VISION ZERO DANVILLE

SAFETY ACTION PLAN 2024

CITY OF DANVILLE KY

VISION ZERO
DANVILLE

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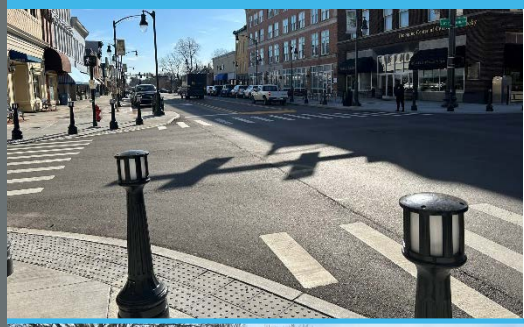


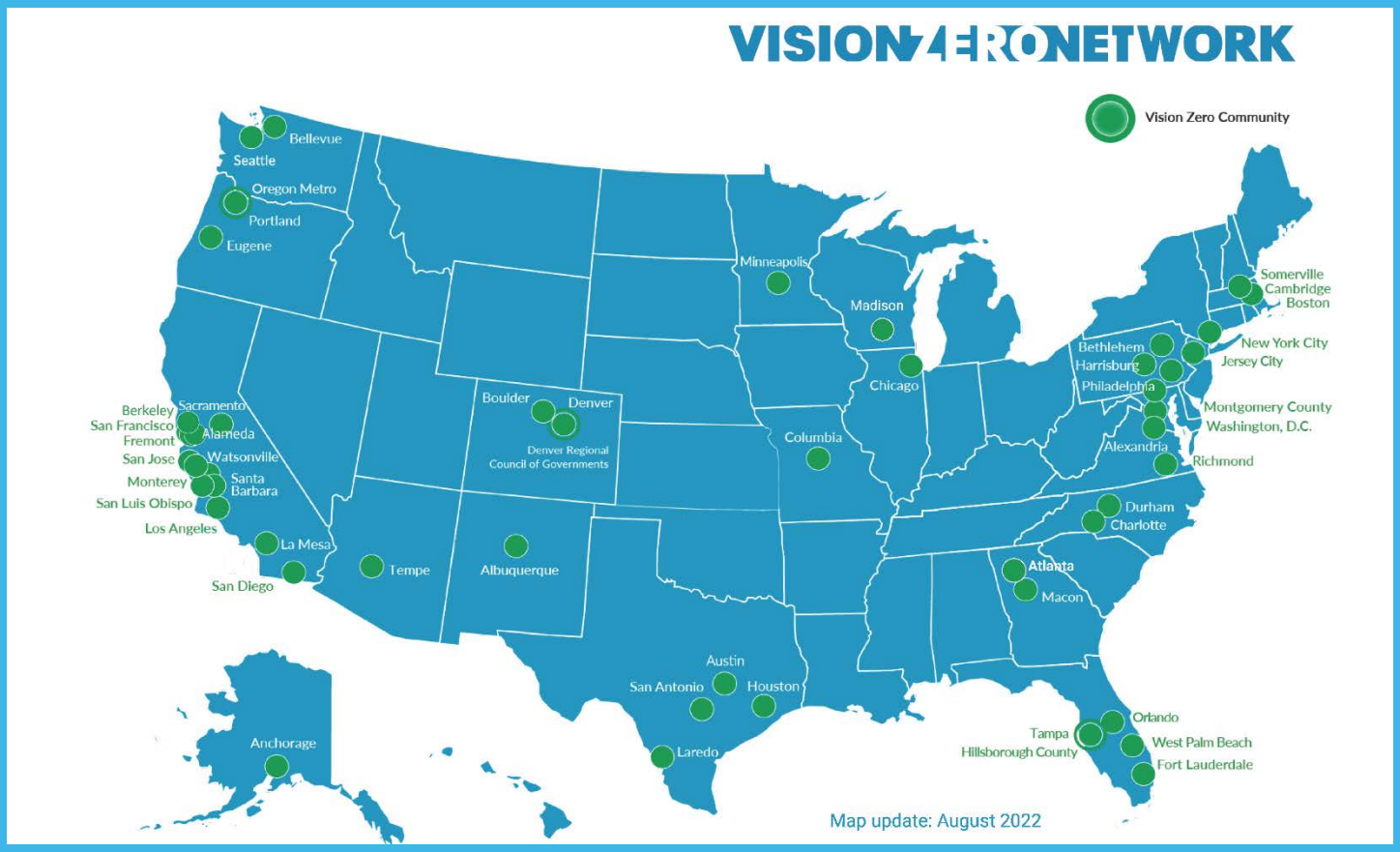
Palmer ENGINEERING

Introduction

The City of Danville is dedicated to achieving zero traffic deaths and serious injuries by 2050, shifting emphasis from vehicle throughput to safety, health and equitable mobility for all road users. This commitment is the focus of the Vision Zero Safety Action Plan, initiated with support from the Safe Streets and Roads for All (SS4A) Grant Program. The plan follows the eight key components identified in the grant.

1	Leadership commitment and goal setting
2	Planning structure
3	Safety analysis
4	Engagement and collaboration
5	Equity considerations
6	Policy and process changes
7	Strategy and project selections
8	Progress and transparency

The City of Danville is aiming to become part of the Vision Zero Network by supporting the city's goal of eliminating traffic fatalities and severe injuries among all road users by 2050, while increasing safe, healthy, and equitable mobility.



What is Vision Zero?

Vision Zero is a strategic commitment to eliminate all traffic fatalities and serious injuries driven by the principle that everyone has the right to move safely in their community. Originating in Sweden during the 1990's and now adopted globally by numerous cities, Vision Zero embraces the Safe System Approach and the principle that no loss of life is acceptable on our transportation network.

Safe System Approach

The Safe System Approach is a comprehensive approach based on the understanding that humans are fallible and may make mistakes, but these mistakes should not result in fatalities or serious injuries.

Safe System Key Principles

- *Death and Serious Injuries are unacceptable*. Every human life is valuable and their safety is the highest priority.
- *Humans make mistakes*. Recognizing human fallibility, we design and manage our roads to be forgiving, mitigating the potential consequences of errors.
- *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.* Everyone, including all stakeholders, shares the responsibility for preventing fatal and serious injuries.
- *Safety is proactive*. Take a proactive stance on safety by anticipating and addressing risks before they lead to a crash.
- *Redundancy is critical*. Ensure that multiple layers of safety are embedded within the transportation system to protect people if one layer of safety fails.

Vision Zero vs Traditional Approach

The traditional approach to safety often relies on perfect behavior from all road users and tends to react to crashes rather than prevent them. In contrast, Vision Zero accepts that humans can and will make mistakes and builds a system that is geared towards minimizing the crash severity from these errors. This proactive approach is highlighted in the comparative graphic that demonstrates the shift from an individual-focused model to a system-centric model that recognizes shared responsibilities for a safe system.

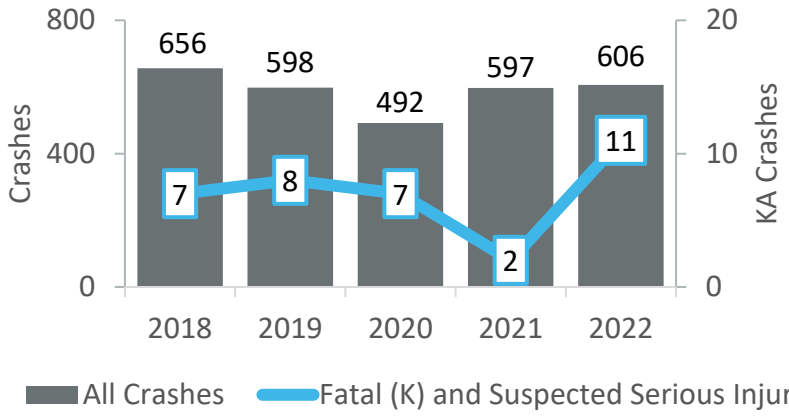
TRADITIONAL APPROACH
Traffic deaths are **INEVITBLE**
PERFECT human behavior
Prevent **COLLISIONS**
INDIVIDUAL responsibility
Saving lives is **EXPENSIVE**

VISION ZERO APPROACH
Traffic deaths are PREVENTABLE
Integrate HUMAN FAILING in approach
Prevent FATAL AND SEVERE CRASHES
SYSTEMIC approach
Saving lives is NOT EXPENSIVE

Overview

In Danville, an average of 7 crashes occur annually resulting in a serious injury or fatality, representing not just statistics, but valued community members. Recognizing the profound impact on families and the community, Danville commits to a safer transportation network through comprehensive countermeasures including infrastructure improvements, education campaigns, enforcement, and continuous evaluations identified in this Safety Action Plan. The following Safety Action Plan is based on all crashes that occurred on roads and streets in the City of Danville between 2018 and 2022.

Total and Fatal and Suspected Serious Injury Crashes



- Annual crashes decreased by 7% between 2018 and 2022, while Fatal and Suspected Serious Injury Crashes increased by 57%

Danville Crashes by Mode (2018-2022)

Vehicle

24 SERIOUS INJURY vehicle crashes

4 FATAL vehicle crashes

Pedestrian

2 SERIOUS INJURY pedestrian crashes

2 FATAL pedestrian crashes

Bicycle

0 SERIOUS INJURY bicyclist crashes

Motorcycle

3 SERIOUS INJURY motorcyclist crashes

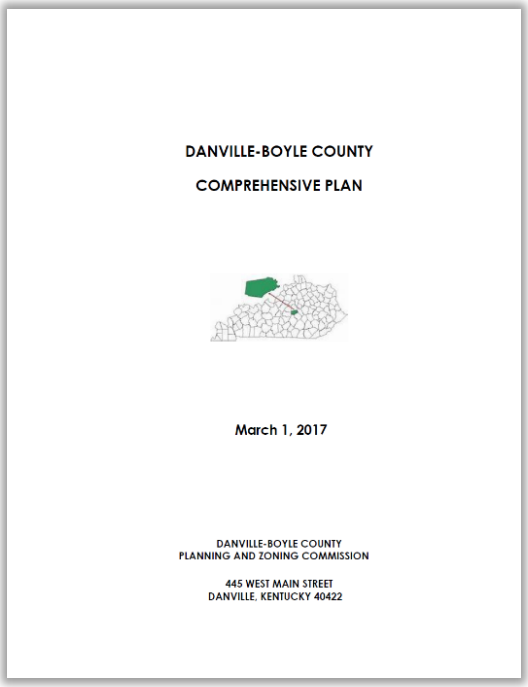
The Safety Action Plan sections follow the SS4A Safety Action Plan required components as outlined in the grant. These components reflect the process-oriented set of activities used to develop the Safety Action Plan.

1. Leadership Commitment and Goal Setting

The City of Danville is dedicated to ensuring safety for all users on the city's streets and roads. The city's commitment is demonstrated by the resolution on the following page, which states that the city's leaders have established "a goal of working towards zero traffic fatalities and serious injuries by the year 2050".

The City of Danville leadership's strong commitment to safety and implementing safety-focused strategies and policies is supported by existing current policies and programs.

The City contributed to the completion of the Danville-Boyle County Comprehensive plan in 2017. This document will guide the growth and development of Danville and Boyle County in the coming years. The plan identifies a transportation goal "*to provide and maintain an adequate, safe, and efficient transportation system that moves people and goods in a manner that results in the least harmful social, economic, and environmental impacts.*" This goal is separated into seven objectives, which provide more concrete concepts and action steps to fulfill the overall transportation goal. One of the objectives that heavily focuses on safety is to "*provide a safe transportation system by requiring developers to provide standard streets able to handle proposed traffic volumes and dedicate sufficient right-of-ways when development occurs.*" Roadway standards are set in manuals such as *A Policy on Geometric Design of Highways and Streets* by the American Association of State Highway and Transportation Officials (AASHTO), the *Highway Capacity Manual: A Guide for Multimodal Analysis* by the Transportation Research Board (TRB), or the *Manual on Uniform Traffic Control Devices* by the Federal Highway Administration (FHWA). Designing roads to these standards ensures they will have enough capacity for expected traffic and will provide consistency and proper safety for roadway users.


DANVILLE-BOYLE COUNTY
COMPREHENSIVE PLAN

March 1, 2017

DANVILLE-BOYLE COUNTY
PLANNING AND ZONING COMMISSION

445 WEST MAIN STREET
DANVILLE, KENTUCKY 40422

Improving safety through access management is another safety-related transportation objective listed in the comprehensive plan. The plan's objective is to "*limit the number of direct access points along arterial streets and county highways by encouraging the use of frontage roads and adopting access management guidelines.*" The FHWA advocates for access management by proactively managing access to land parcels adjacent to roadways. Access management can improve roadway congestion, reduce crashes, and reduce drivers delay. Access management techniques includes intersection spacing, driveway spacing, median treatments and openings, turn and auxiliary lanes, and street connections.

A third transportation objective closely related to safety is to "*encourage citizens to walk or bicycle whenever possible by providing safe sidewalks, street crossings and bike paths in cities.*" The objective ultimately aims to create a connected system of walkways to provide direct access to desired destinations without gaps or abrupt changes. Providing pedestrians with a designated place to walk will not only improve their comfort and accessibility, but it will also help reduce pedestrian crashes occurring mid-block and along the roadway.

RESOLUTION NO. 2024-03-25-01

WHEREAS, the City of Danville, Kentucky, (hereinafter "City") has lost 15 persons since 2014 and has witnessed another 166 persons experience a serious or life-threatening injury due to traffic crashes within the City; and

WHEREAS, the economic impact since 2018 of fatal and serious injury crashes in the City is over $85 million; and

WHEREAS, the City aspires to reduce, and eventually eliminate, traffic related fatalities and serious injuries; and

WHEREAS, the City is utilizing a planning grant through the Safe Streets and Roads for All Program (SS4A) and coordinating with the Kentucky Transportation Cabinet Office of Highway Safety Improvement Program to develop a safety action plan for Danville to analyze existing conditions, historical trends, systemic & specific needs and to identify projects and strategies to address identified problems; and

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

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

NOW, THEREFORE, be it RESOLVED by the Board of Commissioners of the City of Danville, Kentucky, that the City hereby establishes a goal of working towards zero traffic fatalities and serious injuries by the year 2050.

This the 25th day of March, 2024.

J. H. ATKINS, MAYOR
CITY OF DANVILLE, KENTUCKY

ATTESTED BY:

ASHLEY RAIDER, CITY CLERK
CITY OF DANVILLE, KENTUCKY
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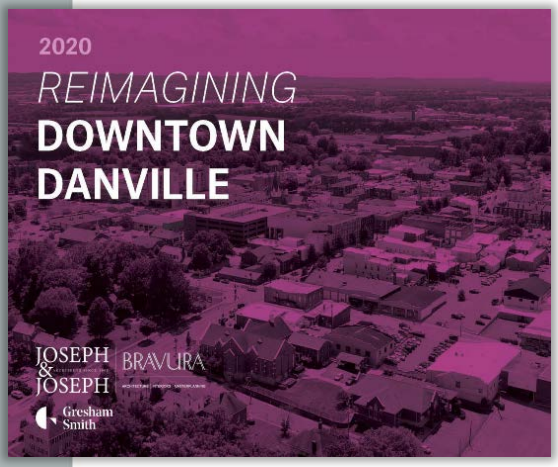


The City completed a Reimagining Downtown Danville master plan in 2020. The goal of this study was "*to lay out the vision for our town, inspire investment….as well as prepare us for the future*." The transportation objective in the plan is to improve safety and usability of streets for all road users by "more *downtown connectivity, traffic calming, pedestrian safety, and sidewalk appeal*." The objectives mentioned here reiterate the concepts found in the Danville-Boyle County Comprehensive Plan and the Kentucky Transportation Cabinet Complete Streets manual. Specific ideas for downtown street improvements include extending 'bump-outs' at street corners to help pedestrians crossing the street, installing roundabouts at the ends of downtown, and installing pedestrian multi-use paths.

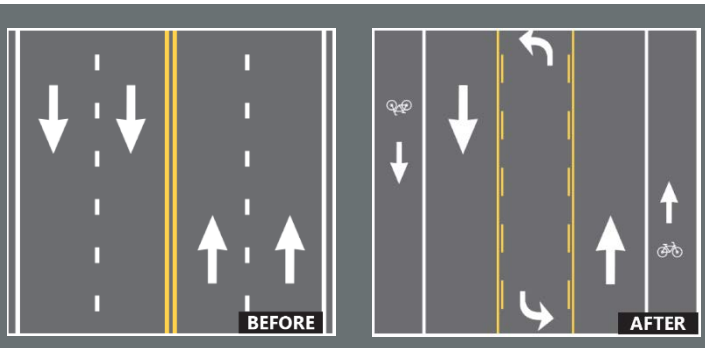
City Supported Safety Initiatives

The City of Danville is dedicated to pushing forward with safety initiatives, actively engaging in both its own projects and those in collaboration with external partners. A variety of safety-focused transportation projects have been successfully completed throughout Danville, including a road diet / downtown sidewalk project and innovative intersection projects. These projects, often implemented in coordination with the Kentucky Transportation Cabinet (KYTC), are described further below.

Main Street (US 150) Downtown Streetscape Project & Road Diet

The main goals of the US 150 project were to increase pedestrian safety, slow traffic, and promote economic development downtown by making it more desirable and accessible. Initiated with a road diet in 2019, the project narrowed the roadway from four lanes to three, dedicating extra space for deliveries in the median, rather than a traditional center turn lane. In 2022 construction began on additional improvements and was completed in fall of 2023. The updates included widening sidewalks and introducing pedestrian bump-outs at intersections, shortening crossing distances and increasing pedestrian visibility for drivers. The project also featured new street lighting, traffic signals, and high-visibility crosswalks, all improving visibility and safety for all road users.

A Road Diet typically involves reconfiguring a four-lane undivided roadway to a three-lane roadway consisting of two driving lanes and a center two-way left-turn lane (TWLTL). The Road Diet is an FHWA proven safety countermeasure, reducing rear-end, left-turn, and right-angle crashes, decreasing traffic speeds, and improving safety for pedestrians and bicyclists by simplifying crossing points and traffic flow.



Shakertown Road (KY 33) and KY 2168 Roundabout

Roundabouts, endorsed by the Federal Highway Administration (FHWA) as a proven safety countermeasure, enhance traffic flow and safety by reducing speeds and conflict points. Roundabouts can replace signals, two-way stop-controlled intersections, or all-way stop-controlled intersections, offering safer crossing for bicyclists and pedestrians. (FHWA, n.d.).

The city, supporting Kentucky Transportation Cabinet's project, endorsed the selection of a roundabout at Shakertown Road (KY 33) and KY 2168 as part of the new roadway project. The roundabout has since proven successful, notably preventing severe crashes and fatalities.

Danville Bypass and Stanford Road RCUT Intersection

Recognizing the Danville Bypass and Stanford Road intersection for its higher than expected crash rate, KYTC initiated a comprehensive study that led to the implementation of a Reduced Left-Turn Conflict (RCUT) design. This innovative intersection type, which reduces conflict points by redirecting left-turn and through-traffic into a right-turn followed by a u-turn, will improve safety and traffic flow at the intersection. The RCUT intersection significantly reduces the likelihood of high-severity angled and head-on crashes. The city-endorsed, KYTC implemented RCUT project represents a commitment to enhancing safety in the City of Danville.

2. Planning Structure

In late 2023, the Vision Zero Danville Safety Advisory Group (SAG) was established, uniting a diverse array of agencies and entities to collaborate on the Vision Zero Safety Action Plan. The multidisciplinary team, comprising key stakeholders in the community, include:

- **City of Danville**
- **Kentucky Transportation Cabinet (KYTC)**
- **Ephraim McDowell Regional Medical Center**
- **Bluegrass Ride**
- **Boyle County Fiscal Court**
- **Kentucky School for the Deaf**
- **Danville Independent Schools**
- **Boyle County Schools**
- **Danville – Boyle County African American Historical Society**

The SAG's primary objective is advising the City of Danville on the Safety Action Plan and monitoring development and implementation. The SAG focused on identifying safety needs and exploring both reactive and systemic safety countermeasures. By integrating diverse perspectives, the group aimed to create a comprehensive plan that aligns with the five objectives of the Safe System Approach. This collaborative structure ensures that the plan is responsive to the specific needs of Danville and effectively addresses various safety challenges.

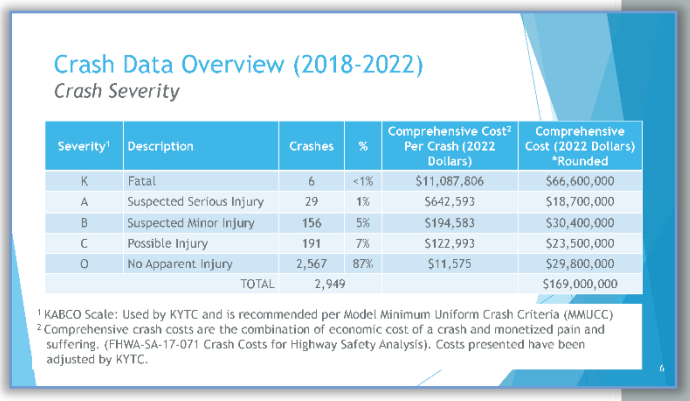
To enhance accessibility and engagement, the SAG utilized a hybrid approach for meetings, accommodating both in-person and virtual participation. A brief summary of meetings held includes:

JANUARY

- Reviewed the background and grant requirements
- Discussed the overall process and objectives.
- Presented an overview of crash trends
- Initiated the process for identifying and ranking high-risk corridors and intersections.
- Discussed proven safety countermeasures

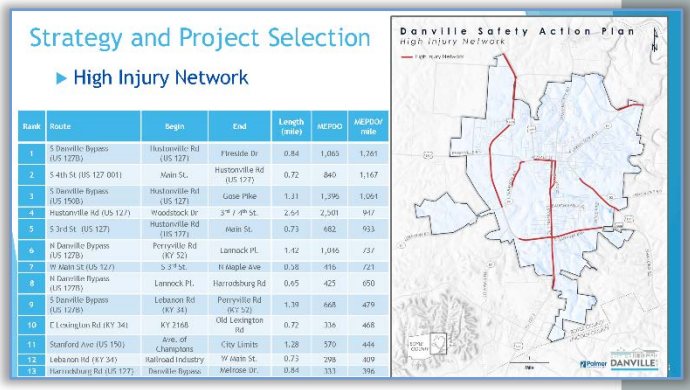
FEBRUARY

- Reviewed detailed crash analysis and trends
- Discussed approaches to reactive and systemic analysis
- Identified potential focus areas
- Discussed prioritization and reviewed top reactive lists
- Reviewed online survey and public meeting input
- Introduced potential countermeasures



MARCH

- Gathered feedback on various locations and proposed improvements
- Introduced systemic safety risks identified through earlier analysis
- Presented safety focused considerations for planning
- Presented strategies and project selections



The SAG is dedicated to continuous engagement and cooperation as the Safety Action Plan progresses from planning to implementation and further. Regular meetings will continue focusing on assessing the effectiveness of strategies, incorporating new data and feedback from community engagement, and making necessary adjustments. This approach ensures that the plan stays relevant and meets Danville's changing safety requirements effectively.

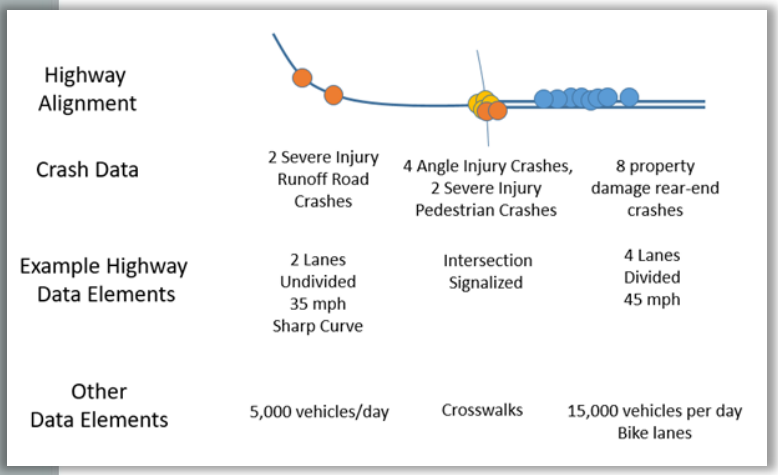
3. Safety Analysis

Study Area

The study area for the Safety Action Plan encompasses all public streets within Danville's city limits. The study period for crash data is from January 1, 2018 to December 31, 2022.

Methodology

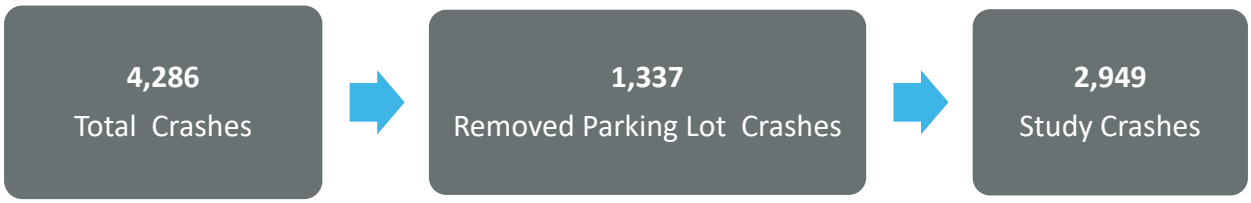
Crash data was provided by KYTC through an agreement with the Kentucky State Police (KSP). In Kentucky, state and local police complete detailed collision reports, which include information on the individuals and vehicles involved, crash location, manner of collision, roadway characteristics, and individual injury severity. The collision reports are then submitted to KSP, reviewed for accuracy, and stored in a secure database managed by KSP. As part of KYTC's use agreement, the crash data provided used in the study does not contain personally identifiable information (PII).



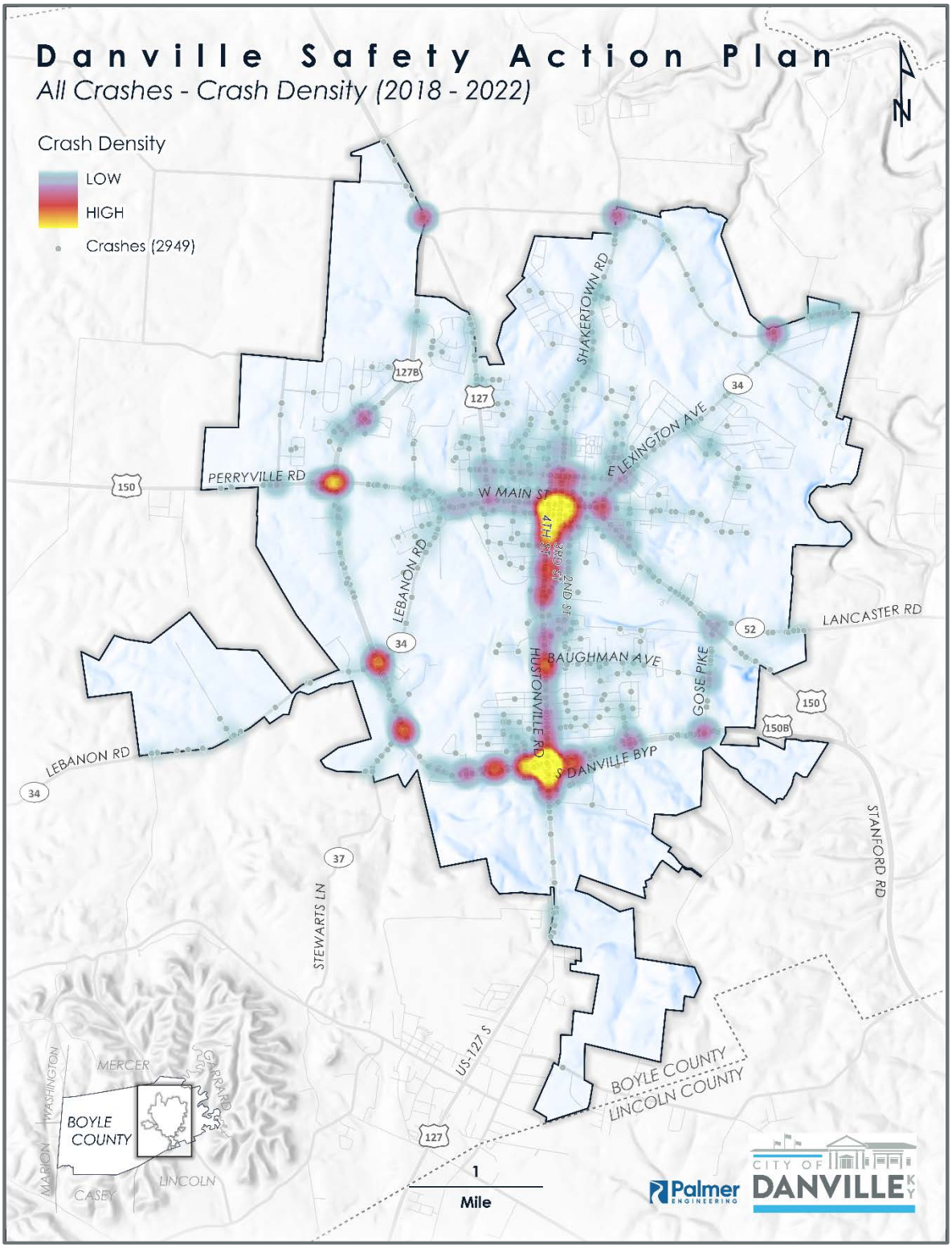
KYTC provided geographic information system (GIS) files of roadway and traffic data, known as the Highway Information System (HIS) database. HIS data includes roadway characteristics and traffic data for state-owned roadways. The crash data provided was joined with GIS information to create a crash database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

Crash Data

The initial crash data collected from KYTC included 4,286 crashes in the city from 2018 to 2022. There were 1,337 crashes that occurred in a parking lot. The final crash database for the study included 2,949 crashes.



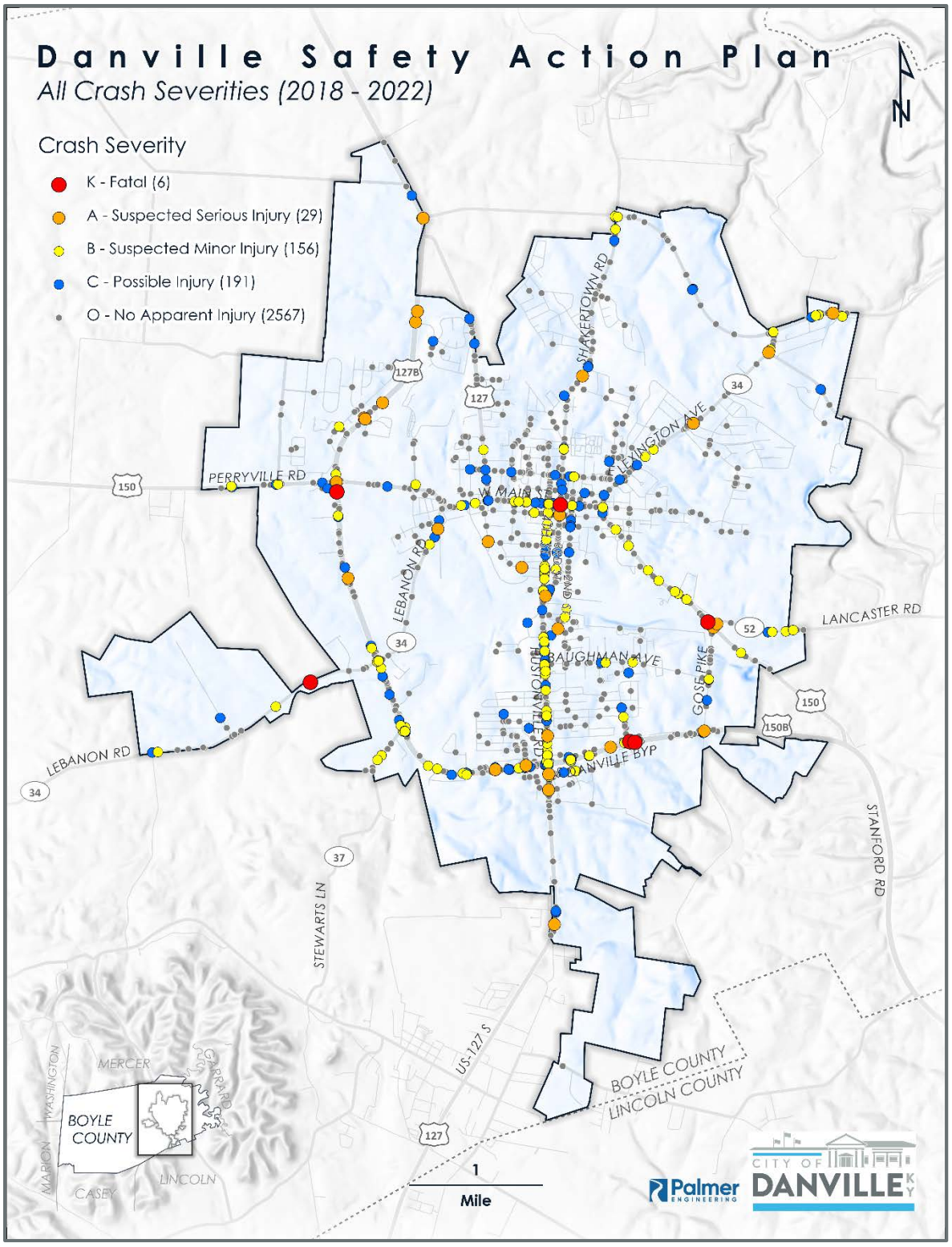
The following crash density map represents the density of crashes within the city. The corridors with the highest density of crashes include Main Street, 3rd Street, 4th Street and the Danville Bypass.



The crash database provided by KYTC utilizes the KABCO Crash Severity Designation. The KABCO scale is recommended as best practice for individual injury reporting per the Model Minimum Uniform Crash Criteria (MMUCC) developed by the National Highway Traffic Safety Administration (NHTSA). The KABCO scale is used by the Kentucky State Police in the field data collection for crashes. The severity of a crash is based on the greatest severity of injury occurring in the crash. For instance, if someone is killed in a crash, the crash is coded as a "K" or fatal crash. The following table provides a breakdown of the total crashes by severity.

Severity	MMUCC Description	Crashes	%
K	Fatal	6	<1%
A	Suspected Serious Injury	29	1%
B	Suspected Minor Injury	156	5%
C	Possible Injury	191	7%
O	No Apparent Injury	2,567	87%
	TOTAL	**2,949**	

The crash maps on the following pages show crash location by severity.


Danville Safety Action Plan
All Crash Severities (2018 - 2022)
Crash Severity
K - Fatal (6)
A - Suspected Serious Injury (29)
B - Suspected Minor Injury (156)
C - Possible Injury (191)
O - No Apparent Injury (2567)
N
PERRYVILLE RD
W MAIN ST
LEBANON RD
SHAKERTOWN RD
LEXINGTON AVE
BAUGHMAN AVE
LANCASTER RD
GOSE PIKE
DANVILLE BYP
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
150
150B
52
37
MERCER
BOYLE COUNTY
GARRARD
WASHINGTON
MARION
CASEY
LINCOLN
1
Mile
Palmer ENGINEERING
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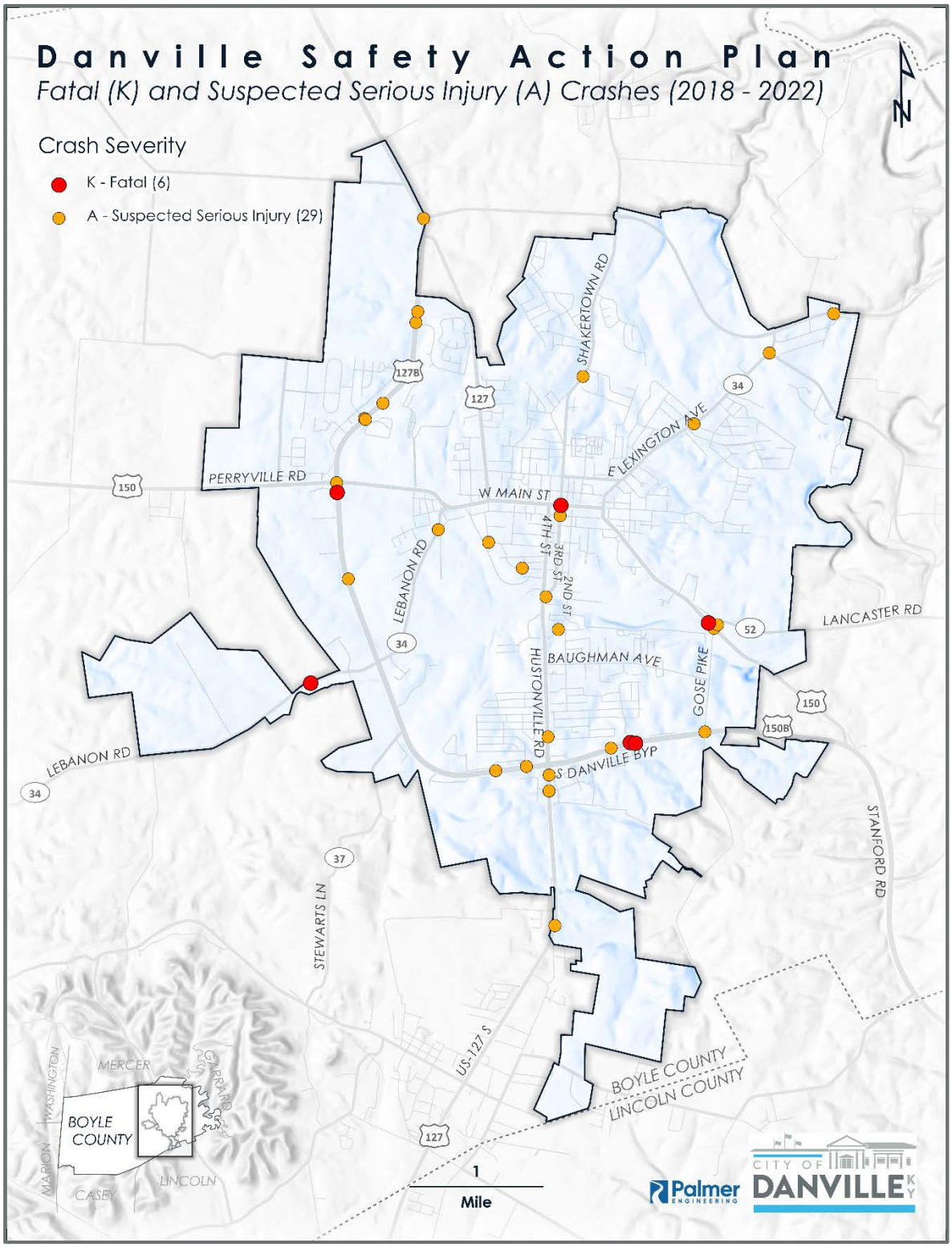
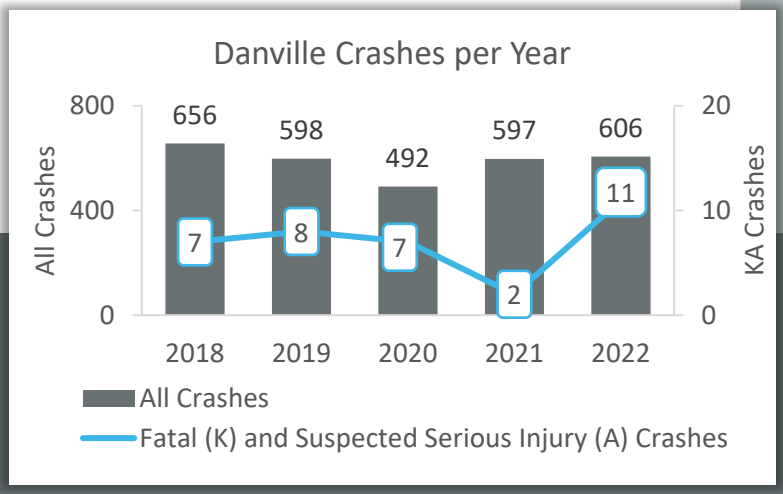

Danville Safety Action Plan
Fatal (K) and Suspected Serious Injury (A) Crashes (2018 - 2022)
Crash Severity
K - Fatal (6)
A - Suspected Serious Injury (29)
N
PERRYVILLE RD
W MAIN ST
E LEXINGTON AVE
SHAKERTOWN RD
LEBANON RD
4TH ST
3RD ST
2ND ST
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
S DANVILLE BYP
LANCASTER RD
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
150
150B
52
37
MERCER
WASHINGTON
GARRARD
MARION
CASEY
LINCOLN
BOYLE COUNTY
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY

Crash Trends

Annual Crash Trends

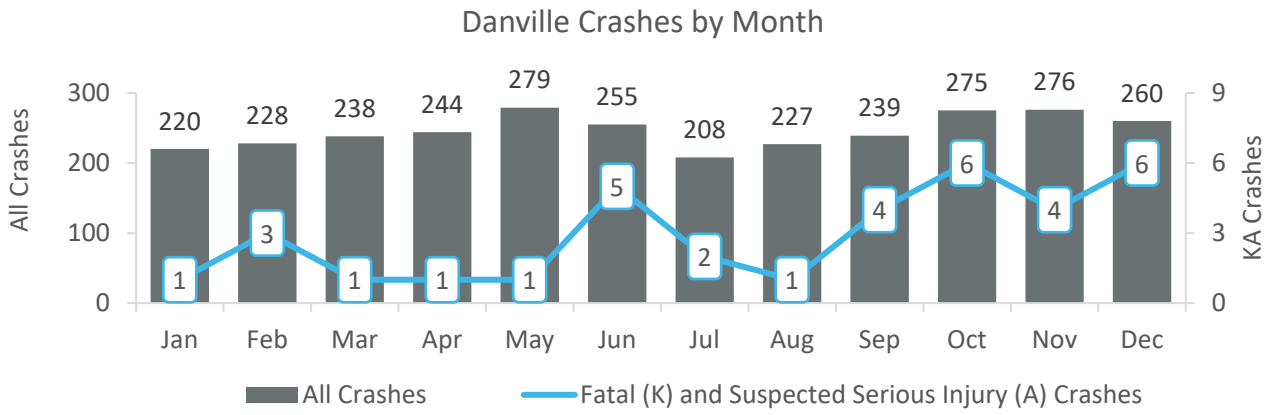
Between 2018 and 2022, annual crashes decreased by 7%, while fatal and suspected serious injury crashes increased by 57%.

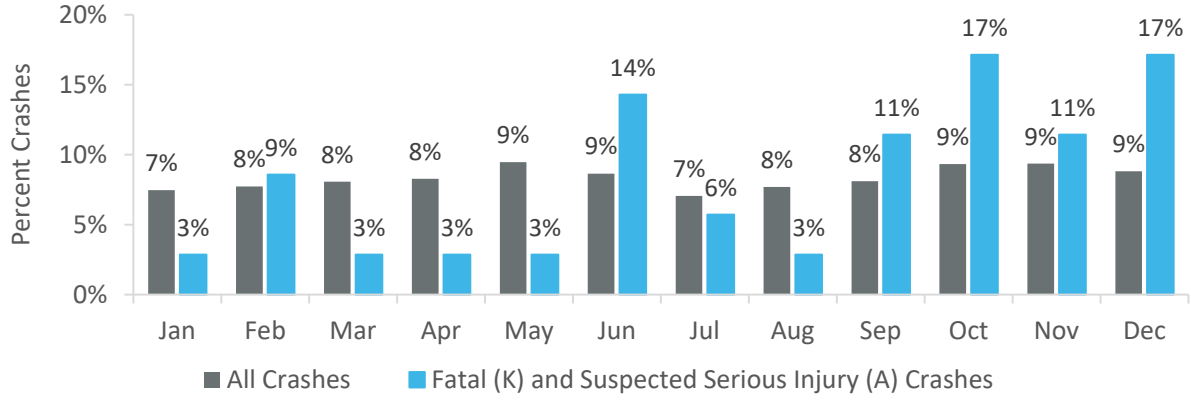
The COVID-19 pandemic greatly affected traffic patterns and crash reporting. In early 2020, to minimize potential exposure, police operating procedures were modified to minimize potential exposure. Consequently, the reported number of crashes in 2020 is likely distorted, as crashes were underreported compared to the rest of the study area.



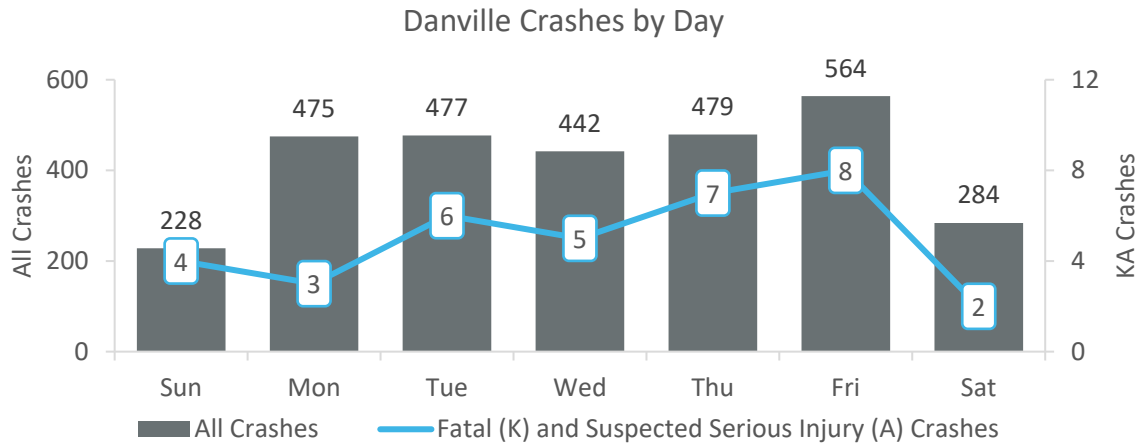
Crash Occurrence

There was a slight seasonal trend of total crashes increasing during the winter months. June, October, and December were the highest months for fatal and suspected serious injury crashes. In Kentucky, the month of October is normally the highest crash month due to the seasonal change to fall, days becoming shorter and temperatures falling.

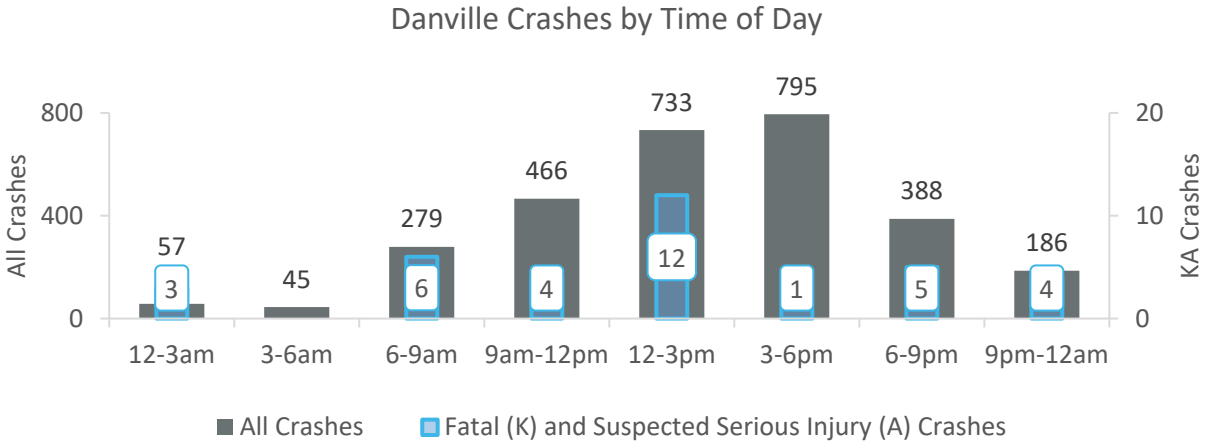




There was a higher crash occurrence on Friday than any other day of the week. The higher crashes on Friday is likely due to increased weekend travel and end of workweek driving behavior. The weekends saw the fewest overall crashes perhaps related to lower traffic volumes. The frequency of severe crashes increases as the workweek progresses.



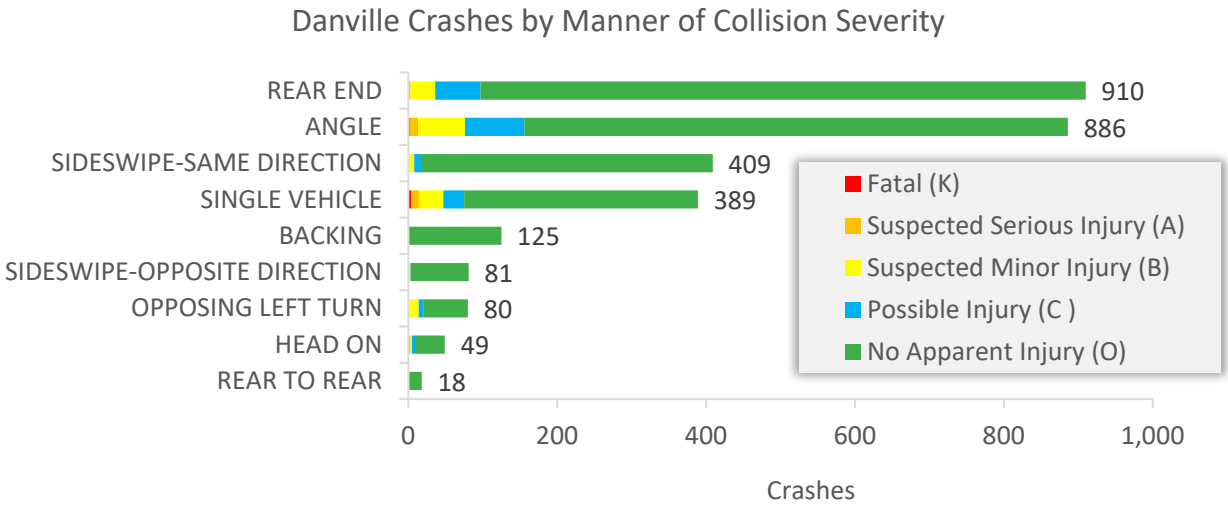
The highest total number of crashes, 795, occurred within the 3:00-6:00 PM period, typically characterized by the evening rush hour. Despite this time period having the most crashes, the number of fatal and suspected serious injury crashes remained notably low. In contrast, the midday period of 12:00-3:00 PM experienced the most fatal and suspected serious injury crashes (12), representing 34% of all fatal and suspected serious injury crashes.

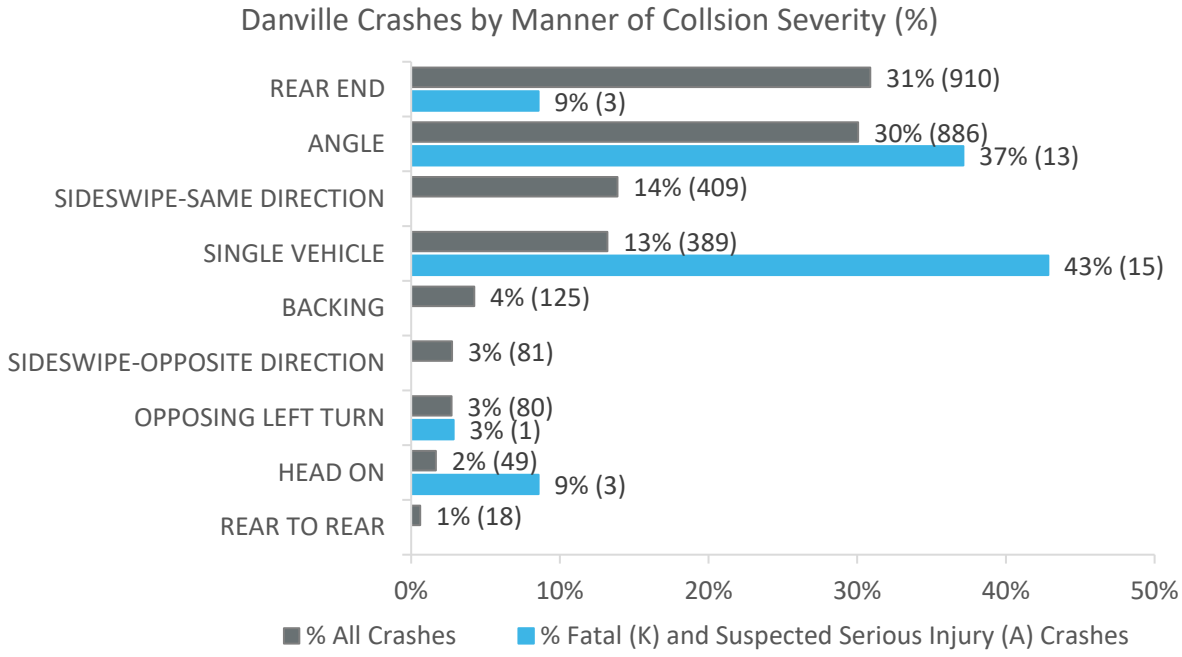


Manner of Collision

Rear-end crashes are the most frequent type of crash, totaling 910 crashes, followed by angle crashes at 886 crashes.

The most severe crashes predominantly involve single vehicles crashes and angle crashes, representing 43% and 37% of all fatal and suspected serious injury crashes, respectively. Single vehicle crashes include crashes with pedestrians and angle crashes typically happened at intersections. Both crash types typically result in more severe injuries.





Driver Behavior

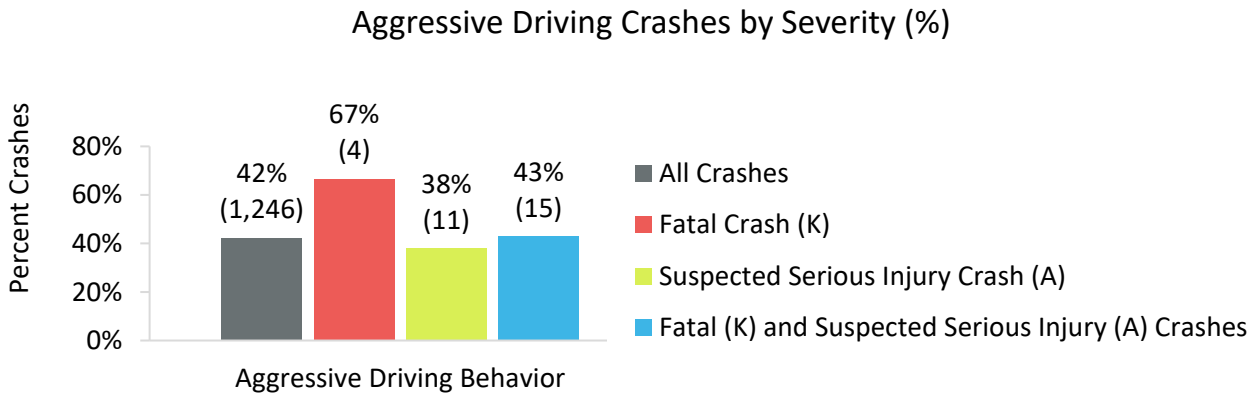
Driver behavior is a shared responsibility and can be the determining factor in a crash.

Aggressive Driving

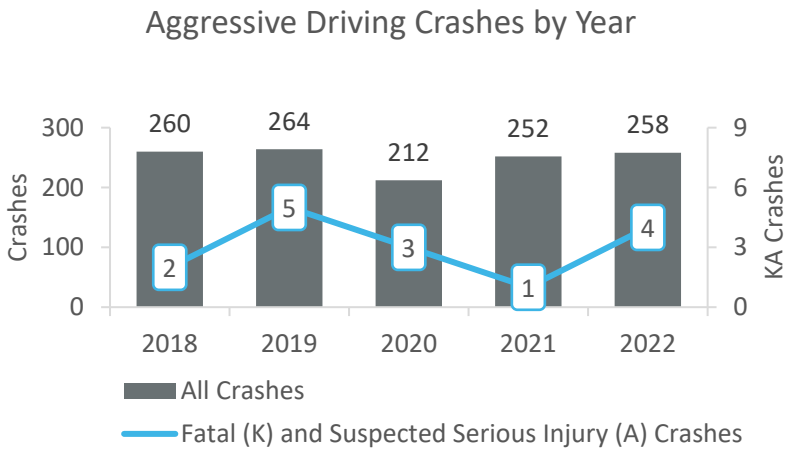
Aggressive driving is generally defined as actions by drivers that result in adverse safety effects to other drivers or pedestrians that contribute to crashes. Aggressive driving crashes are coded to have the following behaviors.

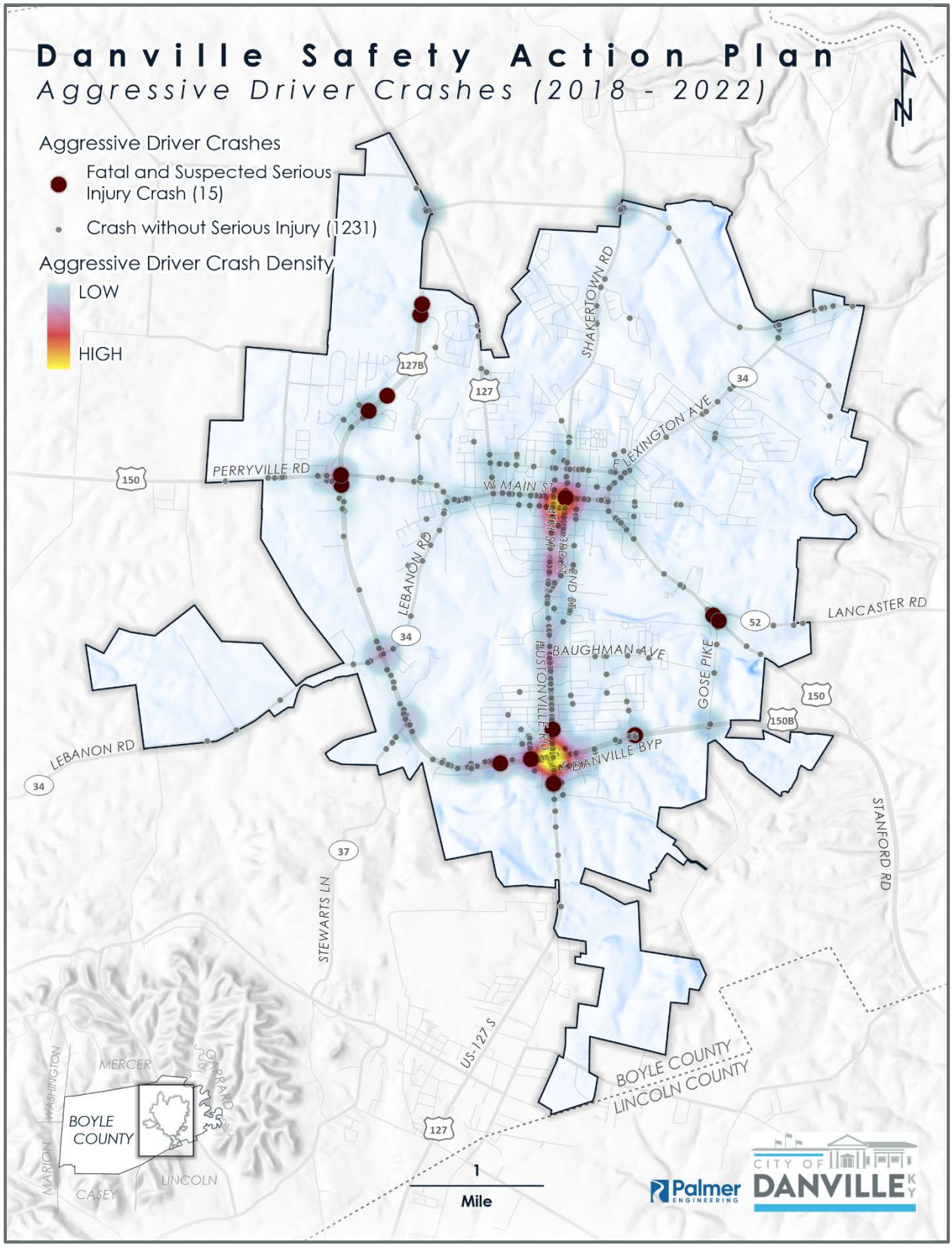
- Failure to yield to right of way
- Following too close
- Traveling too fast for conditions
- Disregarding traffic control
- Exceeding posted speed limit
- Improper passing
- Weaving in traffic

Crashes involving aggressive driving disproportionality contribute to fatal and suspected serious injury crashes compared to all crashes. While aggressive driving behaviors are identified in 31% of all crashes, they represented 40% of those crashes leading to fatalities and severe injuries, indicating a higher risk of severity associated with aggressive driving behaviors.



Annually, aggressive driving crashes were consistent from 2018 to 2022 with a slight decrease in 2020.




Danville Safety Action Plan
Aggressive Driver Crashes (2018 - 2022)
N
Aggressive Driver Crashes
Fatal and Suspected Serious Injury Crash (15)
Crash without Serious Injury (1231)
Aggressive Driver Crash Density
LOW
HIGH
SHAKERTOWN RD
127B
127
34
E LEXINGTON AVE
150
PERRYVILLE RD
W MAIN ST
1ST ST
2ND ST
LEBANON RD
34
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
52
LANCASTER RD
150
150B
LEBANON RD
34
S DANVILLE BYP
37
STEWARTS LN
STANFORD RD
US-127 S
127
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
CASEY
LINCOLN
1
Mile
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Distracted Driving

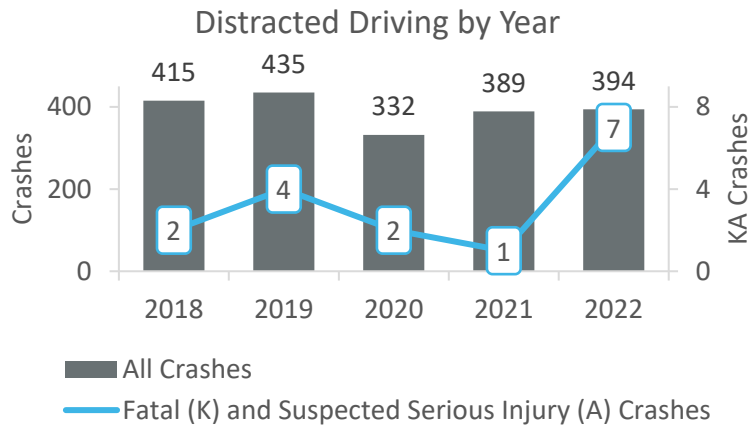
Distracted driving is any activity by the operator of a motor vehicle that has the potential to distract the operator from the primary task of driving, increasing the risk of crashing. The three main types of distracted driving involve drivers removing their eyes from the road, hands off the wheel, and mind away from driving. In Danville, fatal and suspected serious injury crashes linked to distracted driving were consistent throughout the study period.

BETWEEN 3:00-6:00 PM

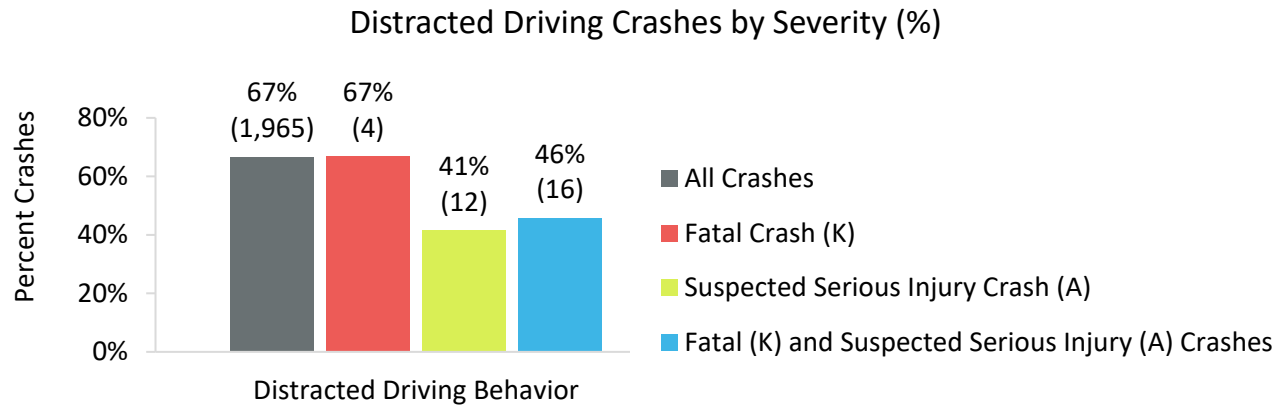
75%

OF THE CRASHES ARE ATTRIBUTED TO

DISTRACTED DRIVING



In Danville, 46% of fatal and suspected serious injury crashes were linked to distracted driving, underscoring the rising concern with distracted driving.



Driving while using a cell phone reduces the amount of brain activity associated with driving by:

37%

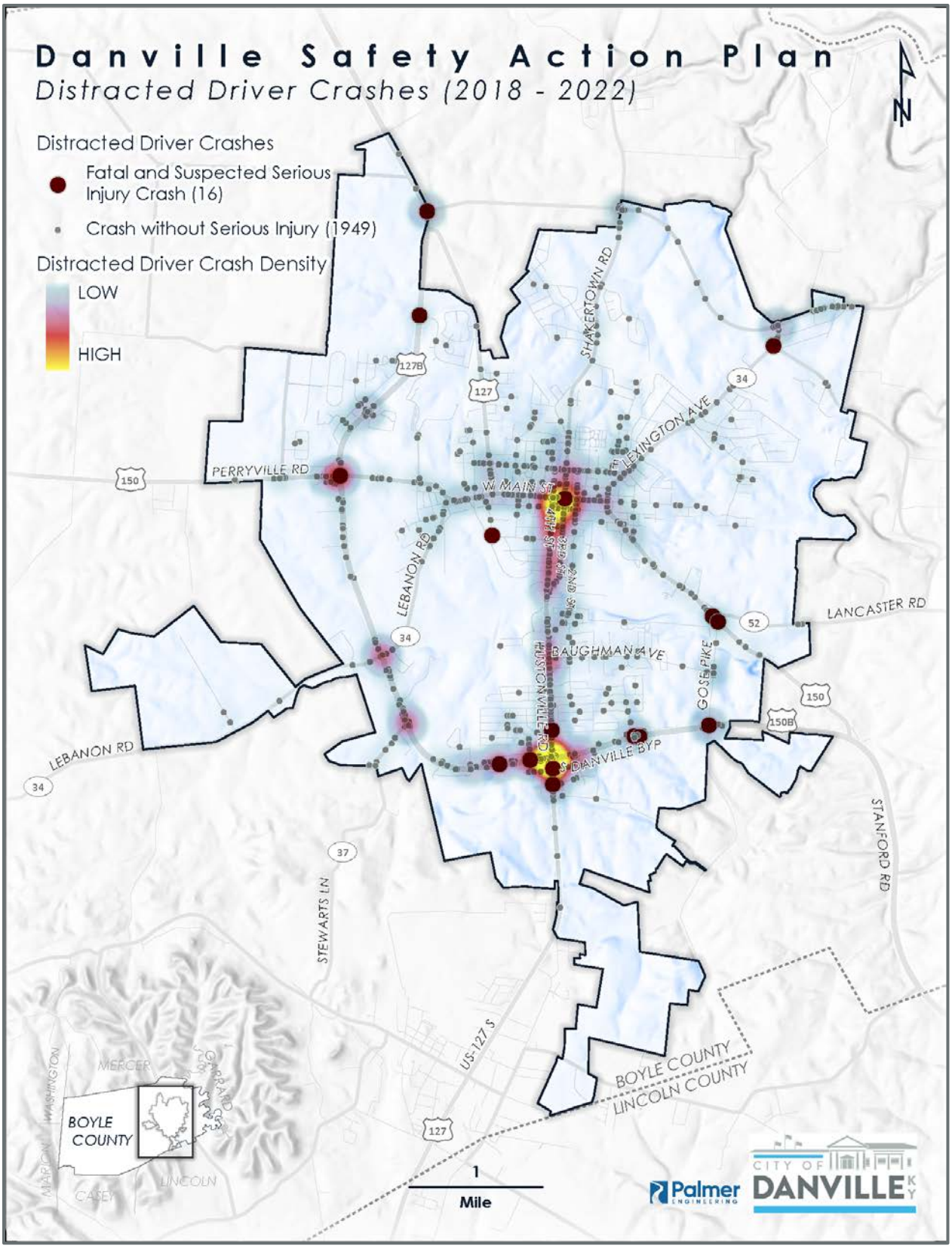
(Source: Carnegie Mellon)

Handheld or hands-free cell phone use while driving delays reaction time as much as a blood alcohol concentration at the legal limit of .08 percent.

(Source: University of Utah)

Kids are **4** times more distracting than adults as passengers and infants are **8** times more distracting.

(Source: AAA Foundation for Safety)


Danville Safety Action Plan
Distracted Driver Crashes (2018 - 2022)
N
Distracted Driver Crashes
Fatal and Suspected Serious Injury Crash (16)
Crash without Serious Injury (1949)
Distracted Driver Crash Density
LOW
HIGH
PERRYVILLE RD
W MAIN ST
E LEXINGTON AVE
SHAKERTOWN RD
LEBANON RD
S 4TH ST
S 2ND ST
HUSTONVILLE RD
BAUGHMAN AVE
GOSE PIKE
LANCASTER RD
S DANVILLE BYP
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
150
52
150B
37
MERCER
GARRARD
BOYLE COUNTY
MARION
WASHINGTON
CASEY
LINCOLN
1
Mile
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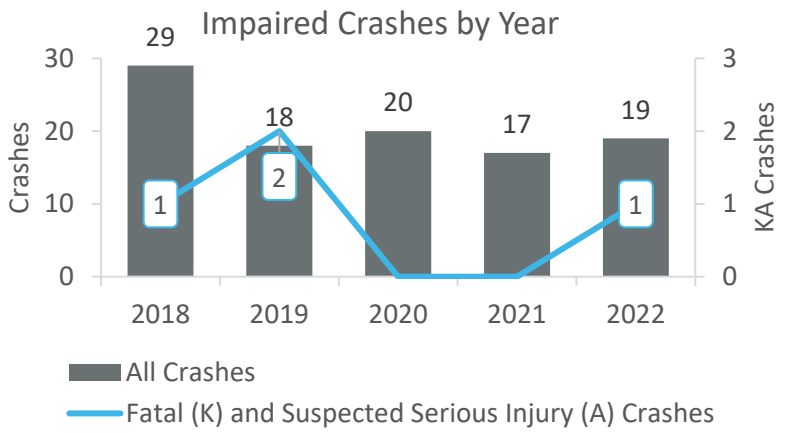
Impaired Driving

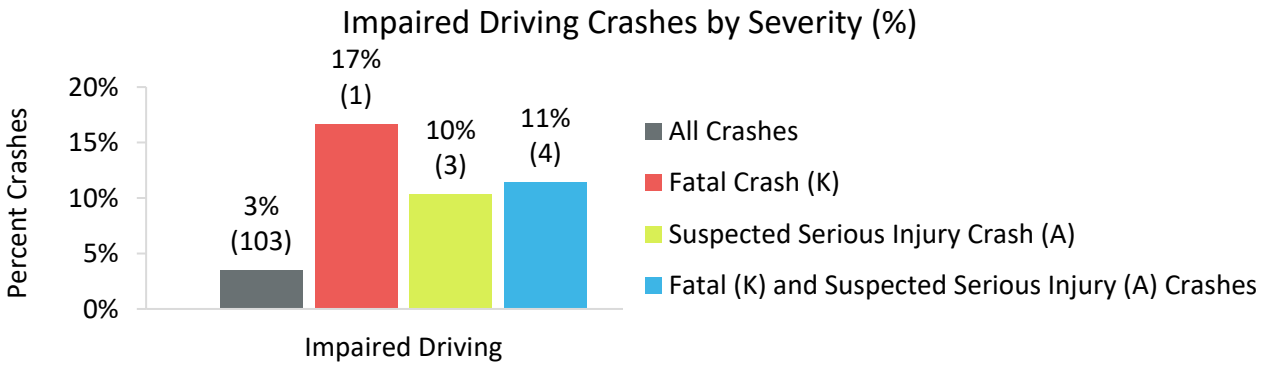
Impaired driving is recognized as driving while under the influence of alcohol or narcotics.

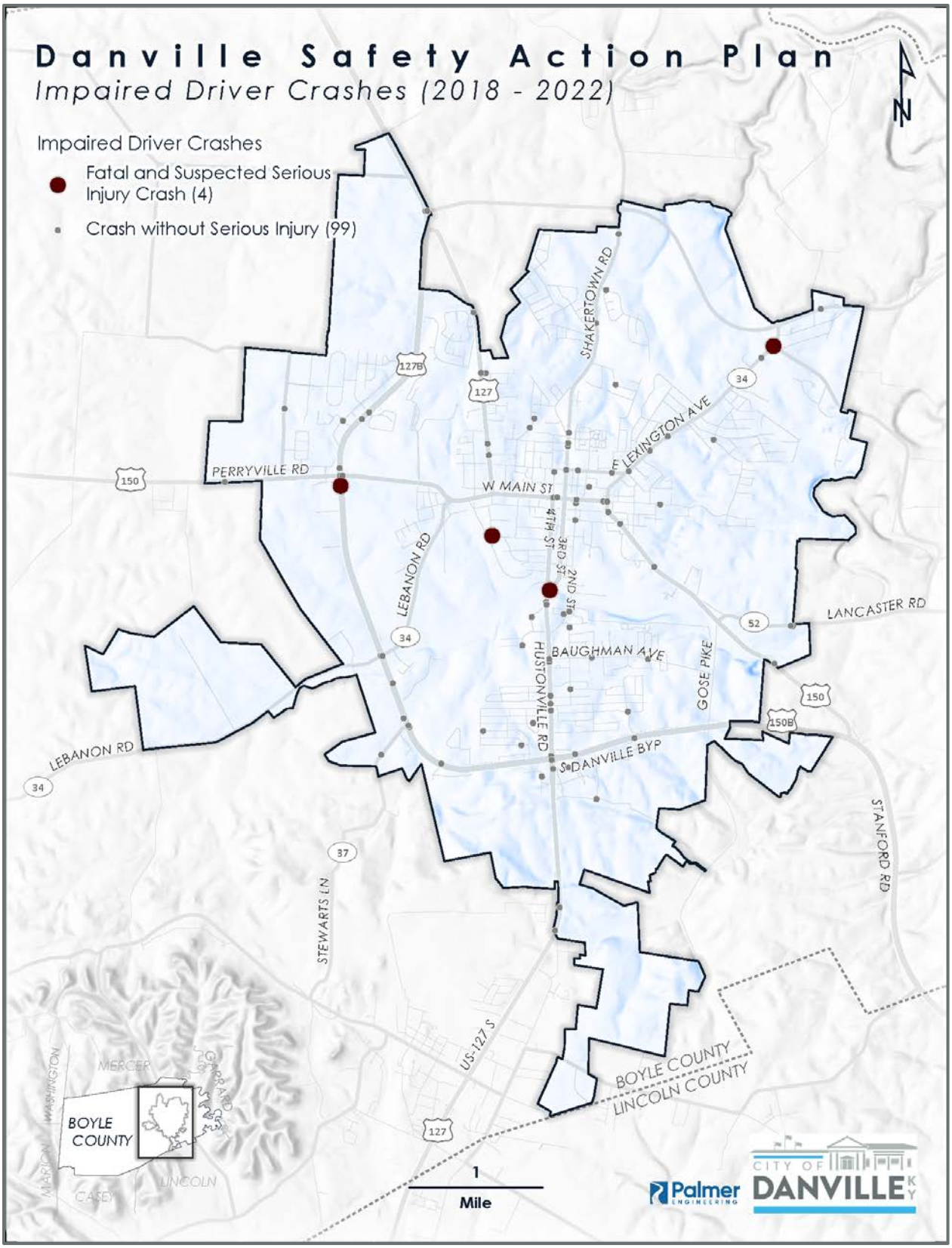


33%

OF CRASHES OCCURING BETWEEN **12:00 AM – 3:00 AM** INVLOVED **IMPAIRMENT**

Impaired driving significantly increases the likelihood of fatal and suspected serious injury crashes. Though only 3% of all crashes involve impaired driving, impaired driving accounts for 11% of crashes that result in fatalities or severe injuries.




Danville Safety Action Plan
Impaired Driver Crashes (2018 - 2022)
Impaired Driver Crashes
Fatal and Suspected Serious Injury Crash (4)
Crash without Serious Injury (99)
N
PERRYVILLE RD
W MAIN ST
E LEXINGTON AVE
SHAKERTOWN RD
LEBANON RD
4TH ST
3RD ST
2ND ST
HUSTONVILLE RD
BAUGHMAN AVE
GOSE PIKE
LANCASTER RD
S DANVILLE BYP
STEWARTS LN
STANFORD RD
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
150
52
150B
37
MERCER
GARRARD
BOYLE COUNTY
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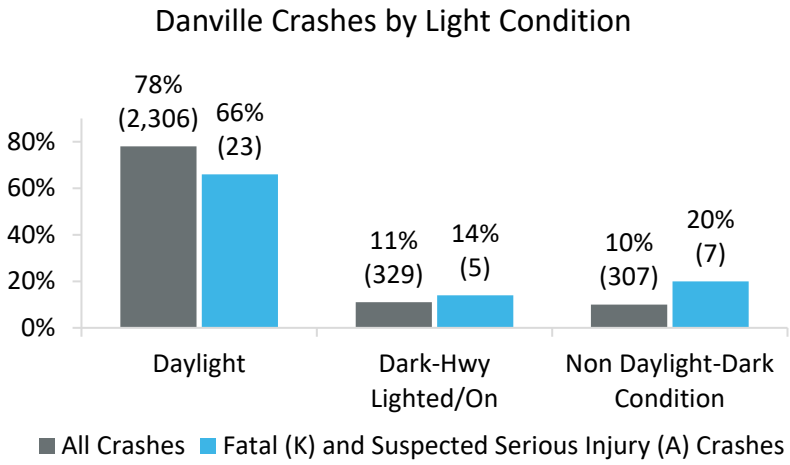
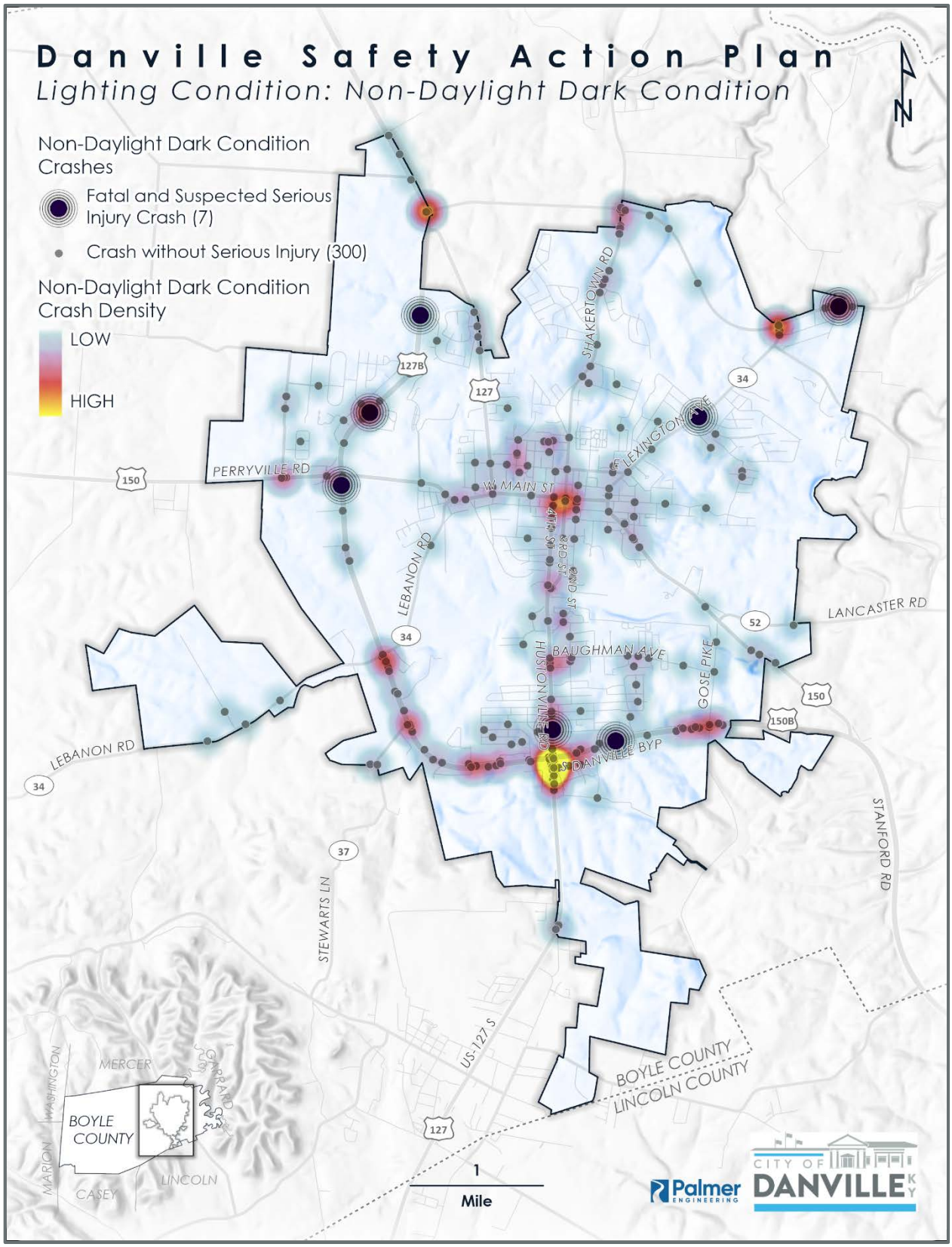
Lighting Conditions

Appropriate lighting is a factor in road safety, influencing visibility and reaction times. However, the documentation of lighting infrastructure in Danville is not comprehensive. The crash data available offers only anecdotal evidence about the lighting at the crash. Currently, there is no established infrastructure database detailing the presence and condition of street lighting, which poses challenges in analyzing the correlation between illumination and road safety.

The chart indicates that while the majority of crashes in Danville occur during daylight conditions, a disproportionate percentage of fatal and suspected serious injury crashes happen in dark conditions – 20% versus the 10% of all crash severities. This suggests that lower visibility conditions at night may be a contributing factor to the increased severity of crashes.




Danville Safety Action Plan
Lighting Condition: Non-Daylight Dark Condition
N
Non-Daylight Dark Condition Crashes
Fatal and Suspected Serious Injury Crash (7)
Crash without Serious Injury (300)
Non-Daylight Dark Condition Crash Density
LOW
HIGH
PERRYVILLE RD
W MAIN ST
LEBANON RD
SHAKERTOWN RD
LEXINGTON AVE
4TH ST
3RD ST
2ND ST
LANCASTER RD
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
S DANVILLE BYP
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
150
52
150B
37
MERCER
GARRARD
WASHINGTON
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LINCOLN
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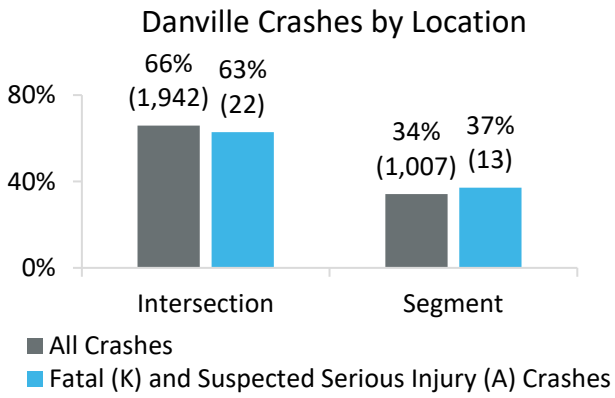
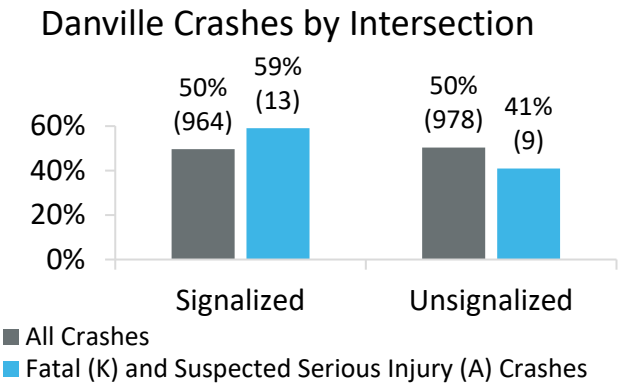


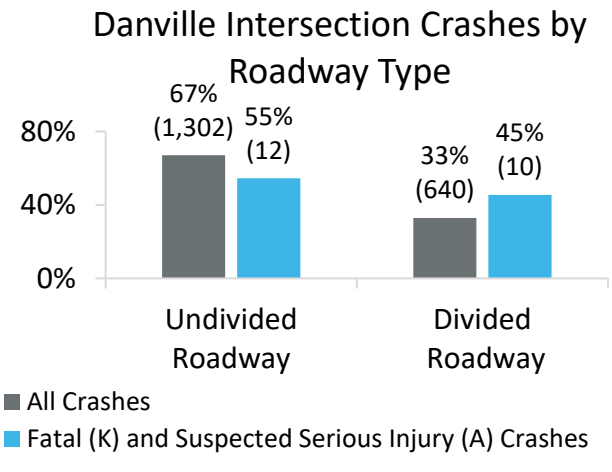
Crash Locations

In the analysis, crashes were identified based on their location: intersections and segments. A significant portion of crashes, about 66%, occurred at intersections, which is expected due to the higher number of conflict points at intersections.

Intersections

In Danville, there are 254 intersections, of which 32 are signalized. Further analysis of intersection crashes shows 50% occurred at signalized intersections, which also accounted for 59% of the fatal and suspected serious injury intersection crashes. This indicates that signalized intersections disproportionately experience more severe crashes compared to unsignalized intersections.





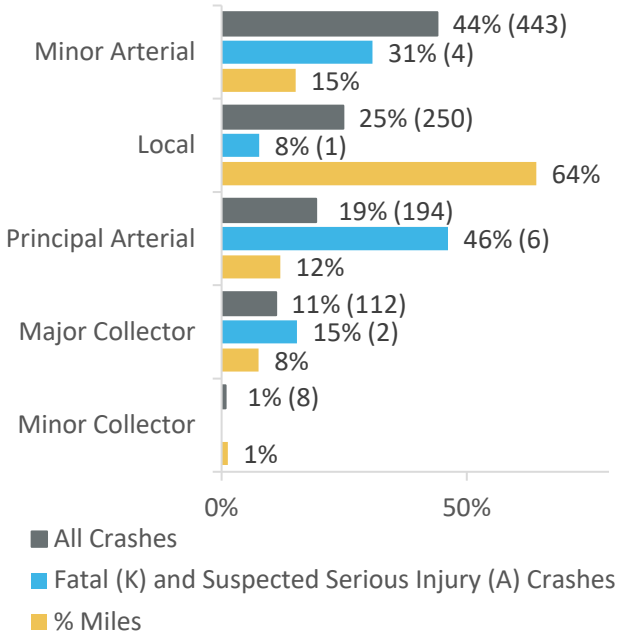
Roadways are classified as either divided or undivided. A divided roadway is characterized by the presence of a physical barrier or space that separates lanes of traffic moving in opposite direction. Of the 254 intersections in Danville, 26 intersections are located on a divided roadway. A majority of the crashes occurred at intersecting undivided roadways. However, the crash data shows intersections on divided roadways experienced 45% of the fatal and suspected serious injury crashes while only 33% of all crashes occurred at divided roadway intersections.

Segments

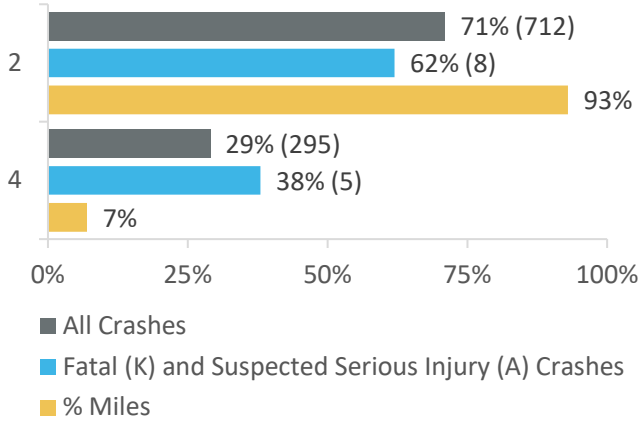
In Danville, 34% of all crashes occur on roadway segments, with a significant portion on Minor Arterials, such as Main Street, Hustonville Road, and 4th Street. Roads with the Principal Arterial classification include the Danville Bypass and Hustonville Road south of the bypass. Principal and Minor Arterials combined account for 76% of the fatal and suspected injury crashes, despite making up only 27% of the roadway network.

Speeds and traffic volumes are typically higher on Principal and Minor Arterials when compared to Local and Major Collector roadways.

Danville Segment Crashes by Functional Classification



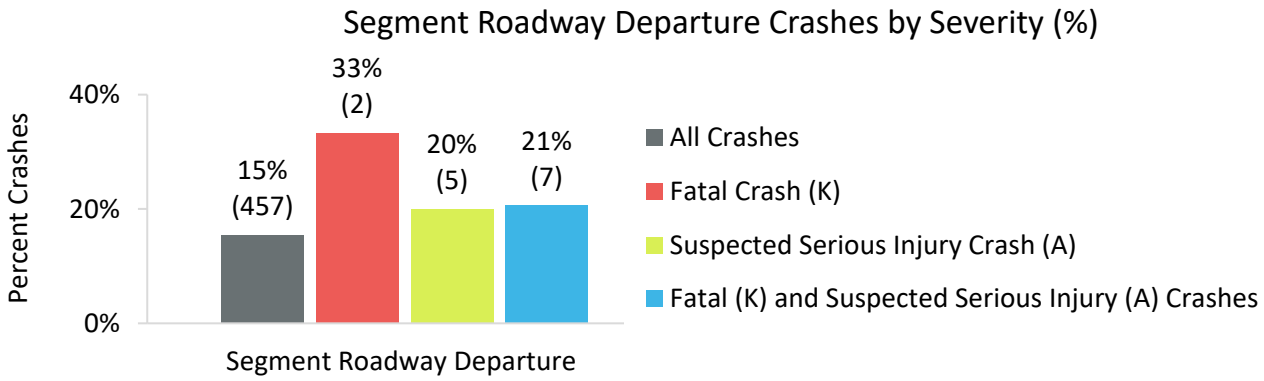
Danville Segment Crashes by Number of Thru Lanes



In Danville, 93% of the roadway network are two-lane roadways and a majority of the segment crashes occur on these roads. Four-lane roadways account for only 7% of the roadways but experiences 29% of all crashes and 38% of severe crashes. Four-lane roadways typically have increased traffic volumes and higher speeds, contributing factors to crashes.

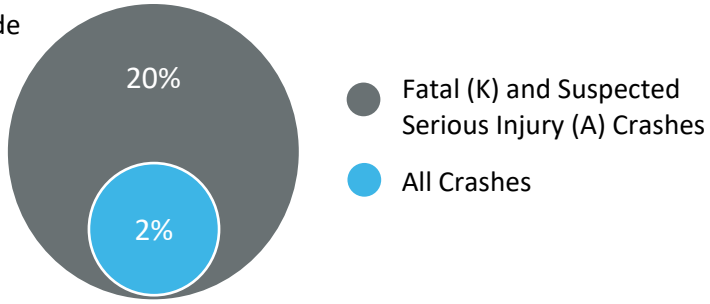
Roadway Departure Crashes

A roadway departure crash is a non-intersection crash that occurs after a vehicle crosses an edge line, a centerline, or otherwise leaves the roadway. Roadway departure crashes that occurred on segments (non-intersection) accounted for 15% (457) of all crashes (2,949) and 21% (7) of the fatal and suspected serious injury crashes (35).



Vulnerable Road Users

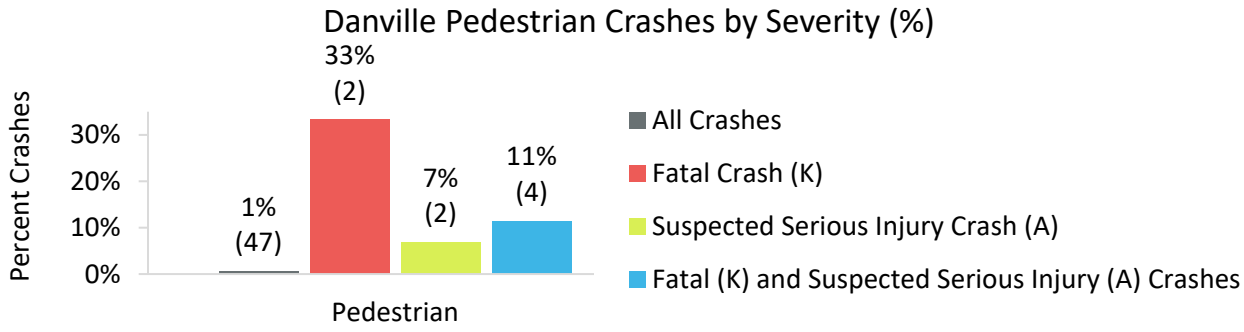
In Danville, vulnerable road users, which include pedestrians, bicyclists, and motorcyclists, are at an elevated risk of severe crashes in comparison to all crashes. Despite representing only 2% of all crashes, vulnerable road user crashes account for 20% of fatal and suspected serious injury crashes. Every ninth crash involving a vulnerable road user is severe.

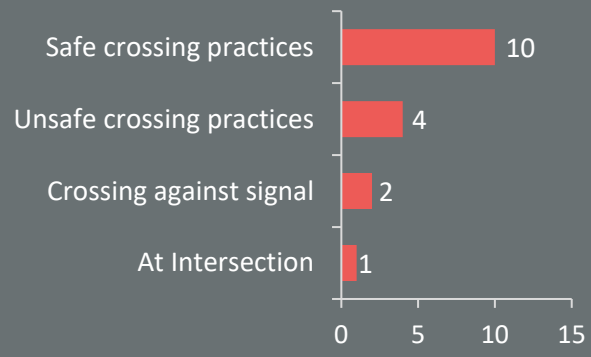


Pedestrians

Pedestrian crashes, while less than 1% of all crashes, represent 12% of fatal and suspected serious injury crashes. Out of the 17 pedestrian crashes, 4 were severe. This discrepancy spotlights the disproportionate risks pedestrians face while traveling.

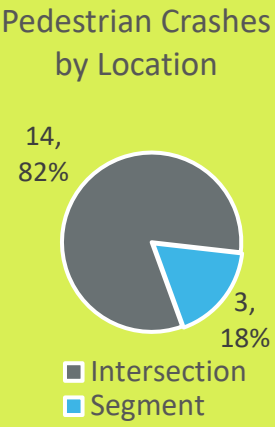
Severity	Description	Crashes	%
K	Fatal	2	12%
A	Suspected Serious Injury	2	12%
B	Suspected Minor Injury	3	18%
C	Possible Injury	4	24%
O	No Apparent Injury	3	35%
	TOTAL	**17**	

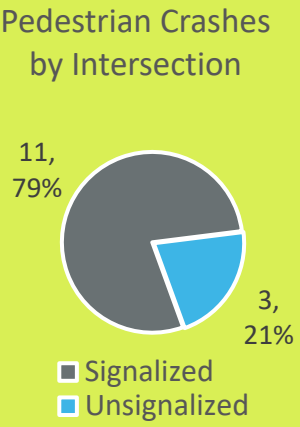


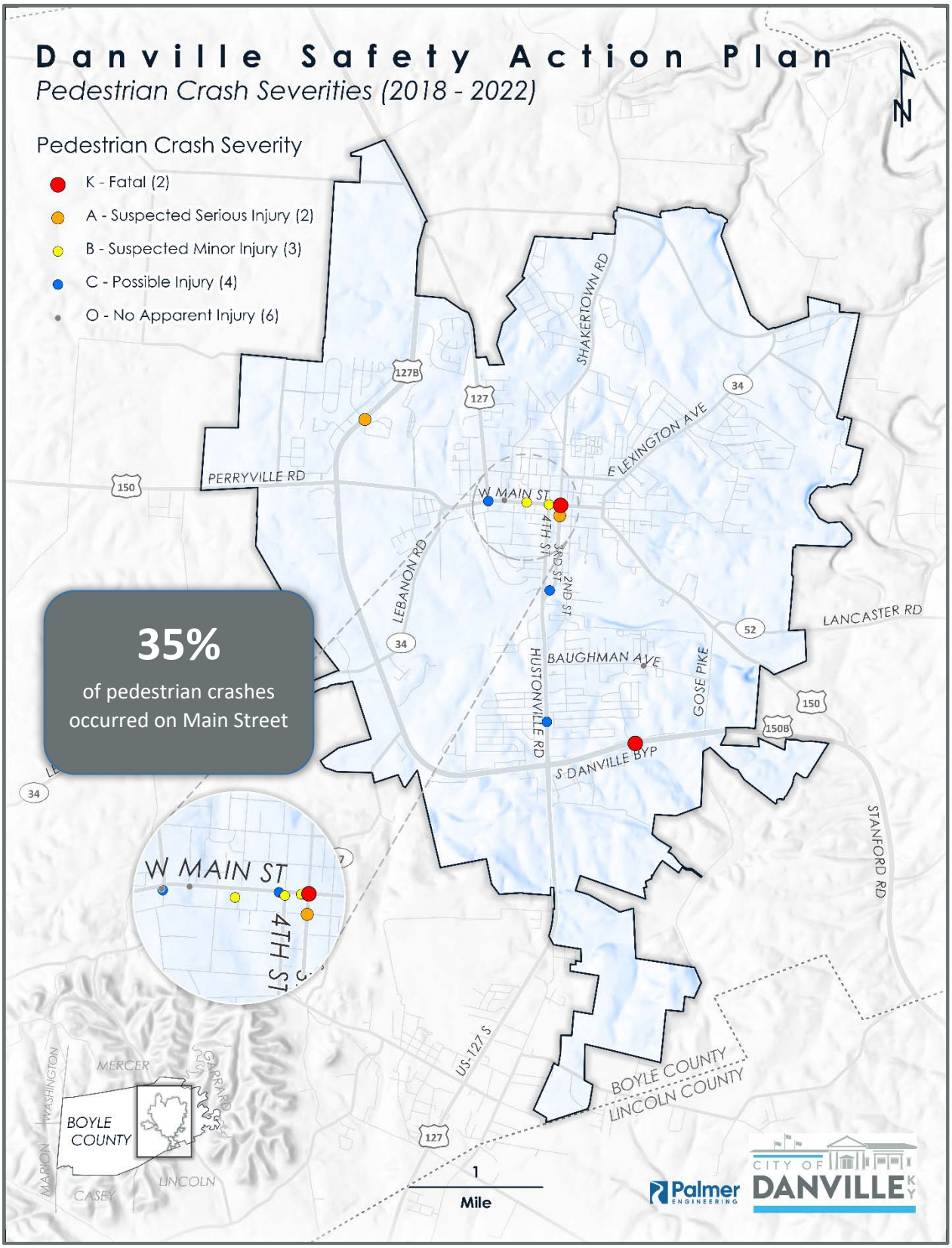


In 35% of the pedestrian crashes, the pedestrian was crossing unsafely.

More than 80% of pedestrian crashes occur at intersections, with a significant amount occurring at signalized intersections.






Danville Safety Action Plan
Pedestrian Crash Severities (2018 - 2022)
N
Pedestrian Crash Severity
K - Fatal (2)
A - Suspected Serious Injury (2)
B - Suspected Minor Injury (3)
C - Possible Injury (4)
O - No Apparent Injury (6)
35%
of pedestrian crashes occurred on Main Street
W MAIN ST
4TH ST
PERRYVILLE RD
LEBANON RD
SHAKERTOWN RD
E LEXINGTON AVE
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
S DANVILLE BYP
LANCASTER RD
STANFORD RD
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
CASEY
LINCOLN
BOYLE COUNTY
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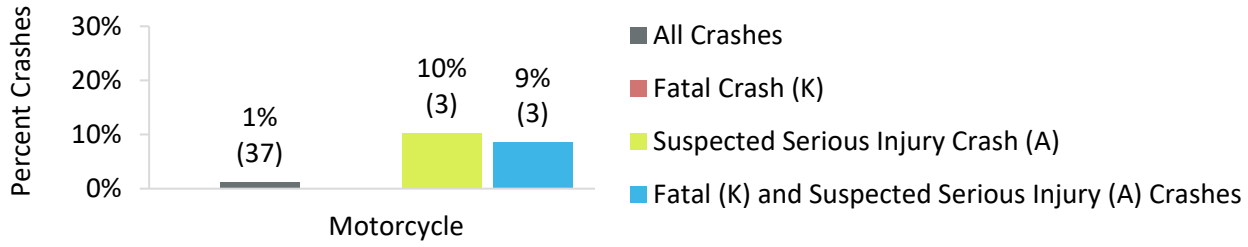
Motorcyclist

Motorcycle crashes make up 42% of all fatal and suspected serious injury crashes among vulnerable road users, with 3 severe crashes. From 2018 to 2022, motorcycle crashes represented 9% of Danville's fatal and suspected serious injury crashes.

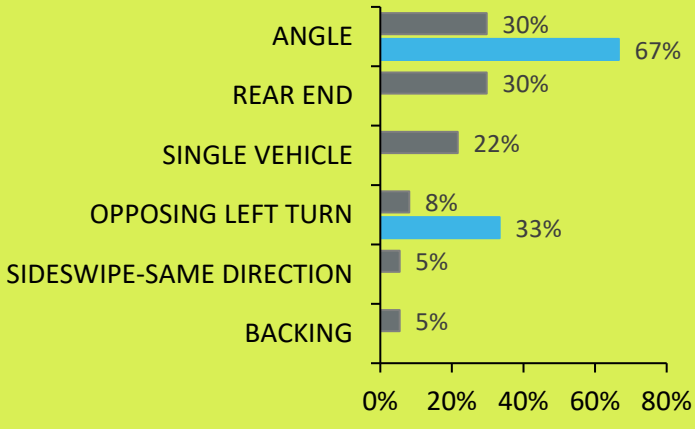
Severity	Description	Motorcycle Crashes	%
K	Fatal	0	-
A	Suspected Serious Injury	3	8%
B	Suspected Minor Injury	9	24%
C	Possible Injury	6	16%
O	No Apparent Injury	19	51%
	TOTAL	37	

Danville Motorcyle Crashes by Severity (%)



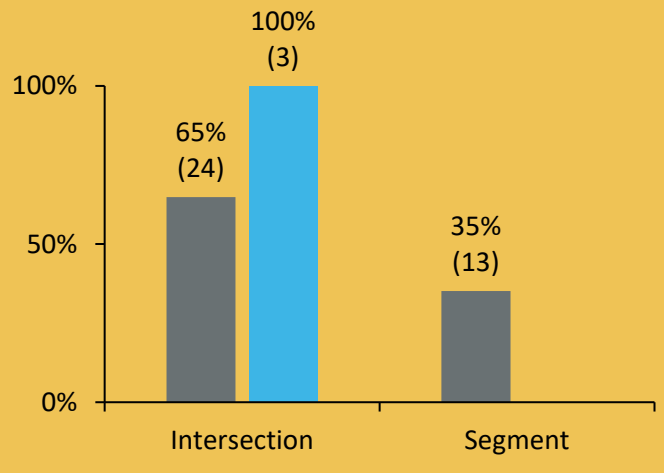
A majority of the motorcycle fatal and suspected serious injury crashes are angle (67%) and opposing left crashes (33%).

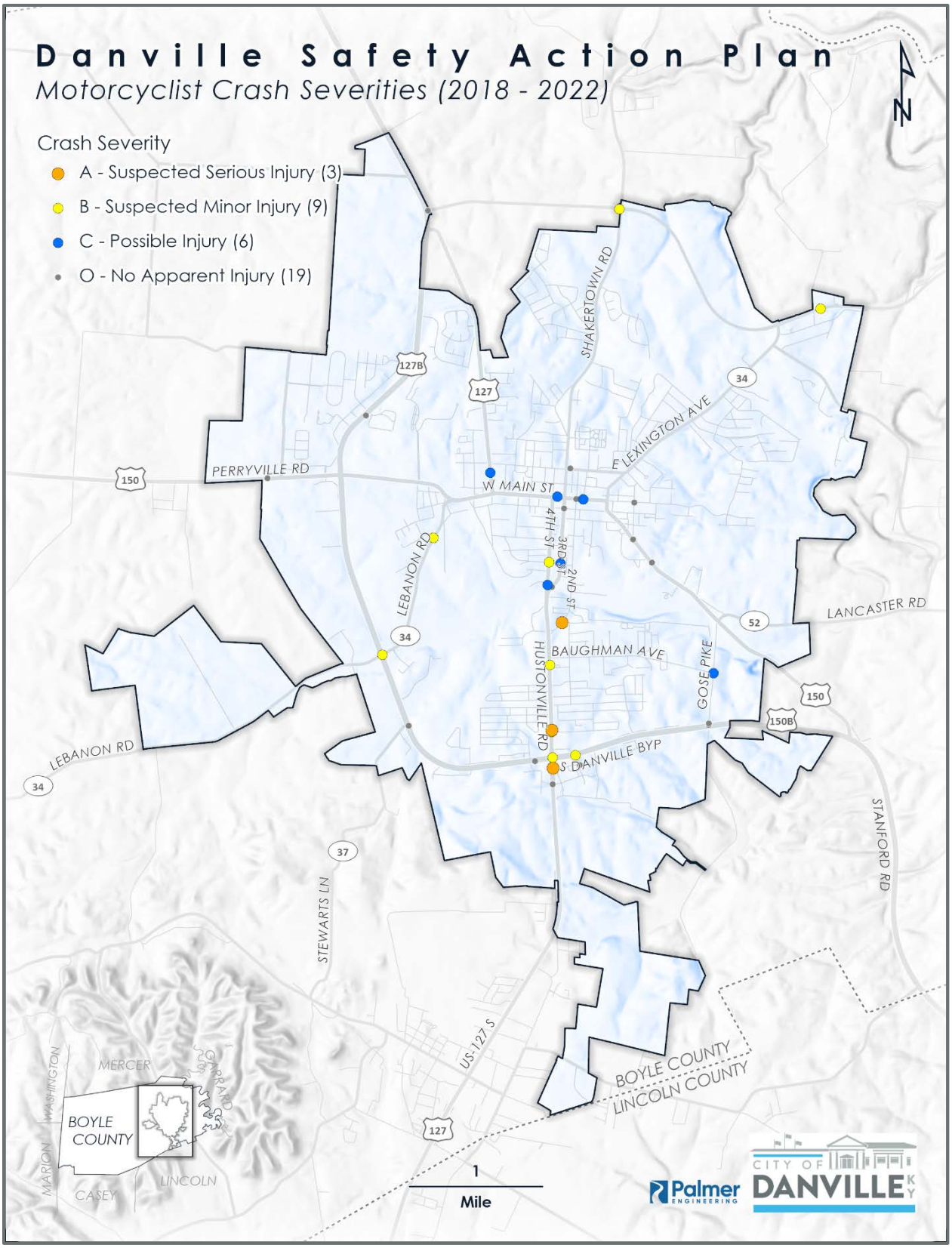
Danville Motorcycle Crashes by Manner of Collsion Severity (%)



A majority of the motorcycle crashes occurred at intersections.

Danville Motorcycle Crashes by Location




Danville Safety Action Plan
Motorcyclist Crash Severities (2018 - 2022)
Crash Severity
A - Suspected Serious Injury (3)
B - Suspected Minor Injury (9)
C - Possible Injury (6)
O - No Apparent Injury (19)
N
SHAKERTOWN RD
127B
127
34
E LEXINGTON AVE
150
PERRYVILLE RD
W MAIN ST
4TH ST
3RD ST
2ND ST
LEBANON RD
LANCASTER RD
52
34
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
150
150B
LEBANON RD
34
S DANVILLE BYP
STANFORD RD
37
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
CASEY
LINCOLN
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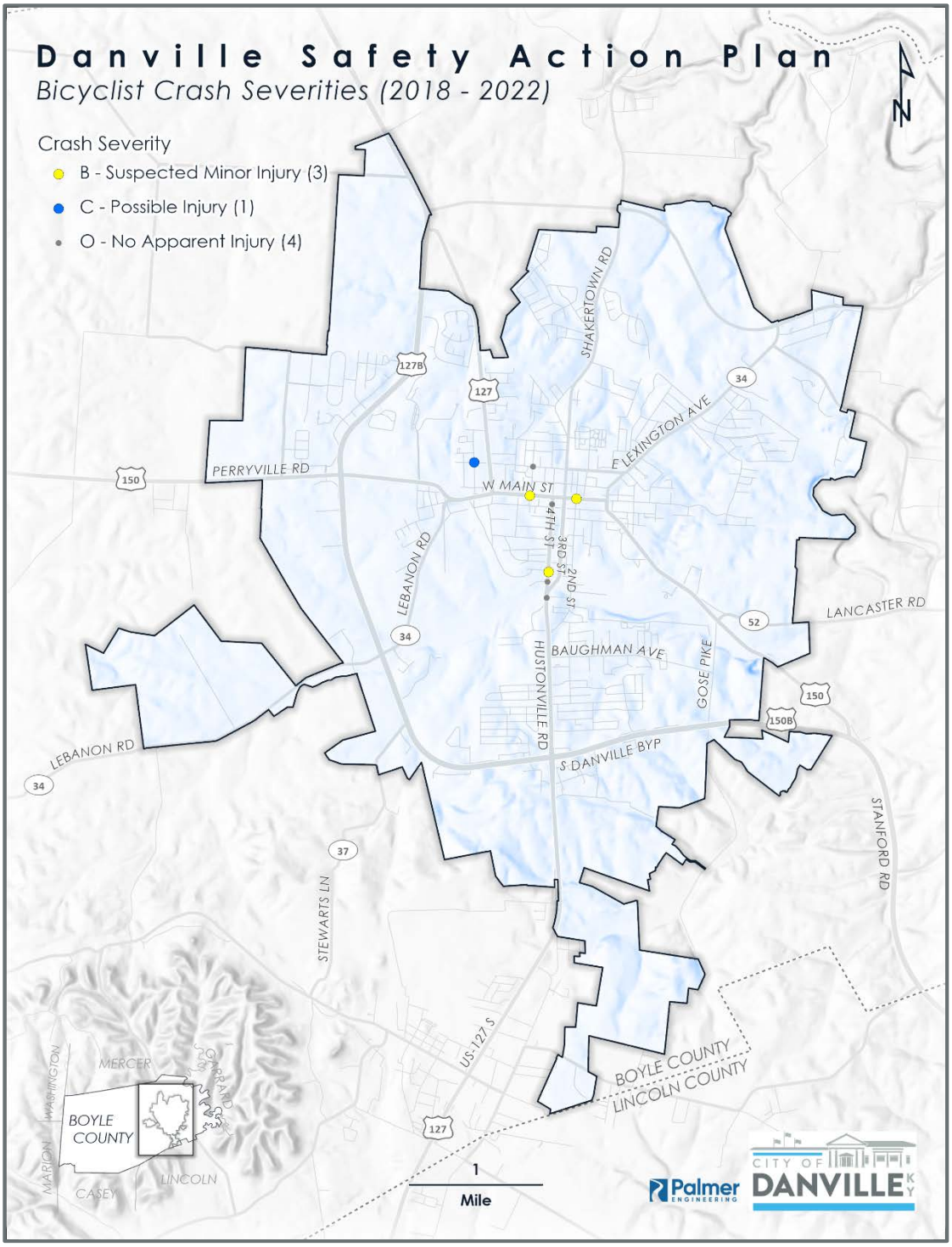
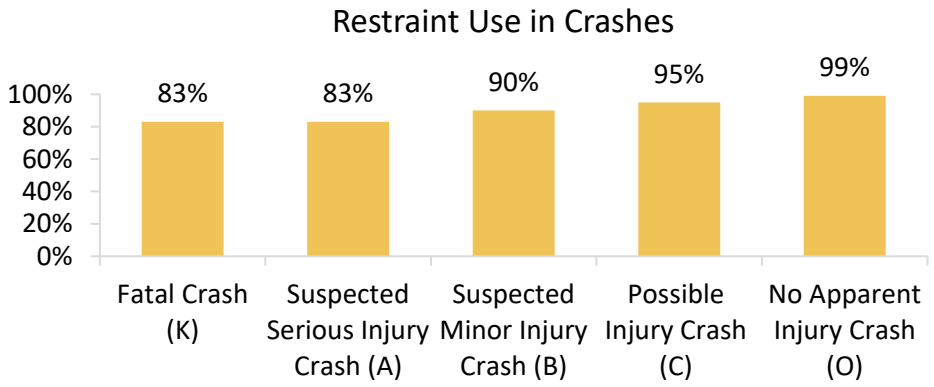
Bicyclist

During the study period in Danville, there were eight bicycle crashes, of which there were not any fatal or suspected serious injury crashes. Given the small number of bicycle crashes, drawing conclusions could be unreliable. The rarity of these crashes suggests a need for broader data to understand the factors contributing to bicycle crash severity and frequency.



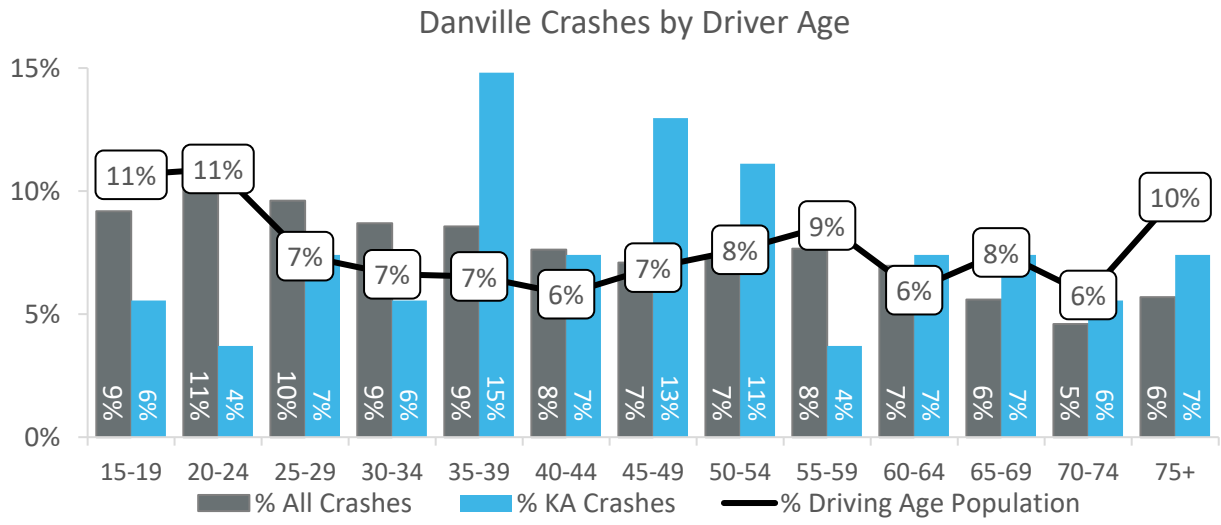
Occupant Protection

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. In 83% of the fatal crashes, all the occupants were restrained.



Driver Age

The following chart illustrates that drivers aged 25-44 are involved in a disproportionately high number of crashes. Furthermore, the 35-39 and 45-54 age groups experience a higher rate of fatal and suspected serious injury crashes. The 75+ age group has a lower crash occurrence, potentially due to reduced driving frequency.



High Injury Network

A High Injury Network (HIN) is a data-driven approach which identifies roadway segments within the City that account for a disproportionate amount of a community's fatal and serious injury crashes. Developing an HIN is a national best practice among Vision Zero communities. The HIN allows communities to focus limited resources on improving safety along those high priority, dangerous corridors. Additionally, following the Safe Systems Approach, the HIN corresponds to the Safer Roads pillar. This pillar involves designing roadway environments to mitigate human mistakes and account for injury tolerances, to encourage safer behaviors, and to facilitate safe travel by the most vulnerable users.

Danville's roads witness 7 fatal and suspected serious injury crashes every year along the 158 roadway miles. The High Injury Network (HIN) provides a data-driven and focused list of corridors where a majority of these fatal and suspected serious injury crashes are occurring. The routes identified in Danville's HIN will guide the city's safety improvement strategy. These strategies and more information on the HIN can be found in Chapter 7. Strategy and Project Selection.

4. Engagement and Collaboration

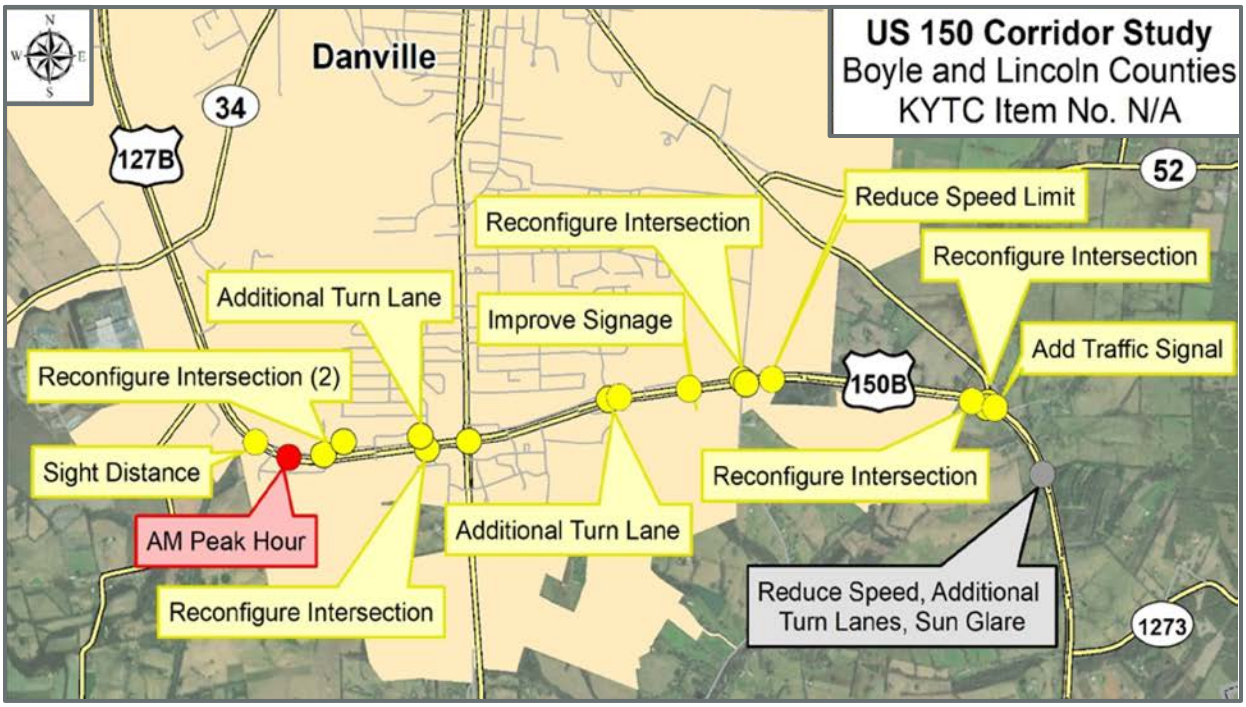
A Key part of the planning process is meaningful engagement with the general public and stakeholders. There were various types of engagement with the general public and stakeholders, where a greater understanding of the existing conditions, safety concerns, and challenges are present. Knowing this information provides needed context for the safety analysis. Working with information that was gathered through existing Safety studies for Danville gives insight on the growth and possible improvements that are already being looked into. The following sections will cover existing plans and the types of engagement with the results.

Bluegrass Area Development District

Bluegrass Area Development District (ADD) produced a public involvement plan in June of 2022. This plan was developed so that public engagement was a part of the transportation planning process. Using a wide range of methods it is possible to reach the greater public. This included radio, TV, and social media advertisement along with meetings and activities.

KYTC Planning – US 150 Corridor Study

In addition to the City's broader community engagement efforts, specific focus was directed toward soliciting feedback from local officials and stakeholders on the KYTC led US 150 Corridor Study. Throughout the study duration, the project team actively convened meetings with key local officials and stakeholders to foster coordination on pertinent study issues and align goals effectively. These



engagements served as crucial forums for exchanging insights, addressing concerns, and collectively shaping the project's direction. This collaborative approach not only enriched the study process but also laid a solid foundation for sustainable and impactful outcomes that benefit the residents and stakeholders of Danville. In addition to project meetings, an online survey was orchestrated to gather diverse perspectives and prioritize transportation concerns. Follow-up sessions facilitated the presentation of

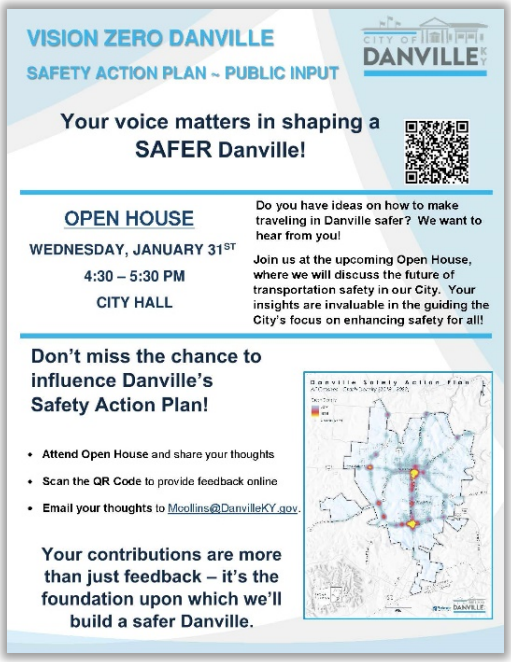
improvement concepts, allowing stakeholders to provide feedback and articulate their priorities. Improvement concepts and recommendations were revised based on the feedback from this engagement.

Safety Action Plan Community Engagement

Safety Action Group

The Safety Action Group (SAG) was the planning structure for the Safety Action Plan development and was comprised of diverse members of the community. During the SAG meetings, the group provided feedback and insights on their concerns and understanding of existing safety issues.

The Safety Action Plan's development evolved through three SAG meetings. The first meeting provided an overview of the Safe System Approach and presented an overview of crash trends. The second meeting reviewed detailed crash analysis and discussed approaches to reactive and systemic analysis. Focus areas were identified based on feedback and local insights. The third meeting was focused on discussing potential improvements at the prioritized intersections and corridors on the High Injury Network. Community engagement with the Safety Action Plan provided invaluable local knowledge and insight. The SAG will continue to meet and collaborate as the Safety Action Plan moves from planning to implementation.



Public Engagement

An important part of the Safety Action Plan is to have updated and relevant public engagement. While past studies can give insight into the public's perception it is best practice to have the most updated information possible. To collect current feedback form the public an open house and online survey were conducted. The open house was held at City Hall January 31st 2024, where individuals were encouraged to fill out an online survey and email any additional thoughts to a provided email. A flyer advertisement of the Open House flyer was shared on the city's website and shared across several social media outlets. During the open house several paper copies of the survey were filled out and returned. The survey data used in this study was collected between the dates of January 25, 2024 through March 12, 2024 and includes 199 survey responses. The survey consisted of collecting feedback on modes of transportation, perception of safety on city roads and streets, enhancement suggestions, personal crash experience, and behavior observations.

The Open House public meeting forum included boards presenting crash locations for all crashes and pedestrian crashes by severity. In addition, the FHWA Proven Safety Countermeasures were presented to share the successes of these improvements and present possible solutions to the crash trends identified in the study. The following is the survey and a summary of the responses.

CITY OF DANVILLE KY

VISION ZERO DANVILLE

SAFETY ACTION PLAN

Welcome to the Vision Zero Danville Safety Action Plan Community Survey. As part of the City of Danville's commitment to eliminating fatal and serious injury crashes, we invite you to contribute to the development of our Safety Action Plan. The following questions are designed to gather valuable insights and experiences regarding transportation safety in Danville. Your responses will be used to focus the plan to enhance safety for all users.

If you would like to receive future correspondence on the Safety Action Plan, please provide your email address:

1. Do you live in the City of Danville?
   ☐ Yes ☐ No
   What county do you live in?

2. How frequent do you drive within the City of Danville?
   ☐ Daily ☐ Weekly
   ☐ Monthly ☐ Rarely

3. What is your primary means of transportation?
   ☐ Drive alone ☐ Carpool
   ☐ Public Transit ☐ Walk, Bike

4. With traffic safety in mind, in general, how safe do you think it is to travel within the City of Danville?
   ☐ Not at all safe ☐ Not very safe ☐ Neutral ☐ Somewhat safe ☐ Very Safe

5. Which safety improvement do you feel would have the most significant impact on reducing traffic crashes?
   ☐ Traffic calming measures to reduce speed
   ☐ Traffic education campaigns
   ☐ Roadway improvement projects
   ☐ Increase traffic enforcement
   ☐ Enhance street lighting
   ☐ Other (Please Specify)

6. Are there specific intersections or stretches of road that you believe need safety improvements? Please describe.

7. Please provide your ideas for making our streets safer.

SURVEY CONTINUES ON THE BACKSIDE PAGE

8. What do you think are the top **three** challenges of traveling in Danville?
   ☐ Distracted Driving ☐ Right or left turning vehicles ☐ People drive too fast
   ☐ People running red lights or stop signs ☐ Not enough bike lanes or trails
   ☐ Poor or blocked views at intersections ☐ Drivers not yielding or stopping to pedestrians

9. Have you ever been seriously injured in a traffic crash in Danville?
   ☐ Yes ☐ No
   If yes, how were you traveling when the crash happened?
   ☐ Driving ☐ Biking ☐ Walking ☐ Passenger ☐ In a wheelchair ☐ Other:
   What primary factor contributed to the crash?
   ☐ Distracted driving ☐ People running red light or stop sign ☐ People driving too fast
   ☐ Right or left turning vehicles ☐ Driver not yielding or stopping ☐ Poor or blocked view at intersection
   ☐ Driver under the influence ☐ Someone trying to cross the street ☐ Other:

10. Do you know someone who has been killed or seriously injured in a traffic crash in Danville?
    ☐ Yes ☐ No
    If yes, how were they traveling when the crash happened?
    ☐ Driving ☐ Biking ☐ Walking ☐ Passenger ☐ In a wheelchair ☐ Other:
    What primary factor contributed to the crash?
    ☐ Distracted driving ☐ People running red light or stop sign ☐ People driving too fast
    ☐ Right or left turning vehicles ☐ Driver not yielding or stopping ☐ Poor or blocked view at intersection
    ☐ Driver under the influence ☐ Someone trying to cross the street ☐ Other:

11. Which of the following driving behaviors do you most frequently observe that contribute to unsafe conditions?
    ☐ Speeding ☐ Distracted Driving ☐ Aggressive Driving ☐ Failure to yield
    ☐ Other:

12. Gender:
    ☐ Male
    ☐ Female

13. Age:
    ☐ Under 18 ☐ 18-24
    ☐ 25-34 ☐ 35-44 ☐ 45-54
    ☐ 55-64 ☐ 65+

14. Race/Ethnicity:
    ☐ No Answer
    ☐ African American / Black ☐ Caucasian / White
    ☐ Hispanic/Latino ☐ Asian/Pacific Islander
    ☐ Other:

Do you have more thoughts about transportation safety in Danville? Let us know where you think the City should focus future pedestrian, bicycle, and driver safety improvements. Email: Maranda Collins (mcollins@danvilleky.gov) Your input will help shape future safety investments in the City of Danville.

Location

To establish the relevancy of the survey some general information about the survey respondents was collected. This was in the form of three questions: do you live in Danville, what county do you live in, and how frequently do you travel within the City of Danville.

Live in Danville	Live in Boyle County	Travel within Danville daily
70%	91%	85%

Modes of Transportation

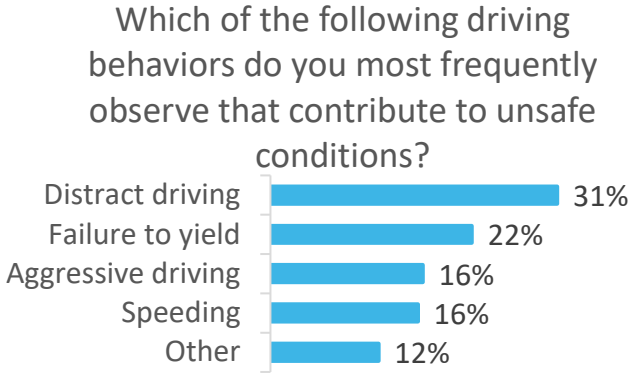
Modes of transportation gives information about how the public travels within Danville.

Primary Means of Transportation

92%	5%	<1%	3%
□ Drive alone	□ Carpool	□ Ride Share	□ Walking □ Bicycle

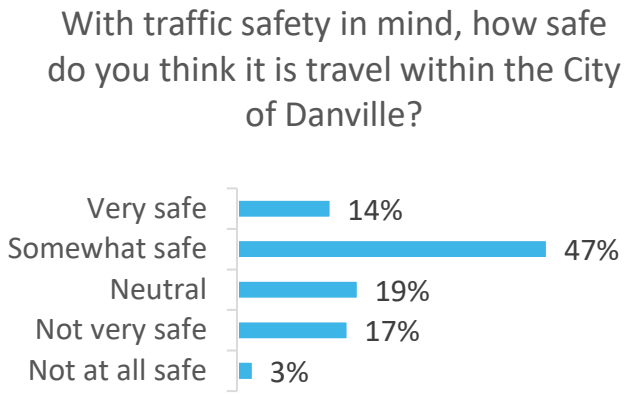
Behavior Observation

Understanding observed driving behaviors is crucial for enhancing road safety. By identifying which actions – such as speeding, distracted driving, aggressive driving, or failing to yield – are most commonly witnessed, we can better tailor safety improvements and educational campaigns. These responses help in prioritizing which behaviors to address, and in designing targeted.

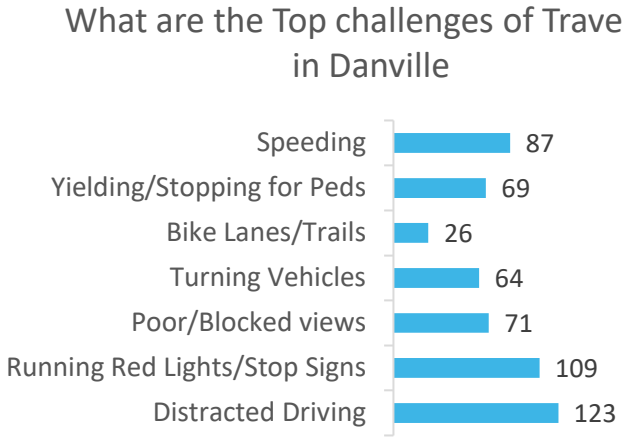


Perception of Safety

The way the public perceives safety can affect how the existing transportation system is used and how the public uses it. The public was given a range from "Not at all safe" to "Very safe" to rank how safe traveling in Danville is. While a majority, at 61%, find that Danville is very safe to somewhat safe there is still about 20% that find it not very safe to not at all safe and 19% that are neutral on the safety of Danville.



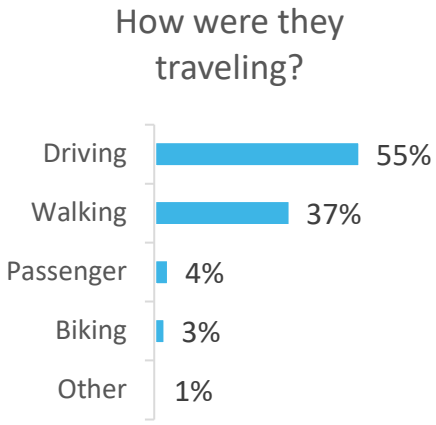
Subsequently understanding the top challenges of traveling in Danville will help narrow down the scope of improvements. None of the potential challenges got less than 25 mentions. Insufficient bike facilities was mentioned 26 times and left or right turning vehicles was mentioned 64 times. With slightly higher mentions there is not yielding or stopping for pedestrians (69 mentions) and poor or blocked views (71 mentions). The top three challenges noted by the public are distracted driving (123 mentions), running red lights or stop sings (109 mentions), and speeding (87 mentions).

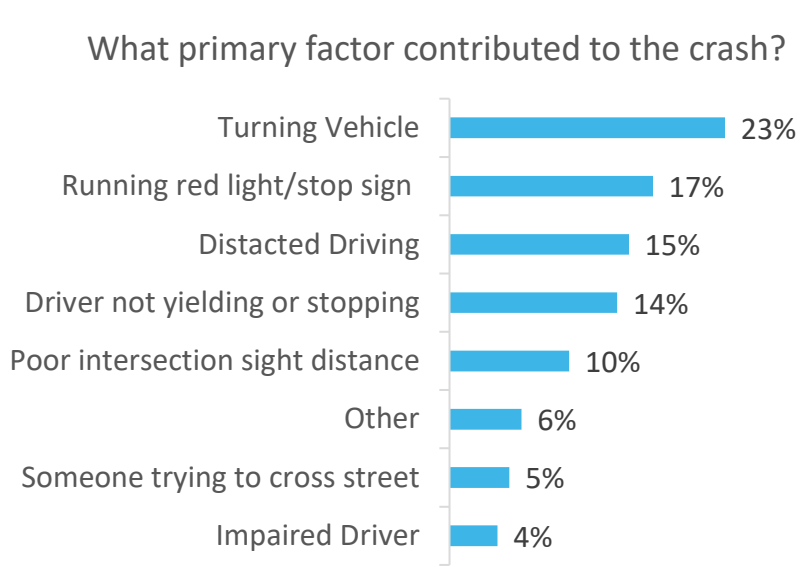


Personal Crash Experience

Do you know someone who has been killed or seriously injured in a traffic crash in Danville?

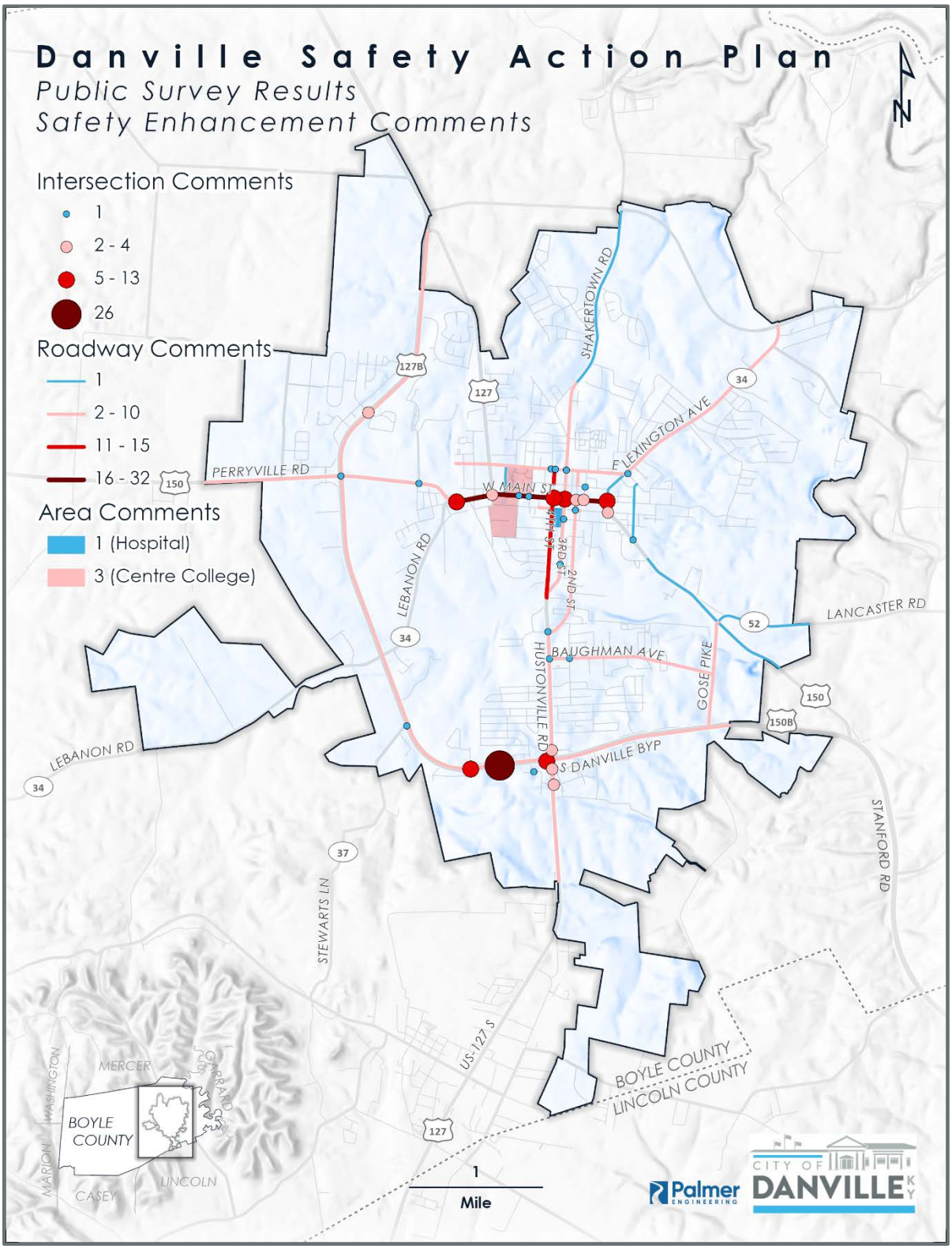
52% - YES 48% - No





Suggested Safety Enhancement

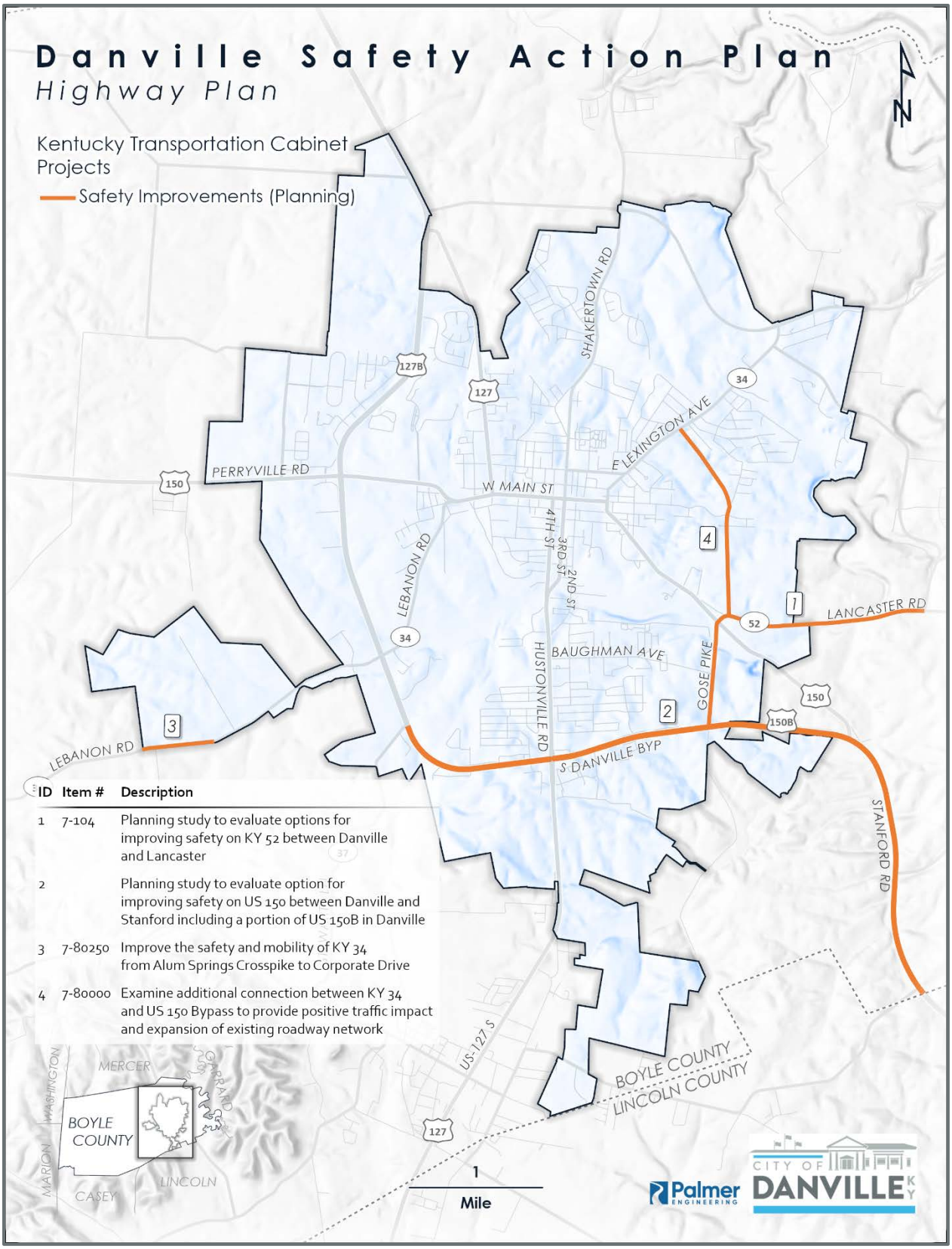
The following is a map summary of suggested safety enhancement roadways corridors and Intersections.



Collaboration

The transportation plans of affected stakeholders were coordinated to consider project and plan overlap with the study. The Kentucky Transportation Cabinet US 150 Corridor Study was referenced and the stage of project development was documented. The following Highway Plan Map and Table present these projects.

Map No.	KYTC Item (CHAF ID)	Route	Begin	End	Description
1	7-104	Lancaster Rd (KY 52)	Gose Pike	Dix River	Planning study to evaluate options for improving safety on KY 52 between Danville and Lancaster
2	-	Danville Bypass (US 127B, US 150B, US 150))	Fireside Dr.	Stanford	Planning study to evaluate option for improving safety on US 150 between Danville and Stanford including a portion of US 150B in Danville
3	7-80250	Lebanon Rd (KY 34)	Alum Springs Crosspike	West of Corporate Drive	Improve the safety and mobility of KY 34 from Alum Springs Crosspike to approx. 1,000 feet west of Corporate Drive.
4	7-80000	Gose Pike extension	Lancaster Rd (KY 52)	Lexington Rd (KY 34)	Examine additional connection between KY 34 and US 150 Bypass to provide positive traffic impact and expansion of existing roadway network



ID	Item #	Description
1	7-104	Planning study to evaluate options for improving safety on KY 52 between Danville and Lancaster
2		Planning study to evaluate option for improving safety on US 150 between Danville and Stanford including a portion of US 150B in Danville
3	7-80250	Improve the safety and mobility of KY 34 from Alum Springs Crosspike to Corporate Drive
4	7-80000	Examine additional connection between KY 34 and US 150 Bypass to provide positive traffic impact and expansion of existing roadway network

5. Equity Considerations

In the development of the Danville Safety Action Plan, a strong commitment to equity takes center stage, aiming to create a safe and accessible city for all. This initiative has been designed to develop a transportation framework that is fair and inclusive, leveraging comprehensive equity studies. Danville is dedicated to engaging with underserved communities. The focus lies in ensuring fair treatment and full participation across all sectors of our community, especially those historically disadvantaged, to evenly distribute the improvements in transportation safety and ensure that no part of our community is left behind.

Environmental Justice embodies the principle that every individual, regardless of race, income, or social status, is entitled to a clean and healthy environment. It recognizes that certain communities, often those marginalized or disadvantaged, bear a disproportionate share of legacy pollution. These communities may lack the political influence or economic resources to protect themselves from environmental hazards, resulting in heightened health risks and diminished quality of life. Advocates of Environmental Justice strive to address these imbalances by advocating for equitable access to environmental resources, pushing for fair environmental policies, and empowering affected communities to engage in decision-making processes. By ensuring that environmental benefits and burdens are equitably distributed among all individuals, Environmental Justice seeks to create a more inclusive and sustainable society.

Both Equity and Environmental Justice advocate equal treatment for all individuals regardless of their backgrounds or financial situations. This Safety Action Plan adopts a data-driven approach that prioritizes equity to guarantee everyone's voices are heard and needs are addressed.

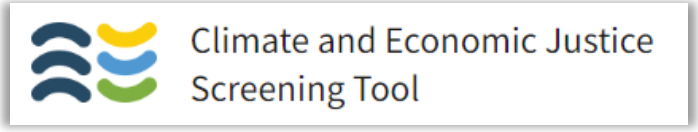
Equity Areas

For the Safety Action Plan, disadvantaged and underserved communities were identified through criteria such as the Justice40 Initiative, Areas of Persistent Poverty, and the Historically Disadvantaged Community designation.

Justice40

The Justice40 Initiative is a comprehensive federal program introduced by the United States government aimed at addressing environmental and economic disparities within marginalized communities. This initiative aims to allocate 40% of the benefits from federal investments in climate and clean energy projects to these communities, which have historically suffered from environmental degradation and pollution. By prioritizing equity and inclusion, the Justice40 Initiative aims to empower vulnerable populations, improve public health, and promote sustainable development, thereby fostering a more just and equitable society.

The Climate and Economic Justice Screening Tool (CEJST), established by the White House Council on Environmental Quality (CEQ) for the Justice40 Initiative, comprises eight categories known as "Indicators of Burdens". These include Climate Change, Energy, Health, Housing, Legacy Pollution, Transportation, Water and Wastewater, and Workforce Development.



Areas of Persistent Poverty

An essential demographic in identifying underserved communities includes those impacted by persistent poverty. The Safe Streets and Roads for All funding grant suggested utilizing the Area of Persistent Poverty Project (APP) as a guideline to aid in identifying census tracts of underserved communities.

An "Area of Persistent Poverty" is defined by the Bipartisan Infrastructure Law. A project is located in an Area of Persistent Poverty if: (Areas of Persistent Poverty & Historically Disadvantaged Communities | US Department of Transportation)

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.*

Historically Disadvantaged Communities

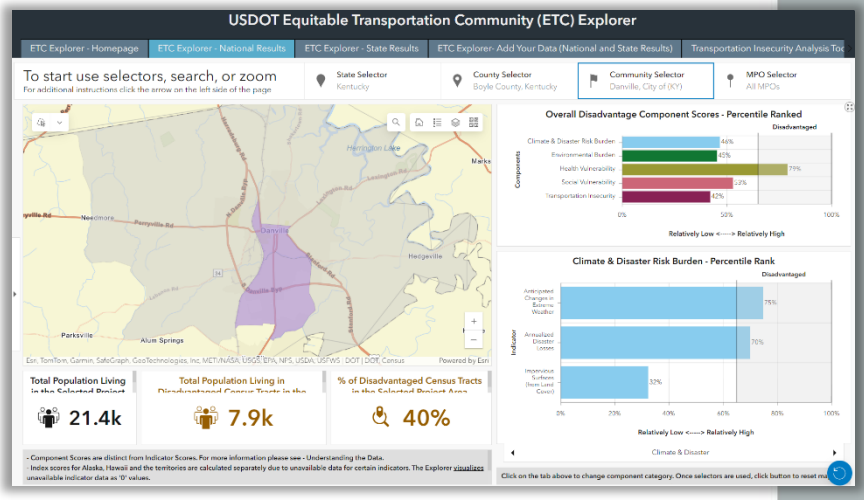
According to the Jusitce40 Interim Guidance Addendum issued by the White House Office of Management and Budget (OMB), White House Council on Environmental Quality (CEQ), and Climate Policy Office (CPO): (Areas of Persistent Poverty & Historically Disadvantaged Communities | US Department of Transportation)

a "Historically Disadvantaged Community" is:

1. *Any Census Tract identified as disadvantaged in the Climate & Economic Justice Screening Tool, which identifies such communities that have been marginalized by underinvestment and overburdened by pollution; OR*
2. *Any Federally Recognized Tribe or Tribal entity, whether or not they have land.*

USDOT Equitable Transportation Community (ETC) Explorer

The Justice40 initiative, led by the U.S. Department of Transportation and driven by the Biden-Harris Administration, aims to address longstanding underinvestment in marginalized communities. This initiative utilizes tools such as the U.S. DOT Equitable Transportation Community (ETC) Explorer, which leverages Census data to assess the cumulative impact of such underinvestment.

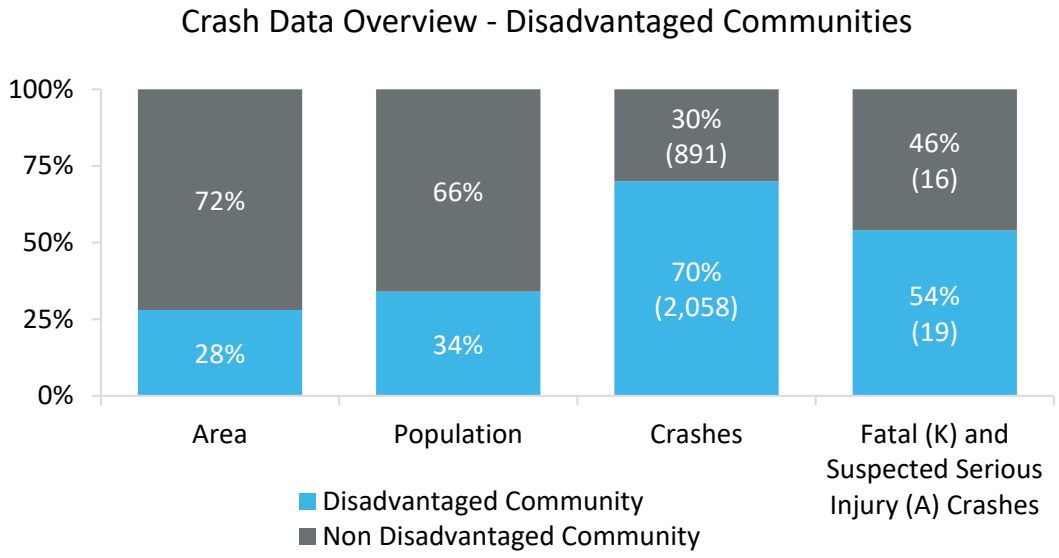


The ETC Explorer is specifically designed to understand transportation-related disparities and aligns with the broader objectives of the Climate & Economic Justice Screening Tool (CEJST). It's a nuanced tool that offers insights rather than simplistic indicators, aiding in directing investment to alleviate transportation burdens. The SS4A Grant provides guidance to utilize the ETC tool to identify census tracts of Disadvantaged Communities.

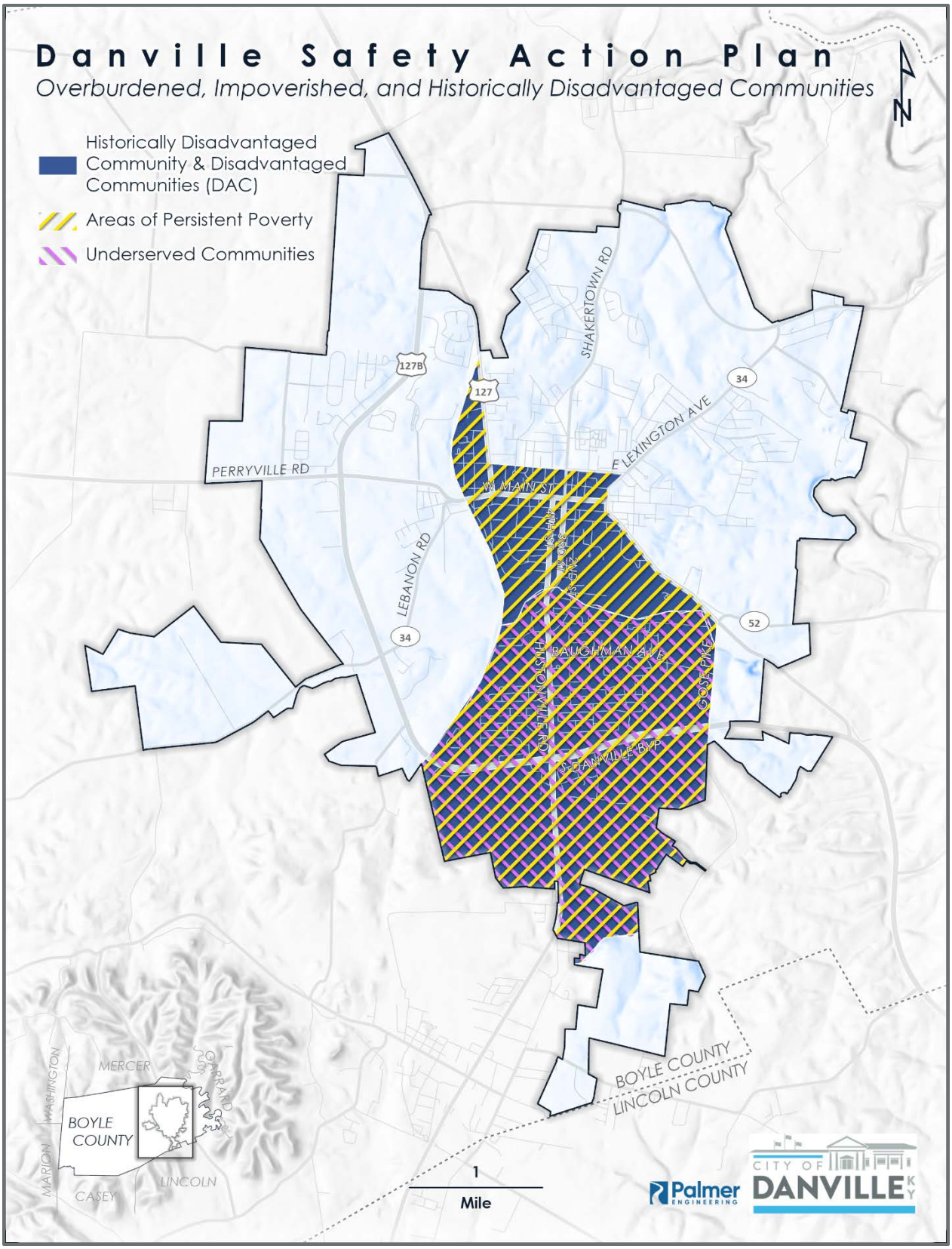
The five components included with the ETC tool are the following (ETC Explorer - National Results | USDOT Equitable Transportation Community (ETC) Explorer (arcgis.com)):

1. Climate & Disaster Risk Burden
2. Environmental Burden
3. Health Vulnerability
4. Social Vulnerability
5. Transportation Insecurity

Taking this into consideration, we looked at census tract area, population, and crash occurrences within these communities. In Danville, disadvantaged communities, encompassing 34% of the population, confront a disproportionate share of traffic safety risks. They account for 70% of crashes and 54% of severe or fatal crashes, despite covering 28% of the area. This data underscores the urgent need for strategic safety interventions that address the social equity dimensions of road safety, aiming to protect the majority of the city's population who are at a heightened risk.



The Justice40, Areas of Persistent Poverty, and Historically Disadvantaged Communities within Danville are all shown in the following map:


Danville Safety Action Plan
Overburdened, Impoverished, and Historically Disadvantaged Communities
N
Historically Disadvantaged Community & Disadvantaged Communities (DAC)
Areas of Persistent Poverty
Underserved Communities
SHAKERTOWN RD
127B
127
34
E LEXINGTON AVE
PERRYVILLE RD
W MAIN ST
LEBANON RD
34
52
HUSTONVILLE RD
BAUGH MAM ST
DANVILLE BYP
GOSE PIKE
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
CASEY
LINCOLN
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY

Equity Populations

An alternative method for pinpointing areas of equity concern entails directly mapping the distribution of disadvantaged populations within the City of Danville. The analysis focused on four disadvantaged population groups, utilizing data from the United States Census American Community Survey (ACS). The 2021 ACS five year table was used.

Citywide Data Analysis

In our examination of the following equity populations, it is crucial to acknowledge that our data analysis extends beyond the geographical confines of Danville's city limits, due to limitations with the 2021 American Community Survey Census Data utilized. Although the primary focus of this Safety Action Plan is Danville, we needed to include data from census block groups both inside and outside the city limits. This broader inclusion of block groups allows for a more comprehensive understanding of the underlying factors, as phenomena such as economic influences and social dynamics often transcend municipal boundaries. By incorporating any census block group data that spans the Danville city border, we aim to capture a more holistic perspective of the interconnected systems shaping our investigations, facilitating accurate and meaningful conclusions regarding the identified equity populations. In ***Chapter 5. Equity Considerations – Equity Populations Section***, any mention of the terms listed below (including but not limited to):

Danville, City, City Limits, Citywide, City Border

essentially denotes the complete area of the equity population detailed above.

Minority Population

A crucial element in assessing which communities receive equitable treatment and benefit from transportation-related enhancements is race. The minority population of Danville includes all individuals who identify as non-white. Danville has approximately 16.8% of all individuals who meet this definition.

Elderly Population

To assist in identifying certain roadway countermeasures, block groups with elderly populations were investigated. Countermeasures such as pedestrian refuge islands, Leading Pedestrian Intervals (LPIs), and raised crosswalks are among of the various improvements that are beneficial to the elderly population. This safety action plan defines the elderly population as individuals aged 65 or older. Danville has approximately 19.1% of all individuals who meet this definition.

Population Experiencing Poverty

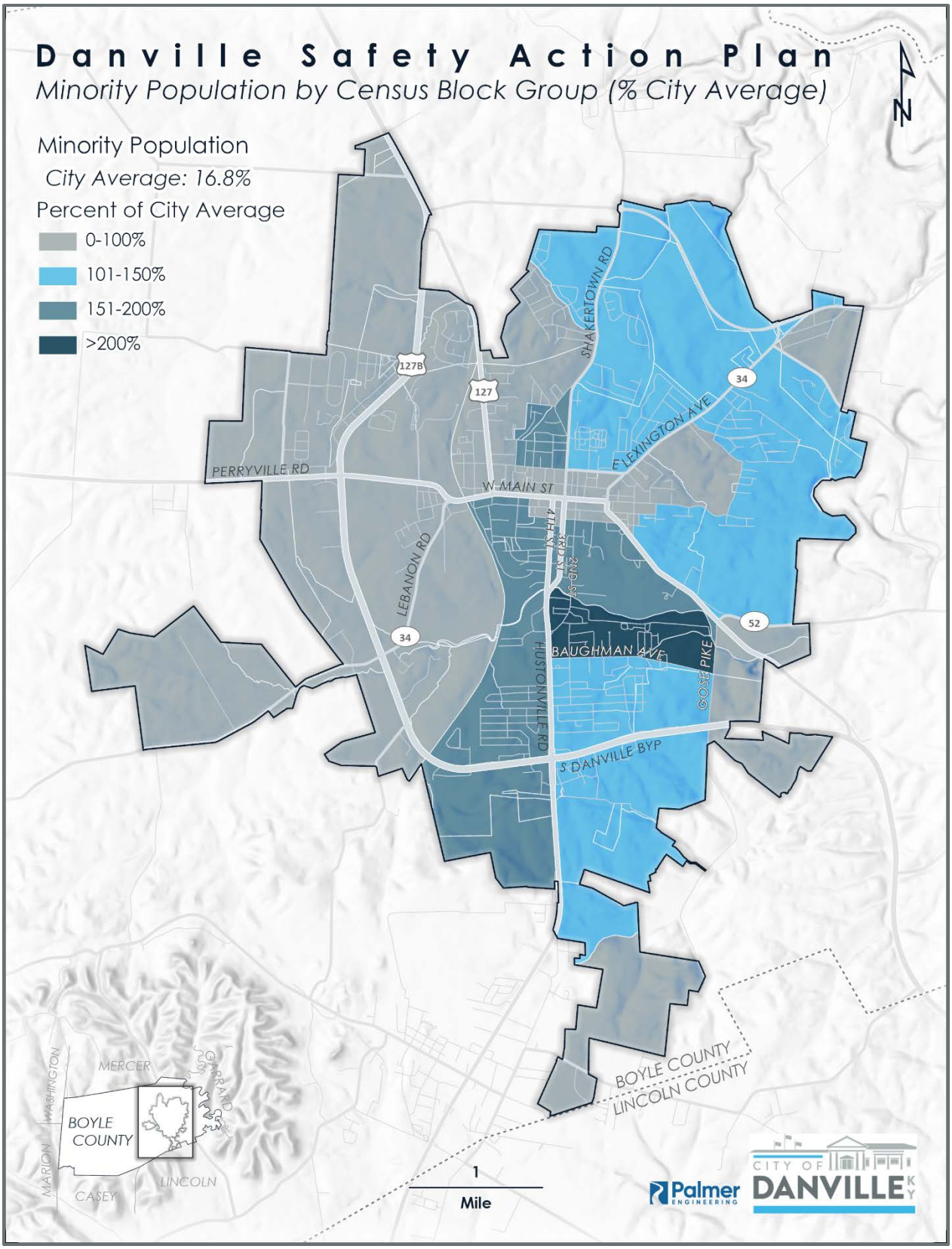
Income significantly impacts societal, health, and recreational aspects for all individuals. The poverty population of Danville includes individuals with incomes below the poverty level. Danville has approximately 15.3% of all individuals who meet this definition.

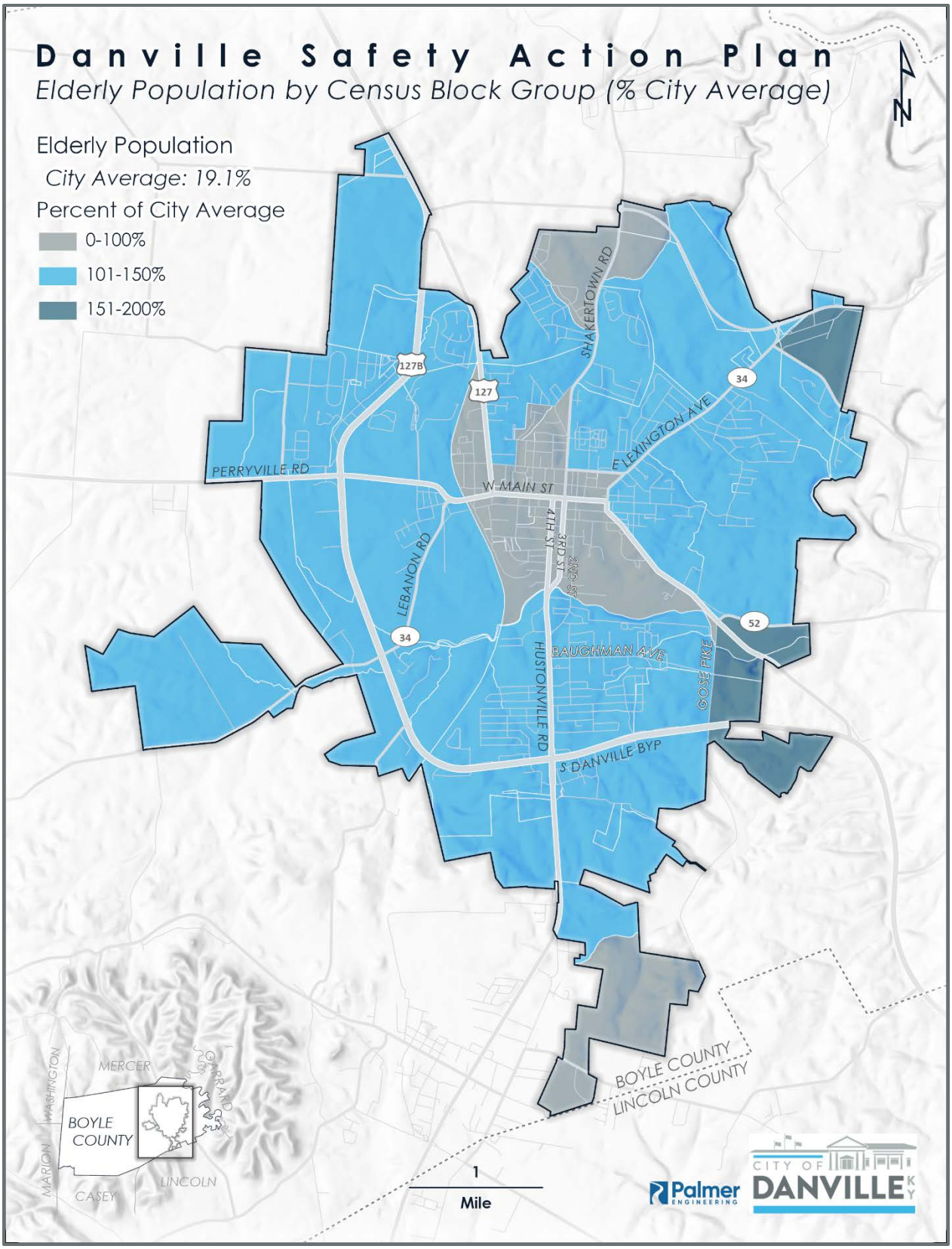
Population Impacted by Disability

Also to help in determining certain roadway countermeasures, block groups with disabled populations were analyzed. Similar to elderly populations, there are pedestrian safety countermeasures available to support disabled populations. This safety action plan assesses disabilities on a household-by-household basis, where any residence with one or more occupants

with a disability meets the disability designation. Danville has approximately 31.3% of all households who meet this definition.

For each Equity Population identified above, any census block group exceeding 200% of the city average is deemed a High Equity Population. Majority of equity populations 151-200% and those surpassing 200% of the city average are located within Historically Disadvantaged Communities. The following maps illustrate each of the corresponding Equity Populations.


Danville Safety Action Plan
Minority Population by Census Block Group (% City Average)
N
Minority Population
City Average: 16.8%
Percent of City Average
0-100%
101-150%
151-200%
>200%
127B
127
34
52
SHAKERTOWN RD
E LEXINGTON AVE
PERRYVILLE RD
W MAIN ST
LEBANON RD
4TH ST
3RD ST
2ND ST
HUSTONVILLE RD
BAUGHMAN AVE
GOSE PIKE
S DANVILLE BYP
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
LINCOLN
CASEY
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY


Danville Safety Action Plan
Elderly Population by Census Block Group (% City Average)
N
Elderly Population
City Average: 19.1%
Percent of City Average
0-100%
101-150%
151-200%
127B
127
34
52
SHAKERTOWN RD
E LEXINGTON AVE
PERRYVILLE RD
W MAIN ST
4TH ST
3RD ST
2ND ST
LEBANON RD
BAUCHMAN AVE
GOSE PIKE
HUSTONVILLE RD
S DANVILLE BYP
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
CASEY
LINCOLN
1
Mile
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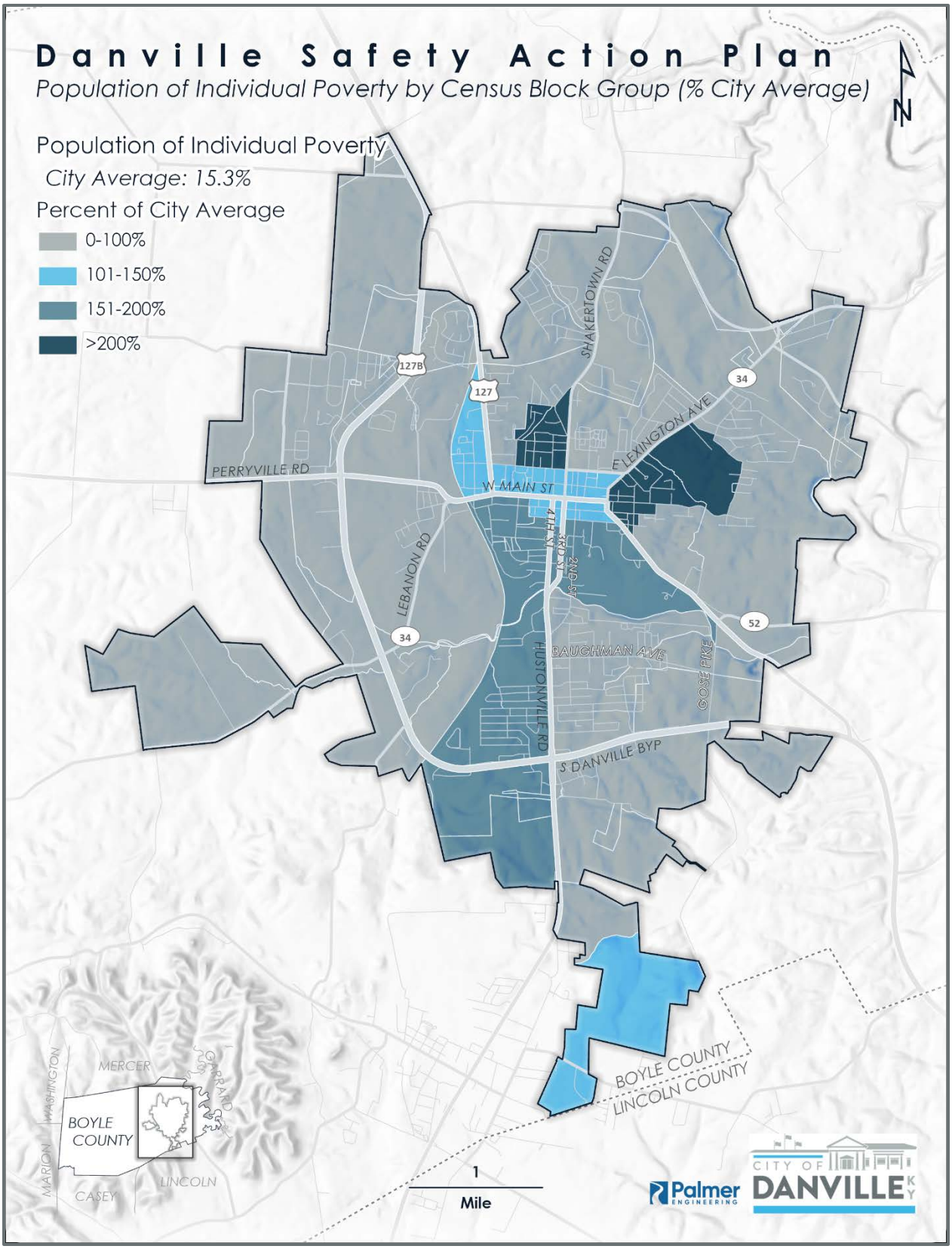
CITY OF DANVILLE KY


Danville Safety Action Plan
Population of Individual Poverty by Census Block Group (% City Average)
N
Population of Individual Poverty
City Average: 15.3%
Percent of City Average
0-100%
101-150%
151-200%
>200%
127B
127
34
52
SHAKERTOWN RD
E LEXINGTON AVE
PERRYVILLE RD
W MAIN ST
LEBANON RD
4TH ST
3RD ST
2ND ST
HUSTONVILLE RD
BAUCHMAN AVE
GORE PIKE
S DANVILLE BYP
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
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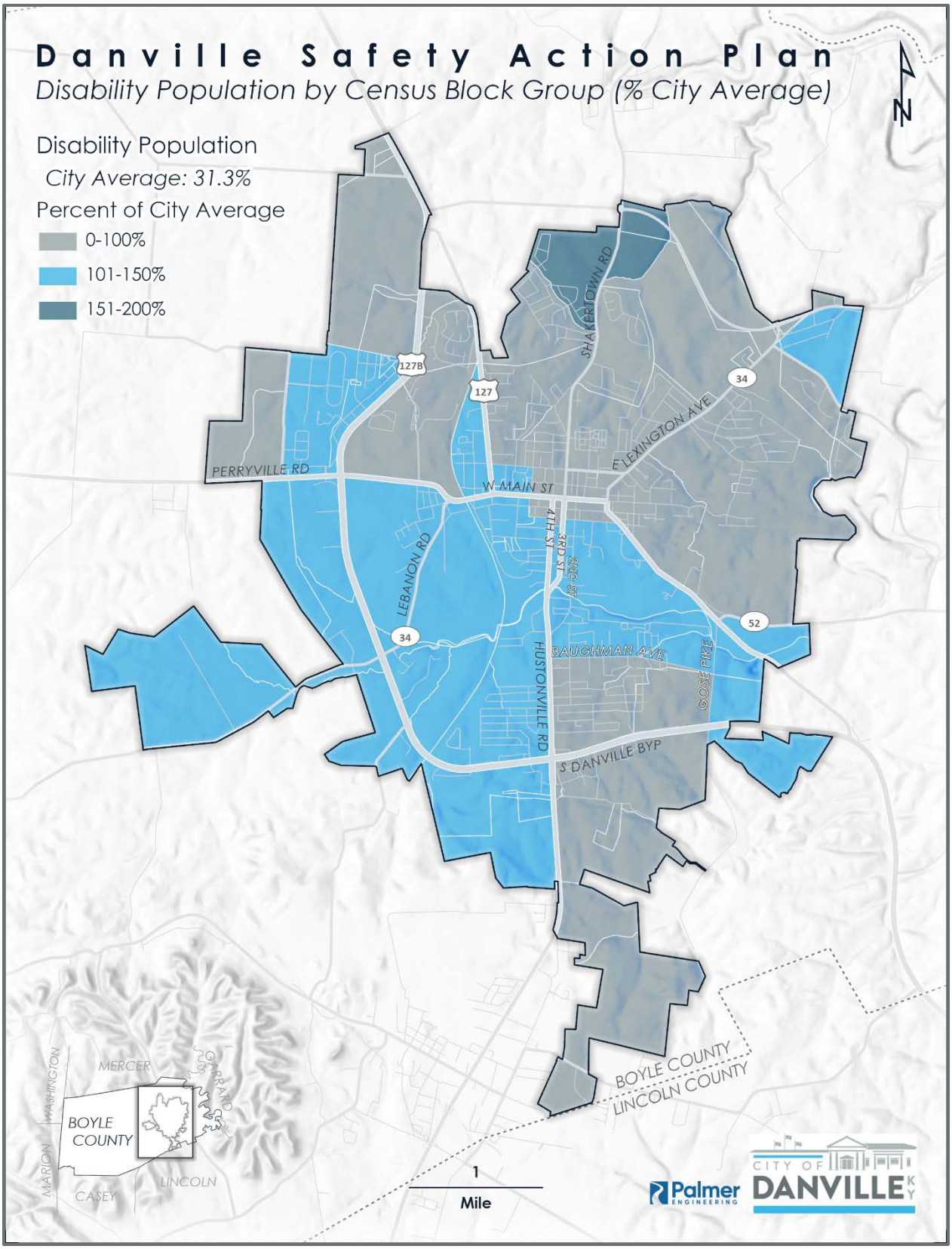
CITY OF DANVILLE KY


Danville Safety Action Plan
Disability Population by Census Block Group (% City Average)
N
Disability Population
City Average: 31.3%
Percent of City Average
0-100%
101-150%
151-200%
SHAKERTOWN RD
127B
127
34
E LEXINGTON AVE
PERRYVILLE RD
W MAIN ST
4TH ST
3RD ST
2ND ST
LEBANON RD
34
52
BAUCHMAN AVE
GOSE PIKE
HUSTONVILLE RD
S DANVILLE BYP
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
LINCOLN
CASEY
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY

Incorporating Equity throughout the Safety Action Plan Process

Establishing equity as an integral part of the Danville Safety Action Plan demands a persistent commitment. It begins with project prioritization through development and implementation.

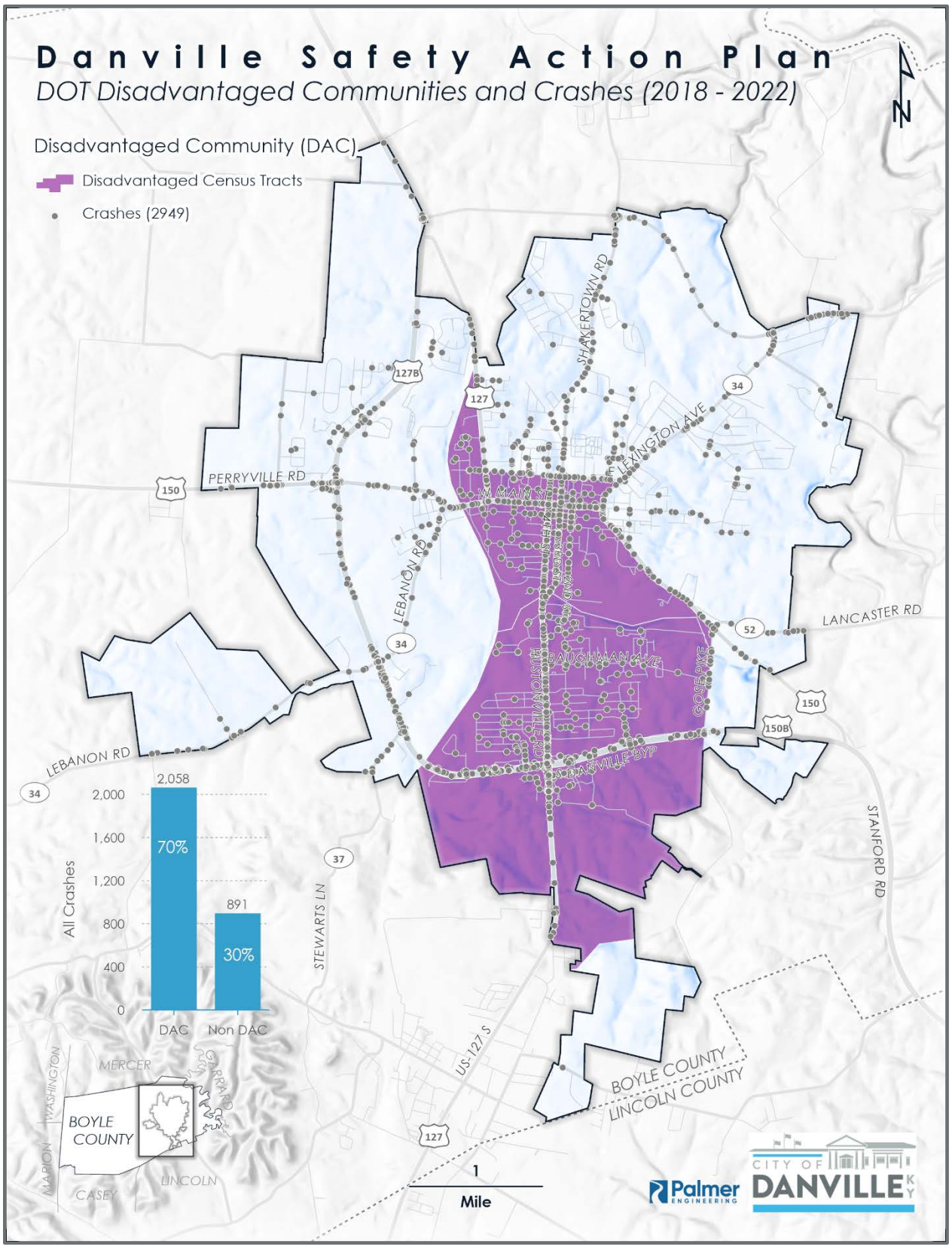
Project Prioritization, Development, and Implementation

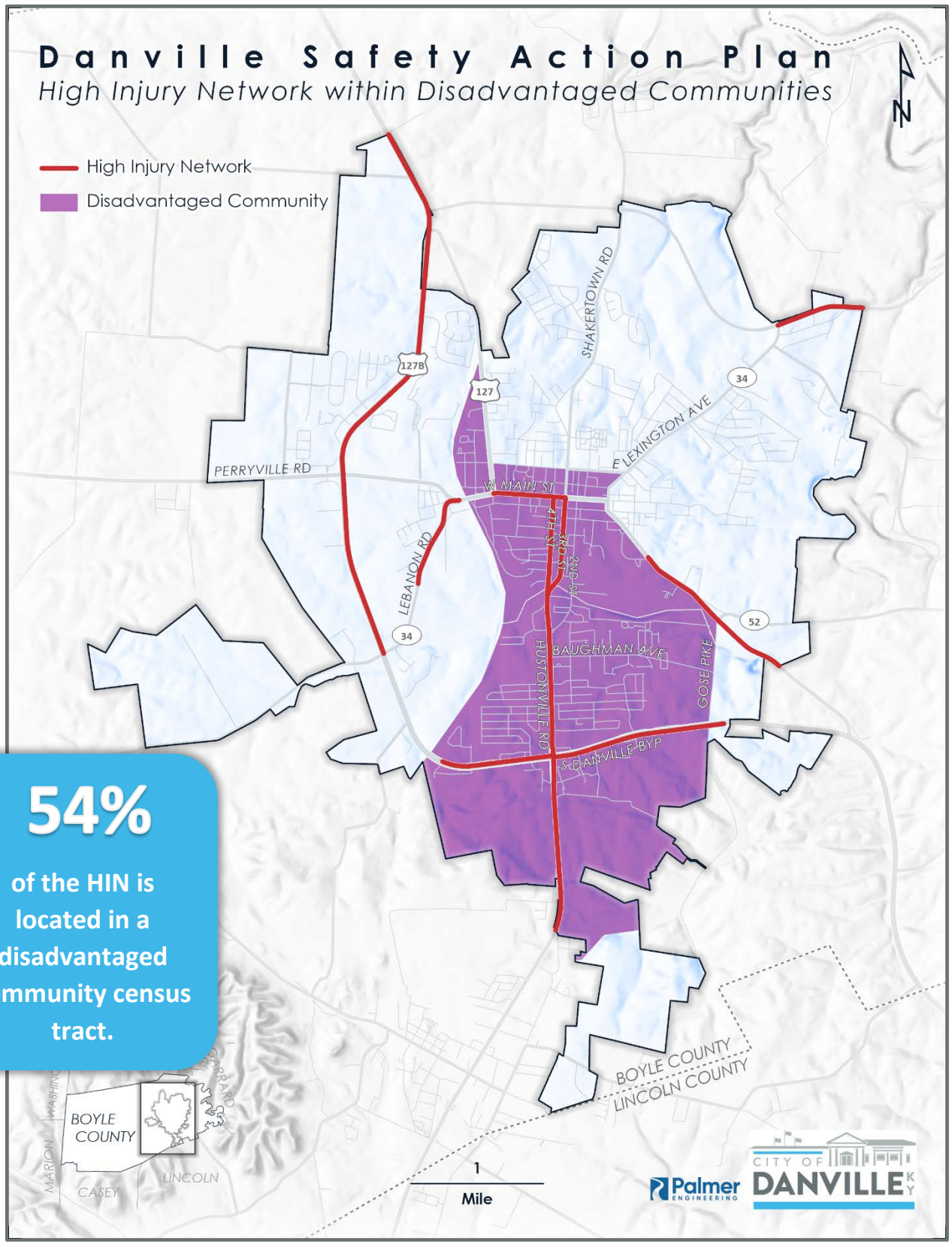
The equity evaluations conducted have identified the Disadvantaged Communities within the City of Danville. Projects and strategies will utilize the safety analyses performed to develop a set of recommended corridor and intersection projects.

Equity will be pivotal in the process of prioritizing and selecting projects, alongside the severity of identified reactive and systemic safety issues. While addressing the most critical intersections and corridors is important, subsequent project choices will be guided by the requirements of underserved communities. Projects aligning closely with equity considerations will be identified by overlaying proposed project locations with Disadvantaged Communities.

The maps on the following pages highlight the Disadvantaged Community Census Tracts with respect to crash locations and High Injury Network. Details pertaining to the High Injury Network are provided in Chapter 7 – Strategy and Project Selection.

Sustaining engagement with equity populations remains vital as the plan progresses from development to implementation. Danville commits to maintaining continuous communication with affected equity populations and partner organizations outlined in the Safety Action Plan throughout the implementation phase.


Danville Safety Action Plan
DOT Disadvantaged Communities and Crashes (2018 - 2022)
N
Disadvantaged Community (DAC)
Disadvantaged Census Tracts
Crashes (2949)
PERRYVILLE RD
W MAIN ST
E LEXINGTON AVE
SHAKERTOWN RD
LEBANON RD
LANCASTER RD
BAUGHMAN AVE
GOSE PIKE
DANVILLE BYP
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
150
52
150B
37
All Crashes
2,058
70%
891
30%
DAC
Non DAC
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
CASEY
LINCOLN
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY



54%

of the HIN is located in a disadvantaged community census tract.

6. Policy and Process Changes

A comprehensive review of Danville's current policies, plans, guidelines, and standards has identified key opportunities for improvement ensuring that safety considerations are a priority. The city seeks to not only prioritize safety but also to foster a more inclusive and accessible environment for all road users.

Danville – Boyle County Comprehensive Plan

March 1, 2017

Link: [Danville-Boyle County Comprehensive Plan]

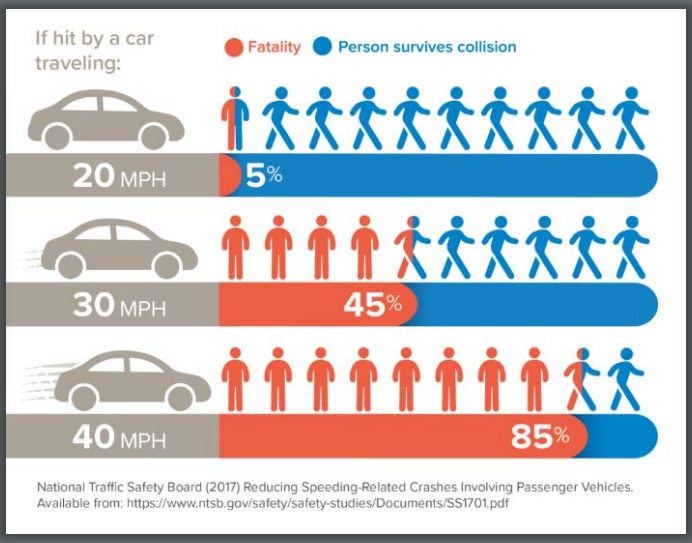
The Danville-Boyle County Comprehensive Plan serves as a fundamental blueprint for the city's development, guiding both public and private actions and decisions. It outlines a set of goals and objectives that reflect the community's aspirations and needs, providing clear direction for planning efforts. At the heart of the Comprehensive Plan lies a statement of goals and objectives, which serves as a roadmap for shaping the city's future. These goals and objectives provide crucial direction for the Planning Commission and city officials in crafting a plan that aligns with the community's vision.

Key focus areas for Danville include effective growth management and ensuring the conversion of rural agricultural land to urban uses in Boyle County. The goals and objectives outlined in the plan offer a dual approach, with goals representing broad, overarching ideals desired by the community, while objectives provide specific, actionable steps to achieve these goals. The following are objectives related to transportation safety.

- Enhance the existing transportation infrastructure by modernizing current rights-of-way, roads, bridges, railroad crossings, and stream crossings to meet contemporary safety standards during instances of new development or redevelopment.
- Ensure the establishment of a secure transportation network by mandating developers to construct standard streets capable of accommodating anticipated traffic volumes.
- Regulate the number of direct access points along arterial streets and county highways by promoting the utilization of frontage roads and adopting guidelines for access management.
- Foster a culture of walking or bicycling among residents by facilitating safe pedestrian pathways, street crossings, and bike lanes within urban areas.

The plan includes a detailed traffic analysis of the transportation system, as well as proposed road improvements in the city of Danville including two bridge replacements. In response to increasing bicycle usage, prioritizing safety is crucial in Danville's bikeway development. This entails creating separated paths where possible and implementing shared-lane markings and dedicated bike lanes where necessary. Safety measures should align with state and federal policies promoting walking and cycling.

It is recommended to incorporate design policies to achieve desired safety, including traffic calming measures such as roundabouts and narrower streets, as well as multi-use paths and trails in areas where high traffic volumes exist and large numbers of non-motorized users are expected.



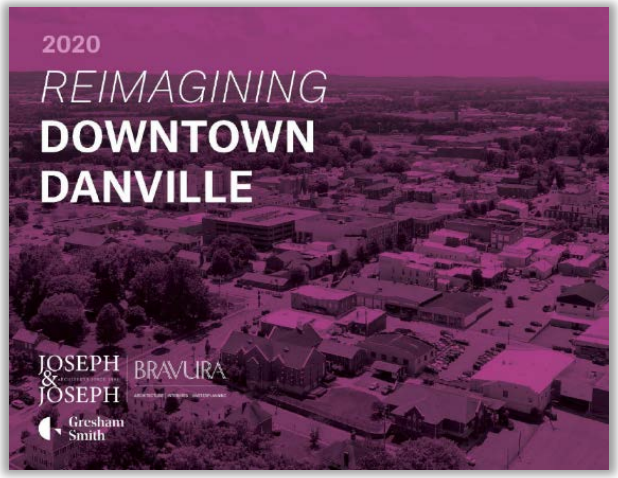
SAFER SPEEDS

Speed plays a pivotal role in severity of crashes, particularly for pedestrians. The relationship between vehicle speed and pedestrian injury severity is both direct and unforgiving. At higher speeds, drivers have less time to react to unexpected pedestrian movement, and the force of impact is exponentially greater, leading to more severe injuries and fatalities. Implementing speed management strategies is a fundamental approach to safeguarding the most vulnerable road users and enhancing overall traffic safety.

Reimagining Downtown Danville

Link: [Reimagining Downtown Danville]

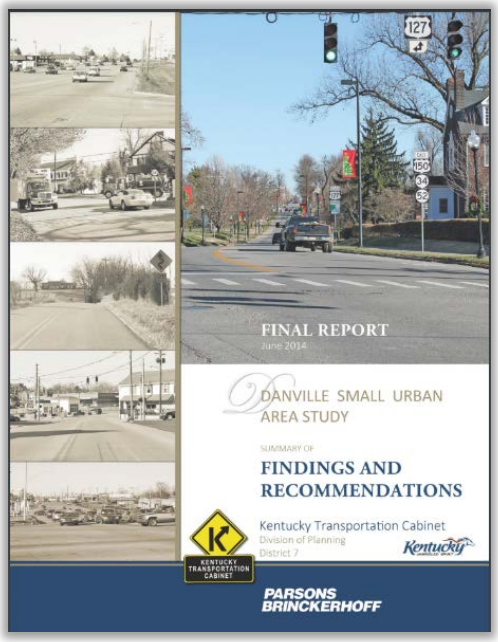
In 2020 The Danville Downtown Master Plan was published by Gresham Smith, Joseph & Joseph, and Bravura. The Master Plan prioritizes safety with objectives focused on downtown connectivity, traffic calming, and pedestrian safety. Strategies include reducing vehicular lanes to control traffic, enhancing sidewalks and streetscapes, installing roundabout intersections, and expanding pedestrian multi-use paths. The Downtown Master Plan highlights key focal areas of transportation, namely Main Street, Walnut Street, and 3rd & 4th Streets. These thoroughfares are central to transportation planning and warrant special attention in addressing traffic flow, pedestrian safety, and infrastructure enhancements.



No changes are recommended to this document.

MAIN STREET DOWNTOWN PROJECT

The project utilized strategies identified in the Reimagining Downtown Danville Master Plan including lane reduction, bulb-outs, lighting, and enhancing sidewalks and streetscape.



City of Danville Small Urban Area Study

Link: City of Danville Small Urban Area Study

In 2014, the Kentucky Transportation Cabinet (KYTC), with support from Parsons Brinckerhoff, conducted a Small Urban Area (SUA) study for Danville, Kentucky, and part of Boyle County. SUA studies target areas with populations ranging from 5,000 to 50,000, focusing on transportation issues like safety and congestion. Following input from various sources, including technical analysis, field reviews, and public engagement, 26 projects were identified for improvement. These projects are categorized into 8 local, 8 short-term, and 10 long-term initiatives.

As the projects in this study are implemented, it is recommended to consider vulnerable road users as well as up to date guidelines for traffic calming measures.

Subdivision Regulations

Link: Subdivsion Regulations

The City's subdivision regulations were last amended in June 2022. These regulations outline the rules and guidelines for the development of land within the city limits. The regulations provide street layout requirements including hierarchy of streets to facilitate safe and efficient traffic flow and street and sidewalk widths providing adequate vehicular and pedestrian widths. The regulations include guidelines on street continuity providing network connectivity, intersection design requirements related to spacing and sight distance, and a street lighting requirement. As this document is amended, it is recommended to consider guidelines for traffic calming measures.

Traffic Calming Measures

Traffic calming measures offer significant benefits for all users, especially vulnerable road users like bicyclists and pedestrians, enhancing safety and mobility. For pedestrians, improvements like raised crosswalks, median refuges, and corner extensions not only make crossing streets safer but also more accessible, especially for those with disabilities.

Speed humps were found to have a

53-60%

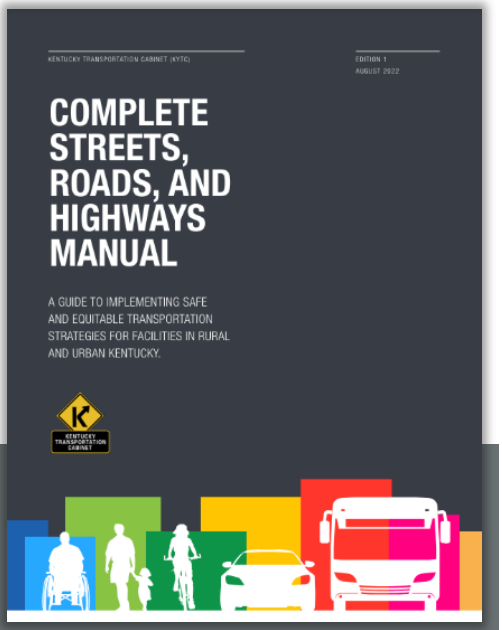
reduction in the odds of injury or death among children struck by a vehicle in their neighborhood.

Source: American Journal of Public Health

Complete Streets Policy

Link: [KYTC's Complete Streets Manual]

A Complete Streets policy is essential for fostering a more sustainable, safe and inclusive urban environment. The City of Danville has implemented the KYTC Complete Streets, Roads, and Highways Manual. The policy represents a commitment to designing and operating roadways with all users in mind, including pedestrians, bicyclists, motorists, transit riders, and individuals of all ages and abilities. No changes are recommended to this document.



WHAT IS A COMPLETE STREET?

A Complete Street is thoroughfare design to be safe and accessible for all users, including pedestrians, cyclists, motorists, and transit riders, tailored to the specific context and characteristics of the area. It creates a diverse transportation network that supports safety, connectivity, comfort, equity, and accessibility, aligning with the Safe System Approach to accommodate various travel needs.

Policy and Process Considerations

The following plan is for consideration to incorporate into practice.

Neighborhood Traffic Management Plan

Evaluate the City's need for a Neighborhood Traffic Management Plan (NTMP) as rising population and traffic volumes may lead to congestion on major roads, pushing drivers to use local streets as detours. Recognizing this trend, Neighborhood Traffic Management is a method to address traffic issues in residential areas. NTMPs aim to reduce traffic volume, speed, and enhance safety, thus improving residents' quality of life. These plans involve thorough community engagement for feedback and implementing customized traffic calming measures to address the effects of increasing traffic in neighborhoods.

7. Strategy and Project Selection

The Safety Action Plan strategies and projects are based on the historical crash data analysis, proven practices, and stakeholder and public engagement with an emphasis on equity. The reactive approach to analyzing crash data examines crashes by frequency, severity and location. This approach helps to identify locations with the highest density of crashes and crash severities. The following provides the method of prioritization for project and strategy selection.

Prioritization

The City's goal is to eliminate fatal and serious injury crashes, therefore crash severity is a major component to prioritizing projects and strategies. The crash severity cost was used to establish a scale for prioritization. The following table provides the comprehensive costs by crash severity based on research by the Federal Highway Administration (FHWA) which developed national crash costs for use as default crash unit values (Crash Costs for Highway Safety Analysis). The national costs provided by the FHWA research are adjusted to Kentucky for costs and adjusted for inflation. Comprehensive crash costs are the combination of economic cost of a crash and monetized pain and suffering.

Severity	Description	Comprehensive Cost Per Crash (2022 Dollars)
K	Fatal	$11,087,806
A	Suspected Serious Injury	$642,593
B	Suspected Minor Injury	$194,583
C	Possible Injury	$122,993
O	No Apparent Injury	$11,575

Equivalent Property Damage Only Method

The comprehensive crash costs are used to establish a value per crash severity equivalent to the No Apparent Injury Crash, also referred to as a Property Damage Only Crash. The following table shows the breakdown of the comprehensive crash costs and Equivalent Property Damage Only (EPDO) value by crash severity.

Severity	Comprehensive Cost Per Crash (2022 Dollars)	EPDO Value
K	$11,087,806	958
A	$642,593	56
B	$194,583	17
C	$122,993	11
O	$11,575	1

The comprehensive cost of a fatal crash is significantly greater than the other crash types. The EPDO method may overly emphasize fatal crashes, potentially skewing focus towards areas with fewer crashes. To address this imbalance, a modified EPDO (MEPDO) approach was used to equally consider both fatal and suspected serious injury crashes by blending their values based on their comprehensive costs and

frequency. The following table provides a breakdown of the MEPDO providing a more balanced evaluation while maintaining a focus on fatal and suspected serious injury crashes.

Severity	Crashes	Comprehensive Cost Per Crash (2022 Dollars)	Severity	Weighted Average Costs	MEPDO Value
K	6	$11,087,806	KA	$2,433,200	210
A	29	$642,593			
B	156	$194,583	B	$194,583	17
C	191	$122,993	C	$122,993	11
O	2,567	$11,575	O	$11,575	1

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. The crash data was joined with GIS information to facilitate a detailed analysis by identifying the location of the crashes by road segment and intersection.

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

Intersections

Enhancing safety at intersections plays a crucial role in promoting a Safe System approach across planning, design, and road infrastructure initiatives. Assessing roadway features like geometrics and traffic operation and control strategies is fundamental to eliminating fatal and serious injury crashes. Intersections serve as deliberate points of interaction, where vehicles and non-motorized users converge, significantly influencing the overall safety performance of the transportation system. These conflict points are locations where historically, fatal and serious injury crashes occur. Therefore, intersection projects offer distinctive prospects to integrate Safe System principles into planning, design, and operational decision-making processes and intersection improvement strategies provide the opportunity to eliminate fatal and serious injury crashes.

The City of Danville experienced 22 fatal and serious injury crashes at an intersection (63%). These crashes occurred at signalized and unsignalized intersections. Both of these type of intersections are locations of multiple conflict points and present an opportunity to improve safety for all users.

Signalized Intersections

The City of Danville has 32 signalized intersections. These intersections account for 13 fatal and serious injury crashes (37% of all fatal and serious injury crashes). MEPDO was calculated for each and ranked. The top 11 ranked signalized intersections by MEPDO experienced at least one fatal or suspected serious injury crash. This list of prioritized signalized intersections comprise the primary focal points where addressing safety concerns can have the most significant impact.

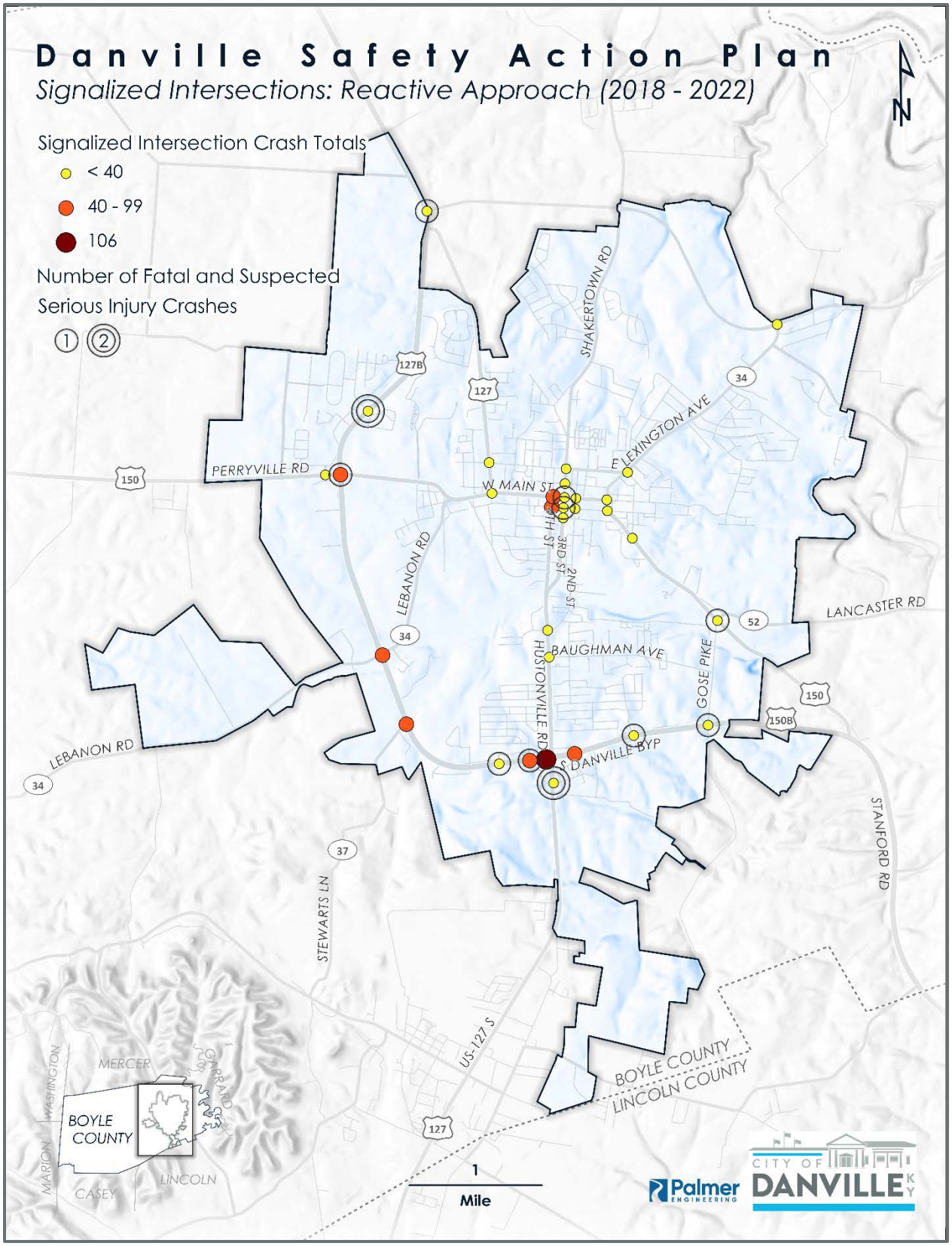
The following table lists the top 11 signalized intersections by MEPDO. These top 11 intersections account for all of the 13 fatal and suspected serious injury crashes at signalized intersections.

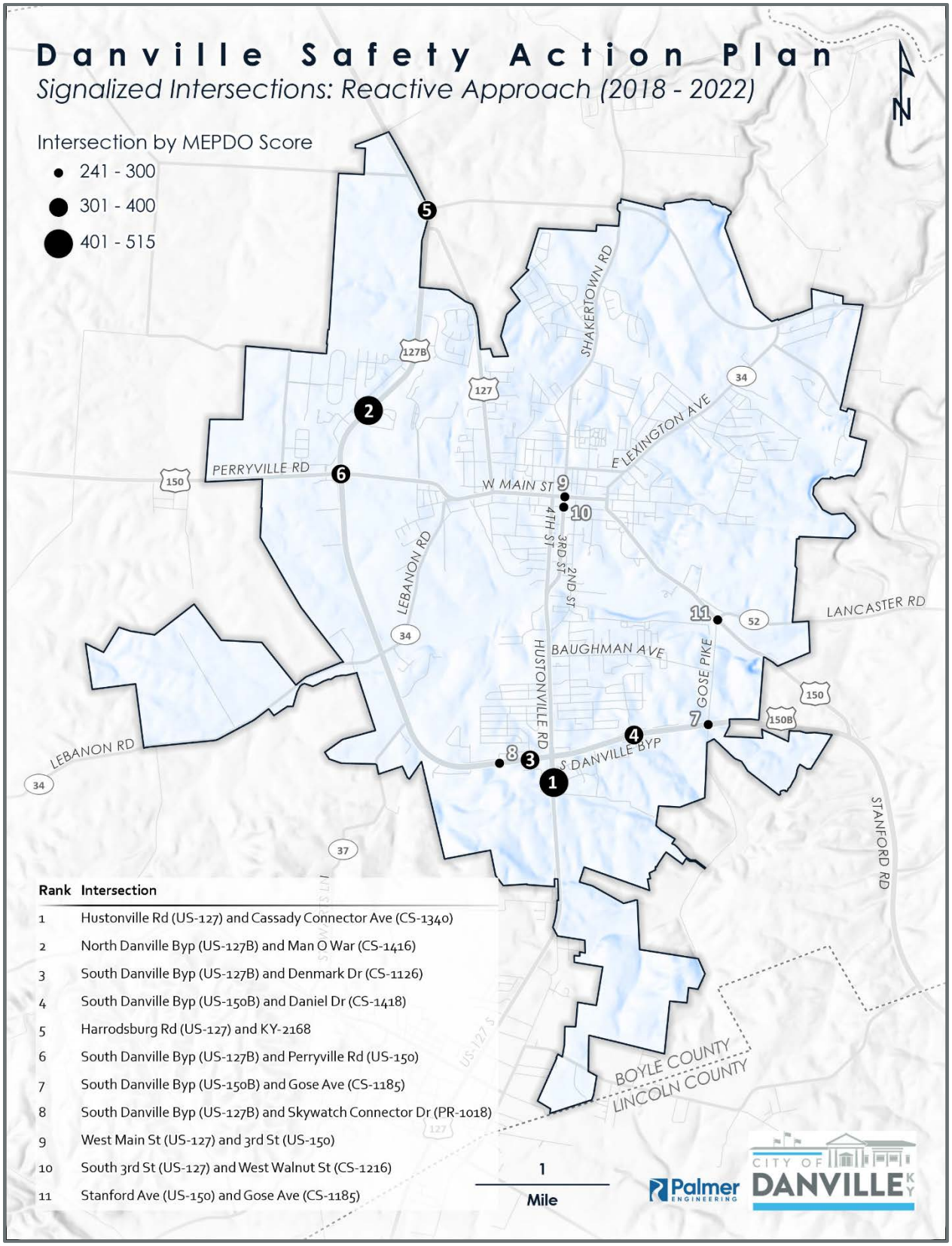
Ranking	Intersection	K	A	B	C	O	KA	TOTAL	MEPDO
1	Hustonville Rd (US-127) and Cassady Connector Ave (CS-1340)	0	2	4	0	28	2	34	516
2	North Danville Byp (US-127B) and Man O War	0	2	1	3	20	2	26	489
3	South Danville Byp (US-127B) and Denmark Dr	0	1	4	5	47	1	57	377
4	South Danville Byp (US-150B) and Daniel Dr	1	0	8	0	10	1	19	355
5	Harrodsburg Rd (US-127) and KY-2168	0	1	2	4	32	1	39	318
6	South Danville Byp (US-127B) and Perryville Rd (US-150)	0	1	1	2	61	1	65	309
7	South Danville Byp (US-150B) and Gose Ave	0	1	2	3	22	1	28	298
8	South Danville Byp (US-127B) and Skywatch Connector Dr	0	1	2	2	17	1	22	282
9	West Main St (US-127) and 3rd St (US-150)	1	0	2	0	31	1	34	275
10	South 3rd St (US-127) and West Walnut St	0	1	0	2	16	1	19	247
11	Stanford Ave (US-150) and Gose Ave	0	1	0	2	10	1	13	241

Detail maps displaying intersection crashes are provided on the following pages. Below are corresponding descriptions and insights of the crash data.

Signalized Intersections: Reactive Approach (2018 – 2022) Crash Totals: Map highlights the locations of all signalized intersections where crashes occurred. Signalized intersection crash totals are grouped in bins based on crash frequency and displayed with different colors. The number of fatal and serious injury crashes are noted by a black outline circle. Each circle represents the number of fatal and serious injury crashes that occurred at each intersection. For example, Hustonville Rd (US-127) and Cassady Connector Ave is outlined with two black circles to represent the two fatal and serious injury crashes that occurred at that intersection.

Signalized Intersections: Reactive Approach (2018 – 2022) Intersection by MEPDO Score: Map presents the top 11 signalized intersections by MEPDO score. The signalized intersections are marked with circles and sized based on the MEPDO score. The prioritized ranking score is noted for the top 11 signalized intersections. For example, Hustonville Rd (US-127) and Cassady Connector Ave is noted with a "1" since it is the highest ranked MEPDO signalized intersection.


Danville Safety Action Plan
Signalized Intersections: Reactive Approach (2018 - 2022)
N
Signalized Intersection Crash Totals
< 40
40 - 99
106
Number of Fatal and Suspected
Serious Injury Crashes
1
2
SHAKERTOWN RD
127B
127
34
E LEXINGTON AVE
PERRYVILLE RD
150
W MAIN ST
4TH ST
3RD ST
2ND ST
LEBANON RD
34
LANCASTER RD
52
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
150
150B
LEBANON RD
34
S DANVILLE BYP
STANFORD RD
37
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127
MERCER
GARRARD
WASHINGTON
BOYLE
COUNTY
MARION
CASEY
LINCOLN
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY



Rank	Intersection
1	Hustonville Rd (US-127) and Cassady Connector Ave (CS-1340)
2	North Danville Byp (US-127B) and Man O War (CS-1416)
3	South Danville Byp (US-127B) and Denmark Dr (CS-1126)
4	South Danville Byp (US-150B) and Daniel Dr (CS-1418)
5	Harrodsburg Rd (US-127) and KY-2168
6	South Danville Byp (US-127B) and Perryville Rd (US-150)
7	South Danville Byp (US-150B) and Gose Ave (CS-1185)
8	South Danville Byp (US-127B) and Skywatch Connector Dr (PR-1018)
9	West Main St (US-127) and 3rd St (US-150)
10	South 3rd St (US-127) and West Walnut St (CS-1216)
11	Stanford Ave (US-150) and Gose Ave (CS-1185)

Prioritized Unsignalized Intersections

There are numerous unsignalized intersections throughout the city. These intersections account for 9 fatal and serious injury crashes (26% of total fatal and serious injury crashes). MEPDO was calculated for each unsignalized intersection and ranked by MEPDO. The top 10 ranked unsignalized intersections by MEPDO include all 9 fatal and suspected serious injury crashes that occurred at unsignalized intersections. This list of prioritized unsignalized intersections comprise the primary focal points where addressing safety concerns can have the most significant impact.

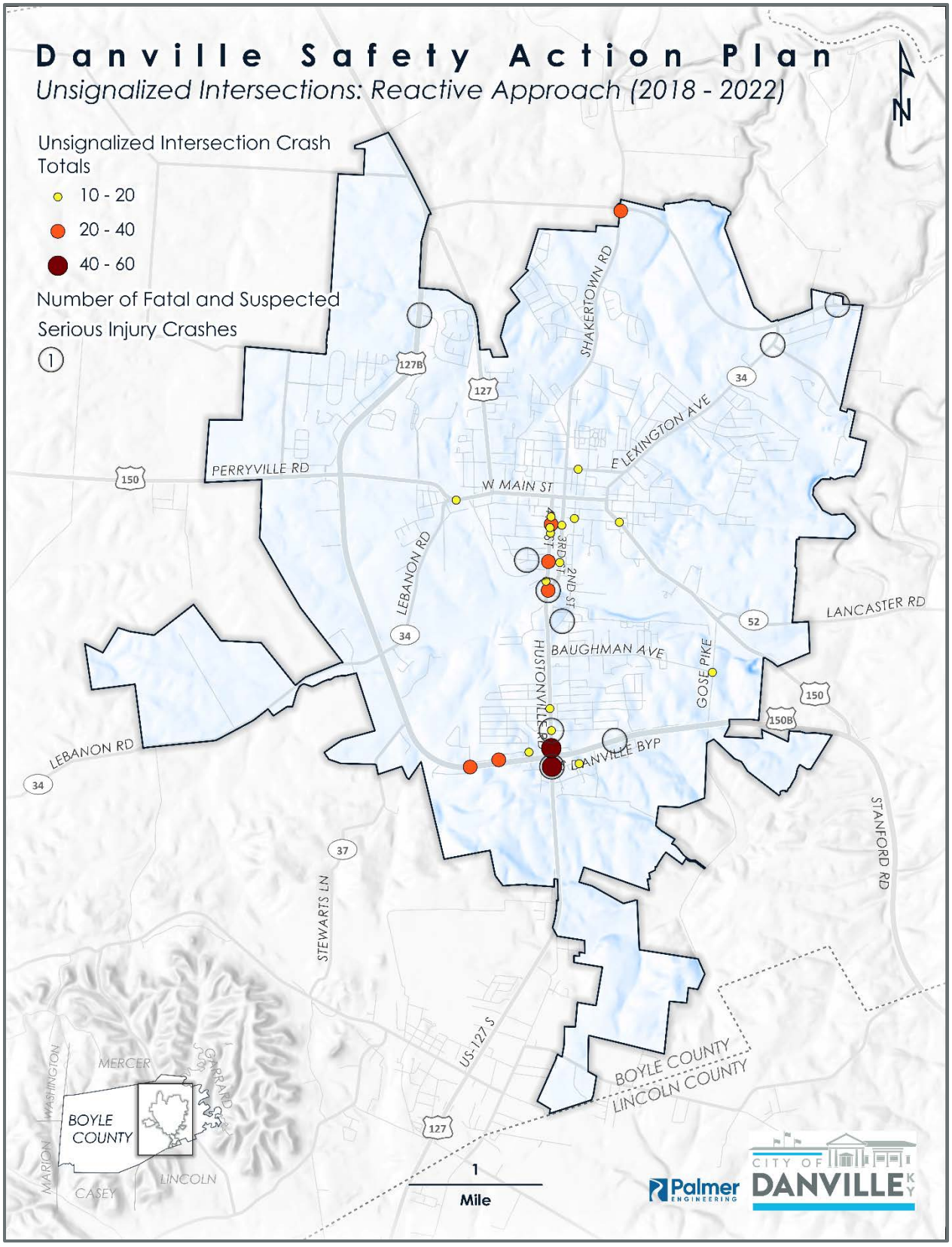
The following table lists the top 10 unsignalized intersections by MEPDO.

Ranking	Intersection	K	A	B	C	O	KA	TOTAL	MEPDO
1	Hustonville Rd (US-127) and Jane Trail	0	1	1	0	54	1	56	281
2	Hustonville Rd (US-127) and Lisa Ave	0	1	1	1	16	1	19	254
3	South 4th St (US-127) and South 3rd St (US-127)	0	1	0	0	27	1	28	237
4	South 2nd St (CS-1160) and Dorothy Ave	0	1	1	0	6	1	8	233
5	South Danville Byp (US-150B) and Southtown Connector Dr (US-150B)	0	1	0	1	4	1	6	225
6	North Danville Byp (US-127B) and Lannock Drive	0	1	0	0	5	1	6	215
7	Lexington Rd (KY-34) and Lexington Ct	0	1	0	0	3	1	4	213
8	Lexington Rd (KY-34) and Goggin Ln (KY-1805)	0	1	0	0	0	1	1	210
9	Roy Arnold Blvd and Furn St	0	1	0	0	0	1	1	210
10	Hustonville Rd (US-127) and Southtown Dr	0	0	1	7	33	0	41	124

Detail maps displaying intersection crashes are provided on the following pages. Below are corresponding descriptions and insights of the crash data.

Unsignalized Intersections: Reactive Approach (2018 – 2022) Crash Totals: Map highlights the locations of all unsignalized intersections where crashes occurred. Unsignalized intersection crash totals are grouped in bins based on crash frequency and displayed with different colors. The number of fatal and serious injury crashes are noted by a black outline circle. Each circle represents the number of fatal and serious injury crashes that occurred at each intersection. For example, Hustonville Rd (US-127) and Cassady Connector Ave is outlined with two black circles to represent the two fatal and serious injury crashes that occurred at that intersection.

Unsignalized Intersections: Reactive Approach (2018 – 2022) Intersection by MEPDO Score: Map presents the top 10 unsignalized intersections by MEPDO score. The unsignalized intersections are marked with circles and sized based on the MEPDO score. The prioritized ranking score is noted for the top 10 unsignalized intersections. For example, Hustonville Rd (US-127) and Jane Trail is noted with 1 since it is the highest ranked MEPDO unsignalized intersection.


Danville Safety Action Plan
Unsignalized Intersections: Reactive Approach (2018 - 2022)
N
Unsignalized Intersection Crash Totals
10 - 20
20 - 40
40 - 60
Number of Fatal and Suspected Serious Injury Crashes
1
SHAKERTOWN RD
127B
127
34
E LEXINGTON AVE
150
PERRYVILLE RD
W MAIN ST
1ST
3RD
2ND ST
LEBANON RD
34
LANCASTER RD
52
BAUGHMAN AVE
GOSE PIKE
HUSTONVILLE RD
150
150B
LEBANON RD
34
DANVILLE BYP
STANFORD RD
37
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127
MERCER
GARRARD
WASHINGTON
BOYLE COUNTY
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CASEY
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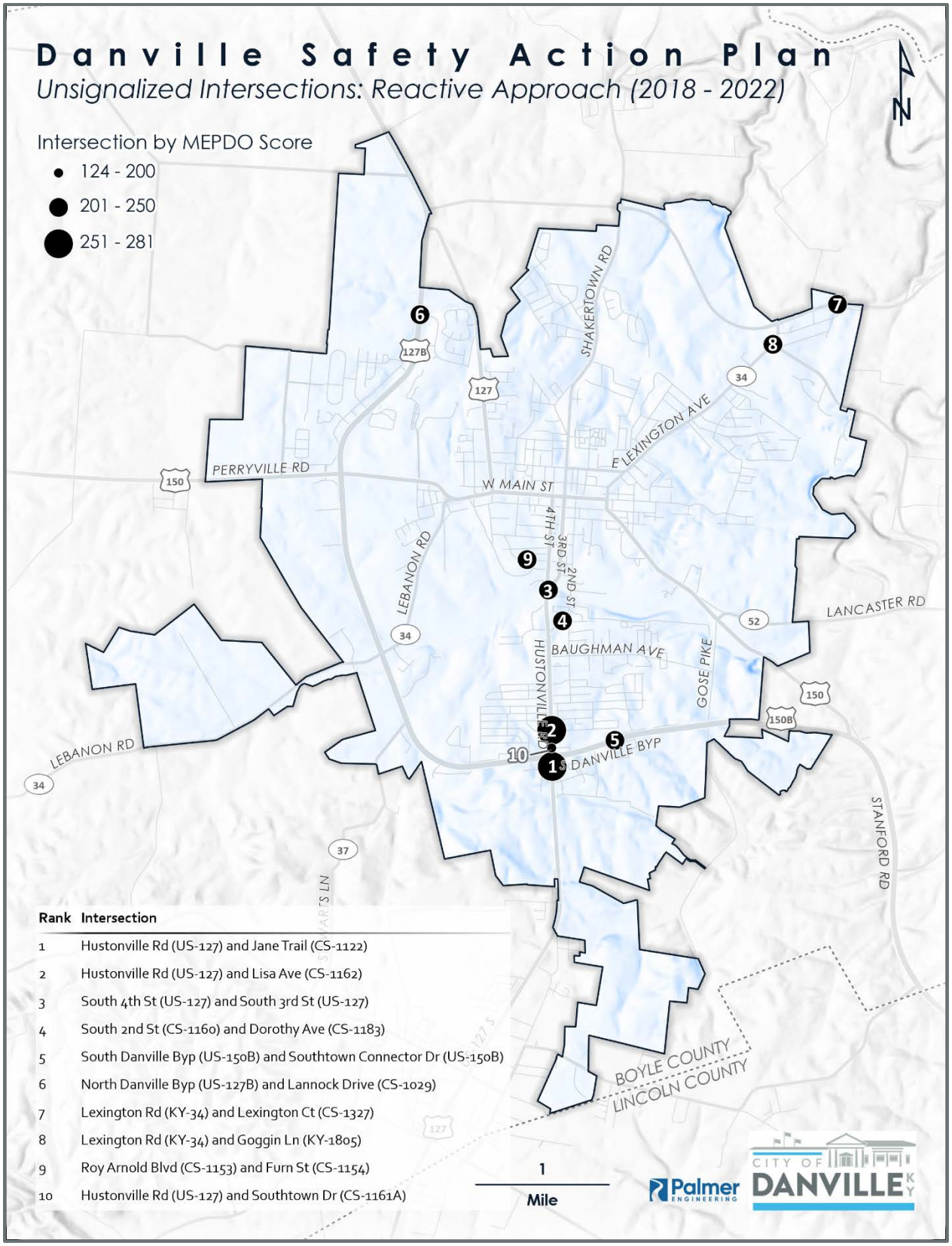


Rank	Intersection
1	Hustonville Rd (US-127) and Jane Trail (CS-1122)
2	Hustonville Rd (US-127) and Lisa Ave (CS-1162)
3	South 4th St (US-127) and South 3rd St (US-127)
4	South 2nd St (CS-1160) and Dorothy Ave (CS-1183)
5	South Danville Byp (US-150B) and Southtown Connector Dr (US-150B)
6	North Danville Byp (US-127B) and Lannock Drive (CS-1029)
7	Lexington Rd (KY-34) and Lexington Ct (CS-1327)
8	Lexington Rd (KY-34) and Goggin Ln (KY-1805)
9	Roy Arnold Blvd (CS-1153) and Furn St (CS-1154)
10	Hustonville Rd (US-127) and Southtown Dr (CS-1161A)

High Injury Network and Prioritized Corridors

A High Injury Network (HIN) is a data-driven approach which identifies roadway segments that account for a disproportionate amount of a community's fatal and serious injury crashes. The HIN allows communities to focus resources on improving safety along those high priority, dangerous corridors. Danville's HIN was developed by analyzing crash data, integrating GIS information to create a detailed crash database, analyzing and identifying corridors, and selecting corridors with high concentrations of fatal and suspected serious injury crashes. The following table and maps present Danville's HIN along with highlights with respect to Disadvantaged Communities, fatal and suspected serious injury crash locations, and prioritized intersections based on MEPDO.

Ranking	Route	Begin	End	Length (mile)	MEPDO	MEPDO/ mile
1	S Danville Bypass (US 127B)	Hustonville Rd (US 127)	Fireside Dr	0.84	1,065	1,261
2	S 4th St (US 127-001)	Main St.	Hustonville Rd (US 127)	0.72	840	1,167
3	S Danville Bypass (US 150B)	Hustonville Rd (US 127)	Gose Pike	1.31	1,396	1,064
4	Hustonville Rd (US 127)	Woodstock Dr	3rd / 4th St.	2.64	2,501	947
5	S 3rd St. (US 127)	Hustonville Rd (US 127)	Main St.	0.73	682	933
6	N Danville Bypass (US 127B)	Perryville Rd (KY 52)	Lannock Pl.	1.42	1,046	737
7	W Main St (US 127)	S 3rd St.	N Maple Ave	0.58	416	721
8	N Danville Bypass (US 127B)	Lannock Pl.	Harrodsburg Rd	0.65	425	650
9	S Danville Bypass (US 127B)	Lebanon Rd (KY 34)	Perryville Rd (KY 52)	1.39	668	479
10	E Lexington Rd (KY 34)	KY 2168	Old Lexington Rd	0.72	336	468
11	Stanford Ave (US 150)	Ave. of Champions	City Limits	1.28	570	444
12	Lebanon Rd (KY 34)	Railroad Industry	W Main St.	0.73	298	409
13	Harrodsburg Rd (US 127)	Danville Bypass	Melrose Dr.	0.84	333	396

The HIN accounts for:

77%

of the City's fatal and suspected serious injury crashes

9%

of the City's roadway miles

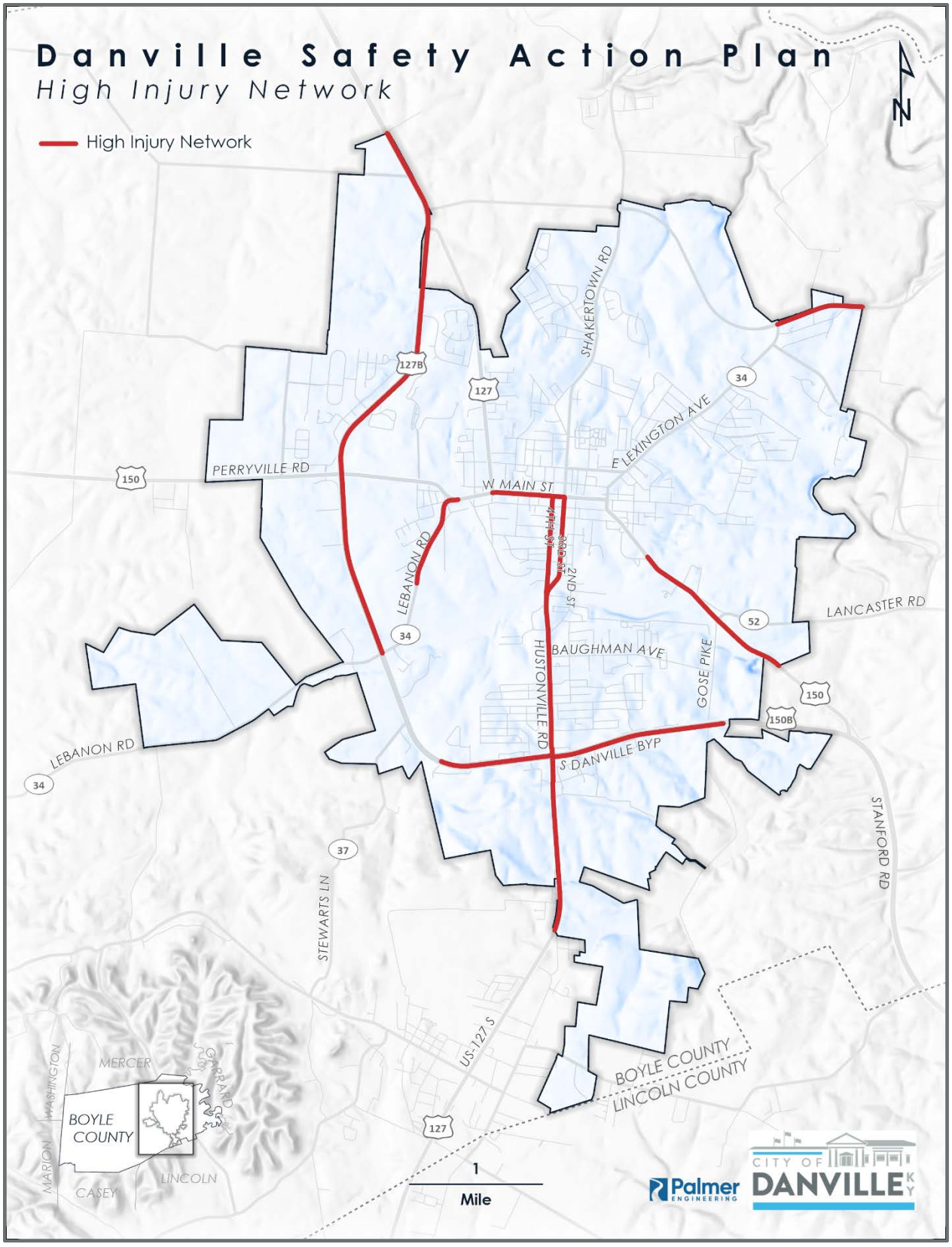
The HIN includes:

11 of top 11

prioritized signalized intersections

7 of top 10

prioritized unsignalized intersections


Danville Safety Action Plan
High Injury Network
High Injury Network
N
PERRYVILLE RD
W MAIN ST
E LEXINGTON AVE
SHAKERTOWN RD
LEBANON RD
HUSTONVILLE RD
BAUGHMAN AVE
GOSE PIKE
LANCASTER RD
S DANVILLE BYP
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
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150
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150B
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MERCER
BOYLE COUNTY
LINCOLN
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MARION
WASHINGTON
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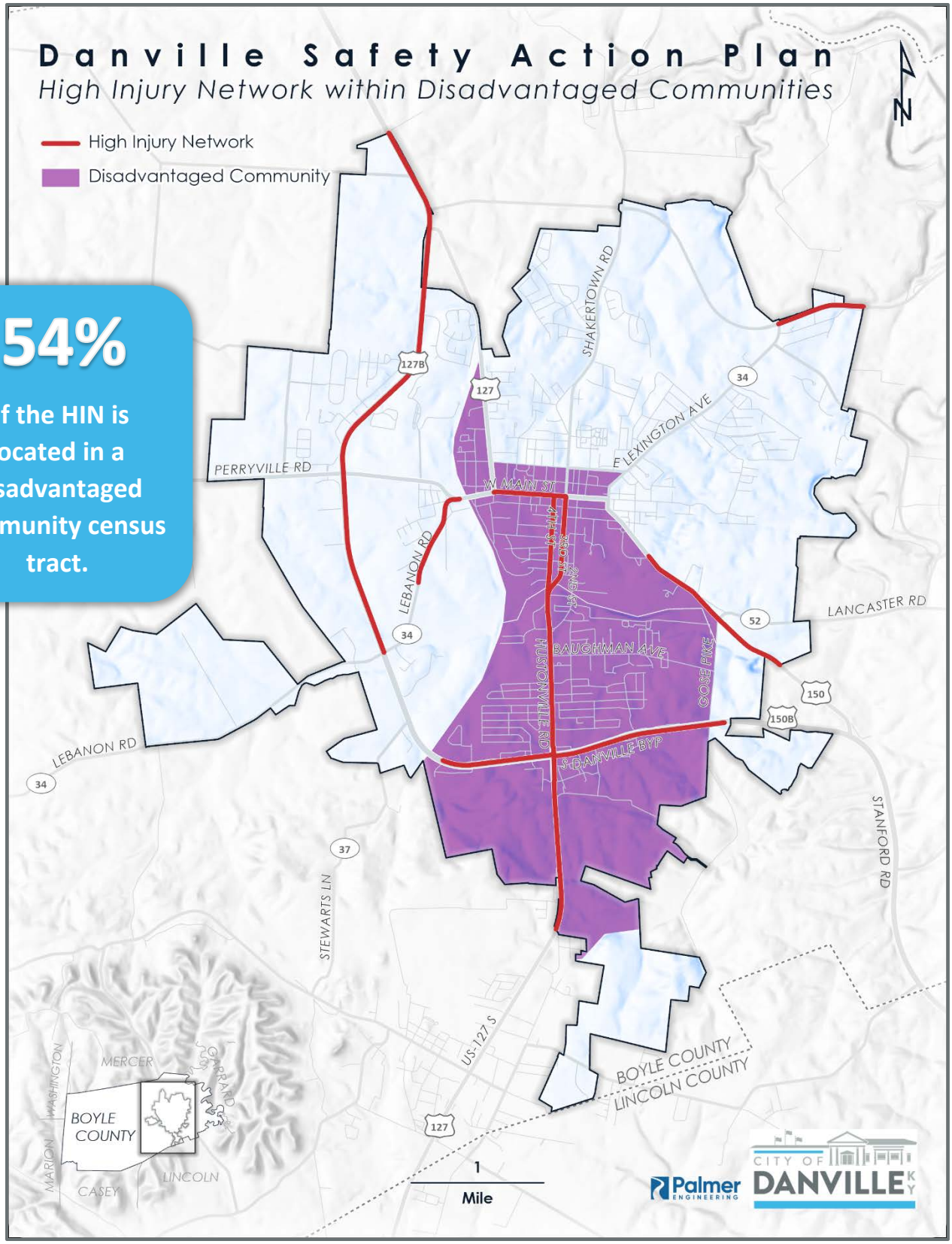
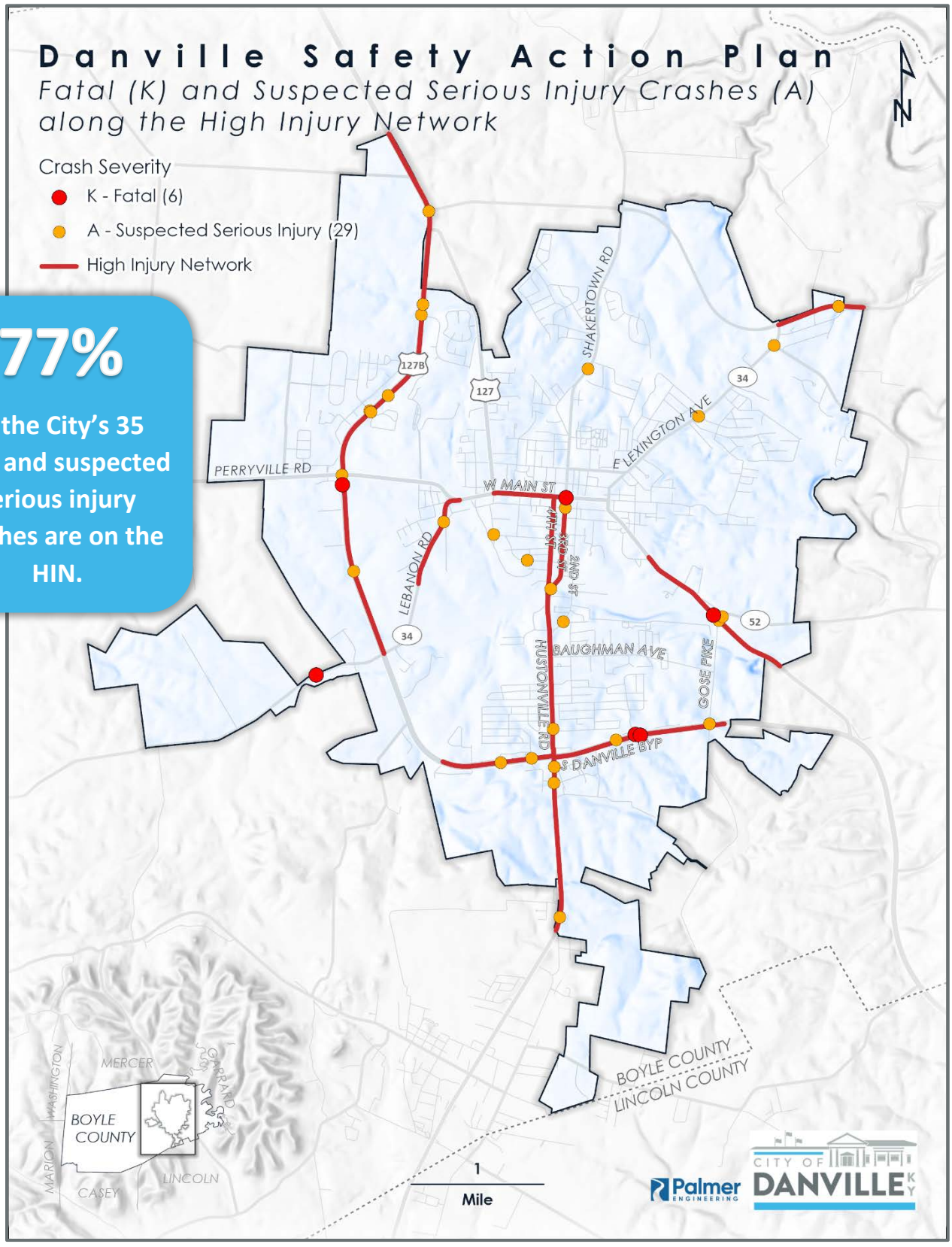
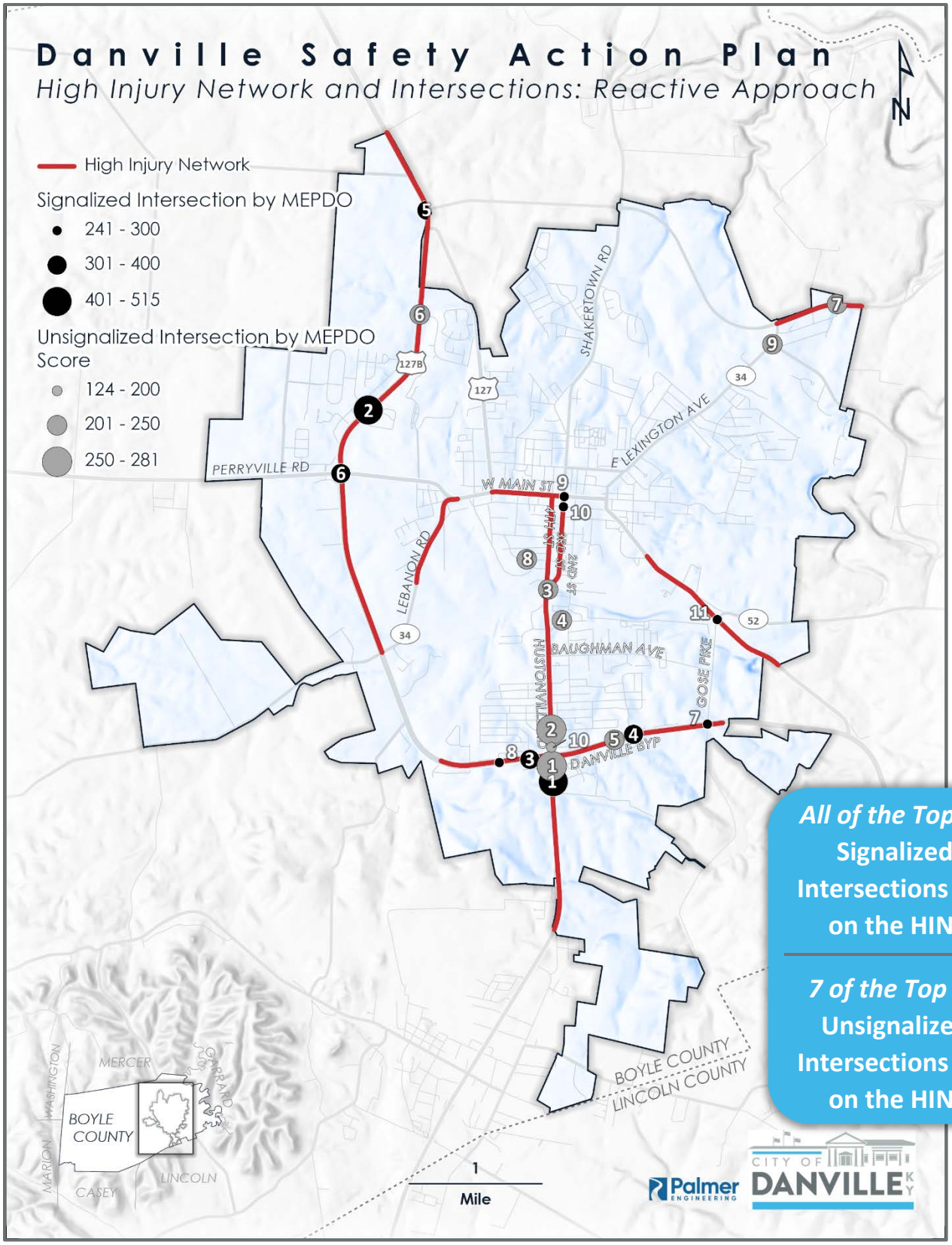
Palmer ENGINEERING
CITY OF DANVILLE KY


Danville Safety Action Plan
High Injury Network within Disadvantaged Communities
High Injury Network
Disadvantaged Community
N
54%
of the HIN is located in a disadvantaged community census tract.
PERRYVILLE RD
LEBANON RD
SHAKERTOWN RD
E LEXINGTON AVE
W MAIN ST
4TH ST
2ND ST
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
S DANVILLE BYP
LANCASTER RD
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
52
150
150B
37
MERCER
BOYLE COUNTY
LINCOLN
CASEY
MARION
WASHINGTON
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY


Danville Safety Action Plan
Fatal (K) and Suspected Serious Injury Crashes (A) along the High Injury Network
N
Crash Severity
K - Fatal (6)
A - Suspected Serious Injury (29)
High Injury Network
77%
of the City's 35 fatal and suspected serious injury crashes are on the HIN.
PERRYVILLE RD
W MAIN ST
E LEXINGTON AVE
SHAKERTOWN RD
LEBANON RD
HUSTONVILLE RD
BAUGHMAN AVE
GOSE PIKE
S DANVILLE BYP
1ST ST
2ND ST
127B
127
34
52
BOYLE COUNTY
LINCOLN COUNTY
MERCER
GARRARD
WASHINGTON
MARION
CASEY
LINCOLN
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY



All of the Top 11 **Signalized Intersections are on the HIN.**

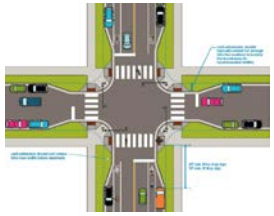
7 of the Top 10 **Unsignalized Intersections are on the HIN.**

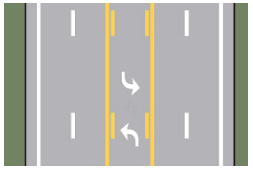
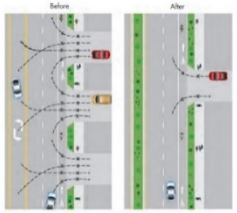
Project Selection

A comprehensive array of recommended strategies and safety improvements was compiled for the prioritized top ranking signalized intersections, unsignalized intersections, and the corridors on the High Injury Network. Improvements have been developed based on the safety analysis, input from the SAG and public, a commitment to equity considerations, and rooted in the principles of the Safe System Approach.

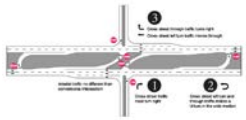
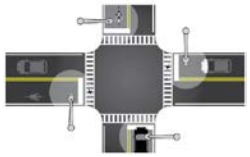
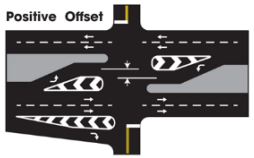
Proven Safety Countermeasures

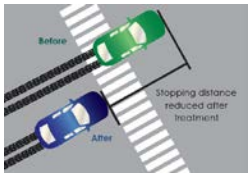
The following tables include potential proven safety countermeasures for consideration to reduce crashes. These proven safety countermeasures are based on before and after crash data from case studies. The countermeasures have been organized into three tables: pedestrian, intersection, and segment countermeasures. Each countermeasure in the tables below include an image, a description of the countermeasure and how it can improve safety, a statistic of the estimated safety impact, and a link to learn more information. These expanded resources listed are provided by the U.S. Federal Highway Administration (FHWA) and the National Association of City Transportation Officials (NACTO). The countermeasures will be implemented where appropriate based on the prioritized list of project locations.

Pedestrian Countermeasures							
Countermeasure	Description	Safety Impact	Links	Countermeasure	Description	Safety Impact	Links
Raised Crosswalk				Crosswalk Visibility Enhancements			
	Ramped speed tables spanning the roadway, often placed at midblock crossings	All Crashes ↓30%	FHWA		Combination of high-visibility crosswalks, lighting, and signing and pavement markings. Can be implemented alone or in combination.	Ped Crashes ↓ 40%	FHWA
Medians and Pedestrian Refuge Islands				Advanced Stop / Yield Lines			
	Median with Marked Crosswalk Ped Crashes ↓ 46% --- Pedestrian Refuge Island Ped Crashes ↓ 56%		FHWA		Provide notice to drivers of upcoming pedestrian crossings	Ped Crashes ↓ 25%	FHWA
Curb Extensions (Bulb Outs)				Leading Pedestrian Interval			
	Extend curbs to provide additional refuge, shorten crosswalks, slow traffic	Decrease turning speed & Decrease crash severity	NACTO		Provide pedestrians 3+ sec head start to improve visibility to turning traffic	Ped Crashes ↓ 13%	FHWA
Pedestrian Beacons				Install/Implement Pedestrian Signal Improvements			
	Ped Hybrid Beacon (PHB) All Crashes ↓ 12% Ped Crashes ↓ 43% --- Rectangular Rapid Flashing Beacon (RRFB) Ped Crashes ↓ 47%		FHWA		Implementing leading pedestrian interval (LPI) and installing pedestrian pushbuttons and pedestrian countdown signals.	Ped crashes ↓ 8%	CMF

Segment Countermeasures							
Countermeasure	Description	Safety Impact	Links	Countermeasure	Description	Safety Impact	Links
Road Diet				Center Turn Lanes			
	Reallocate space within roadway to calm traffic speeds and improve safety for all users	All Crashes ↓30%	FHWA		Provide painted median to remove left-turning traffic from travel lanes	All Crashes ↓24%	FHWA
Curbed Median				Consolidate Driveways (Access Management)			
	Provide curbed median between opposing travel lanes to provide separation, reduce left-turn risks	All Crashes ↓28% --- Angle Crashes ↓55%			Reduce number and proximity of access points to focus turning traffic to fewer locations. Reduces turning conflicts	Severe Crashes ↓25- 31%	FHWA
Dynamic Speed Feedback Signs				Shoulder Treatment – Safety Edge			
	Provides positive and negative feedback to drivers on speed.	All Crashes ↓5%	FHWA		Shoulder installation to improve recoverability for roadway departures.	Run-Off-Road Crashes ↓21% --- Head-On Crashes ↓19% --- Severe Crashes ↓11%	FHWA

Segment Countermeasures (continued)								
Countermeasure	Description	Safety Impact	Links		Countermeasure	Description	Safety Impact	Links
Enhanced Curve Delineation					Buffered Bike Lanes			
	High visibility markings and delineators around curves	Severe Crashes ↓18%	FHWA			Provides greater shy distance between motor vehicles and bicycles	Add additional space between vehicle and bicycle traffic	NACTO
Conventional Bike Lanes					Shoulder Rumble Strips			
	On streets with < 3,000 ADT and posted speed > 25mph, creates separation	Increase bicyclist comfort and predictability between motorist and cyclist.	NACTO			Longitudinal rumble strips are milled or raised elements on the pavement intended to alert drivers through vibration and sound that their vehicle has left the travel lane.	Run off Road Fatal and Serious Injury Crashes ↓13-51%	FHWA

Intersection Countermeasures							
Countermeasure	Description	Safety Impact	Links	Countermeasure	Description	Safety Impact	Links
Restricted Crossing U-Turn (RCUT)				Left Turn Phasing – Protected Only			
	Convert existing traditional intersection into RCUT signalized or unsignalized). Eliminating and reducing conflicts.	Severe Crashes ↓ 22-63%	FHWA		Eliminates conflicts in areas where sight distance, spacing, judgement is difficult	All Crashes ↓18-42%	FHWA
Cycle Length and Clearance Intervals				Intersection Lighting			
	Shorter cycle lengths improve driver compliance, lessen red-light running.		NACTO		Increased visibility at nighttime can improve safety for all modes of travel.	Nighttime Ped Injuries ↓42% --- Nighttime Crashes ↓33-38%	FHWA
Positive Left-Turn Lane Offset				Intersection Treatments for Conventional Bike Lanes			
	Provides increased visibility by preventing turning vehicles from blocking sightlines	Left Turn Crashes ↓ 36%	FHWA		Provide opportunity for cyclist to position themselves to approach and travel through intersections.	Predictability. Reduces conflict between turning motorists and bicyclists.	NACTO

Intersection Countermeasures (continued)							
Countermeasure	Description	Safety Impact	Links		Countermeasure	Description	Safety Impact	Links
Modern Roundabouts					Reflective Backplates			
	Converting existing traditional intersection (stop or signal control) into single lane roundabout. Slowing traffic while eliminating and reducing conflicts.	2-way Stop conversion Severe Crashes ↓82% --- Signal conversion ↓78%	FHWA			Improve the visibility of the illuminated face of the signal by introducing a controlled-contrast background.	Total Crashes ↓15%	FHWA
Low-Cost Countermeasures at Stop-Controlled Intersections					High Friction Surface (HFST)			
	Deploying a package of multiple low-cost countermeasures, including enhanced signing and pavement markings increasing driver awareness.	Severe and Fatal Crashes ↓10% --- Nighttime Crashes ↓15%	FHWA			HFST consists of a layer of durable, anti-abrasion, and polish-resistant aggregate over a thermosetting polymer resin binder that locks the aggregate in place to restore or enhance friction and skid resistance.	Total Crashes ↓20%	FHWA

Potential Unsignalized Intersection Strategies

Below is a table of prioritized signalized intersections based on the MEPDO values. Each location was visited and evaluated for its existing conditions. Based on this field analysis, relevant safety countermeasures were noted as potential improvements. These are summarized in the table as well.

Unsignalized Intersections – Reactive Approach												
Ranking	Intersection	Potential Countermeasures										
		Innovative Concept	Positive Offset Left-Turn Lane(s)	Trim Trees (Sight Distance)	Markings / Striping	Updated Signing	Lighting Improvements	High Friction Surface	Access Management	Right-in Right-out	Ped Access	Bike Improvement
1	Hustonville Rd (US-127) and Jane Trail				X	X		X	X	X		
2	Hustonville Rd (US-127) and Lisa Ave				X	X				X	X	
3	South 4th St (US-127) and South 3rd St (US-127)				X	X					X	X
4	South 2nd St and Dorothy Ave				X	X					X	
5	South Danville Byp (US-150B) and Southtown Connector Dr (US-150B)	RCUT	X		X	X	X					
6	North Danville Byp (US-127B) and Lannock Drive	RCUT			X						X	
7	Lexington Rd (KY-34) and Lexington Ct			X	X	X	X					
8	Lexington Rd (KY-34) and Goggin Ln (KY-1805)				X	X						
9	Roy Arnold Blvd and Furn St				X	X						
10	Hustonville Rd (US-127) and Southtown Dr				X				X	X		

Potential Signalized Intersection Strategies

The following table presents the prioritized signalized intersections based on the MEPDO values and potential safety countermeasures based on existing conditions.

Signalized Intersections – Reactive Approach																
Ranking	Intersection	Potential Countermeasures														
		Innovative Concept	Positive Offset Left-Turn Lane(s)	Added Right Turn Lane	Reflective Backplates	Markings / Striping	Updated Signing	High Friction Surface	Shoulder Rumble Strips	Yellow Change Intervals	Access Management	Right-In Right-Out	Ped Phasing	Crosswalk Visibility Enhancement	Ped Access	Bike Improvement
1	Hustonville Rd (US-127) and Cassady Connector Ave	RCUT			X	X	X	X		X						
2	North Danville Byp (US-127B) and Man O War	RCUT	X		X	X	X			X					X	
3	South Danville Byp (US-127B) and Denmark Dr		X	X	X	X	X	X		X						
4	South Danville Byp (US-150B) and Daniel Dr	RCUT	X	X	X	X	X									
5	Harrodsburg Rd (US-127) and KY-2168		X					X	X	X						
6	South Danville Byp (US-127B) and Perryville Rd (US-150)	RCUT	X				X	X		X						X
7	South Danville Byp (US-150B) and Gose Ave	RCUT	X		X	X	X	X		X						
8	South Danville Byp (US-127B) and Skywatch Connector Dr	RCUT	X				X	X		X						
9	West Main St (US-127) and 3rd St (US-150)	Compact Roundabout											X	X		
10	South 3rd St (US-127) and West Walnut St	Compact Roundabout			X	X	X						X	X		
11	Stanford Ave (US-150) and Gose Ave	RCUT	X		X	X				X	X	X				

Potential High Injury Network Corridor Strategies

The following table provides potential safety improvement strategies for routes along the HIN. Proven safety countermeasures and complete street design parameters were used to develop the list of safety improvements along these routes to reduce and eventually eliminate fatal and suspected serious crashes. These routes can be further studied to eventually lead to implementation. The table notes the improvements recently constructed along W Main Street and corridors currently in planning and design phases.

Rank	Route Name	Begin and End Limits	Length	Potential Project Strategies
1	S Danville Bypass (US 127B)	Hustonville Rd (US 127) to Fireside Dr	0.84	Current KYTC Planning Project. RCUT Corridor, Access Management, Shared-Use Path, Safe Non-Motorized Crossings
2	S 4th St (US 127-001)	Main St. to Hustonville Rd (US 127)	0.72	One-way to Two-Way Conversion. Road Rightsizing. Curb Bump-Outs. Safe Non-Motorized Crossings.
3	S Danville Bypass (US 150B)	Hustonville Rd (US 127) to Gose Pike	1.31	Current KYTC Planning Project. RCUT Corridor, Access Management, Shared-Use Path, Safe Non-Motorized Crossings
4	Hustonville Rd (US 127)	Woodstock Dr to 3rd/4th St	2.64	Access Management, Pedestrian facility connections, Safe Non-Motorized Crossings, Refuge Islands, Ped Signals.
5	S 3rd St (US 127)	Hustonville Rd (US 127) to Main St	0.73	One-way to Two-Way Conversion. Road Rightsizing. Curb Bump-Outs. Safe Non-Motorized Crossings.
6	N Danville Bypass (US 127B)	Perryville Rd (KY 52) to Lannock Pl	1.42	RCUT Corridor, Access Management, Shared-use path, Safe Non-Motorized Crossings, Refuge Islands. Lighting.
7	W Main St (US 127)	S 3rd St. to N Maple Ave	0.58	Construction complete 2023. Downtown Streetscape Project and Road Rightsizing.
8	N Danville Bypass (US 127B)	Lannock Pl. to Harrodsburg Rd (US 127)	0.65	RCUT Corridor, Access Management, Shared-use path, Safe Non-Motorized Crossings, Refuge Islands. Lighting.
9	S Danville Bypass (US 127B)	Lebanon Rd (KY 34) to Perryville Rd (KY 52)	1.39	RCUT Corridor, Access Management, Shared-use path, Safe Non-Motorized Crossings, Refuge Islands. Lighting.
10	E Lexington Rd (KY 34)	KY 2168 to Old Lexington Rd	0.72	Intersection Improvements. Edgeline Rumble Strips.
11	Stanford Ave (US 150)	Avenue of Champions to City Limits	1.28	Intersection Improvements. Lighting.
12	Lebanon Rd (KY 34)	Railroad Industry to W Main St.	0.73	Shared-use Path and Safe Non-Motorized Crossings. Intersection Improvements. Roundabouts.
13	Harrodsburg Rd (US 127)	Danville Byp (US 127B) to Melrose Dr	0.84	Turbo Roundabout at KY 2168. Shared-use Path.
Corridor currently in planning or design.				
Corridor reconstruction project implemented safety improvements to enhance pedestrian safety and reduce travel speeds.				

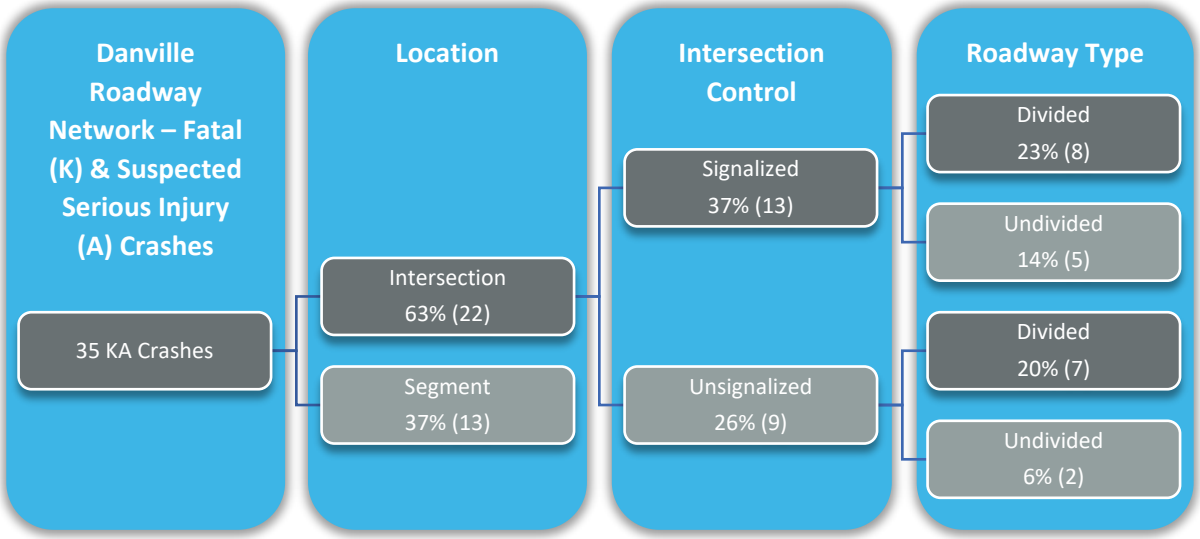
Systemic Approach and Strategies

The systemic approach to safety is a comprehensive strategy to identify and address high-risk features, or factors, across the entire roadway network, rather than focusing solely on specific crash locations such as the reactive approach. The crash data and roadway data were analyzed to identify the risk factors that seem to contribute to the crash history on Danville's roadway network. The analysis resulted in Intersections and Pedestrians as categories with risk factors.

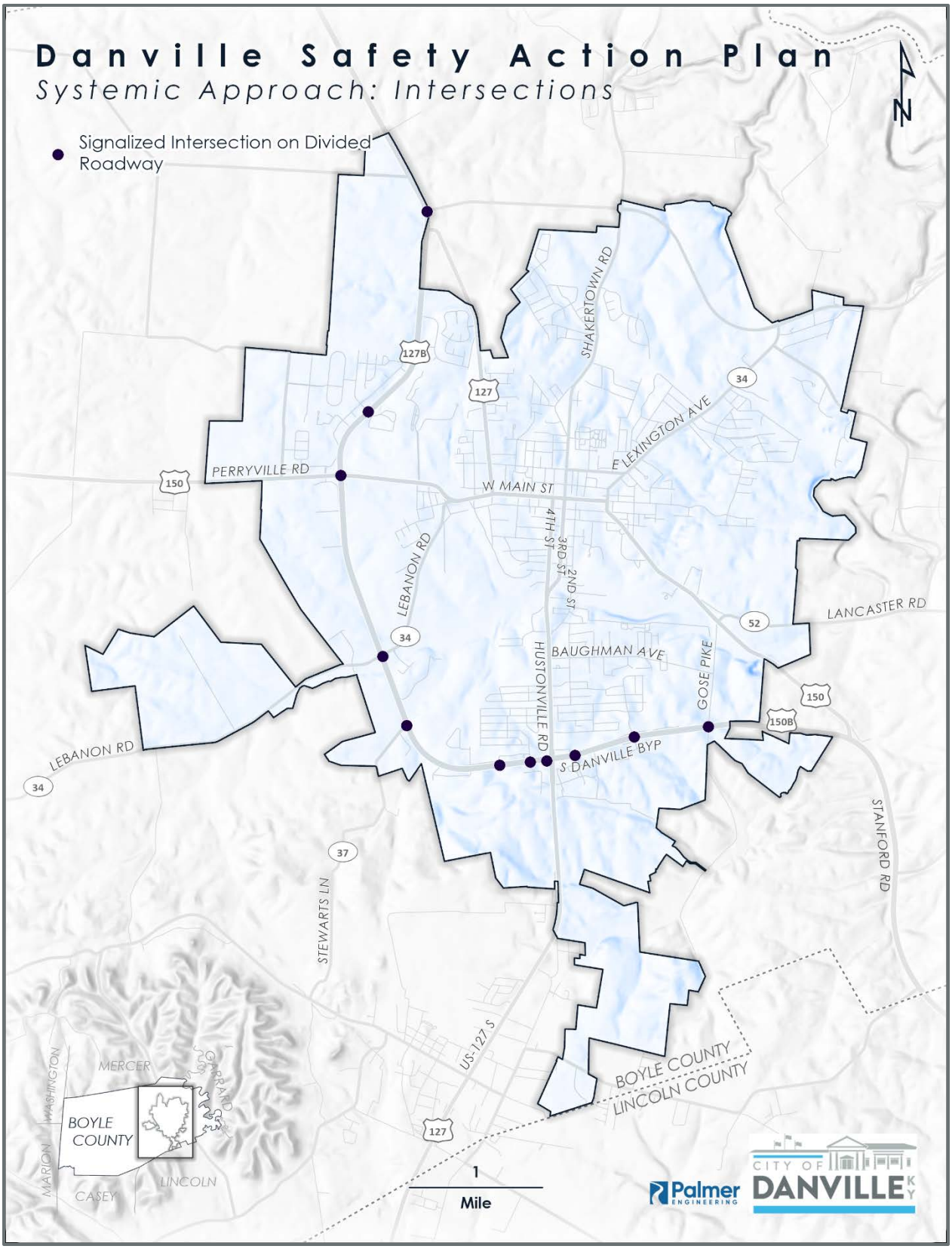
Systemic strategies focus on widespread implementation of improvements to address identified risk features across an area, not just at specific locations. These improvements aim to reduce both the likelihood and severity of crashes throughout an area. Systemic strategies leverage data to proactively identify and mitigate potential hazards to prevent crashes.

Intersections

As previously discussed, crashes in Danville occur at intersections more often than on roadway segments. Approximately, 66% of all crashes occur at intersection compared to 34% occurring on segments. The fatal and suspected serious injury crash has a similar distribution, 63% of fatal and suspected serious injury crashes occur at intersections and 37% on roadway segments. The systemic approach was applied to the fatal and suspected serious injury crashes occurring at intersections. Based on the systemic analysis, signalized intersections located on divided roadways accounted for 23% of all fatal and suspected serious injury crashes. Unsignalized intersections on divided roadways account for 20% of all fatal and suspected serious injury crashes. 43% of all fatal and suspected serious injury crashes occur at intersections located on divided roadways. The following graphic presents the fatal and suspected serious injury crashes breakdown by location, intersection control and roadway type. Based on the systemic analysis, signalized control and a divided roadway at intersections are risk factors.

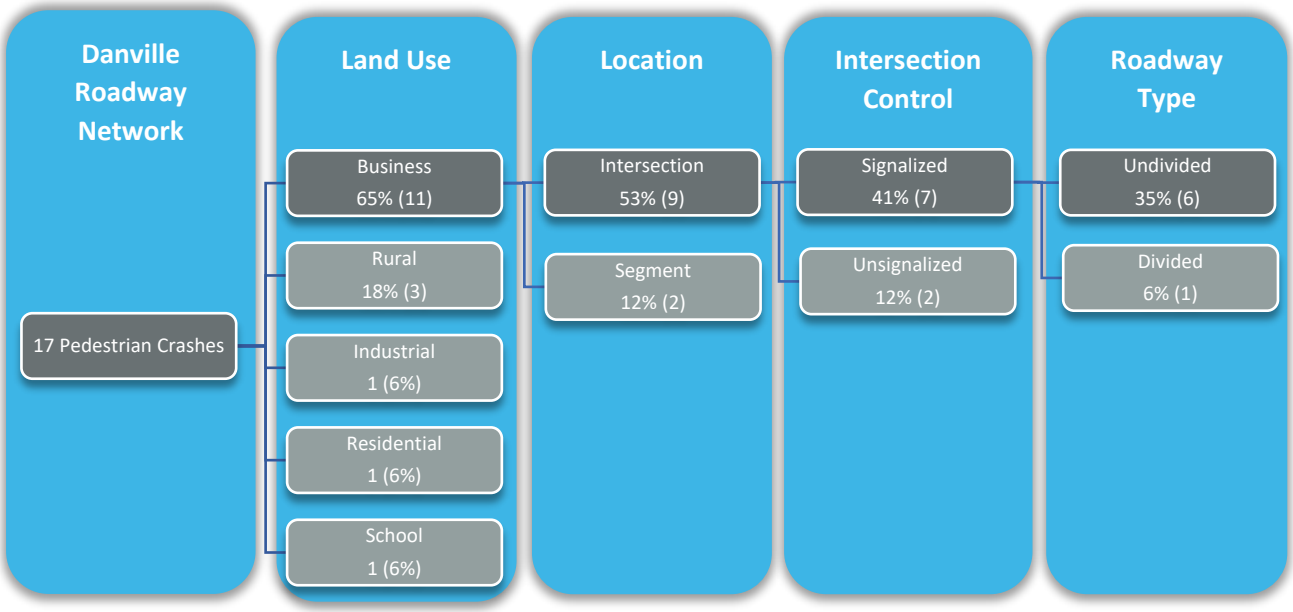


Systemic intersection improvements include low-cost countermeasures such as enhanced signing and striping and retroreflective backplates at signalized intersections. In Danville, there are 32 signalized intersections, of which 11 are located on divided roadways. There are 15 unsignalized intersections on divided roadways. The following map presents the locations of these intersections.


Danville Safety Action Plan
Systemic Approach: Intersections
Signalized Intersection on Divided Roadway
N
PERRYVILLE RD
W MAIN ST
E LEXINGTON AVE
SHAKERTOWN RD
LEBANON RD
4TH ST
3RD ST
2ND ST
BAUGHMAN AVE
HUSTONVILLE RD
GOSE PIKE
S DANVILLE BYP
LANCASTER RD
STANFORD RD
STEWARTS LN
US-127 S
BOYLE COUNTY
LINCOLN COUNTY
127B
127
34
150
52
150B
37
MERCER
GARRARD
WASHINGTON
MARION
BOYLE COUNTY
CASEY
LINCOLN
1
Mile
Palmer ENGINEERING
CITY OF DANVILLE KY

Pedestrians

Pedestrian crashes account for 12% of all fatal and suspected serious injury crashes while less than 1% of all crashes involve a pedestrian. Of the 17 pedestrian crashes, 14 (82%) occurred at intersections and 11 crashes (65%) were identified to have occurred in a business land use area. The systemic approach was applied to all pedestrian crashes and based on the analysis, 35% of the pedestrian crashes occurred at signalized undivided intersections within a business land use setting. The fatal and suspected serious injury crashes occurring at intersections. The following graphic illustrates the pedestrian crashes breakdown by land use, location, intersection control and roadway type. The systemic analysis shows that pedestrian risk factors include being located within a business land use area and at signalized undivided intersections.



Low-cost pedestrian systemic improvements include enhancing sidewalks and enhancing crosswalk visibility with markings, signs, and lighting. Lead pedestrian intervals (LPI) at signalized intersections, along with rapid flashing beacons and refuge areas at unsignalized crossings can significantly improve pedestrian safety.

8. Progress and Transparency

Danville is dedicated to enhancing our community's roadways into safer spaces by consistently monitoring and updating the Safety Action Plan. It is essential for Danville's success to track progress towards the goal of eliminating fatalities and serious injuries by 2050. The plan's oversight will be conducted openly, with a commitment to making data readily available and communicating updates clearly to the community.

Safety Performance Measurement

The City will measure safety improvements through performance metrics, with a focus on equity to ensure progress in disadvantaged communities. Additionally, the impact of individual projects will be carefully tracked to ensure they positively impact safety.

Annual Safety Performance Measures

Crash Severity

The total number of crashes by severity will be monitored annually. The measurement will include monitoring 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 will be monitored. The crash rate will be the total number of crashes per vehicle miles traveled in the city.

Fatal and Suspected Serious Injury Crashes

The annual fatal and suspected serious injury crashes will be monitored annually. The measurement will include monitoring the total number of fatal and suspected serious injury crashes and the crash rate. The crash rate will be the number of fatal and suspected serious injury crashes per vehicle miles traveled in the city.

Vulnerable Road User Crashes

Annually, the vulnerable road user crashes will be monitored, with an emphasis on fatal and suspected serious injury crashes. 20% of the fatal and suspected serious injury crashes was a vulnerable road user crash. Of the vulnerable road user crashes, 1 in 9 were severe.

Equity Focused

The City will monitor the annual safety performance measures listed above for the disadvantaged communities to ensure all communities benefit from the program and efforts to improve safety. An annual equity focused analysis of crashes annually will identify any potential trends in the disadvantaged communities that may differ from the entire city.

Project Specific Performance Measures

The City, in collaboration with stakeholders, will monitor project specific performance measures. The safety action plan recommends specific improvements based on the reactive approach (historical crash analysis) and systemic approach. Project specific improvements will be tracked for the prioritized signalized intersections, unsignalized intersections, and along the corridors identified on the High Injury Network. The main project specific performance measures anticipated to be collected include;

Prioritized Locations

Total number of safety improvement projects being implemented at prioritized locations-- Performance measures will include the overall total number of safety focused improvements projects that are constructed from the potential improvements listed in Chapter 7. Each year the total number of safety improvements implemented at the intersections and along the corridors identified on the High Injury Network will be measured

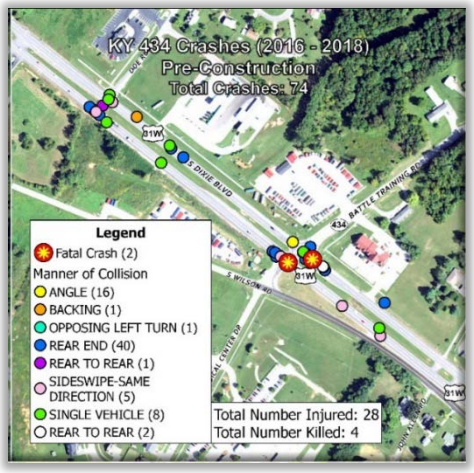
The crash trends of these implemented safety improvement projects—

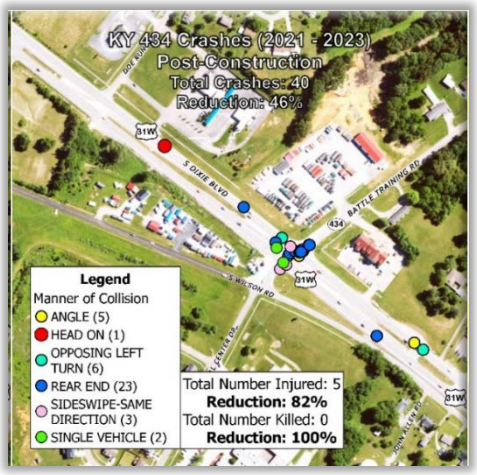
When a safety improvement project has been constructed, post-construction crash history can be collected to begin to document the realized crash reduction benefit. Crash trends can be measured for each project specific improvement and will aid the City in future safety improvement decisions. This performance measure will be focused on tracking fatal and serious injury crashes for each improvement project.

Crash Trends

Studies & Design

Safety studies and design plans that are initiated and completed will be measured each year-- Safety studies and designs that include cost estimates, public engagement, NEPA documentation, and project readiness, will move the projects closer to construction. Each location that has a completed study and design will be moved closer to actual implementation and realizing the goal of eliminating fatal and serious injury crashes.





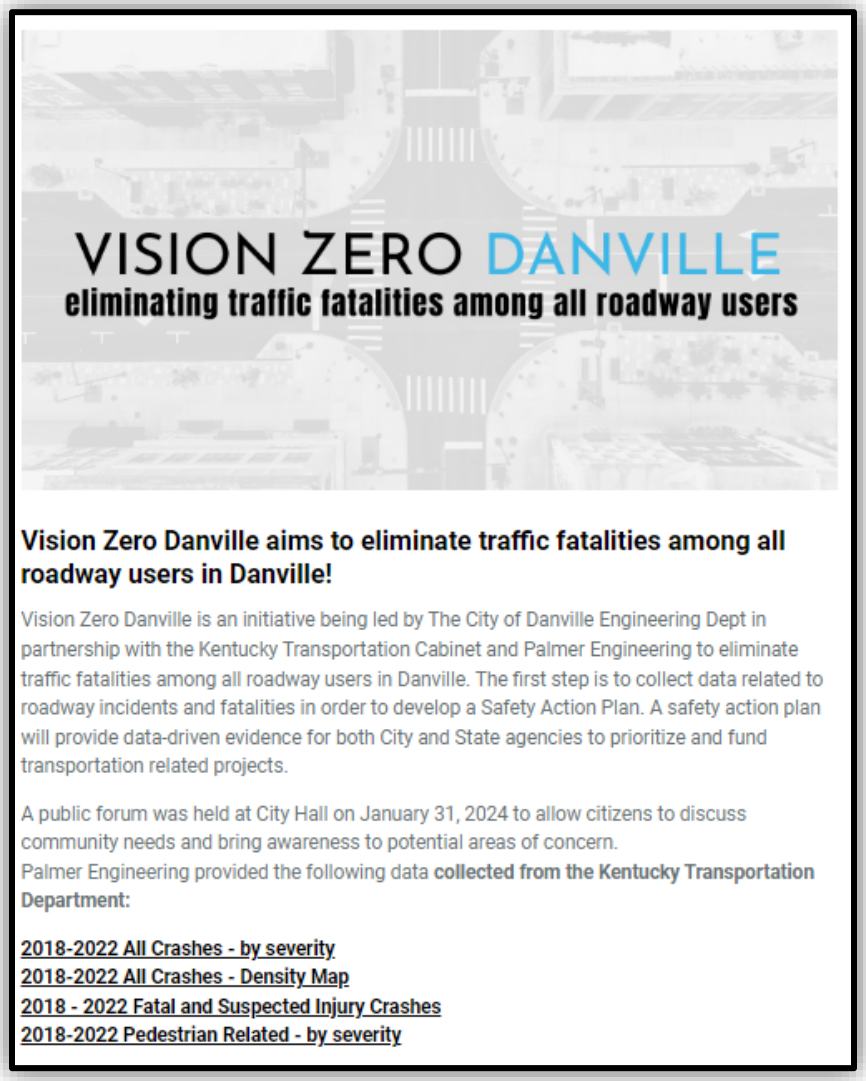
PRE-CONSTRUCTION → **POST-CONSTRUCTION**

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.

Transparency

The Safety Action Plan progress has been openly communicated via the Vision Zero Danville website. This platform served to engage the community through a survey, and to disseminate further resources including maps, the Vision Zero Network, Safe Streets and Roads for All Grant Program, and Safe Systems Approach. [Vision Zero Danville (danvilleky.org)]

The Safety Action Plan is available on the website and will continue to be the platform for sharing updates and presenting the effectiveness of implemented safety measures.



Feedback and Continuous Improvement

In developing the Safety Action Plan, the focus was on gathering the community input through surveys and meetings, while also collaborating closely with stakeholders and Safety Action Group. The city plans to maintain this dialogue, continuously engaging both the public and stakeholders to collect feedback and make necessary adjustments to the plan based on effectiveness.