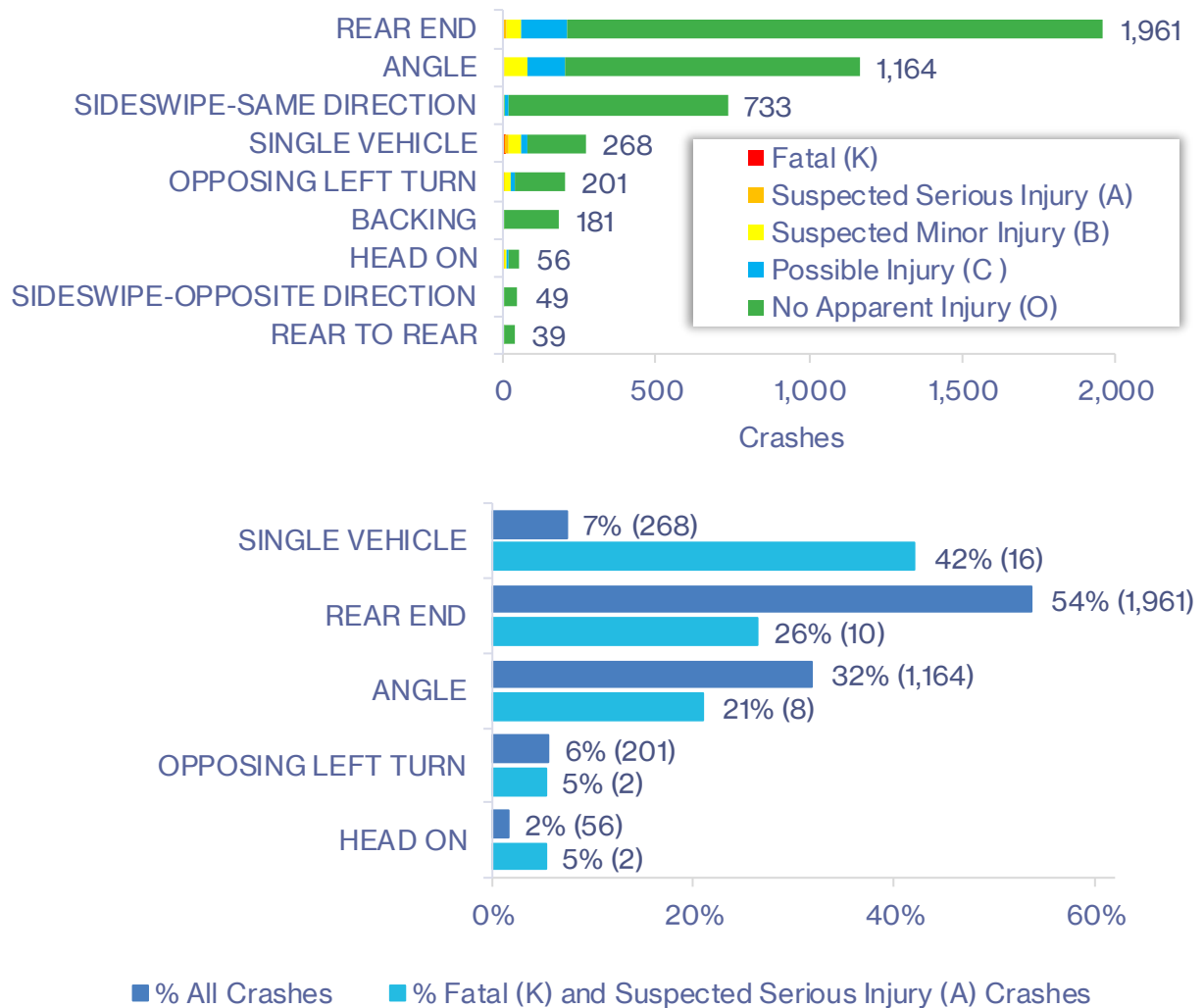


Figure 3-8: Manner of Collision by Severity



## 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 driving, distracted driving, 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

Aggressive driving is a contributing factor in all crashes, contributing to 29% of all crashes. Nearly one in three fatal and suspected serious injury crashes (29%) are attributed to aggressive driving behaviors. The map shows where these crashes occurred.

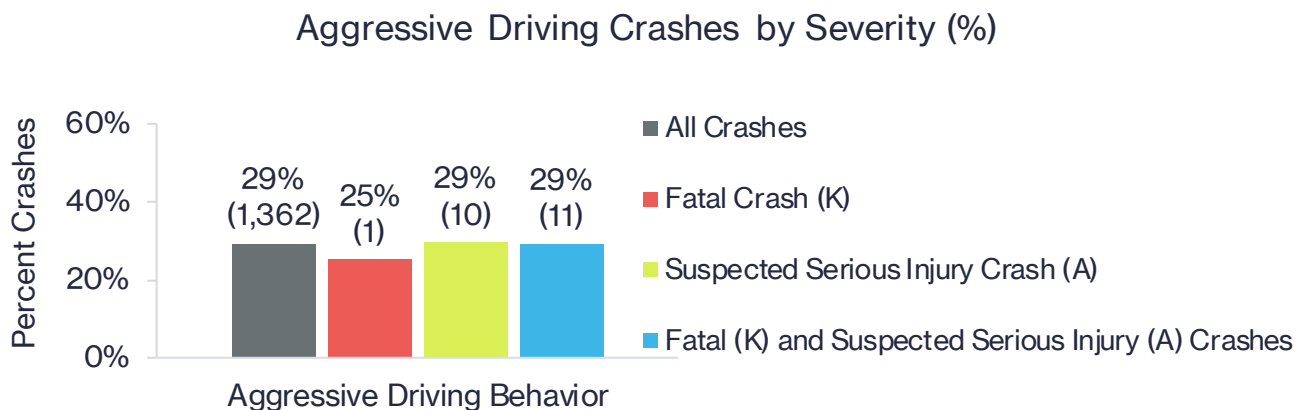


Figure 3-9: Aggressive Driver Crashes by Severity



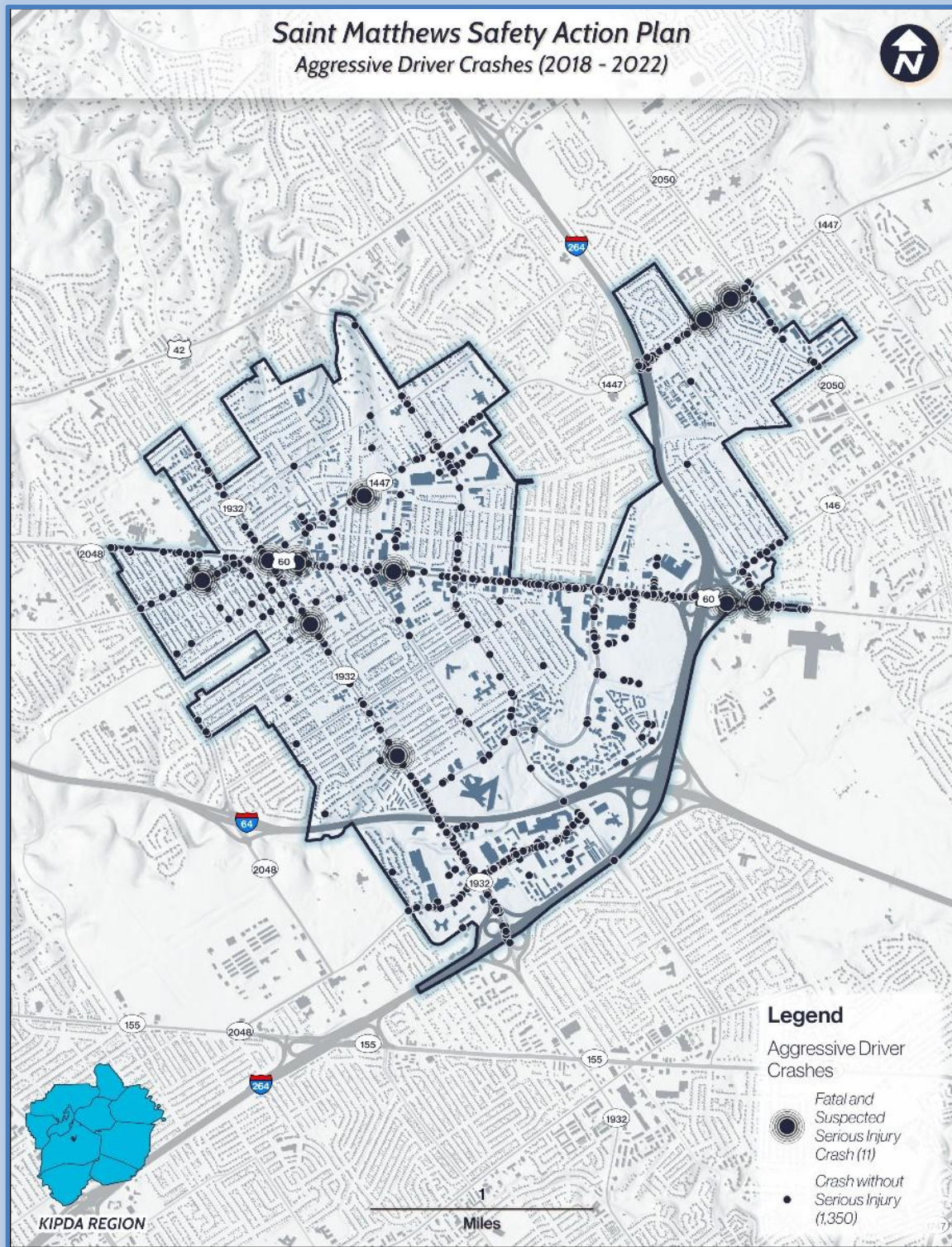


Figure 3-10: Aggressive Driver Crashes Map

### 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 of the road, hands off the wheel, and mind away from driving. In St. Matthews, there was downward trend in all crashes linked to distracting driving through the study period as seen below.

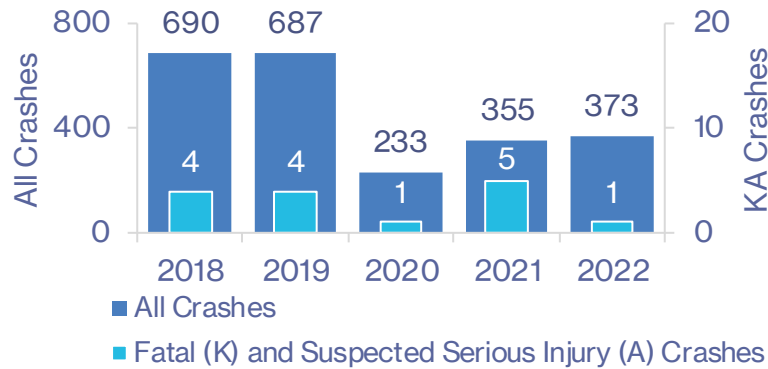


Figure 3-11: Distracted Driver Crashes by Year

In St. Matthews, distracted driving is a significant factor in crashes, contributing to 50% of all crashes. Furthermore, distracted driving is linked to 39% of fatal and suspected serious injury crashes. This suggests that distracted driving not only contributes to a high number of crashes overall but also to a substantial proportion of severe crashes as seen below shows the location of these crashes.

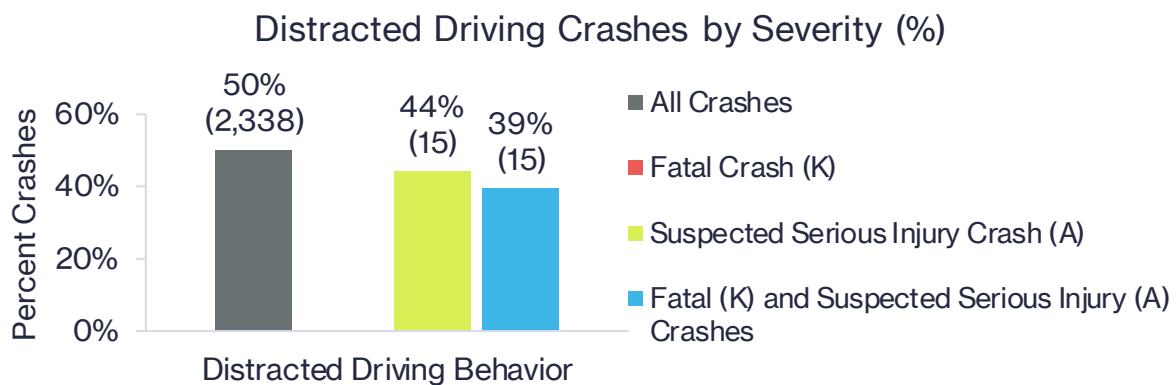


Figure 3-12: Distracted Driver Crashes by Severity



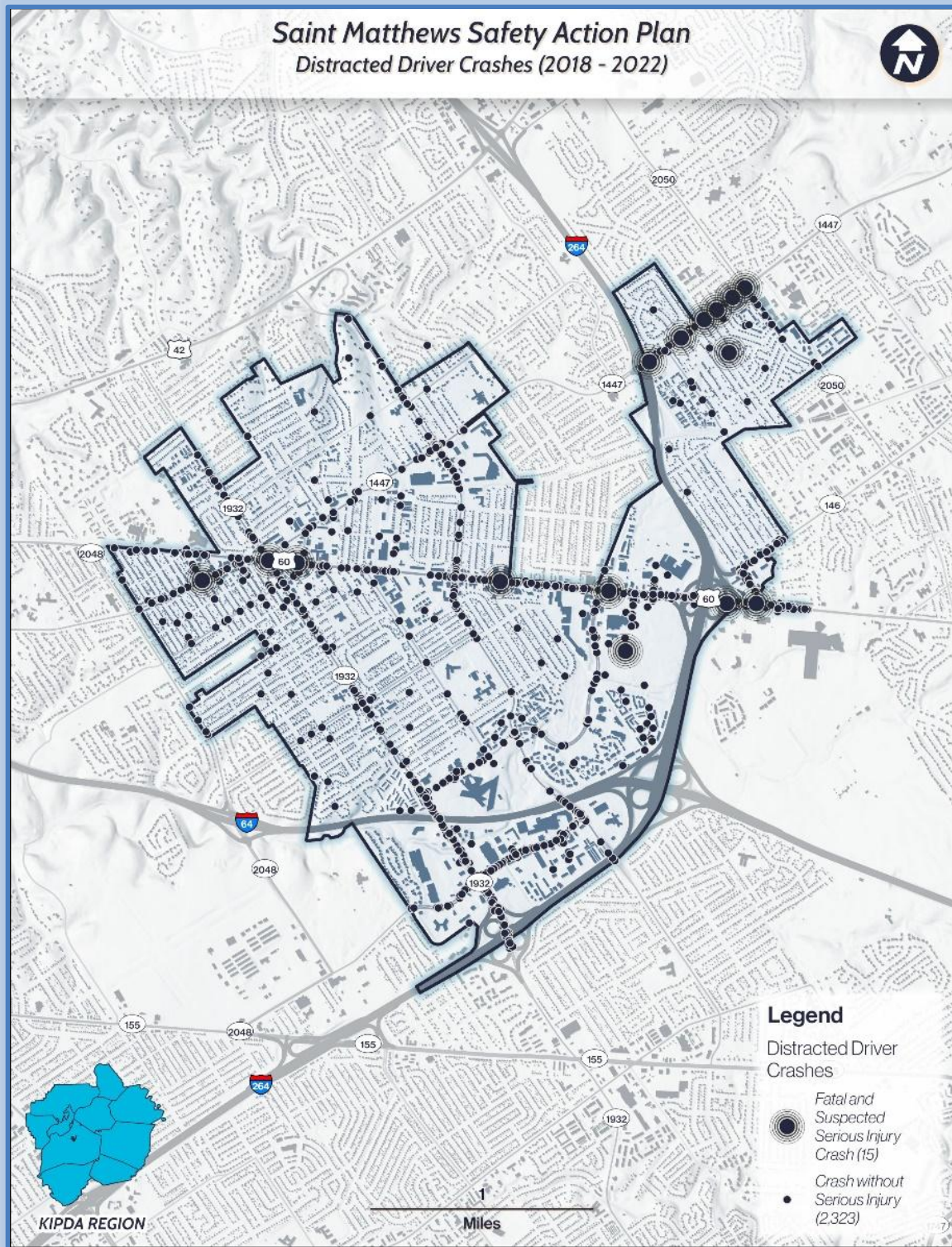


Figure 3-13: Distracted Driver Crashes Map

### 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.



Figure 3-14: Impaired Driver Crashes by Year

While impaired driving behaviors are identified in only 2% of all crashes, they disproportionately contribute to more severe crashes. Impaired driving is involved in 18% of fatal and suspected serious injury crashes. This 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.

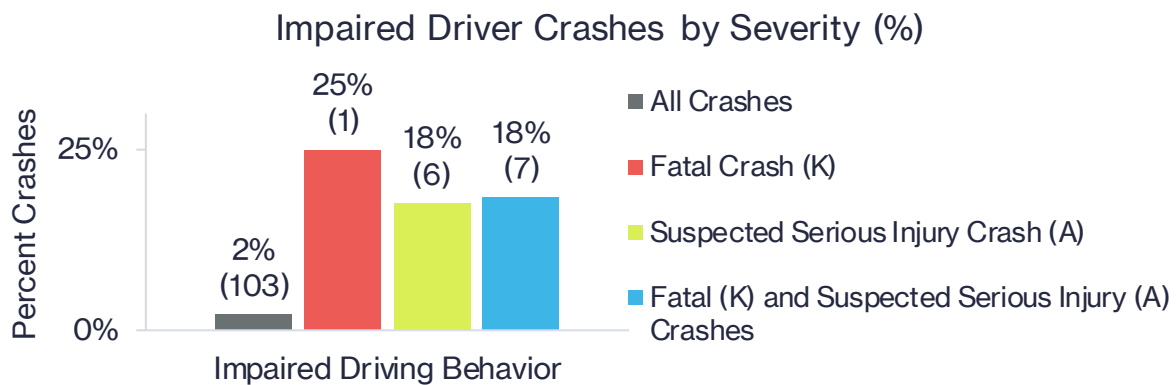


Figure 3-15: Impaired Driver Crashes by Severity



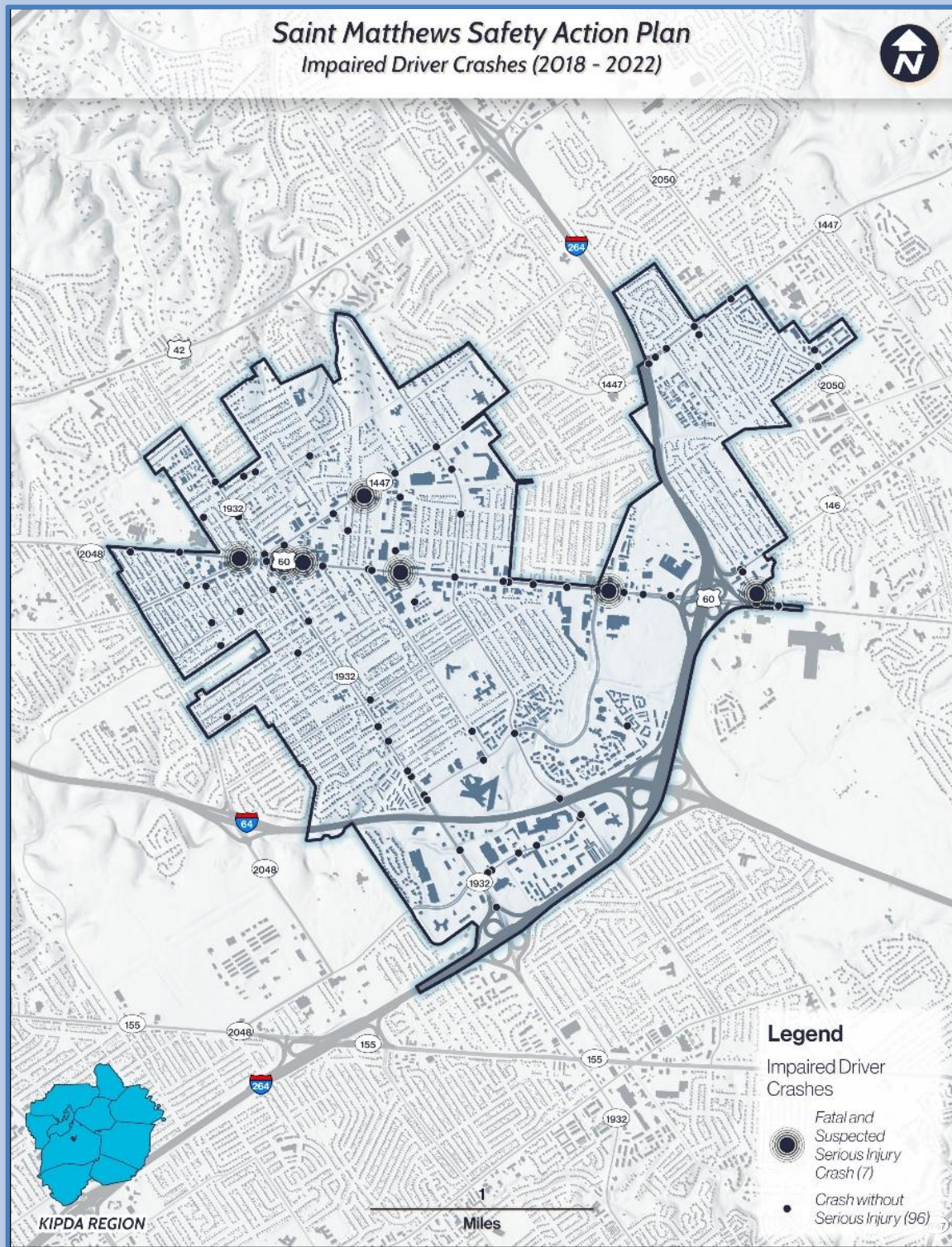


Figure 3-16: Impaired Driver Crashes Map

## Lighting Condition

Roadway lighting is a factor in safety, influencing 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 at the time of 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 data indicates that while the majority of the crashes occurred during daylight conditions, a disproportionate percentage of fatal and suspected serious injury crashes happen in dark conditions – 26% versus the 13% of all crash severities. This suggests that reduced visibility at night may contribute to the increased severity of crashes.

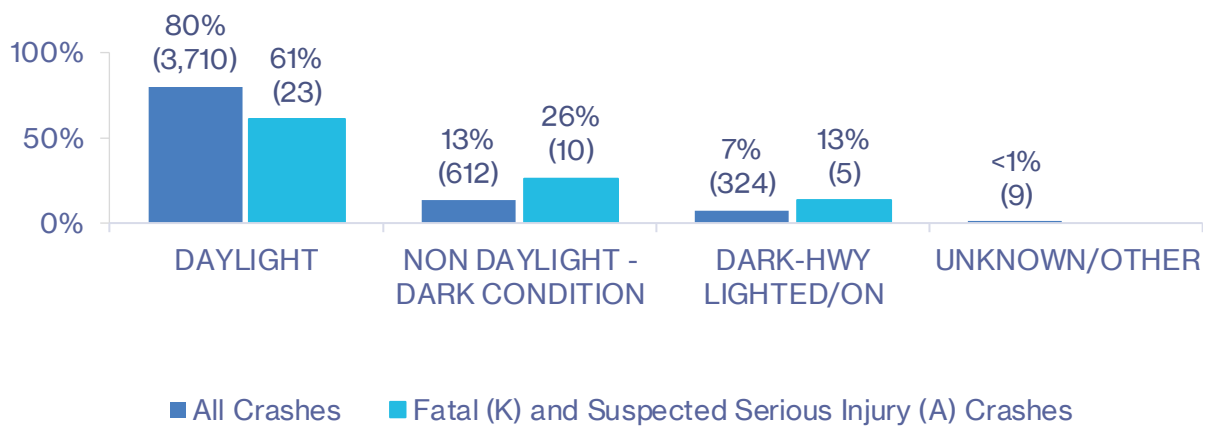


Figure 3-17: Crashes by Light Condition



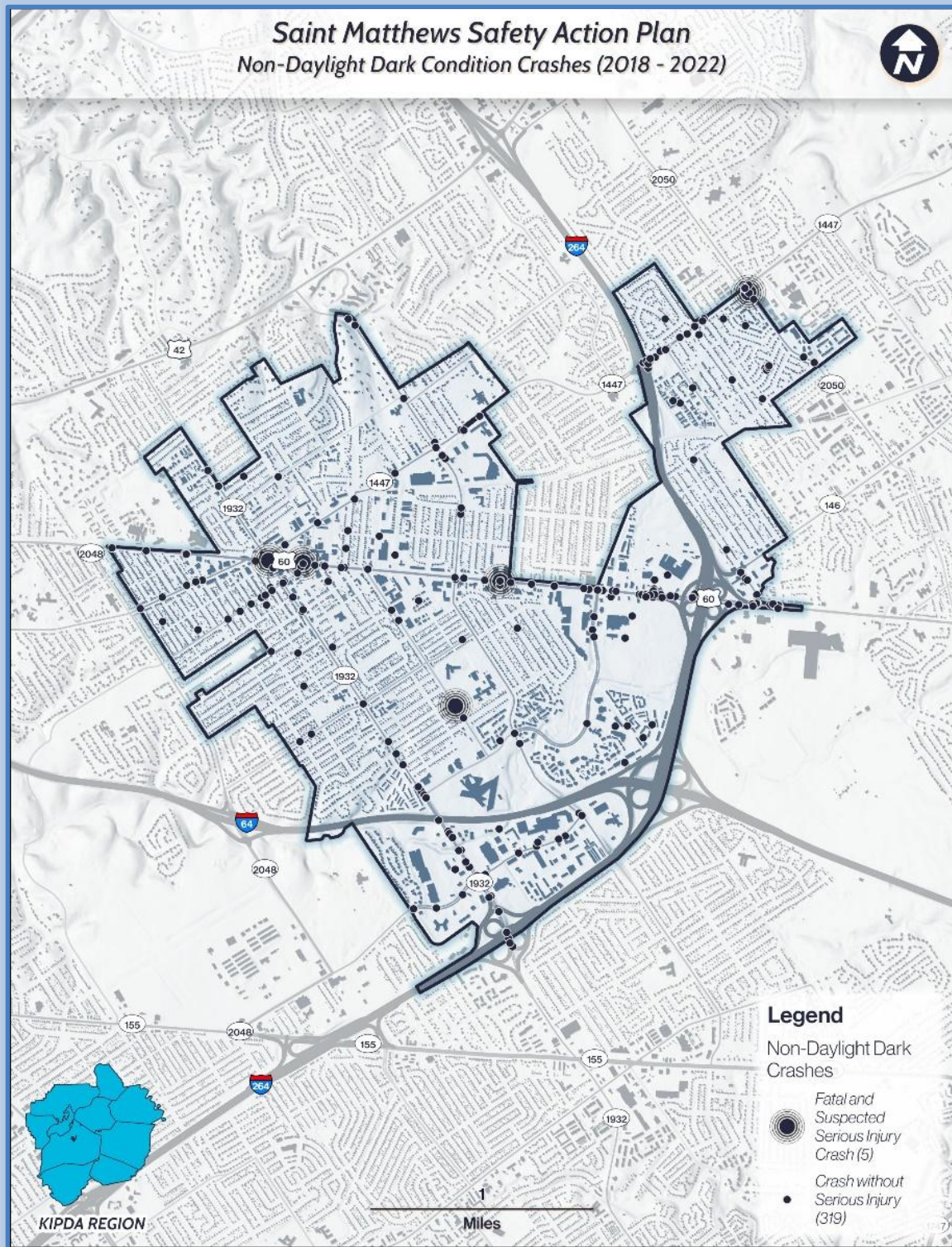


Figure 3-18: Lighting Condition: Non-Daylight Dark Condition Crashes Map



## Crashes by Locations

In the analysis, crashes were identified based on their location: intersections and segments. In St. Matthews, a significant majority of crashes occurred at intersections, accounting for 73% (3,383 crashes) of all crashes and 74% (28 crashes) of fatal and suspected serious injury crashes. This is expected for an urban area where intersections serve as high-conflict points for vehicles, pedestrians, and cyclists. By comparison, 27% (1,272 crashes) of all crashes and 26% (10 crashes) of severe crashes occurred on roadway segments.

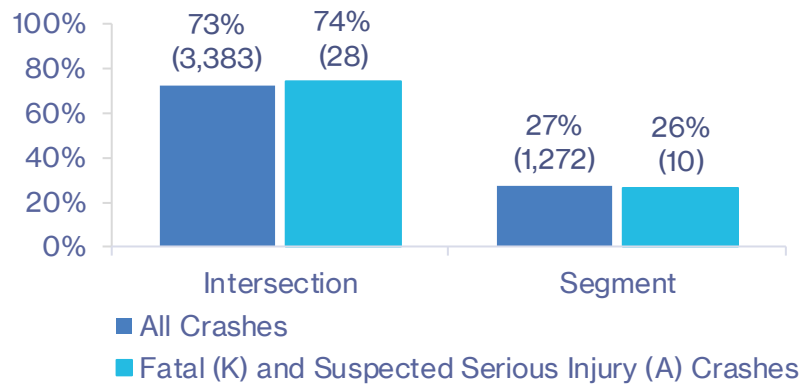


Figure 3-19: Crashes by Location



## 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 compared to other crash types.

The data indicates that roadway departure crashes are a significant contributor to severe outcomes. Although roadway departure crashes account for 14% of all crashes, they disproportionately represent a higher percentage of fatal and serious injury crashes. Specifically, 24% of fatal and suspected injury crashes are related to roadway departures.

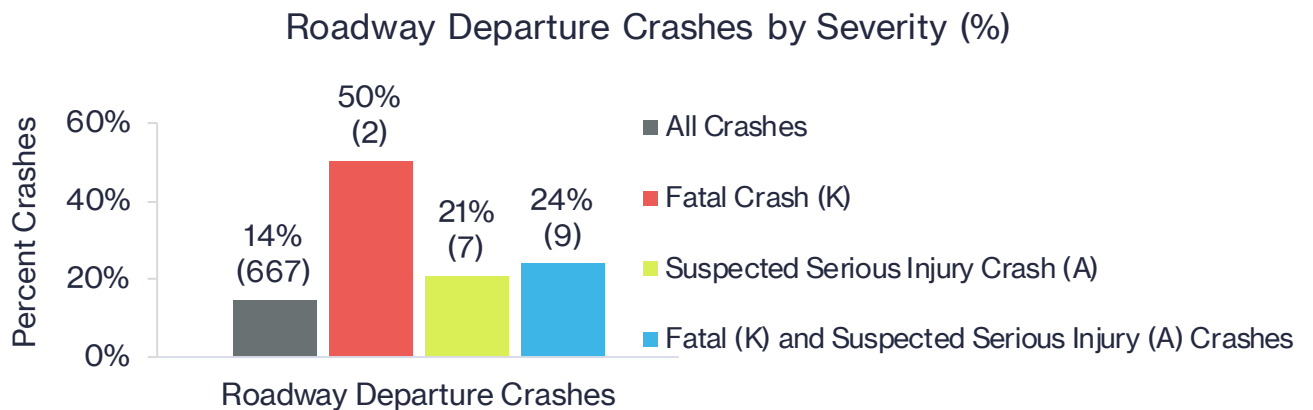


Figure 3-20: Roadway Departure Crashes by Severity



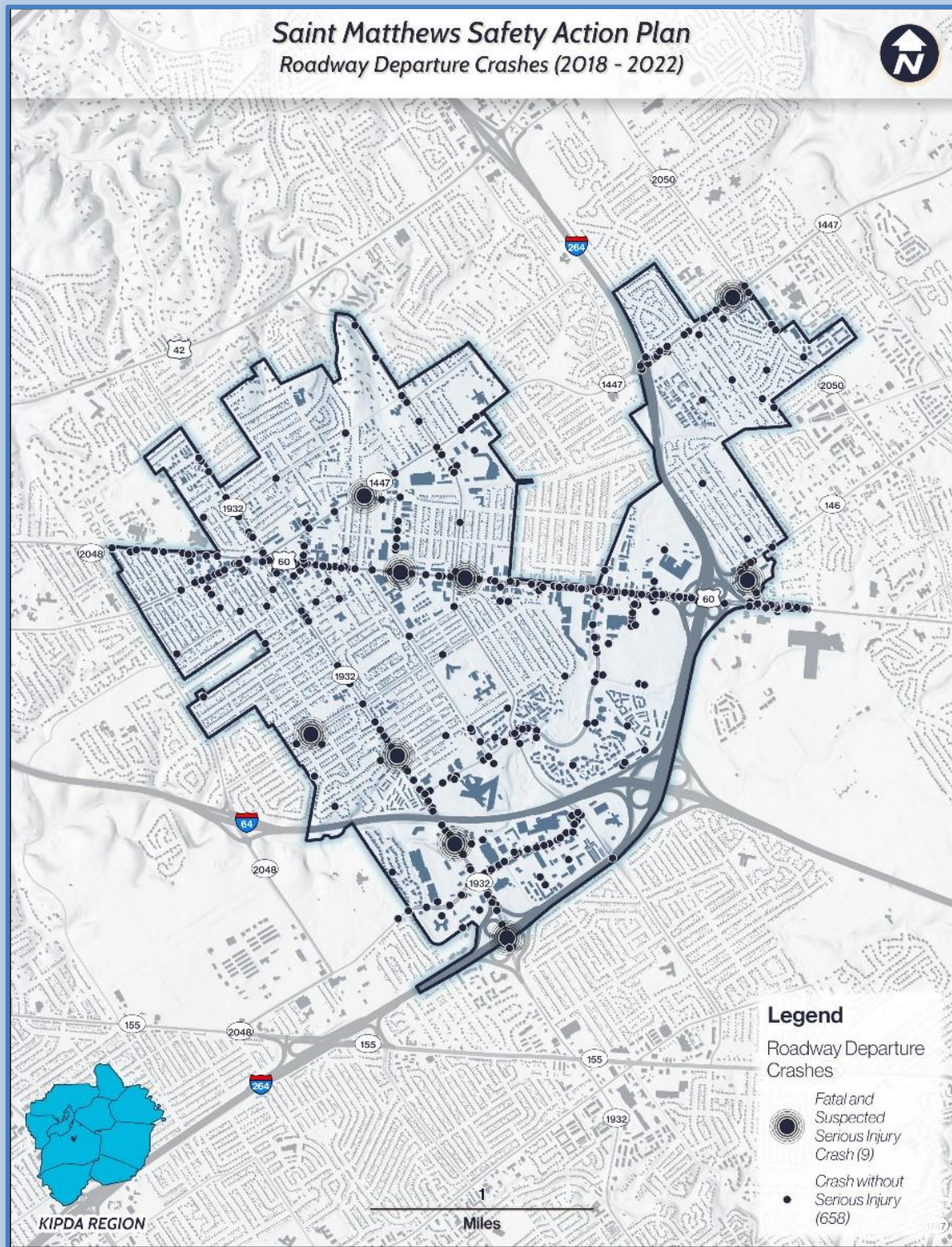


Figure 3-21: Roadway Departure Crashes Map

## Vulnerable Road Users

Vulnerable road user crashes, including pedestrians and bicyclists, 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 them and the force of the collision.

### Bicyclists

A total of 11 bicyclists crashes were reported in St. Matthews as shown below. Among these, one was a suspected serious injury crash, one was a suspected minor injury crash, two were possible injury and 7 were no apparent injury crashes.

Severity	Description	Crashes	%
K	Fatal	-	-
A	Suspected Serious Injury	1	9%
B	Suspected Minor Injury	1	9%
C	Possible Injury	2	18%
O	No Apparent Injury	7	64%
TOTAL		11	

Table 3-2: Bicyclist Crashes by Severity

In St. Matthews, a total of 43 pedestrian crashes occurred during the study period. There were 2 fatal crashes and 6 suspected serious injury crashes. Notably, almost 1 in 6 pedestrian crashes (19%) resulted in a severe outcome, either fatal or suspected serious injury. Additionally, suspected minor injury made up 44% (19 crashes). This highlights the need for continued emphasis on pedestrian safety. The map is shown on the next page.

Severity	Description	Crashes	%
K	Fatal	2	5%
A	Suspected Serious Injury	6	14%
B	Suspected Minor Injury	19	44%
C	Possible Injury	7	16%
O	No Apparent Injury	9	21%
TOTAL		43	

Table 3-3: Pedestrian Crashes by Severity





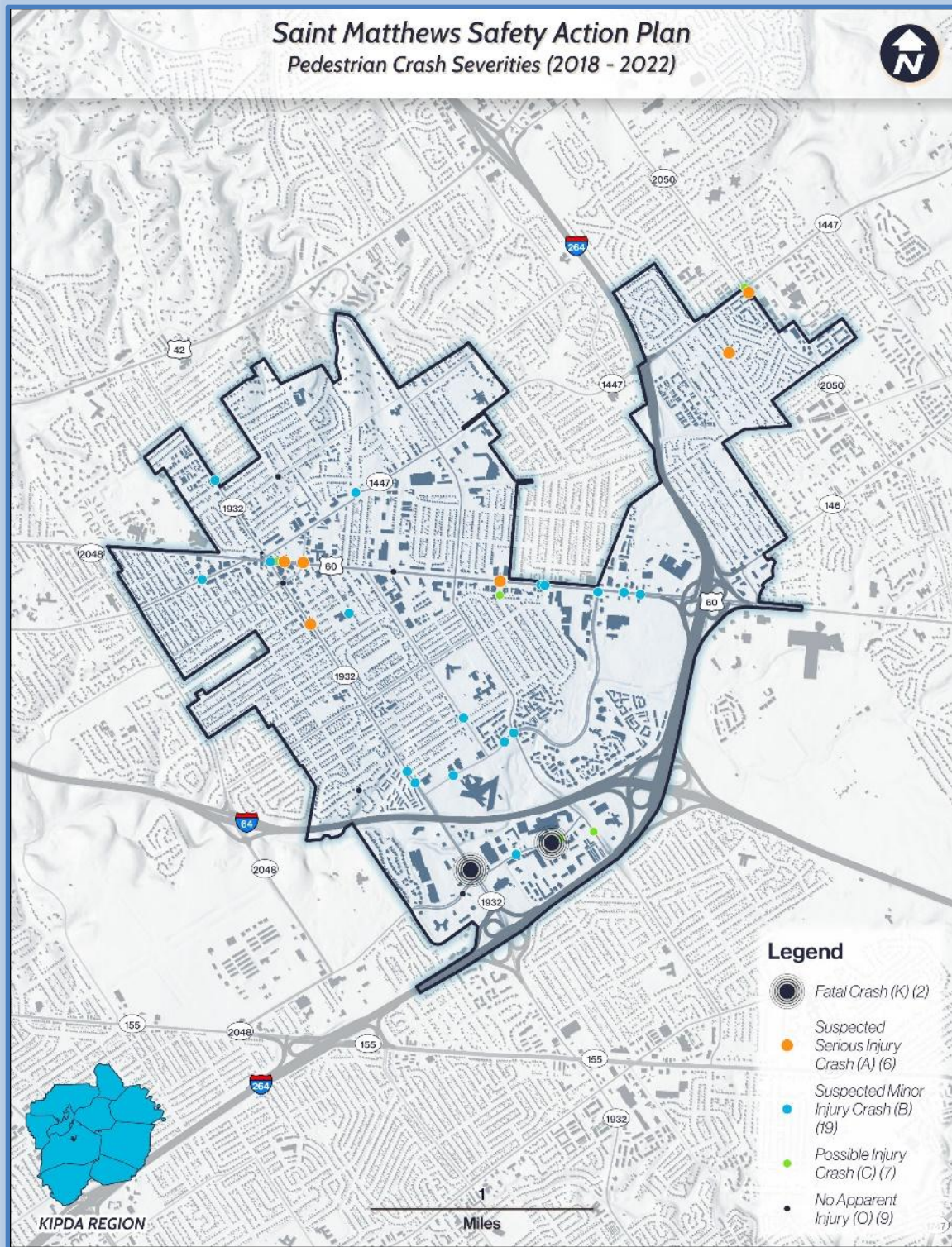


Figure 3-23: Pedestrian Crash Map



## Occupant Protection

Occupant Protection involves any device which is intended for protective use in a vehicle such as a 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.

The data on occupant protection in St. Matthews reveals a high rate of restraint use across all crash severities, as shown in the figure below. Restraint use was observed in 75% of fatal crashes and 85% of suspected serious injury crashes, increasing to 96% for suspected minor injury crashes, 98% of possible injury crashes, and 99% for no apparent injury crashes. Despite the commendable restraint usage, the data still reflects a clear relationship between occupant protection and crash severity, with lower restraint usage in fatal and severe injury crashes compared to less severe crashes. This emphasizes the continued importance of promoting restraint use to reduce crash severity and prevent fatalities.

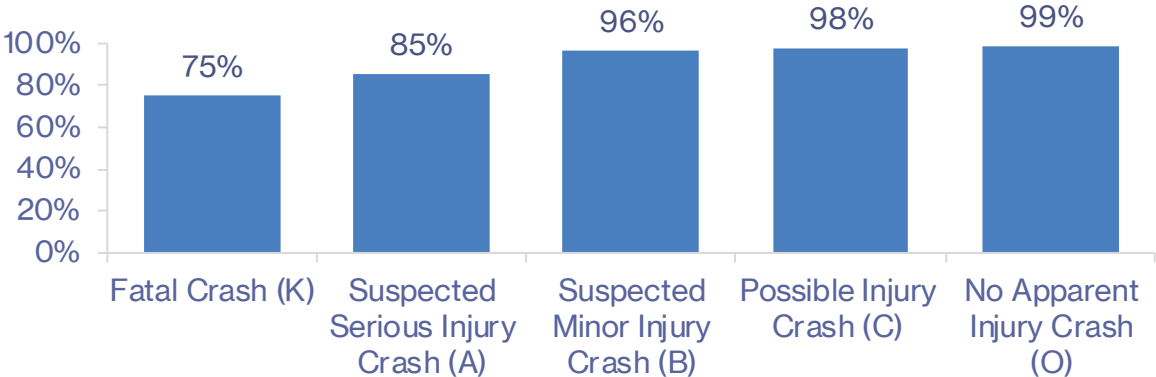


Figure 3-24: Restraint Use in Crashes



## Contributing Human Factors

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

In St. Matthews, driver inattention is the leading factor, contributing to 2,178 crashes, followed by failure to yield right of way (824 crashes) and misjudge clearance (389 crashes).

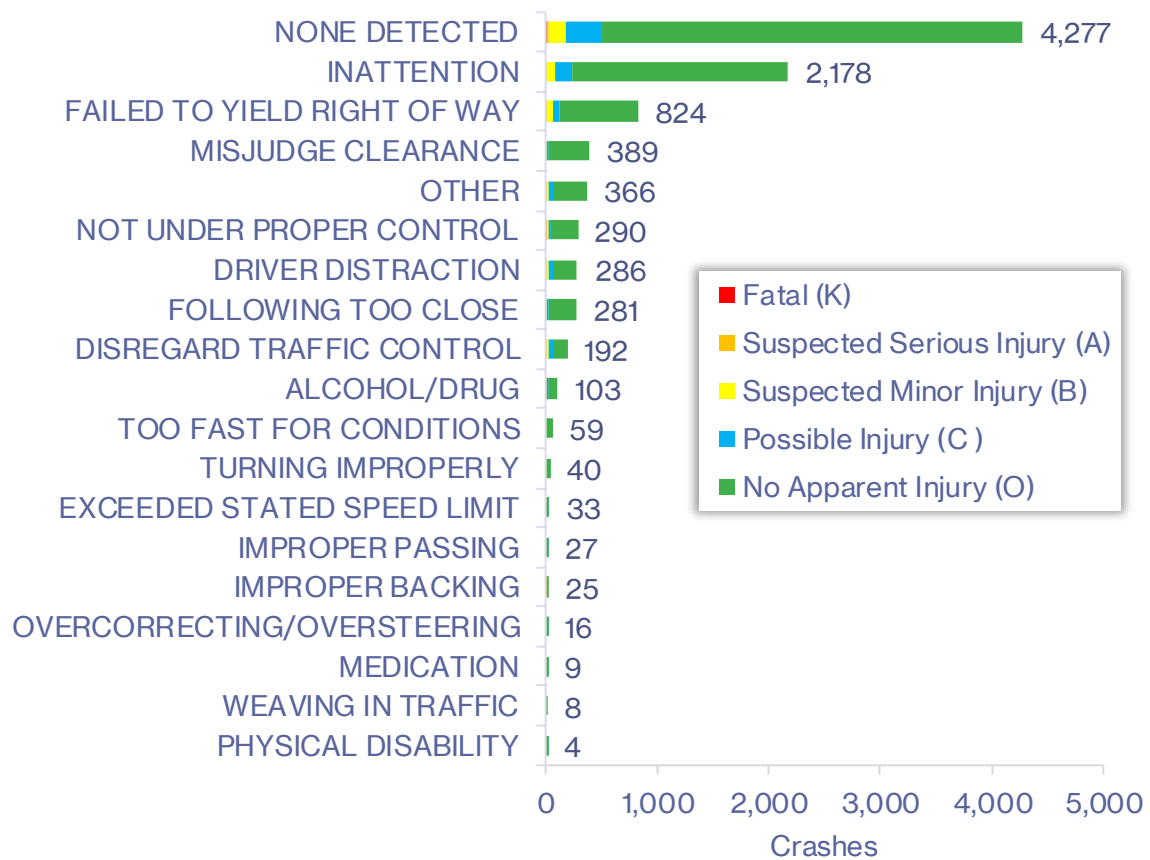


Figure 3-25: Crashes by Human Factor



Of the fatal and suspected serious injury crashes, 40% (15) were categorized as driver inattention. Both failed to yield right of way and alcohol and drug involvement contributed to 18% of fatal and suspected serious injury crashes.

Given the high proportion of drivers being inattentive or failing to yield the right-of way, 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.

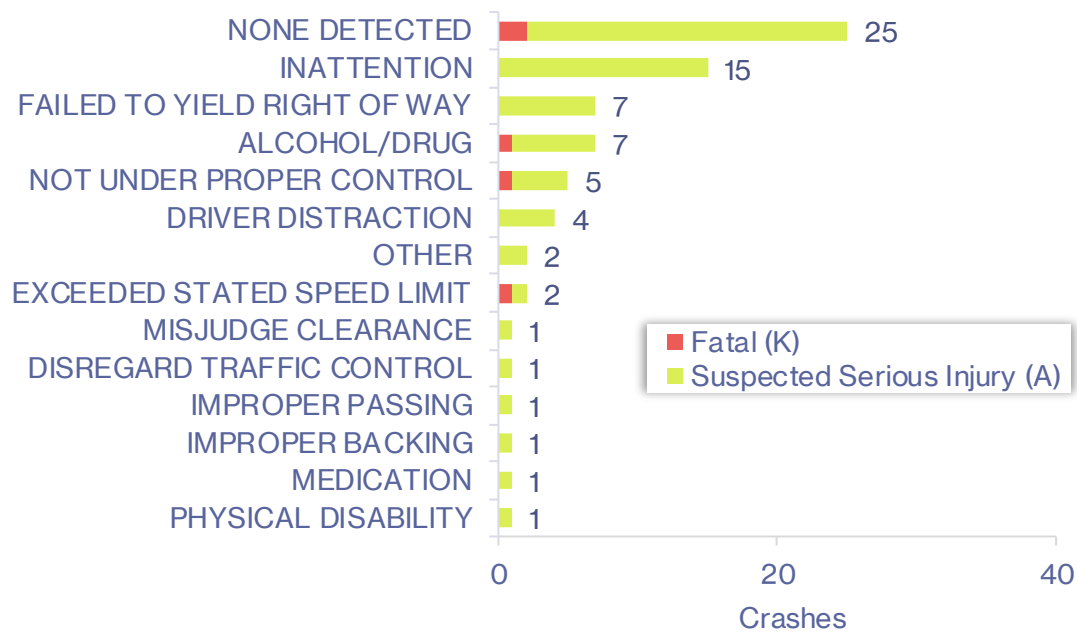


Figure 3-26: Fatal and Suspected Serious Injury Crashes by Human Factor



## 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 18% of all crashes and 24% of fatal and suspected serious injury crashes. Snow, slush, standing or moving water, and other conditions combined account for less than 2% of all crashes with no associated severe outcomes. This suggests that most crashes in St. Matthews 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	3,755	81%	29	76%
Wet	835	18%	9	24%
Snow/Slush	30	1%	-	-
Water (Standing or Moving)	19	<1%	-	-
Ice	14	<1%	-	-
Other	1	<1%	-	-
Sand-Mud-Dirt-Oil-Gravel	1	<1%	-	-

Table 3-4: Crashes by Roadway Condition

## High Injury Network

A High Injury Network (HIN) is a data-driven approach used to identify roadway segments that accounts 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.

### Safety Action Plan Community Engagement

#### Regional Steering Committee

The Regional Steering Committee, comprised of diverse members from the region, 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 community 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 and facilitated a discussion focusing on local conflict areas.



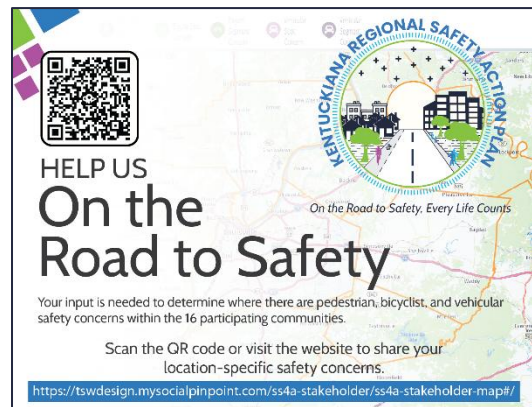
## Meeting Two

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 the Chenoweth Lane project (HIN Segment 12), recent changes to Lagrange Road (Unsignalized intersection 4), and the need for improvements and speed management on Dupont Road and at Dupont Road and Browns Lane.

## Public Engagement

### Survey One

The project team and committees conducted public engagement for the Safety Action Plan through an interactive online map. Residents within the KIPDA Region, including St. Matthews, 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.



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 19 comments located within St. Matthews. Figure 4-4 provides an example view of the engagement map.

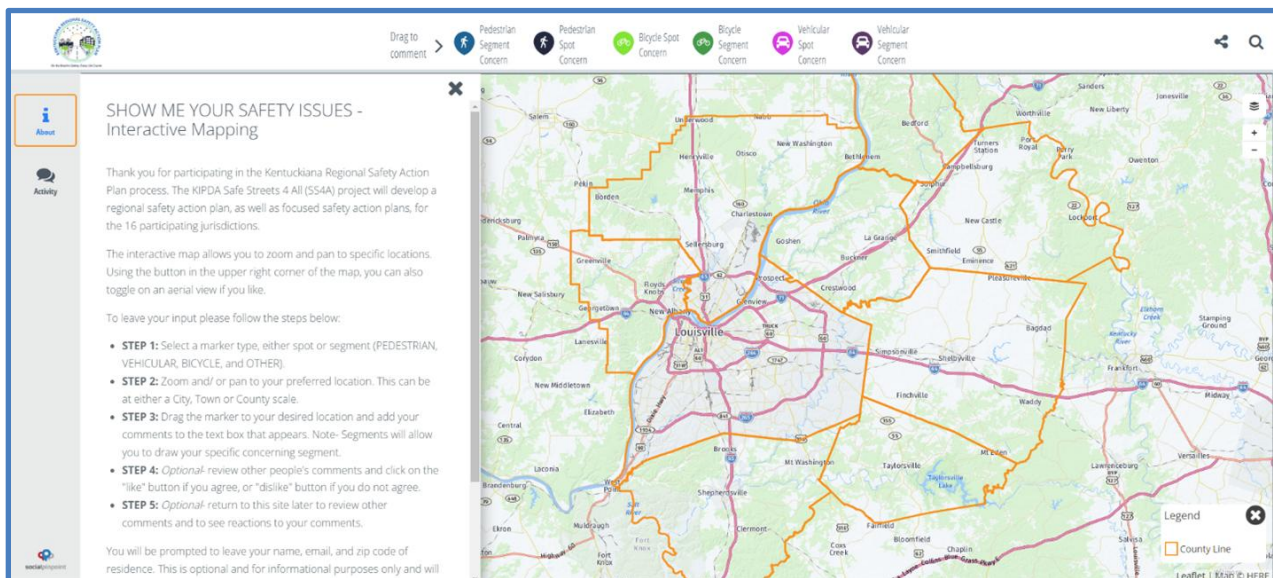


Figure 4-1: Social Pinpoint Online Engagement



### **Vehicular Safety Concerns**

- Intersection Improvements
- Speed Limits
- Turning lanes
- Interstate Access Points

### **Pedestrian Safety Concerns**

- Adding sidewalks
- Adding crosswalks

### **Bicycle Safety Concerns**

- Update existing bike lanes
- Add bike lanes

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 St. Matthews 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 the 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. An example of this is along the US 60 corridor and specifically on the US 60 corridor near the I-264 interchange.

### ***Survey Two***

The project team and committees conducted a second public survey for the Safety Action Plan. Residents within the KIPDA Region, including St. Matthews, 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. The responses for St. Matthews generally agreed with the High Injury Network rankings. There was also agreement on several of the top listed signalized intersections. Of those, Shelbyville Road and Lagrange Road were the top ranked. The unsignalized intersections were generally rated as less important than the signalized locations; however, Shelbyville Road at the I-264 westbound ramp and Breckenridge Lane at the I-264 EB Loop Ramp were both marked by most as a high priority. There was also general support for all of the listed countermeasures with the notable exception of speed control measures.



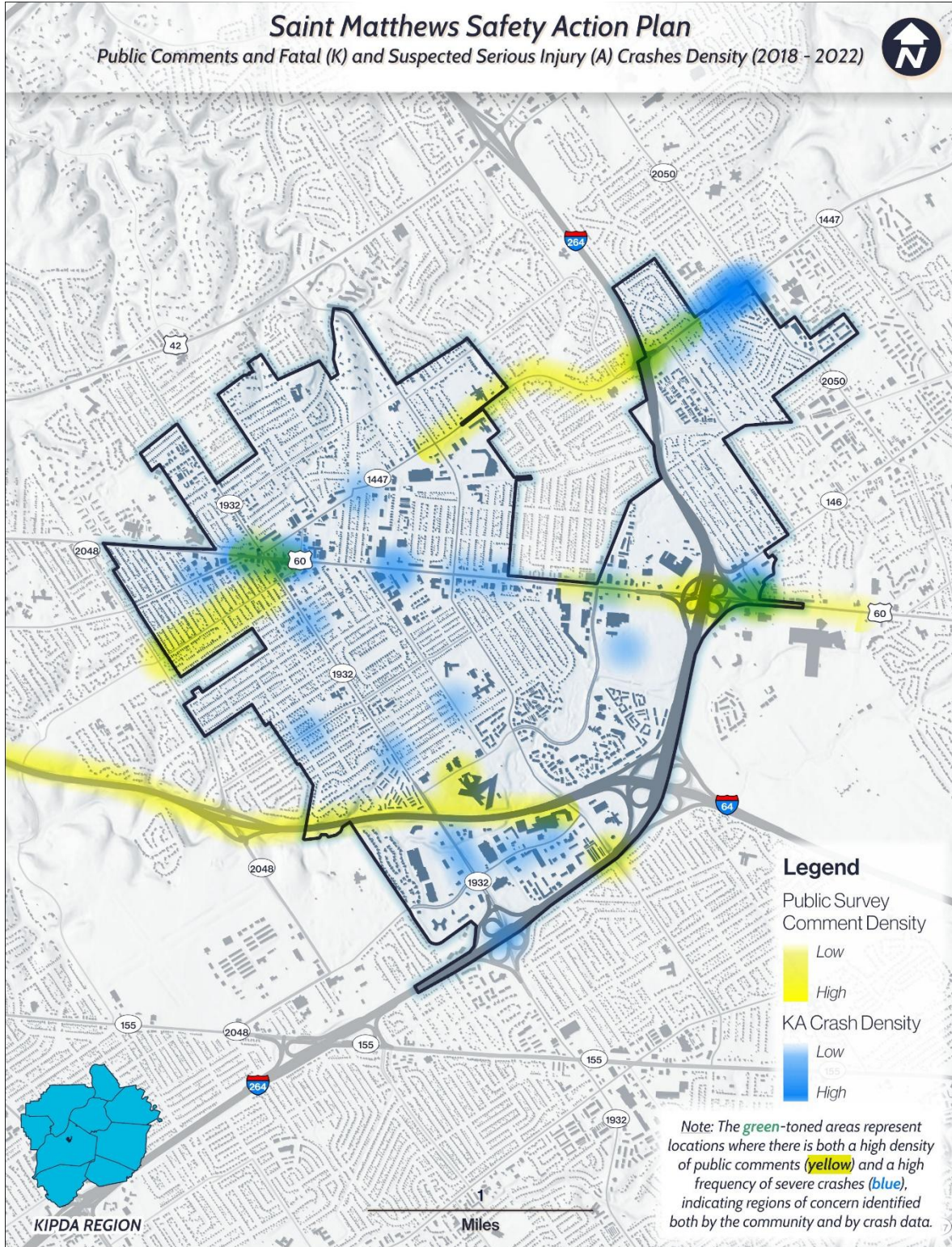


Figure 4-2: Safety Concern Comments and High Severity Crash Density

## 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 St. Matthews 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.

Map No.	KYTC Item (CHAF ID)	Route	Begin	End	Status	Description
1	5-5-80200.00.00	KY 2050	0.95	1.5	Planned	Reduce congestion, improve safety, and enhance mobility on KY 2050 (Herr Lane) from Prince Valiant Drive / Westmar Terrace to Bedford Lane
2	5-80355.00	US 60	6.82	0.32	Planned	Improvements from Eastern Parkway Transportation Study between Bardstown Rd to Cherokee Park Entrance with a memorandum of agreement with the Louisville Metro Government

Table 4-1: Current Highway Plan Projects



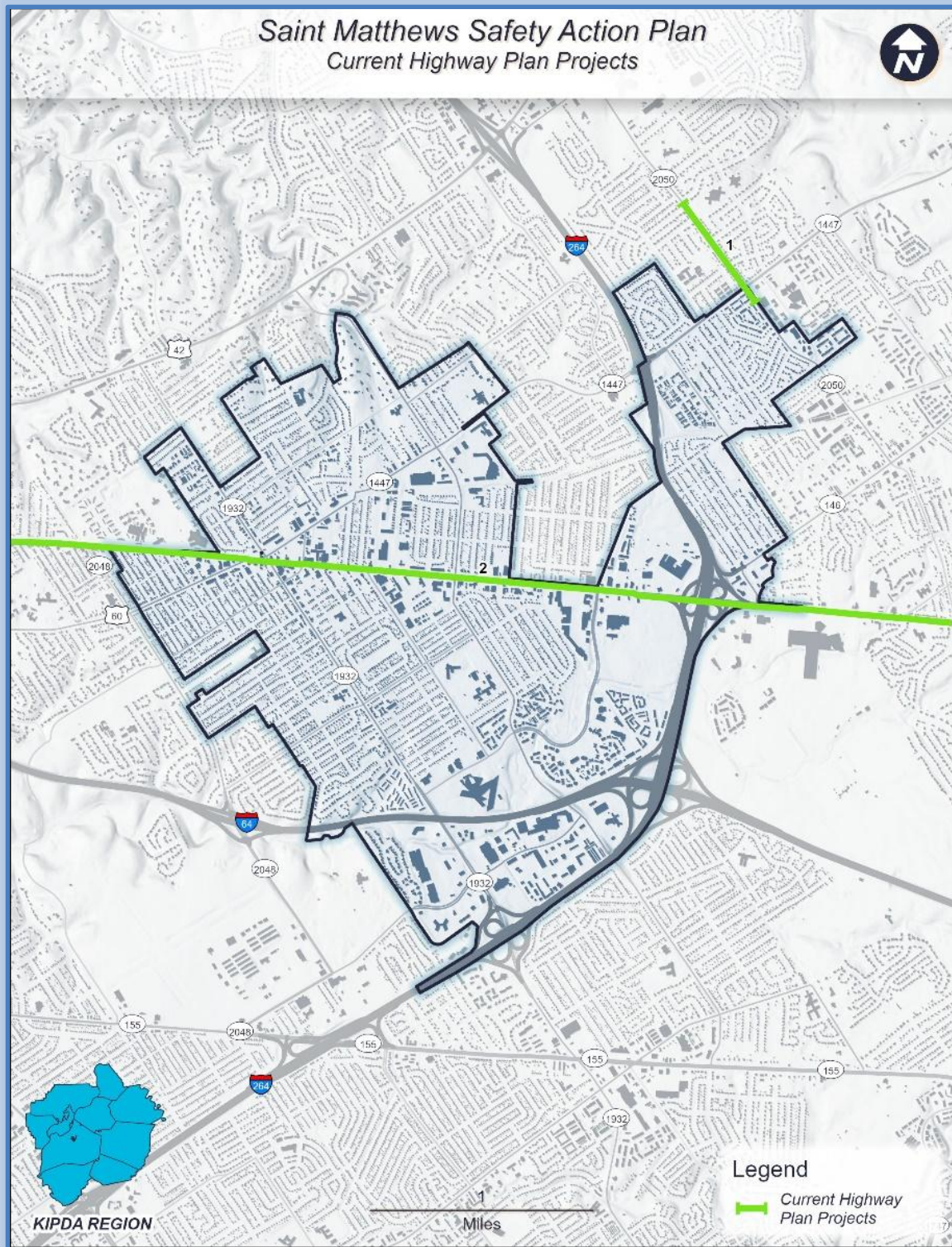


Figure 4-3: Highway Plan Map

## Community Considerations

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

### 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 as 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.*

St. Matthews is not located within a designated Area of Persistent Poverty.

### Community Demographic Summary

The following four populations were analyzed using the US Census American Community Survey (ACS) data. The 2022 ACS five-year table was used.



## Elderly Population

Approximately 21.2% of households in St. Matthews are over 65. Portions of the city with high elderly populations should consider tailored roadway safety countermeasures. Oversized signage, lighting, pedestrian refuge islands, leading pedestrian intervals (LPIs), and raised crosswalks are some of the countermeasures that benefit elderly populations.

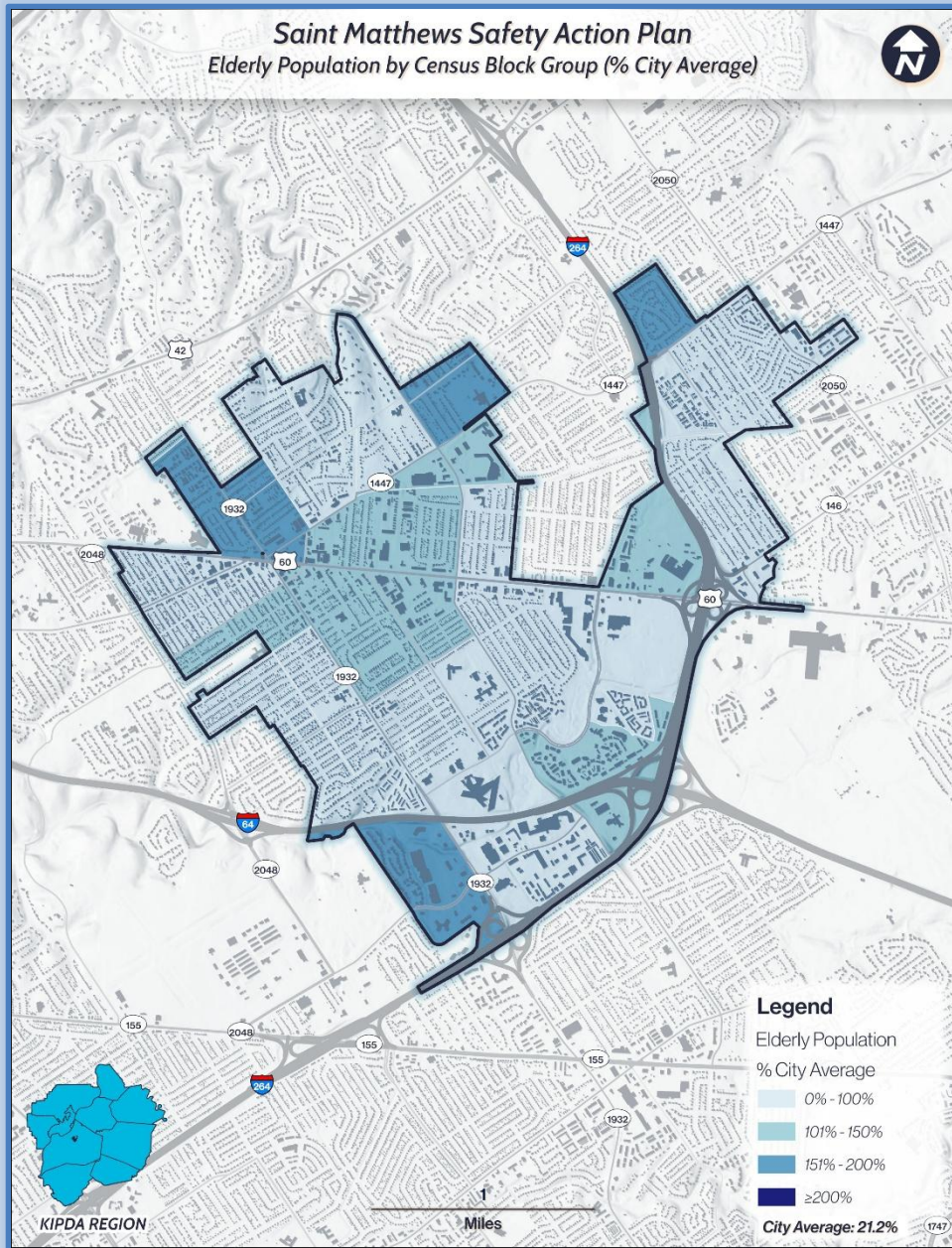


Figure 4-4: Elderly Population by Census Block Group Map

### Population Impacted by Disability

St. Matthews has approximately 19.6% of all households that have one or more persons with a disability. Like elderly populations, safety countermeasures are available to support disabled populations, many of which relate to pedestrian facilities, such as curb ramps.

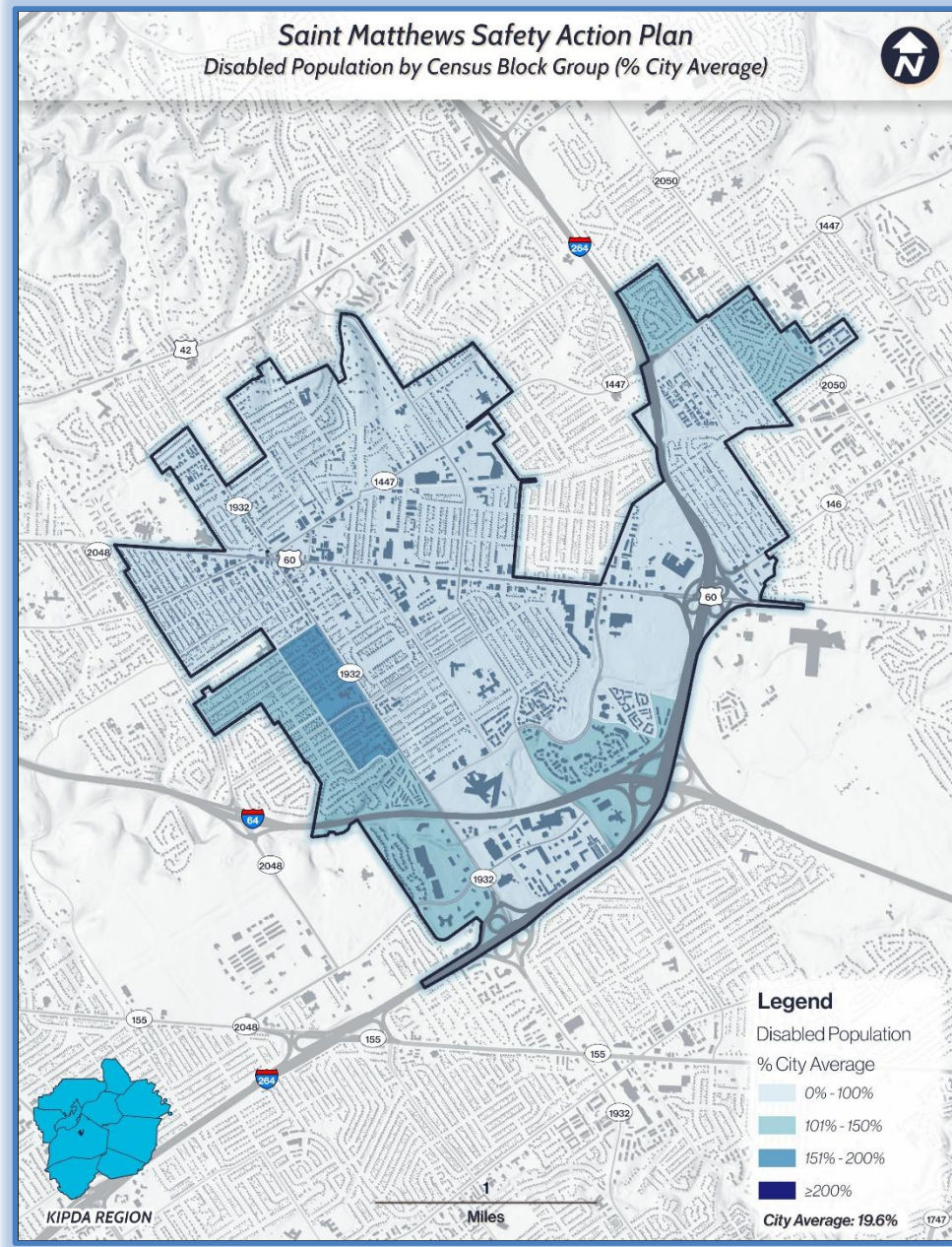


Figure 4-5: Disabled Population by Census Block Group Map

### Population Experiencing Poverty

The poverty population of St. Matthews includes individuals with incomes below the poverty level. St. Matthews has approximately 6.7% of all individuals who meet this definition. Areas with high poverty rates are often characterized by underinvestment in infrastructure and safety.

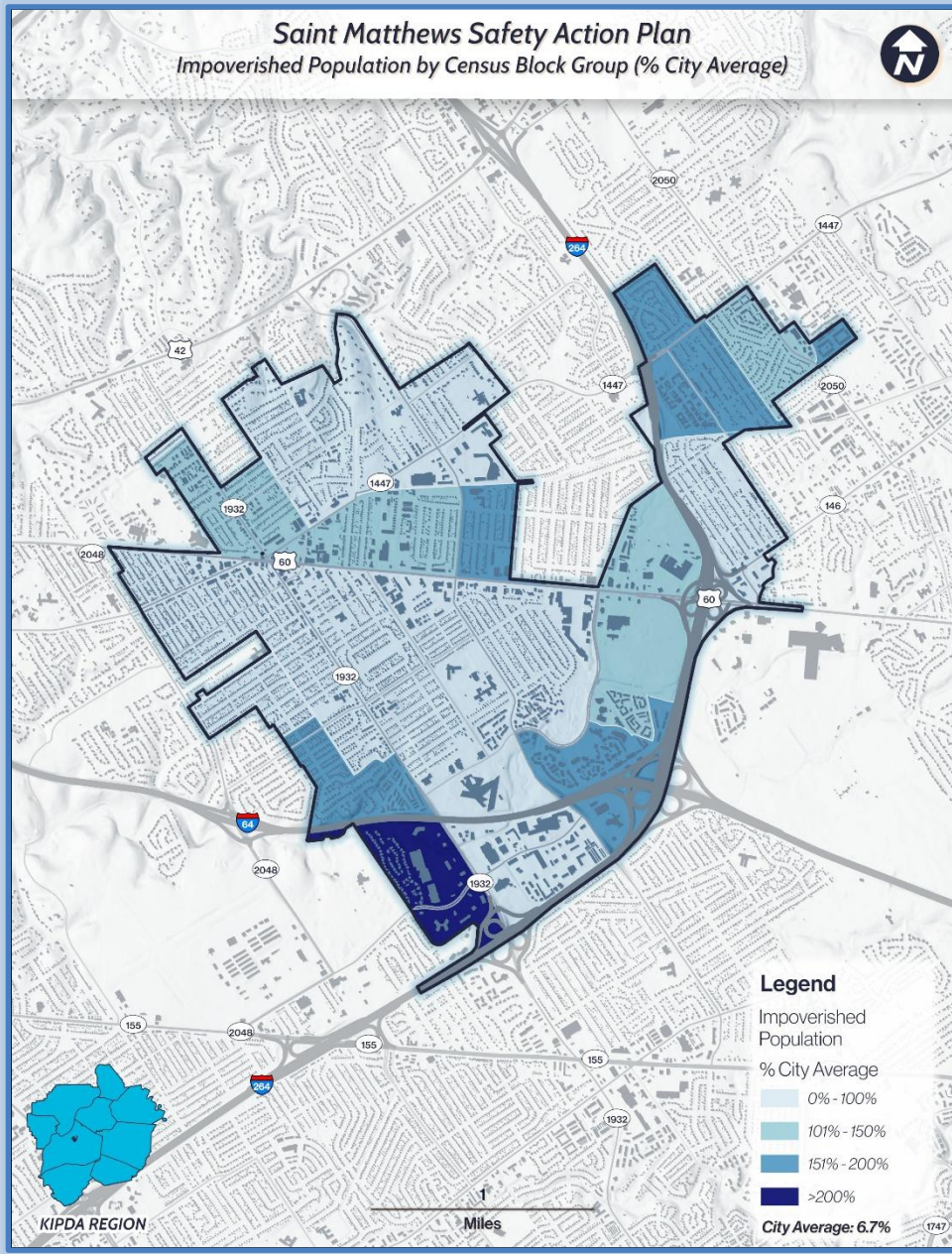


Figure 4-6: Impoverished Population by Census Block Group Map

### Minority Population

The minority population of St. Matthews encompasses all individuals who identify as non-white. St. Matthews has approximately 8.8% of its population that meets this definition.

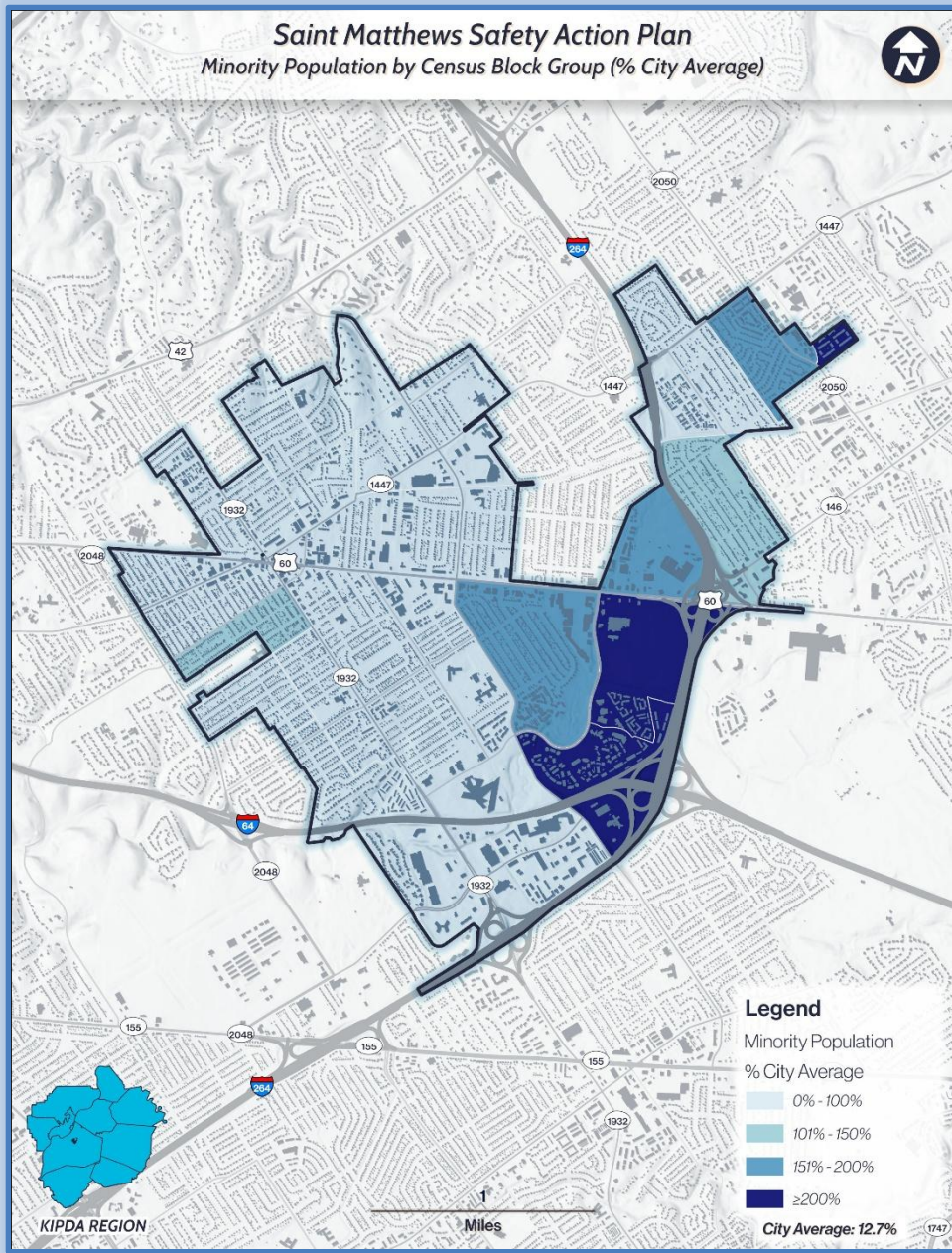


Figure 4-7: Minority Population by Census Block Group Map

## 5. Policy and Process Changes

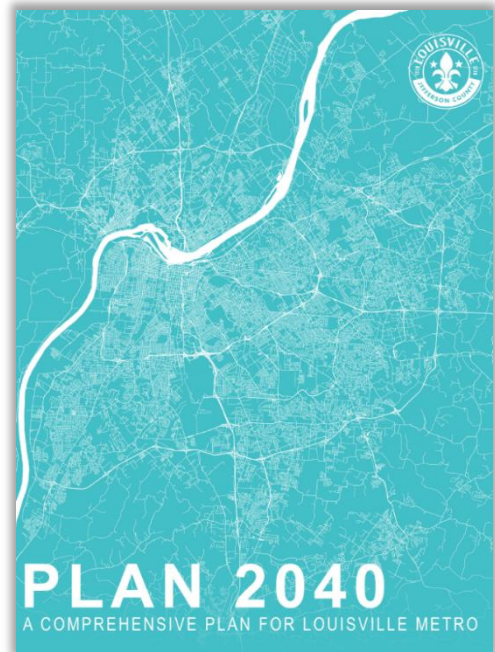
A comprehensive review of the City of St. Matthews’s existing policies, plans, guidelines, and standards has identified key opportunities to enhance transportation safety. The city aims to elevate safety as a priority while also creating a more inclusive and accessible transportation network for all users.

The City of St. Matthews does not have its own comprehensive plan but instead uses the Jefferson County Comprehensive Plan as an overarching framework for the city.

### Comprehensive Plan -2019

**Link:** [Louisville Metro Comprehensive Plan 2040](#)

The Mobility plan element carries forward the multi-modal policies pioneered by Cornerstone 2020 to effectively connect the community through a safe and accessible transportation system. Through sound planning practices, Plan 2040 aligns with the goals to increase investment in the transportation network, promote freight movement, and enhance access to the Louisville International Airport. Other mobility issues addressed in this plan element include promoting nodal density, encouraging transit-oriented development, and reinforcing strategies that encourage “complete streets.”



The Mobility plan element contains three overarching goals, supported by a series of objectives and action-oriented policies to achieve the community’s vision for a safer, healthier, more livable city.

Goal 1: Implement an accessible system of alternative transportation modes.

Goal 2: Plan, build, and maintain a safe, accessible and efficient transportation system.

Goal 3: Encourage land use and transportation patterns that connect Louisville Metro and support future growth

No recommended changes are proposed for the Comprehensive Plan.

## St. Matthews Zoning

The City of St. Matthews adheres broadly to the Development Code for Louisville-Jefferson County Metro Government, Kentucky. This development code includes many safety-focused elements. However, it is recommended that St. Matthews consider some City specific polices as noted below.

### Future City Policy Considerations

**Traffic Calming Measures:** Consider updated policies, procedures, or guidelines for traffic calming measures, such as roundabouts, speed humps, chicanes, and raised intersections and crosswalks to reduce vehicle speeds and enhance safety for pedestrians and bicyclists. Implementing traffic calming strategies will reduce the risk and severity of crashes.

**Traffic Safety Analysis and Improvements:** Consider policies, procedures, guidelines, or regulations that require a traffic safety analysis to demonstrate that a development or redevelopment will not significantly impact safety on nearby roads or intersections. This could provide for the analysis of, and recommendations for, potential countermeasures to address any potential impacts.

## 6. Strategy and Project Selection

Development of strategies and project selection is based on a comprehensive analysis of historical crash data, implementation of best practices, and active engagement with stakeholders and the community. The reactive approach involves a detailed examination of crash data by frequency, severity, and location to identify the most need for improvement. The following sections detail the methodology for prioritizing projects and strategy selection.

### Prioritization

The City’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 as shown below, 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

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 geographic information system (GIS) files of roadway and traffic data, known as the Highway Information System (HIS) database. HIS data includes roadway characteristics and traffic data for state-owned roadways. Analysts combined the crash data 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, analysts applied the MEPDO method 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 achieving a Safe System Approach. Evaluating roadway features such as geometrics and traffic operation and control is necessary 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.

St. Matthews experienced 28 fatal and suspected serious injury crashes at intersections, representing 74% of all fatal and suspected serious injury crashes. These crashes occurred at both signalized and unsignalized intersections. Both types of intersections contain multiple conflict points and offer significant opportunities to enhance safety for all users. MEPDO was calculated for each intersection and ranked.

#### ***Prioritized Signalized Intersections***

The table lists the top 10 signalized intersections by MEPDO. These top 10 intersections account for the top 10 fatal and suspected serious injury crashes that occurred at signalized intersections. The maps show the reactive approach at prioritizing signalized intersections and prioritization based on MEPDO.



### Prioritized Unsignalized Intersections

The second table shows the top ten prioritized Unsignalized Intersections by MEPDO. The maps show the reactive approach to prioritizing signalized intersections and prioritization based on MEPDO.

Ranking	Intersection	K	A	B	C	O	KA	TOTAL	MEPDO
1	Westport Rd (KY-1447) & Herr Ln (KY-2050)	0	2	5	13	94	2	114	657
2	Westport Rd (KY-1447) & I-264 EB Ramp	0	1	4	8	133	1	146	451
3	Shelbyville Rd (US-60) & LaGrange Rd (KY-146)	0	1	4	6	93	1	104	392
4	Dutchmans Ln & Dupont Cir	0	1	4	5	38	1	48	327
5	Shelbyville Rd (US-60) & Ten Pin Ln	0	0	7	9	132	0	148	322
6	Shelbyville Rd (US-60) & St. Matthews Ave	0	1	3	4	49	1	57	314
7	Shelbyville Rd (US-60) & Chenoweth Ln (KY-1932)	0	1	2	2	63	1	68	294
8	Shelbyville Rd (US-60) & Thierman Ln	0	1	1	4	30	1	36	265
9	Breckenridge Ln (KY-1932) & Dutchmans Ln	0	0	4	9	114	0	127	260
10	Shelbyville Rd (US-60) & Fairmeade Rd	0	1	2	3	18	1	24	258

Table 6-4: Prioritized Signalized Intersections by MEPDO

Ranking	Intersection	K	A	B	C	O	KA	TOTAL	MEPDO
1	Shelbyville Rd (US-60) & I-264 WB Ramp	0	0	5	12	308	0	325	497
2	Westport Rd (KY-1447) & Abbeywood Dr	0	2	1	1	12	2	16	400
3	Westport Rd (KY-1447) & Graymoor Pl	0	2	1	1	7	2	11	395
4	LaGrange Rd (KY-146) & S Park Pl	0	1	0	2	24	1	27	225
5	Westport Rd (KY-1447) & Girard Dr	0	1	1	1	17	1	20	223
6	Shelbyville Rd (US-60) & Meridian Ave	0	1	0	2	18	1	21	219
7	Westport Rd (KY-1447) & Fountain Ave	0	1	1	0	15	1	17	212
8	Breckenridge Ln (KY-1932) & I-264 EB Loop Ramp	1	0	1	0	15	1	17	212
9	Shelbyville Rd (US-60) & Bonner Ave	0	1	0	1	15	1	17	207
10	Browns Ln & Hillsboro Rd	0	1	0	2	1	1	4	202

Table 6-5: Prioritized Unsignalized Intersections by MEPDO



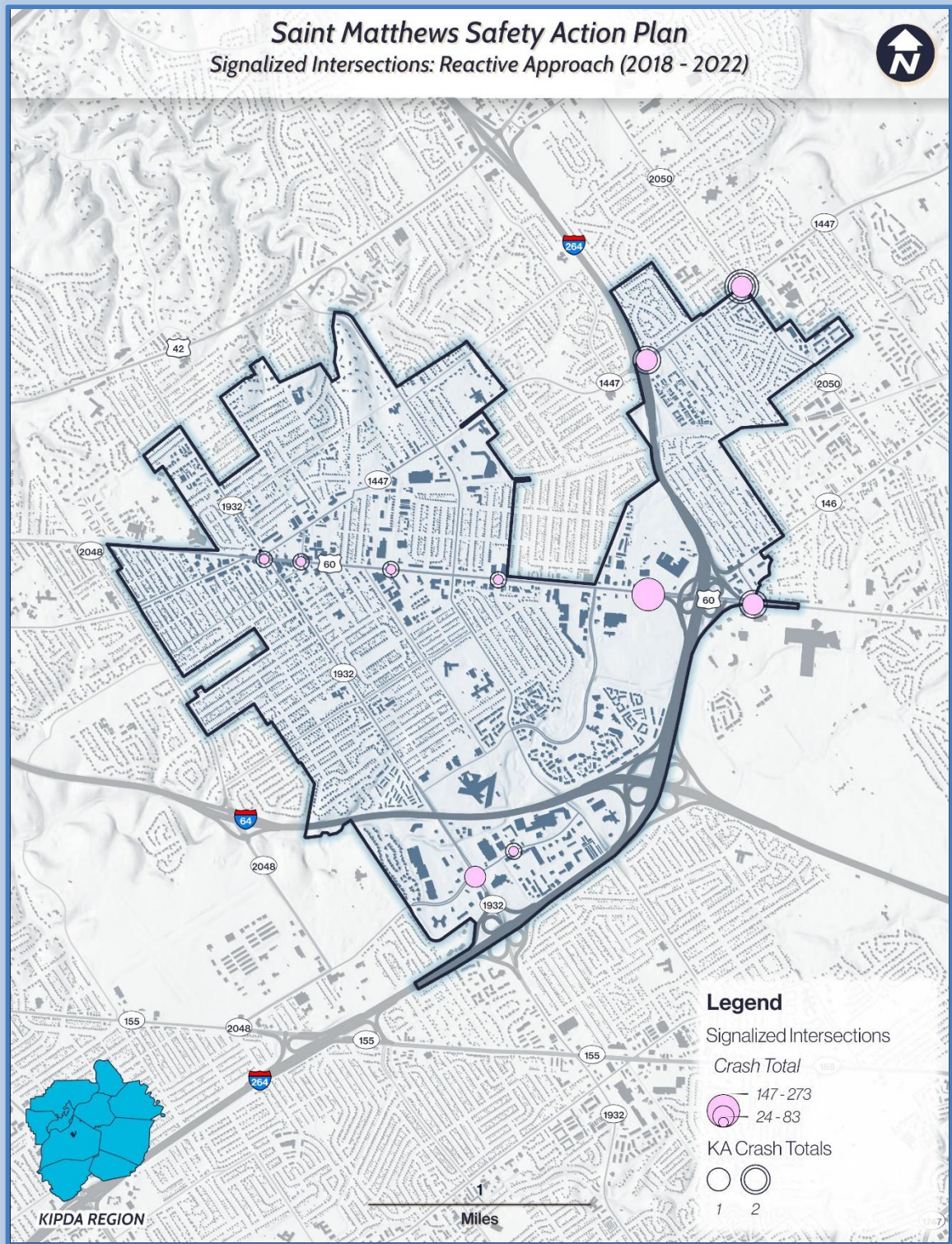


Figure 6-1: Signalized Intersections: Reactive Approach Map

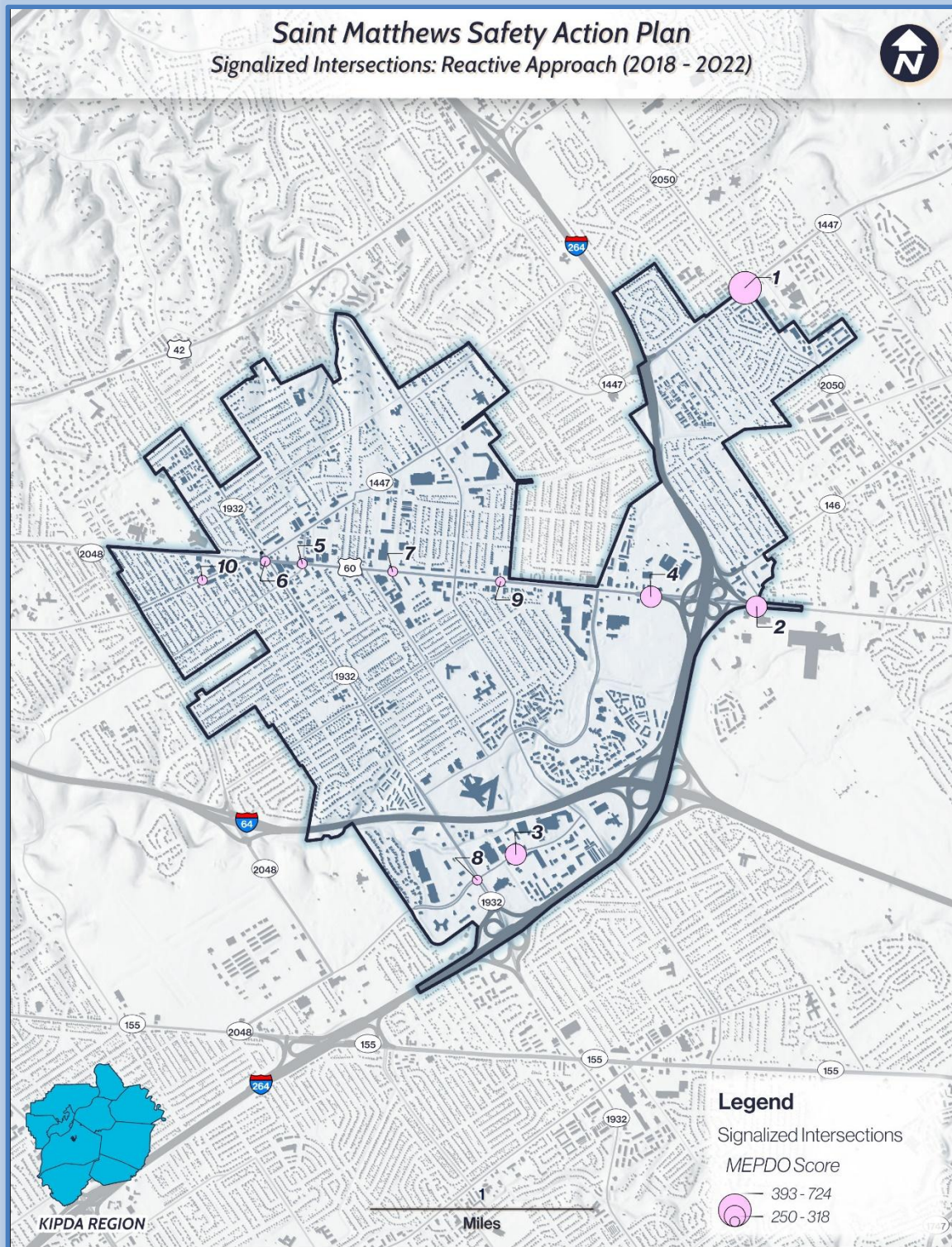


Figure 6-2: Signalized Intersections Prioritized by EPDO Map

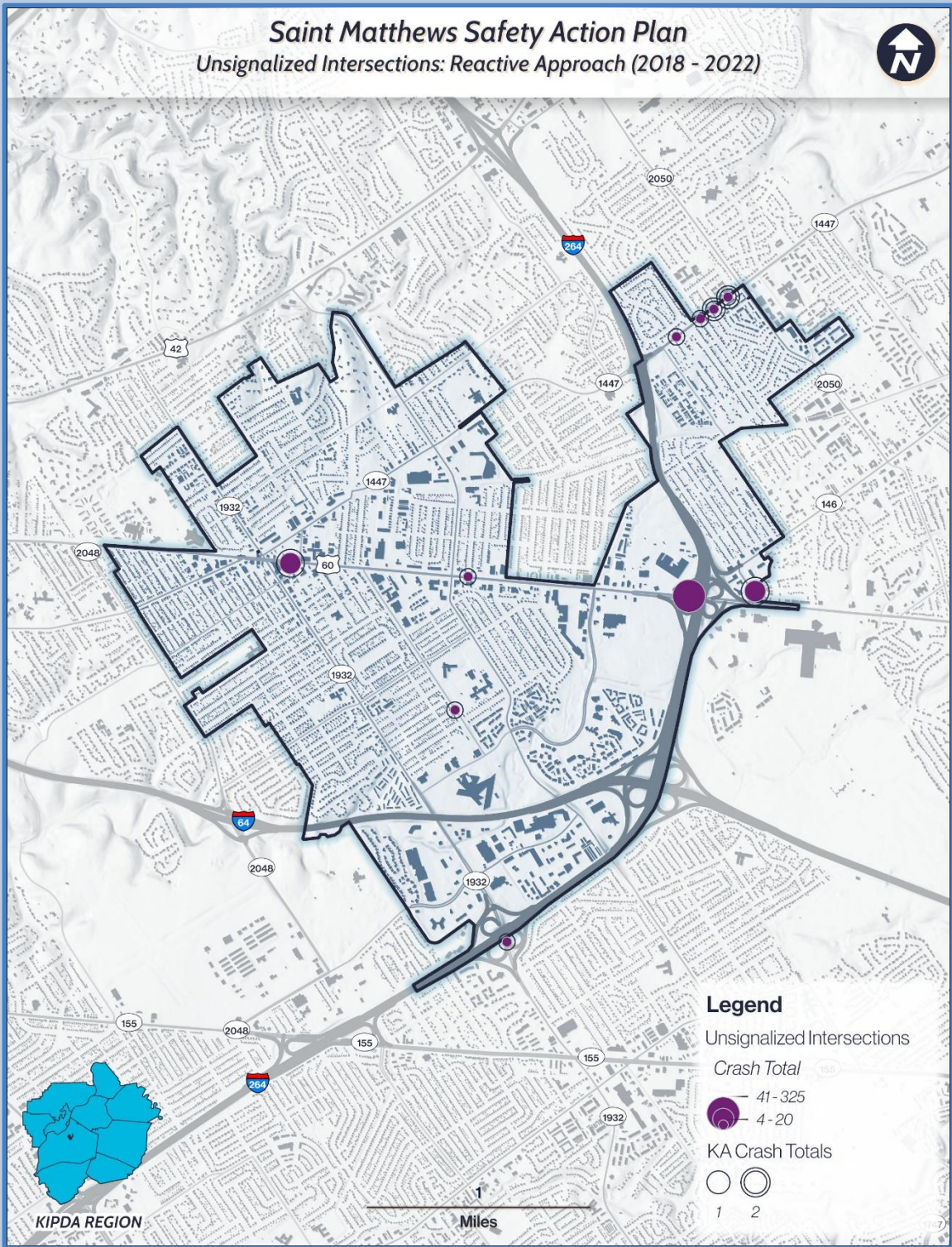


Figure 6-3: Unsignalized Intersections: Reactive Approach Map

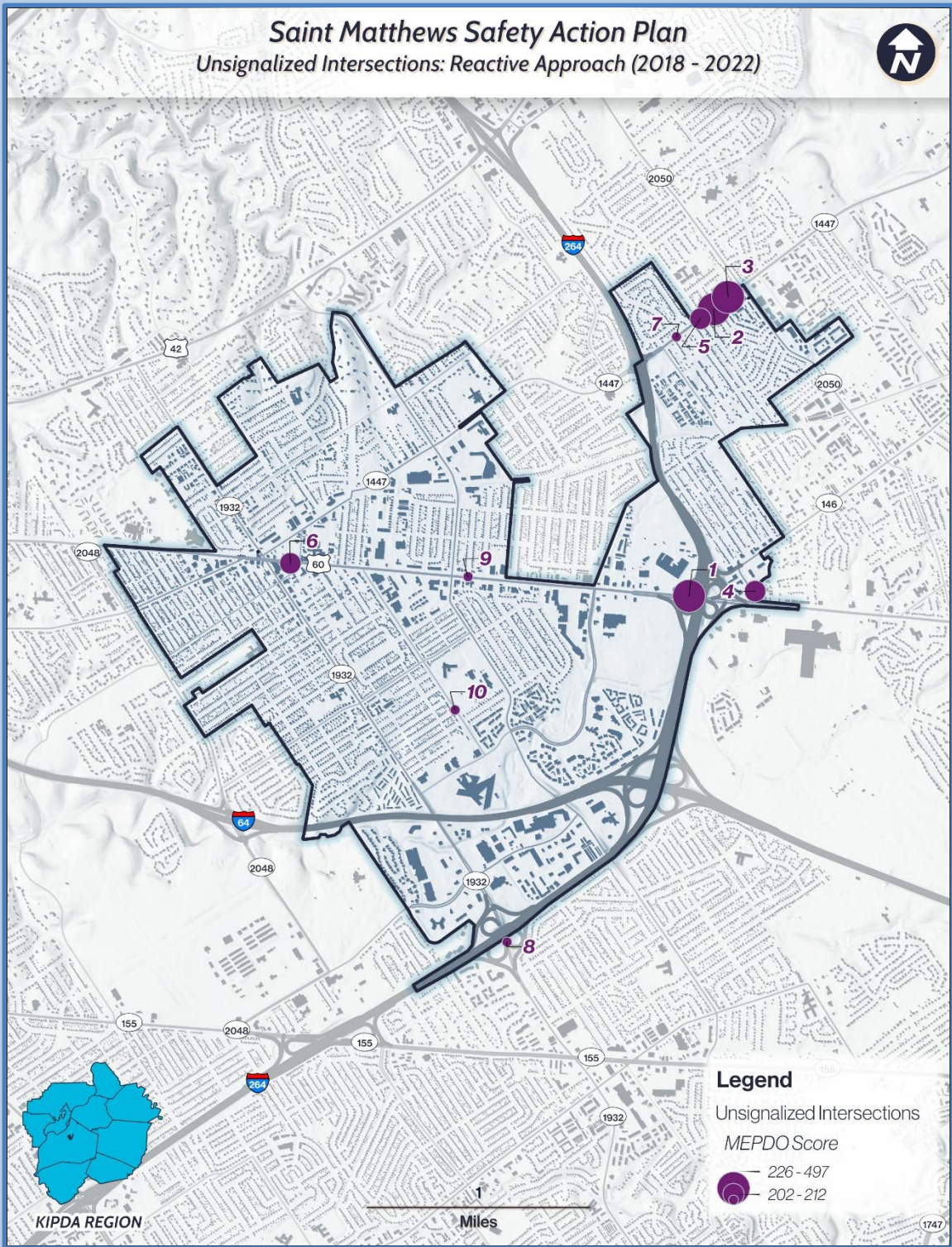


Figure 6-4: Unsignalized Intersections Prioritized by EPDO Map

## 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. St. Matthews's HIN was developed using detailed crash data analysis and GIS mapping to pinpoint corridors with the highest concentration of severe crashes. The tables and maps that follow present St. Matthews'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	Westport Rd (KY-1447)	Ambridge Dr	Herr Lane (KY-2050)	0.75	2,811	3,733
2	Shelbyville Rd (US-60)	Bramton Rd	Oxmoor Lane	0.91	2,719	2,988
3	Shelbyville Rd (US-60)	Lexington Rd (US-60A)	Thierman Lane	0.69	1,831	2,649
4	Dutchmans Ln	Dutchmans Pkwy	Browns Ln	0.66	1,392	2,113
5	Breckenridge Ln (KY-1932)	I-264 Interchange	Dupont Rd	0.78	1,603	2,053
6	Shelbyville Rd (US-60)	Thierman Lane	Fairmeade Rd	0.49	858	1,743
7	Shelbyville Rd (US-60)	Fairmeade Rd	Bramton Rd	0.34	508	1,504
8	New La Grange Rd (KY-146)	Shelbyville Rd (US-60)	Kentucky Ave	0.38	536	1,409
9	Lexington Rd (US-60A)	Eline Ave	Shelbyville Rd (US-60)	0.50	465	931
10	Breckenridge Ln (KY-1932)	Dupont Rd	Shelbyville Rd (US-60)	1.28	1112	871
11	Brown Ave	Shelbyville Rd (US-60)	Lyndon Way	0.33	198	597
12	Breckenridge Ln (KY-1932)	Shelbyville Rd (US-60)	Leland Rd	0.58	296	510
13	Browns Ln	Bowling Blvd	Ravenwood Dr	1.54	716	464
14	N Hubbards Ln	Shelbyville Rd (US-60)	Elmwood Ave	1.41	636	453

Table 6-6: Prioritized Corridors - High Injury Network



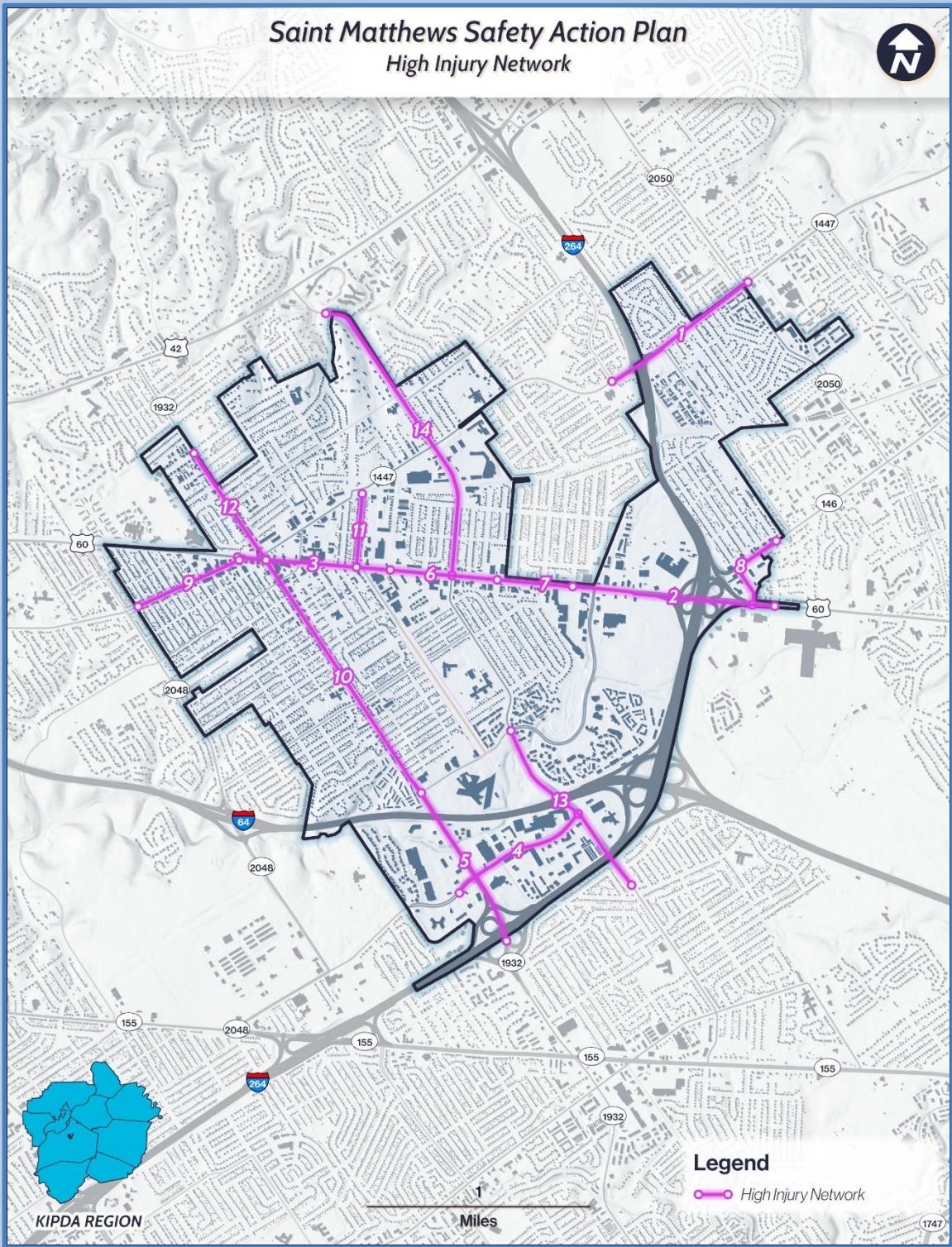


Figure 6-5: High Injury Network

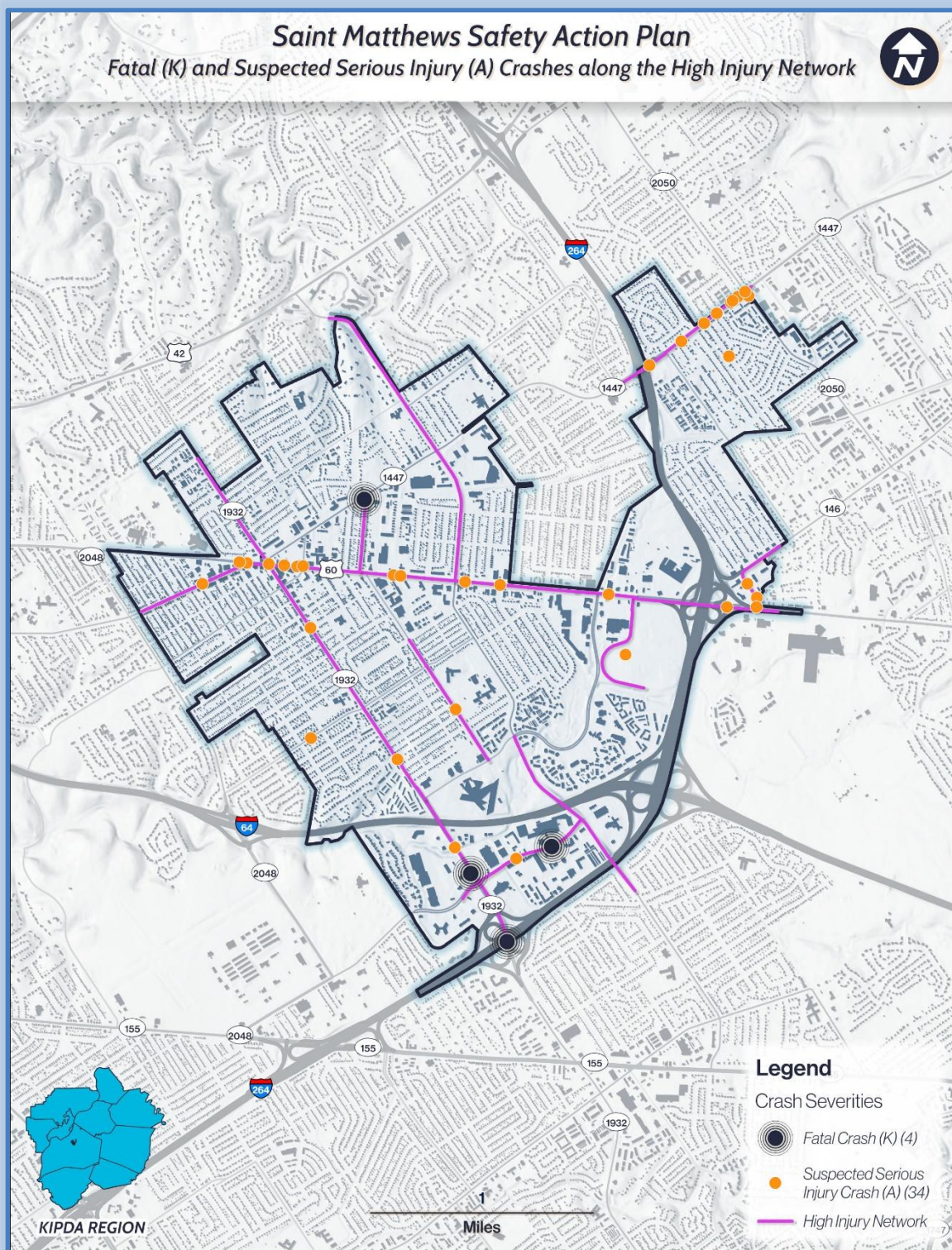


Figure 6-6: High Injury Network and Fatal and Suspected Serious Injury Crashes

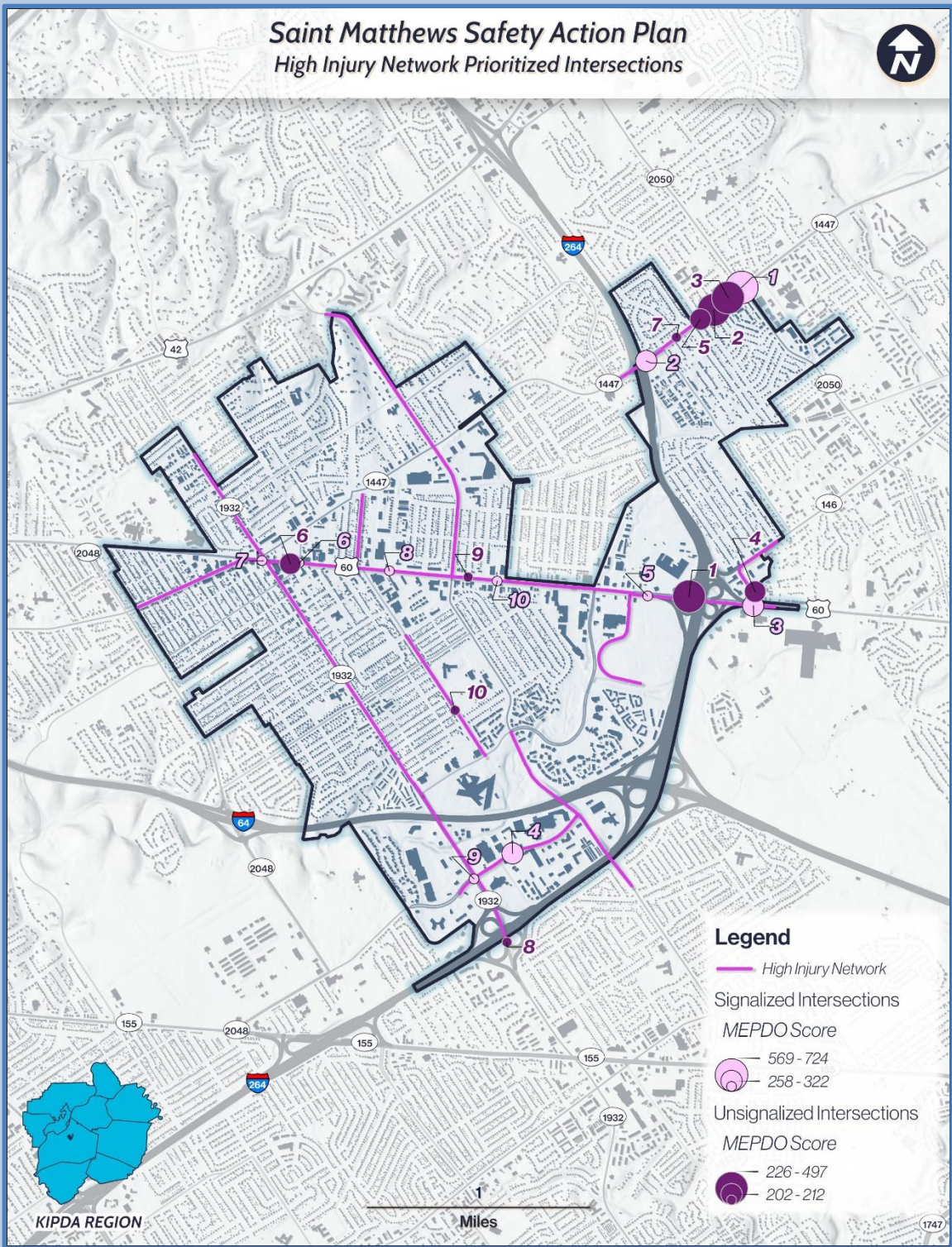


Figure 6-7: High Injury Network and Prioritized Intersections

## 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 A. 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>





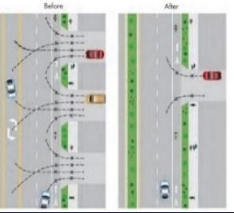





Example Segment Countermeasures							
Countermeasure	Description	Safety Impact	Links	Countermeasure	Description	Safety Impact	Links
<b>Enhanced Delineation for Horizontal Curves</b>				<b>Roadside Design Improvements at Curves</b>			
	High visibility markings and delineators around curves provide drivers with better information about curves.	Severe crashes ↓15-18%	<a href="#">FHWA</a>		Includes treatments that improve horizontal curves, giving drivers the opportunity to recover safely or reducing crash severity.	Single Vehicle or All Crashes ↓8-44%	<a href="#">FHWA</a>
<b>Access Management (segment treatments)</b>				<b>Medians and Pedestrian Refuge Islands</b>			
	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%	<a href="#">FHWA</a>		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%	<a href="#">FHWA</a> and <a href="#">FHWA</a>
<b>Roadway Reconfiguration (Right Sizing or Road Diet)</b>				<b>Shoulder Treatment – Safety Edge</b>			
	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%	<a href="#">FHWA</a>		Shoulder edge upgrades to improve recoverability for roadway departures.	Severe ↓11% Run-Off-Road ↓21% Head-On ↓19%	<a href="#">FHWA</a>
<b>Dynamic Speed Feedback Signs</b>				<b>Pavement Friction Management</b>			
	Provide positive and negative feedback to drivers regarding their speed.	All Crashes ↓5%	<a href="#">FHWA</a> (pg 5) <a href="#">FHWA</a> <a href="#">Clearing house</a>		High Friction Surface Treatment (HFST) can prevent roadway departure, intersection, and pedestrian-related crashes.	Severe Crashes at Curves ↓48% Crashes at Intersections ↓48%	<a href="#">FHWA</a>

Table 6-7: Example Segment Countermeasures




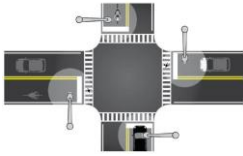





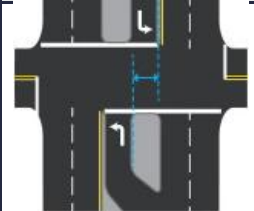
Example Intersection Countermeasures							
Countermeasure	Description	Safety Impact	Links	Countermeasure	Description	Safety Impact	Links
<b>Access Management (intersection treatments)</b>				<b>Intersection Lighting</b>			
	This refers to the design and control of access points including intersections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

Table 6-8: 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	Roundabouts / Alternative Int. (RCUT)	Potential Countermeasures										
			Turn Lanes	Tighten Intersection	Reflective Backplates	Enhanced Striping	Enhanced Signing & Updated Signal Timing	Access Management / Raised Median	Lighting	Sight Distance Improvements	Pedestrian Enhancements	Re-Align Intersection	Speed Management
Signalized Intersections													
1	Westport Rd (KY-1447) & Herr Ln (KY-2050)	X		X	X	X	X	X		X		X	
2	Westport Rd (KY-1447) & I-264 EB Ramp				X	X	X					X	
3	Shelbyville Rd (US-60) & New LaGrange Rd (KY-146)				X	X	X					X	
4	Dutchmans Ln & Dupont Cir	X		X	X	X	X					X	
5	Shelbyville Rd (US-60) & Ten Pin Ln	X				X	X						
6	Shelbyville Rd (US-60) & St. Matthews Ave			X	X	X	X	X	X			X	
7	Shelbyville Rd (US-60) & Chenoweth Ln (KY-1932)			X	X	X	X		X			X	
8	Shelbyville Rd (US-60) & Thierman Ln			X	X	X	X					X	X
9	Breckenridge Ln (KY-1932) & Dutchmans Ln	X			X	X	X						X
10	Shelbyville Rd (US-60) & Fairmeade Rd	X			X	X	X		X				

Table 6-9: Potential Signalized Intersection Strategies

Intersections – Reactive Approach													
Ranking	Intersection	Potential Countermeasures											
		Roundabouts / Alternative Int.	Turn Lanes	Tighten Intersection	Reflective Backplates	Enhanced Striping	Enhanced Signing	Access Management / Raised Median	Lighting	Sight Distance Improvements	Pedestrian Enhancements	Re-Align Intersection	Speed Management
<b>Unsignalized Intersections</b>													
1	Shelbyville Rd (US-60) & I-264 WB Ramp					X	X				X		
2	Westport Rd (KY-1447) & Abbeywood Dr					X	X	X					
3	Westport Rd (KY-1447) & Graymoor Pl					X	X	X					
4	LaGrange Rd (KY-146) & S Park Pl	<i>Recent road diet expected to improve safety</i>											
5	Westport Rd (KY-1447) & Girard Dr					X	X	X			X		
6	Shelbyville Rd (US-60) & Meridian Ave					X	X	X			X		
7	Westport Rd (KY-1447) & Fountain Ave					X	X	X					
8	Breckenridge Ln (KY-1932) & I-264 EB Loop Ramp					X	X				X		
9	Shelbyville Rd (US-60) & Bonner Ave					X	X	X					
10	Browns Ln & Hillsboro Rd	X				X	X	X	X	X	X		X

Table 6-10: Potential Unsignalized Intersection Strategies

## Potential High Injury Network Corridor Strategies

The table below outlines 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.

Rank	Route Name	Begin and End Limits	Length	Potential Project Strategies
1	Westport Rd (KY-1447)	Ambridge Dr to Herr Lane (KY-2050)	0.75	Road rightsizing, protected bicycle facilities, access management, speed management, landscaped medians, innovative intersections, enhanced pedestrian crossings, interjurisdictional coordination on enforcement
2	Shelbyville Rd (US-60)	Bramton Rd to City Limit	0.91	Innovative intersections, enhanced pedestrian crossings, access management, refuge islands, speed management <a href="#">Planned: 5-80355.00: Improvements from Eastern Parkway Transportation Study between Bardstown Rd to Cherokee Park Entrance with a memorandum of agreement with the Louisville Metro Government</a>
3	Shelbyville Rd (US-60)	Lexington Rd (US-60A) to Thierman Lane	0.69	Innovative intersections, enhanced pedestrian crossings, access management, refuge islands, speed management <a href="#">Planned: 5-80355.00: Improvements from Eastern Parkway Transportation Study between Bardstown Rd to Cherokee Park Entrance with a memorandum of agreement with the Louisville Metro Government</a>
4	Dutchmans Ln	Dutchmans Ln to Dutchmans Pkwy	0.66	Innovative intersections, access management, enhanced pedestrian crossings, lighting, speed management, consider intersections throughout
5	Breckenridge Ln (KY-1932)	Kresge Ln to I-264 Interchange	0.78	Innovative Intersections, lighting, enhanced pedestrian facilities, pedestrian access across interstate, speed management, transition zone treatments
6	Shelbyville Rd (US-60)	Thierman Lane to Fairmeade Rd	0.49	Innovative intersections, enhanced pedestrian crossings, access management, refuge islands, speed management <a href="#">Planned: 5-80355.00: Improvements from Eastern Parkway Transportation Study between Bardstown Rd to Cherokee Park Entrance with a memorandum of agreement with the Louisville Metro Government</a>
7	Shelbyville Rd (US-60)	Fairmeade Rd to Bramton Rd	0.34	Innovative intersections, enhanced pedestrian crossings, access management, refuge islands, speed management <a href="#">Planned: 5-80355.00: Improvements from Eastern Parkway Transportation Study between Bardstown Rd to Cherokee Park Entrance with a memorandum of agreement with the Louisville Metro Government</a>
8	New La Grange Rd (KY-146)	City Limit to Shelbyville Rd (US-60)	0.38	Curve realignment, innovative intersections, enhanced pedestrian crossings, lighting, short raised median with signage <a href="#">Recently resurfaced with center turn lane</a>
9	Lexington Rd (US-60A)	City Limit to Eline Ave	0.50	Enhanced pedestrian crossings, innovative intersections. <a href="#">Recently rightsized to 3-lane with bicycle lanes</a>
10	Breckenridge Ln (KY-1932)	Kresge Ln to City Limit	1.28	Innovative Intersections, lighting, enhanced pedestrian crossings, speed management



Rank	Route Name	Begin and End Limits	Length	Potential Project Strategies
11	Brown Ave	Lyndon Way to Shelbyville Rd (US-60)	0.33	Enhanced pedestrian crossing, speed management, upgraded signage, tightened north intersection
12	Chenoweth Ln (KY-1932)	City Limit to Shelbyville Rd (US-60)	0.58	Widen to 3-lane section (to Massie), enhanced pedestrian crossings <a href="#">Active KYTC project</a>
13	Browns Ln	Norbourne Blvd to Kresge Way	1.54	Enhanced pedestrian crossings, connected pedestrian crossings, signage, speed management <a href="#">Local priority from Kresge Way to Springhill Road</a> <a href="#">Work with schools to manage traffic and connect campuses</a>
14	N Hubbards Ln	City Limit to Shelbyville Rd (US-60)	1.41	Innovative intersections, enhanced pedestrian crossings, lighting, curve signing <a href="#">Active KYTC project</a>

Table 6-11: Potential Corridor Strategies

## System Level Approach and Strategies

The system level (or systemic) approach to safety identifies and addresses high-risk features across the entire roadway network rather than focusing solely on specific crash locations, as in the reactive approach. Risk factors for St. Matthews' roadway network were identified by analyzing crash and roadway data. The major safety challenges appear to be related to intersections and high severity crashes often involve driver inattention/distraction. Another critical issue is the safety of vulnerable road users.

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

### Strategy 1 – Intersection Safety Improvements

Given that driver inattention or other errors lead to severe crashes in St. Matthews, it is recommended that the city consider countermeasures that could either reduce the likelihood of the error or reduce the severity of the crash when the error occurs. Please note that the city already is implementing several of the countermeasures listed below.

The types of countermeasures that could reduce the likelihood of the errors include citywide implementation of backplates on signals, upgraded intersection lighting, upgraded intersection striping, smaller intersection turning radii (with truck aprons where needed).

Improvements that would reduce the severity of the crashes when they occur include the implementation of roundabouts, lane narrowing (using striping only), speed feedback signs, and other designs and operational measures that help reduce vehicles speeds.



## **Strategy 2 – Designs that Minimize Severity of Distracted Driving Crashes**

Innovative intersection designs can reduce the severity of distracted driving crashes because the kinetic energy is dissipated. For example, roundabouts reduce the number of high-speed angle crashes and instead result in more low speed sideswipe and rear end crashes. The city should continue to implement these types of intersections with future roadway and development projects.

## **Strategy 3 – Driver Inattention Behavioral and Education Programs**

St. Matthews could work with local community groups, churches, schools, and businesses to promote awareness of the impacts of distracted driving.

## **Strategy 4 – Vulnerable Road User Safety Upgrades**

Many of the countermeasures listed above would benefit pedestrians and bicyclists. In particular, improved crosswalk signing and striping and intersection lighting would be beneficial. Other upgrades could include completion of missing sidewalk connections and lighting along roadways, especially near side-streets and driveways.

## **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 City's capacity to execute each action. In cases where the City 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 4 years)	1	Adopt updated traffic calming and/or updated safety related codes and policies	Chapter 5	Work with 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 KYTC to identify and agree on a project and match funding	Infrastructure
	3	Implement initial low-cost Speed Management strategies on HIN corridors	Chapters 3, 4 and 6; Systemic Sec.	Work with law enforcement and KYTC to identify key corridors	Operational
	4	Continue to support targeted speed and traffic control enforcement	Chapter 3 and 4	Work with law enforcement and KYTC to identify key locations	Operational
Mid Term (4 to 8 years)	5	Implement one easy to implement systemic infrastructure focused project	Chapters 3 and 6; Systemic Sec.	Work with KYTC to identify a promising project and funding	Infrastructure
	6	Implement high priority HIN segment project	Chapter 3 and Chapter 6	Work with KYTC to identify a promising project and funding	Infrastructure
	7	Implement high priority intersection project	Chapter 3 and Chapter 6	Work with KYTC to identify a promising project and funding	Infrastructure
	8	Implement safety focused local street/highway upgrades and maintenance	Chapter 3 and Chapter 6	Use local funds to advance priority local projects / maintenance	Infrastructure
	9	Initiate citywide safety outreach; Consider focusing on distracted driving and vulnerable road users	Chapter 3	Work with KIPDA and other jurisdictions to develop a multi-agency outreach approach	Behavioral
Long Term (9+ years)	10	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
	11	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
	12	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
	13	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	14	Continue Local Safety Meetings	Chapters 2 and 4	Schedule quarterly meetings	Policy / Procedures
	15	Collaborate with KIPDA to monitor, assess, and publicly report progress	Chapter 7	Coordinate with KIPDA to implement reporting plan	Policy / Procedures
	16	Continue building staff/agency knowledge regarding highway safety	Chapters 4, 5, and 6	Coordinate with KIPDA to schedule annual sessions	Policy / Procedures

Table 6-12: Implementation Action Plan Timeline



## 7. Progress and Transparency

The City of St. Matthews, with support from KIPDA, is dedicated to ensuring 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 City 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 City.

##### *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 City 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 City 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 city-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

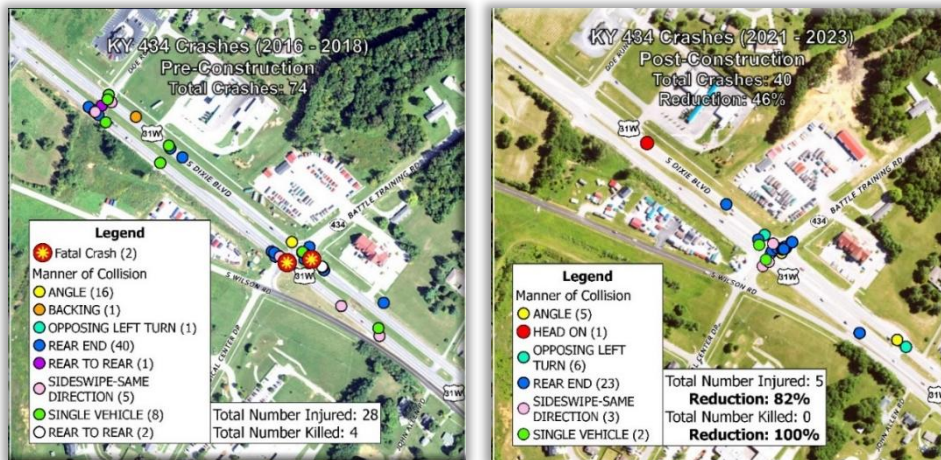
This performance measure tracks the number of safety-focused improvement projects constructed from the potential improvements listed in **Chapter 6. Strategy and Project Selection**. The total number of safety improvements implemented at the intersection and along the corridors identified on the HIN would be recorded annually.

### Crash Trends at Project Locations

When a safety improvement project has been constructed, pre-construction and post-construction crash data can be collected to document the realized crash reduction benefit. Crash trends would be assessed for each project specific improvement to 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 would be 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.

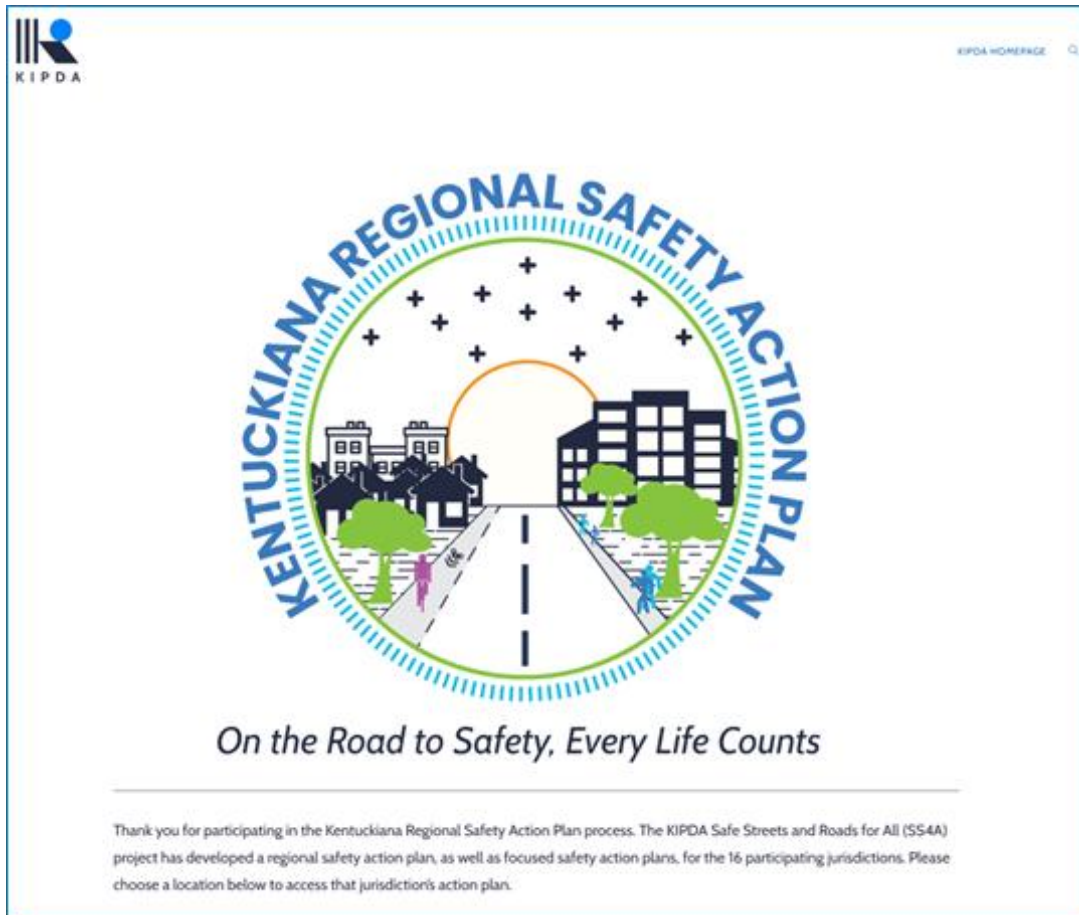
PRE-CONSTRUCTION



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 St. Matthews 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**

**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

Project	Unit	Cost Percentages ==>										(7%/yr compounded)		
		5%	15%	20%	10%	12%	15%	50%	61%	61%	Low Total 2032	High Total 2032		
		Design and Environmental				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%	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 Few alternatives Limited or no public involvement No anticipated controversy No TIP/STIP issues	6 - 9 months Minimal design No survey or geotech NEPA CE (programmatic or low level)	6 months Minimal design effort	N/A Within existing ROW	3-6 months Notification only No relocations	6 - 9 months <\$500K No phasing needed	2 to 3 years
Moderate	6-12 months Several alternatives Public involvement May require TIP/STIP mods	6-12 months Straightforward design Survey required NEPA CE (with public input)	6-12 months Moderate design effort Agency reviews	6-12 months Easements and/or minor acquisitions	6-18 months Relocations possible Agreements possible	6-12 months \$500K-\$2M Lane closures/phasing	3 to 6.5 years
Complex	12-18 months Numerous alternatives Public involvement May require TIP/STIP mods Multiple agencies involved	12-18 months Alternatives analysis Extensive design (survey, traffic, geotech) NEPA EA or CE (with public input)	12-18 months Major design effort Extensive permitting Environmental constraints	12-24 months Full ROW Relocations/eminent domain	12-18 months Major relocations Agreements required	12-24 months \$2M+ 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

