



# SAFE STREETS & ROADS FOR ALL

# ACTION PLAN



APRIL 2024  
FREDERICK COUNTY, CITY OF WINCHESTER,  
AND TOWN OF STEPHENS CITY, VIRGINIA



# Acknowledgments

The following individuals and groups have been instrumental to this report:



Winchester-Frederick Metropolitan Planning Organization (WinFred MPO) and Northern Shenandoah Valley Regional Commission (NSVRC), including Taryn Logan;



Frederick County, including John Bishop and Kayla Peloquin;



City of Winchester, including Perry Eisenach and Justin Hall;



Virginia Department of Transportation, including Adam Campbell, David Morris, and Brad Reed;



DSP Marketing and Consulting, including Diana Patterson;



McCormick Taylor was the lead consultant for the WinFred MPO Safe Streets and Roads for All Action Plan.



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# 1 | Introduction

## Safe Streets and Roads for All

Since 2015, almost 900 people were involved in life-altering car crashes in Frederick County, the City of Winchester, and Stephens City. Road deaths and injuries are unacceptable and preventable. Everyone deserves to travel safely in their communities.

Understanding that we all have a responsibility to make our roadways safer for everyone, the Northern Shenandoah Valley Regional Commission (NSVRC) and the Winchester/Frederick County Metropolitan Planning Organization (WinFred MPO) received a U.S. Department of Transportation (US DOT) grant in 2023 to develop a Safe Streets and Roads for All (SS4A) Action Plan.

The goal of this Action Plan is to develop a comprehensive, well-defined strategy to prevent roadway deaths and serious injuries with a focus on safe mobility for all road users, including pedestrians, bicyclists, transit riders, and drivers.

- The WinFred MPO, created in 2002, is a board of local officials who oversee planning and implementation of federal transportation funds in Frederick County, the City of Winchester, and the Town of Stephens City.
- The Northern Shenandoah Valley Regional Commission (NSVRC) encompasses five counties in the northwest corner of Virginia—Clarke, Frederick, Page, Shenandoah, Warren, and all jurisdictions within—as well as the City of Winchester. The NSVRC exists to bring these local governments together to pursue common goals, work together on regional issues, and find efficiencies through collaboration.
- Sitting at the mouth of the Shenandoah Valley, Frederick County is 416 square miles and has a population of 90,287.
- The City of Winchester is the oldest Virginian city west of the Blue Ridge mountains. It is 9.3 square miles and has a population of 28,194. As an independent city, it is not part of Frederick County and has separate jurisdiction.

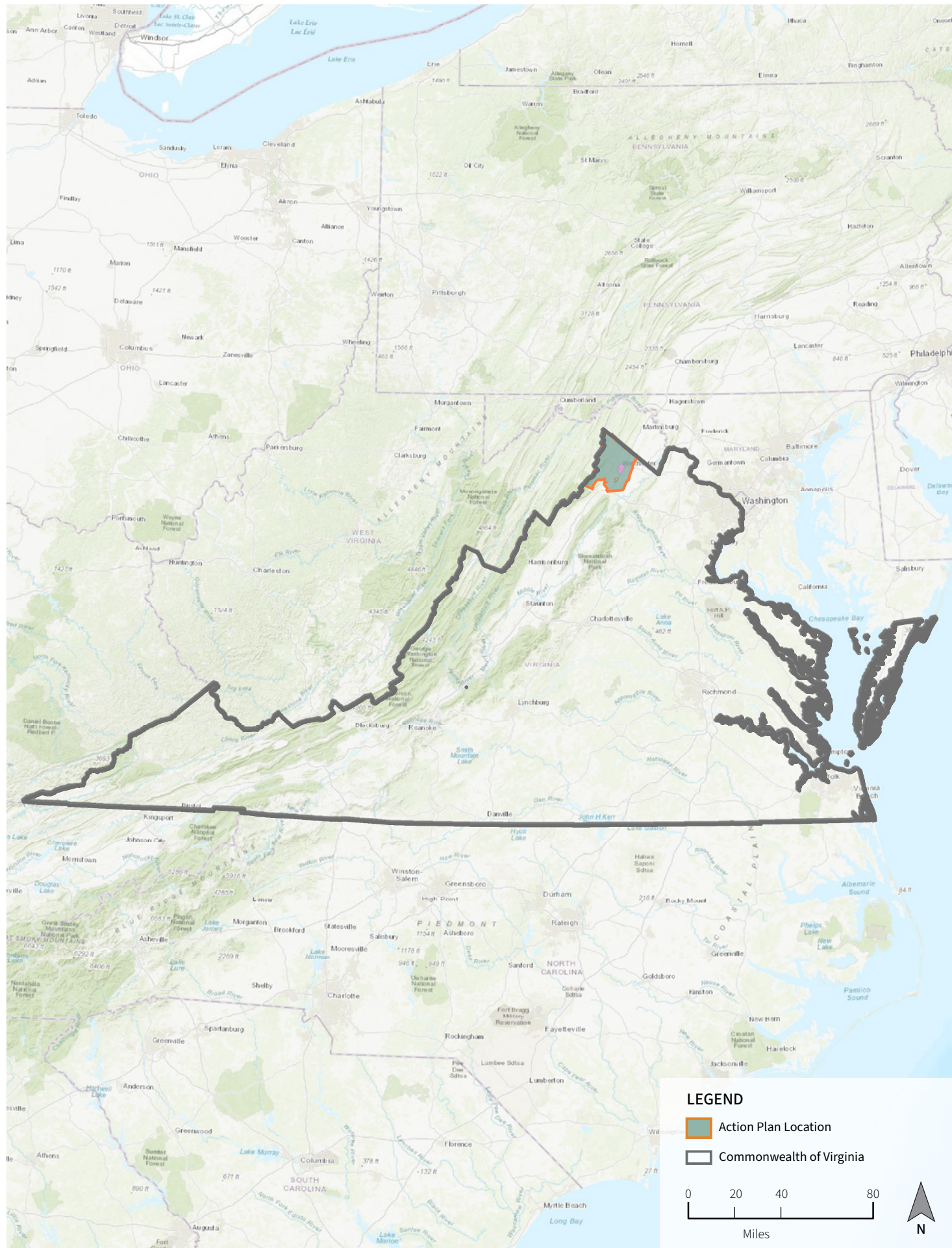


Figure 1.1 The Action Plan Area in northern Virginia

## Commitment to Zero by 2045

WinFred MPO is dedicated to building a safe, equitable transportation system that values all road users. On April 17, 2024, WinFred MPO committed to Vision Zero with NSVRC, Frederick County, and the City of Winchester to pursue a safe systems approach and implement this SS4A Action Plan.

### A Resolution of the Winchester/Frederick County, Virginia Metropolitan Planning Organization Adopting a Vision Zero Goal

WHEREAS, the life and health of all persons living and traveling within the Winchester/Frederick County Metropolitan Planning Area are our utmost priority, and no one should die or be seriously injured while traveling on our streets;

WHEREAS, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable;

WHEREAS, Vision Zero is a holistic strategy aimed at eliminating all traffic fatalities and severe injuries suffered by all road users while increasing safe, healthy, equitable mobility for all;

WHEREAS, streets and transportation systems have traditionally been designed primarily to move cars efficiently, and Vision Zero supports a paradigm shift by designing streets and transportation systems to move all people safely, including people of all ages and abilities, pedestrians, bicyclists, public transit users, scooter riders, and motorcyclists, as well as drivers and passengers of motor vehicles;

WHEREAS, Vision Zero recognizes that people will sometimes make mistakes, so the road system and related policies should be designed to ensure that those inevitable mistakes do not result in severe injuries or fatalities; therefore, transportation planners and engineers and policymakers are expected to improve the roadway environment, policies, and other related systems to lessen the severity of crashes;

WHEREAS, traffic crashes are among the leading cause of deaths in the United States; \

WHEREAS, the Winchester/Frederick County Metropolitan Planning Organization's transportation infrastructure serves an increasing number of vulnerable road users such as pedestrians and bicyclists;

WHEREAS, making streets safer for all people using all modes of transportation will encourage people to travel on foot, by bicycle, and by public transit, which supports a healthier, more active lifestyle and reduces environmental pollution;

WHEREAS, successful Vision Zero programs are a result of both a complete government approach (i.e., interdepartmental, coordinated initiatives) and community support of Vision Zero objectives and action plans;

WHEREAS, the Winchester/Frederick County Metropolitan Planning Organization adopts the goal of zero traffic deaths and serious injuries, stating that no loss of life or serious injury is acceptable on our streets; and

WHEREAS, the Winchester/Frederick County Metropolitan Planning Organization adopts the goal of eliminating traffic deaths and serious injuries by 2045 and endorses Vision Zero as a comprehensive and holistic approach to achieving this goal.

(see Appendix E for the complete resolution)

## Vision Zero

Vision Zero is a strategy to eliminate all traffic-related fatalities and severe injuries, while increasing safety, health, and equitable mobility for all. This idea was first adopted in Sweden in 1997 and since then has spread around the world. According to the Vision Zero Network, more than 45 U.S. communities have committed to Vision Zero as of March 2024.

Vision Zero acknowledges that even one death on our transportation system is unacceptable. The approach recognizes that people will sometimes make mistakes, so the road system and related policies should be designed to ensure those inevitable mistakes do not result in severe injuries or fatalities. This means that transportation system designers and policymakers are responsible for improving the roadway environment, policies, and other related systems to reduce the severity of crashes.

## Safe Systems Approach

Reaching zero deaths requires a Safe System Approach to roadway safety. The Safe System Approach places safety first and foremost in road system investment decisions. Applying the Approach involves anticipating human mistakes by designing and managing road infrastructure to keep the risk of a mistake low; and when a mistake leads to a crash, the impact on the human body doesn't result in a fatality or serious injury.

There are six principles that form the basis of the Safe System approach:

1. Deaths and serious injuries are unacceptable
2. Humans make mistakes
3. Humans are vulnerable
4. Responsibility is shared
5. Safety is proactive
6. Redundancy is crucial

Making a commitment to zero traffic deaths means addressing all aspects of safety through five Safe System Approach objectives:

1. Safe road users
2. Safe vehicles
3. Safe speeds
4. Safe roads
5. Post-crash care



Figure 1.3 This diagram represents the how the Safe System objectives correspond to the principles. Source: U.S. DOT

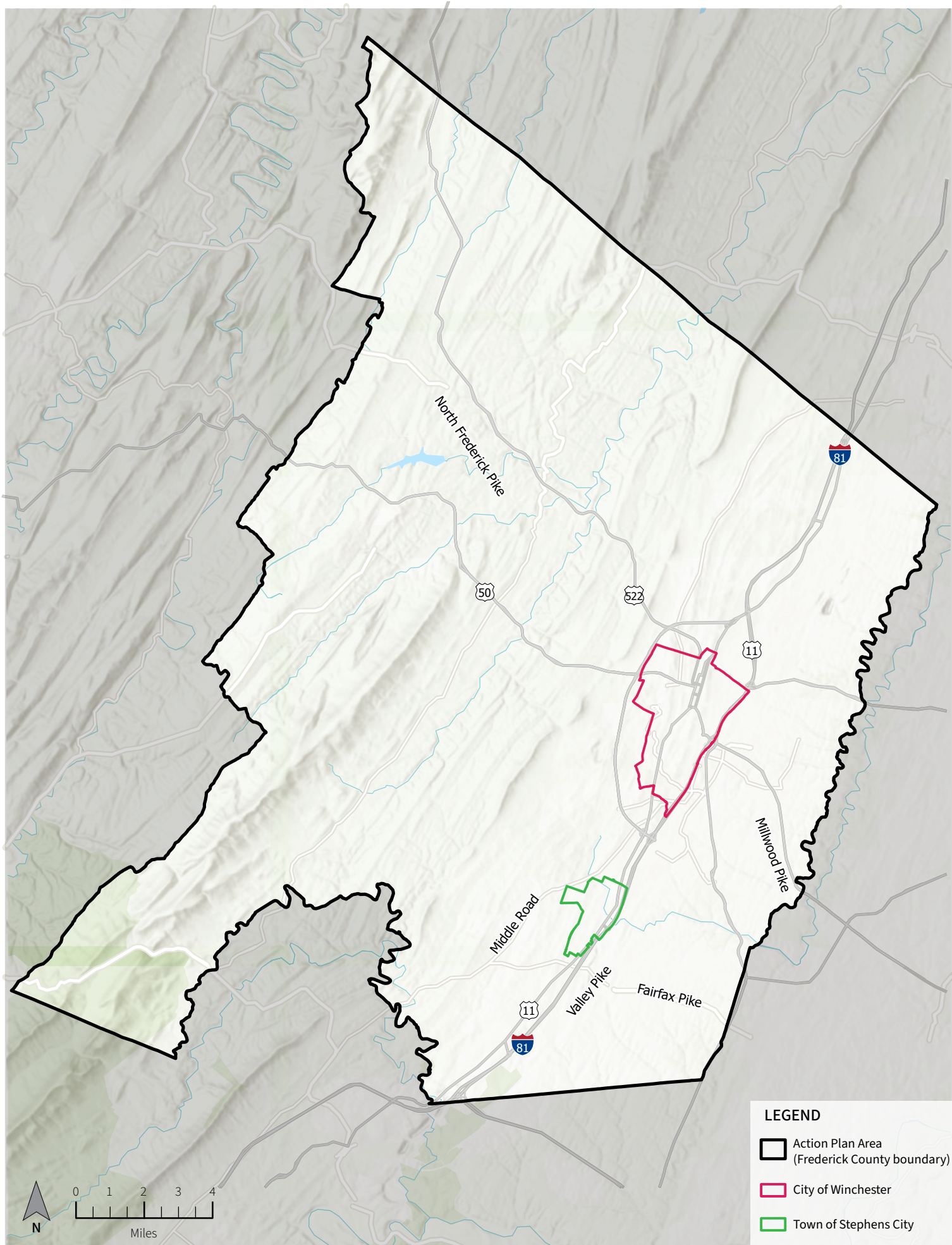


Figure 1.4 Action Plan Area Map

## The SS4A Action Plan

The US DOT’s SS4A Grant Program funded this Comprehensive Safety Action Plan (Action Plan). It describes the roadway safety issues and identifies a prioritized list of projects and strategies that address those issues. This Action Plan is needed to apply for implementation grants to fund safety improvements. Eligible projects and strategies can be infrastructural, behavioral, and/or operational activities. This Action Plan includes prioritized lists of roadway safety improvements for Frederick County and the City of Winchester (Chapter 7).

## Action Plan Area and Timeline

The SS4A Action Plan area includes Frederick County, the City of Winchester, and the Town of Stephens City (Figure 1.3). In September 2023, the Action Plan began with a roadway safety analysis and the development of the region’s High Injury Network (HIN). Simultaneously, the project team conducted public engagement to learn where residents and business owners had concerns about transportation safety. These steps informed the draft list of roadway safety improvements.

In Spring 2024, the draft list of roadway safety improvements for Frederick County and the City of Winchester was presented for public input. This feedback helped to prioritize the lists.

In April 2024, the Action Plan was adopted by WinFred MPO. Frederick County and the City of Winchester anticipate submitting applications to the US DOT for implementation grants in the future.

In 2024 and beyond, WinFred MPO is committed to measuring progress toward zero deaths and serious injuries. The Action Plan and prioritized list of roadway safety improvements will be reviewed annually. An annual progress report will be made publicly available. Chapter 8 describes how progress will be measured over time.

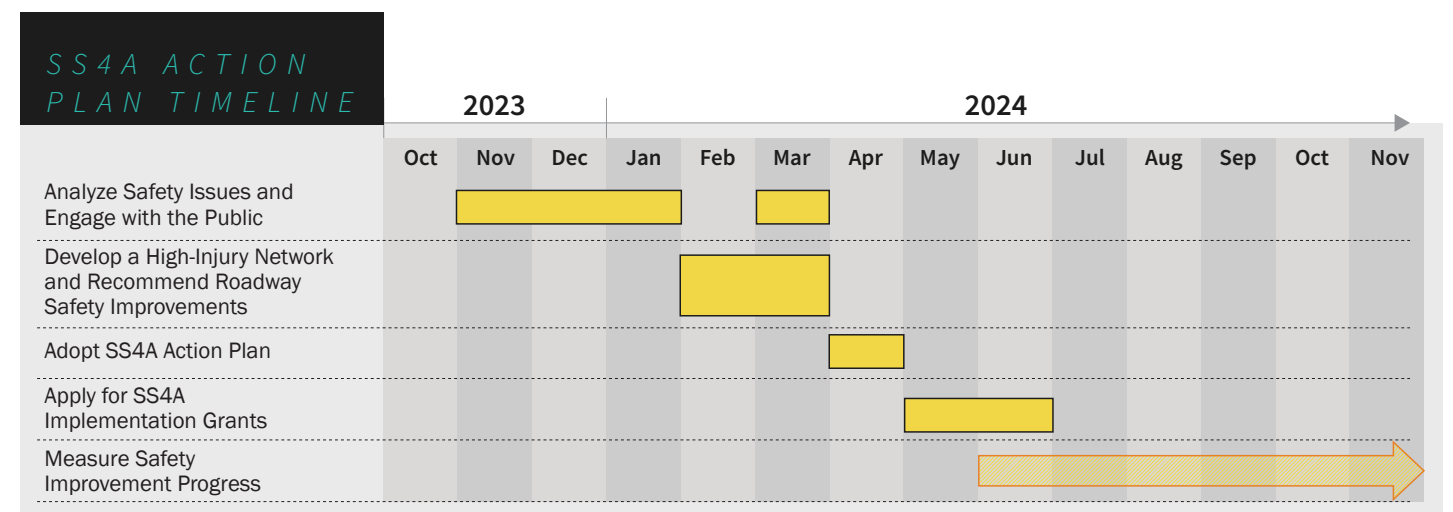


Figure 1.5 Action Plan Timeline



## Planning Structure

A Leadership Commitment Committee (LCC) was formed in November 2023 and charged with oversight of the Action Plan development, implementation, and monitoring of progress after adoption of the Action Plan. The LCC also helped to promote the public engagement opportunities. They reviewed public input and provided guidance on the roadway safety improvements. The multi-jurisdictional members of the LCC include NSVRC, Frederick County, City of Winchester, and the Virginia Department of Transportation.

### Members of the Leadership Commitment Committee

**Northern Shenandoah Valley  
Regional Commission (NSVRC)**  
Taryn Logan, AICP

**City of Winchester**  
Perry Eisenach, PE  
Justin Hall

**Virginia Department of  
Transportation (VDOT)**  
Adam Campbell, PLA  
David Morris, PE  
Brad Reed, AICP

**Frederick County**  
John Bishop, AICP  
Kayla Peloquin

The LCC met once a month between December 2023 and April 2024:

- December 5, 2023
- January 10, 2024
- February 6, 2024
- March 5, 2024
- April 9, 2024

After adoption of the Action Plan by WinFred MPO, the LCC will continue to meet regularly to review implementation grant progress as well as to measure the progress of the Vision Zero commitment. More information about the WinFred MPO and LCC's plans for Progress and Transparency can be found in Chapter 8.



# Equity Considerations

Equity is safe, accessible, affordable, reliable, comfortable, healthy, and sustainable mobility and access that facilitates social and economic opportunities and meets the needs of all community members – particularly those identified as underserved, disadvantaged, and overburdened.

- The United States Department of Transportation (US DOT)

Centering equity in the SS4A Action Plan is critical to creating a future where everyone can travel safely. In the development of the SS4A Action Plan, equity was included in the following ways:

- Developing a planning structure that represents diverse interests and communities;
- Identifying Underserved Communities through data;
- Utilizing engagement tools and strategies to reach Underserved Communities;
- Developing measurable equity goals;
- And conducting an initial equity impact assessment of the prioritized list of roadway safety improvements.

## Underserved Communities Screening

In the United States (US), Underserved Communities have been denied consistent and systematic fair, just, and impartial treatment. They have been historically under-represented in decision-making and the public involvement processes due to overt exclusion and/or inadvertently due to a lack of awareness. To create a safe transportation network that is free from serious injury and death, disparities must be identified and eliminated through an inclusive process.

According to the US DOT, Underserved Communities (low-income communities and people of color, in particular) carry a disproportionate burden of traffic-related injuries and deaths due to patterns of disinvestment and under-investment.



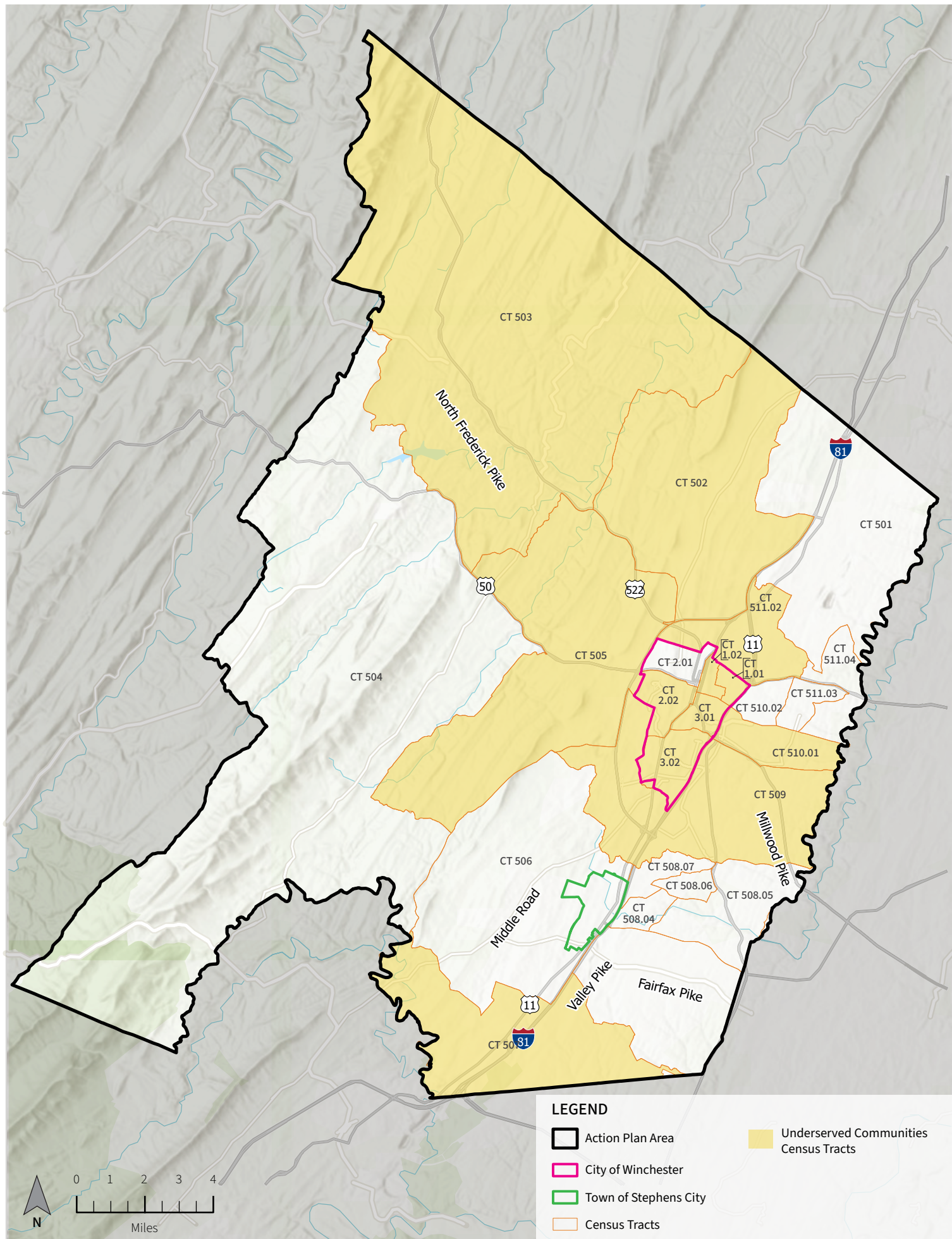


Figure 3.1 Identified Underserved Communities

An Underserved Communities screening was conducted to identify where Underserved Communities are located and to understand who makes up the Underserved Communities. The SS4A Notice of Funding Opportunity (NOFO) defines an “underserved community” as consistent with the US DOT’s definition of a disadvantaged community designation, which includes:

- Any Tribal land; or
- Any territory or possession of the United States (e.g., Puerto Rico, the Virgin Islands, etc.); or
- US Census Tracts identified in the Equitable Transportation Community Explorer (ETC) Tool; or
- US Census tracts identified in the Climate and Economic Justice Screening (CEJST) Tool.

For a comprehensive analysis, the project team used the ETC Explorer Tool to identify Underserved Communities in Frederick County and the City of Winchester. Table 3.1 shows the Census Tracts within the Action Plan Area that have been identified by the ETC Explorer Tool as Underserved Communities.

The ETC Explorer Tool was used to analyze the cumulative burden these Underserved Communities experience as a result of underinvestment in transportation. These burdens, CEJST results, and Areas of Persistent Poverty and Historically Disadvantaged Communities designations are analyzed in Appendix A. Equity Considerations.

Table 3.1: Underserved Communities Demographics

	City of Winchester Underserved Communities	City of Winchester	Frederick County Underserved Communities	Frederick County
People of Color	47%	26%	24%	12%
People Living in Poverty	14%	13%	7%	7%
Under 18 Years	24%	22%	19%	22%
65 Years and Over	16%	16%	23%	17%
Limited English Households	3%	4%	1%	2%
Zero Vehicle Households	9%	2%	6%	1%
People With Disabilities	15%	15%	14%	12%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

- Within Frederick County, six out of 19 Census Tracts (32%) were identified as Underserved Communities. Thirty five percent (31,371) of Frederick County’s population resides within these Census Tracts.
- Within the City of Winchester, five out of six Census Tracts (83%) were identified as Underserved Communities. A majority of City of Winchester residents live within those five Census Tracts (87%, or 24,600 residents).
- To understand who lives within the Underserved Communities, US Census data was analyzed and compared to the City of Winchester and Frederick County.

## Underserved Communities Key Takeaways

### People of Color

While people of color only account for 12% of Frederick County’s overall population, they make up 24% of Frederick County’s underserved communities and 47% of Winchester’s underserved communities.

### People Living in Poverty

The City of Winchester’s Underserved Communities have double the percentage of People Living in Poverty (14%) compared to Frederick County (7%). People living in poverty might not be able to afford a car, so many depend on walking or biking, which makes them vulnerable roadway users.

### Children (age 18 years and younger)

Nearly 1 out of every 4 residents of Frederick County is under the age of 18. Within Winchester’s Underserved Communities, there is a slightly higher percentage of children than in the County. Children have difficulty perceiving road and traffic threats. Additionally, because of their small size, they might not be seen by drivers.

### Seniors (age 65 years old and older)

While approximately 17% of Frederick County residents are over the age of 65, the percentage of seniors living within Frederick County’s Underserved Communities is 23%. Older adults are often overrepresented in crash and injury statistics; they may have difficulty detecting approaching traffic, determining the speed of approaching vehicles, and estimating if they have enough time to cross.

In the US, low-income communities are less likely to have sidewalks, marked crosswalks, and streets designed to support safer, slower speeds.

## Limited English-Speaking Households

There is a higher percentage of Limited English-Speaking Households in the City of Winchester (4%) than in Frederick County (2%).

In the City of Winchester and Frederick County, a majority of Limited English-Speaking Households speak Spanish.

## Zero Vehicle Households

While only one percent of Frederick County’s households lack a vehicle, the underserved households in the City of Winchester (9%) and Frederick County (6%) are more likely to not own a car. Households without access to a vehicle are more likely to walk, bike, or take transit to get to work, school, medical appointments, and shopping, which means they are frequently walking along roads without sidewalks and more at risk, especially at night.

## People With Disabilities

The percentage of the City of Winchester’s underserved residents (15%) and Frederick County’s underserved residents (14%) who have a disability is higher than the County (12%).

The location of Underserved Communities informed the roadway safety analysis and high injury network (Chapter 4) as well as the prioritized list of roadway safety improvements (Chapter 7).

The Underserved Communities key takeaways helped to develop an inclusive public engagement plan that sought to eliminate the barriers to participation that these groups face. Chapter 5 describes the strategies and tools utilized to inform and engage the Underserved Communities. To view the demographic profile of the identified Underserved Communities Census Tracts, go to Appendix A.



## 4 | Safety Analysis

### Existing Conditions and Historical Trends

This analysis utilizes crash data and the KABCO scale definitions as reported to the State of Virginia Department of Motor Vehicles (VDMV) in crash reports. The focus of this Action Plan is Fatality or Killed (K) and Severe Injury (A) crashes, also known as KSI crashes. Table 4.1 shows a general decrease in KSI crashes and rates per population from 2015-2021 . The study area includes all of Frederick County, the Town of Stephens city, and the City of Winchester. For the five-year period from 2015-2019 there was a five-year rolling average of approximately 68 KSI crashes per 100,000 population compared to 55 KSI crashes per 100,000 population from 2017 to 2021.

Table 4.1: KSI over Population Data

Year	Population: City of Winchester	Population: Frederick County	Total Population	K Crashes	A Crashes	KSI (K+A) Crashes	K Crash Rate per 100,000 People	KSI Rate per 100,000 People
2015*	27,500	83,525	111,025	13	84	97	11.7	87.4
2016*	27,789	84,722	112,511	11	81	92	9.8	81.8
2017**	28,148	86,568	114,716	19	57	76	16.6	66.3
2018**	27,889	88,378	116,267	11	46	57	9.5	49.0
2019**	28,036	89,483	117,519	10	57	67	8.5	57.0
2020**	28,009	91,865	119,874	13	49	62	10.8	51.7
2021**	28,115	94,014	122,129	9	51	60	7.4	49.1
Average 2015 to 2019			114,408	12.8	65.0	77.8	11.2	68.0
Average 2017 to 2021			118,101	12.4	52.0	64.4	10.5	54.5

\*KSI crashes from Virginia Department of Transportation (VDOT) Crash Analysis Tool  
 \*\*KSI crashes from SS4A Action Plan data  
 Population data: USAFacts, "Our Changing Population: Frederick County, Virginia"; and  
 ""Our Changing Population: Winchester City, Virginia";

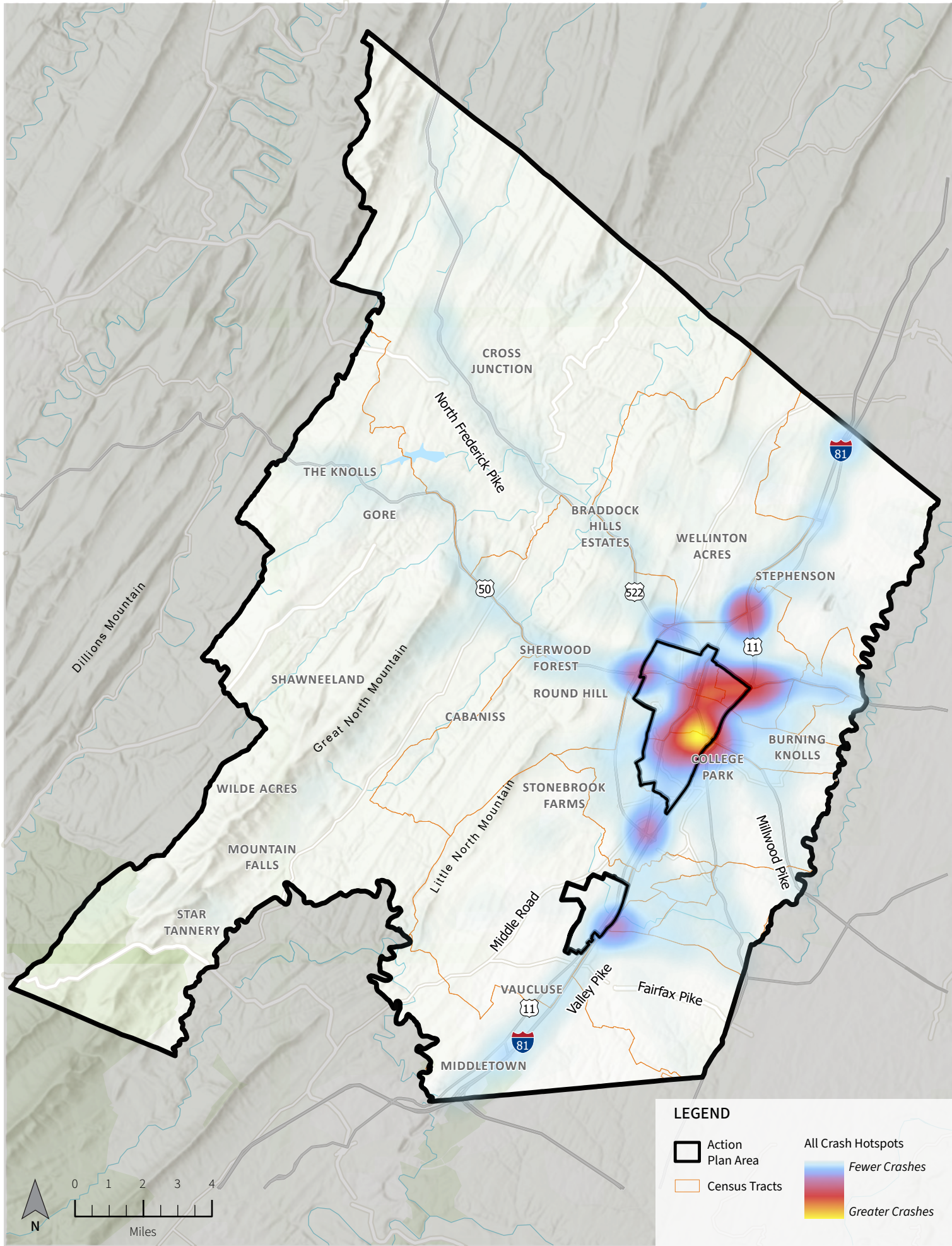


Figure 4.1 Crash Hotspots in Frederick County

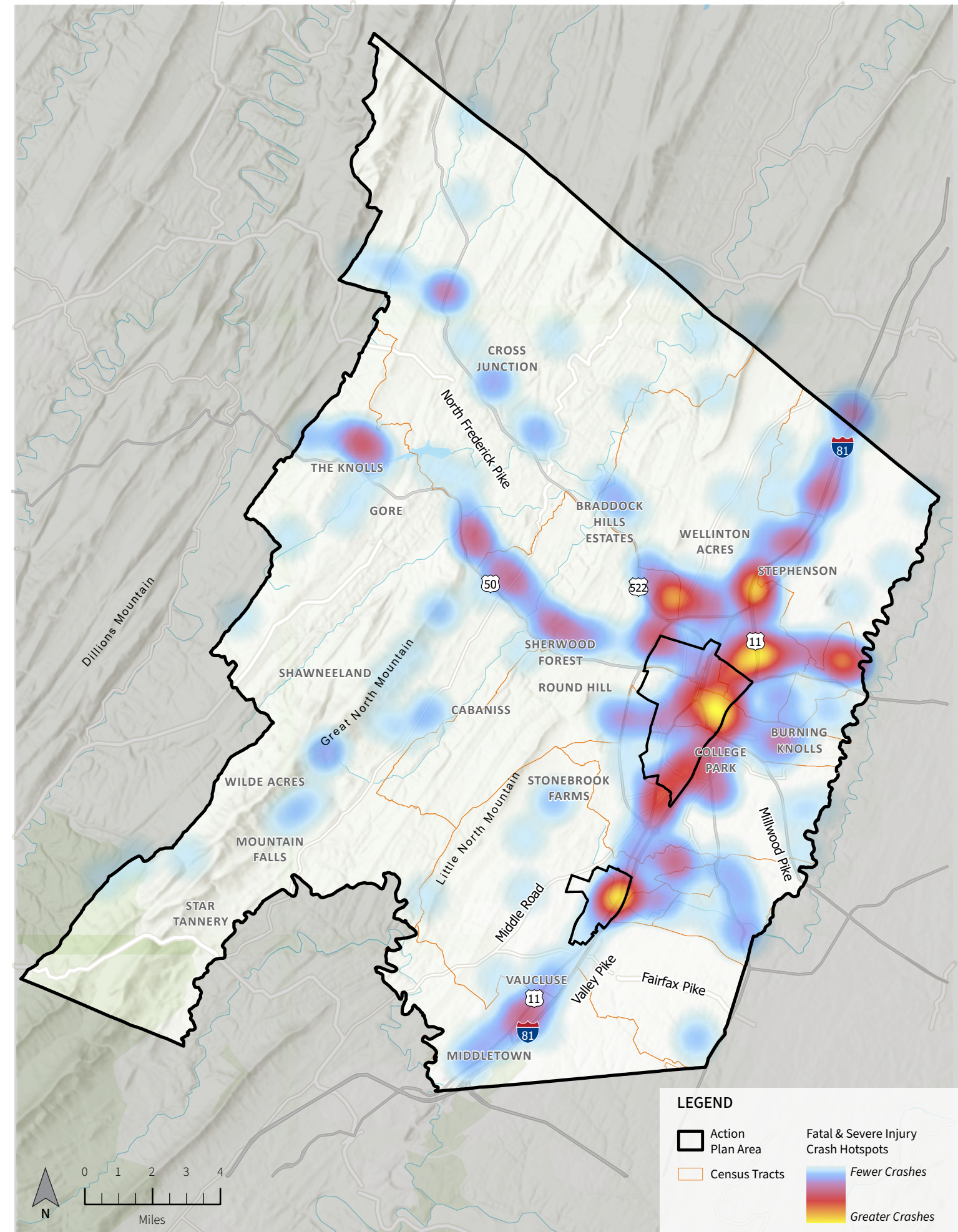


Figure 4.2 Fatal and Severe Injury Crash Hotspots in Frederick County

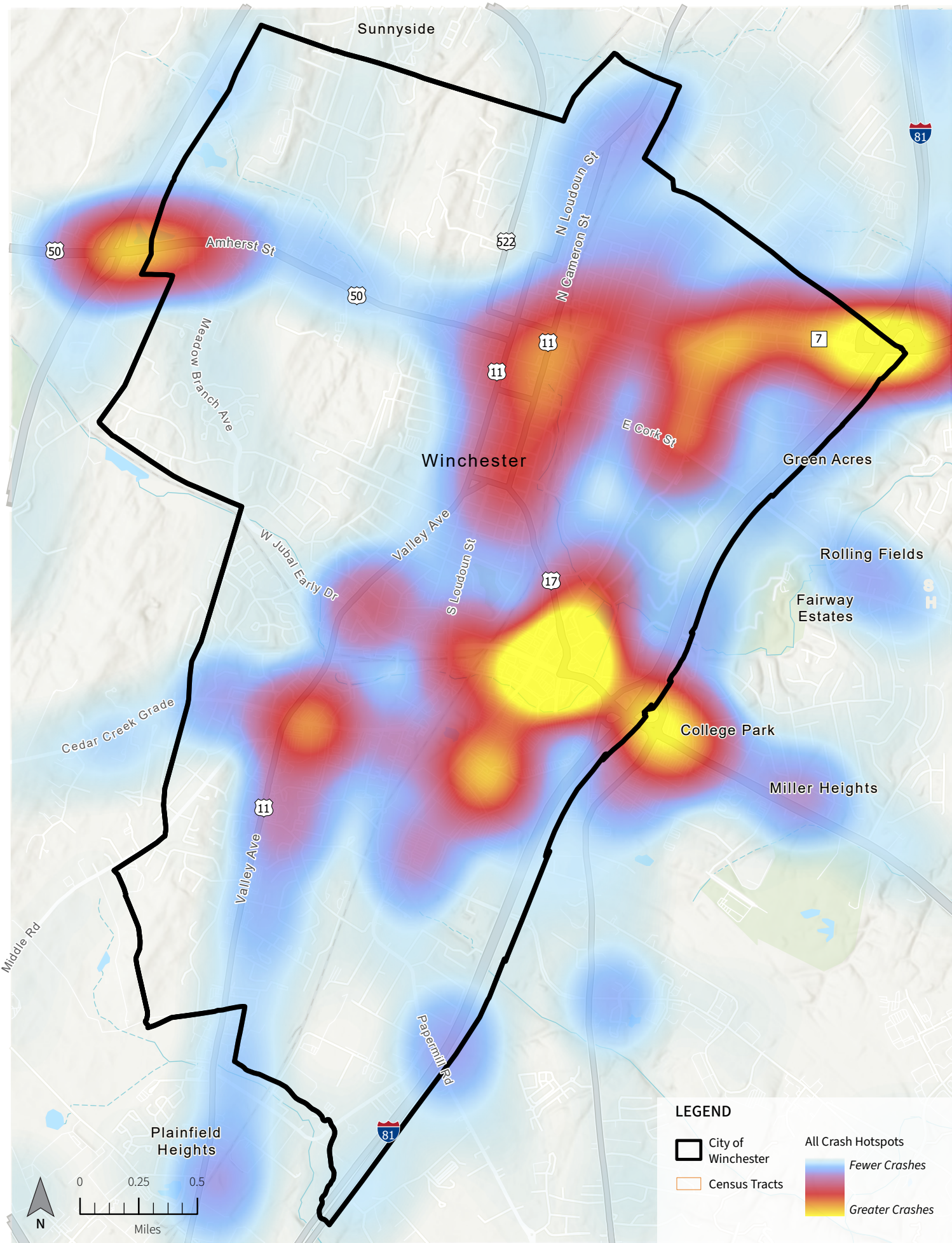


Figure 4.3 Crash Hotspots in the City of Winchester

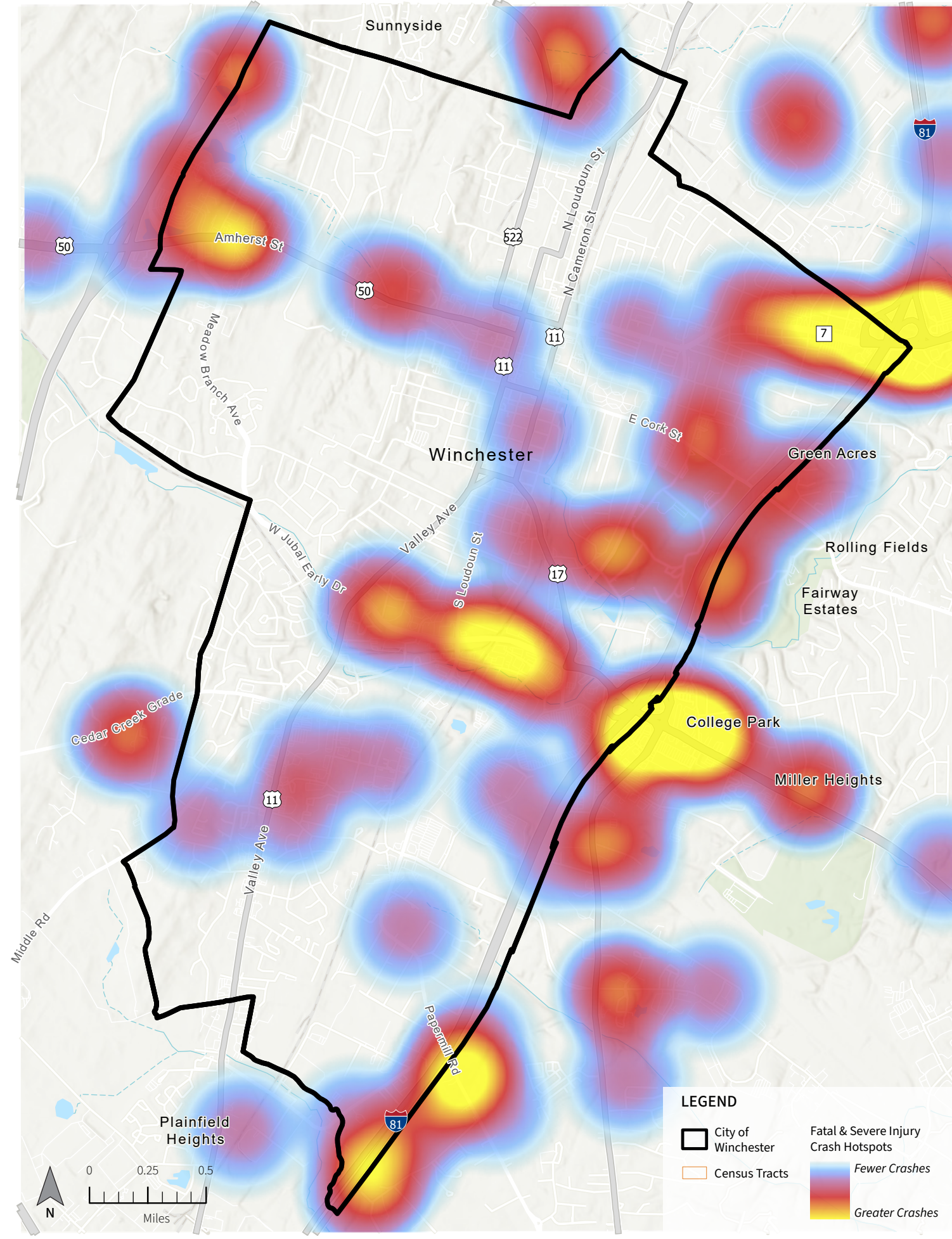


Figure 4.4 Fatal and Severe Injury Crash Hotspots in the City of Winchester

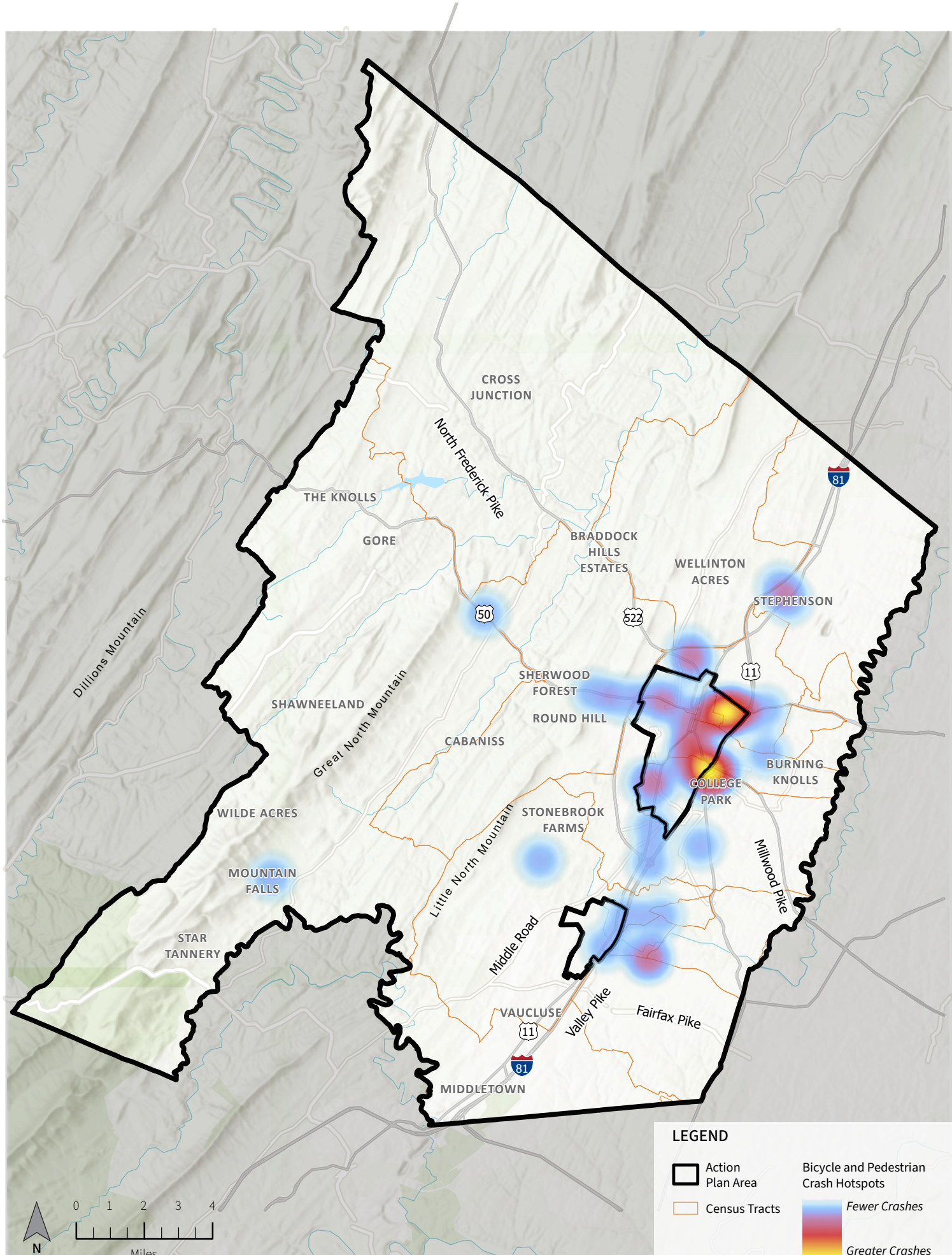


Figure 4.5 Bike-Ped Crash Hotspots in Frederick County

## Crash Hotspots

Crash locations in the study area are depicted using heat maps (Figure 4.1 to Figure 4.6). Locations with higher concentrations of crashes are referred to in this report as “hotspots”.




As noted above, the focus of this Action Plan is KSI crashes. Figure 4.2 and 4.4 depict KSI crash hotspots in the study area.

## Severity

Appendix B includes a map (and list) of roadway segment KSI Crash Rates for all roadways with traffic counts in the State of Virginia Department of Transportation (VDOT) database.

## Most Common Crash Types

VDMV has a standardized crash data reporting system that categorizes data elements for each crash such as conditions, events, and driver actions. This system is outlined in detail in the VDOT Crash Data Manual Version 1.0 published in November 2017. Patterns and commonalities can sometimes be found in review of KSI crash data across the study area and in Hot Spot locations.

**Vehicles**

The most frequently occurring reported data data/ attribute types (referred to as factors) in KSI crashes are identified in Table 10: Top Ten Data Elements in KSI Crashes. Individual crashes may have more than one of the data elements. Crash report data are more fully summarized in Appendix G.

**Pedestrians**

Vulnerable users comprise a disproportionate percentage of KSI crashes with locations of bicycle and pedestrian crashes in Figure 13. Pedestrians were involved in approximately 1.5 percent of total crashes and 7 percent of KSI crashes

**Bicyclists**

Bicyclists were involved in approximately 0.5 percent total crashes and 3 percent KSI crashes.

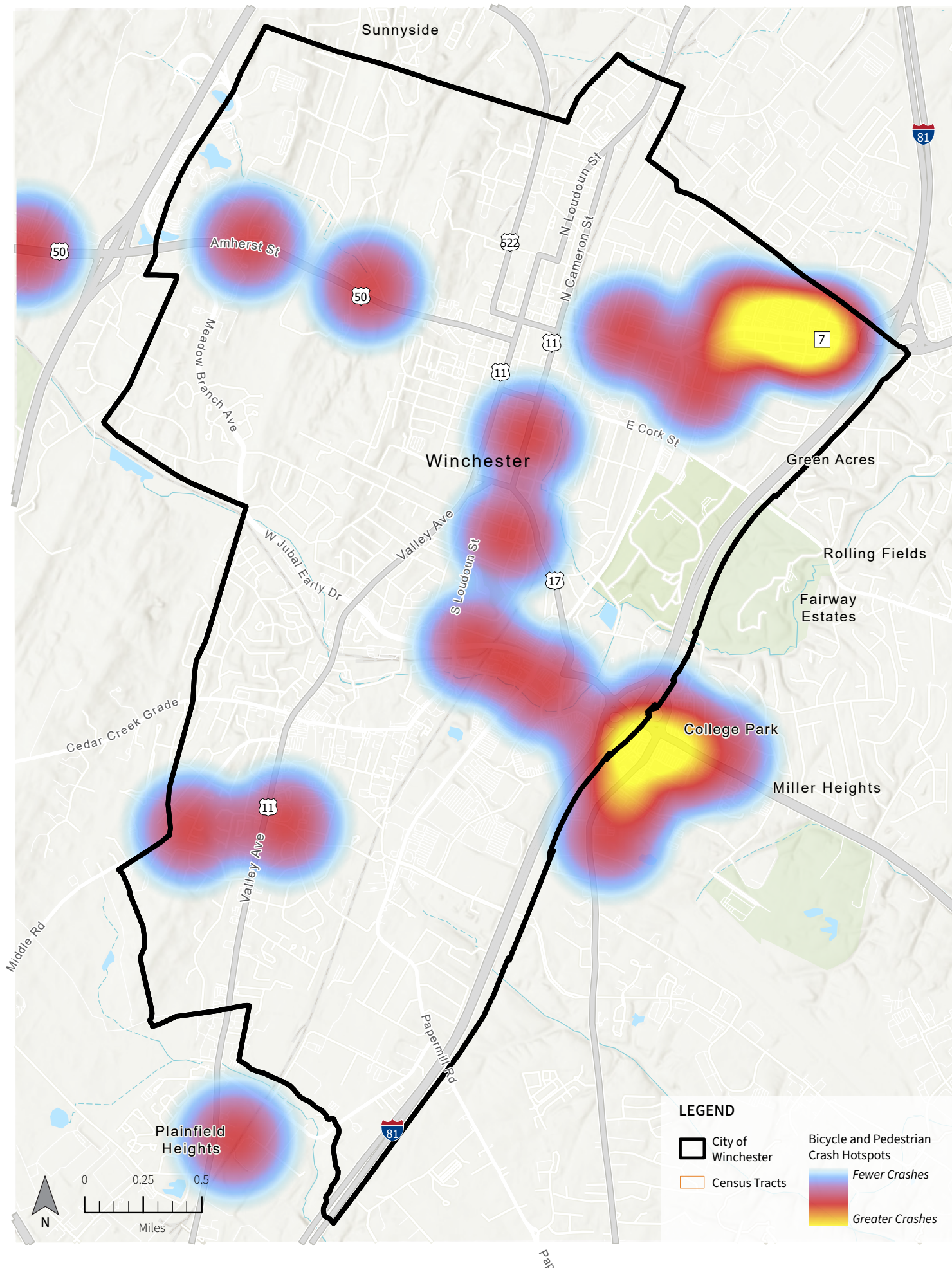


Figure 4.6 Bike-Ped Crash Hotspots in the City of Winchester

## Contributing Factors

The most common crash report factor is single vehicle crash, which indicates only one vehicle was involved in 49 percent of KSI crashes and could include roadway departure crashes, rollover or an object in the road, a single vehicle crash with a pedestrian, and crashes with animals. The most commonly reported collision type in study area KSI crashes is 'Fixed Object Off Road,' where the vehicle departs from the roadway, at nearly 40 percent of total KSI crashes. 'Angle' crashes typically occur at intersections and were reported in approximately 20 percent of KSI crashes. 'Rear End' crashes were reported in 17 percent of all KSI crashes. Approximately one-third of KSI crashes occurred in darkness in a location without lighting. Approximately 11 percent occurred on wet roads. Approximately 10 percent of KSI crashes involved more than two vehicles. The most common driver action types were 'No Improper Action' for approximately one-third of drivers and 'Failure to Maintain Proper Control' for 30 percent of drivers. A summary of KSI collision types and conditions across the study area is in Appendix D.

Table 4.2: Top Ten Crash Report Factors in KSI Crashes

Crash Report Factor	Category	Approximate Percentage
Single Vehicle Crash	Driver Vehicle Number	49%
Roadway Departure (Fixed Object Off Road)	Collision Type	39%
Nighttime	Yes/No	39%
Speeding	Yes/No	35%
Darkness (Roadway Not Lit)	Light Condition	33%
Failure To Maintain Proper Control	Driver Action Type CD	30%
Under Influence of Alcohol or Drugs	Yes/No	27%
Seatbelt Usage	Yes/No	21%
Angle	Collision Type	20%
Distracted Driving	Yes/No	19%

Analysis carried out for this Action Plan, based on VDOT data

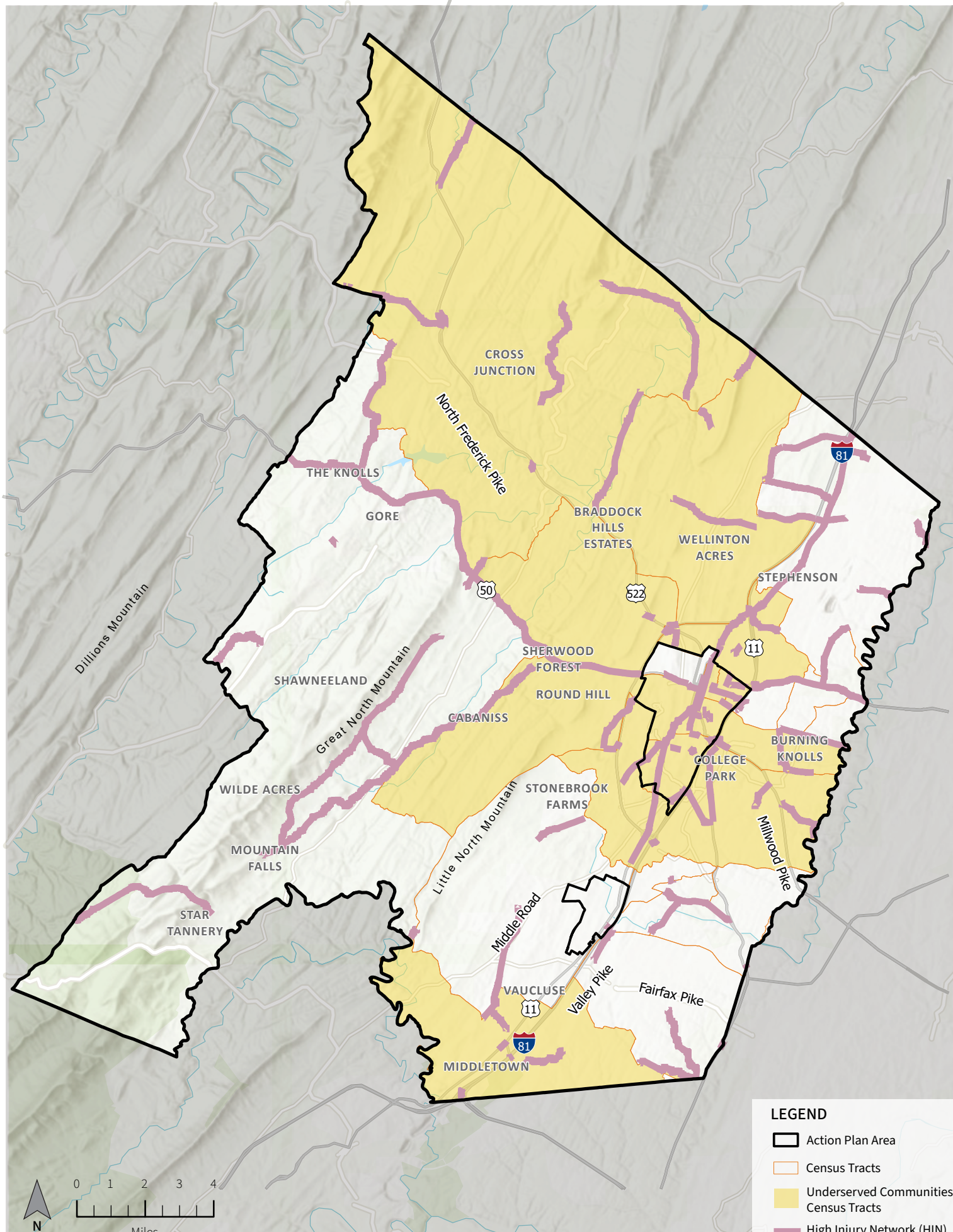


Figure 4.7 High-Injury Network, Frederick County

## High Injury Network (HIN)

A spatial analysis was developed in a Geographic Information System (GIS) webmap created for this Action Plan (Figure 4.7). The webmap incorporated data layers provided by VDOT and the WinFred MPO. Crash and traffic volume data were used to develop KSI crash rates as shown in Appendix E. The High Injury Network (HIN) is comprised of street segments and intersections with an average rate of KSI crashes per million vehicle-miles traveled utilizing the ESRI FHWA plug-in for all road segments in the study area.

Table 4.3: Road Segments on the High Injury Network in the Action Plan Area

Roadway Name	From	To
VA-7W	I81	County Boundary
SC-1204N (Frederick County)	SC-744E	SC-1205N
I-81S Ramp 300A	I81	County Boundary
I-81N Ramp 310A	I81	VA-37N
VA-37S Ramp 3B	VA-37S	SC-622N
SC-703N (Frederick County)	US-50E	SC-701E
Adams DR (PR - City of Winchester)	Pleasant Valley Rd	Legge Blvd
Loudoun ST (PR - City of Winchester)	Jubal Early Dr	US-50E
SC-1012N (Frederick County)	VA-277E	Peace and Plenty Ln
I-81N Ramp 313A	I81	US-50W
VA-37N Ramp 6A	VA-37N	US-522N
SC-634N (Frederick County)	SC-625N	SC-635N
SC-639E (Frederick County)	SC-640N	County Boundary
I-81N Ramp 315A	I81	VA-7E
Woodstock LN (PR - City of Winchester)	N East Ln	I81
SC-767N (Frederick County)	Fort Braddock Ct	US-522N
I-81N Ramp 302A	I81	SC-627N



Roadway Name	From	To
Battle AVE (PR - City of Winchester)	VA-7E	City of Winchester Boundary
US-522U Ramp 140B	US-522N	VA-37S
VA-37S Ramp 6A	VA-37S	US-522N
SC-628N (Frederick County)	SC-732E	SC-819E
SC-617N (Frederick County)	SC-704N	County Boundary
I-81S Ramp 317A	I81S	US-11N
VA-7E Ramp 1A	VA-7E	City of Winchester Boundary
SC-1620N (Frederick County)	Market St	US-11N
I-81N Ramp 307A	I81N	VA-277E
I-81S Ramp 313A	I81S	US-50E
SC-671N (Frederick County)	SC-661N	US-11N
Featherbed LN (PR - City of Winchester)	Pleasant Valley Rd	Loudoun St
SC-1328E (Frederick County)	Park Center Dr	SC-1322N
SC-719N (Frederick County)	SC-642N	VA-277E
SC-657E (Frederick County)	SC-656N	SC-736N
Taft AVE (PR - City of Winchester)	Papermill Rd	(End of Taft Ave)
SC-723N (Frederick County)	US-50	County Boundary
Owl LN (PR - Frederick County)	VA-259N	(End of Owl Ln)
SC-668N (Frederick County)	SC-672	390 ft to Backwoods Ln
SC-660N (Frederick County)	VA7	SC-664E
VA-277E	US11	I81/VA-27 Ramps
SC-600N (Frederick County)	SC-600N	SC-689N/Bucksaw Ln
SC-600N (Frederick County)	US-522	SC-684N
SC-600N (Frederick County)	SC-615E	SC-679E

Roadway Name	From	To
SC-600N (Frederick County)	SC-612N/Farwood Trl	Hendrick Ln
SC-600N (Frederick County)	SC-612N	SC-612N/Farwood Trl
SC-600N (Frederick County)	SC-608N	SC-612N
SC-600N (Frederick County)	SC-608N	440 ft beyond SC-604N
SC-669E (Frederick County)	SC-611N	I81S Ramp/SC-669U Ramp
SC-669E (Frederick County)	US11	SC-671N
SC-669E (Frederick County)	I81	US-11
SC-641N (Frederick County)	SC-636N	County Boundary
SC-655E (Frederick County)	SC-656N	205ft to Landfill Rd
Loudoun ST (PR - City of Winchester)	North Ave	US-11/US-50
SC-761E (Frederick County)	SC-666E	County Boundary
SC-621N (Frederick County)	SC-622N	City of Winchester Boundary
SC-696N (Frederick County)	US-522	County Boundary
SC-672E (Frederick County)	SC-661N	SC-677N
SC-672E (Frederick County)	US-11	SC-661N
SC-672E (Frederick County)	US-11	Quarry Ln
SC-612N (Frederick County)	SC-600N	SC-608N
SC-1037E (Frederick County)	SC-1031N	SC-1180N
SC-661N (Frederick County)	SC-671N	SC-669E
SC-661N (Frederick County)	US-11	SC-662N
SC-625N (Frederick County)	SC-631E	SC-627N
SC-654N (Frederick County)	Wild Wood Dr	County Boundary
SC-671N (Frederick County)	SC-671N	SC-682E
SC-671N (Frederick County)	SC-654N	SC-676N

Roadway Name	From	To
SC-656N (Frederick County)	SC-657E	SC-655E
SC-636N (Frederick County)	SC-627N	SC-709N
SC-642N (Frederick County)	150 ft from SC647N/SC-1031N	US-522
VA-7W	VA-7E	Ross St
US-50E	Fox Dr	US-50E/Amherst St
US-50E	Amherst St	US-522
SC-608N (Frederick County)	US-522	SC-682E
SC-608N (Frederick County)	SC-616N/SC-619N	Bridle Path Ct
SC-608N (Frederick County)	SC-600N	SC-612N
SC-608N (Frederick County)	SC-612N	SC-616N/SC-619N
SC-679E (Frederick County)	SC-789N	US-522
SC-644N (Frederick County)	I81	US-522
US-50W	I81 N Ramp	I81 S Ramp
US-50W	I-81 N Ramp	US-50
US-50W	SC-614N	SC-608N
SC-657E (Frederick County)	SC-736N	County Boundary
US-522S	SC-699N	VA-127E
US-522N	VA-127E	SC-699N
US-50W	VA-37	US-50 Merge
US-50EB	Bush Dr	County Boundary
R-VA034SC00642NB	SC-846N	SC-1467N
SR-55EB	SC-604N	Mile Ridge ESTS
US-522NB	SC-705E	SC-693N
S-VA138PR Pleasant Valley Rd	US-50E	Parkview Ave

Roadway Name	From	To
US-50EB	US-50E Ramp	US-522
S-VA138PR Loudon St	Battery Dr	Jubal Early Dr
US-11NB	Hope Dr	Middle Rd
S-VA138PR Pleasant Valley Rd	Papermill Rd	Jubal Early Dr
S-VA138PR Pleasant Valley Rd	Hollingsworth Dr	Cork St
US-50EB	Gerrard St	Southwerk St
S-VA138PR Cedar Creek Grade	Tower Ave	US-11
R-VA034SC00719NB	Churchill Dr	SC-1540E
S-VA138PR WEEMS LN	US-11	Weems Ln
R-VA034SC00657EB	SC-1265N	SC-1213N
I-1SB	I81 Weigh Statoin	
SR-37SB	SC-628N	VA-37S Ramp
US-522NB	SC-767N	US-522 Ramp/US-37S Ramp
SR-37NB	SC-628N	VA-37N Ramp
SR-277EB	Apprentice Ln	County Boundary
US-50EB		SC-645E
US-522NB	SC-739N	VA-37S Ramp/US-522 Ramp
US0-11NB	Family Dr	Stephens City Boundary
VA-55E	Tannery Hills Ln	County Boundary
VA-55E	Tannery Hills Ln	SC-600N
SC-728N (Frederick County)	SC-1092E	US-50
SC-728N (Frederick County)	SC-1092E	SC-645W
Middle RD (PR - City of Winchester)	Nazarene Dr	US-11
Middle RD (PR - City of Winchester)	City of Winchester Boundary	Nazarene Dr

Roadway Name	From	To
Southwerk ST (PR - City of Winchester)	US-11	Loudoun St
Southwerk ST (PR - City of Winchester)	Loudoun St	US-50E
Shawnee DR (PR - City of Winchester)	Papermill Rd	City of Winchester Boundary
VA-127E	County Boundary	US-522
Hollingsworth DR (PR - City of Winchester)	Pall Mall St	Opequon Ave
Hollingsworth DR (PR - City of Winchester)	Opequon Ave	Pleasant Valley
US-11N	SC-661/SC-839	County Boundary
US-11N	SC-764E	SC-661/SC-839
US-11N	SC-783N	SC-764E
US-11N	US-11	SC-1322N
US-11N	US-11	VA-7
US-11N	SC-649E	VA-7
US-11N	SC-627N/SC-1107N	SC-627N
SC-622N (Frederick County)	SC-621N	VA-37S Ramp/SC-622 Ramp
SC-622N (Frederick County)	Clayhill Dr	City of Winchester Boundary
SC-622N (Frederick County)	VA-37S Ramp/SC-622 Ramp	City of Winchester Boundary
US-522N	SC-644N	Delco Plz
US-522N		County Boundary
US-522N	County Boundary	County Boundary
SC-628N (Frederick County)	SC-652E	City of Winchester Boundary
SC-628N (Frederick County)	SC-622N	County Boundary
Cork ST (PR - City of Winchester)	Pleasant Valley	Rifleman Ln

Roadway Name	From	To
Cork ST (PR - City of Winchester)	Rifleman Ln	60ft to City of Winchester Boundary
VA-7E	TE-576027	County Boundary
VA-7E	Pikeside Ln	SC-659E
VA-7E	City of Winchester Boundary	SC-815N
VA-7E	SC-815N	SC-656S
VA-7E	VA-7E Ramp	SC-659E
VA-7E	Chestnut St/ Dunlap St	Ross St
VA-7E	Woodland Ave	Dunlap St
VA-7E	Atwell Ave	VA-7E Ramp
VA-7E	Chestnut St/ Dunlap St	Elm St
VA-7E	N East Ln	Pleasant Valley Dr
US-50E	County Boundary	Pugh Ln
US-50E	Pugh Ln	SC-751E
US-50E	County Boundary	Keating Dr
US-50E	US-522	Ryco Ln
US-50E	Ryco Ln	SC-796N
SR-259NB	Owl Ln	US-50
R-VA034SC00614NB	SC-600N	US-50
US-522NB	SC-856N	Silver Lake Ln
US-522NB	260 ft to City of Winchester Boundary	Scarlet Maple Dr

# 5 | Public Engagement

## Guiding Principles



**Equitable:** Ensure that opportunities for participation are distributed in a manner that responds to historic and ongoing disadvantages faced by underserved communities by using a variety of public engagement tools, incorporating plain language into all communications, and providing interpretation and translation services.



**Meaningful:** Public and stakeholder comments will influence the process and the resulting Safety Action Plan.



**Accessible:** Offer multiple options for public participation in the process, with specific regard for language, and physical and cognitive ability.



**Representative:** Provide opportunities for all parts of the regional community to participate by seeking out and considering the distinct “needs of those traditionally underserved by existing systems.”

Data alone cannot provide a comprehensive understanding of a community’s needs. Robust and inclusive engagement with the public, Underserved Communities, and stakeholders fostered a collaborative approach to determining roadway safety improvements and their prioritization.

## Audiences

Audiences are the different groups that were targeted for public engagement. Each group requires thoughtful use of engagement and communication tools.

### Public/Road Users

At some point in a person’s day, they are using the roadway, whether they are walking, using a wheelchair, biking, driving, or riding transit. The public includes residents and business owners of the study area, as well as people who visit or travel through the area. Through social media, press releases, website updates, email, and flyers, the public was invited to participate in the public engagement opportunities.

### Stakeholders

WinFred MPO and Frederick County assisted in developing a list of stakeholders who could help reach specific segments of the public. This included vulnerable users like pedestrians, bicyclists, children (through their parents and caregivers), and seniors. Stakeholders from the private and public sector representing these groups as well as the business and healthcare communities were selected. The stakeholders were asked to participate in the public engagement as well as to share the opportunities to their networks through their email, website, and social media posts.

### Underserved Communities

Underserved communities include people and residents of Frederick County, Winchester City, and Stephens City who have historically been overlooked, harmed, or otherwise negatively impacted by

transportation investments and environmental detriments. Chapter 3 identifies the Underserved communities and describes the screening process. Public engagement strategies were developed to specifically target the identified underserved communities. The strategies included:

### Easy to Understand Communications

To include people with varying reading levels, all project-related materials were written in plain language. Images were used to help convey information.

### Language Access

Within the SS4A Action Plan area, there is a large population of limited English-speaking households. A majority of these households are Spanish-speaking. Being able to participate in engagement in one's own language is a cornerstone of equity. All project-related materials were translated into Spanish. A Spanish interpreter was available at in-person and virtual public engagement events.



Figure 5.1: Children at the Handley Public Library participate in a pop-up event. This event was planned during a Spanish-language reading workshop at the library to maximize outreach to children and Hispanic communities.

### Americans with Disability Act (ADA) Accessibility

In-person public engagement locations were held in ADA-accessible locations. Additional ADA-modifications were offered to ensure equal opportunity to access and participation. The Virtual Public Forum was held on Microsoft Teams, which offers live closed captioning.

### Transit Accessibility

In-person public engagement locations were held adjacent to Winchester Transit (WinTran) bus stop locations, including one event at the WinTran bus transfer station.

### Varied Meeting Times, Locations, & Formats

The logistics, location, and time of traditional public meetings often conflict with the schedules of people who do not work 9:00 AM to 5:00 PM schedules. Attending an evening meeting may require parents to obtain childcare. An electronic survey (e-survey) was used to collect feedback so that people with internet access could complete it at a time that suits their schedule. A virtual public meeting was held so that people with internet access had the opportunity to speak with project team members, learn more about SS4A, and give their input from a convenient location of their choosing.

There are barriers to e-surveys and virtual meetings, like access to the internet and digital skill level. “Pop-up” engagement events supplemented the in-person and virtual meetings. The pop-up events were held at a library and bus station within the Underserved Communities. During the pop-ups, people could stop by and participate in the activity or speak with a project team member at their leisure.

### List of Stakeholders

- BikeWalk Winchester
- City of Winchester Economic Development Authority
- Frederick County Economic Development Authority
- Frederick County Fire and Rescue
- Frederick County Public Schools
- Handley Regional Library
- Navy Federal Credit Union
- Old Town Winchester
- Shenandoah University
- Top of Virginia Regional Chamber
- Valley Health System
- Walk with a Doc Winchester
- Winchester Regional Airport
- Winchester Wheelmen
- Winchester-Frederick County Convention & Visitors Bureau

## Phase 1 Promotion

- Project Website
- English & Spanish Flyers
- English & Spanish Social Media Posts
- Press Release
- Stakeholders & Subscribers Email
- Leadership Commitment Committee & Stakeholder Promotion

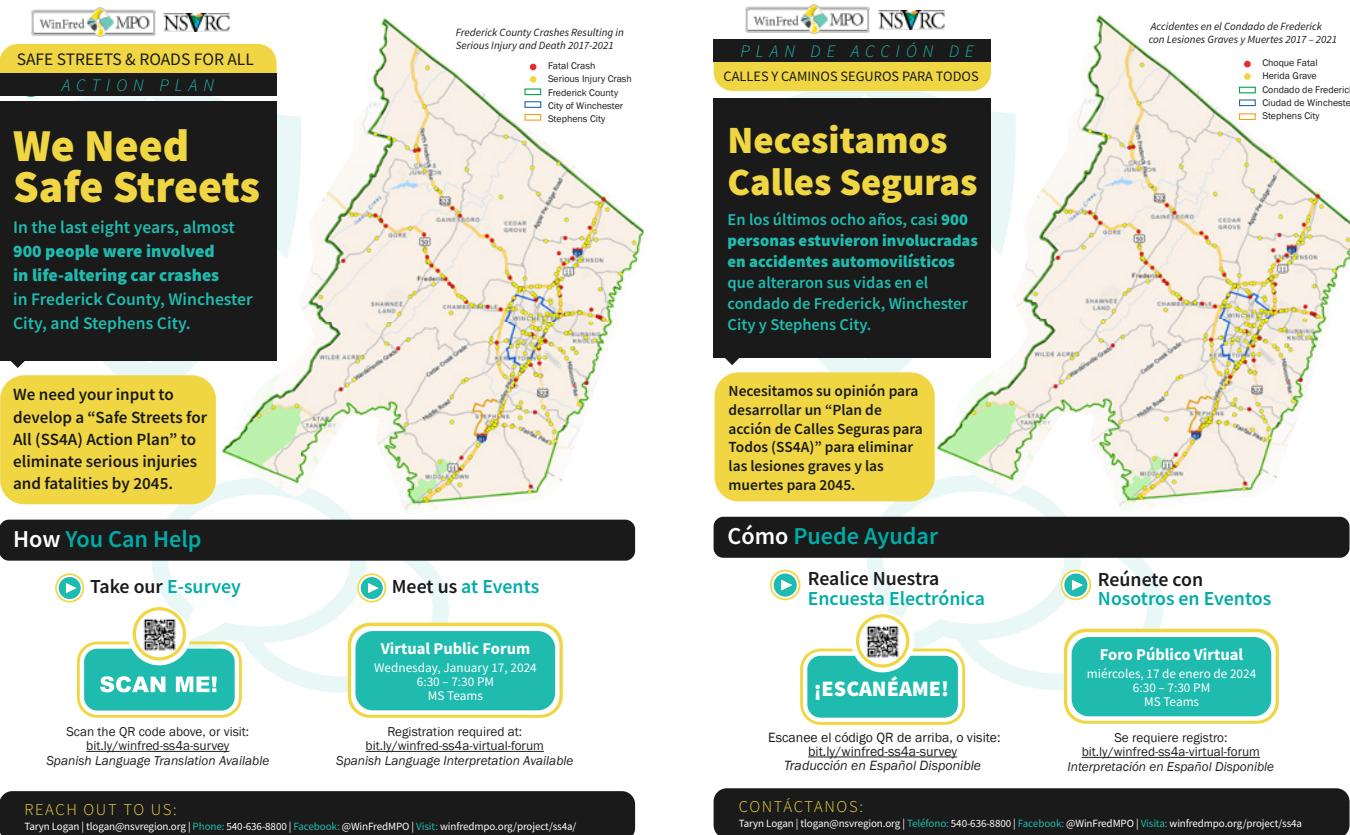
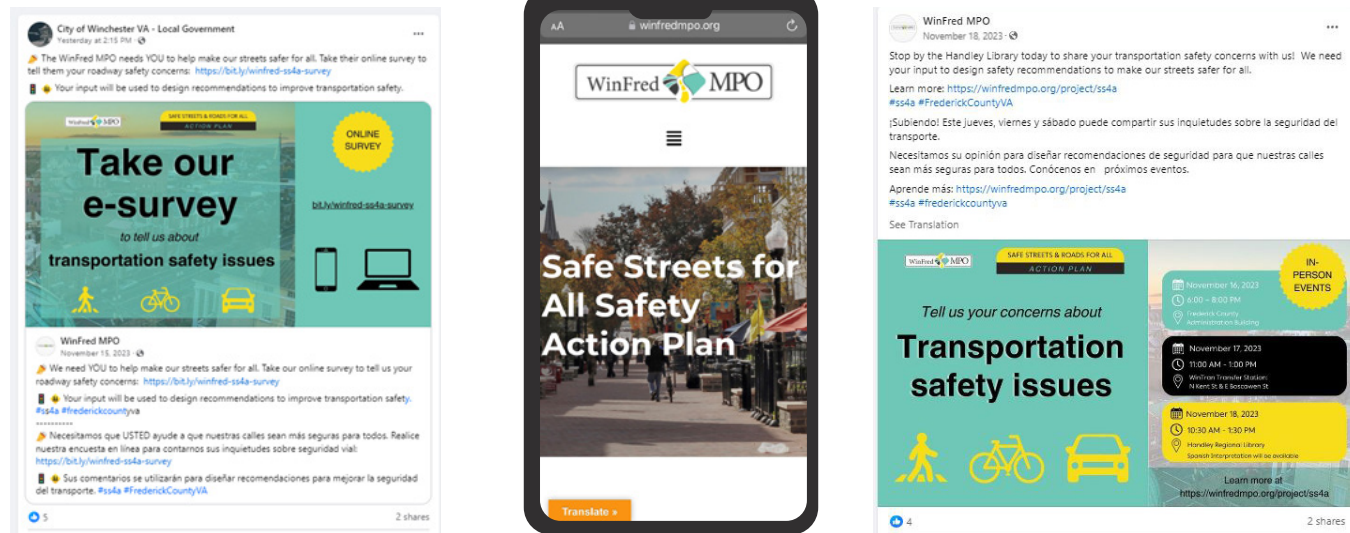


Figure 5.2: Social media promotion of the in-person events (top left and right); Project Mobile Website (top center); Promotional flyers in English and Spanish (above)

## Public Engagement

Public Engagement occurred in two phases between November 2023 and March 2024.



### Phase 1: Engage and Educate

The purpose of the first round of engagement was to educate the audiences on Safe Streets for All Action Plans and Vision Zero as well as to learn about the roadway safety issues residents face.

Table 5.1: Phase 1 Public Engagement Opportunities

Opportunity	Date	Time Frame	Location	Located in an Underserved Community
Electronic Survey & Interactive Web Map	November 16, 2023 to January 24, 2024	70 Days	Internet (available on desktop and mobile)	N/A
Transportation Forum	Thursday, November 16, 2023	6:00 to 8:00 PM	Frederick County Administration Building	Yes
Pop-up #1	Friday, November 17, 2023	11:00 AM to 1:00 PM	WinTran Bus Transfer Station	Yes
Pop-up #2	Saturday, November 18, 2023	10:30 AM to 1:30 PM	Handley Library	Yes
Virtual Public Forum	Wednesday, January 17, 2024	6:30 to 7:30 PM	Microsoft Teams	N/A

\*ZIP codes were not collected at the Transportation Forum, Pop-up #1, and Pop-up #2.

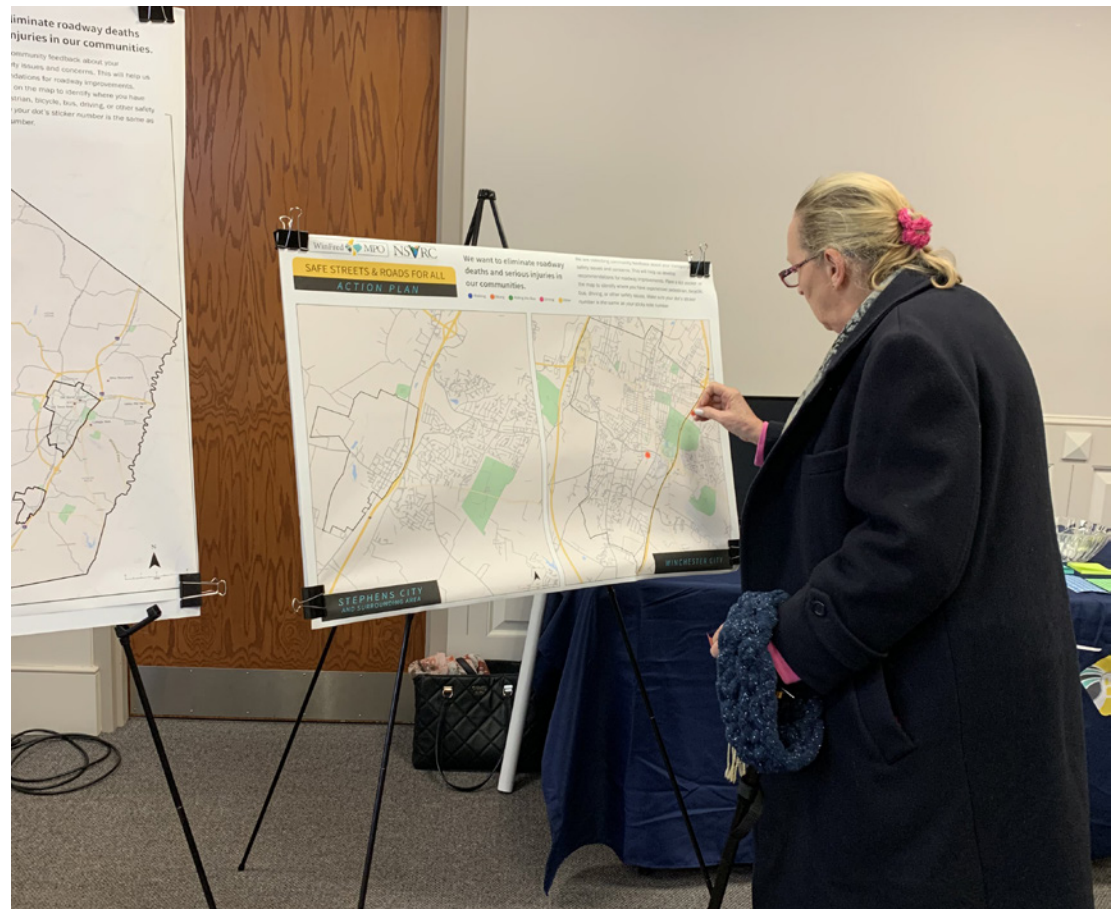


Figure 5.3 (left): A participant at the Transportation Forum adding a dot sticker to the map.

## Phase 1 Activities

The Transportation Forum and pop-up events featured maps of Frederick County, City of Winchester, and the Town of Stephens City and a large comment board. Participants placed sticky dots on the maps where they experience roadway safety issues. On the comment board, people wrote about their safety issues. The virtual public forum utilized open discussion and polls to get feedback on roadway safety issues.

The e-survey featured multiple-choice questions and an interactive web-map where users could locate and describe their roadway safety issues.

“Sidewalk pavement condition improvements are needed throughout the City of Winchester.”

“Frequently, students and adults bike along Senseny Road; many times at night. There isn’t a path for them and they are in the road.”

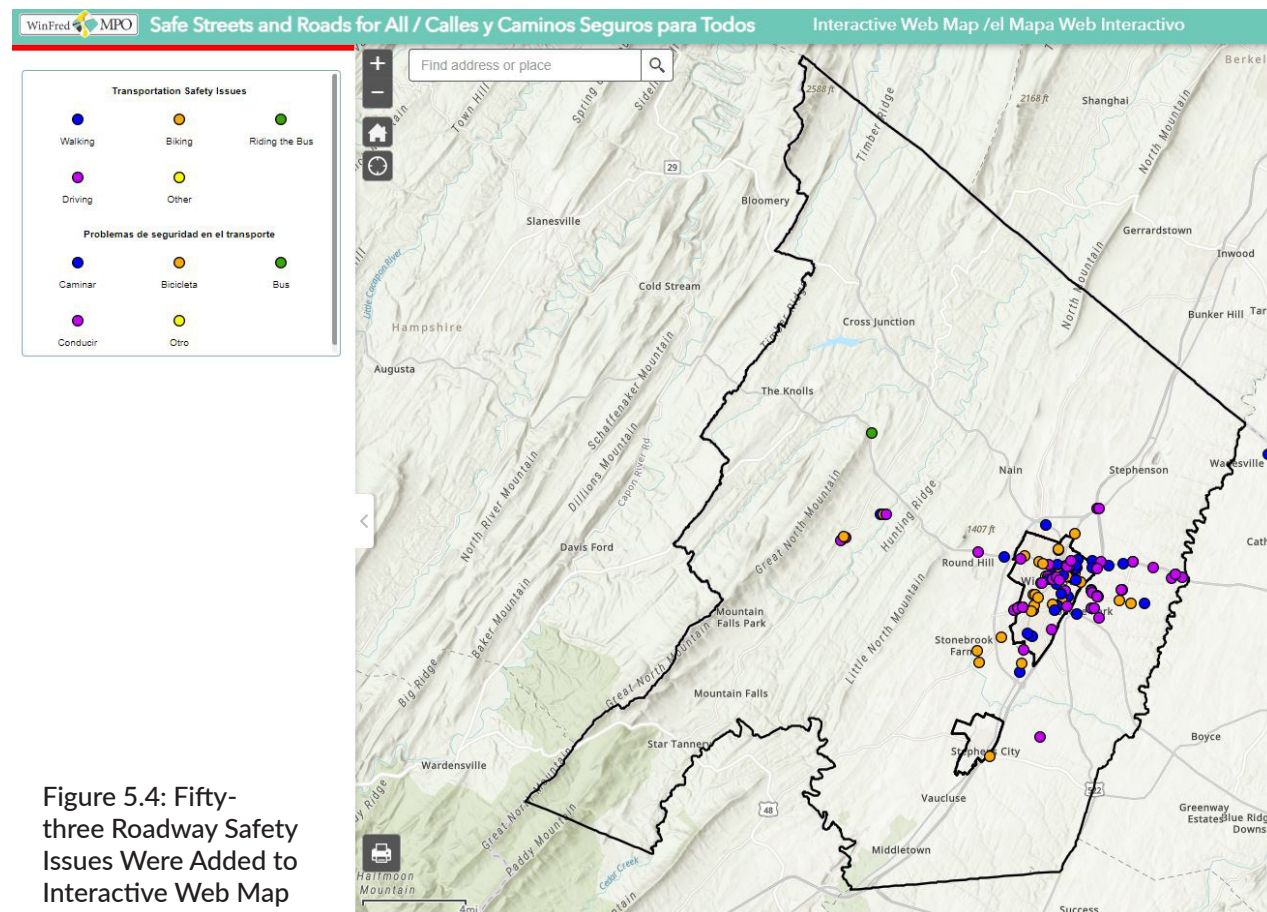


Figure 5.4: Fifty-three Roadway Safety Issues Were Added to Interactive Web Map

## E-survey Results

### Actions Local Governments Can Take to Improve Roadway Safety

Ranked from most important to least important based on responses

1. Slow Down Speeding Drivers
2. Make It Safer to Walk and Cross the Street
3. Improve Enforcement of Traffic Laws
4. Better Road Maintenance
5. Engage and Educate the Public on Traffic Laws and Safety
6. Ensure Safety for People with Disabilities

### Which Form of Mobility to Prioritize to Reach Vision Zero

Highest number of responses to lowest numbers of responses

1. Driving
2. Biking
3. Walking
4. Bus/Paratransit
5. Scooters, e-bikes, Segways, Skateboards
6. Other

In Phase 1 of public engagement, the following recurring roadway safety concerns and locations emerged:

Top Three Roadway Safety Concerns	Top Six Locations Cited as Unsafe
 Lack of Safe Spaces to Walk	1. Interstate 1-81
 Poor Driver Behavior	2. Route 7
 Challenging Roadway Configurations	3. Senseny Road
	4. Route 11 (Valley Avenue)
	5. Walking Mall Area in Old Town, City of Winchester
	6. Pleasant Valley Road

## Phase 2: Roadway Safety Improvements Report Back

After Phase 1, public input, the safety analysis, and the High Injury Network were used to develop a list of roadway safety improvements. Phase 2 asked for the public's help in determining which improvements should be submitted first for an implementation grant.

Table 5.2: Phase 2 Public Engagement Opportunity

Opportunity	Date	Time Frame	Location	Located in an Underserved Community
Winchester/Frederick County Public Meeting	Thursday, March 14, 2024	6:00 to 8:00 PM	Frederick County Administration Building, Winchester, VA	Yes

### Phase 2 Promotion

- Project Website
- English & Spanish Flyers
- English & Spanish Social Media Posts
- Press Release
- Stakeholders & Subscribers Email
- Leadership Commitment Committee & Stakeholder Promotion

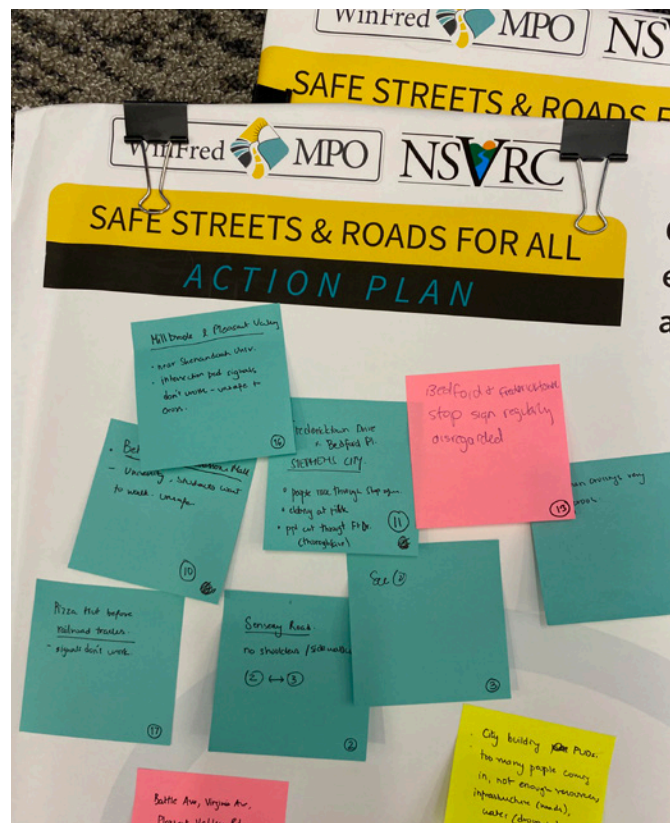


Figure 5.5: Dot stickers and comments against maps after the Phase 1 pop-up event at Handley Library



Figure 5.6: Members of the public voting on roadway safety improvements at the 2024 Spring Meeting

The list of roadway safety improvements has three categories: **street improvements**, **intersection improvements**, and **sidewalk improvements**. At the public meeting, display boards featured a map of improvement locations. Attendees used one dot sticker to vote on the most important improvement in each category. This public feedback helped to prioritize the roadway safety improvements for the City of Winchester and Frederick County. See Chapter 7 for the prioritized list of roadway safety improvements. If you would like to read individual summaries of the public engagement opportunities, see Appendix C.

### Highest Priority Roadway Safety Improvements from March 14, 2024 Public Meeting:

**Street Improvement:**  
Berryville Pike (City of Winchester's eastern boundary to Clark County's boundary)

**Intersection Improvement:**  
E. Jubal Early Drive & S. Loudon Street

**Sidewalk Improvement:**  
Featherbed Lane (S. Loudon Street to S Pleasant Valley Road)





## 6 | Existing Plan and Policy Review

Road safety must become an integral part of the northern Virginia region. To achieve “zero by 2045,” planning goals and policies must work in tandem with the safety recommendations made in Chapter 7. They must ensure that all road users—regardless of mode choice or ability—can travel safely in their communities.

### Current Plans and Policies

The project team reviewed thirty planning documents for the study area, including:

- Comprehensive Plans
- Zoning Ordinances
- Subdivision and Land Development Ordinances
- Current Land Use and Zoning Maps
- Future Land Use Maps
- Long Range and Surface Transportation Plans

### Active Transportation Infrastructure

The Comprehensive Plans for all three municipalities promote multimodal transportation. Their planning goals encourage mixed land uses, shorter distances between destinations, and walkable streets.

- Frederick County encourages multimodal transportation access within urban growth areas.
- The City of Winchester aims to create an integrated network of streets, sidewalks, bike paths, and transit. The City’s Comprehensive Plan (2022) uses example images to illustrate walkable infrastructure, such as sidewalks, crosswalks, bike racks, and bus shelters. Their zoning map utilizes overlay districts to increase regulations in parts of the City of Winchester.

- WinFred MPO also promotes active, safe transportation through its plans and activities. The MPO has carried out a Winchester Bike Share Feasibility Study in 2020, a Stephens City Sidewalk Audit, and several area studies for traffic safety.

## Managing Growth for Transportation Safety

Common to all municipalities is the projected increase in population and development. Growth management is a critical tool to plan infrastructure at pace with new development. Each municipality's comprehensive plan highlights the need to demarcate growth areas:

- The City of Winchester Comprehensive Plan (2022) identifies infill development as a way to densify parts of the city. Winchester's zoning map utilizes overlay districts to direct growth. For instance, Planned Unit Developments (PUDs) are overlay districts with requirements to include affordable housing units. Their zoning code provides density bonuses for achieving New Urbanism principles in PUDs.
- The Frederick County Comprehensive Plan (2021) outlines an Urban Development Area (UDA) and "Sewer and Water Service Area (SWSA)." The UDA is a region around Winchester that promotes higher development. The SWSA is the limit for extending public sewer and water services. The County also charts "urban centers" and "neighborhood villages" for targeted growth. These areas lie within the Traditional Neighborhood Design-Business (TNDB) overlay zone. The County encourages compact and intense development patterns within the TNDB.

**New Urbanism** is a planning and urban design movement that encourages cities to be walkable with housing, jobs, and amenities within short distances of one another. According to Chapter 3 of the City of Winchester 2022 Comprehensive Plan, New Urbanism principles include:

- a. Pedestrian and bicycle-friendly road design
- b. Interconnectivity of new local streets with existing local streets
- c. Connectivity of road and pedestrian networks
- d. Preservation of natural areas
- e. Increased density using bonuses
- f. Mixed-use, mixed-income neighborhoods, including mixed housing types
- g. Reduction of front and side yard building setbacks, and
- h. Reduction of street widths and turning radii at intersections

- The Town of Stephens City aims to time growth with infrastructure development. Their comprehensive plan suggests impact assessments and phased plans for this purpose. Their Future Land Use Map places agricultural land at the town's edges to define a growth boundary.

The changes that accompany growth can be complex. During public outreach, several participants expressed concerns about densification. People expressed concern about new developments with increasing traffic and potentially, more crashes. These conversations demonstrate how important it is to carefully integrate all modes of transportation in growth management strategies, especially for vulnerable road users.

## Gaps in Existing Policies

Existing municipal regulations must be improved to implement the region's goals for New Urbanism. Zoning codes could be enhanced to support the objectives set forth in comprehensive plans by adding more specific language and detailed specifications.

- For instance, in the City of Winchester:
  - » Historic Winchester District (HW) is a zoning overlay district over the Central Business District. The Design Guide outlines specific material and aesthetic treatments for uniform architectural character but does not provide criteria related to infrastructure improvements such as Americans with Disabilities Act (ADA) requirements or sidewalk widths.
  - » The Corridor Enhancement District (CE) is an overlay district along major tourist access roads. Land in the CE is required to have inter-parcel access and sidewalks, but only encouraged to install bike racks or transit stop facilities.
- The local zoning and subdivision ordinances in the City of Winchester and Frederick County could include more specific requirements pertaining to multimodal transportation safety.
  - » For instance, several network and feasibility studies have been carried out for bicycle and pedestrian infrastructure. Active transportation also features extensively in each comprehensive plan. Subdivision ordinances for both municipalities prescribe a minimum sidewalk width in new developments but there are no design guidelines or strict specifications for curb cuts, bump-outs, pedestrian crosswalks, pedestrian medians, or bike lanes.

## Recommendations

These are suggestions for additional plans, modifications to existing ordinances, and strategies for regional land use management to achieve comprehensive safety in the northern Virginia region. With growth projected to increase, new developments can be an opportunity to ensure that new transportation infrastructure promotes traffic safety and simultaneously preserves the region's rural livelihoods and character.

It is important to note that the region varies greatly in density, land use, and built character. Transportation infrastructure and use patterns are not the same in the more compact City of Winchester as in the western, predominantly agricultural parts of Frederick County. Therefore, a safety strategy for a city street that connects key land uses may not be appropriate for a two-lane rural road. The recommendations for transportation safety presented here are thus suggested to be organized along the rural-to-urban Transect diagram, that can help classify recommendations appropriate to their built context.

### I. Protect Vulnerable Road Users

- Consolidate the information from recent bike share, sidewalk, and transit studies into a regional Multimodal Transportation Plan with an emphasis on vulnerable road users and aging populations. The Plan should be adopted by the MPO's Policy Board (which includes representatives from each municipality and VDOT). The Multimodal Plan should strengthen the region's existing road classification system by incorporating:
  - » A Complete Streets Manual, with guidelines to safely include pedestrians and bicyclists on the same roads as vehicles.

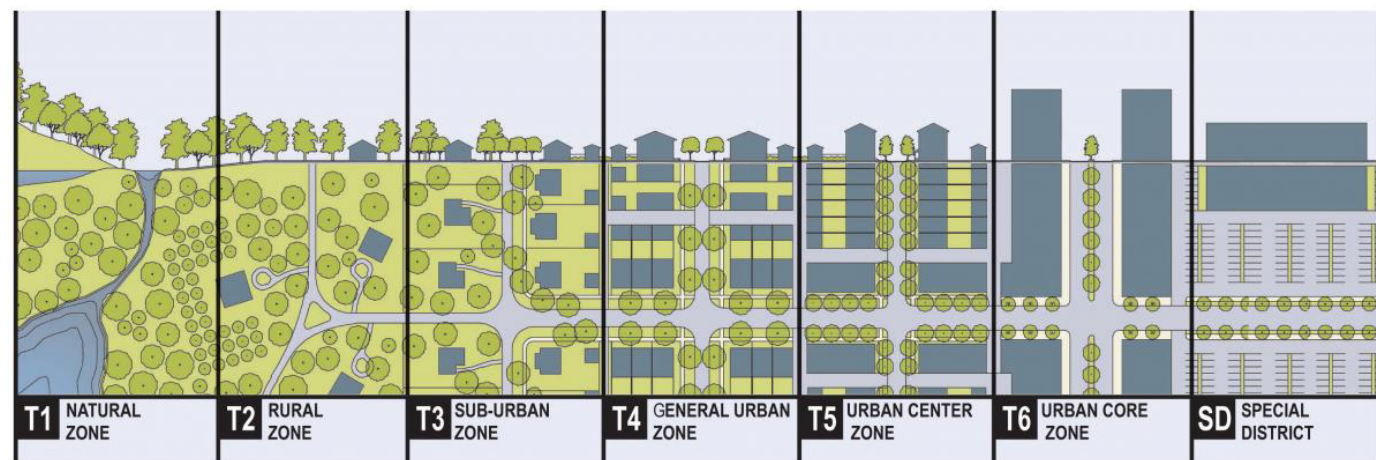


Figure 6.2: A rural-to-urban Transect is widely promoted by the Congress for New Urbanism (CNU). It can be used as a framework to write zoning and form-based codes. By viewing the built environment as a spectrum, the Transect can help match developmental regulations to their appropriate zone. Source: Congress for New Urbanism (CNU).

- » A regional Bicycle and Pedestrian Mobility Plan, with an inventory of existing sidewalk and bike infrastructure, and strategies to connect communities through a safe and complete walk, bike, and transit network.
- » Coordinate bike-ped mobility strategies with future transit plans, comprehensive plans and land use maps.
- Modify the existing zoning code and subdivision and land development ordinance to implement the Complete Streets approach.
  - » Illustrate typical multimodal street configurations through plans and sections.
  - » Furnish detailed information and establish minimum standards for all aspects of a roadway that contribute to traffic safety, including but not limited to: streets, sidewalks, curb cuts, curb ramps, curb extensions, shared-use paths, bike lanes, protected buffers, crosswalks, pedestrian medians, off-street parking spaces, on-street parking and loading zones, street furniture, bike racks, and signage.
  - » Ensure that all design standards are ADA compliant.
- Update language in the zoning and subdivision ordinances of each municipality to require multimodal and safety specifications for all new developments and high-density zones.
  - » Commercial and industrial zones are part of Frederick County's targeted growth sectors and should not be exempt from multimodal regulations. Rather, consider using performance-based zoning to set targets for Complete Streets infrastructure.
  - » Minimize and limit instances where zoning requirements are waived, even if a hardship is cited.

Organizing Complete Streets measures into a "Transect Zone Suitability Matrix" (see Figure 6.2) can help city officials, planners, developers, and property owners identify and prioritize roadway specifications appropriate to their built environment. For instance, a sidewalk may need to be wider in a high-volume commercial zone in Winchester than in a low-density residential neighborhood in Frederick County.

## II. Manage Access Points to Reduce Traffic Conflicts

- Specify detailed requirements for access management in local zoning and subdivision ordinances.
  - » Ensure that standards for proper corner clearance, intersection design, crossing spacing, median design, driveway spacing, and driveway-street connections are incorporated into the zoning code and are consistent with Complete Streets policies.
- Balance land use and density with transportation demand through requirements in the local zoning and subdivision ordinances.
  - » Broaden the Traffic Impact Analysis (TIA) requirement in the subdivision ordinance to include assessments of traffic safety on vulnerable road users, in conjunction with the Multimodal Transportation Plan.

The Traditional Neighborhood Design (TND) ordinance, which is promoted in plans for Frederick County, Winchester, and Stephens City, is a popular way to plan infill developments with walkable, well-connected streets. For example, the TND code in Davidson, North Carolina, provides for a 30% reduction in transportation fees charged to the development in return for pedestrian-oriented design features, as well as another possible 30% reduction in fees for design that is transit-friendly.

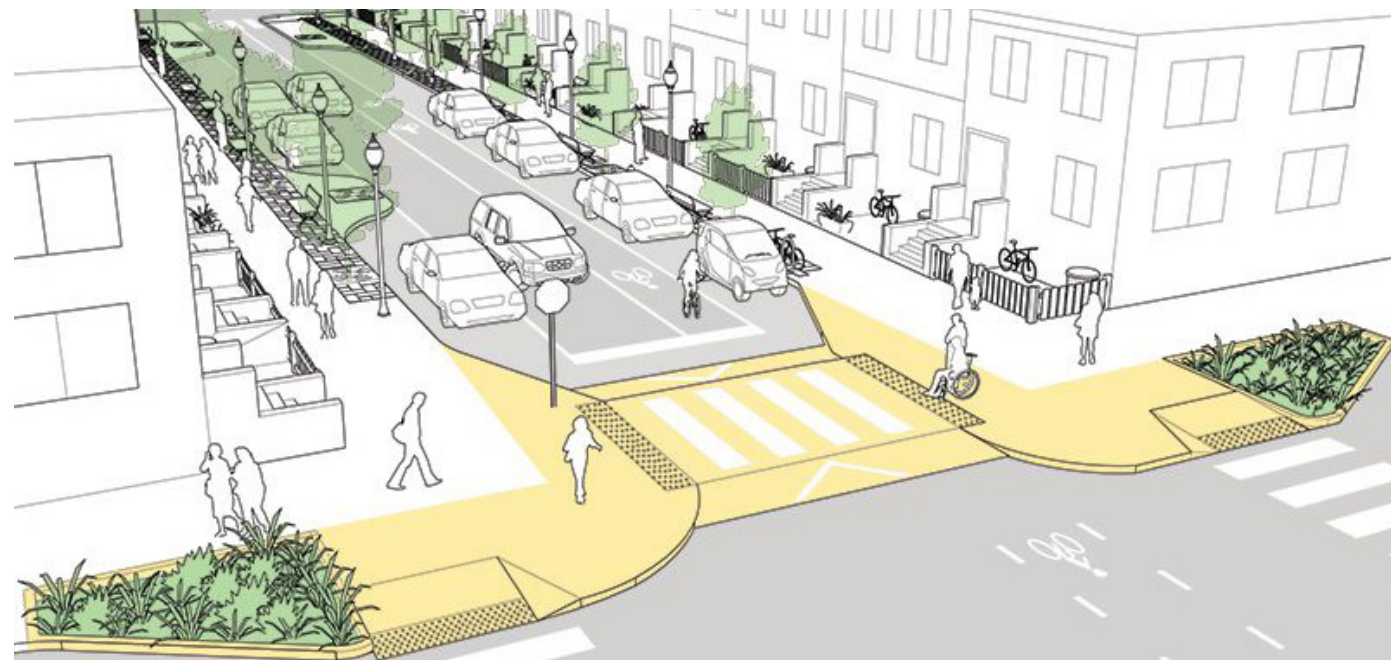


Figure 6.3: A diagram of the Complete Streets approach as applied to a local neighborhood street, with a 30-foot roadway within a 50-foot right-of-way. Local streets should provide safe, accessible, inviting ways to travel around the community. Source: National Association of City Transportation Officials (NACTO)

- » Incentivize access management best practices such as inter-parcel connectivity and curb cuts consolidation. Refer to VDOT's comprehensive access management regulations in the VDOT Road Design Manual: Appendix F, and VDOT Complete Streets: Bicycle & Pedestrian, Bus Stop Design, & Parking Guidelines: Appendix A(1).

## III. Campaign with Communities

- Work with communities to identify quick, low-cost, demonstration projects for neighborhood safety improvements. These lighter/quicker/cheaper demonstration projects are often referred to as Tactical Urbanism.
  - » For instance, painting crosswalks with residents or installing pop-up bike lanes can quickly test the efficacy of a strategy, open dialogue, and help build trust.
  - » Partner with school districts to develop Safe Routes to School around schools.
- Foster a culture of traffic safety with the people of the City of Winchester and Frederick County through education, engagement, and outreach.
  - » Encourage behavior change through public safety campaigns, driver education, and safety workshops, especially in underserved areas where people may be more dependent on non-vehicular transportation.
  - » Partner with local bike-walk advocacy groups to formally promote, educate, and empower residents to choose active transportation modes.

“BikeWalk Winchester” is a local group that advocates for safe bike-ped infrastructure through community bike rides and discussions. The group has participated actively in public surveys and meetings for this Action Plan and could be a partner for sustained community engagement.

## IV. Establish a Framework for Regional Safety Planning

- Systematize safety improvements through a Vision Zero Task Force.
  - » Identify unified objectives and strategies for transportation safety planning across the MPO's three municipalities.
  - » Annually inspect safety infrastructure on the High Injury Network (HIN) and incorporate maintenance needs in the following year's capital planning and VDOT/FHWA grant funding requests.



## 7 | Prioritization and Improvements

### Criteria for Prioritization

This Action Plan prioritizes Hot Spot locations based on criteria developed in cooperation with the Leadership Commitment Committee (LCC).

### Safety Evaluation

Locations were identified for safety prioritization from over 200 miles of streets and roadways in the Action Plan Area, including the High Injury Network (HIN) and other street segments.

#### Factors Considered for Safety Prioritization

1. Roads and streets with a fatal or severe injury (KSI) crash, including streets on the HIN,
2. Relative weight of crash types based on VDOT crash cost and length of roadway in the hotspot,
3. Bicycle and/or Pedestrian crash locations,
4. Incorporated areas,
5. Location in underserved census tracts,
6. Current funding status,
7. Inclusion in VDOT's Staunton District "Top 100 Potential Safety Improvements,"
8. Inclusion in a state or municipal plan or work program,
9. Comments and inputs gathered from Phase 1 of the Action Plan's public engagement activities.

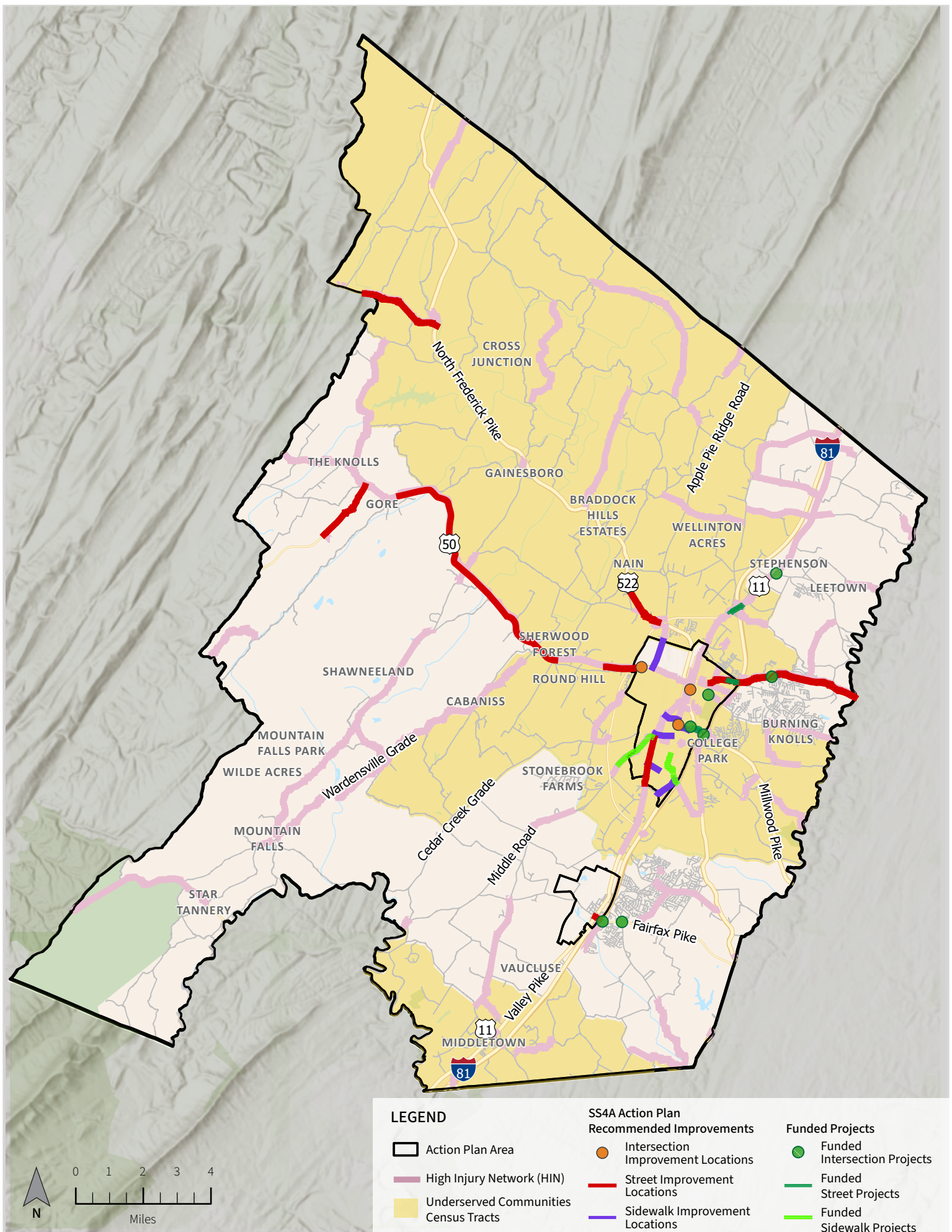


Figure 7.1: Recommended Safety Improvements and Funded Projects in the Action Plan Area

## List of Improvements & Relative Costs

The Federal Highway Administration (FHWA) has developed extensive studies of safety modifications and countermeasures, with a Crash Modification Factor (CMF) for each. The countermeasures preferred by VDOT represent a subset of those studies for the Commonwealth of Virginia. Appendix D includes a specific subset of the VDOT countermeasures and CMF and their relative costs.

For this Action Plan, safety improvements have been organized in three categories:

**STREET  
IMPROVEMENTS**

---

**INTERSECTION  
IMPROVEMENTS**

---

**SIDEWALK  
IMPROVEMENTS**

---

These recommended improvements have been proven through studies and data to provide significant and measurable safety benefits. The traffic fatalities and injuries that occur on I-81, which also appears on the HIN, are being addressed through other funded projects.

- The street and intersection improvement locations cover approximately 2.5 percent of approximately 1,000 centerline miles of transportation network in the study area.
- The locations include approximately 20 percent of the fatal and severe injury (KSI) crashes in Frederick County and the City of Winchester.

## Systemwide Improvements

Some crash types are not specific to a location. Low-Cost improvements can be addressed with ongoing systemwide maintenance projects. Medium and High-Cost Improvements may need to either be implemented as a stand-alone project or as part of a larger capital improvement to a street. Table 7.1 illustrates proven safety countermeasures that can address the “Top Ten Crash Factors.” These proven countermeasures, shown with their KSI Crash Modification Factor (CMF), can be applied systemwide (where appropriate and based on an engineering analysis or further study when required) to address the top ten crash factors.

**This Action Plan supports efforts to that effect underway by the Commonwealth of Virginia, Frederick County, the City of Winchester, and the Town of Stephens City.**

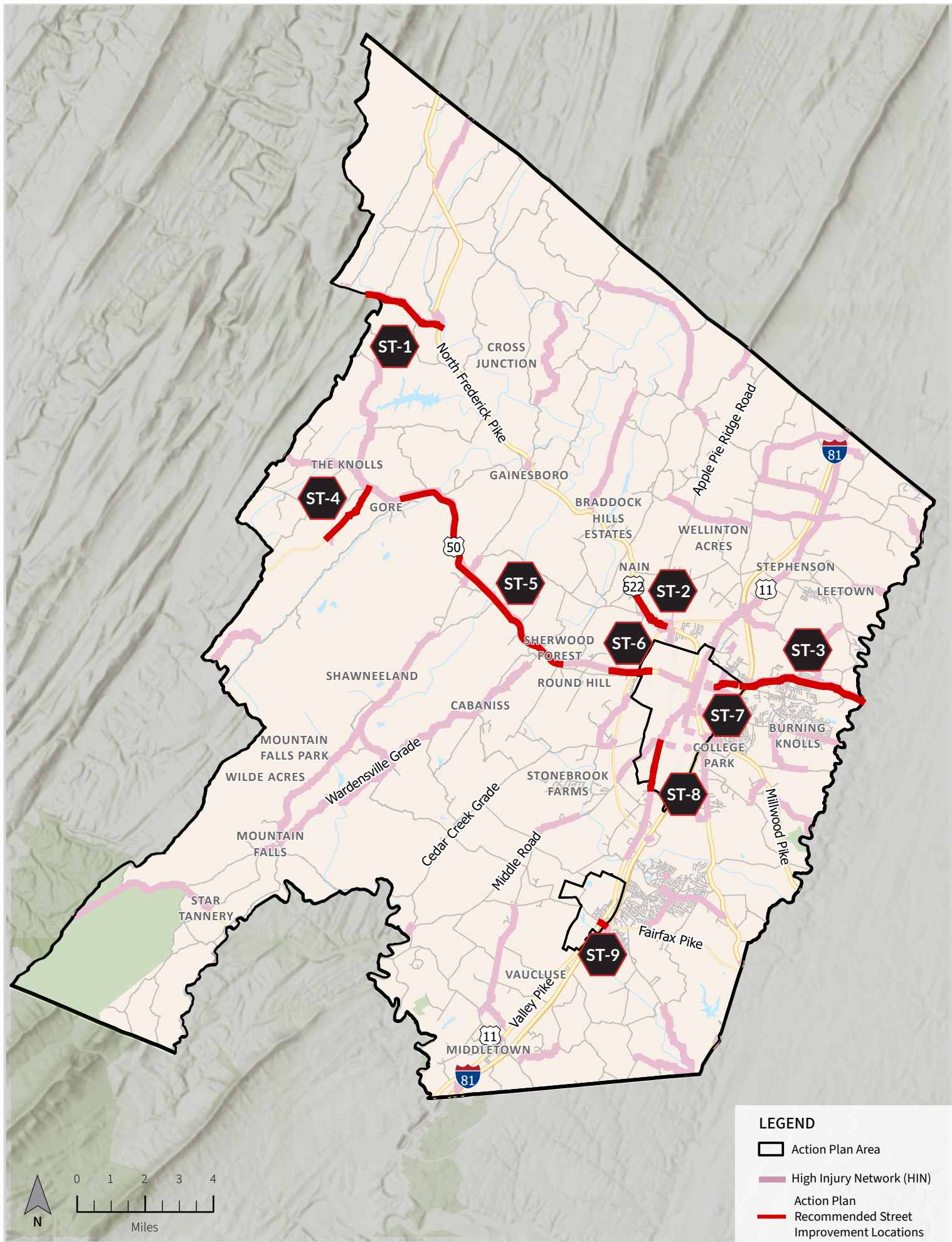


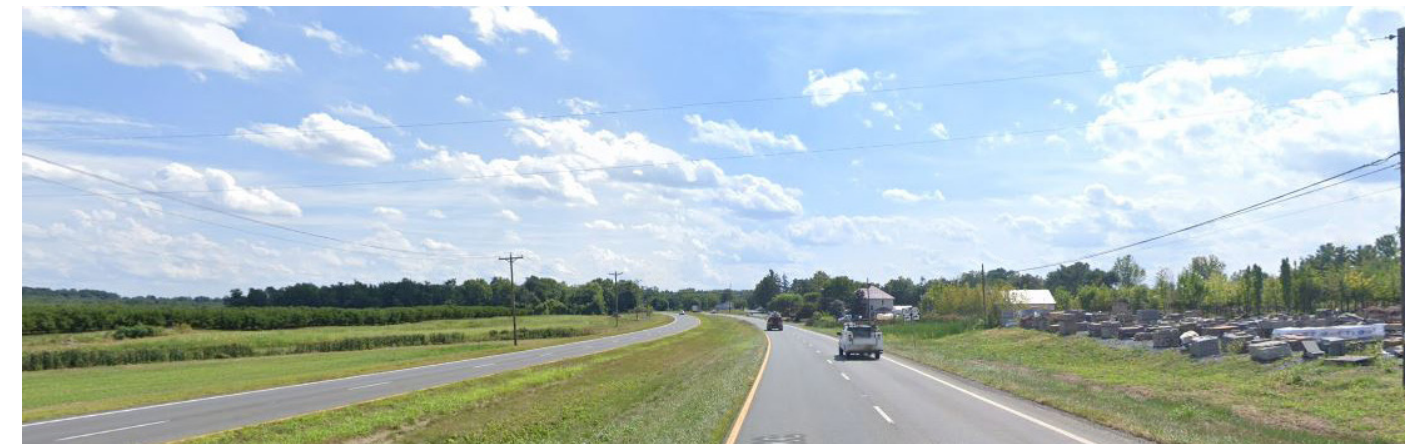
Figure 7.2: Recommended Street Improvements in the Action Plan Area

## Recommended Street Improvement Locations

**ST-1** Bloomery Pike (Route 127)  
West Virginia State Line to US 522 Frederick Pike



**ST-2** Frederick Pike North (Route 522)  
State Route 37 Ramps to Burnt Church Road

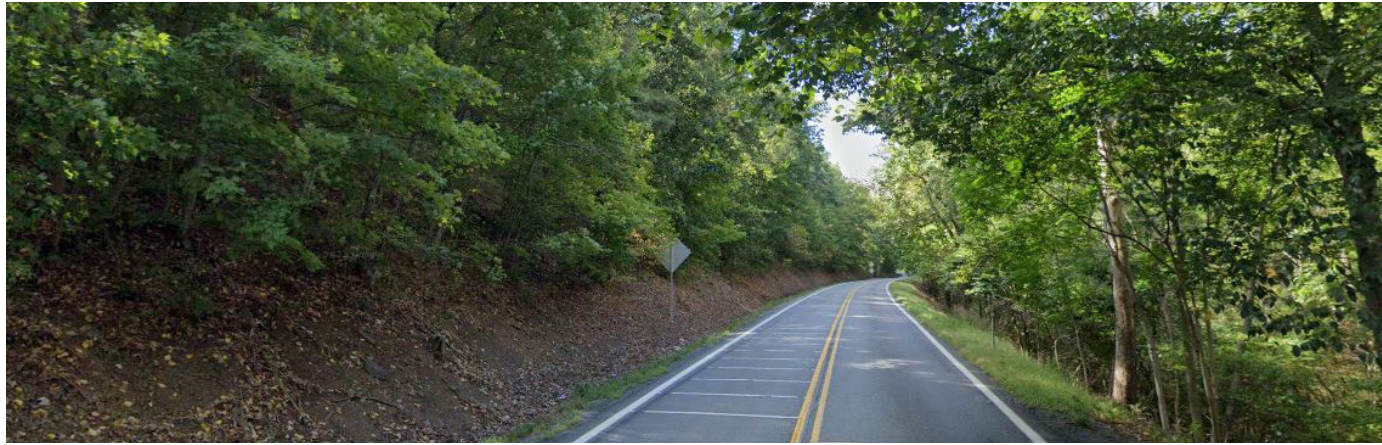


**ST-3** Berryville Pike (Route 7)  
City of Winchester eastern edge to Clark County Line

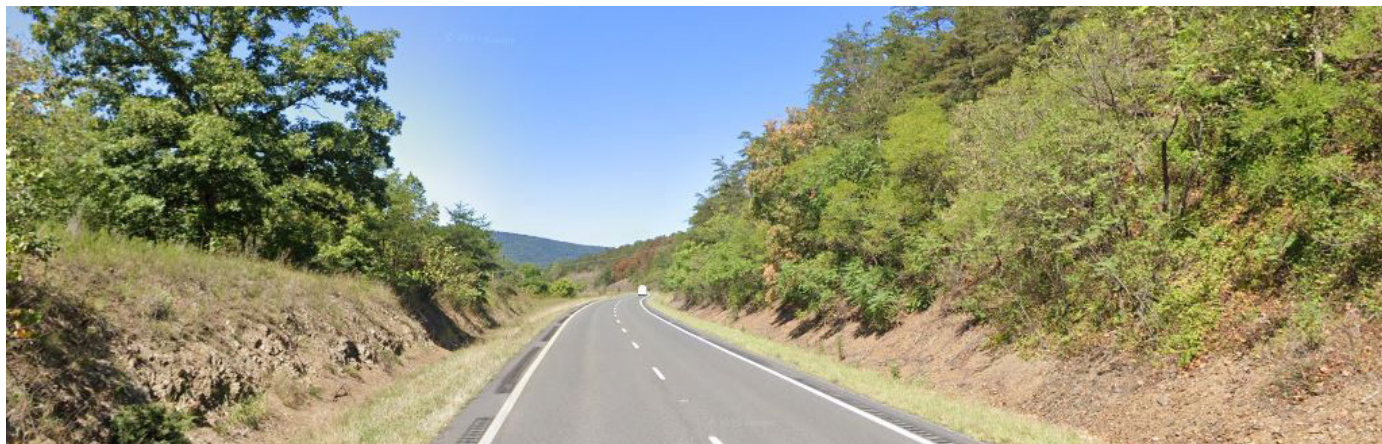


## Recommended Street Improvement Locations

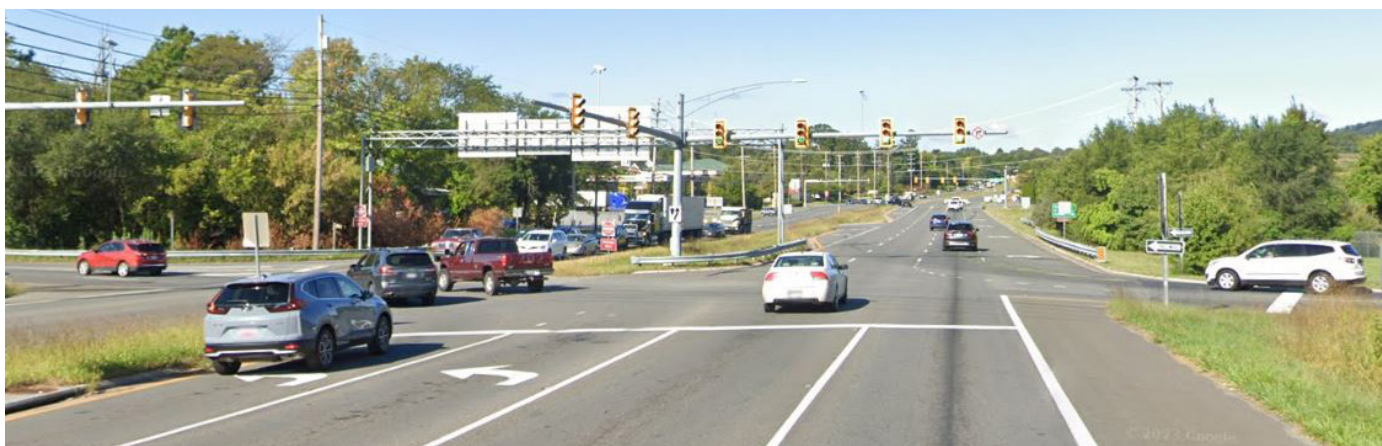
**ST-4** Carpers Pike (Route 259)  
Owl Lane to US 50/17 (Northwestern Pike)



**ST-5** Northwestern Pike (Route 50)  
Wardensville Grade to Gore Road



**ST-6** Northwestern Pike (Route 50)  
Round Hill Road to Keating Drive



## Recommended Street Improvement Locations

**ST-7** Berryville Avenue (Route 7)  
North Pleasant Valley Road to W Elm Street/Fort Collier Boulevard



**ST-8** Valley Avenue (Route 11)  
City of Winchester southern edge to Middle Road



**ST-9** Fairfax Street (Route 277)  
US 11/Main Street to 1-81 Southbound Ramps





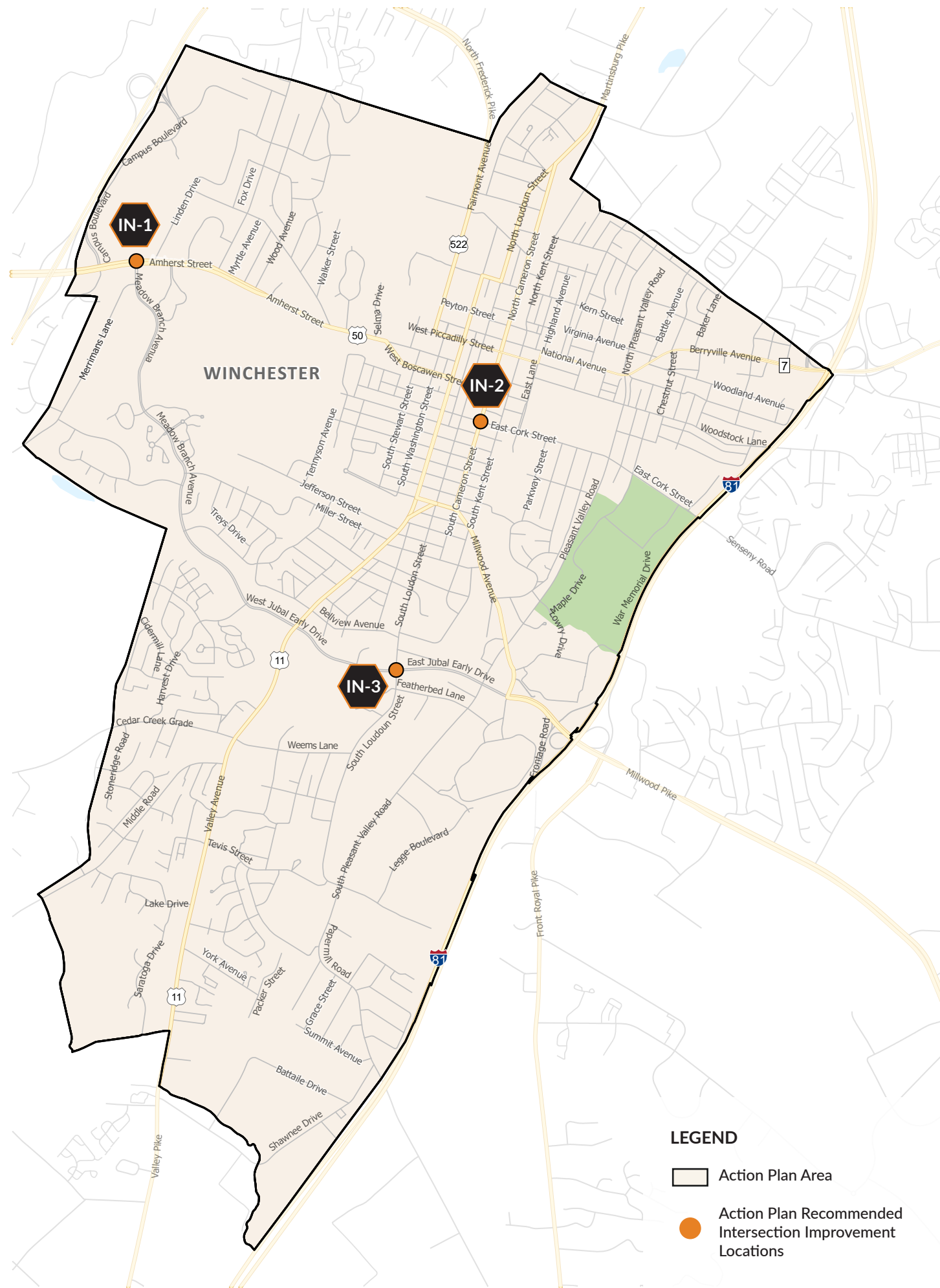


Figure 7.3: Recommended Intersection Improvements in the Action Plan Area

## Recommended Intersection Improvement Locations

### IN-1 Amherst Street & Campus Boulevard/Meadow Branch Avenue

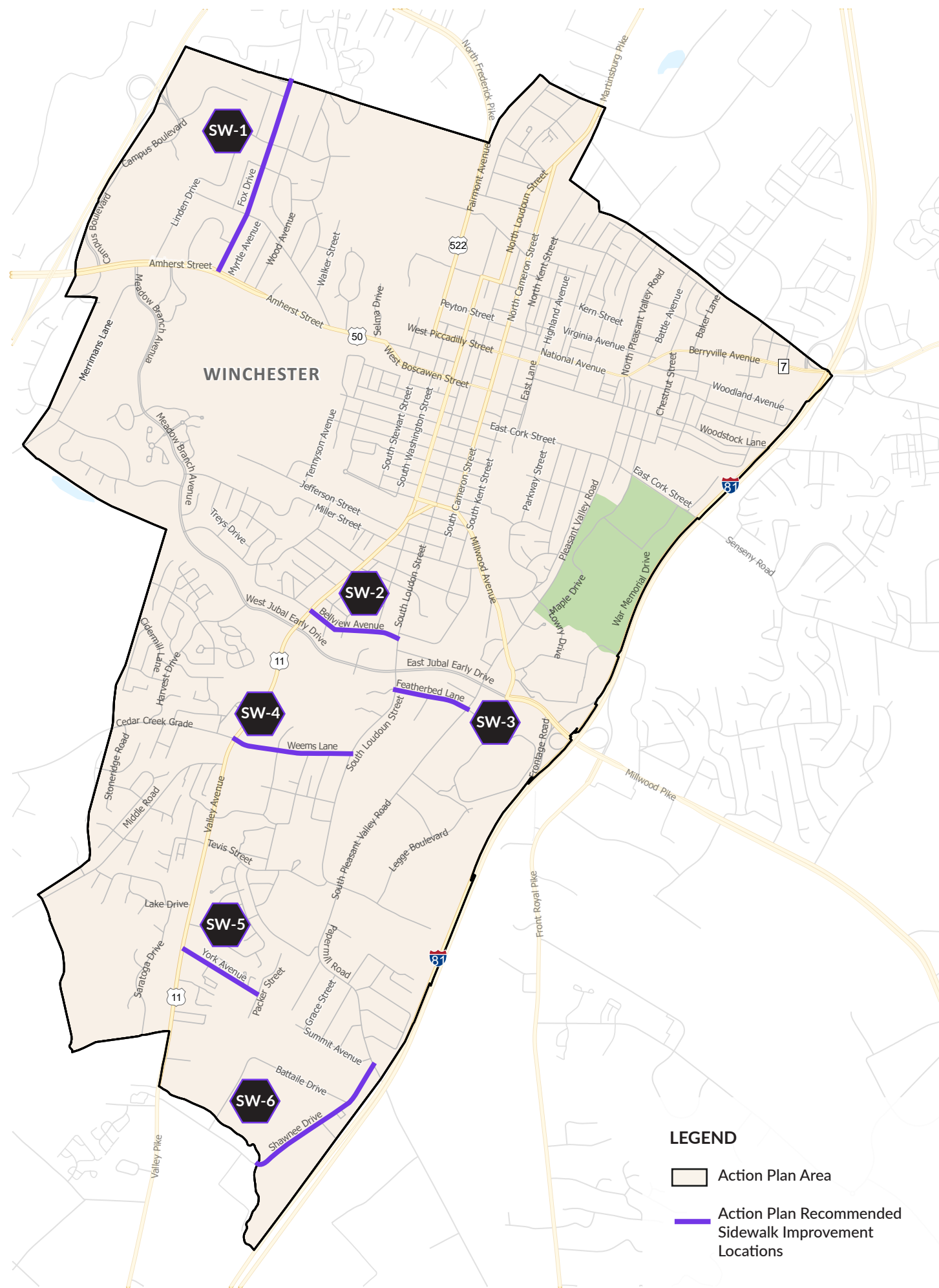


### IN-2 South Cameron Street & Cork Street



### IN-3 East Jubal Early Drive & S Loudon Street



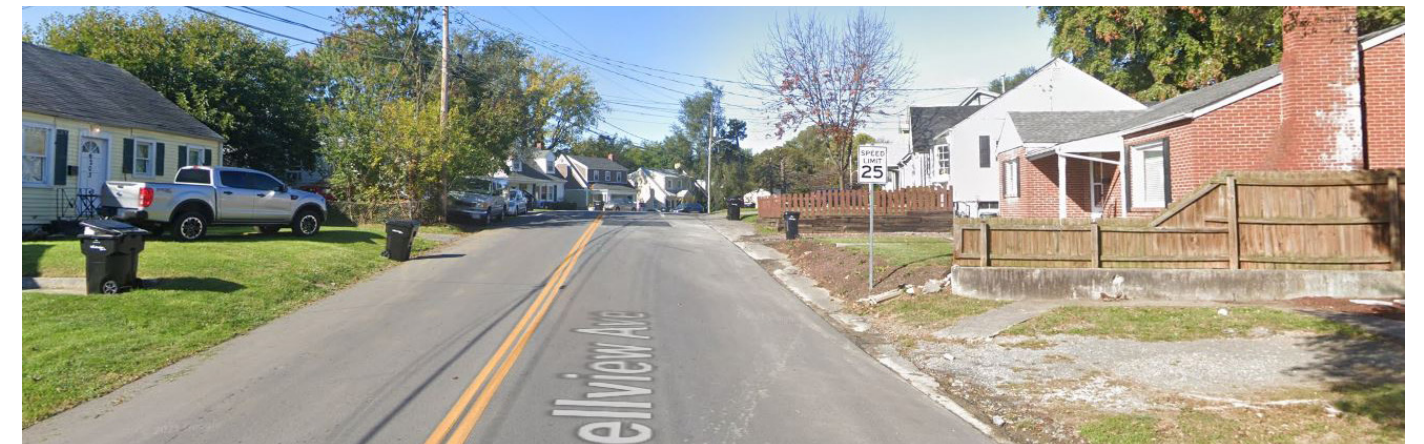


## Recommended Sidewalk Improvement Locations

**SW-1** **Fox Drive**  
Amherst Street (Route 50) to City of Winchester northern edge



**SW-2** **Bellview Avenue**  
Valley Avenue (Route 11) to Loudon Street



**SW-3** **Featherbed Lane**  
South Loudon Street to South Pleasant Valley Road



Figure 7.4: Recommended Sidewalk Improvements in the Action Plan Area

## Recommended Sidewalk Improvement Locations

SW-4

### Weems Lane

Valley Avenue (Route 11) to South Loudon Street



SW-5

### York Avenue

Valley Avenue (Route 11) to Packer Street



SW-6

### Shawnee Drive

City of Winchester southern edge to Papermill Road



## Safety Countermeasures

Table 7.1: Proven Safety Countermeasures with their KSI Crash Modification Factor (CMF) to Address Top Ten Crash Factors

Category	Subcategory	Countermeasure or Improvement	Crash Modification Factor (CMF)	Type of Crash Reduction	Appropriate Location
Roadway Departure or Single Vehicle Crash Countermeasures	With roadway resurfacing projects	Add Safety Edge	0.79		
		Add Shoulder Rumble Strips (Including Sinusoidal/ Mumble)	0.83		Rural
		Add Centerline Rumble Strips (Including Sinusoidal/ Mumble)	0.55		Rural
		Implement High-Friction Surface Treatment on Horizontal Curve	0.759		
		Add Raised Pavement Markers	0.87		Rural
		Upgrade Pavement Markings to Wet-Reflective Pavement Markings	0.881		Freeway
Maintenance projects		Remove or Relocate Fixed Object to Outside of Clear Zone	0.62		
		Upgrade Horizontal Curve Signage	0.75		
		Add Raised Pavement Markers	0.87		
Widen Average Shoulder Width			CMF based on HSM Table 10-9, CMF Clearinghouse range from 0.38 to 1.22		

Category	Subcategory	Countermeasure or Improvement	Crash Modification Factor (CMF)	Type of Crash Reduction	Appropriate Location
Nighttime or Darkness – Roadway Not Lighted	Lighting	Add Crosswalk Lighting	0.56		
		Install Intersection Lighting	0.881		
		Add Segment Lighting	0.68	Night Time	Urban
	Maintenance projects	Upgrade Chevrons with Fluorescent Sheeting	0.65		Rural
		Add 3-Inch Yellow Retroreflective Sheeting to Signal Backplates Angle	0.759		Urban
		Intersection Control Evaluation Study (ICE) to evaluate modified geometry or traffic control.			
Angle		Change from Permitted or Permitted/ Protected Left-Turn to Protected on Minor Approach	0.04	Angle	Urban
		Change from Permissive Left-Turn to Flashing Yellow Arrow	0.635		
		Change from Pre-timed Signal to Actuated Signal	0.8		

## Potential Street Safety Improvement Measures



### EDGE & CENTERLINE RUMBLE STRIPS

Edgeline and centerline rumble strips are cylindrical grooved patterns milled into the pavement that alert drivers through detectable noise and vibration when a vehicle's wheels leave the travel lane.



### ACCESS MANAGEMENT

Access management focuses on the location, spacing, and design of entrances, street intersections, median openings, and traffic signals.

*Safety benefit: 5-23% reduction in total crashes along two-lane rural roads. 25-31% reduction in fatal injury and crashes along urban/suburban roads.*



### SHOULDER WIDENING

Shoulder widening, particularly on curves, can provide drivers with an opportunity to regain control and re-enter the roadway.

Table 7.2: Systemwide countermeasures and other improvements related to vulnerable road users

Category	Countermeasure or Improvement	Crash Modification Factor (CMF)	Type of Crash Reduction	Appropriate Location
Traffic Operations	Convert Standard Crosswalk Pavement Marking to High-Visibility Crosswalk	0.63		
	Add Crosswalk Lighting	0.41 for severe injury, 0.56 for fatal crashes		
	Add PHB or HAWK, Advanced Yield/Stop Markings	0.432	Vehicle-Pedestrian	
	Add Rectangular Rapid Flashing Beacon (RRFB)	0.526	Vehicle-Pedestrian	
	Change Pedestrian Phase to Barnes Dance	0.49	Vehicle-Pedestrian	Urban
	Convert from Walk/Don't Walk to Pedestrian Countdown	0.3	Vehicle-Pedestrian	
	Implement Leading Pedestrian Interval	0.413	Vehicle-Pedestrian	Urban
	Add or Upgrade Sidewalk	0.12	Vehicle-Pedestrian	
	Add Shared Use Path	0.41 for severe injury, 1 for fatal crashes		

**Sidewalks are a proven countermeasure for pedestrian safety.**



According to the Federal Highway Administration, sidewalks can reduce crashes involving pedestrians along roadways by 65% to 89%.

Most of the proposed sidewalk improvements above are also identified in the City of Winchester's Sidewalk Master Plan, released in 2022.

**Potential Intersection Safety Improvement Measures**



**HIGH-VISIBILITY CROSSWALKS**

High-visibility crosswalks use patterns (i.e., bar pairs, continental, ladder) that are visible to both the driver and pedestrian from farther away compared to traditional transverse line crosswalks.

*Safety benefit: Up to 40% reduction in pedestrian injury crashes.*



**LEADING PEDESTRIAN INTERVAL (LPI)**

A Leading Pedestrian Interval (LPI) gives pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given a green indication.

*Safety benefit: 13% reduction in pedestrian/vehicle crashes at intersections.*



**PROTECTED VS. PERMISSIVE LEFT TURNS**

A protected left turn provides a green arrow for left turning vehicles while stopping both oncoming traffic and parallel pedestrian crossings to eliminate conflicts.



## Time Frames for Deployment

Identified improvement locations are under various jurisdictions and countermeasures identified in Appendix H may be funded in multiple ways with federal, state, and or municipality funding, as determined by the implementing agency or agencies. Generally, low-cost countermeasures can be deployed as part of ongoing resurfacing/maintenance projects or a larger Transportation Improvement Program (TIP) project. Medium-cost improvements as part of a larger scheduled TIP project in the next 0-10 years. High-cost improvements as a programmed standalone TIP project in 6-20 years..

## How is This Part of the Safe Systems Approach?

This Action Plan incorporates the six principles that form the basis of the Safe Systems Approach: deaths and serious injuries are unacceptable, humans make mistakes, humans are vulnerable, responsibility is shared, safety is proactive, and redundancy is crucial. This Action Plan is part of the Safe Systems Approach by VDOT, the WinFred MPO, Frederick County, and the Town of Stephens City to facilitate implementation of Vision Zero policies and in support of the State Highway Safety Action Plan. Addressing the other Top Ten Crash Factors such as speeding, driving under the influence, not wearing a seat belt, and distracted driving, are largely behavioral factors addressed through shared responsibility and cooperation of proactive engineering and education in support of enforcement efforts. However, KSI crashes often occur as a result of a combination of multiple crash factors. As a result, many of the systemwide countermeasures are applicable and prove the importance of redundancy. Protection of vulnerable users is another key component of the Safe Systems Approach that has been incorporated into recommended safety improvements.



## 8 | Progress and Transparency

The SS4A Action Plan is a public document that is available on the WinFred MPO website. The Action Plan will evolve in tandem with growth and development in the project area.

The Leadership Commitment Committee (LCC) will continue to meet regularly to review and discuss the prioritized list of roadway safety improvements and as well as to measure the progress of the Vision Zero commitment. Based on data and progress, they will consider adding or amending projects on an annual basis to ensure the Action Plan is current and remains actionable. Crash data will be maintained and updated regularly.

The SS4A grant funding requires tracking of the progress of the safety goals and can be used to track safety project implementation. The primary safety goal is reduction of fatality and severe injury, or KSI, crashes. While the end goal of Vision Zero is indeed zero fatalities and severe injuries, tracking incremental progress is also recommended. Tracking can be as simple as a periodic update posted on the WinFred MPO website based on VDMV annual crash data reports, or a dashboard showing progress. The VDMV annual crash data report does track fatalities each year and by county, however, it does not separate severe injuries from all injuries. VDOT has online webmap resources such as the VDOT Crash Analysis tool that contains filters that can be used to slice the data by categories when, where, what, and behaviors that can be utilized as the basis for tracking. The safety analysis in this Action Plan utilized that same VDOT data.

WinFred MPO adopts statewide targets, and all progress on the Vision Zero commitment will be reported in the MPO's Annual Performance Report. This will include information on what has been completed, and data related to crashes. The WinFred MPO website will host each Annual Performance Report.

Scan Me to Visit the WinFred MPO  
Action Plan Website!



[winfredmpo.org/project/safe-streets-for-all-safety-action-plan/](https://winfredmpo.org/project/safe-streets-for-all-safety-action-plan/)

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# A | Underserved Communities Screening

## Equitable Transportation Community (ETC) Explorer Tool

ETC Explorer Tool analyzes the cumulative burden communities experience as a result of underinvestment in transportation in the following five components: Transportation Insecurity, Climate and Disaster Risk Burden, Environmental Burden, Health Vulnerability, and Social Vulnerability.

Within the Action Plan Area, the most common burdens are Health Vulnerabilities and Environmental Burdens. Five of the six Frederick County Census Tracts are considered burdened by transportation insecurity. According to the US DOT, transportation insecurity occurs when people are unable to get to where they need to go to meet the needs of their daily life regularly, reliably, and safely. A growing body of research indicates that transportation insecurity is a significant factor in persistent poverty.

Table 3.1: ETC Explorer Tool Underserved Community Census Tracts – State Results

Census Tract	Municipality	Transportation Insecurity	Climate & Disaster Risk	Environmental Burden	Health Vulnerability	Social Vulnerability
51069050200 (502)	Frederick County	✓			✓	
51069050300 (503)	Frederick County	✓			✓	
51069050500 (505)	Frederick County	✓			✓	
51069050700 (507)	Frederick County	✓			✓	
51069050900 (509)	Frederick County	✓				
51069051102 (511.02)	Frederick County		✓	✓	✓	✓
51840000101 (1.01)	Winchester City			✓		✓
51840000102 (1.02)	Winchester City		✓	✓		✓
51840000202 (2.02)	Winchester City		✓	✓	✓	
51840000301 (3.01)	Winchester City			✓		✓
51840000302 (3.02)	Winchester City		✓	✓	✓	✓

## Climate & Economic Justice Screening Tool

CEJST was developed by the White House Council on Environmental Quality to identify disadvantaged communities as part of the Biden-Harris Administration’s Justice40 Initiative. A community is highlighted as disadvantaged on the CEJST map if it is in a Census Tract that is (1) at or above the threshold for one or more environmental, climate, or other burdens, and (2) at or above the threshold for an associated socioeconomic burden. There are eight indicators of burden: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.

## Areas of Persistent Poverty (APP)

The Bipartisan Infrastructure Law defined an “Area of Persistent Poverty” as meeting the following one of the following criteria:

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

## Historically Disadvantaged Community (HDC)

A “Historically Disadvantaged Community” is defined by USDOT, consistent with the Office of Management and Budget’s Interim Guidance for the Justice40 Initiative. A project is in a Historically Disadvantaged Community if:

- The project is located in certain qualifying census tracts; OR
- The project is located on Tribal land; OR
- The project is located in any territory or possession of the United States.

The 11 Census Tracts identified by the ETC Explorer were further analyzed using the tool and guidelines above. As shown in **Table 3.2**, Census Tracts 1.01, 1.02, and 3.01, located in the City of Winchester, met the criteria for AAP and HDC. Census Tracts 1.01 and 1.02 meet the CEQ socioeconomic threshold for low income and four burden thresholds:

- Housing Cost
- Proximity to Risk Management Plan facilities
- Linguistic Isolation
- High School Education

Table 3.2: Additional Underserved Communities Tool Analysis

Census Tract	Municipality	Area of Persistent Poverty (US DOT)	Historically Disadvantaged Community (US DOT)	Climate and Economic Justice Screening Tool (CEJST)
5184000101 (1.01)	Winchester City	✓	✓	✓
5184000102 (1.02)	Winchester City	✓	✓	✓
5184000301 (3.01)	Winchester City	✓	✓	

**WinFred MPO Title VI Plan**

Title VI of the Civil Rights Act of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving Federal financial assistance. Specifically, Title VI provides that “no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” (42 U.S.C. Section 2000d).

In 1994, President Bill Clinton signed Executive Order 12898 that directed federal agencies to develop strategies to mitigate against adversely impacting the health or environmental quality of minority and low-income populations. This order also pushed forward efforts to keep these populations more informed about their communities and their rights.

In 2000, President Bill Clinton signed Executive Order 13166 to improve access to services for people with limited English proficiency.

To comply with these requirements, the WinFred MPO developed a Title VI Plan. The Title VI Plan’s underserved communities analysis was reviewed to ensure alignment as well as to ascertain locally recommended engagement strategies for underserved communities. As part of the WinFred MPO Title VI Plan, race and ethnicity, low-income, free or reduced lunch program, age, people with disabilities, and vehicle availability were analyzed. Here is how the analysis overlaps with the underserved communities screening:

- About 79% to 85% of people living in the City of Winchester identify as races “other than White alone”.
  - The southern and eastern portions of the City of Winchester contain large concentrations of Hispanic and Latino populations, especially Census Tracts 1.01, 3.01, and 3.02.
  - Census Tract 511.02, located at the northern edge of the City of Winchester has a higher concentration of non-White groups.
- Poverty levels are highly concentrated in Census Tracts 1.01 and 1.02.
- Census Tracts in Frederick County adjacent to the northern and southern edges of Winchester City also display poverty levels between 8.2 to 15.1%, namely Census Tracts 511.02 and 509.
- There is a large concentration of students who qualify for free or reduced lunch school programs in the area east of Oldtown in the City Winchester, especially Census Tract 3.01.

- Census Tract 2.02 in the City of Winchester City and Census Tracts 505 and 509 in Frederick County have between 23.1% to 30.3% of their population aged 65 and over.

The WinFred MPO Title VI Plan can be found at <https://winfredmpo.org/resources/title-vi-title-ii/>.

**Underserved Communities Screening: Demographic Profiles**

Executive Order 13985 on Further Advancing Racial Equity and Support for Underserved Communities (2021), denotes that individuals who belong to underserved communities include those who have been denied consistent and systematic fair, just, and impartial treatment, including Black, Latino, and Indigenous and Native American persons, Asian Americans and Pacific Islanders and other persons of color; members of religious minorities; lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons; persons with disabilities; persons who live in rural areas; and persons otherwise adversely affected by persistent poverty or inequality. To understand the demographic and socioeconomic makeup of the 11 identified Disadvantaged Community Census Tracts, US Census data was used to analyze the following:

- Race and Ethnicity
- Poverty
- Age
- Limited English Proficiency
- Zero Vehicle Households
- People with Disabilities

The demographic and socioeconomic data of the disadvantaged Census Tracts located in Frederick County are compared to the County and the Commonwealth. As the City of Winchester is an independent city, the disadvantaged Census Tracts located in Winchester City are compared to the City and Commonwealth.

**Race and Ethnicity**

An individual is considered a minority if they identify as members of the following five population groups: American Indian or Alaskan Native, Asian, Native Hawaiian or Other Pacific Islander, Black or African American, and Hispanic or Latino ethnicity.

According to US DOT, fatal traffic crashes disproportionately impact people who are Black and American Indian, both in-vehicle and as pedestrians.

**Frederick County Underserved Communities Census Tracts**

Frederick County is predominantly populated by people who identify as White alone, which, at 88% of the County’s population, is higher than 64% for the Commonwealth of Virginia. Of all disadvantaged Census Tracts identified in this report, Tract 509 stands out with 9% of its population identifying as Black or African American alone. There are also a significant number of people in Tract 511.02 who identify as Hispanic or Latino – 27%, almost triple the County and Commonwealth average of 10%.

Table A.1: Population by Race

	502	503	505	507	509	511.02	Frederick County	Virginia
White Alone	92%	98%	90%	91%	79%	80%	88%	64%
Black or African American Alone	2%	1%	1%	3%	9%	7%	4%	19%
American Indian or Alaska Native Alone	0%	0%	4%	0%	0%	0.08%	.4%	0.3%
Asian Alone	1%	0%	1%	1%	2%	2%	2%	7%
Native Hawaiian and Other Pacific Islander Alone	0%	0%	0%	0%	0%	0.06%	0.09%	0.06%
Some Other Race Alone	3%	0%	1%	1%	2%	4%	2%	3%
Two or More Races	1%	1%	2%	4%	7%	6%	4%	6%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

Table A.2: Population by Ethnicity

	502	503	505	507	509	511.02	Frederick County	Virginia
Hispanic Population	7%	1%	7%	7%	8%	27%	10%	10%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**City of Winchester Underserved Community Census Tracts**

In Winchester City, there is a more mixed distribution of race than in Frederick County. While the City is still three-quarters White, Tract 1.02 is home to 22% people who identify as African American, double the entire City, and greater than the Commonwealth average. There are also 18% of people in Tract 1.02 who are ethnically Hispanic.

In Tracts 3.01 and 3.02, 15% and 11% of the population identify as African American, and 21% and 19% are ethnically Hispanic, respectively. Tract 1.01 has 19% of its population identify as two or more races, with 35% ethnically Hispanic or Latino.

Table A.3: Population by Race

	1.01	1.02	2.02	3.01	3.02	Winchester City	Virginia
White Alone	71%	61%	80%	71%	76%	74%	64%
Black or African American Alone	2%	22%	3%	15%	11%	10%	19%
American Indian or Alaska Native Alone	0%	0%	0%	0.07%	0.5%	0.3%	0.3%
Asian Alone	0%	3%	6%	1%	1%	2%	7%
Native Hawaiian and Other Pacific Islander Alone	0%	0%	0%	0%	0.2%	0.03%	0.06%
Some Other Race Alone	7%	7%	8%	4%	8%	6%	3%
Two or More Races	19%	7%	3%	10%	3%	7%	6%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

Table A.4: Population by Ethnicity

	1.01	1.02	2.02	3.01	3.02	Winchester City	Virginia
Hispanic Population	35%	18%	11%	21%	19%	18%	10%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**Poverty**

According to the US Department of Health and Humann Service, the 2023 federal poverty level for a single person in the US is \$14,580. For each additional person in the household, the federal poverty level increased by \$5,140.

In the US, low-income communities are significantly less likely to have sidewalks, marked crosswalks, and streets designed to support safer, slower speeds. Lower-income neighborhoods are also much more likely to contain major arterial roads built for high speeds and higher traffic volumes at intersections, exacerbating dangerous conditions for people walking. Households in low-income areas typically own fewer vehicles, have longer commutes, and have higher transportation costs.

**Frederick County Underserved Communities Census Tracts**

The prevalence of poverty in Frederick County as a whole is at 7%, below the state average of 10%. Of the Census Tracts identified as “underserved” in this report, Tracts 507, 509, and 511.02 have a higher number of people living below the poverty line, at 11%, 11%, and 12% respectively. It is important to note here that Tract 511.02 is also home to the largest percentage of ethnically Hispanic people in the County.

Table A.5: Percentage of Population in Poverty

	502	503	505	507	509	511.02	Frederick County	Virginia
Percent in Poverty	2%	4%	3%	11%	11%	12%	7%	10%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**City of Winchester Underserved Communities Census Tracts**

Poverty levels in Winchester City are 13% - almost double that of Frederick County. Within the City, poverty is highly concentrated in Tracts 1.01 and 1.02 at 23% and 31% respectively, both of which are significantly higher than the Commonwealth average. CT 3.02 also has higher poverty levels than the City average, with 14% of its population in poverty. These observations are in concurrence with the US DOT’s “Areas of Persistent Poverty” tool, which identifies all three Tracts – 1.01, 1.02, 3.02 – under the Bipartisan Infrastructure Law. As noted for Frederick County, all three tracts with high levels of poverty are also home to more communities of color than other tracts.

Table A.6: Percentage of Population in Poverty

	1.01	1.02	2.02	3.01	3.02	Winchester City	Virginia
Percent in Poverty	23%	31%	5%	6%	14%	13%	10%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**Age**

According to Centers for Disease Control and Prevention (CDC), motor vehicle crashes are the leading cause of death for children between the ages of 5 and 19 in America. The CDC found that in 2021, of the child passengers aged 12 years old and younger who were killed in a crash, 36% were not buckled up. Outside of the vehicle, children are vulnerable to injury and death due to not understanding traffic rules and risks and parents overestimating their child’s traffic knowledge and skill. In pedestrian-motor vehicle crashes, children are overrepresented in intersection dashes and in dash-and-dart out crashes.

The US Census Bureau has projected that by 2030, that for the first time there will be more 65-and-older residents than children, and approximately 85 to 90% of them will be licensed to drive. As the number of senior licensed drivers increases, it is important for local governments to consider roadway safety associated with older drivers and pedestrians.

Senior drivers are among the safest drivers on the road and often reduce their risk of injury by wearing safety belts, not drinking and driving and by observing speed limits; however, seniors are more likely to be injured or killed in a crash due to age-related fragility. With the exception of teenagers, seniors have the highest crash death rate per mile driven.

**Frederick County Underserved Communities Census Tracts**

In Frederick County, the proportion of people in each of these categories is higher than the Commonwealth average, with 19% under 16 and 17% over 65. People over 65 are significantly higher than this average in Tracts 502 at 27%, 505 at 30%, and 509 at 19%. Given the exacerbation of vulnerabilities with age, this implies a greater focus on preventing traffic accidents entirely.

Table A.7: Population by Age

	502	503	505	507	509	511.02	Frederick County	Virginia
Under Age 10	8%	6%	7%	8%	11%	13%	11%	11%
Under Age 16	14%	14%	10%	15%	20%	17%	29%	16%
Age 16 to 65	59%	67%	60%	69%	55%	65%	64%	59%
Over Age 65	27%	19%	30%	16%	26%	19%	17%	14%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**City of Winchester Underserved Communities Census Tracts**

In contrast, Census Tracts in Winchester City have a higher proportion of people below the age of 16. Notably, values in Tracts 1.01 and CT 1.02 fall above the City's average of 19% - at 23% and 27% respectively. Tract 2.02 has more people above the age of 65, at 24%.

**Table A.8: Population by Age**

	1.01	1.02	2.02	3.01	3.02	Winchester City	Virginia
Under Age 10	16%	21%	13%	8%	11%	13%	11%
Under Age 16	24%	27%	16%	17%	17%	19%	16%
Age 16 to 65	66%	63%	59%	69%	68%	65%	59%
Over Age 65	11%	10%	24%	14%	15%	16%	14%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**Limited English-speaking Households**

While the United States has no official language, a lack of English language skills can make social and economic advancement more difficult and impede participation in civic life.

The US Census Bureau defines Limited English-speaking households as a household "in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English 'very well.' In other words, all members 14 years old and over have at least some difficulty with English."

**Frederick County Underserved Communities Census Tracts**

Of the Census Tracts in Frederick County identified as underserved, two (509 and 511.02) are about equal with the County.

**Table A.9: Limited English-speaking Households**

	502	503	505	507	509	511.02	Frederick County	Virginia
Limited English Households	0%	0%	0%	0.4%	2%	2%	2%	2.6%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**City of Winchester Underserved Communities Census Tracts**

In the City of Winchester, the proportion of households that are limited English-speaking exceeds the Commonwealth. At 8%, the proportion of households that are limited English-speaking in Census Tract 3.01 exceeds the City by almost double. The percentage of households in Census Tract 1.01 is equal and the percentage of households in Census Tract 1.02 (5%) exceeds the City by 1%.

**Table A.10: Limited English-speaking Households**

	1.01	1.02	2.02	3.01	3.02	Winchester City	Virginia
Limited English Households	4%	5%	2%	8%	1%	4%	2.6%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**Zero Vehicle Households**

According to the US DOT, income is one of the major determinates of the number of vehicles in a household. (i.e., lower-income households tend to own less or no vehicles compared to higher income households). However, additional factors influence vehicle ownership besides income. Households with no vehicles were more likely to live in urban areas, be renters, and have incomes under \$25,000 as compared to households with at least one vehicle.

**Frederick County Underserved Communities Census Tracts**

In Frederick County, the percentage of five of the underserved Communities Census Tracts exceed the County and Commonwealth for zero vehicle households. Census Tract 505 in particular is 12% higher than the County and Virginia. Census Tracts 502, 503, 505, 507, and 509 were identified as transportation insecure by the ETC Explorer. Frederick County is more rural and suburban than the City of Winchester. Public transit is not available, making it difficult to get to jobs, school, healthcare, and other destinations without a car.

**Table A.11: Zero Vehicle Households**

	502	503	505	507	509	511.02	Frederick County	Virginia
Zero Vehicle Households	1%	4%	13%	6%	7%	6%	1%	1%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

**City of Winchester Underserved Communities Census Tracts**

The proportions of households without a vehicles in the City of Winchester underserved communities Census Tracts exceed the City and Commonwealth. In the City of Winchester is dense and has public transit, which may allow people to live and work in the City without owning a car.

**Table A.12: Zero Vehicle Households**

	1.01	1.02	2.02	3.01	3.02	Winchester City	Virginia
Zero Vehicle Households	4%	11%	9%	10%	9%	2%	1%

Data Source: US Census, American Community Survey, five-year Estimates, 2017-2021

# B | Safety Analysis

## People With Disabilities

Pedestrians with disabilities are particularly at risk when it comes to roadway safety. The Americans with Disabilities Act (ADA) made it illegal to discriminate against persons with disabilities and mandates that all public spaces—including transportation facilities—accommodate persons with disabilities. Common measures include curb ramps, detectable warning surfaces, and accessible pedestrian signals at signalized intersections. However, streets are commonly missing such measures or have other barriers, like damaged sidewalks, blocked crosswalks, and inconveniently placed utility poles.

When it comes to traffic accidents, the data on pedestrians using wheelchairs or other assisted mobility device have is incomplete. In fatal and nonfatal incidents alike, police reports often fail to note whether the victim was using one. So, it's unclear how the risk of getting hit by a car for wheelchair users compares to the risk for the rest of the population. However, a Georgetown University study found that pedestrians with disabilities are 33% more likely to be killed in a crash than the general population.

## Frederick County Underserved Communities Census Tracts

The occurrence of disability in Frederick County is the same as that in Virginia, at 12%. From the Census Tracts studied in this report, Tract 503 has slightly higher proportions of people with disabilities than the County and Commonwealth average, at 16%.

Table A.13: Population of People with Disabilities

	502	503	505	507	509	511.02	Frederick County	Virginia
<b>Total People with Disabilities Population</b>	4%	16%	13%	13%	11%	12%	12%	12%

Data Source: Percentage of Population with Disabilities, Frederick County (Source, ACS 5-year Estimates, 2017-2021)

## City of Winchester Underserved Communities Census Tracts

Overall, the proportion of people with disabilities in Winchester City is 15%, slightly higher than the state average of 12%. Of the tracts studied in this report, CT 1.01 and CT 2.02 reach the same level, aside from which other tracts display moderately low rates of people with disabilities.

However, it is important to note that several of the road and sidewalk improvements that facilitate mobility for people with disabilities also provide safer, more reliable access for elderly populations.

Table A.14: Population of People with Disabilities

	1.01	1.02	2.02	3.01	3.02	Winchester City	Virginia
<b>Total People with Disabilities Population</b>	12%	15%	14%	9%	10%	15%	12%

Data Source: Percentage of Population with Disabilities, City of Winchester (Source, ACS 5-year Estimates, 2017-2021)

## Hotspot Crash Summary

Roadway name (alias)	from/at intersection(s)	to	Location	Total crash cost per mile	Underserved Census Tract (Yes/Partial/Boundary/No)	Bike-Ped crashes	Public comment	Most common crash types
E Cork St	S Pleasant Valley Rd	ECL Winchester	City of Winchester	\$5,236,970	Yes	0		Collision type: angle (16 of 35), rear-end (12 of 35). Light Condition: darkness road not lit (6 of 35). (2) 'A' crashes: fixed object off road (1), other (1). Note: existing sidewalk gaps Driver action type - 8 [11. Did not have right-of-way], 5 [21. Disregarded traffic signal], 7 [12. Following too close]
Featherbed Ln	S Loudon St	S Pleasant Valley Rd	City of Winchester	\$7,751,497	Yes	0		•Collision Type - 8 of 65 [2. Angle], 16 of 65 [1. Rear End], •'A' crashes - 1 rear end, 1 pedestrian; 1 Did Not Have Right-of-Way, 1 Following Too Close •Weather condition- 13/65 [Rain/Snow] •Driver Action - 26 of 65 [11. Did Not Have Right-of-Way], 11 of 65 [40. Failure to Maintain Control], 9 of 65 [21. Disregarded Traffic Signal] •bike injury out of 65
Weems Ln	US 11 Valley Ave	S Loudon St	City of Winchester	\$12,677,580	Yes	1		Collision Type - 31 of 57 [2. Angle Crash], 1 bike injury; Driver Action - 31 of 57 [11. Did Not Have Right-of-Way]
Berryville Ave	N Pleasant Valley Rd	W of Elm St/Fort Collier Blvd	City of Winchester	\$19,047,939	Yes	5	VPF 1 mention (National Avenue intersection)	•Collision Type - 51 of 133 [2. Angle], 41 of 133 [1. Rear end], 4 of 133 [12. Pedestrian] includes 2 'A' crashes; •Lighting condition- 22/133 [ Darkness lighted/ not lighted]
Amherst St	Campus Blvd/Meadow Branch Ave		City of Winchester	\$23,606,986	Partial	1		Collision Type - 11 of 33 [1. Rear End] 19 of 33 [2. Angle]; Weather condition 8 of 33 [5. Rain]; Driver Action Type 14 of 33 [11. Did Not Have Right of Way]; Vehicle Manuever - 16 of 33 [3. Making Left Turn];
Berryville Ave	W of Elm St/Fort Collier Blvd	I-81 SB ramps	City of Winchester	\$34,032,964	Yes	4	VPF 1 mention	Collision Type - 67 of 126 [2. Angle] includes 1 'K' crash, 31 of 126 [1. Rear end], 3 of 126 [12. Pedestrian] incl 1 'A' crash, 6 [9. Ran off road]
E Jubal Early Dr	S Loudoun St		City of Winchester	\$25,319,833	Yes	2	Jubal Early #3 concern in e-survey; VPF 1 mention this intersection	Collision Type - 23 of 47 [2. Angle] including 1 'A' crash, 'A' crash 1 pedestrian; Driver Action - 17 of 47 [11. Did not have right of way], 10 of 47 [12. Following too close]; 1 bicycle
Millwood Ave	Apple Blossom Drive	Frontage Road (0.2000 MI)	City of Winchester	\$8,557,803	Yes	0		Collision Type - 20 of 47 [1. Rear end], 17 of 47 [2. Angle]
Pleasant Valley Rd	E Cork St		City of Winchester	\$14,213,084	Yes	1		Collision Type - 16 of 35 [2. Angle] 12 of 35 [1. Rear End], 2 of 35 [9. Ran off road] includes 1 'A' crash; Light Condition - 1 ('A' crash) of 35 darkness road not lit; Driver Action - 8 of 35 [11. Did not have right-of-way] incl 1 'A' crash, 7 of 35 [12. Following too close], 6 of 35 [40. Failure to maintain proper control] incl 1 'A' crash;

Pleasant Valley Rd	Jubal Early Drive		City of Winchester	\$24,847,849	Yes	3	Jubal Early #3 concern in e-survey; VPF 1 mention this intersection	Collision Type 43 of 103 [2. Angle], 34 of 103 [1. Rear end]; Driver_Action - 33 of 103 [11. Did not have right-of-way], 26 of 103 [12. Following too close]
Fox Dr	US 50 Amherst St	NCL Winchester	City of Winchester	\$956,865	No	1		bicycle
Bellevue Ave	US 11 Valley Ave	S Loudon St	City of Winchester	\$1,294,095	Yes	1		pedestrian
York Ave	US 11 Valley Ave	Packer St	City of Winchester	\$93,702	Yes	0		
S Cameron St	Cork St		City of Winchester	\$8,255,417	Yes	4		Collision Type - 7 of 15 [2. Angle], 4 of 15 [12. Pedestrian]; Lighting- 5 (2 pedestrian) of 15 [4. Darkness with lighting]; Driver Action - 5 of 15 [21. Disregarded Traffic Signal];
S Pleasant Valley Rd	Tevis St	E Jubal Early Rd	City of Winchester	\$11,402,210	Yes	3		Collision Type - 10 of 24 [1. Rear end], 7 of 24 [2. Angle], 1 of 24 [12. Pedestrian] 'B' crash;
Valley Ave	SCL Winchester	Middle Rd	City of Winchester	\$5,729,443	Yes	4		Collision Type - 48 of 115 [1. rear end], 46 of 115 including 1 'A' [2. Angle]; Driver_Action - 34 [11. Did not yield] 32 [12. Following too close]; 2 pedestrian; 2 bike
Berryville Pike	I-81; ECL Winchester	Clarke County Line	Frederick County	\$32,225,744	Partial	1	VPF 2 mentions	Collision Type - 170 of 399 [1. Rear end] incl 2 'K' (1 bicycle) & 3 'A' crashes, 85 of 399 [2. Angle] incl 5 'A' crashes, 66 of 399 [9. Ran off road] incl 3 'K' & 4 'A' crashes, 46 of 399 [4. Sideswipe same direction] 2 'A' crashes; Light Condition - 70 of 399 [5. Darkness Road not lighted] incl 2 'K' (1 bicycle) & 4 'A' crashes; Driver_Action - 134 of 399 [12. Following too close] incl 2 'A' crashes, 94 of 399 [40. Failure to maintain proper control] incl 4 'K' & 6 'A' crashes, 33 of 399 [21. Disregarded traffic signal] incl 5 'A' crashes; Crash_Events - 93 of 399 [28. Ran off road] incl 3 'K' & 6 'A' crashes, 34 of 399 [36. Cross centerline] incl 2 'K' & 1 'A' crash
Northwestern Pike	VDOT HQ	Keating Dr	Frederick County	\$16,326,863	Yes	3	VPF 1 mention	Collision Type - 104 of 228 [2. Angle] includes 2 'A' & 2 bike crashes, 91 of 228 [1. Rear end], 1 of 228 [12. Pedestrian] includes 1 'K' crash; Light Condition - 11 of 228 [5. Darkness Road Not Lighted] incl pedestrian 'K' & 1 'A' crash; Driver_Action - 72 of 228 [11. Did not have right-of-way] incl 1 'A' crash, 72 of 228 [12. Following too close]
Berryville Pike	Millbrook Dr/Blossom Dr		Frederick County	\$13,342,549	Partial	0		Collision Type - 14 of 25 [1. Rear end], 8 of 25 [2. Angle], 3 of 25 [4. Sideswipe same direction] includes 1 'A' crash; Light Condition 3 of 25 [5. Darkness Road not lighted] incl 1 'A' crash
Northwestern Pike	34-751 E; Gore Rd	Wardensville Grade	Frederick County	\$20,648,000	Boundary	0		Collision types - 92 of 205 [9. Fixed Object Off Road] including 5 'K' & 9 'A', 32 of 205 [10. Deer], 26 of 205 [2. Angle] incl 3 'A', 1 [12. Pedestrian] 'K'; Light Condition - 68 of 205 [5. Darkness road not lighted] including 1 'K'; Driver_Action_94 of 205 [40. Failure to Maintain Proper Control], including 4 'K' & 10 'A'.
Bloomery Pike	West Virginia State Line	US 522 Frederick Pike	Frederick County	\$37,426,583	Yes	0		Collision types - 15 of 38 [2. Angle] including 1 'K' & 1 'A', 10 of 38 [1. Rear End] incl 1 'A', 9 of 38 [9. Fixed object off road] incl 1 'A'; Light Condition - 8 of 38 [5. Darkness road not lighted]; Driver_Action_13 of 38 [11. Did not have right of way], 10 Ran off road.

Carpers Pike	Owl Ln	US 50/17 (Northwestern Pike)	Frederick County	\$47,536,332	No	0		Collision types - 5 of 27 [2. Angle] including 1 'K', 11 of 27 [9. Fixed object off road] incl 1 'A', 4 of 27 [10. Deer], 3 of 27 [8. Overturned_ran off road]; Light Condition - 9 of 27 [5. Darkness road not lighted]; Driver_Action_12 of 27 [40. Failure to maintain proper control]; Crash Events - 15 of 27 [28. Ran off road].
Fairfax Pike	Double Church Rd		Frederick County	\$11,773,006	No	0		Collision Type - 25 of 63 [2. Angle] includes 1 'A' crash, 24 of 63 [1. Rear end] incl 1 'A' crash, 24 of 63 [3. Head on] incl 1 'A' crash; Driver_Action - 19 of 63 [11. Did not have right-of-way] incl 2 'A' crashes, 19 of 63 [12. Following too close]; Light Condition - 10 of 63 [Darkness];
Frederick Pike North	SR 37 ramps	Burnt Church Rd	Frederick County	\$16,403,114	Yes	0		Collision Type - 50 of 88 [1. Rear end], 22 of 88 [2. Angle] including 3 'A', 5 of 88 [9. Fixed object off road] incl 1 'K' & 4 'A'; Light Condition - 15 of 88 [5. Darkness road not lighted] incl 2 'A'; Driver_Action_14 of 88 [40. Fail to maintain proper control] incl 1 'K' & 2 'A', 34 of 88 [12. Following too close]; 12 of 88 [21. Disregarded Traffic Signal] incl 2 'A', 5 of 88 [11. Did not have right of way] incl 1 'A', 1 'A' [41. Improper passing]; Crash_Event - 13 of 88 [28. Ran off road] incl 1 'K' & 3 'A'
I-81 SB ramps	SR 277 Fairfax St		Frederick County	\$12,238,871	No	0		Collision Type - 12 of 22 [1. Rear end]; Lighting Condition - 4 of 22 [5. Darkness Road not lighted]; Driver Action - 10 of 22 [12. Following too close]
Martinsburg Pike	SR 37 Winchester Bypass merge	I-81 interchange NB on-ramp/Redbud Rd	Frederick County	\$72,546,524	Yes	1	I-81 US 11 ramps part of #1 hotspot concern in e-survey; VPF 2 mentions	Collision Type - 114 of 236 [1. Rear end] includes 1 'A' crash, 87 of 236 [2. Angle] incl 1 'A' crash, 21 of 236 [4. Sideswipe same direction] includes 1 'A' crash, 8 of 236 [9. Ran off road] incl 1 'K' & 1 'A' crash; Light Condition - 40 of 236 [5. Darkness Road not lighted] incl 1 'K', 1 'A', 1 pedestrian crash; Driver Action - 90 of 236 [12. Following too close], 44 of 236 [11. Did not have right-of-way] incl 1 'A' crash; 27 of 236 [21. Disregarded traffic signal] incl 1 'A' crash, 20 of 236 [40. Failure to maintain proper control] incl 1 'K' & 3 'A' crashes.
Martinsburg Pike	34-761 Old Charles Town Rd		Frederick County	\$16,483,690	No	0		VDOT project UPC 120643 roundabout Collision Type - 16 of 28 [2. Angle] includes 1 'A' crash, 3 of 28 [1. Rear end], 3 of 28 [9. Ran off road]; Light Condition - 8 of 28 [Darkness]; Driver Action - 16 of 28 [11. Did not have right-of-way] incl 2 'A' crash; 5 of 28 [40. Failure to maintain proper control]
Millwood Pike	US 522 Front Royal Pike/I-81 NB ramps		Frederick County	\$14,983,911	Partial	0	VPF 1 mention	VDOT UPC 115717 A crash: 2/28; [1/2 Angle, 1/2 Head on]; [2/2 Did Not Have Right-of-Way] Collision type- 16/28 [2. Angle], 3/28 [1. Rear End], 3/28 [9. Fixed object off road] Light condition - 8/28 [4/5/6 Darkness] Vehicle_Maneuver_Type - 18/28 [3. Making Left Turn] Driver action type - 16/28 [11. Did Not Have Right-of-Way]

Northwestern Pike	34-614 Back Mountain Rd	Mahlon Dr	Frederick County	\$71,697,440	Boundary	0	VPF 2 mentions (US 50)	Collision Type - 13 of 32 [9. Run off the road] including 2 'K' & 1 'A' crashes, 7 of 32 [10. Deer], 3 of 32 [2. Angle] incl 1 'K'; Light Condition 10 of 32 [5. Darkness roadway not lighted]; Driver_Action_15 of 32 [40. Fail to Maintain Proper Control] incl 1 'K' & 1 'A', 1 'K' [43. Over correction], 1 'A' [11. Did not have right-of-way]
Woodstock Ln	N East Ln	ECL Winchester	City of Winchester	\$2,477,281	No	1		Collision Type - 23 of 40 [2. Angle] A crash [3. Head-on], bicycle; Driver Action - 11 of 40 including A crash [11. Did not have right-of-way]
Papermill Rd	US-522 N, Front Royal Pike	S Pleasant Valley Rd	Frederick County/ City of Winchester	\$13,198,324	Yes	1		VDOT UPC 121154 install sidewalks and bike lanes •K crash- 1 of 64, head on, alcohol related •Collision Type - 16 of 64 [2. Angle] includes 2 'A' crash, 1 Pedestrian; 26 of 64 [1. Rear end] incl 1 A crash, 7 of 64 [9. Ran off road] incl 1 A crash; •Light Condition - 11 of 64 [Darkness]; •Driver Action - 23 of 64 [12. Following too close], 12 of 64 [11. Did not have right-of-way] incl 2 'A' crash; 16 of 64 [40. Failure to maintain proper control] incl 1 K crash, 1 A crash
Middle Rd	VA 37 Winchester Bypass	US 11	Frederick County/City of Winchester	\$947,542	Yes	1		Collision types - 30 of 33 [2. Angle] including 1 'A' (pedestrian) crash; Driver_Action_12 of 33 [11. Did not have right of way]
Fairfax St	US 11 (Main St)	I-81 SB ramps	Town of Stephens City	\$16,534,550	No	0		Collision Type - 18 of 39 [2. Angle], 14 of 39 [1. Rear end] including 1 'A' crash; Light Condition - 3 of 39 [5. Darkness road not lighted]; Driver_Action_12 of 39 [12. Following too close] incl 1 'A' crash, 12 of 39 [11. Did not have right of way], 6 of 39 [21. Disregarded traffic signal]
Main St	SR 277 Fairfax St		Town of Stephens City	\$9,215,490	No	1		Collision Type - 10/16 [1. Rear End] & 4/16 [2. Angle] 1 "A crash"- rear end, following too close Driver action type - 8/16 [12. Following too close] Pedestrian Injured- 1/16
Front Royal Pike	Papermill Rd		Frederick County	\$26,574,346	Yes	0		3/16 "A Crash" [1 Head on, 1 Angle crash, 1 Rear End]; [1/3 Related to Alcohol]; [2/3 Did not have right of way, 1/3 Following too close] Collision type- 8/16 [2. Angle]; 5/16 [1. Rear end] Light Condition- 3/16 [5. Darkness- not lighted] Driver action type- 6/16 [11. Did Not Have Right-of-Way]; 4/16 [12. Following Too Close]
Tasker Rd	Aylor Rd	600' east	Frederick County	\$17,815,371	No	1		A Crash-2/18; [2 Angle crashes]; [1/2 included Bikes]; [1 Did not have right of way, 1 disregarded traffic signal] Collision type - 13/18 [2. Angle] Light condition - 4/18 [5. Darkness-not lighted] Driver action type - 5/18 [21. Disregarded traffic signal], 7/18 [11. Did not have right of way]
Berryville Pike	Burnt Factory Rd		Frederick County	\$288,063,325	No	0		K Crash- 3/8; [2/3 Fixed object off road, 1/3 rear end]; [ 1/3 Alcohol]; [2/3 Fail to maintain proper control, 1/3 Other] Collision type - 5/8 [9. Fixed object off road] Weather condition- 2/8 [6. Snow] Driver action type - 4/8 [40. Fail to Maintain Proper Control] Vehicle_Manuever_Type- 4/8 [Ran Off Road]

Northwestern pike	curve MP 7.43	MP 7.85	Frederick County	\$73,202,488	Boundary	0	VPF 2 mentions	K crash- 2/23; [ 1 Fixed object off road, 1 Angle crash]; [ 1 fail to maintain proper control, 1 did not have right of way] A Crash- 3/23; [3 Ran off road]; [ 2 Failed to maintain proper control, 1 over correction] Collision type- 9/23 [9. fixed object off road], 5/23 [10. Deer] Light condition - 8/23 [5. Darkness-not lighted] Driver action type - 10/23 [40. Fail to Maintain Proper Control], 2/23 [43. Over Correction]
Northwestern Pike	Carpers Pike		Frederick County	\$106,061,402	No	0	VPF 2 mentions	K crash- 1/11; [Angle]; [Exceeded Speed Limit & Fail to Maintain Proper Control]; Collision type- 5/ 11 [9. fixed object off road] Light condition - 6/11 [5. Darkness-not lighted] Driver action type - 5/11 [40. Fail to Maintain Proper Control], 3/11 [11. Did Not Have Right-of-Way] First Crash event- 5/11 [either ran off road/overturn]
Frederick Pike North	SR 37 SB ramps		Frederick County	\$18,837,915	Yes	0	VPF 2 mentions	A crash- 3/27; [2/3 Angle]; [2/3 Night dark condition]; [2/3 Rainy condition]; [2/3 Disregarded Traffic Signal, 1/3 Fail to Maintain Proper Control]; [1/3 Ran off road] Collision type- 17/ 27 [1. Rear End], 5/27 [2. Angle] Light condition - 6/27 [5. Darkness-not lighted] Driver action type - 13/27 [12. Following Too Close], 5/27 [40. Fail to Maintain Proper Control] First Crash event- 3/27 [28. Ran off road]
Frederick Pike North	0.4 miles S of Burnt Church Rd MP 141.06	MP 141.17	Frederick County	\$129,651,264	Yes	0		K crash: 1/4; [Fixed object off road]; [ Fail to Maintain Proper Control]; [ Ran Off Road] A crash: 1/4; [Fixed object off road]; [Darkness-not lighted]; [ Fail to Maintain Proper Control]; [ Ran Off Road] Collision type- 2/4 [9. Fixed object off road] Light condition - 2/4 [5. Darkness-not lighted] Driver action type - 3/4 [40. Fail to Maintain Proper Control] Vehicle_Manuever_Type - 3/4 [ Ran off road]
Frederick Pike North	Indian Hollow Rd		Frederick County	\$19,188,956	Yes	0	VPF 2 mentions (US 522, 1 mention of intersection)	A crash: 2/15; [2/2 Fixed object off road]; [1/2 Night dark condition]; [ 2/2 Fail to Maintain Proper Control] Collision type- 9/15 [1. Rear End], 2/15 [9. Fixed object off road] Driver action type - 7/15 [12. Following Too Close], 4/15 [40. Fail to Maintain Proper Control]
Berryville Pike	Woods Mill Rd		Frederick County	\$29,132,217	No	0	VPF 2 mentions (one specific to intersection)	A crash: 3/21; [3/3 Angle]; [1/3 Rainy condition]; [3/3 Disregarded Traffic Signal] Collision type- 6/21 [1. Rear End], 9/21 [2. Angle] Weather Condition- 6/21 [Rain/Snow] Driver action type - 7/21 [21. Disregarded Traffic Signal /11. Did Not Have Right-of-Way]; 5/21 [12. Following Too Close], 4/21 [40. Fail to Maintain Proper Control] First Crash event - 3/21 [ Ran off road]



## Systemwide Summary

Crash Severity	Crashes	People
K	62	69
A	309	392
B	n/a	103
C	n/a	34
Total	371	598

Persons Injured	529
Pedestrians Killed	5
Pedestrians Injured	24
Vehicle Count	612
Alcohol?	82
UnBelted?	79
Bike?	10
Distracted?	70
Animal Related?	4
Drowsy?	8
Drug Related?	17
Guardrail Related?	48
Hit & Run?	18
Large Vehicle?	48
Motorcycle?	33
Pedestrian?	28
Speed?	131
Senior Driver?	60
Young Driver?	71
Mainline?	358
Night?	145
Bike_VehicleNumber	17
Ped_Number	27

Collision Type	Total KSI (K+A)	K	A
[0. ]	0	0	0
[1. Rear End]	63	8	55
[2. Angle]	74	9	65
[3. Head on]	26	9	17
[4. Sideswipe - Same Direction of Travel]	11	1	10
[5. Sideswipe - Opposite Direction of Travel]	0	0	0
[6. Fixed object in road (from ditch to ditch)]	1	0	1
[7. Train]	0	0	0
[8. Non-collision, overturned, jackknifed or ran off road (no object)]	12	1	11
[9. Fixed object off road]	144	26	118
[10. Deer]	4	0	4
[11. Other Animal]	0	0	0
[12. Pedestrian]	26	5	21
[13. Bicyclist]	0	0	0
[14. Motorcyclist]	0	0	0
[15. Backed into]	0	0	0
[16. Miscellaneous or other]	10	3	7
[17. Not Stated]	0	0	0
[99. Not Applicable]	0	0	0

Weather Condition	Total KSI (K+A)	K	A
[0. Not Provided]	0	0	0
[1. No Adverse conditions (clear/cloudy)]	328	57	271
[2. n/a]	0	0	0
[3. Fog]	1	0	1
[4. Mist]	3	1	2
[5. Rain]	34	4	30
[6. Snow]	3	0	3
[7. Sleet/Hail]	2	0	2
[8. Smoke/Dust]	0	0	0
[9. Other]	0	0	0
[10. Blowing Sand/Soil/Dirt/Snow]	0	0	0
[11. Severe Crosswinds]	0	0	0

Light Condition	Total KSI (K+A)	K	A
[0. Not Provided]	0	0	0
[1. Dawn]	6	2	4
[2. Daylight]	211	30	181
[3. Dusk]	9	1	8
[4. Darkness - Road Lighted]	20	4	16
[5. Darkness - Road Not Lighted]	125	25	100
[6. Darkness - Unknown Road Lighting]	0	0	0
[7. Unknown]	0	0	0

Driver_VehicleNumber	Total KSI (K+A)	K	A
[0.]	0	0	0
[1.]	180	31	149
[2.]	156	24	132
[3.]	24	3	21
[4.]	9	3	6
[5.]	1	1	0
[6.]	0	0	0
[7.]	1	0	1
[8.]	0	0	0
[9.]	0	0	0

Driver_Action_Type_Cd	Total KSI (K+A)	K	A
[0. Not Provided]	0	0	0
[1. No Improper Action]	200	30	170
[2. Exceeded Speed Limit]	15	7	8
[3. Exceeded Safe Speed But Not Speed Limit]	6	0	6
[4. Overtaking On Hill]	0	0	0
[5. Overtaking On Curve]	0	0	0
[6. Overtaking at Intersection]	0	0	0
[7. Improper Passing of School Bus]	0	0	0
[8. Cutting In]	0	0	0
[9. Other Improper Passing]	4	0	4
[10. Wrong Side Of Road – Not Overtaking]	13	5	8
[11. Did Not Have Right-of-Way]	45	6	39
[12. Following Too Close]	32	0	32
[13. Fail to Signal or Improper Signal]	0	0	0
[14. Improper Turn – Wide Right Turn]	0	0	0
[15. Improper Turn – Cut Corner on Left Turn]	0	0	0
[16. Improper Turn From Wrong Lane]	0	0	0
[17. Other Improper Turn]	2	0	2
[18. Improper Backing]	0	0	0
[19. Improper Start From Parked Position]	0	0	0
[20.]	0	0	0
[21. Disregarded Traffic Signal]	13	0	13
[22. Disregarded Stop or Yield Sign]	3	0	3
[23.]	0	0	0
[24.]	0	0	0
[25.]	0	0	0
[26.]	0	0	0
[27.]	0	0	0
[28.]	1	0	1
[29. Improper Parking Location]	2	0	2
[30.]	0	0	0
[31. Avoiding Other Vehicle]	4	1	3
[32. Avoiding Animal]	1	0	1
[33.]	0	0	0
[34. Hit and Run]	4	0	4
[35.]	0	0	0
[36.]	0	0	0
[37. Other]	17	1	16
[38. Avoiding Object in Roadway]	2	0	2
[39. Eluding Police]	5	2	3
[40. Fail to Maintain Proper Control]	187	38	149
[41. Improper Passing]	4	1	3
[42. Improper or Unsafe Lane Change]	6	1	5
[43. Over Correction]	2	1	1

Sum of 1st, 2nd, 3rd, 4th Crash Events	Total KSI (K+A)	K	A
[0. Not Provided]	0	0	0
[1. Bank Or Ledge]	46	5	41
[2. Trees]	53	9	44
[3. Utility Pole]	12	2	10
[4. Fence Or Post]	14	2	12
[5. Guard Rail]	52	16	36
[6. Parked Vehicle]	6	2	4
[7. Tunnel, Bridge, Underpass, Culvert, etc.]	7	2	5
[8. Sign, Traffic Signal]	19	4	15
[9. Impact Cushioning Device]	0	0	0
[10. Other]	2	1	1
[11. Did Not Have Right-of-Way]	2	0	2
[12. Building/Structure]	1	1	0
[13. Curb]	3	1	2
[14. Ditch]	41	7	34
[15. Other Fixed Object]	6	3	3
[16. Other Traffic Barrier]	0	0	0
[17. Traffic Sign Support]	0	0	0
[18. Mailbox]	7	0	7
[19. Pedestrian]	31	7	24
[20. Motor Vehicle In Transport]	392	63	329
[21. Train]	0	0	0
[22. Bicycle]	8	1	7
[23. Animal]	4	0	4
[24. Work Zone Maintenance Equipment]	0	0	0
[25. Other Movable Object]	0	0	0
[26. Unknown Movable Object]	0	0	0
[27. Other]	4	1	3
[28. Ran Off Road]	238	47	191
[29. Jackknife]	2	2	0
[30. Overturn (Rollover)]	86	19	67
[31. Downhill Runaway]	0	0	0
[32. Cargo Loss or Shift]	0	0	0
[33. Explosion or Fire]	2	1	1
[34. Separation of Units]	0	0	0
[35. Cross Median]	11	3	8
[36. Cross Centerline]	56	17	39
[37. Equipment Failure (Tire, etc)]	5	1	4
[38. Immersion]	0	0	0
[39. Fell/Jumped From Vehicle]	4	1	3
[40. Thrown or Falling Object]	1	0	1
[41. Non-Collision Unknown]	1	0	1
[42. Other Non-Collision]	10	2	8
[43. ]	0	0	0
Total	1126	220	906

Most Harmful Crash Event Cd	Total KSI (K+A)	K	A
[0. Not Provided]	0	0	0
[1. Bank Or Ledge]	16	1	15
[2. Trees]	36	7	29
[3. Utility Pole]	9	1	8
[4. Fence Or Post]	3	0	3
[5. Guard Rail]	17	5	12
[6. Parked Vehicle]	2	0	2
[7. Tunnel, Bridge, Underpass, Culvert, etc.]	3	1	2
[8. Sign, Traffic Signal]	4	1	3
[9. Impact Cushioning Device]	0	0	0
[10. Other]	1	1	0
[11. Did Not Have Right-of-Way]	1	0	1
[12. Building/Structure]	0	0	0
[13. Curb]	0	0	0
[14. Ditch]	16	1	15
[15. Other Fixed Object]	2	2	0
[16. Other Traffic Barrier]	0	0	0
[17. Traffic Sign Support]	0	0	0
[18. Mailbox]	0	0	0
[19. Pedestrian]	29	7	22
[20. Motor Vehicle In Transport]	331	54	277
[21. Train]	0	0	0
[22. Bicycle]	7	0	7
[23. Animal]	2	0	2
[24. Work Zone Maintenance Equipment]	0	0	0
[25. Other Movable Object]	0	0	0
[26. Unknown Movable Object]	0	0	0
[27. Other]	3	1	2
[28. Ran Off Road]	5	1	4
[29. Jackknife]	0	0	0
[30. Overturn (Rollover)]	63	10	53
[31. Downhill Runaway]	1	0	1
[32. Cargo Loss or Shift]	0	0	0
[33. Explosion or Fire]	2	1	1
[34. Separation of Units]	0	0	0
[35. Cross Median]	0	0	0
[36. Cross Centerline]	1	0	1
[37. Equipment Failure (Tire, etc)]	1	0	1
[38. Immersion]	0	0	0
[39. Fell/Jumped From Vehicle]	4	1	3
[40. Thrown or Falling Object]	1	0	1
[41. Non-Collision Unknown]	0	0	0
[42. Other Non-Collision]	6	0	6
Total	566	95	471

**Roadway Segment Fatality or Severe Injury Crash Rates**

Node Number	Route Label	Roadway Name (Alias)	From/At Intersection(s)	To	Location	K+A Crashes	Segment/Node AADT (Sum of All Legs) 2021	Length (miles)	K+A Crash Rate (per 100M VMT)	High Injury Network (Yes/No)
	VA 55, US 48	34-600 Pifer Rd	West Virginia State Line	Wardensville Grade	Frederick County	3	3,200	3.20	16.05	Yes
		Adams Dr	S Pleasant Valley Rd	Legge Blvd	Frederick County	1	3,000	0.25	73.06	Yes
	34-600	Back Mountain Rd	0.9 miles N of Mountain Falls Blvd MP 11.18 to 11.20		Frederick County	2	2,100	0.25	208.74	Yes
	34-600	Back Mountain Rd	34-608 N, Wardensville Grade	34-611 White Rd	Frederick County	3	2,100	3.80	20.60	Yes
	34-600	Back Mountain Rd	34-612 N, Back Ridge Rd	34-614, Hayfield Rd	Frederick County	4	4,500	2.90	16.80	Yes
	34-600	Back Mountain Rd	34-614, Hayfield Rd	US 50 Northwestern Pike	Frederick County	3	5,300	1.94	16.01	Yes
333011	34-600	Back Mountain Rd	Bowman Lane		Frederick County	1	4,500	0.14	85.72	Yes
333011 (upto the A crash)	34-600	Back Mountain Rd	Bowman Lane	Hayfield Rd	Frederick County	2	4,500	0.48	51.02	Yes
1253173/1170034 (ended before intersection)	34-600	Back Mountain Rd	Hayfield Road	S of US 50	Frederick County	1	5,300	1.94	5.34	Yes
1015649	VA 7	Berryville Ave	Baker Ln		City of Winchester	1	24,000	0.20	11.45	Yes
	VA 7	Berryville Ave	Battle Ave/Woodland Ave		City of Winchester	0	26,000	0.19	0.00	Yes
	VA 7	Berryville Ave	Dunlap St/Chestnut St		City of Winchester	0	24,200	0.19	0.00	Yes
	VA 7	Berryville Ave	Fort Collier Rd/Elm St		City of Winchester	1	28,850	0.19	10.03	Yes
334159	VA 7	Berryville Ave	I-81 interchange SB off-ramp		Frederick County	0	35,700	0.14	0.00	Yes
	VA 7	Berryville Ave	N Pleasant Valley Rd	W of Elm St/Fort Collier Blvd	City of Winchester	2	24,000	0.51	8.95	Yes
334073	VA 7	Berryville Ave	Pleasant Valley Rd		City of Winchester	0	51,900	0.19	0.00	Yes
334161	VA 7	Berryville Ave	Ross St		City of Winchester	0	56,000	0.14	0.00	Yes
	VA 7	Berryville Ave	W of Elm St/Fort Collier Blvd	I-81 SB ramps	City of Winchester	2	24,000	0.25	18.26	Yes
1089667	VA 7	Berryville Pike	Burnt Factory Rd		Frederick County	3	16,300	0.14	71.00	Yes
333210	VA 7	Berryville Pike	First Woods Dr/Greenwood Rd		Frederick County	1	18,600	0.19	15.55	Yes
334160/334158/334157/333232	VA 7	Berryville Pike	I-81 interchange		Frederick County	4	42,350	0.54	9.59	Yes
333232/332238	VA 7	Berryville Pike	I-81 interchange NB ramps/Valley Mill Rd	0	Frederick County	2	31,300	0.19	18.49	Yes
	VA 7	Berryville Pike	I-81; ECL Winchester	Clarke County Line	Frederick County	21	30,000	3.70	10.37	Yes
333470/743211	VA 7	Berryville Pike	Millbrook Dr/Blossom Dr		Frederick County	1	30,000	0.19	9.64	Yes
334155	VA 7	Berryville Pike	Regency Lakes Dr		Frederick County	1	33,700	0.19	8.59	Yes
333419/333195/334155	VA 7	Berryville Pike	Regency Lakes Dr (larger area to capture K+A)		Frederick County	4	31,085	0.32	21.72	Yes
333241	VA 7	Berryville Pike	Woods Mill Rd		Frederick County	3	16,300	0.14	71.00	Yes
	VA 127	Bloomery Pike	West Virginia State Line	US 522 Frederick Pike	Frederick County	4	5,200	0.14	296.73	Yes

	SR 259	Carpers Pike	Carpers Pike (section between 1173475/333362)		Frederick County	1	3,100	1.12	15.78	Yes
1173475/1173476	SR 259	Carpers Pike	Carpers Pike/Owl lane intersection		Frederick County	1	3,100	0.38	46.51	Yes
334193	SR 259	Carpers Pike	Cline Dr		Frederick County	1	3,100	0.14	124.44	Yes
	SR 259	Carpers Pike	MP 25.52	MP 25.83	Frederick County	1	3,100	1.12	15.78	Yes
	SR 259	Carpers Pike	Owl Ln	US 50/17 (Northwestern Pike)	Frederick County	3	3,100	0.38	139.54	Yes
	34-723	Carpers Valley Rd	US 17/50 Millwood Pike	Clarke County line	Frederick County	1	1,100	1.60	31.13	Yes
	34-622	Cedar Creek Grade	34-621 Merrimans Lane/Jones Rd	SR 37	Frederick County	2	15,000	0.52	14.05	Yes
1170405	34-622	Cedar Creek Grade	Clayhill Dr	0.15 miles east	Frederick County	2	13,000	0.15	56.20	Yes
	34-622	Cedar Creek Grade	SR 37	WCL Winchester	Frederick County	2	13,000	0.90	9.37	Yes
334176/333075/333076/334179 (upto A crash)	34-622	Cedar Creek Grade	SR 37 Interchange SB Ramps		Frederick County	1	15,000	0.19	19.29	Yes
	34-671	Cedar Hill Rd	Welltown Rd	US 11 Martinsburg Pike	Frederick County	2	810	2.10	13.53	Yes
	34-634	Cougill Rd	Hites Rd	Valley Road (US 11)	Frederick County	1	120	1.00	456.62	Yes
	34-641	Double Church Rd	Hudson Hollow Rd	Warren County line	Frederick County	1	1,400	2.50	15.66	Yes
	138-5204	E Cork St	S Pleasant Valley Rd	ECL Winchester	City of Winchester	2	11,000	0.44	22.64	Yes
334021	UR 5204	E Cork St	S Purcell Ave/Maple St		City of Winchester	1	12,700	0.19	22.78	Yes
	34-639	E Refuge Church Rd	Refuge Church Rd	Warren County line	Frederick County	1	360	1.90	80.11	Yes
1171245/334196 (up to border line)	SR 277	Fairfax Pike	Apprentice Ln	US 522 past Warren County line	Frederick County	3	9,700	1.47	11.49	Yes
333171	SR 277	Fairfax Pike	Aylor Rd		Frederick County	1	19,700	0.19	14.69	Yes
333145	VA 277	Fairfax Pike	Double Church Rd		Frederick County	2	16,550	0.20	33.04	Yes
333994	VA 277	Fairfax Pike	I-81 NB Ramps		Frederick County	1	14,950	0.19	19.35	Yes
	VA 277	Fairfax Pike	Main St (Sandy's Manufactured Home Community entrance) 0.5 miles W of US 522 MP 4.13	MP 4.19	Frederick County	2	9,700	0.06	188.30	Yes
	VA 277	Fairfax Pike	US 11	34-726 Lakeview Circle	Frederick County	6	13,000	1.70	14.88	Yes
719206	SR 277	Fairfax Pike	Warrior Dr/S Warrior Dr		Frederick County	1	17,345	0.19	16.68	Yes
	VA 277	Fairfax St	US 11 (Main St)	I-81 SB ramps	Town of Stephens City	1	8,600	0.14	45.51	Yes
		Featherbed Ln	S Loudon St	S Pleasant Valley Rd	City of Winchester	1	3,000	0.30	60.88	Yes
	US 522	Frederick Pike North	0.4 miles S of Burnt Church Rd MP 141.06	MP 141.17	Frederick County	2	21,000	0.11	47.44	Yes
333309	US 522	Frederick Pike North	Indian Hollow Rd		Frederick County	2	21,000	0.14	36.74	Yes

n/a	US 522	Frederick Pike North	MP 152.17 to MP 152.53 S curve N of Bloomery Pike	0	Frederick County	3	17,500	0.36	26.09	Yes
333018	US 522	Frederick Pike North	Siler Rd		Frederick County	1	16,230	0.19	17.83	Yes
333991	US 522	Frederick Pike North	SR 37 NB ramps		Frederick County	0	31,000	0.19	0.00	Yes
	US 522	Frederick Pike North	SR 37 ramps		Frederick County	2	21,000	0.25	20.87	Yes
0	US 522	Frederick Pike North	SR 37 ramps	Burnt Church Rd	Frederick County	8	21,000	1.50	13.92	Yes
333990	US 522	Frederick Pike North	SR 37 SB ramps		Frederick County	3	31,000	0.19	28.00	Yes
	34-654	Frog Hollow Road	Green Spring Rd	WV state line	Frederick County	1	160	2.70	85.62	Yes
	US 522	Front Royal Pike	34-644 N, Papermill Rd	US 50 Millwood Pike	Frederick County	9	14,000	2.40	14.68	Yes
333166	US 522	Front Royal Pike	Airport Rd		Frederick County	2	18,600	0.19	31.11	Yes
333778	US 522	Front Royal Pike	Papermill Rd		Frederick County	3	22,900	0.14	50.54	Yes
1092646/Bufalo lick run	US 522	Front Royal Pike	Sunda Cir	Airport Rd	Frederick County	3	8,800	0.38	49.16	Yes
333288/333284	34-671	Green Spring Rd	34-682 Glaze Orchard Rd	34-690 Howards Chapel Rd	Frederick County	3	650	6.12	41.30	Yes
333203/333207	34-656	Greenwood Rd	34-655 Sulphur Spring Rd	34-657 Senseny Rd	Frederick County	2	5,000	1.05	20.78	Yes
333207	34-656	Greenwood Rd	Greenwood Rd/Senseny Rd Int		Frederick County	1	14,300	0.17	22.90	Yes
333203	34-656	Greenwood Rd	Sulphur Spring Rd/Greenwood Rd Int		Frederick County	0	29,300	0.19	0.00	Yes
1168661/1092636/1168663	34-600	Hayfield Rd	US 50 Northwestern Pike/ Back mountain Intersection		Frederick County	1	18,100	0.29	10.54	Yes
	34-672	Hiatt Rd/Catalpa Rd	Cedar Grove Rd	Apple Pie Ridge Rd	Frederick County	1	1,200	2.70	11.42	Yes
	34-625	Hites Rd	34-627 N, Chapel Rd	34-631 W, Marlboro Rd	Frederick County	2	480	3.70	61.71	Yes
333763/333765	34-625	Hites Rd	Capon Spring Tpke	34-631 W, Marlboro Rd	Frederick County	1	480	4.07	28.02	Yes
	34-690	Howards Chapel Road	Green Spring Rd	GlenGary Rd	Frederick County	3	650	5.50	13.31	Yes
	34-636	Huttle Rd	Reliance Rd	Ridings Mill Rd	Frederick County	4	360	1.50	405.89	Yes
333294	I-81	I-81 NB ramps	Hopewell Rd		Frederick County	1	6,200	0.19	46.66	Yes
333944	I-81	I-81 SB ramps	SR 277 Fairfax St		Frederick County	1	14,900	0.19	19.42	Yes
333123	US 11	Main St	SR 277 Fairfax St		Town of Stephens City	1	13,200	0.19	21.92	Yes
333954/1267384/743019	US 522	Maple St	NCL Winchester	Purcell Ln/Autumn View Ln	Frederick County	4	12,000	0.60	30.44	Yes
	US 522	Maple St	NCL Winchester	SR 37	Frederick County	5	11,000	1.30	19.16	Yes
	US 11	Martinsburg Pike	34-671 Cedar Hill Rd/Woodside Rd		Frederick County	1	8,510	0.19	34.00	Yes
	US 11	Martinsburg Pike	34-761 Old Charles Town Rd	34-836 Walters Mill Lane	Frederick County	5	8,200	1.00	33.41	Yes
333418	US 11	Martinsburg Pike	34-761 Old Charles Town Rd		Frederick County	1	18,250	0.19	15.85	Yes
333975	US 11	Martinsburg Pike	SB I-81 Ramps		Frederick County	2	45,700	0.19	12.66	Yes

	US 11	Martinsburg Pike	SR 37 Winchester Bypass merge	I-81 interchange NB on-ramp/Redbud Rd	Frederick County	5	38,000	0.42	17.17	Yes
	US 11	Martinsburg Pike	SR 37 Winchester Bypass merge	I-81 SB ramps (N of Winchester)	Frederick County	5	38,000	0.42	17.17	Yes
333251	US 11	Martinsburg Pike	Welltown Rd/Amoco Ln		Frederick County	2	41,850	0.19	13.83	Yes
333065/1170500/737763	34-621	Merrimans Ln	Cedar Creek Grade	Robinson Dr/Ballygar Dr	Frederick County	2	1,400	0.58	134.96	Yes
	34-628	Middle Rd	Barley Ln	Opequon Creek bridge	Frederick County	2	3,100	1.70	20.79	Yes
	34-628	Middle Rd	VA 37 Winchester Bypass	US 11	Frederick County/City of Winchester	1	3,100	1.90	9.30	Yes
333435	US 50, US 17	Millwood Pike	Custer Ave/Prince Frederick Dr		Frederick County	2	17,000	0.19	34.04	Yes
333202	US 50/17	Millwood Pike	Sulphur Springs Rd		Frederick County	1	22,800	0.14	16.92	Yes
333453	US 50, US 17	Millwood Pike	Tulane Dr/Delco Plz		Frederick County	2	17,870	0.19	32.38	Yes
	US 50, US 17	Millwood Pike	US 522 Front Royal Pike	34-723 Carpers Valley Rd	Frederick County	9	18,000	2.70	10.15	Yes
	I-81 S	MM 305.32 Weigh Station ramp			Frederick County	1	5,000	0.25	43.84	Yes
333954/743019/1172007	US 522	N Frederick Pike	Fortress Dr/Scarlett Maple Dr	S end of curve (MP 138.69)	Frederick County	3	24,000	0.59	11.52	Yes
333397	US 522	N Frederick Pike	Fox Dr		Frederick County	1	15,500	0.19	18.67	Yes
	VA 7	National Ave	Fairfax Ln/N East Ln	Lincoln St	City of Winchester	1	9,300	0.19	31.01	Yes
	US 50	Northwestern Pike	34-614 Back Mountain Rd	Mahlon Dr	Frederick County	4	6,100	0.60	59.88	Yes
	US 50	Northwestern Pike	34-751 E; Gore Rd	Wardensville Grade	Frederick County	21	13,000	7.00	12.64	Yes
	US 50	Northwestern Pike	34-751 E; Gore Rd	34-614 Back Mountain Rd	Frederick County	14	13,000	4.90	12.04	Yes
	US 50	Northwestern Pike	34-803 Round Hill Rd West	SR 37 Winchester Bypass	Frederick County	6	19,000	2.60	6.66	Yes
	US 50	Northwestern pike	500' S of National Lutheran Blvd (Round Hill Shopping Center entrances)	National Lutheran Blvd	Frederick County	1	12,800	0.20	21.40	Yes
333053	US 50	Northwestern Pike	Back Mountain Rd		Frederick County	2	15,500	0.14	49.77	Yes
333732	US 50/17	Northwestern Pike	Botanical Blvd/Ward Ave		Frederick County	0	19,650	0.19	0.00	Yes
333943	US 50	Northwestern Pike	Carpers Pike		Frederick County	1	11,800	0.14	32.69	Yes
	US 50	Northwestern Pike	curve 0.3 miles W of Parrishville Rd MP 1.59 to MP 1.74		Frederick County	2	8,700	0.15	83.98	Yes
	US 50	Northwestern pike	curve MP 7.43	MP 7.85	Frederick County	5	13,000	0.42	50.18	Yes
	US 50	Northwestern Pike	Mahlon Dr	34-803 Round Hill Rd West	Frederick County	8	6,100	1.90	37.82	Yes
1168644/1168699	US 50	Northwestern pike	Mahlon Dr	Hogue Creek lane	Frederick County	3	12,800	1.79	7.16	Yes
1170065	US 50	Northwestern pike	Mahlon Dr/Quail Run Ln		Frederick County	1	12,800	0.14	30.14	Yes
1092637	US 50	Northwestern pike	Mt. Olive Rd		Frederick County	1	12,800	0.14	30.14	Yes

333049/1165942	US 50	Northwestern Pike	Parrishville Rd/Overlook Rd (offset T)		Frederick County	2	9,130	0.27	43.71	Yes
333200	US 50	Northwestern Pike	Poorhouse Rd/Old Firehouse Ln		Frederick County	2	7,380	0.19	78.41	Yes
1267183	US 50/17	Northwestern Pike	Retail Blvd/Round Hill Rd		Frederick County	0	20,325	0.19	0.00	Yes
	US 50	Northwestern Pike	VDOT HQ	Keating Dr	Frederick County	6	19,000	2.60	6.66	Yes
1168677	US 50	Northwestern pike	W Hill Ln/Magic Mountain Rd/driveway		Frederick County	2	12,800	0.14	60.27	Yes
333937	US 50	Northwestern Pike	Wardensville Grade		Frederick County	2	7,900	0.14	97.66	Yes
	US 50	Northwestern Pike	West Virginia State Line	34-751 E; Gore Rd	Frederick County	11	8,700	4.40	15.75	Yes
	34-644	Papermill Rd	S of David Dr		Frederick County	2	9,400	0.15	77.72	Yes
333778/1015723	34-644	Papermill Rd	US-522 N, Front Royal Pike	S Pleasant Valley Rd	Frederick County/ City of Winchester	7	9,400	1.57	25.96	Yes
	34-600	Pifer Rd	SC-609 Capon Springs Grade		Frederick County	1	2,800	0.19	19.57	Yes
333273	34-669	Rest Church Rd	I-81 NB ramps		Frederick County	1	13,300	0.25	16.18	Yes
	34-669	Rest Church Rd	I-81 SB ramp	I-81 NB ramp	Frederick County	1	13,300	0.27	15.26	Yes
1155802	34-668	Shady Creek Rd	Peach Grove Ln		Frederick County	1	250	0.14	1543.01	Yes
		Taft Ave	Valor Dr	Papermill Rd	Frederick County	1	2,000	0.28	97.85	Yes
333153	34-642	Tasker Rd	Aylor Rd	600' east	Frederick County	4	17,450	0.25	49.31	Yes
	34-642	Tasker Rd	Aylor Rd	US 522 N, Ft Royal Pike	Frederick County	7	9,200	2.30	18.13	Yes
	34-696	Timber Ridge Rd	Frederick Pike	WV state line	Frederick County	1	640	2.40	14.27	Yes
	34-696	Timber Ridge Rd	RNS MP 5.47 to 5.48		Frederick County	1	640	0.20	42.81	Yes
	US 11	Valley Ave	SCL Winchester	Middle Rd	City of Winchester	2	13,000	1.40	6.02	Yes
334062	US 11	Valley Ave	W Gerrard Street		City of Winchester	0	10,300	0.19	0.00	Yes
736365	US 11	Valley Pike	Commonwealth Ct		Frederick County	1	17,000	0.14	22.69	Yes
736362	US 11	Valley Pike	Hood Way		Frederick County	1	17,100	0.14	22.56	Yes
	US 11	Valley Pike	SR 37 South of Winchester	SCL Winchester	City of Winchester	4	13,000	1.50	11.24	Yes
	34-728	Victory Rd	Airport Rd	US 17/50 Millwood Pike	Frederick County	1	2,400	0.86	26.55	Yes
	US 50	W Boscawen St	Amherst St (US 50)	US 11	City of Winchester	1	9,600	0.34	16.79	Yes
	VA 55, US 48	Wardensville Grade	US 48 34-600 Pifer Rd	Star Tannery Rd	Frederick County	1	50	3.10	353.51	Yes
	34-719	Warrior Rd	SR 277 Fairfax Pike	Tasker Rd	Frederick County	2	7,200	2.00	7.61	Yes
	34-1205	Wilkins Dr	Fairway Dr	Woodstock Ln	Frederick County	1	1,200	0.44	103.78	Yes
334184	VA 37	Winchester Bypass	NB off-ramp at US 522		Frederick County	1	10,000	0.14	39.14	Yes
	34-669	Woodbine Rd	US 11 Martinsburg Pike	Woodside Rd	Frederick County	1	490	0.80	15.98	Yes
		Woodstock Ln	N East Ln	Molden Dr	City of Winchester	1	2,300	0.67	35.56	Yes
		Woodstock Ln	N East Ln	ECL Winchester	City of Winchester	1	2,300	1.03	23.13	Yes
	VA 277	Fairfax Pike	34-726 Lakeview Circle	Warren County Line	Frederick County	4	9,700	2.60	8.69	Partial

	US 522	Frederick Pike North	SR 127 Bloemery Pike	34-694 Cumberland Trail Rd	Frederick County	4	8,600	3.40	7.50	Partial
	US 522	Frederick Pike North	SR 37	34-654 Cedar Grove Rd/Marple Rd	Frederick County	6	21,000	2.70	5.80	Partial
	US 522	Front Royal Pike	Warren County Line	34-642 N; Macedonia Church Rd	Frederick County	5	14,000	2.40	8.15	Partial
1089978	US 50	Amherst St	Campus Blvd/Meadow Branch Ave		City of Winchester	2	76,000	0.19	0.04	No
	US 50	Amherst St	Campus Blvd/Westside Station Dr		City of Winchester	0	38,000	0.19	0.00	No
1015889/1055347	US 50	Amherst St	Fox Dr	Boscawen St	City of Winchester	2	53,000	0.87	2.38	No
3334203/1274852	US 50	Amherst St	SR 37 NB ramps		Frederick County	1	38,000	0.19	7.61	No
		Bellevue Ave	US 11 Valley Ave	S Loudon St	City of Winchester	0	1,000	0.40	0.00	No
	34-622	Cedar Creek Grade	WCL Winchester	US 11	City of Winchester	0	10,000	0.50	0.00	No
334029	UR 5204	E Cork St	S Kent St		City of Winchester	0	8,600	0.19	0.00	No
1015819	US 17	E Jubal Early Dr	S Loudoun St		City of Winchester	2	19,300	0.19	0.12	No
333511	SR 277	Fairfax St	Mulberry St		Town of Stephens City	0	10,200	0.16	0.00	No
		Fox Dr	US 50 Amherst St	NCL Winchester	City of Winchester	0	1,000	0.88	0.00	No
	US 522	Frederick Pike North	34-600 Siler Rd	SR 127 Bloemery Pike	Frederick County	6	16,000	5.10	4.03	No
	US 522	Frederick Pike North	34-654 Cedar Grove Rd	34-600 Siler Rd	Frederick County	6	18,000	4.30	4.25	No
333942	US 522	Frederick Pike North	Bloemery Pike		Frederick County	0	17,500	0.14	0.00	No
333198	US 522	Frederick Pike North	Cedar Grove Rd/Marple Rd		Frederick County	0	20,760	0.19	0.00	No
0	US 522	Front Royal Pike	Costello Drive		Frederick County	0	14,000	0.14	0.00	No
333780/333282	34-671	Green Spring Rd	34-682 Glaze Orchard Rd	Apple pie ridge	Frederick County	1	3,000	2.33	7.83	No
709770	VA SC 656	Greenwood Rd	Woodrow Rd		Frederick County	0	10,500	0.14	0.00	No
333012/333053 (before intersection at US50)	34-600	Hayfield Rd	34-614 Back Mountain Rd	S of US 50 Northwestern Pike	Frederick County	1	5,300	1.99	5.18	No
		Hollingsworth Dr	S Pleasant Valley Rd	E Pall Mall St	City of Winchester	0	1,000	0.40	0.00	No
	34-672	Hopewell Rd	Welltown Rd	I-81 SB ramps	Frederick County	2	2,200	1.70	8.30	No
	I-81 N	I-66 w Ramp 1a			Frederick County	0	7,600	0.45	0.00	No
	I-81	I-81	Hopewell Rd	Rest Church Rd	Frederick County	4	53,000	2.50	1.65	No
	I-81	I-81	I-66	Reliance Dr	Frederick County	3	54,000	1.60	1.90	No
	I-81	I-81	Reliance Dr	SR 277 Fairfax Pike	Frederick County	12	55,000	4.80	2.49	No
	I-81	I-81	Rest Church Rd	West Virginia line	Frederick County	1	50,000	0.34	3.22	No
	I-81	I-81	SR 277 Fairfax Pike	SR 37 Winchester Bypass (S)	Frederick County	10	59,000	3.00	3.10	No
	I-81	I-81	SR 37 Winchester Bypass (S)	US 50/17/522 Millwood Pike	Frederick County	15	52,000	3.50	4.52	No
	I-81	I-81	SR 7 Berryville Pike	US 11 Martinsburg Pike	Frederick County	8	74,000	2.30	2.58	No
	I-81	I-81	US 11 Martinsburg Pike	Hopewell Rd	Frederick County	7	53,000	3.60	2.01	No

	I-81	I-81	US 50/17/522 Millwood Pike	SR 7 Berryville Pike	Frederick County	7	68,000	1.90	2.97	No
1155991 (Fairground Rd)/3332279/1252442/333292	US 11	Martinsburg Pike	34-836 Walters Mill Lane	34-671 Cedar Hill Rd	Frederick County	2	17,200	2.03	3.14	No
	US 11	Martinsburg Pike	Hopewell Rd		Frederick County	0	17,200	0.19	0.00	No
333798	US 11	Martinsburg Pike	Hopewell Rd/Bruce town Rd		Frederick County	0	9,600	0.19	0.00	No
333974	US 11	Martinsburg Pike	I-81 interchange NB off-ramp		Frederick County	0	24,500	0.14	0.00	No
333791	US 11	Martinsburg Pike	I-81 interchange NB on-ramp/Redbud Rd		Frederick County	0	19,100	0.19	0.00	No
	34-621	Merrimans Ln	Robinson Dr/Ballygar Dr	WCL Winchester (Abrams Creek)	Frederick County	0	1,400	1.40	0.00	No
718082	US 50	Millwood Ave	Apple Blossom Drive	Frontage Road (0.2000 MI)	City of Winchester	0	45,000	0.19	0.00	No
718082	US 50	Millwood Ave	Jubal Early Dr		City of Winchester	0	80,000	0.19	0.00	No
726521	US 50/17	Millwood Pike	Independence Dr		Frederick County	0	19,900	0.19	0.00	No
333980	US 50, US 17	Millwood Pike	US 522 Front Royal Pike/I-81 NB ramps		Frederick County	0	26,950	0.19	0.00	No
	US 11	N Braddock St	W Boscawen St		City of Winchester	0	24,400	0.19	0.00	No
847018	US 11	N Cameron St	Piccadilly St		City of Winchester	0	14,900	0.19	0.00	No
333813	US 522	N Frederick Pike	Apple Pie Ridge Rd		Frederick County	0	19,900	0.19	0.00	No
		N Pleasant Valley Dr	N of Berryville Ave	Bruce St	City of Winchester	0	16,000	0.33	0.00	No
	34-761	Old Charles Town Rd	Gun Club Rd	Clarke County line	Frederick County	1	1,600	1.00	4.89	No
	34-600	Pifer Rd	Gravel Springs Rd	Wardensville Grade	Frederick County	1	2,800	4.50	1.22	No
	34-600	Pifer Rd	Paddy's Cove Ln		Frederick County	1	2,800	0.30	2.45	No
	34-704	Pinetop Rd	WV state line	Back Creek Road	Frederick County	1	240	0.19	228.31	No
334023	138-5213	Pleasant Valley Rd	E Cork St		City of Winchester	0	59,100	0.19	0.00	No
713334	UR 5213	Pleasant Valley Rd	Jubal Early Drive		City of Winchester	0	54,000	0.19	0.00	No
334069	UR 5213	Pleasant Valley Rd	Parkview Avenue		City of Winchester	0	21,000	0.14	0.00	No
	34-661	Redbud Rd	Milburn Rd	S of US 11 Martinsburg Pike	Frederick County	1	2,900	1.10	3.78	No
	34-669	Rest Church Rd	I-81 SB ramps	US 11	Frederick County	1	9,900	0.16	0.33	No
333274	34-669	Rest Church Rd	I-81 SB ramps		Frederick County	0	13,250	0.25	0.00	No
	34-669	Rest Church Rd	Welltown Road	I-81 SB ramps	Frederick County	0	1,900	1.90	0.00	No
334030	US 11	S Cameron St	Cork St		City of Winchester	0	14,400	0.19	0.00	No
334140	US 11	S Cameron St	E Boscawen St		City of Winchester	0	76,500	0.19	0.00	No
		S Pleasant Valley Rd	E Jubal Early Rd	Millwood Ave (US 50)	City of Winchester	0	23,000	0.10	0.00	No
		S Pleasant Valley Rd	Millwood Ave (US 50)	Cork St	City of Winchester	2	21,000	0.84	6.21	No
334047		S Pleasant Valley Rd	Tevis St	E Jubal Early Rd	City of Winchester	0	20,000	1.00	0.00	No
	34-657	Senseny Rd	Greenwood Rd	Clarke County line	Frederick County	2	4,100	2.10	1.16	No
333215	VA SC 657	Senseny Rd	Meade Dr		Frederick County	0	13,500	0.14	0.00	No

333218	VA SC 657	Senseny Rd	Williamson Rd		Frederick County	0	13,100	0.14	0.00	No
	34-642	Tasker Rd	Rutherford Ln	Aylor Rd	Frederick County	2	13,000	1.20	7.02	No
742217	VA SC 642	Tasker Rd	Warrior Dr		Frederick County	0	14,150	0.19	0.00	No
333237/11163315	34-659	Valley Mill Rd	Channing Dr	S of I-81 NB/SR 7 Berryville Pike	Frederick County	0	5,100	1.30	0.00	No
1170979/333948	US 11	Valley Pike	Family Dr	Town of Stephens City CL (Stephens Run bridge)	Frederick County	0	5,600	0.97	0.00	No
	34-622	Weems Ln	US 11 Valley Ave	S Loudon St	City of Winchester	0	10,000	0.20	0.00	No
728876/333249/333251	34-661	Welltown Rd	N of US-11 S, Martinsburg Pike/Amoco Ln	34-663 Fair Lane	Frederick County	1	4,800	1.60	0.41	No
333149	SR 37	Winchester Bypass	US 11 EB (south) ramps		Frederick County	0	13,800	0.14	0.00	No
	VA 37	Winchester Bypass	US 11 Ramps South of Winchester	34-622 Cedar Creek Grade	Frederick County	3	21,000	2.60	3.01	No
740549	SR 37	Winchester Bypass	US 11 WB (north) ramps		Frederick County	0	13,800	0.14	0.00	No
	VA 37	Winchester Bypass	US 50 West of Winchester	US 522 NW of Winchester	Frederick County	6	32,000	1.70	6.04	No
	34-660	Woods Mill Rd	VA 7 Berryville Pike	Jordan Springs Rd	Frederick County	2	2,300	2.00	1.99	No
		Woodstock Ln	Molden Dr	ECL Winchester	City of Winchester	0	2,300	0.36	0.00	No
		York Ave	US 11 Valley Ave	Packer St	City of Winchester	0	1,000	0.88	0.00	No

# C | Public Engagement

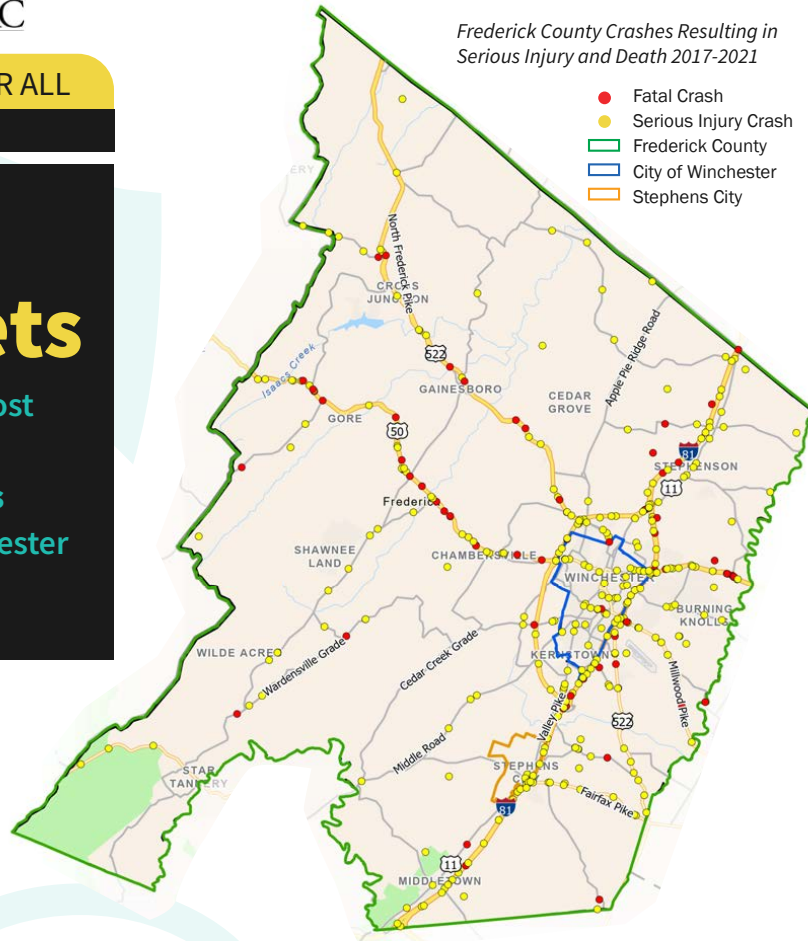


## SAFE STREETS & ROADS FOR ALL ACTION PLAN

### We Need Safe Streets

In the last eight years, almost **900 people** were involved in life-altering car crashes in Frederick County, Winchester City, and Stephens City.

We need your input to develop a “Safe Streets for All (SS4A) Action Plan” to eliminate serious injuries and fatalities by 2045.



### How You Can Help

▶ Take our E-survey



**SCAN ME!**

Scan the QR code above, or visit:  
[bit.ly/winfred-ss4a-survey](https://bit.ly/winfred-ss4a-survey)  
Spanish Language Translation Available

▶ Meet us at Events

**Virtual Public Forum**

Wednesday, January 17, 2024  
6:30 – 7:30 PM  
MS Teams

Registration required at:  
[bit.ly/winfred-ss4a-virtual-forum](https://bit.ly/winfred-ss4a-virtual-forum)  
Spanish Language Interpretation Available

### REACH OUT TO US:

Taryn Logan | [tlogan@nsvregion.org](mailto:tlogan@nsvregion.org) | Phone: 540-636-8800 | Facebook: @WinFredMPO | Visit: [winfredmpo.org/project/ss4a/](https://winfredmpo.org/project/ss4a/)



Everyone deserves safe streets and roads.

### ▶ Safe Streets and Roads for All Action Plan

The Winchester-Frederick Metropolitan Planning Organization (WinFred MPO) and Northern Shenandoah Valley Regional Commission (NSVRC) are responsible for regional planning and transportation in Frederick County, Winchester City, and Stephens City. The two organizations have a goal to eliminate serious injuries and traffic deaths on roadways by 2045. To help achieve zero by 2045, the region is developing a Safe Streets and Roads for All (SS4A) Action Plan.

The Action Plan will:

1. Identify roads with high traffic fatalities and serious injuries.
2. Recommend projects and strategies to address roadway safety issues.

### US Department of Transportation SS4A Grant Program

The SS4A grant program was established by the Bipartisan Infrastructure Law (BIL) in 2022 to significantly reduce or eliminate roadway fatalities and serious injuries across the nation.

The SS4A program supports the US Department of Transportation's National Roadway Safety Strategy and its long-term goal of zero.

This Action Plan will be used by the WinFred MPO and NSVRC to apply for federal grants to implement the safety projects.

### SS4A ACTION PLAN TIMELINE

	2023			2024					
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
Analyze Safety Issues and Engage with the Public		█	█	█	█	█	█	█	█
Select Strategies and Projects				█	█	█			
Finish SS4A Action Plan			█				█		
Apply for SS4A Implementation Grants								█	█



**SCAN ME!**

Take our E-survey

### SPREAD THE WORD

Encourage friends and family to participate in the e-survey, events, and virtual public forum.  
[winfredmpo.org/project/ss4a/](https://winfredmpo.org/project/ss4a/)

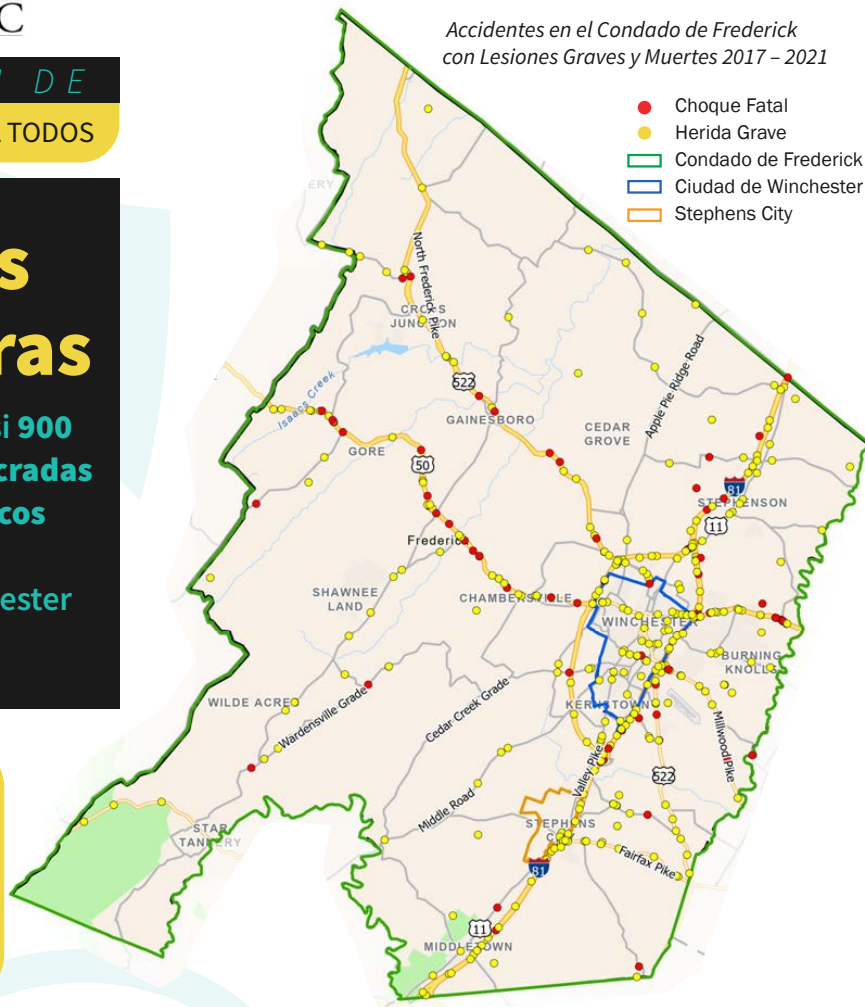


PLAN DE ACCIÓN DE CALLES Y CAMINOS SEGUROS PARA TODOS

# Necesitamos Calles Seguras

En los últimos ocho años, casi 900 personas estuvieron involucradas en accidentes automovilísticos que alteraron sus vidas en el condado de Frederick, Winchester City y Stephens City.

Necesitamos su opinión para desarrollar un "Plan de acción de Calles Seguras para Todos (SS4A)" para eliminar las lesiones graves y las muertes para 2045.



## Cómo Puede Ayudar

▶ **Realice Nuestra Encuesta Electrónica**



**¡ESCANÉAME!**

Escanee el código QR de arriba, o visite: [bit.ly/winfred-ss4a-survey](https://bit.ly/winfred-ss4a-survey)  
Traducción en Español Disponible

▶ **Reúnete con Nosotros en Eventos**

**Foro Público Virtual**

miércoles, 17 de enero de 2024  
6:30 – 7:30 PM  
MS Teams

Se requiere registro: [bit.ly/winfred-ss4a-virtual-forum](https://bit.ly/winfred-ss4a-virtual-forum)  
Interpretación en Español Disponible

**CONTÁCTANOS:**

Taryn Logan | [tlogan@nsvregion.org](mailto:tlogan@nsvregion.org) | Teléfono: 540-636-8800 | Facebook: @WinFredMPO | Visita: [winfredmpo.org/project/ss4a](https://winfredmpo.org/project/ss4a)



## Todos Merecen calles y caminos seguros.

### ▶ Plan de Acción de Calles y Caminos Seguros para Todos

La Organización de Planificación Metropolitana de Winchester-Frederick (MPO) y la Comisión Regional del Valle del Norte de Shenandoah (NSVRC) son responsables de la planificación regional y el transporte en el condado de Frederick, la ciudad de Winchester y la ciudad de Stephens City. Las dos organizaciones tienen el objetivo de eliminar las lesiones graves y las muertes por accidentes de tránsito en las carreteras para 2045. Para ayudar a lograr cero para 2045, la región está desarrollando un Plan de Acción de Calles y Carreteras Seguras para Todos (SS4A).

**El Plan de Acción:**

1. Identificar carreteras con un alto número de víctimas mortales y heridos graves.
2. Recomendar proyectos y estrategias para abordar los problemas de seguridad vial.

### Programa de Subvenciones SS4A del Departamento de Transporte de EE. UU.

El programa de subvenciones SS4A fue establecido por la Ley de Infraestructura Bipartidista (BIL) en el 2022 para reducir o eliminar significativamente las muertes y lesiones graves en las carreteras en todo el país.

El programa SS4A respalda la Estrategia Nacional de Seguridad Vial del Departamento de Transporte de EE. UU. y su objetivo a largo plazo de cero muertes en las carreteras.

Este Plan de Acción será utilizado por la MPO y el NSVRC para solicitar subvenciones federales para implementar los proyectos de seguridad.

### CRONOGRAMA DEL PLAN DE ACCIÓN SS4A

	2023			2024						
	Oct	Nov	Dic	Ene	Feb	Mar	Abr	May	Jun	
Analizar Cuestiones de Seguridad e Interactuar con el Público		[Barra]			[Barra]					
Seleccionar Estrategias y Proyectos				[Barra]						
Finalizar el Plan de Acción SS4A			[Barra]				[Barra]			
Solicitar subvenciones para la implementación de SS4A								[Barra]		



**¡ESCANÉAME!**

¡Responda nuestra encuesta electrónica!

### DIFUNDIR LA PALABRA

Anime a amigos y familiares a participar en la encuesta electrónica, los eventos y el foro público virtual.

[winfredmpo.org/project/ss4a/](https://winfredmpo.org/project/ss4a/)

## WinFred MPO SS4A: Electronic Survey #1 Summary Report

Survey Publicly Available Online from November 16, 2023 to January 24, 2024

**Total Number of Surveys Received: 104**

The electronic survey (e-survey) for the Winchester-Frederick Metropolitan Planning Organization (WinFred MPO) Safe Streets for All (SS4A) Action Plan launched on November 16, 2023. It was promoted on the MPO website, through four social media posts, a Fact Sheet, and an article in the [Winchester Star](#). A link to the survey was also shared with the public at the project’s three pop-up engagement activities held from November 16, 2023, to November 18, 2023, in the City of Winchester, as well as at the Virtual Public Forum held on January 17, 2024. The social media posts and Fact Sheet were disseminated in both English and Spanish.

The e-Survey remained open to the public for seventy days, from November 16, 2023 to January 24, 2024. It received a total of **104 responses**. The e-survey featured ten multiple-choice questions and an interactive web-map for participants to locate and comment on their perceptions of traffic safety issues across the study area (Frederick County, the City of Winchester, and Stephens City). The e-Survey was also available in both English and Spanish to maximize accessibility for people’s whose primary language is not English. A copy of the English survey is provided in Appendix A.

### Overview

#### Mobility: Usage and Priorities

- Almost 90% of people who took the e-survey selected “driving” as their primary mode of transportation. For active transportation, 6.7% chose “walking”, and 4.8% chose “biking.” Less than 1% of the surveyed population takes public transit, i.e., the bus.
- Close to 6% of the surveyed population chose “yes” to using a wheelchair, cane, or other mobility device.
- When asked which form of mobility would be a top priority to eliminate crashes that result in severe injuries or death, about 52% of the surveyed population chose “driving,” 15.4% chose “biking,” and 13.5% chose “walking”. Less than 10% of participants chose “bus/paratransit for seniors or people with disabilities” and “scooters, e-bikes, segways, or skateboards.”

#### Demographics and Origins

- Almost half the people who took the e-survey lived in ZIP Code “22601” – the City of Winchester. A quarter had homes in ZIP Code “22602,” located south of Winchester in Frederick County.

- Sixty-one percent of survey respondents were aged 40 years or older, including 21% who were 60 to 69 years old. Almost 10% were 70 to 79 years of age, and almost 5% were over 80 years old. In contrast, less than 1% of people who took the survey were under the age of 18.
- Eighty percent of survey respondents identified as non-Hispanic White, while 4.8% identified as Hispanic, and 2.8% identified as American Indian/Alaska Native. There were no respondents who identified as Black, Asian, Middle Eastern, or Native Hawaiian/Other Pacific Islander.

### Safety Concerns

The e-survey collected feedback on safety concerns in two ways: first, through two questions that asked participants to rank their perceptions of safety and countermeasures, respectively; the second, through an interactive web-map where participants could pinpoint a street, intersection, or other location they perceived as unsafe in relation to their primary transportation mode, and add a comment to describe their concerns along with their chosen location.

From the responses, the top three safety issues that emerged were:

#### 1. Poor Driver Behavior

- Driving over the speed limit.
- Racing through signals/stop signs.

#### 2. Lack of Safe Spaces for Walking and to Cross the Street

- Non-existent or poor-quality pedestrian infrastructure.
- Conflicts between land uses that generate high pedestrian traffic (senior center, farm market), traffic volume, and pedestrian crossing designs.

#### 3. Challenging Roadway Configurations

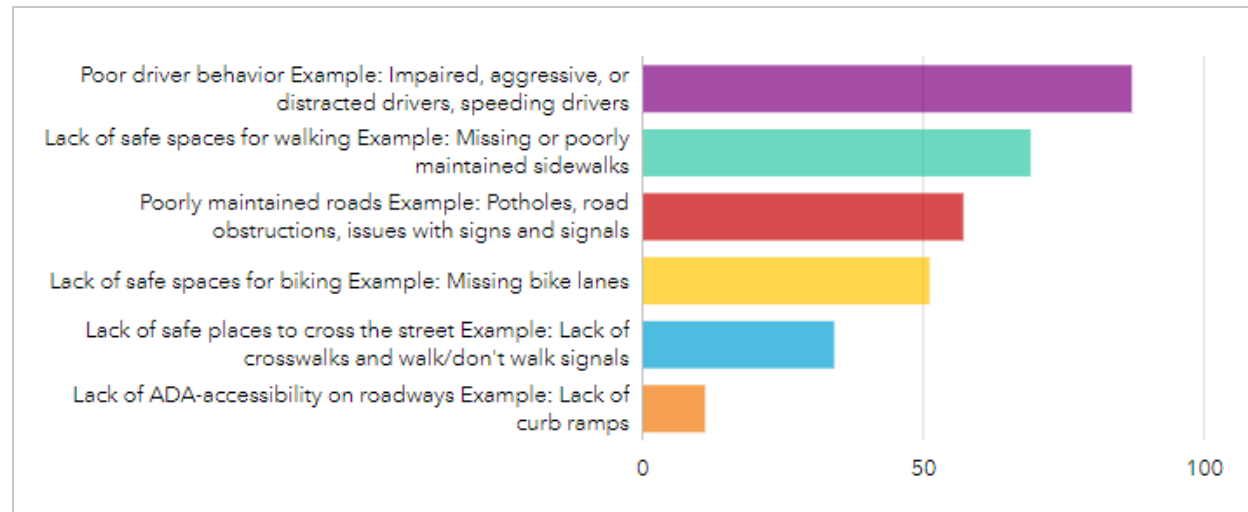
- Conflicting and confusing geometries at highway on-and-off-ramps and street intersections.
- Commercial and residential land uses at intersections create traffic circulation conflicts.
- Roadway capacity is insufficient and/or roadway designs are not appropriate for increasing traffic volume and congestion.

#### The first ranking question (Question 3 on the e-survey) was:

*“When you are traveling by your primary mode of transportation, what makes you feel unsafe?”*

- A total of **103 people** answered this question.
- Of this, “poor driver behavior” was selected as a top concern by 84% of people, “lack of safe spaces for walking” was chosen by 66% as their second most important concern, and “poorly maintained roads” was chosen by 55% of people as their third priority.
- This was closely followed by 49% of people who chose “lack of safe spaces for biking” (Figure 1).

Figure 1: Responses to: "When you are traveling by your primary mode of transportation, what makes you feel unsafe?"

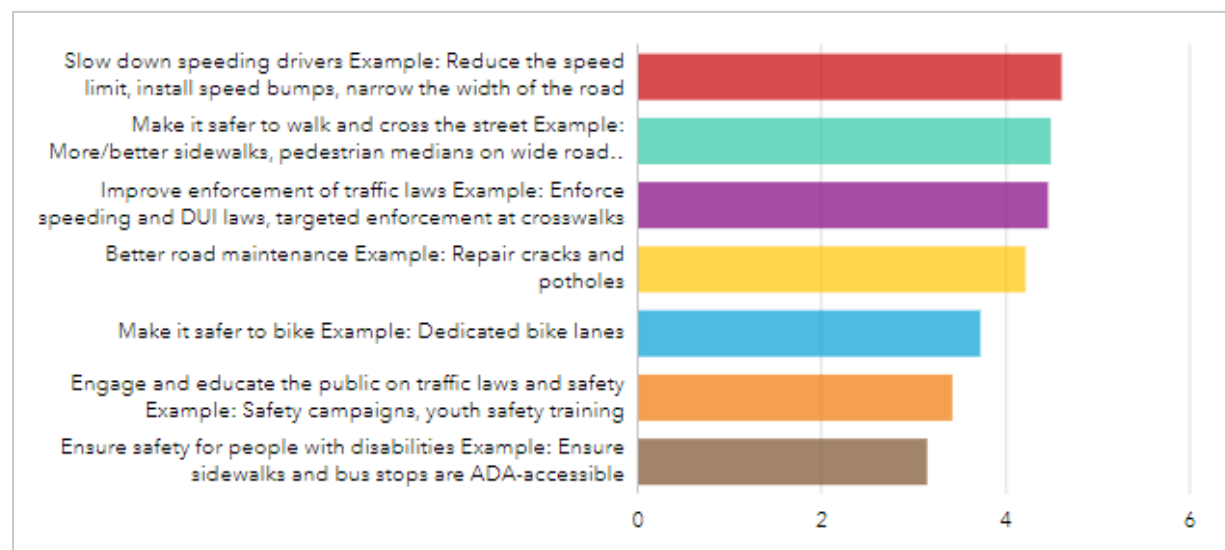


The second ranking question (Question 4 on the e-survey) was:

"How do you rank the importance of the following actions the locality can take to improve transportation safety?"

- 102 people left responses for this question.
- The action given the highest importance, with an average score of 4.6 out of 7.0, was to "slow down speeding drivers" (Figure 3).
- "Make it safer to walk and cross the street" and "improve enforcement of traffic laws" were second and third, with average scores of 4.48 and 4.45 respectively.

Figure 2: Responses to: "How do you rank the importance of the following actions the locality can take to improve transportation safety?"



A further 123 comments were added to the interactive web-map. These have been collated and analyzed by mode in Table 1 and cross-referenced against the same categories presented in the first ranking question to gain a deeper understanding of participants' safety priorities.

Table 1: Feedback Organized by Safety Concern and Mode of Travel

Safety Concern	Number of Mentions				Total Number of Mentions
	Driving	Walking	Biking	Other	
Challenging Roadway Configurations	31	6	7	-	44
Poor Driver Behavior	19	9	-	2	30
Lack of Safe Spaces for Walking	-	18	4	1	23
Lack of Safe Places to Cross the Street	-	12	8	1	21
Lack of Safe Spaces for Biking	-	-	18	-	18
Conflicts with Existing Land Uses and Proposed Developments	8	-	1	1	10
Conflicts with Truck Traffic	1	-	-	-	1
Poorly Maintained Roads	-	-	6	-	6
Not Described/Unrelated to Traffic Safety	3	-	1	1	5
Lack of ADA-Accessibility on Streets	-	-	-	-	-

### Location Concerns

Location concerns were gathered from the 123 points and comments added to the interactive web-map. Data from the web-map was disaggregated by transportation mode, such that:

- 51% of comments were about safety issues related to driving.
- 26% of comments were about safety issues related to walking.
- 22% of comments were about safety issues related to biking.

The top three locations that were repeatedly cited as unsafe from a mobility perspective were:

1. **Route 7**
  - Challenging road configurations, especially while making left/right turns from local or collector roads on to Route 7, and at on/off ramps from Route 7 to I-81.
  - Sight distance and conflicts with parked cars within the City of Winchester where Route 7 becomes National Ave.

- Increasing traffic volume and congestion due to increased development.

**2. Cedar Creek Grade & Stoneridge Road**

- Speeding over the legal limit, especially through intersections.
- Conflicts with truck traffic, such as “jake breaking,” and increasing commuter traffic.
- Conflicts with residential land use and an upcoming assisted living facility that is proposed to increase density and the number of vulnerable users near this intersection.

**3. City Center/Walking Mall Area**

- Poor visibility while pulling out of parking lots/zones on main streets.
- Negligent driving behavior, especially at pedestrian intersections when drivers do not yield to pedestrians at green lights.

*Table 2: Feedback Organized by Location and Mode of Travel*

Location Concern	Number of Mentions				Total Number of Mentions
	Driving	Walking	Biking	Other	
<b>Route 7</b>	10	3	-	-	<b>14</b>
• <i>National Ave</i>	4	2	-	-	6
<b>Cedar Creek Grade &amp; Stoneridge Rd</b>	13	-	-	-	<b>13</b>
<b>City Center/Walking Mall Area</b>	3	4	3	-	<b>10</b>
• <i>Cameron, Loudon, &amp; Braddock St</i>	3	3	-	-	5
• <i>Cork St</i>	-	1	2	-	3
• <i>Piccadilly St/Kent St</i>	-	-	1	-	1
• <i>Kent St</i>	1	-	-	-	1
<b>Route 11</b>	1	2	5	-	<b>8</b>
<b>Pleasant Valley Rd</b>	2	5	2	-	<b>8</b>
<b>Senseny Road</b>	5	1	3	-	<b>8</b>
<b>I-81 (interchanges)</b>	5	-	1	-	<b>6</b>
<b>Route 50</b>	2	1	3	-	<b>6</b>
<b>Back Mountain Road</b>	3	1	-	-	<b>4</b>

Millwood Ave	-	2	1	-	<b>3</b>
York Ave	-	2	-	1	<b>3</b>
Miller St	2	-	-	-	<b>2</b>
Dewberry Dr	2	-	-	-	<b>2</b>
Greenwood Rd	1	1	-	-	<b>2</b>
Route 522	-	1	1	-	<b>2</b>
Middle Rd	-	-	2	-	<b>2</b>
Featherbed Ln	-	-	1	-	<b>1</b>
W Monmouth St	1	-	-	-	<b>1</b>
Jubal Early Dr	-	-	1	-	<b>1</b>
Warrior Drive	1	-	-	-	<b>1</b>
Woods Mill Road/Route 600	1	-	-	-	<b>1</b>
Weare, Merrian Ln, Meadow Branch Ave	1	-	-	-	<b>1</b>
Hollingsworth Dr	1	-	-	-	<b>1</b>
Inverlee Way	1	-	-	-	<b>1</b>
E Tevis St	1	-	-	-	<b>1</b>
Loudon St	1	-	-	-	<b>1</b>
Wyck St	-	1	-	-	<b>1</b>
Weems Ln	-	1	-	-	<b>1</b>
Stewart St	-	1	-	-	<b>1</b>
Rossman Blvd	-	1	-	-	<b>1</b>
Lowry Dr	-	1	-	-	<b>1</b>
Fort Collier Road	-	1	-	-	<b>1</b>
Kern St	1	-	-	-	<b>1</b>

## Appendix A

### Safe Streets and Roads for All e-Survey #1

In the last eight years, almost 900 people were involved in life-altering car crashes in Frederick County, Winchester City, and Stephens City. Over 100 of these people never made it home to their families and nearly 700 were seriously injured. This is unacceptable. The Winchester-Frederick County Metropolitan Planning Organization (MPO) and Northern Shenandoah Valley Regional Commission (NSVRC) want to eliminate severe injuries and crash deaths by 2045. Help us determine transportation safety recommendations to make our streets safer for all.

#### Survey Questions

##### 1. What is your primary mode of travel? (select one)

- Driving
- Carpooling
- Rideshare (e.g., Lyft, Uber)
- Walking
- Biking
- Scooter, e-bikes, Segway, or skateboards
- Bus
- Paratransit (for seniors/people with disabilities)
- Other \_\_\_\_\_

**2. Safe Streets and Roads for All Interactive Web Map:** Use this web map to identify locations where you feel unsafe walking, biking, riding the bus, or driving and tell us why. For example, is there a street where drivers speed? The web map can be used on a desktop computer or mobile device. It is suggested to use the web map on a desktop computer.

Click here to open the web map: [WEB MAP](#)

##### 3. When you are traveling by your primary mode of transportation, what makes you feel unsafe? Please select your top three transportation safety concerns (Select 3).

- Poorly maintained roads  
*Example: Potholes, road obstructions, issues with signs and signals*
- Lack of safe spaces for walking  
*Example: Missing or poorly maintained sidewalks*
- Poor driver behavior  
*Example: Impaired, aggressive, or distracted drivers, speeding drivers*

- Lack of safe spaces for biking  
*Example: Missing bike lanes*
- Lack of safe places to cross the street  
*Example: Lack of crosswalks and walk/don't walk signals*
- Lack of ADA-accessibility on roadways  
*Example: Lack of curb ramps*

**4. How do you rank the importance of the following actions the locality can take to improve transportation safety? Please rank them on a scale of 1 to 7, with 1 being the most important and 7 the least important.** On a desktop computer, use your mouse to drag the answers in your preferred order. On a mobile device, move the answers by selecting the three lines to the right with your finger, holding down, and dragging it to the desired location.

- Better road maintenance  
*Example: Repair cracks and potholes*
- Make it safer to walk and cross the street  
*Example: More/better sidewalks, pedestrian medians on wide roads, dedicated crosswalks and pedestrian signals*
- Make it safer to bike  
*Example: Dedicated bike lanes*
- Improve enforcement of traffic laws  
*Example: Enforce speeding and DUI laws, targeted enforcement at crosswalks*
- Slow down speeding drivers  
*Example: Reduce the speed limit, install speed bumps, narrow the width of the road*
- Engage and educate the public on traffic laws and safety  
*Example: Safety campaigns, youth safety training*
- Ensure safety for people with disabilities  
*Example: Ensure sidewalks and bus stops are ADA-accessible*

##### 5. Which form of mobility would you prioritize to eliminate crashes that result in severe injuries and death? (Select one)

- Driving
- Walking
- Biking
- Scooters, e-bikes, Segways, or skateboards
- Bus/Paratransit (for seniors/people with disabilities)
- Other \_\_\_\_\_

## DEMOGRAPHICS

Survey takers will be required to answer these questions.

### 7. What is your home ZIP Code?

- 22601
- 22602
- 22603
- 22624
- 22625
- 22637
- 22654
- 22545
- 22655
- 22630
- 22663
- Other: \_\_\_\_\_
- Prefer not to say

### 8. Do you use a wheelchair, cane, or other mobility device?

- Yes
- No
- Prefer not to say

### 9. What is your age?

- Under 18
- 18-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79
- 80+
- Prefer not to say

### 10. Which is your race/ethnicity? (select all that apply to you)

- American Indian/Alaska Native
- Asian
- Black/African
- Hispanic/Latinx
- Middle Eastern
- Native Hawaiian or Other Pacific Islander
- White (not Hispanic)

- Other
- Prefer not to say

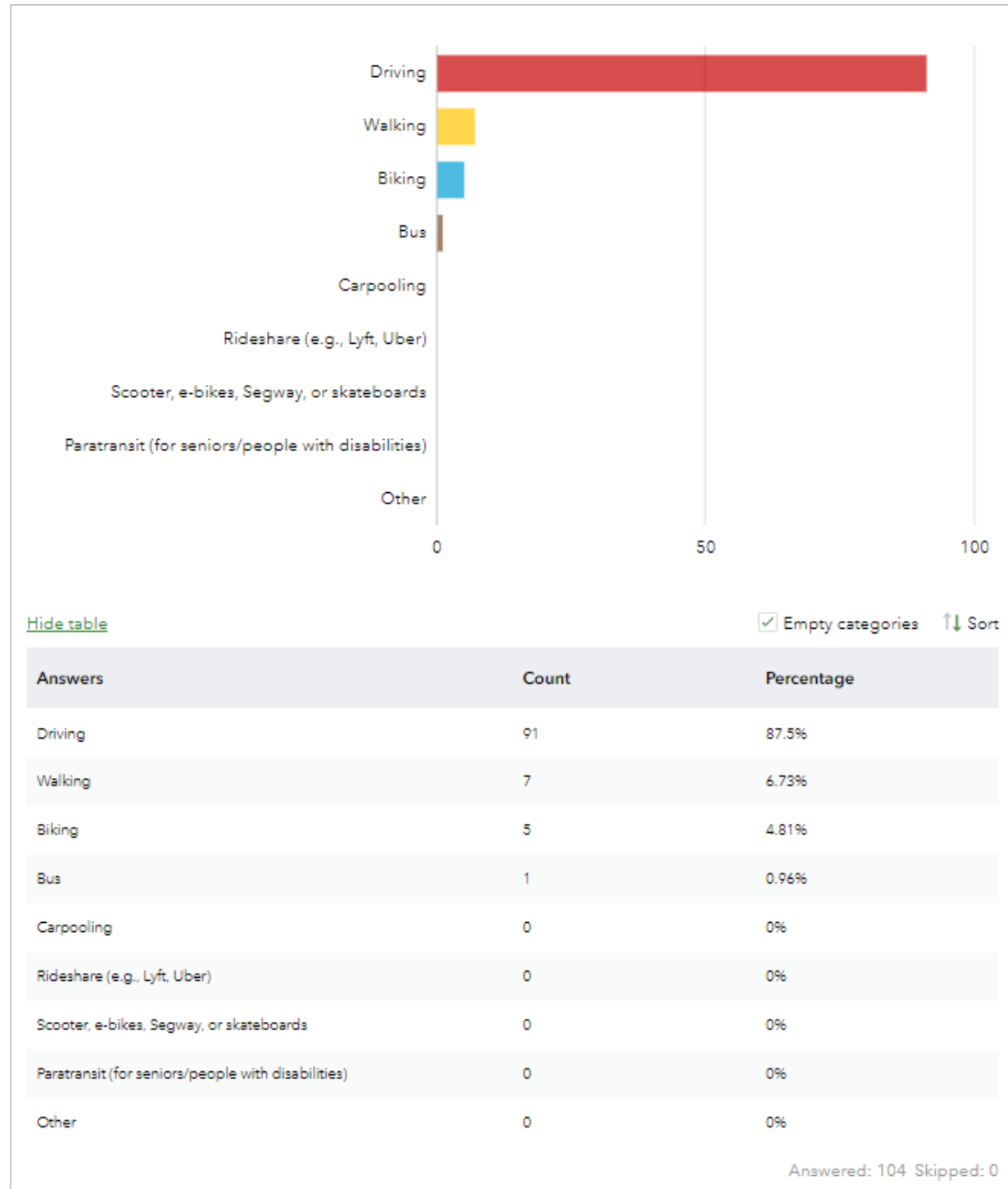
### 11. Which gender do you most identify with? (select one option)

- Female
- Male
- Non-binary
- Genderqueer
- Other
- Prefer not to say

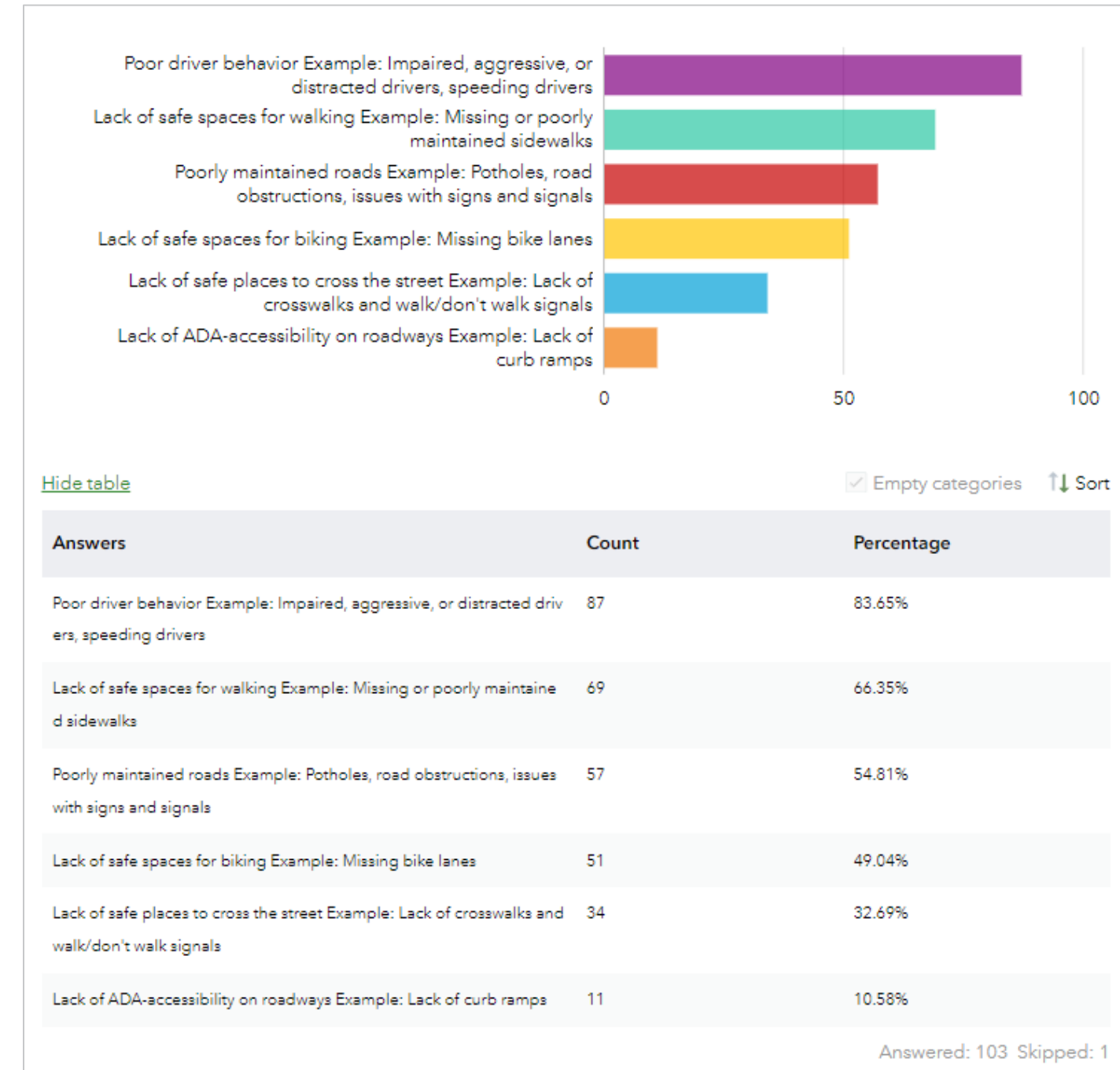
### 12. What is your household income range?

- Less than \$14,999
- \$15,000 - \$24,999
- \$25,000 - \$34,999
- \$35,000 - \$49,999
- \$50,000 - \$74,999
- \$75,000 - \$99,999
- \$100,000+
- Prefer not to say

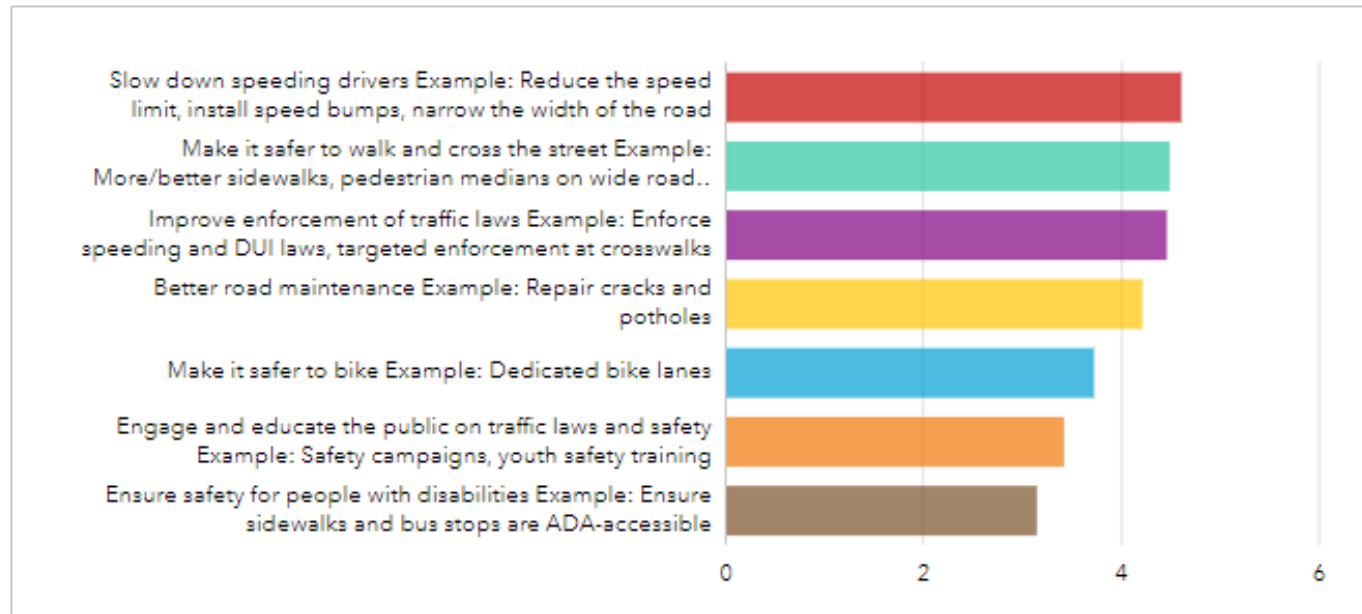
What is your primary mode of travel?



When you are traveling by your primary mode of transportation, what makes you feel unsafe? (Select three.)



How do you rank the importance of the following actions the locality can take to improve transportation safety? Please rank them on a scale of 1 to 7, with 1 being the most important and 7 the least important.



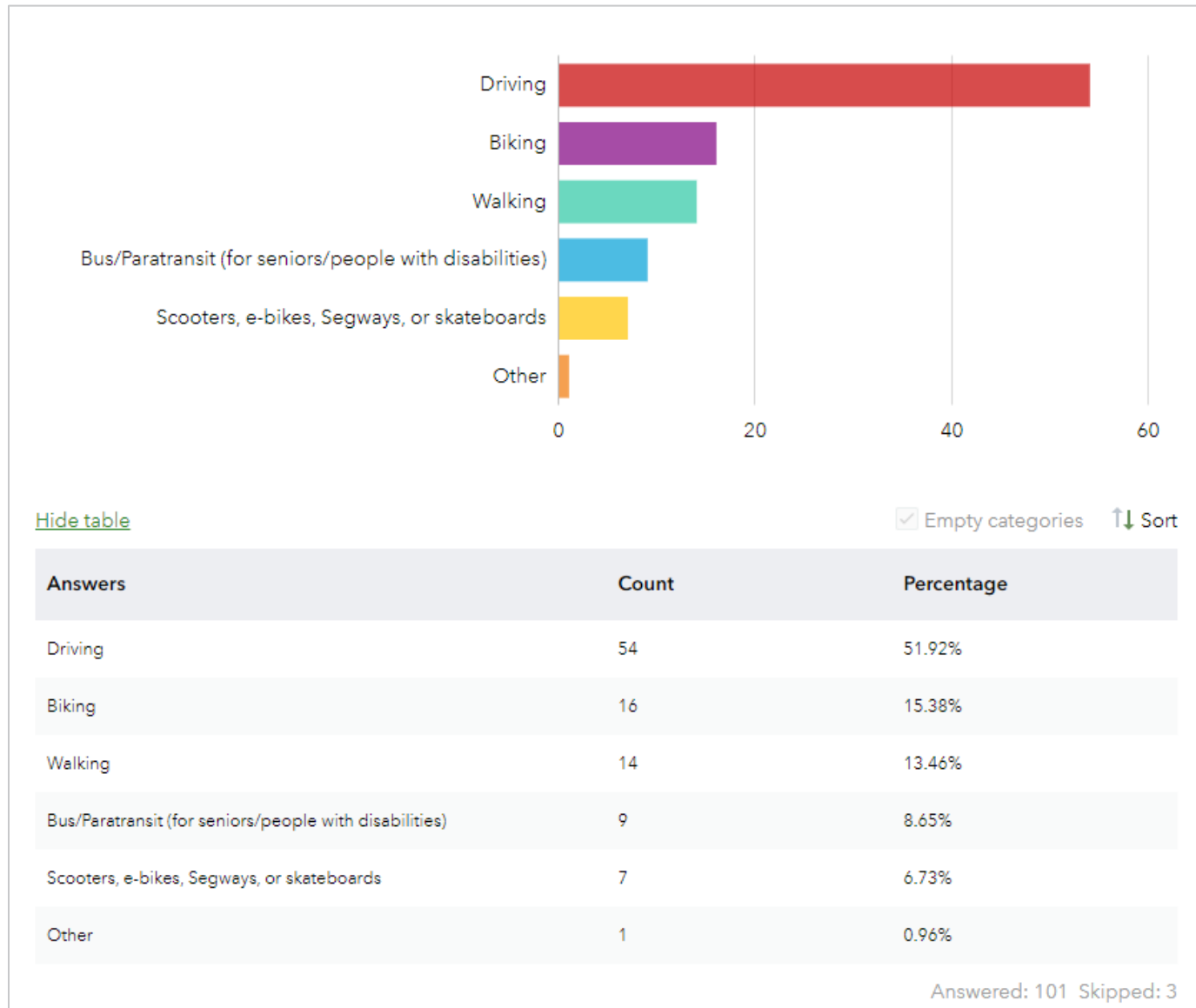
How do you rank the importance of the following actions the locality can take to improve transportation safety? *Continued.*

Rank	Answers	1	2	3	4	5	6	7	Average score
1	Slow down speeding drivers Example: Reduce the speed limit, install speed bumps, narrow the width of the road	21.57% 22	19.61% 20	14.71% 15	10.78% 11	13.73% 14	13.73% 14	5.88% 6	4.60
2	Make it safer to walk and cross the street Example: More/better sidewalks, pedestrian medians on wide roads, dedicated crosswalks and pedestrian signals	16.67% 17	18.63% 19	18.63% 19	12.75% 13	16.67% 17	8.82% 9	7.84% 8	4.48
3	Improve enforcement of traffic laws Example: Enforce speeding and DUI laws, targeted enforcement at crosswalks	20.59% 21	16.67% 17	15.69% 16	14.71% 15	11.76% 12	7.84% 8	12.75% 13	4.45
4	Better road maintenance Example: Repair cracks and potholes	17.65% 18	14.71% 15	10.78% 11	20.59% 21	10.78% 11	14.71% 15	10.78% 11	4.21
5	Make it safer to bike Example: Dedicated bike lanes	16.67% 17	11.76% 12	14.71% 15	8.82% 9	6.86% 7	13.73% 14	27.45% 28	3.72
6	Engage and educate the public on traffic laws and safety Example: Safety campaigns, youth safety training	2.94% 3	9.8% 10	16.67% 17	16.67% 17	20.59% 21	16.67% 17	16.67% 17	3.41
7	Ensure safety for people with disabilities Example: Ensure sidewalks and bus stops are ADA-accessible	3.92% 4	8.82% 9	8.82% 9	15.69% 16	19.61% 20	24.51% 25	18.63% 19	3.14

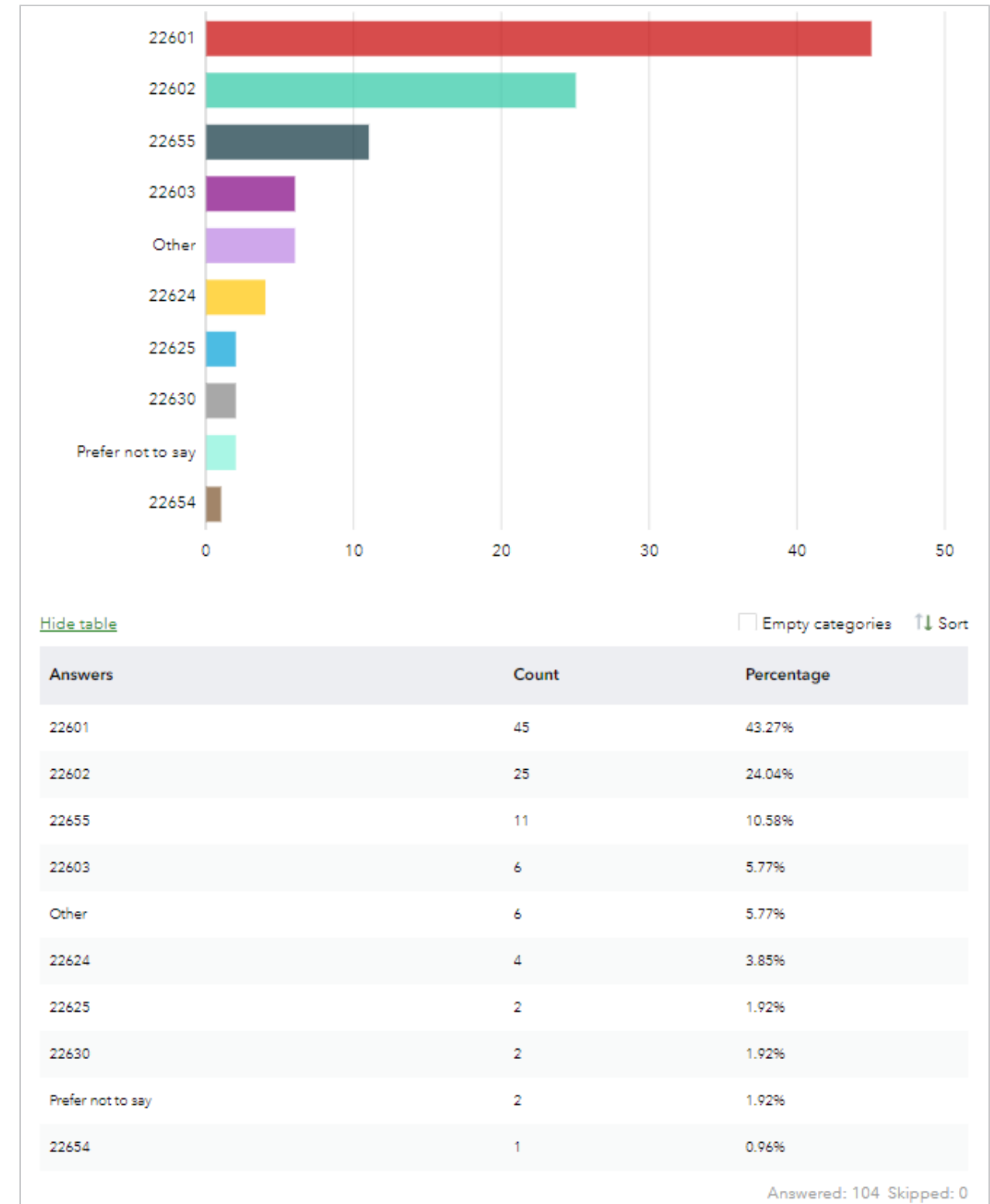
Answered: 102 Skipped:



Which form of mobility would you prioritize to eliminate crashes that result in severe injuries and death? (Select one.)



What is your home ZIP Code? (required)

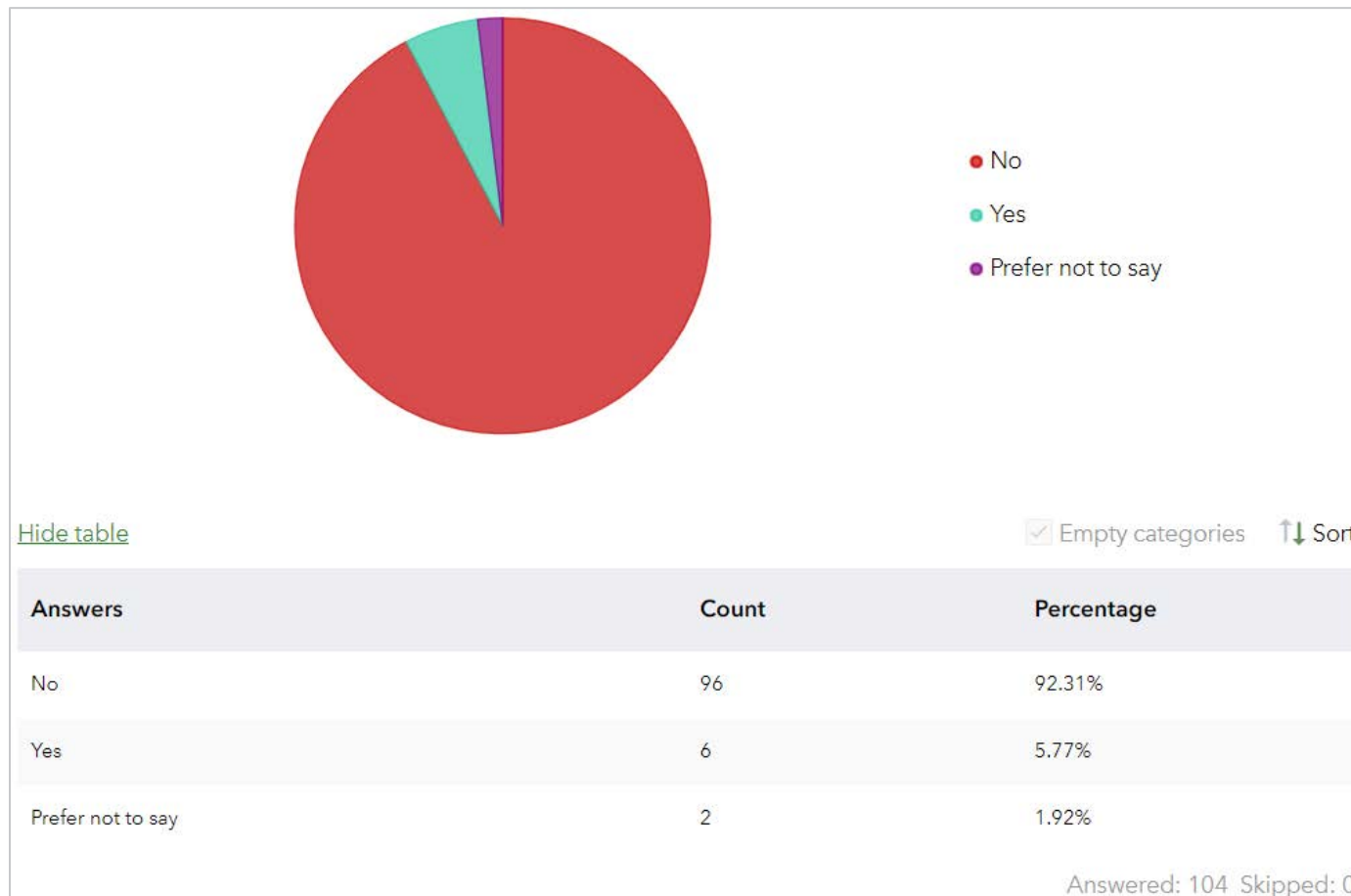


What is your home ZIP Code? *Other responses.*

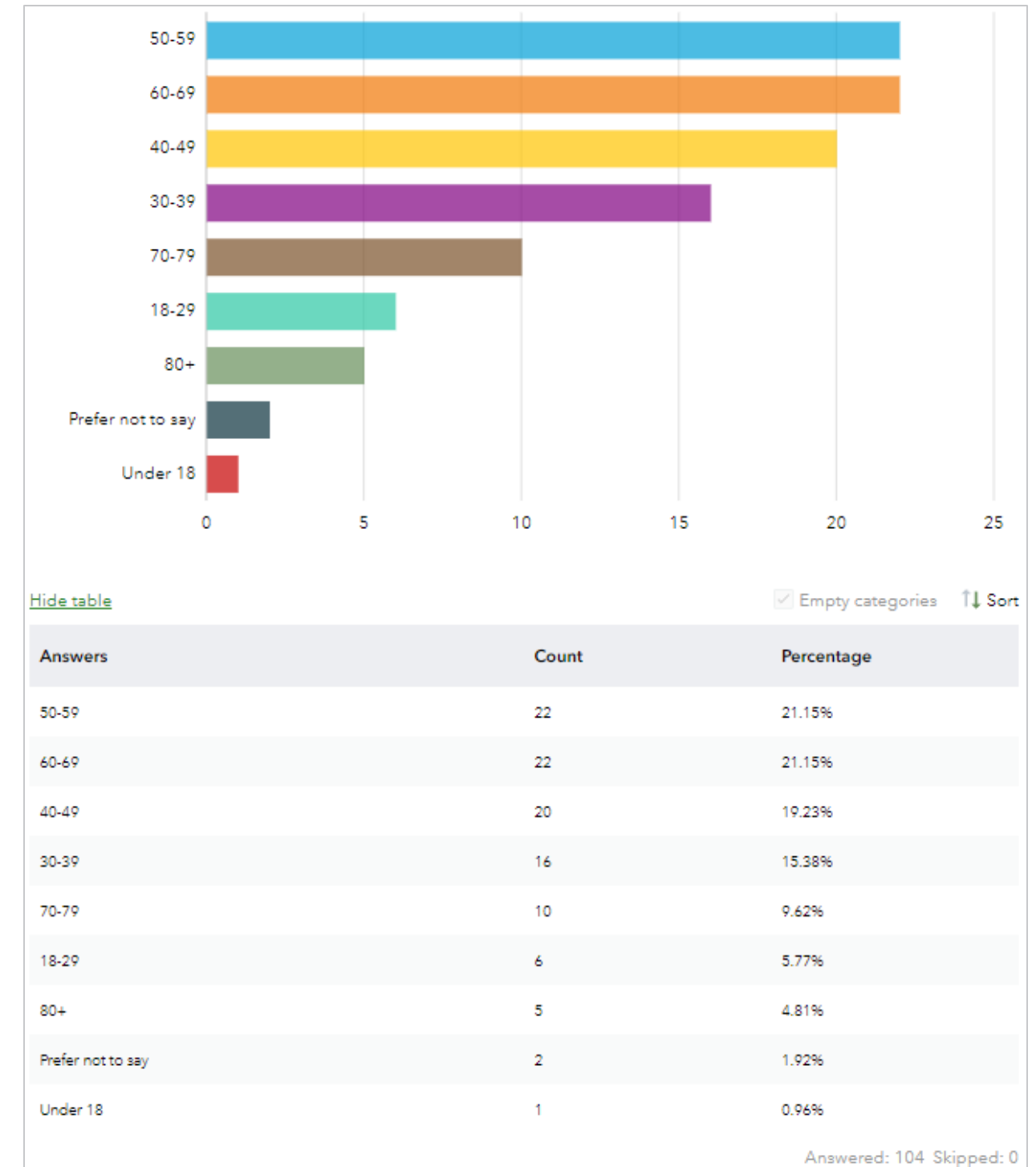
Response	Count
22656	3
25413	1
22645	1
22620	1

Answered: 6 Skipped: 98

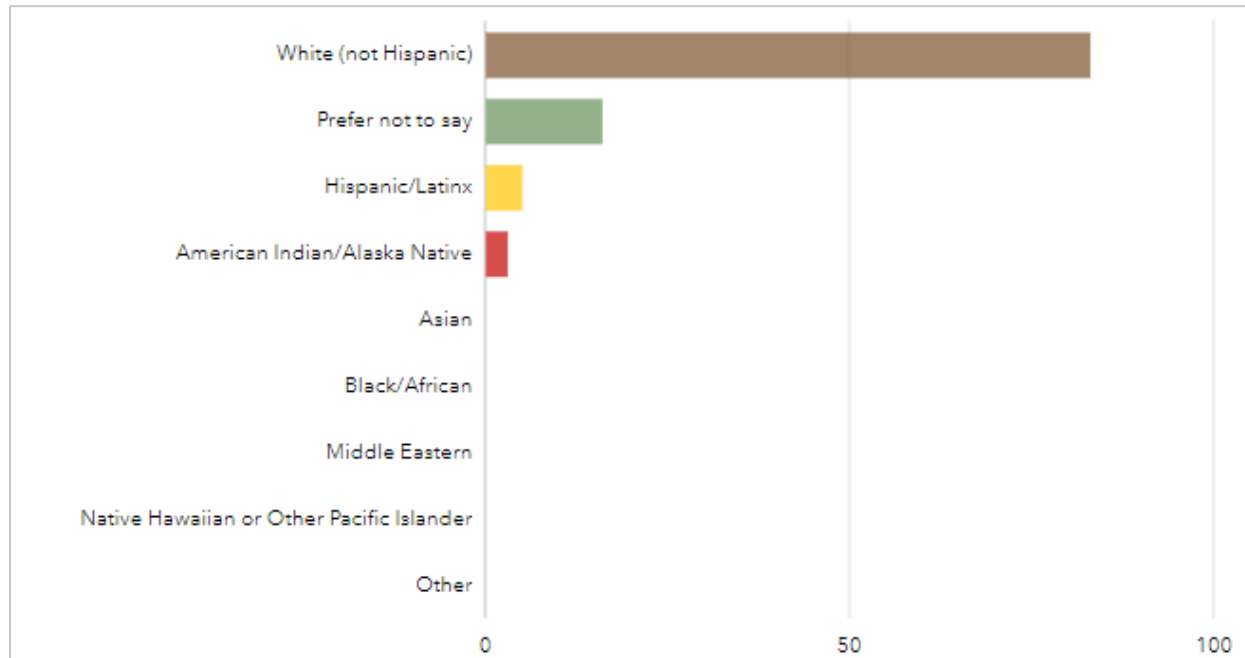
Do you use a wheelchair, cane, or other mobility device? (required)



What is your age? (required)



Which is your race/ethnicity? (required)

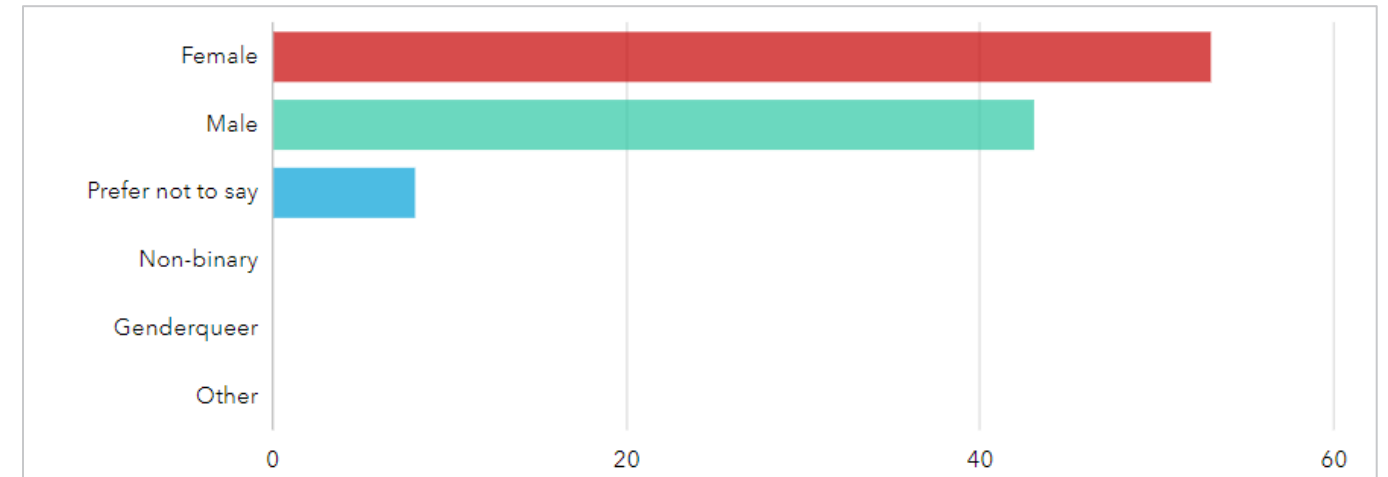


[Hide table](#)  Empty categories [Sort](#)

Answers	Count	Percentage
White (not Hispanic)	83	79.81%
Prefer not to say	16	15.38%
Hispanic/Latinx	5	4.81%
American Indian/Alaska Native	3	2.88%
Asian	0	0%
Black/African	0	0%
Middle Eastern	0	0%
Native Hawaiian or Other Pacific Islander	0	0%
Other	0	0%

Answered: 104 Skipped: 0

Which gender do you most identify with? (required)

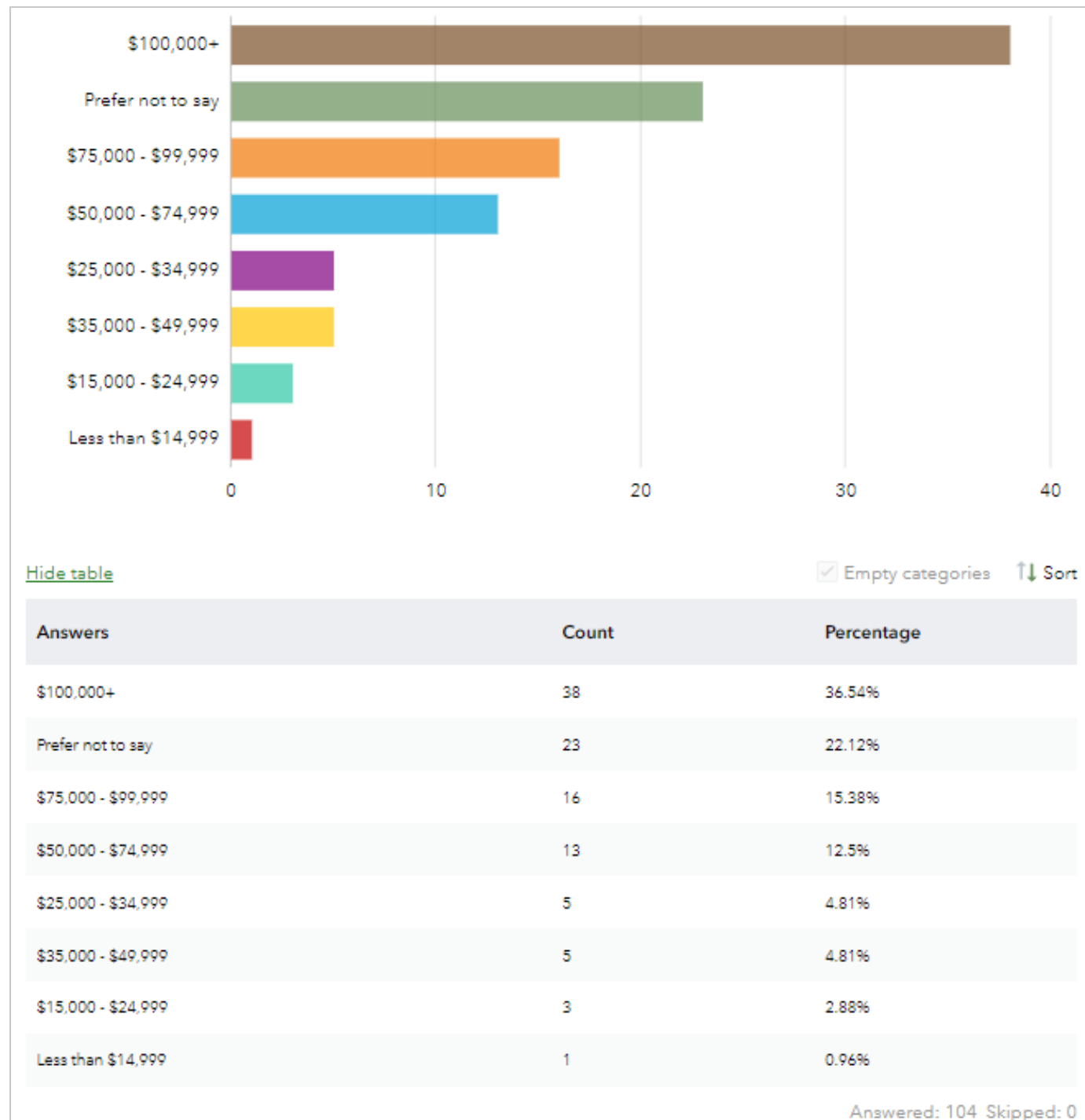


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Answers	Count	Percentage
Female	53	50.96%
Male	43	41.35%
Prefer not to say	8	7.69%
Non-binary	0	0%
Genderqueer	0	0%
Other	0	0%

Answered: 104 Skipped: 0

What is your household income range? (required)



## WinFred SS4A Action Plan In-Person Public Engagement

Public Engagement activities for the WinFred SS4A Action Plan commenced in November 2023, with three consecutive pop-up events. By engaging people where they are, pop-up events are a quick way of hearing from community members. They are typically held within the study area at accessible and heavily trafficked public locations or pre-organized community events.

For this project, pop-ups were planned at a mix of formal and informal locations in Winchester City. This included: the Frederick County Transportation Forum, an open house at the County Administration Building that invited residents to provide feedback on various active projects; a bus transfer station served by the local transit agency, WinTran; and Handley Regional Library, which caters to Winchester City, Frederick County, and Clarke County from a historic Beaux-Arts style building in Old Town.

These locations, informed by the project’s commitment to equity, were chosen to reach a wide range of residents across age, gender, race, ethnicity, and abilities (detailed in the *‘Underserved Communities Screening Report’*). Care was taken to ensure ADA accessibility (as required by the Americans with Disabilities Act, 1990 and the WinFred MPO & NSVRC Title VI Plan), and translation services at Handley Library, which is frequented by members of the region’s Hispanic population.

TABLE 1: Project Pop-up Events, November 2023

Event	Date	Time	Location	Number of Comments
Transportation Forum	Thursday, November 16, 2023	6.00 - 8.00 PM	Frederick County Administration Building, 107 N Kent St, Winchester City	15
Pop-up #1*	Friday, November 17, 2023	11.00 AM - 1.00 PM	WinTran Transfer Station, N Kent St and E Boscawen St, Winchester City	5

\*Due to smoke from unforeseen wildfires in Shenandoah National Park, a “Code Orange” Air Quality Alert was active in Winchester City during the pop-up events. This impacted attendance the day of Pop-up #1, as it was held outdoors.

Pop-up #2	Saturday, November 18, 2023	10.30 AM – 1.30 PM	Handley Library, 100 W. Piccadilly St., Winchester City	38
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## Pop-up Materials and Process

The pop-ups featured **two large maps (one showing the entire area of Frederick County, another zoomed into Winchester City and the Town of Stephens City); a large comment board; and numbered sticky notes and sticky dots** to interact with the public. The sticky notes and sticky dots were color coded by travel mode such that:

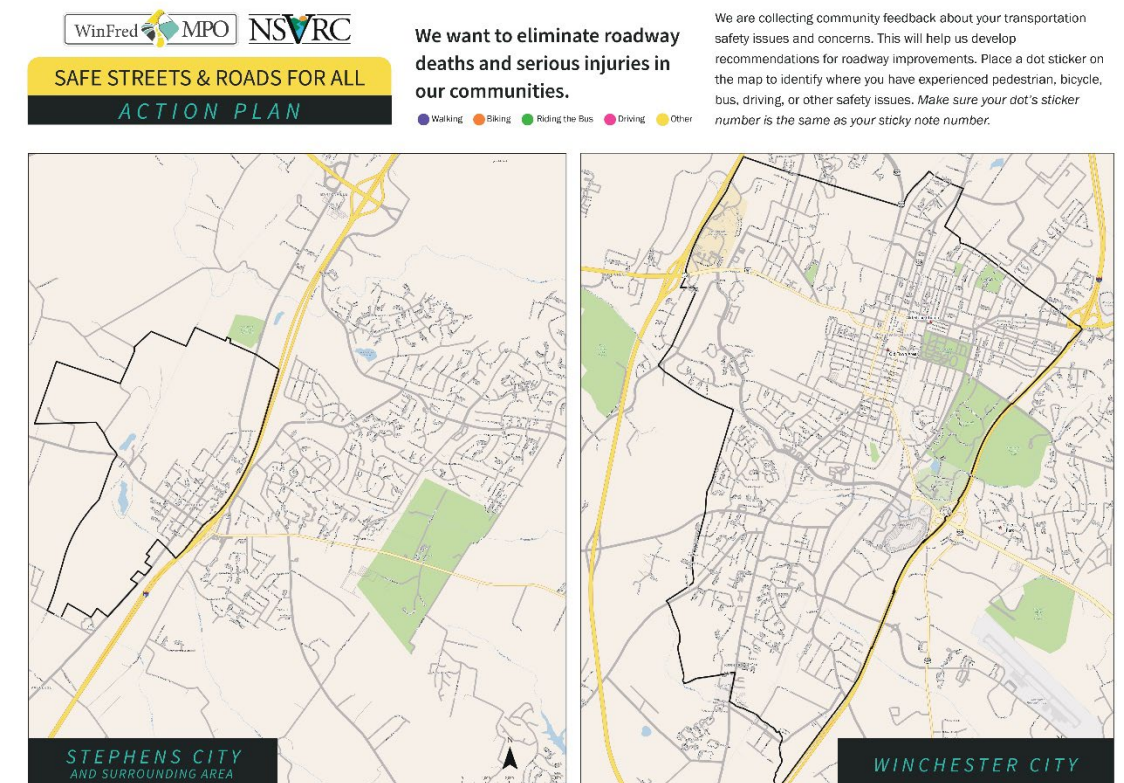
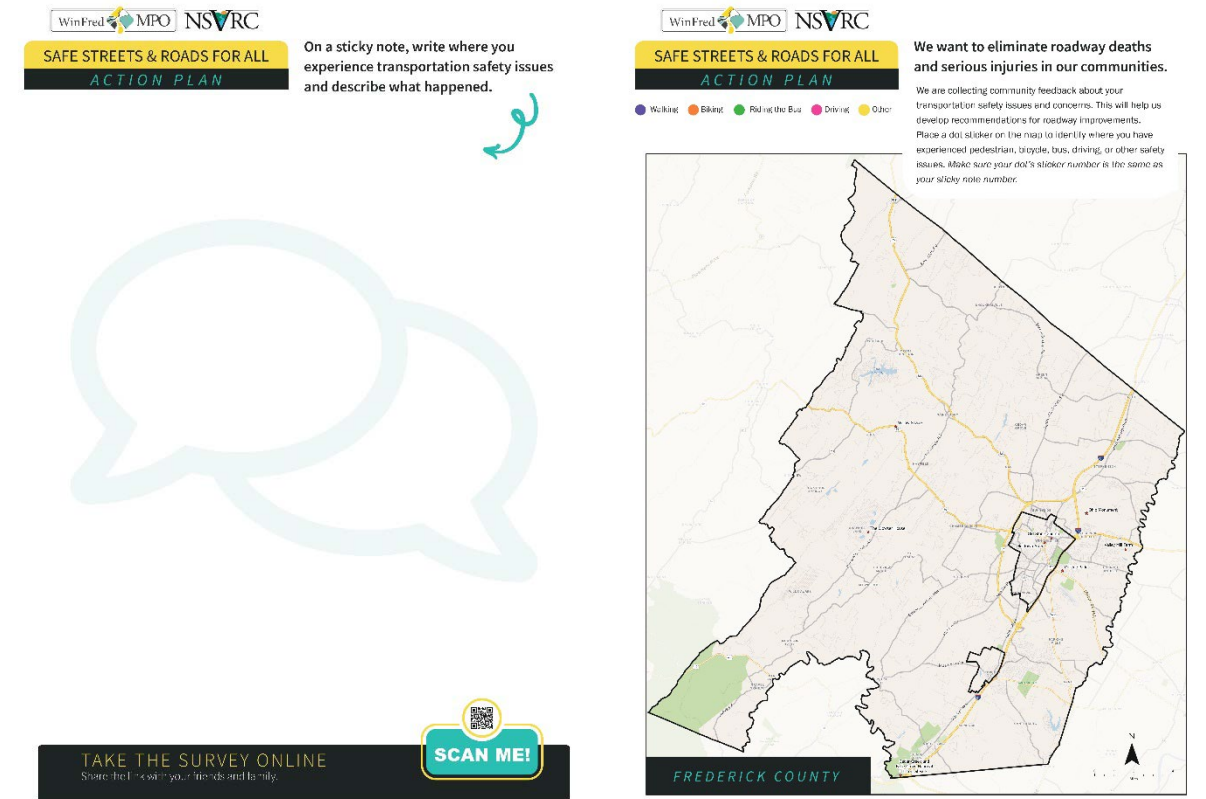
- **Blue** corresponded with **“Walking.”**
- **Orange** corresponded with **“Biking.”**
- **Pink** corresponded with **“Driving.”**
- **Green** corresponded with **“Riding the Bus.”**
- **Yellow** corresponded with **“Other.”**

Passers-by were informed about the project purpose, asked about their concerns with traffic safety in the study area, and requested to locate their “pain points” on the two maps with a relevant sticky dot. Participants’ descriptions of traffic safety concerns were written on sticky notes (matched to the color and number of their sticky dot) and pasted on the comment board.

Those who could not stop for a conversation were given a Fact Sheet with a summary of the project, details of upcoming events, a link to the e-Survey, and MPO/NSVRC contact information. Fact Sheets were printed in both English and Spanish and given to passers-by after confirming their language preference. Participants and passers-by were also offered giveaways consistent with the WinFred MPO brand, including pens, hand sanitizers, and compact coloring books for children.

To ensure that people from all backgrounds could be involved with the pop-up activities, prior arrangements were made with the MPO/NSVRC to staff a Spanish-language interpreter at the Handley Library event on November 18, 2023. The event was also promoted via the MPO using Social Media Posts in English and Spanish, guided by a Social Media Plan.

## Pop-up Boards



## Pop-up Results

The project received a total of **58 comments** across all three days, each of which identified multiple traffic safety issues.

A total of **150 English Fact Sheets** and **75 Spanish Fact Sheets** were distributed to passers-by, pinned at public locations, and handed for further distribution to local business-owners and officials from the MPO/NSVRC project team.

On successful completion of the pop-ups, all comments received were photographed, archived, and transcribed for project records. The comments have been further collated below by the number of times a particular “Safety Concern” (Table 2) or “Location” (Table 3) was mentioned in comments.

### Safety Concerns

The **top three** concerns regarding traffic safety emerged as:

#### 1. Challenging Roadway Configurations

- Conflicting and confusing geometries at highway on-and-off-ramps and street intersections.
- Narrow lanes, or high-speed arterials where the number of lanes abruptly reduce.
- Commercial land uses clustered at highway intersections create traffic circulation conflicts.
- Poor lines of sight on roadways.

#### 2. Lack of Safe Spaces to Walk and Cross the Street

- Poor quality of existing sidewalks.
- No sidewalks and/or narrow shoulders on streets in residential areas.
  - This also cuts off access to neighborhood parks and amenities.
- Conflicts between pedestrian and vehicular circulation, especially on roads with heavy freight traffic.
- Poorly designed pedestrian crossings, including faded crosswalks, defunct/minimally functional pedestrian signals.
- Missing/poor pedestrian infrastructure at school bus stops that make it dangerous for children to cross busy arterial/collector streets with high-speed traffic.

### 3. Poor Driver Behavior

- Driving beyond the speed limit.
- Running stop signs at intersections.
- Driving the wrong way.

Safety concerns noted in the “**Other**” category include:

- Upcoming developments (PUDs) in parts of the City and County are anticipated to increase traffic congestion and create safety risks.
- The need for reflective strips along painted road lanes to improve visibility at night.

TABLE 2: Feedback Organized by Safety Concern and Mode of Travel

Safety Concern	Number of Mentions					Total Number of Mentions
	Walking	Biking	Driving	Riding the Bus	Other	
Challenging Roadway Configurations	4	2	17	1	0	24
Lack of Safe Spaces for Walking	15	1	1	1	0	18
Poor Driver Behavior	6	1	8	0	0	15
Lack of Safe Places to Cross the Street	6	0	0	1	0	7
Lack of Safe Spaces for Biking	1	5	0	0	0	6
Other	3	0	0	0	3	6
Conflicts with Truck Traffic	1	1	1	0	0	3
Lack of ADA-Accessibility on Streets	0	0	0	0	0	0
Poorly Maintained Roads	0	0	0	0	0	0

### Location Concerns

The **top five** locations that recurred as pain points for traffic safety were:

#### 1. Senseny Road

- Narrow roads and insufficient/missing shoulders.
- Sidewalks not safely levelled for bike-ped users.
- Speeding traffic.

## 2. Interstate 81

- Challenging road configurations and poor driver behavior at on-and-off-ramps, such as slopes constructed awkwardly at Exit 317 and wide junctions at Redbud Road.
- Abrupt lane reductions at interchanges, specifically where I-81 meets Route 11.
- Placement of commercial land uses at the I-81 and Route 7 interchange creates conflicts between traffic turning and traffic continuing straight.

## 3. Pleasant Valley Road

- Improper traffic signal length and coordination, specifically for vehicular turn lights and pedestrian “walk” signals.
- Defunct/minimally functional pedestrian signals, especially near land uses that generate higher volumes of pedestrian footfall, such as schools, universities, and restaurants.
- Speeding traffic, especially through green signals at intersections where community facilities are located, such as schools and post offices.

## 4. Route 11 (Valley Ave)

- Confusion at interchanges, especially with Route 37 and 522.
- Roadway configuration, traffic volume, and speed of Route 11 through Winchester City (known as Valley Ave south of Old Town) is incompatible with adjacent land uses.
  - Conflicts for children crossing the street to access school bus routes.
  - Lack of safe bike-ped access to parks and amenities around residential neighborhoods

## 5. The Walking Mall Area in Old Town, Winchester City

- Conflicts between pedestrian and vehicular circulation around the Walking Mall.
  - Automobiles driving through high-volume pedestrian areas interrupt pedestrian movement, especially at the edges of the Walking Mall around Indian Alley and Boscawen St.
  - Missing direct and exclusive pedestrian access from the Walking Mall to nearby parking lots.

TABLE 3: Feedback Organized by Location and Mode

Location	Number of Mentions					Total Number of Mentions
	Walking	Biking	Driving	Riding the Bus	Other	
<b>Senseny Rd</b>	4	3	11	-	-	<b>9</b>
<b>I-81</b>						<b>8</b>
• I-81 at Exit 317	-	1	2	-	-	3
• I-81 & Route 7	-	-	2	-	-	2
• I-81 & Route 11	-	-	2	-	-	2
• I-81, Route 37 & Route 11	-	-	1	-	-	1
<b>Route 11</b>						<b>8</b>
• Route 11 & Battle Park Drive	-	-	-	1	-	1
• Route 11 & Route 522	-	-	1	-	-	1
<b>Valley Ave (Rt 11 within Winchester City)</b>						<b>3</b>
• Valley Ave & Cedar Creek Grade	1	-	-	-	-	1
• York Ave off Valley Ave	1	-	-	-	-	1
• Through Old Town	1	-	-	-	-	1
<b>Pleasant Valley Rd</b>						<b>5</b>
• Pleasant Valley Rd & Jubal Early Ave	1	-	2	-	-	3
• Pleasant Valley Rd & Millbrook Ave	1	-	-	-	-	1
• Pleasant Valley Rd, Battle Ave & Virginia Ave	-	-	1	-	-	1
<b>Old Town and Walking Mall Area</b>	<b>1</b>					<b>5</b>
• Cameron St & Piccadilly St	-	-	-	-	1	1
• Southeast Lane	1	-	-	-	-	1
• Indian Alley	1	-	-	-	-	1
• Boscawen St	1	-	-	-	-	1
<b>Valley Mill Rd</b>	<b>1</b>					<b>2</b>

Route 522, Southbound	1	1	1	-	-	1
Redbud Road	-	-	1	-	-	1
Burnt Factory Rd to Woods Mill Rd	-	-	1	-	-	1
Kent St	1	1	1	-	-	3
Bedford & Fredericktown St	1	-	1	-	-	2
Back Mountain Rd (near Clowser House)	-	-	1	-	-	1
Spring St	-	-	-	-	1	1
Main St & Route 277	-	-	1	-	-	1
Near Greenwood Mill Elementary School	-	-	1	-	-	1
E Leicester St	-	-	1	-	-	1
Abrahams Creek Drive & Ricketts Drive	-	1	-	-	-	1
East Pall Mall St	1	-	-	-	-	1
Mall Rd (behind Apple Blossom Mall)	1	-	-	-	-	1
Whitacre St (near Winchester Medical Center)	1	-	-	-	-	1

Pop-up Events





**SAFE STREETS & ROADS FOR ALL**  
**ACTION PLAN**

On a sticky note, write where you experience transportation safety issues and describe what happened.



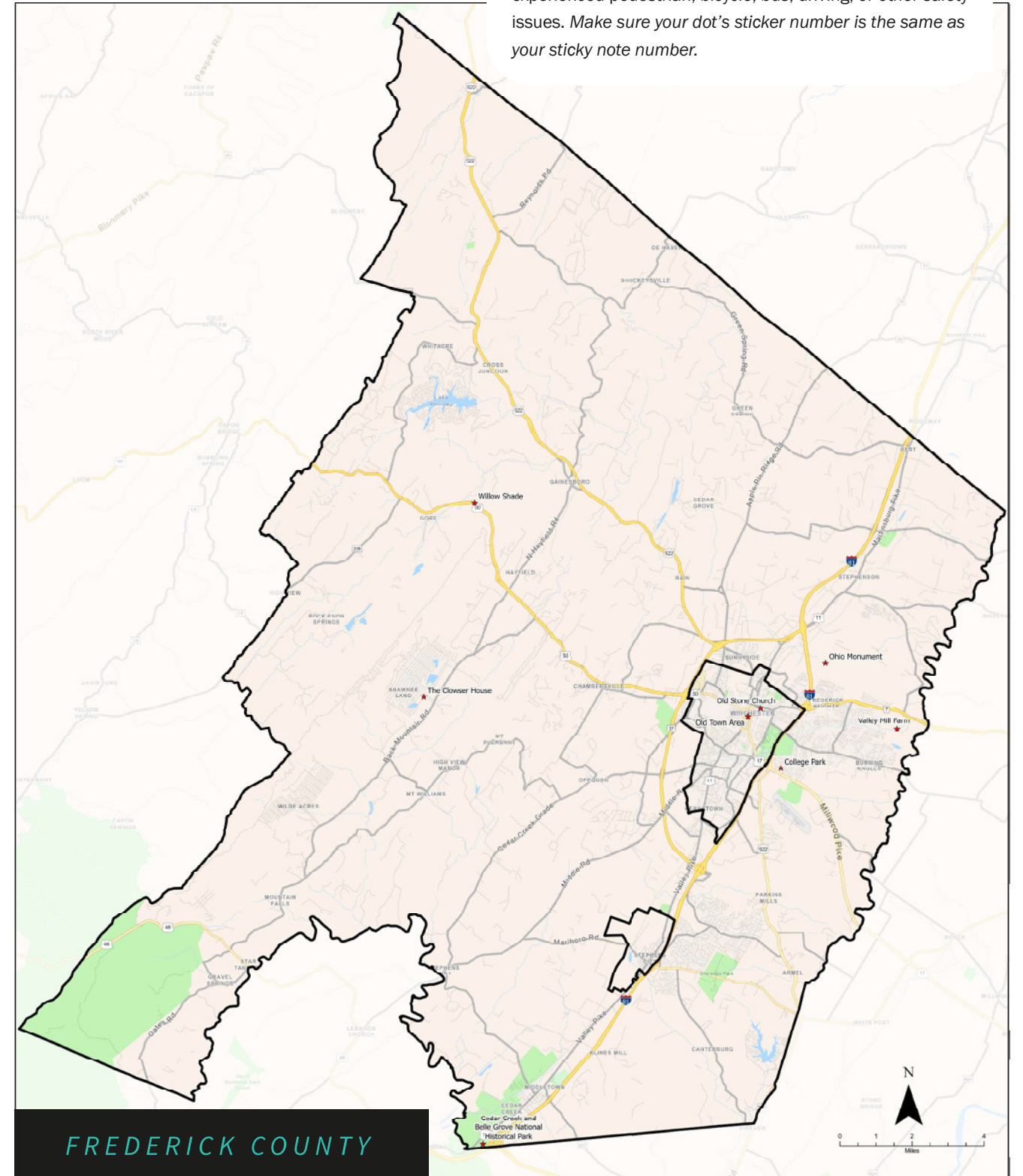
**TAKE THE SURVEY ONLINE**  
 Share the link with your friends and family!

**SAFE STREETS & ROADS FOR ALL**  
**ACTION PLAN**

- Walking
- Biking
- Riding the Bus
- Driving
- Other

**We want to eliminate roadway deaths and serious injuries in our communities.**

We are collecting community feedback about your transportation safety issues and concerns. This will help us develop recommendations for roadway improvements. Place a dot sticker on the map to identify where you have experienced pedestrian, bicycle, bus, driving, or other safety issues. *Make sure your dot's sticker number is the same as your sticky note number.*



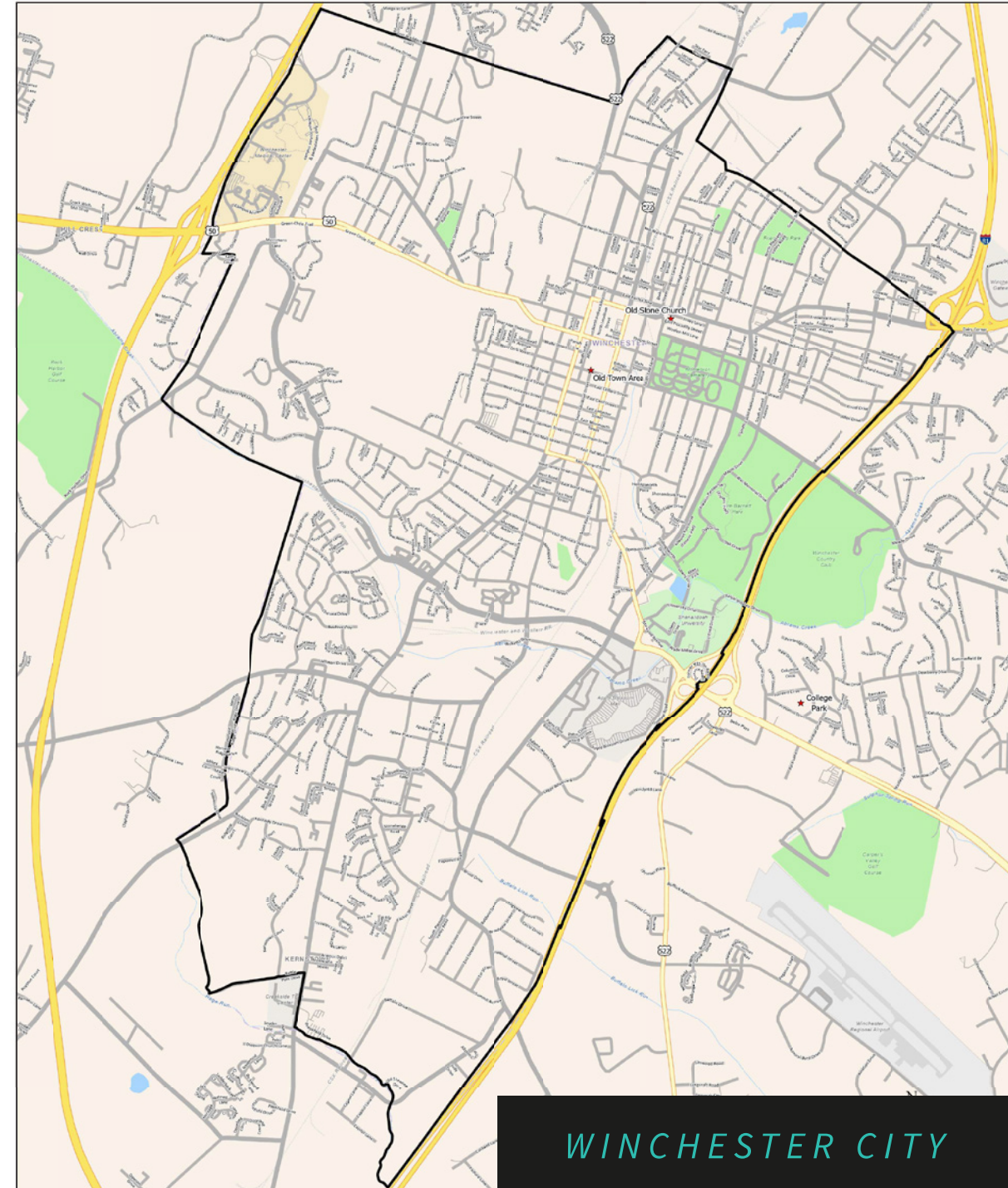
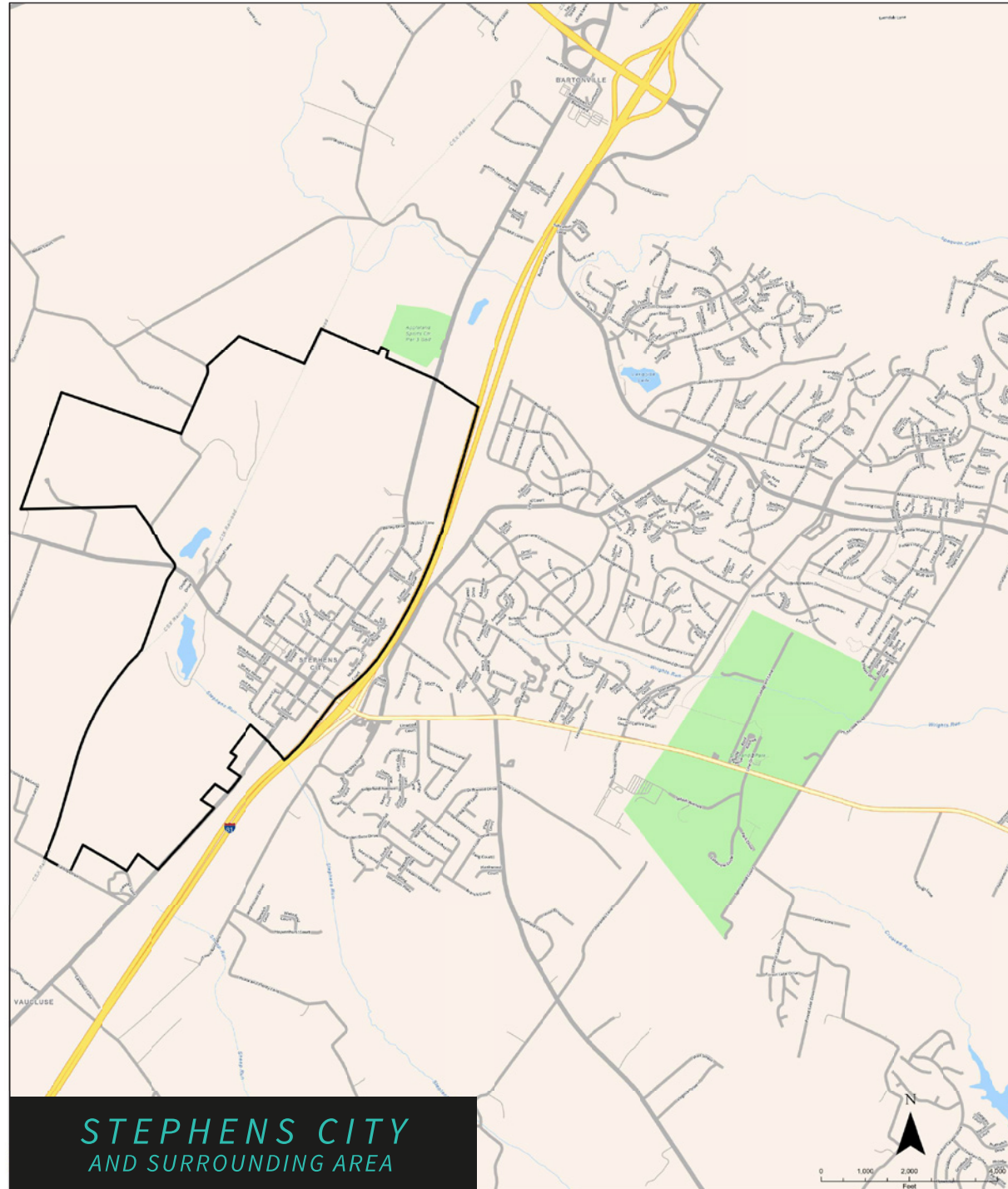
**FREDERICK COUNTY**

**SAFE STREETS & ROADS FOR ALL**  
**ACTION PLAN**

**We want to eliminate roadway deaths and serious injuries in our communities.**

- Walking
- Biking
- Riding the Bus
- Driving
- Other

We are collecting community feedback about your transportation safety issues and concerns. This will help us develop recommendations for roadway improvements. Place a dot sticker on the map to identify where you have experienced pedestrian, bicycle, bus, driving, or other safety issues. *Make sure your dot's sticker number is the same as your sticky note number.*



## WinFred MPO SS4A: Virtual Public Forum

### Summary

January 17, 2024

MS Teams

6:30 – 7:30 p.m.

Total Number of Registrants: 27

Total Number of Attendees: 24

Members of the Public: 13

Project Team Attendees: 11

#### WinFred MPO/NSVRC

Taryn Logan  
Diana Patterson (DSP  
Marketing and Consulting)

#### Leadership Commitment Committee (LCC)

John Bishop, Frederick  
County  
Perry Eisenach, City of  
Winchester  
Adam Campbell, VDOT  
Brad Reed, VDOT

#### McCormick Taylor

Alexandra Castrechini  
Andrew Getch  
Christina Arlt  
Erika Morgan  
Riddhi Batra

The Virtual Public Forum (VPF) opened with a welcome by Taryn Logan of the Northern Shenandoah Valley Regional Commission, who explained the Safe Streets and Roads for All (SS4A) program and described the Action Plan as a precursor for implementation grant applications. Taryn introduced the Leadership Commitment Committee (LCC) as local government officials and technical experts providing project oversight, as well as Diana Patterson, the MPO’s Spanish-language translator. Thereafter, Alex Castrechini introduced members of McCormick Taylor’s consultant team, walked through the VPF agenda, and turned the presentation over to Erika Morgan.

Erika explained the basics of managing MS Teams functions, such as muting/unmuting, raising/lowering hand, turning camera on/off, posting a message in the chat, and navigating interactive polls. This was followed by the first interactive poll, which asked participants to “select their primary mode of travel.” All participants who voted selected “car/carpool/rideshare.”

Using an interactive word cloud, Erika Morgan and Riddhi Batra asked participants to “guess how many crashes occur on average in the study area.” After nine guesses came in, ranging from “3” to “54,” Erika revealed that an average of five crashes occur everyday in the study area, based on a total of 8,728 crashes from 2017 to 2021. Subsequently, Erika went over the overarching components of an SS4A Action Plan, explaining it to be a planning study rather than an implementation plan, introduced a map of the study area, and shared the project timeline, stating that it was due for completion by April 2024.

Following this overview, Andrew Getch explained the project’s Safety Analysis to participants. He presented maps showing a High-Injury Network (higher than average rate of fatalities and severe

injuries), equity considerations (evaluating underserved communities), and the development of a map that identifies areas of high fatalities and serious injuries as “hot spots,” which will inform the prioritization of recommended safety upgrades.

The presentation paused to ask participants to share “which roads, intersections, or areas they think are unsafe,” the results of which have been summarized below (Table 1). After a brief discussion, Erika explained the Action Plan’s public engagement activities to date and highlighted ways in which the public could get involved: by taking and sharing the electronic survey and project fact sheet, following project updates on WinFred MPO’s social media, and keeping an eye out for further public engagement activities in the Spring. The Forum was then opened for an audience Question and Answer session, moderated by Christina Arlt.

## VPF Results

### Safety Concerns

A total of **33 unique comments** relating to traffic safety concerns were received from participants during the open-ended poll and Q&A session. The top three safety issues that emerged were:

#### 1. Challenging Roadway Configurations

- Conflicting and confusing geometries at highway on-and-off-ramps and street intersections.
- Commercial and residential land uses at intersections create traffic circulation conflicts.
- Roadway capacity is insufficient and/or roadway designs are not appropriate for increasing traffic volume and congestion.
- Lack of road markers to indicate “wrong way” driving, especially at night.

#### 2. Poor Driver Behavior

- Driving over the speed limit.
- Racing through green lights.
- U-turns on busy roads

#### 3. Lack of Safe Spaces for Walking and to Cross the Street

- Non-existent or poor-quality pedestrian infrastructure.
- Poor lines of sight on roadways, especially at night.
- Conflicts between land uses that generate high pedestrian traffic (senior center, farm market), traffic volume, and pedestrian crossing designs.

Table 1: Feedback Organized by Safety Concern and Mode of Travel

Safety Concern	Number of Mentions		Total Number of Mentions
	Driving	Walking/Biking	
Challenging Roadway Configurations	13	2	15
Poor Driver Behavior	9	1	10
Lack of Safe Spaces for Walking	4	5	9
Lack of Safe Places to Cross the Street	4	3	7
Lack of Safe Spaces for Biking	4	2	6
Conflicts with Truck Traffic	5	0	5
Lack of ADA-Accessibility on Streets	1	0	1
Poorly Maintained Roads	1	0	1
Not Described	10	3	13

**Location Concerns**

The top three locations that were cited as unsafe with regards to traffic mobility were:

1. **Interstate 81**
  - Challenging road configurations and poor driver behavior on-and-off-ramps, specifically at the Route 7, Route 50, Route 37, and Route 11 interchanges.
  - Increasing traffic volume and congestion around Redbud Road, due to an increase in development.
2. **Cedar Creek Grade & Stoneridge Road**
  - Vehicle speeds over the legal limit.
  - Conflicts with truck traffic and commuter traffic.
  - Conflicts with existing land use (an assisted living facility), and proposed developments (single-family housing) that is anticipated to increase traffic volume and congestion.
  - The installation of a traffic signal or roundabout was proposed by several participants.
3. **Jubal Early Drive**
  - Difficulties at all intersections, specifically with Pleasant Valley Road, Loudon Street, Valley Ave, and Harvest Drive.

Table 2: Feedback Organized by Location Concern and Mode of Travel

Location Concern	Number of Mentions		Total Number of Mentions
	Driving	Walking/Biking	
<b>I-81</b>	<b>8</b>	<b>1</b>	<b>9</b>
• I-81 & Route 7	2	-	2
• All interchanges between I-81 & Route 50	1	-	1
• I-81 & Route 7	2	-	2
• I-82 & Route 37 (at Redbud Rd)	1	-	1
• I-81, Route 37, & Route 11	2	-	2
• I-81, around Alamo shopping area	-	1	1
<b>Cedar Creek Grade &amp; Stoneridge Rd</b>	<b>6</b>	<b>-</b>	<b>6</b>
• Cedar Creek Grade & Harvest Dr	1	-	1
<b>Jubal Early Dr</b>	<b>6</b>	<b>-</b>	<b>6</b>
• Jubal Early Dr & Pleasant Valley Rd	2	-	2
• Jubal Early Dr & Loudon St	1	-	1
• Jubal Early Dr & Valley Ave	1	-	1
• Jubal Early Dr & Harvest Dr	-	-	0
• Any intersections along Jubal Early Dr	2	-	2
<b>County Rd 660</b>	<b>2</b>	<b>-</b>	<b>2</b>
• Woods Mill Rd & Route 7	1	-	1
<b>Route 522</b> (from Sunnyside to Route 37)	<b>2</b>	<b>-</b>	<b>2</b>
<b>Senseny Road</b> (Greenwood Rd to Cork St)	<b>1</b>	<b>1</b>	<b>2</b>
<b>Fox Drive</b>	<b>0</b>	<b>2</b>	<b>2</b>
• Fox Drive, Route 522, & Route 37	-	1	1
<b>Pleasant Valley Rd &amp; National Ave</b>	<b>1</b>	<b>-</b>	<b>1</b>

Location Concern	Number of Mentions		Total Number of Mentions
	Driving	Walking/Biking	
Rt 7 & Valley Mill Rd	1	-	1
Back Mountain Rd	1	-	1
Routes 50 & 52	1	-	1
Route 7, 17, & 50	1	-	1
Region-wide Concerns	1	3	4

**Additional Concerns**

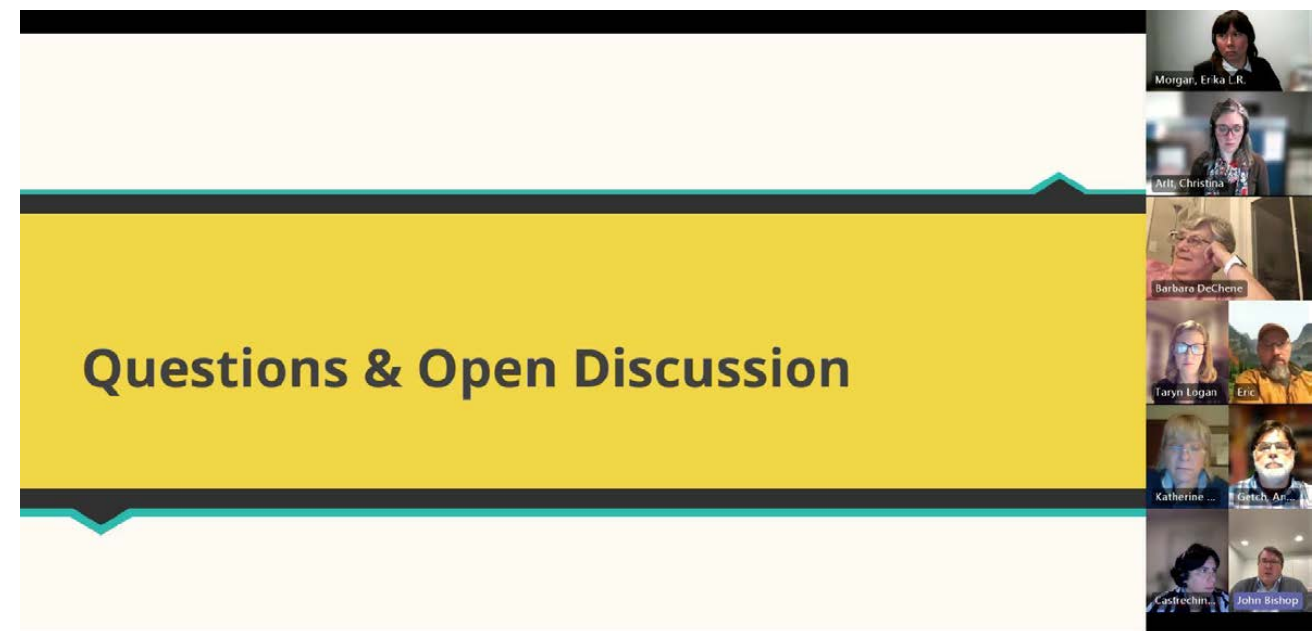
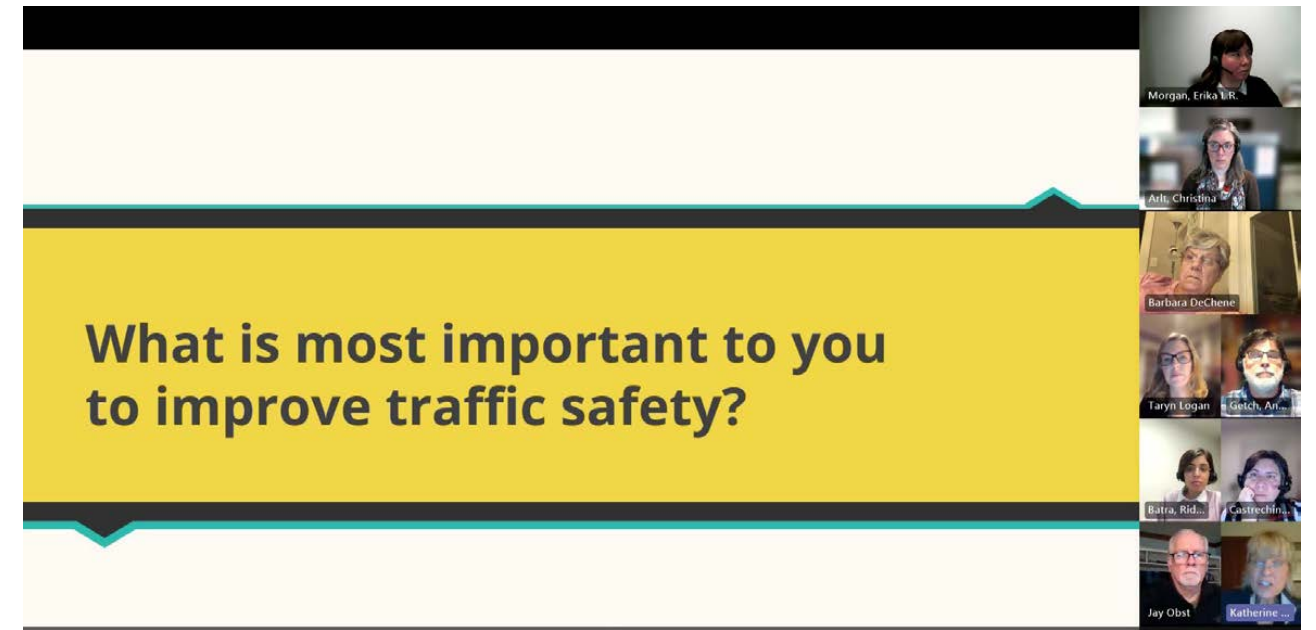
When asked in a fourth interactive poll to “rank seven options in order of how important they are to improve traffic safety,” the top three priorities selected by participants were:

1. Slowing down speeding drivers.
2. Safer infrastructure to walk and cross the street.
3. Improved traffic law enforcement.

Participants also sought clarifications regarding the project structure and road safety action in the region. All concerns were addressed by members of the LCC. These included:

- The purpose of the Action Plan – whether it was to study high-crash areas or to fix them.
- The scope of the Action Plan – whether or not it was limited to “hotspot” or HIN regions.
- Ways to get involved and positively impact traffic safety in their communities while the Action Plan and other grants are in progress.
- Inquiries about the congestion alleviation on Route 37, which falls under the scope of the Eastern Frederick County Transportation Study (EFCTS).

Screenshots from Interactive Polling and Q&A Sessions During the Virtual Public Forum held on January 17, 2024



# SAFE STREETS & ROADS FOR ALL

## ACTION PLAN

### Virtual Public Forum

January 17, 2024

## Agenda

- What is the Safe Streets for All (SS4A) Action Plan?
- Safety Analysis
- Public Engagement
- Interactive Audience Polls, Q&A, and Feedback
- How Can You Get Involved?

## Meet the People Involved

### Northern Shenandoah Valley Regional Commission (NSVRC)

Taryn Logan  
*Project Lead*

### Leadership Commitment Committee (LCC)

John Bishop  
*Frederick County, VA*

Perry Eisenach  
*Winchester City, VA*

Brad Reed  
*VDOT*

### Leadership Commitment Committee (LCC) continued...

Adam Campbell  
*VDOT*

David Morris  
*VDOT*

Justin Hall  
*Winchester City, VA*

Kayla Peloquin  
*Frederick County, VA*

### McCormick Taylor

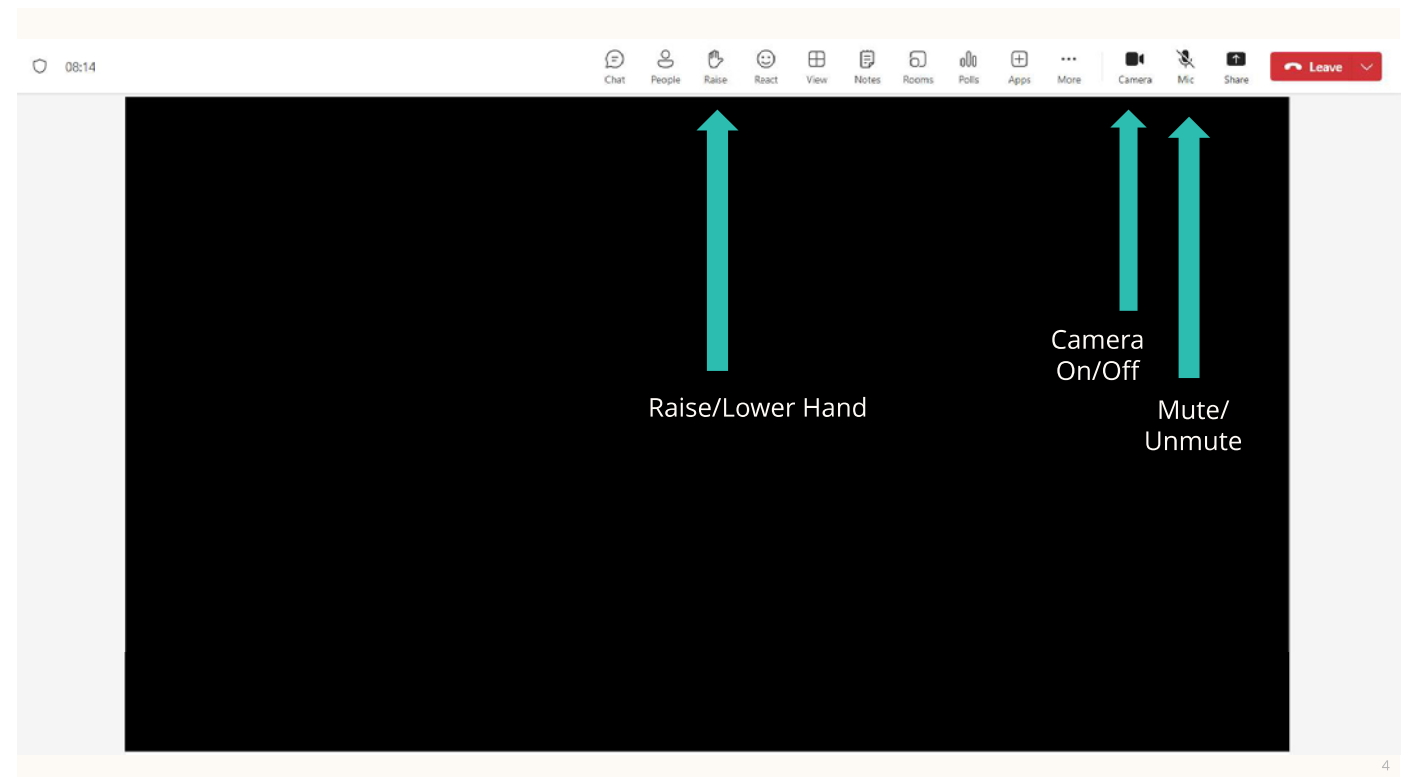
Alexandra Castrechini, P.E.  
*Project Manager*

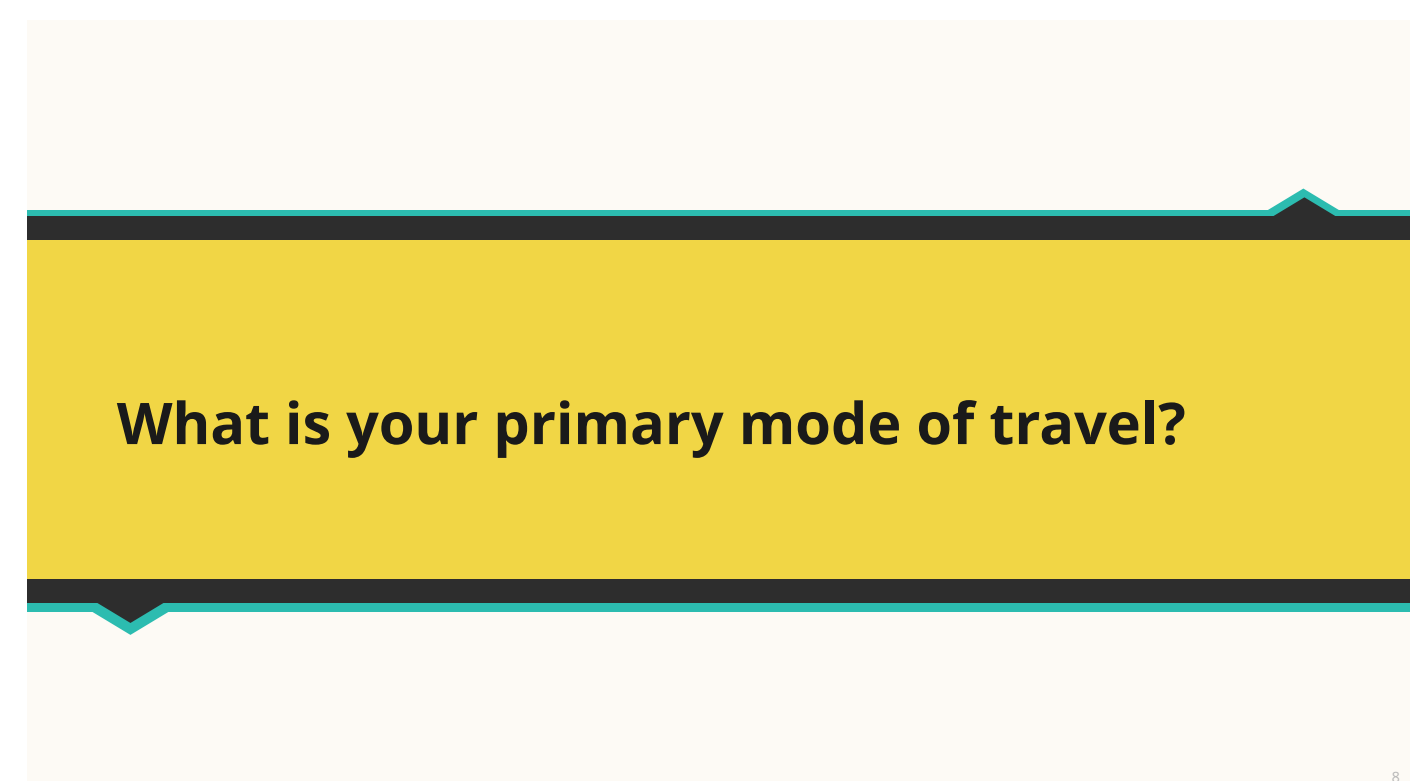
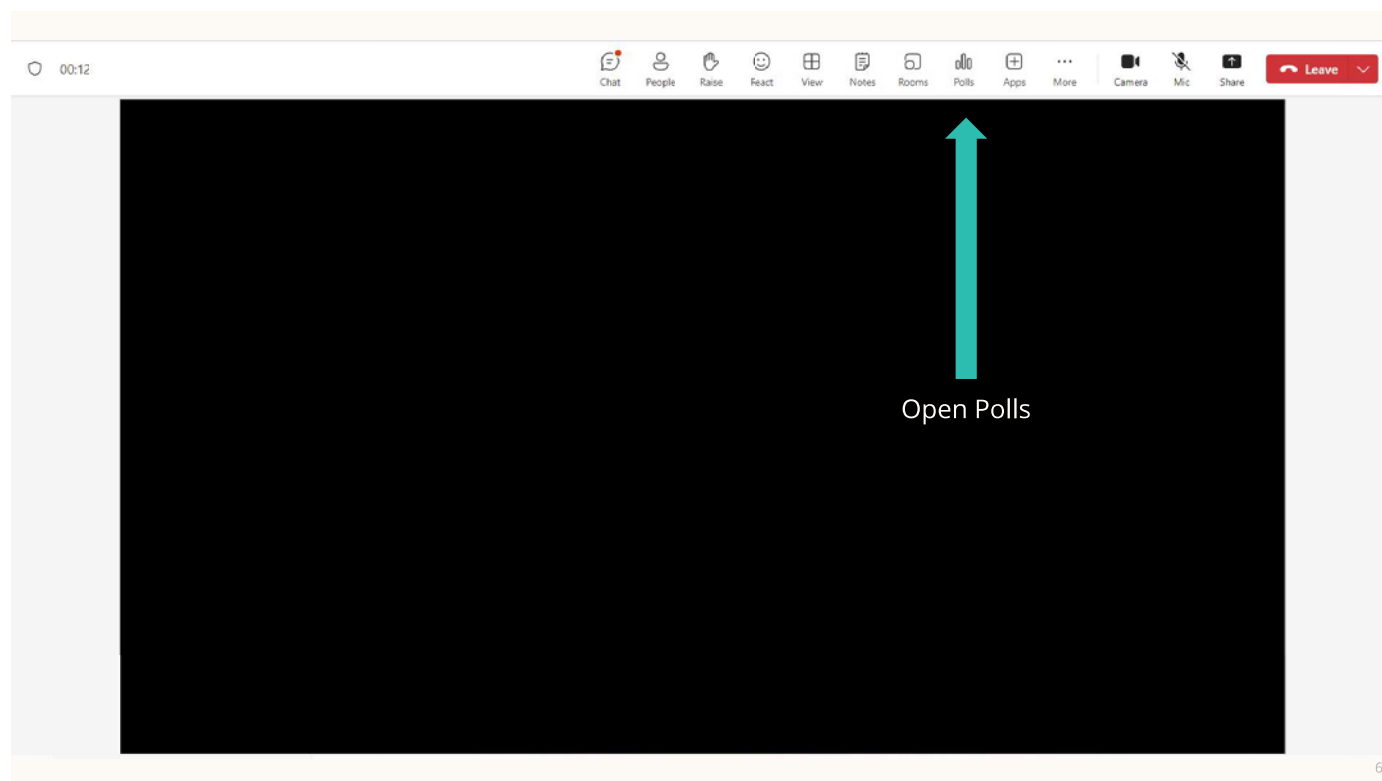
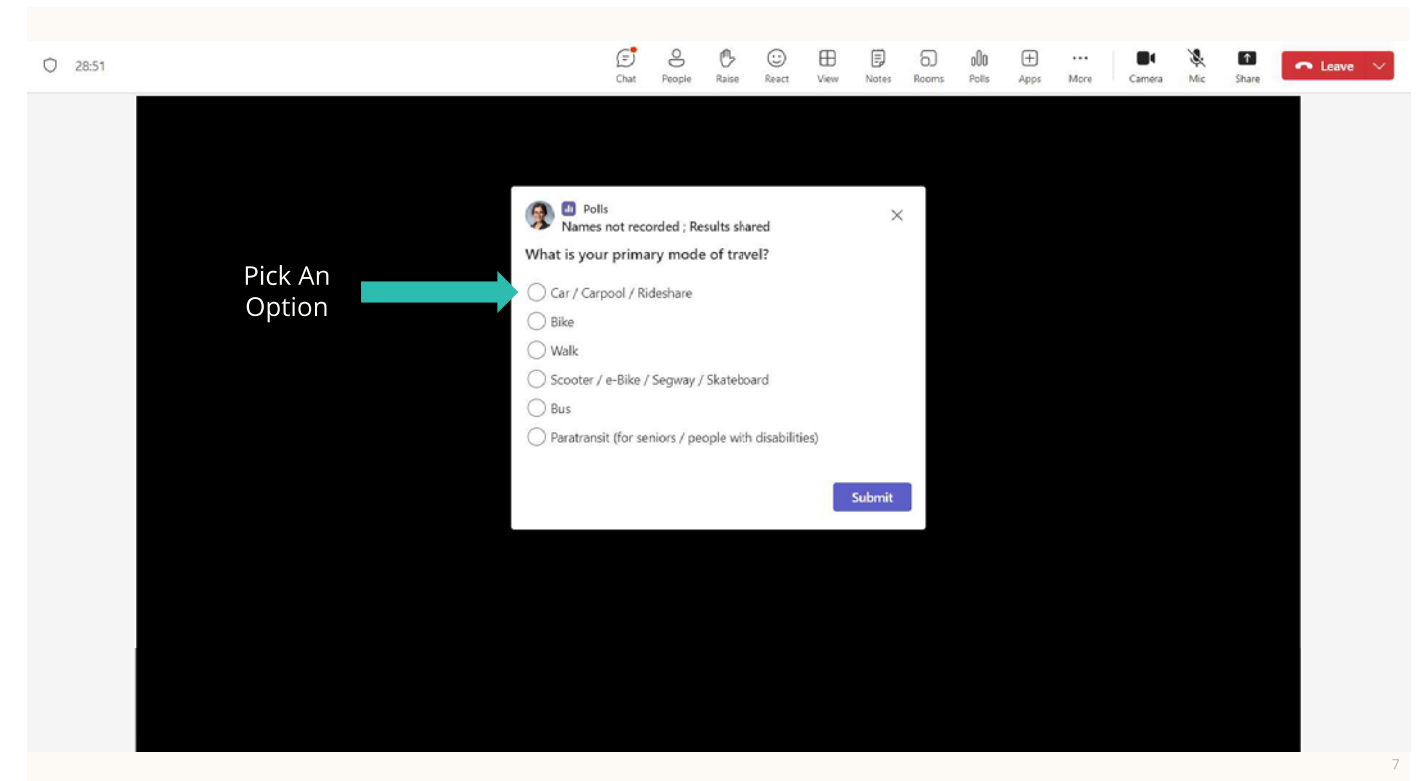
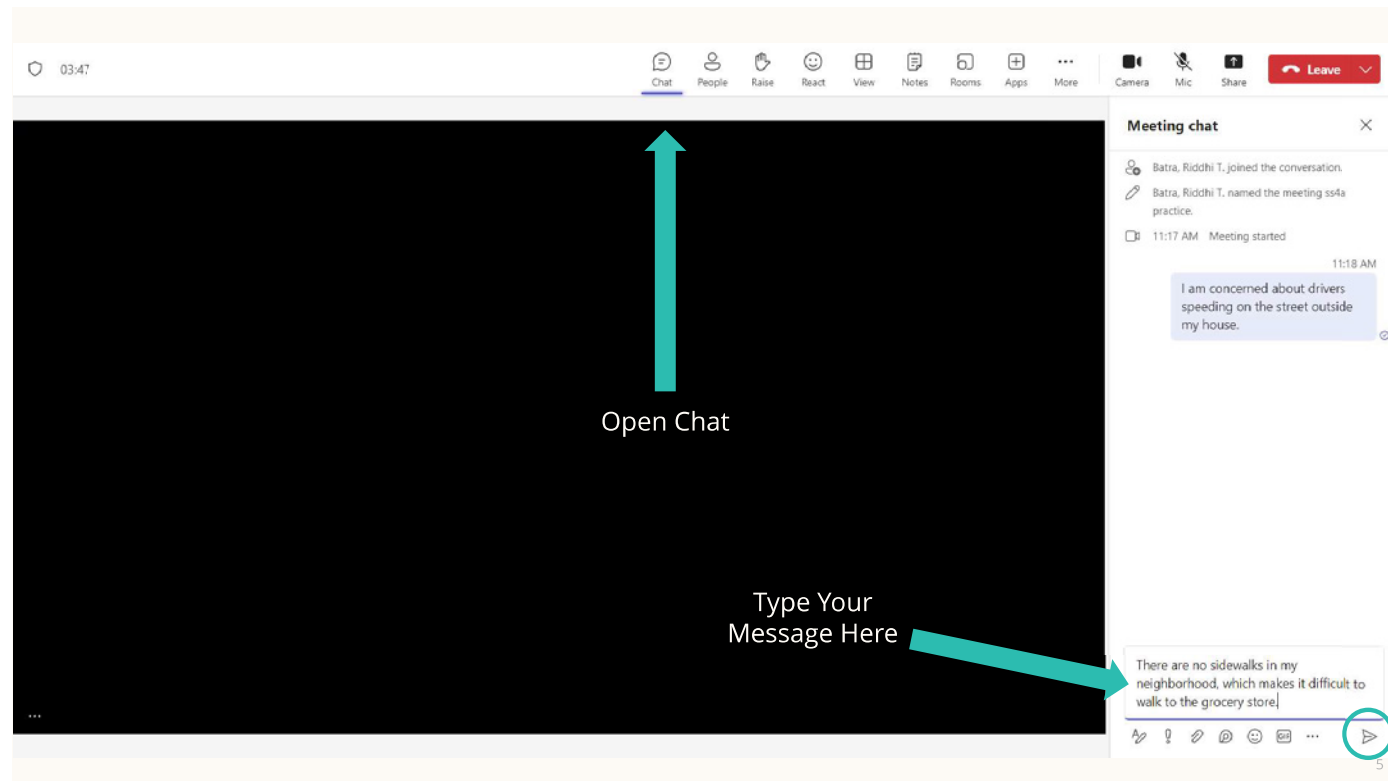
Andy Getch, P.E., ENV SP  
*Safety Analysis*

Christina Arlt, AICP  
*Planner, Public Engagement & Equity*

Erika Morgan, MCRP  
*Planner, Public Engagement & Equity*

Riddhi Batra, AICP  
*Planner, Public Engagement & Equity*

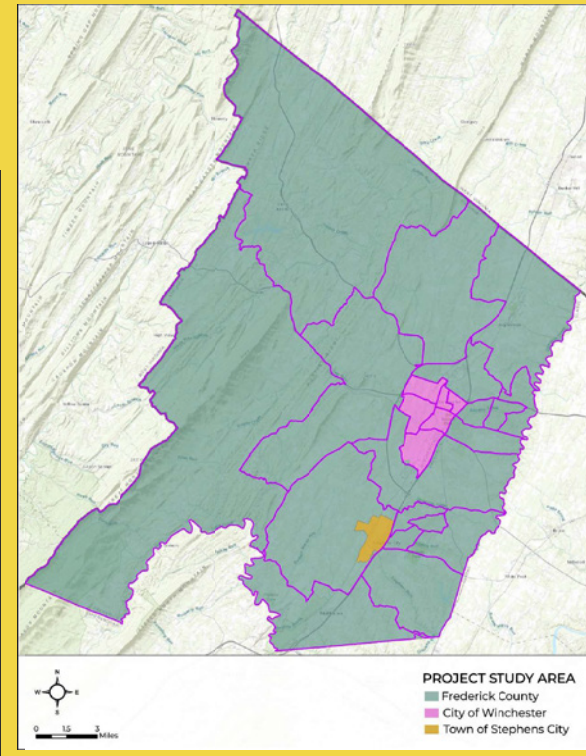




## Study Area

### Winchester-Frederick Metropolitan Planning Organization (WinFred MPO)

- Frederick County
- City of Winchester
- Town of Stephens City



On average, **5 crashes occur every day** in Frederick County, Winchester City, and Stephens City\*.



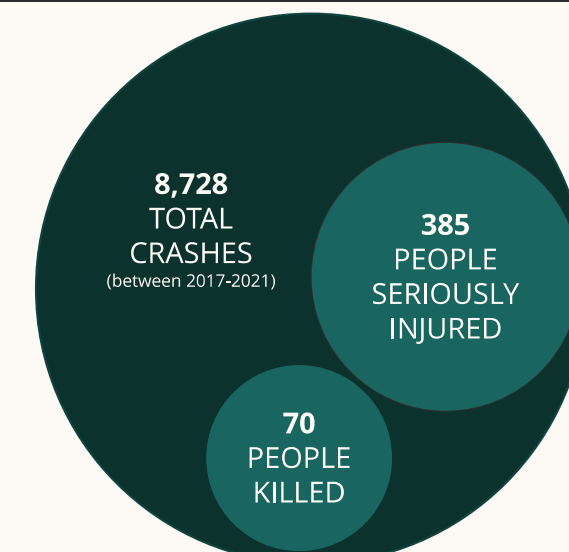
\*Based on a total of 8728 crashes from 2017-2021  
Data source: VDOT Crash Analysis Tool

11

How many crashes do you think occur every day in Frederick County, Winchester City, and Stephens City?

10

## We Need Safe Streets!



\*From 2017 to 2021  
Data source: VDOT Crash Analysis Tool

12



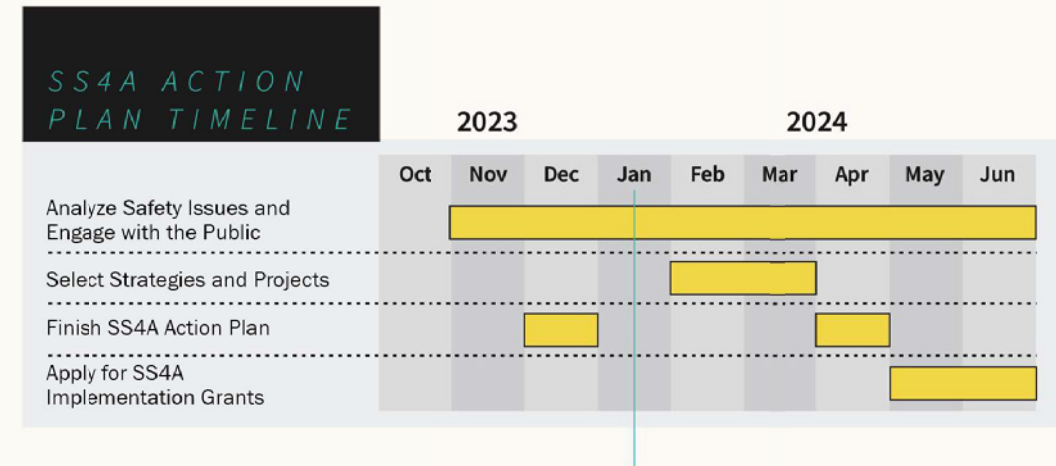
## How Can We Change This?

The Winchester-Frederick County Metropolitan Planning Organization (WinFred MPO) and Northern Shenandoah Valley Regional Commission (NSVRC) are **developing a “Safe Streets for All (SS4A) Action Plan.”**

**The SS4A Action Plan will be used to apply for implementation grants in 2024 and beyond.**

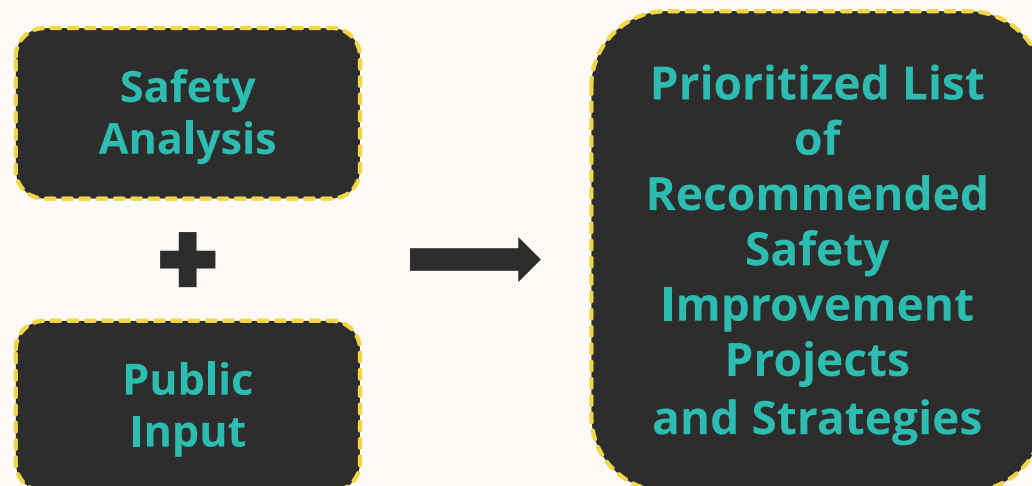
13

## Timeline



15

## What is in the Action Plan?



14

## How Can This Forum Help?

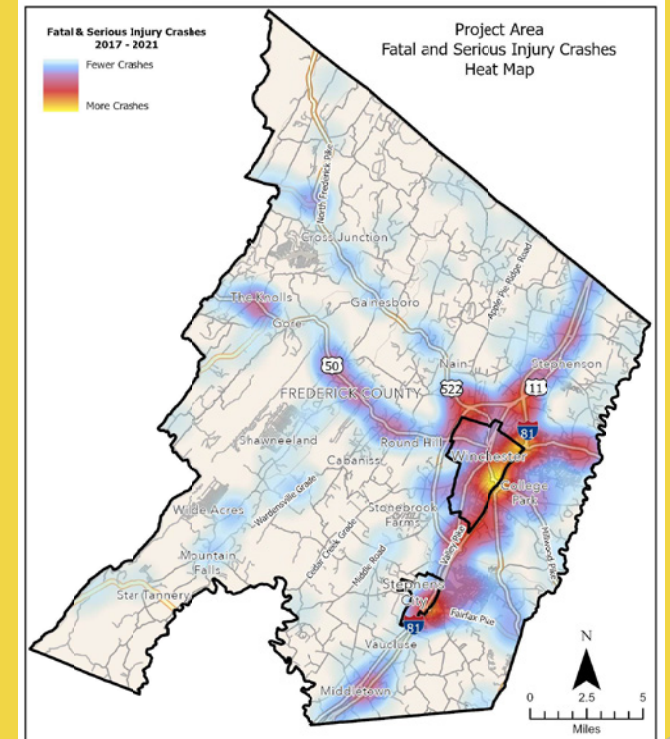
We need community input **to eliminate traffic-related serious injuries and fatalities by 2040.**

16

# Safety Analysis

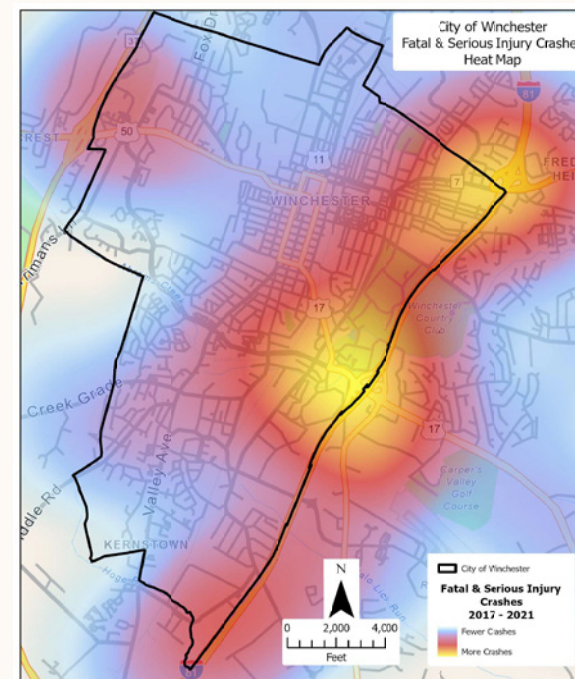
## Crashes in the Study Area

Higher numbers of fatal and serious injury crashes occur **along and near Interstate 81.**



## Objectives

- ❑ Develop a **High Injury Network**
- ❑ Analyze **Equity Considerations**
- ❑ Develop **Evaluation Matrix**
- ❑ Recommend **Safety Upgrades**



# Which roads, intersections, or areas do you think are unsafe\*?

*\*Whether you drive, walk, bike, or take the bus.*

## Public Engagement Activities

**3**  
**In-Person**  
**Events**

*November 16 to 18,  
2023*

**1**  
**e-Survey**

*November 15, 2023,  
to January 31, 2024*

**2**  
**Virtual**  
**Public**  
**Forums**

*January 17, 2024, and  
TBD, 2024*

## Public Engagement

## Transportation Forum



### Transportation Forum

November 16, 2023

*Frederick County  
Administration Building,  
Winchester City*



# Pop-up #1



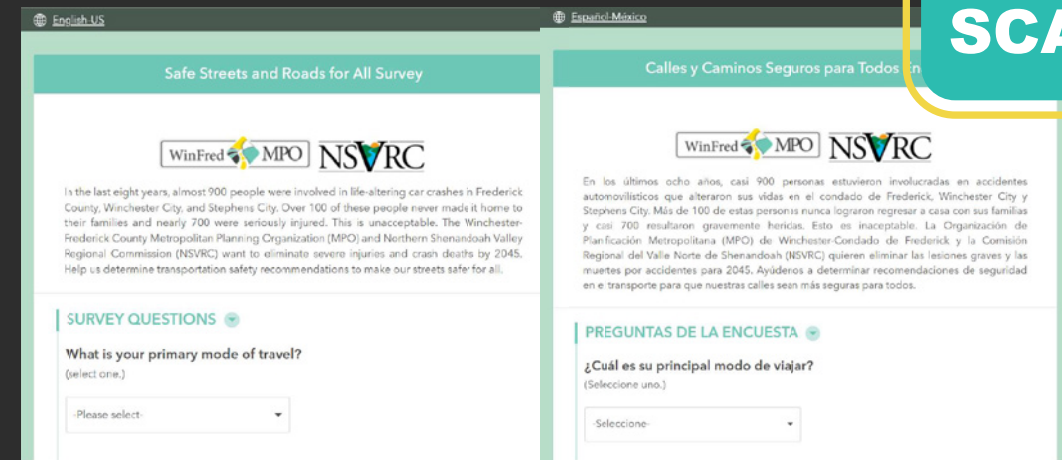
November 17, 2023  
 WinTran Transfer Station,  
 Winchester City



# Electronic Survey: Active



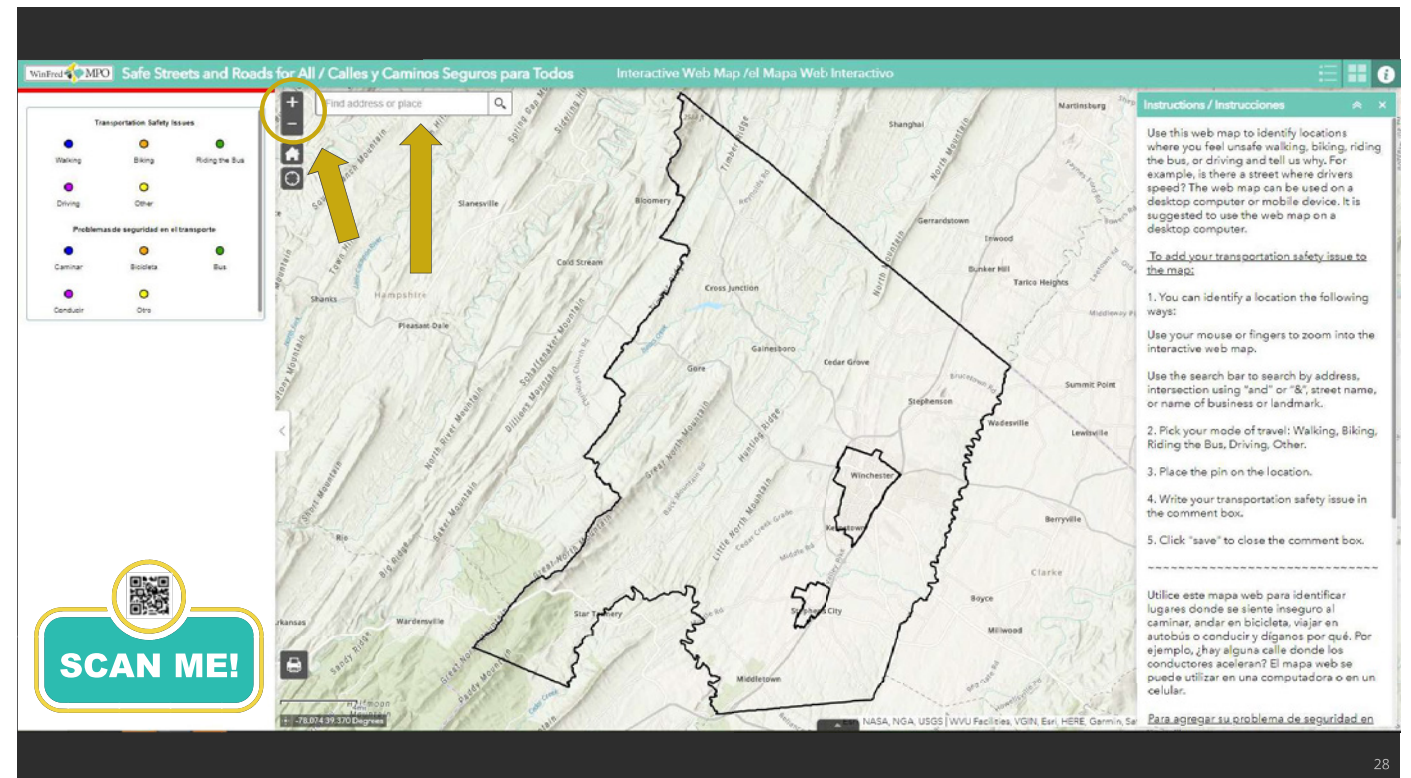
**SCAN ME!**



# Pop-up #2



November 18, 2023  
 Handley Regional Library,  
 Winchester City



Winfred MPO Safe Streets and Roads for All / Calles y Caminos Seguros para Todos Interactive Web Map / el Mapa Web Interactivo

Find address or place

Transportation safety issues

- Walking
- Biking
- Riding the Bus
- Driving
- Other

Problemas de seguridad en el transporte

- Camion
- Bicieta
- Bus
- Conductor
- Otro

Select Travel Mode

SCAN ME!

Instructions / Instrucciones

Use this web map to identify locations where you feel unsafe walking, biking, riding the bus, or driving and tell us why. For example, is there a street where drivers speed? The web map can be used on a desktop computer or mobile device. It is suggested to use the web map on a desktop computer.

To add your transportation safety issue to the map:

1. You can identify a location the following ways:
  - Use your mouse or fingers to zoom into the interactive web map.
  - Use the search bar to search by address, intersection using "and" or "&", street name, or name of business or landmark.
2. Pick your mode of travel: Walking, Biking, Riding the Bus, Driving, Other.
3. Place the pin on the location.
4. Write your transportation safety issue in the comment box.
5. Click "save" to close the comment box.

Utilice este mapa web para identificar lugares donde se siente inseguro al caminar, andar en bicicleta, viajar en autobús o conducir y díganos por qué. Por ejemplo, ¿hay alguna calle donde los conductores aceleran? El mapa web se puede utilizar en una computadora o en un celular.

Para agregar su problema de seguridad en

29

# Get Involved!

31

## What is most important to you to improve traffic safety?

30

## How You Can Help

1. Take the [e-Survey](#) & join our [second Virtual Public Forum \(TBD\)](#). Share them with family, friends, neighbors, and on your social media accounts.

SCAN ME!

e-Survey

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## How You Can Help

2

Follow the project on [Social Media:](#)

**Facebook:** @WinFredMPO

**Website:**

[winfredmpo.org/project/ss4a](https://winfredmpo.org/project/ss4a)



Social Media Post publicizing the Virtual Public Forum

33

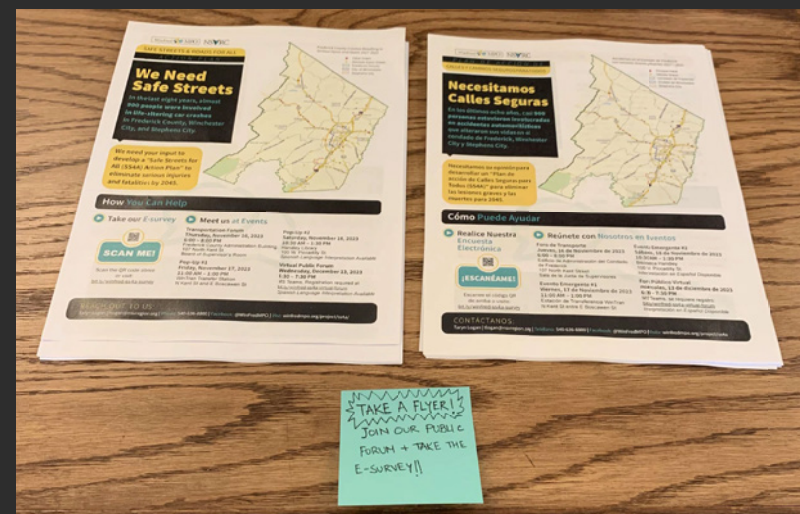
## Questions & Open Discussion

35

## How You Can Help

3

Share the project [Fact Sheet, available](#) in English and Spanish, with friends, family, and on social media.



Bi-Lingual Fact Sheets placed at the Handley Regional Library Front Desk, Winchester City

34

## Reach out to us!

Taryn Logan

[tlogan@nsvregion.org](mailto:tlogan@nsvregion.org)

540-636-8800

[winfredmpo.org/project/ss4a](https://winfredmpo.org/project/ss4a)

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SAFE STREETS & ROADS FOR ALL

ACTION PLAN

FACT SHEET #2: SPRING 2024

We Need Safe Streets

In the last eight years, almost 900 people were involved in life-altering car crashes in Frederick County, Winchester City, and Stephens City.

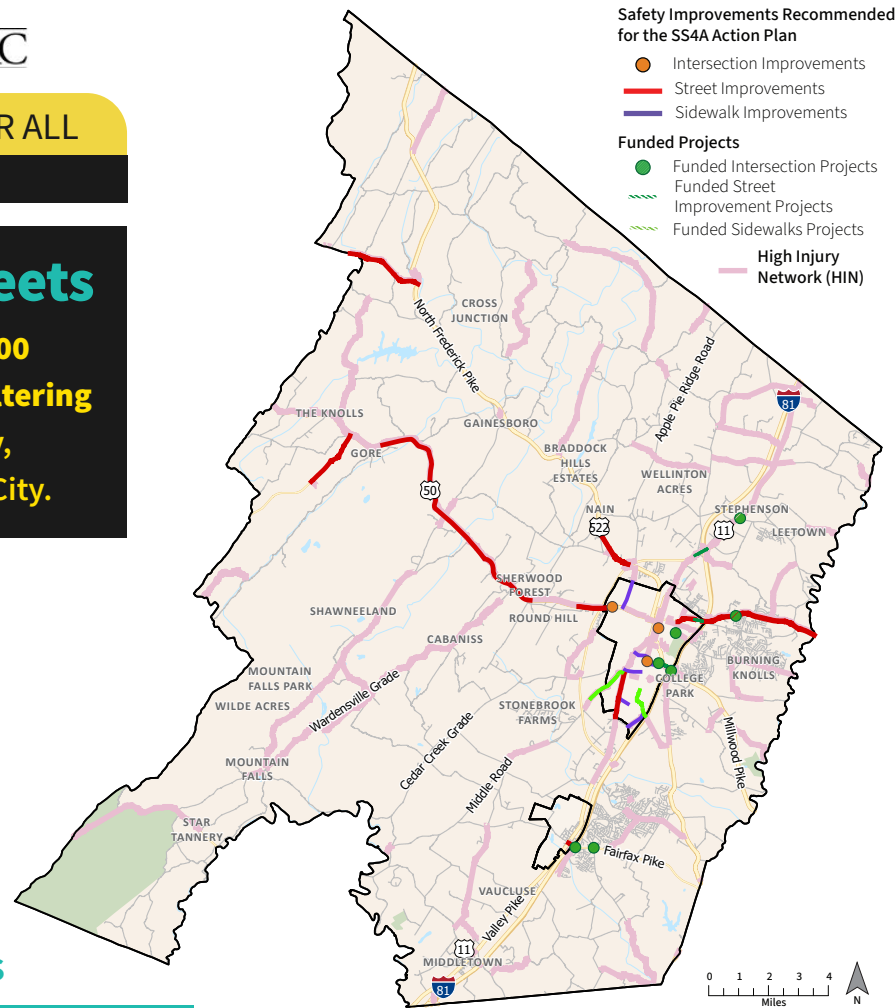
We need your input to develop a “Safe Streets for All (SS4A) Action Plan” to eliminate serious injuries and fatalities by 2045.

Recommended Safety Improvements

Between fall 2023 and spring 2024, the project team performed a crash analysis and heard from the public on traffic safety issues and locations.

The crash analysis resulted in a High Injury Network (HIN), which identifies roads where the highest concentrations of fatal and serious injury crashes occur. The improvements recommended for the SS4A Action Plan predominantly lie on this region’s HIN.

Virginia Department of Transportation (VDOT), Frederick County, and the City of Winchester are funding and implementing several street, intersection, and sidewalk improvements on the HIN that will help eliminate traffic fatalities and serious injuries by 2045. Public input and the HIN were used to recommend additional safety improvements. These recommended improvements have been proven through studies and data to provide significant and measurable safety benefits. The traffic fatalities and injuries that occur on I-81, which also appears on the HIN, are being addressed through other VDOT funded projects.



How You Can Help

Join us to vote on recommended street, intersection, and sidewalk safety improvements.

Spring Meeting

Thursday, March 14, 2024  
6:00 – 8:00 PM  
Frederick County Office  
Board of Supervisors Room  
107 N Kent St  
Winchester, VA 22601  
Spanish Language Interpretation will be available

Your Voice Matters

The prioritized list of safety improvements will appear in the SS4A Action Plan, anticipated to be released by the end of spring 2024.

REACH OUT TO US:

Taryn Logan | tlogan@nsvregion.org | 540-636-8800 | Facebook: @WinFredMPO | Web: winfredmpo.org/project/safe-streets-for-all-safety-action-plan/



Everyone deserves safe streets and roads.

Safe Streets and Roads for All Action Plan

The Winchester-Frederick Metropolitan Planning Organization (WinFred MPO) and Northern Shenandoah Valley Regional Commission (NSVRC) are responsible for regional planning and transportation in Frederick County, Winchester City, and Stephens City. The two organizations have a goal to eliminate serious injuries and traffic deaths on roadways by 2045. To help achieve zero by 2045, the region is developing a Safe Streets and Roads for All (SS4A) Action Plan.

The Action Plan will:

1. Identify roads with high traffic fatalities and serious injuries.
2. Recommend projects and strategies to address roadway safety issues.

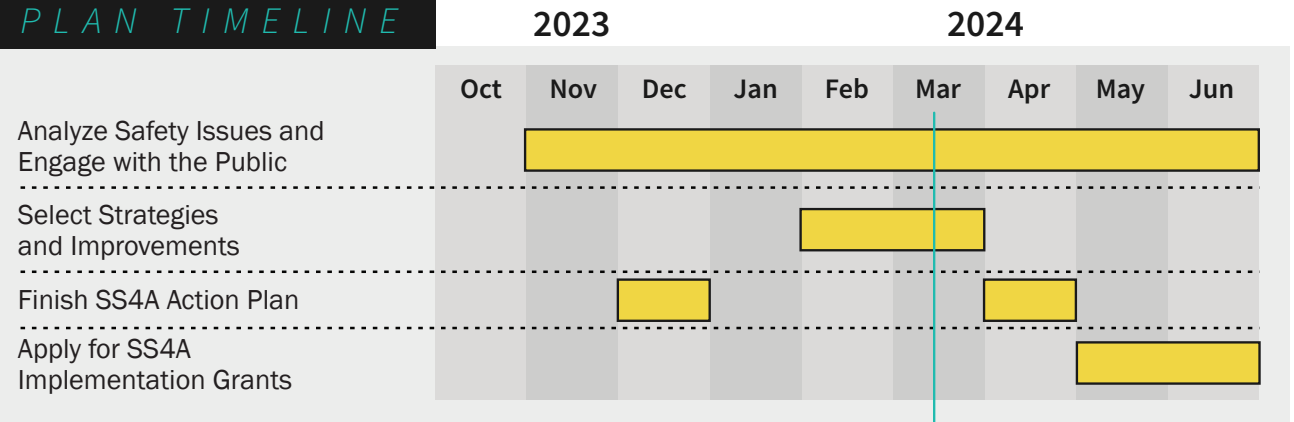
US Department of Transportation SS4A Grant Program

The SS4A grant program was established by the Bipartisan Infrastructure Law (BIL) in 2022 to significantly reduce or eliminate roadway fatalities and serious injuries across the nation.

The SS4A program supports the US Department of Transportation's National Roadway Safety Strategy and its long-term goal of “zero”.

Starting this summer, the Action Plan will be used by the WinFred MPO and NSVRC to apply for federal grants to implement the prioritized safety improvements.

SS4A ACTION PLAN TIMELINE



SCAN ME!  
SS4A Action Plan Website

LEARN MORE ABOUT THE ACTION PLAN

Encourage friends and family to attend and participate in the Spring Meeting.

winfredmpo.org/project/safe-streets-for-all-safety-action-plan/

# WinFred SS4A Action Plan

## Winchester/Frederick County Public Meeting Summary

The public input gathered between November 2023 and January 2024, safety analysis, and High Injury Network were used to develop a list of potential roadway safety improvements. On Thursday, March 14, 2024, Frederick County and the City of Winchester held a public meeting to get feedback on which roadway safety improvements should be implemented first. This public engagement helped to prioritize the list of roadway improvements for the Action Plan.

The meeting was in-person and included a presentation followed by an opportunity to review display boards and participate in an engagement activity. Comment cards for open-ended, written feedback were available.

TABLE 1: Winchester/Frederick County Public Meeting Details

Event	Date	Time	Location	Number of Attendees
Winchester/Frederick County Public Meeting	Thursday, March 14, 2024	6:00 – 8:00 PM	Frederick County Administration Building, 107 N Kent St, Winchester City	13

### Engagement Activity

Eighteen roadway safety improvements were categorized into three categories: street improvements, intersection improvements, and sidewalk improvements. The roadway safety improvement locations were displayed on maps of Frederick County and the City of Winchester. The displays included examples of roadway safety measures proven to provide significant and measurable safety benefits. Attendees used one dot sticker to vote on the most important roadway safety improvement in each category.

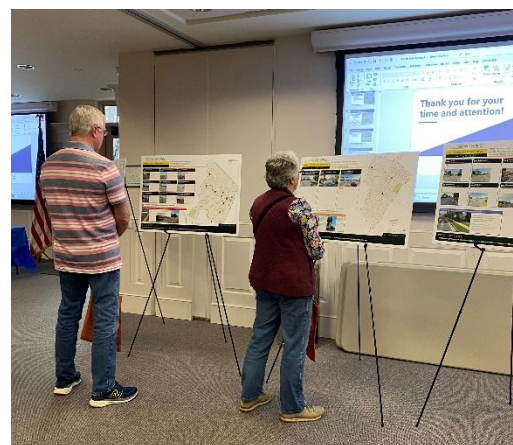


Figure 1: Public meeting attendees voted on which projects they wanted to see implemented first.

## Engagement Results By Roadway Safety Category

Street Improvements: 11 Total Votes

Berryville Pike, from the City of Winchester’s eastern boundary to Clark County’s boundary, received the highest number of votes for Street Improvements.

TABLE 2: Street Improvements Prioritization Results

Street Improvement Location	Number of Votes	Percentage of Votes
<b>Berryville Pike</b> (City of Winchester’s eastern boundary to Clark County’s boundary)	4	36%
<b>Fairfax Street/State Route 277</b> (US 11/Main Street to I-81 Southbound Ramps)	2	18%
<b>Berryville Avenue</b> (N. Pleasant Valley Road to West of Elm Street/Fort Collier Boulevard)	2	18%
<b>Valley Avenue</b> (City of Winchester’s southern boundary to Middle Road)	2	18%
<b>Northwestern Pike</b> (Round Hill Road to Keating Drive)	1	9%
<b>Bloomery Pike</b> (West Virginia State Line to US 522 Frederick Pike)	0	0%
<b>Frederick Pike North</b> (State Route 37 Ramps to Burnt Church Road)	0	0%
<b>Carpers Pike</b> (Owl Lane to US 50/17 (Northwestern Pike)	0	0%
<b>Northwestern Pike</b> (Wardensville Grade to Gore Road)	0	0%



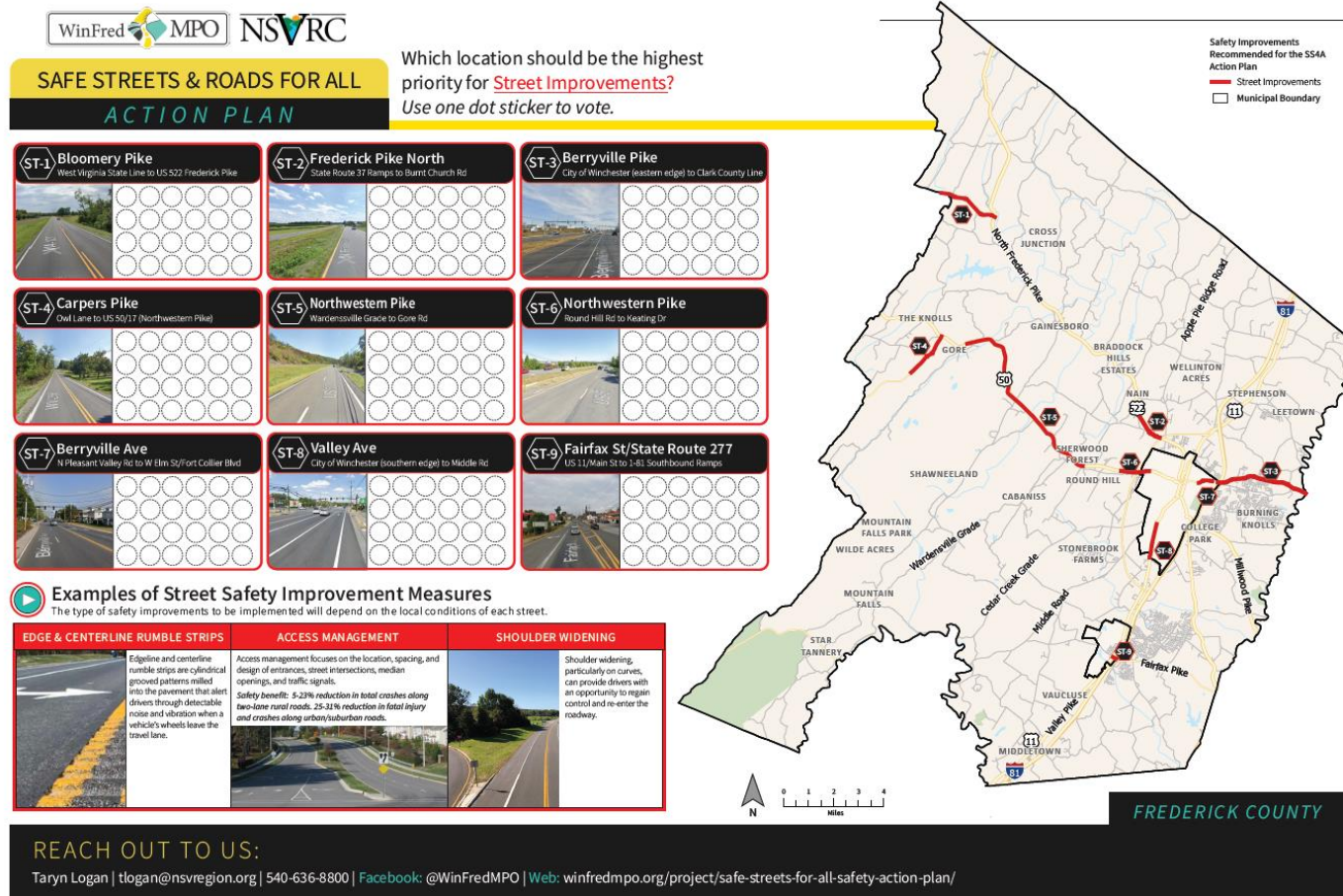


Figure 2: Street Improvements Prioritization Board

Intersection Improvements: 7 Total Votes

A majority of voters chose E. Jubal Early Drive & S. Loudon Street as the intersection improvement that they would like to see implemented first.

TABLE 3: Intersection Improvements Prioritization Results

Intersection Improvement Location	Number of Votes	Percentage of Votes
E. Jubal Early Drive & S. Loudon Street	5	71%
Amherst Street & Campus Boulevard/Meadow Branch Avenue	2	29%
S. Cameron Street & Cork Street	0	0

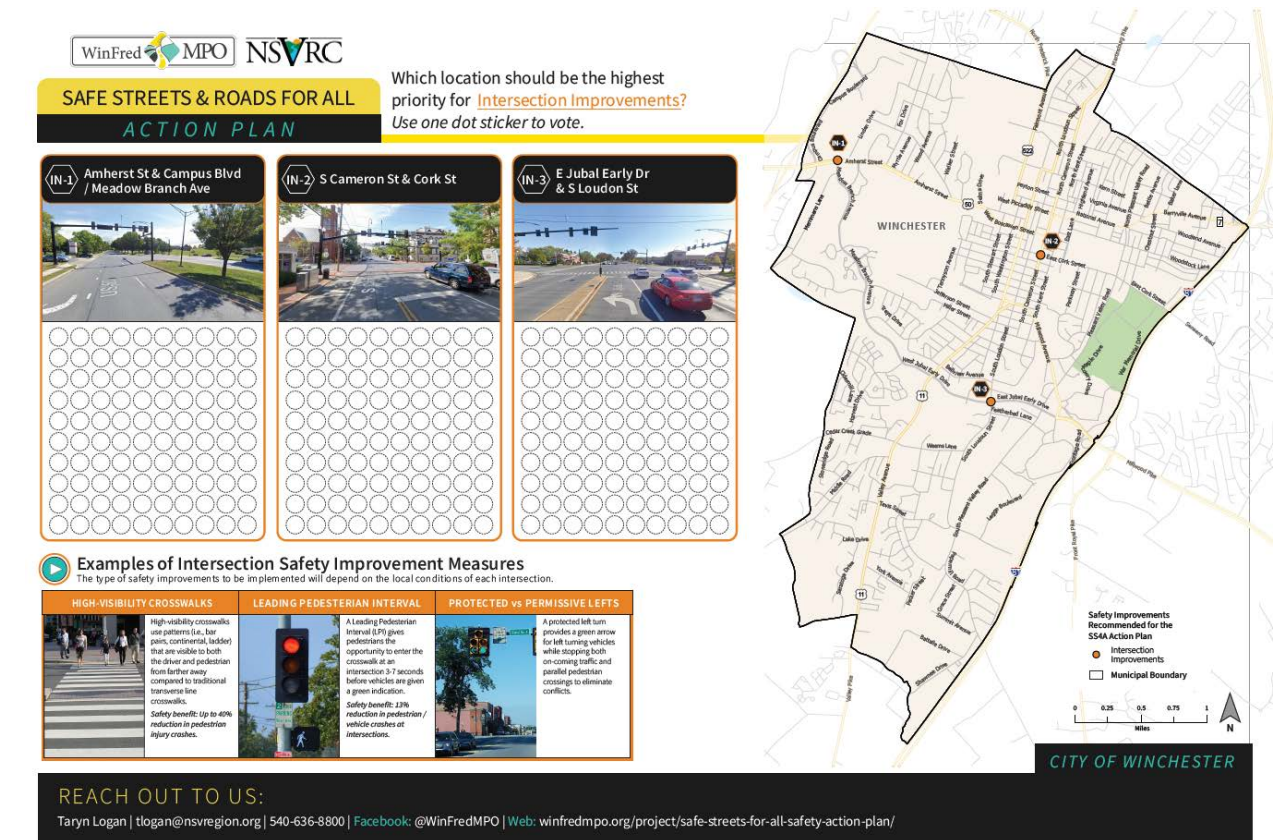


Figure 3: Intersection Improvements Prioritization Board

**Sidewalk Improvements: 7 Total Votes**

Fox Drive, from US 50/Amherst Street to the City of Winchester’s northern boundary, received the highest number of votes for the sidewalk improvements.

**TABLE 4: Sidewalk Improvements Prioritization Results**

Sidewalk Improvement Location	Number of Votes	Percentage of Votes
<b>Fox Drive</b> (US 50/Amherst Street to City of Winchester’s northern boundary)	3	43%
<b>Featherbed Lane</b> (S. Loudon Street to S. Pleasant Valley Road)	2	29%
<b>Bellview Avenue</b> (US 11/Valley Avenue to Loudon Street)	1	14%
<b>Weems Lane</b> (US 11/Valley Avenue to S. Loudon Street)	1	14%
<b>York Avenue</b> (US 11/Valley Avenue to Packer Street)	0	0%
<b>Shawnee Drive</b> (City of Winchester’s southern boundary to Papermill Road)	0	0%

**Open-ended Comments:**

- Strongly support anything to make Berryville Ave pedestrian-friendly and bike-friendly. More people would bike and walk to the stores here if there were more pedestrian crosswalks and trees.
- Need sidewalks between Greenwood Avenue and S. Pleasant Valley Road on Senseny Road.
- Need crosswalk and traffic light at entrance to Senseny Place/Bank of Clarke.
- Need mini-transit running five days a week, and possibly Saturdays, for car-less residents who live at Senseny Place.

**Figure 4: Sidewalk Improvements Prioritization Board**

## Meet the People Involved

### Northern Shenandoah Valley Regional Commission (NSVRC)

Taryn Logan  
*Project Lead*

### Leadership Commitment Committee (LCC)

John Bishop  
*Frederick County, VA*

Perry Eisenach  
*Winchester City, VA*

Brad Reed  
*VDOT*

### Leadership Commitment Committee (LCC) continued...

Adam Campbell  
*VDOT*

David Morris  
*VDOT*

Justin Hall  
*Winchester City, VA*

Kayla Peloquin  
*Frederick County, VA*

### McCormick Taylor

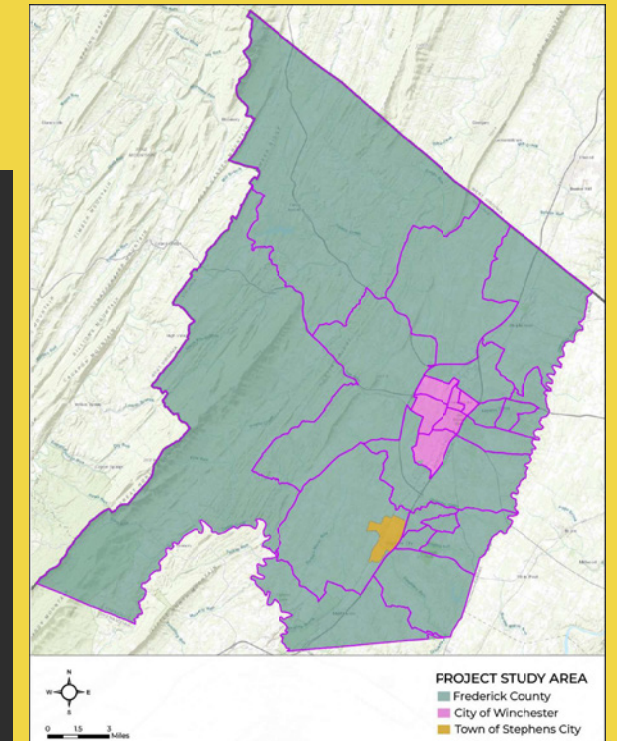
Alexandra Castrechini, P.E.  
*Project Manager*

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## Study Area

### Winchester-Frederick Metropolitan Planning Organization (WinFred MPO)

- Frederick County
- City of Winchester
- Town of Stephens City



## Agenda

- What is the Safe Streets for All (SS4A) Action Plan?
- Safety Analysis
- Public Engagement Overview
- How You Can Help Prioritize Locations for Safety Upgrades

3

## US DOT Components of a SS4A Action Plan

- 1 Leadership Commitment and Goal Setting**  
Includes a **goal timeline** for eliminating roadway fatalities and serious injuries.
- 2 Planning Structure**  
Through a committee, task force, implementation group, or similar body charged with **oversight of the Action Plan** development, implementation, and monitoring.
- 3 Safety Analysis**  
Of the existing conditions and historical trends that **provides a baseline level of crashes involving fatalities and serious injuries** across a jurisdiction, locality, Tribe, or region.
- 4 Engagement & Collaboration**  
With the public and relevant stakeholders, including the private sector and community groups, that allows for both **community representation and feedback**.

# US DOT Components of a SS4A Action Plan

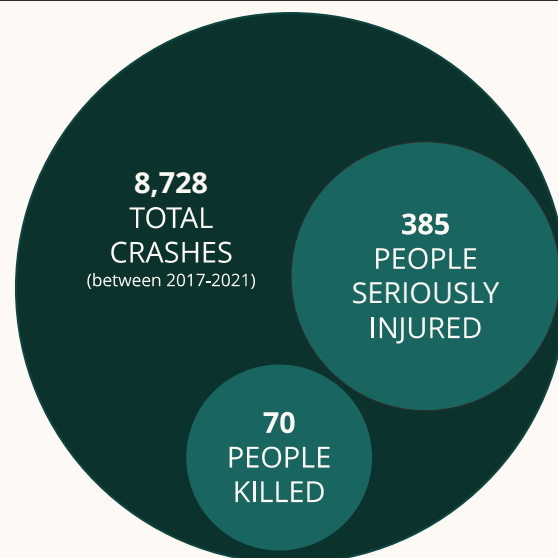
- 5 Equity**  
Considerations developed through a plan using **inclusive and representative processes**.
- 6 Policy and Process Changes**  
That assess the current policies, plans, guidelines, and/or standards to identify opportunities **to improve how processes prioritize transportation safety**.
- 7 Strategy and Project Selections**  
That **identify a comprehensive set of projects and strategies**, shaped by data, the best available evidence and noteworthy practices, as well as stakeholder input and equity considerations, **that will address the safety problems described in the Action Plan**.
- 8 Progress and Transparency Methods**  
That **measure progress over time** after an Action Plan is developed or updated, including outcome data.

# How Can We Change This?

The Winchester-Frederick County Metropolitan Planning Organization (WinFred MPO) and Northern Shenandoah Valley Regional Commission (NSVRC) are **developing a “Safe Streets for All (SS4A) Action Plan.”**

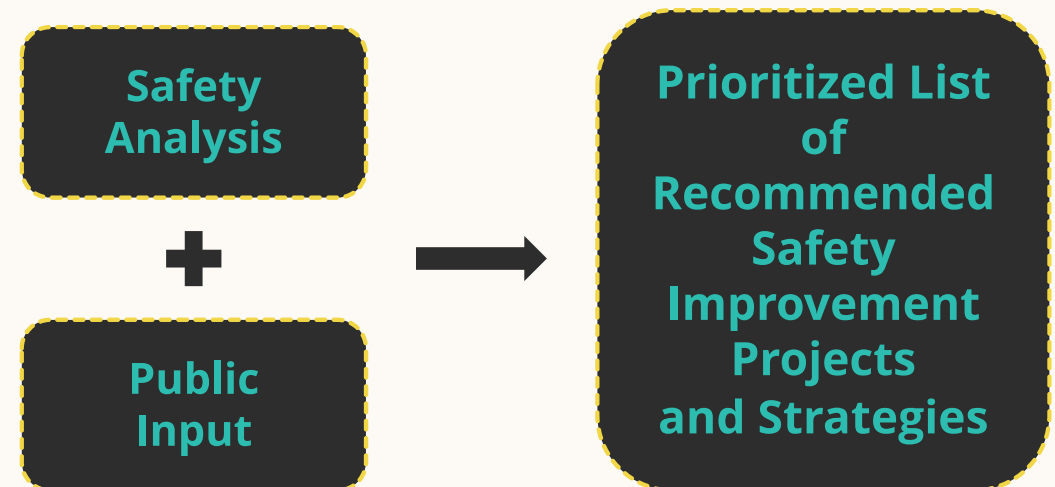
**The SS4A Action Plan will be used to apply for implementation grants in 2024 and beyond.**

# We Need Safe Streets!

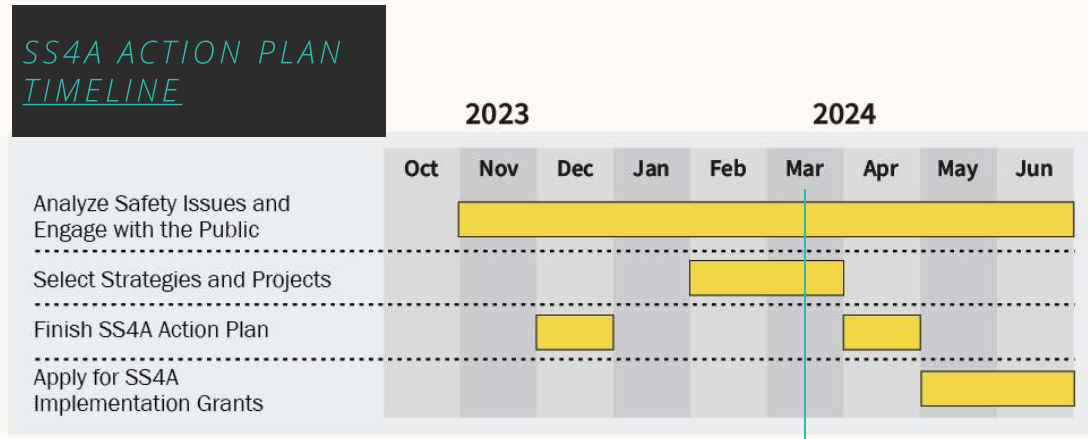


\*From 2017 to 2021  
Data source: VDOT Crash Analysis Tool

# What is in the Action Plan?



# Timeline



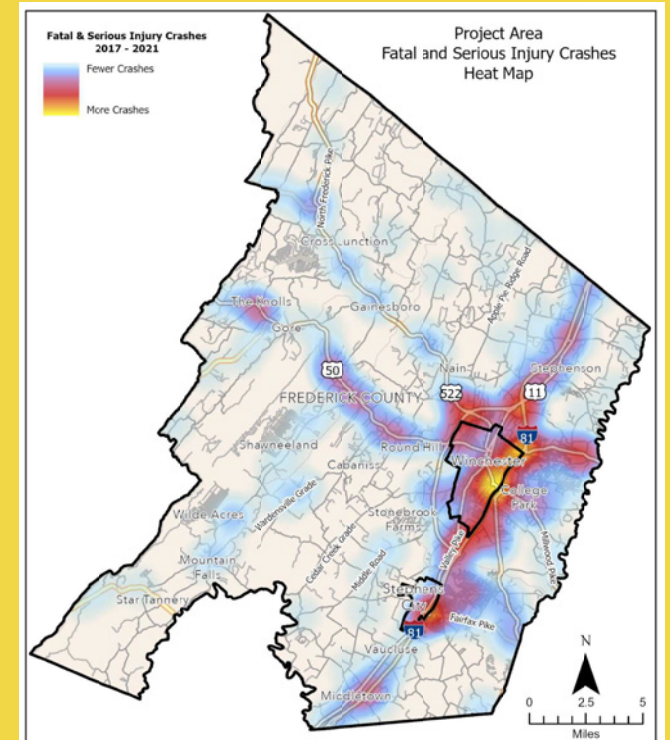
# Objectives

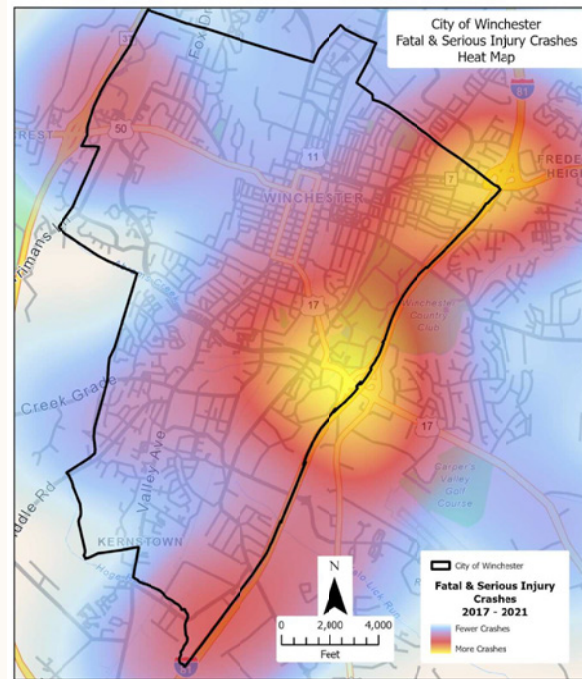
- ❑ Develop a **High Injury Network**
- ❑ Analyze **Equity Considerations**
- ❑ Develop **Evaluation Matrix**
- ❑ Recommend **Safety Upgrades**

# Safety Analysis

# Crashes in the Study Area

Higher numbers of fatal and serious injury crashes occur **along and near Interstate 81.**



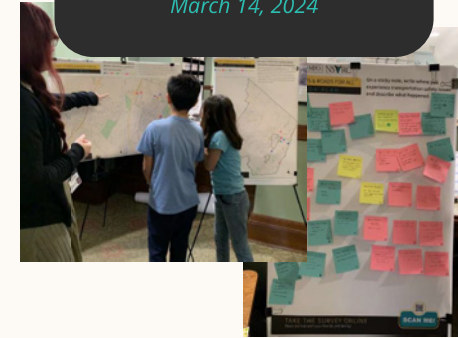


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## Public Engagement Activities

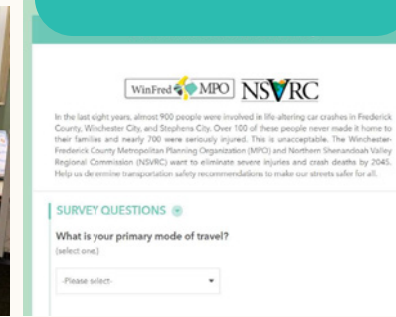
**4**  
In-Person Events

November 16-18, 2023  
March 14, 2024



**1**  
e-Survey

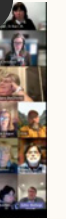
November 15, 2023, to January 31, 2024



**1**  
Virtual Public Forum

January 17, 2024

Questions & Open Discussion



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## Public Engagement

15

## Public Engagement: Safety Concerns

Safety Concern*	Number of Mentions
Challenging Roadway Configurations	83
Poor Driver Behavior	55
Lack of Safe Spaces for Walking	50
Lack of Safe Spaces to Cross the Street	35
Lack of Safe Places for Biking	30

\*Top 5 safety concerns.

*"Sidewalks are out of level for walkers & bicycle riders from Jim Barnett Park to the Post Office in several areas"*

*"People race through stop signs at Fredericktowne Dr & Bedford Pl."*

# Public Engagement: Location Concerns

Location Concern*	Number of Mentions
I-81	23
Route 7	21
Senseny Road	19
Route 11 (Valley Ave)	17
City Center/Walking Mall Area	15

\*Top 5 location concerns.

*"School bus drops off kids on Route 11 near Battle Park Drive – children have to cross a 4-lane highway."*

*"Narrow shoulders on Senseny Road cuts off access to neighborhood parks and amenities"*

## How You Can Help Prioritize Locations for Safety Upgrades

**Transportation Safety Issues**

- Walking (Blue dot)
- Biking (Orange dot)
- Riding the Bus (Green dot)
- Driving (Purple dot)
- Other (Yellow dot)

**Problemas de seguridad en el transporte**

- Caminar (Blue dot)
- Bicicleta (Orange dot)
- Bus (Green dot)
- Conducir (Purple dot)
- Otro (Yellow dot)

**Instructions / Instrucciones**

Use this web map to identify locations where you feel unsafe walking, biking, riding the bus or driving and tell us why. For example, is there a street where drivers speed? The web map can be used on a desktop computer or mobile device. It is suggested to use the web map on a desktop computer.

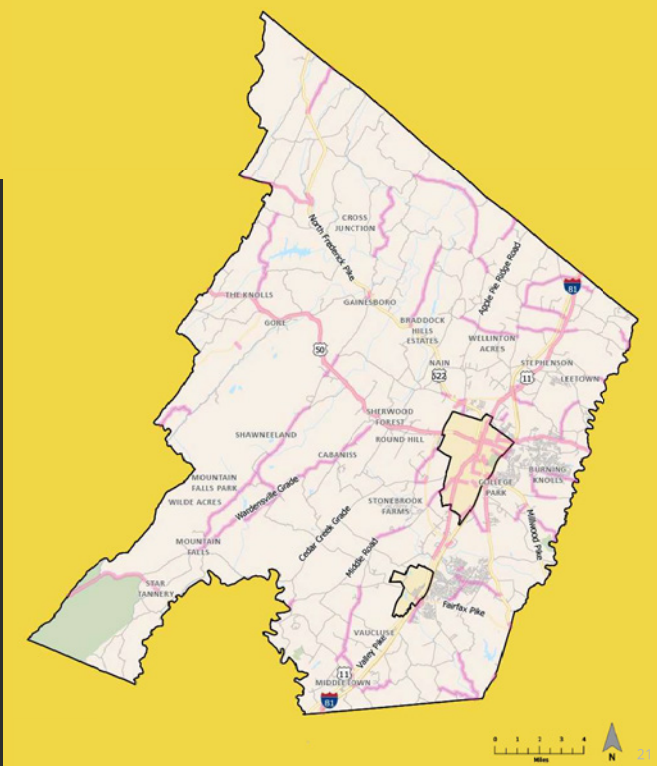
To add your transportation safety issue to the map:

1. You can identify a location the following ways:
  - Use your mouse or fingers to zoom into the interactive web map.
  - Use the search bar to search by address, intersection using "and" or "&", street name, or name of business or landmark.
2. Pick your mode of travel: Walking, Biking, Riding the Bus, Driving, Other.
3. Place the pin on the location.
4. Write your transportation safety issue in the comment box.
5. Click "save" to close the comment box.

## Recommended Projects

Projects recommended for the SS4A Action Plan lie predominantly on the High Injury Network (HIN).

— High Injury Network (HIN)



# D | Prioritization and Improvements

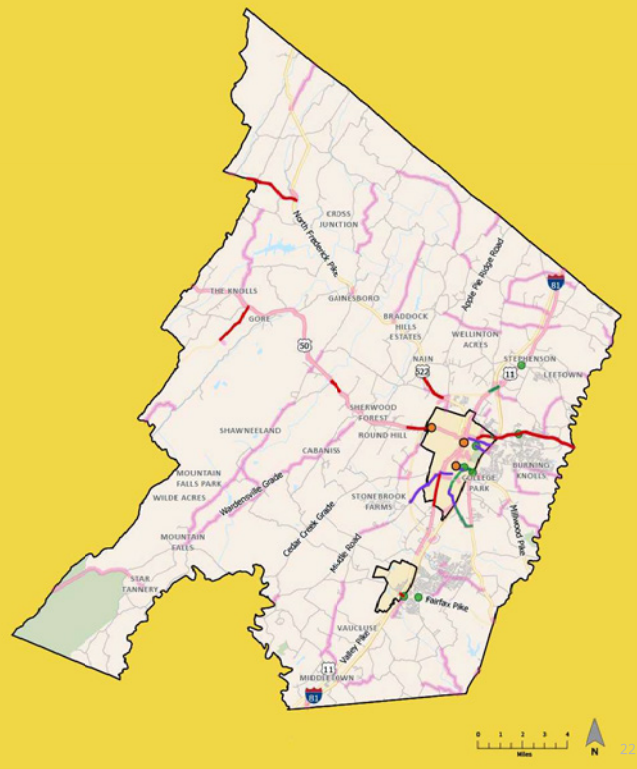
## Recommended Projects

### Safety Projects Recommended in the SS4A Action Plan (vote)

- Intersection Projects
- Street Improvement Projects
- Sidewalk Projects

### Funded Projects (not in voting)

- Funded Street Improvement Projects
- Funded Intersection Improvement Projects
- High Injury Network (HIN)



## Vote!

Today, we need your input to prioritize safety projects in the Action Plan. Join us at the display boards to vote on each street, intersection, and sidewalk improvement project.

WinFred SS4A Action Plan Systemwide Countermeasure

WinFred SS4A Action Plan Systemwide Countermeasure	Crash Type	Area Type	Crash Modification Factors (CMF)			Application	Reference	Typical Cost (low, medium, high, or very high)
			K	A	All Severities			
Add Crosswalk	Vehicle-Pedestrian	All	1	1	1	existing pedestrian crossing with no crosswalk	CMF ID: 441, 2379	low
Add Crosswalk Lighting	Vehicle-Pedestrian	All	0.56	0.41	0.56	existing pedestrian crosswalk with no lighting	CMF ID: 441, 2379	medium
Add or Upgrade Sidewalk	Vehicle-Pedestrian	All	0.12	0.12	0.12	existing pedestrian traffic with no or deficient sidewalk	PED CMF Toolbox	medium
Add Pedestrian Bridge	Vehicle-Pedestrian	All	0.1	0.1	0.1	existing high volume at-grade pedestrian crossing	PED CMF Toolbox	very high
Add PHB or HAWK, Advanced Yield/ Stop Markings	Vehicle-Pedestrian	Urban, Suburban	0.432	0.432	0.432	existing mid-block pedestrian crossing with no PHB or HAWK	CMF ID: 9020, 9021	medium
Add Rectangular Rapid Flashing Beacon (RRFB)	Vehicle-Pedestrian	Urban, Suburban	0.526	0.526	0.526	existing mid-block pedestrian crossing with no RRFB	CMF ID: 9024	medium
Add Shared Use Path	Vehicle-Pedestrian	Urban	1	0.41	0.75	existing bicycle and pedestrian traffic with no shared use path	CMF ID: 4102, 9250	medium
Change Pedestrian Phase to Barnes Dance	Vehicle-Pedestrian	Urban	0.49	0.49	0.49	existing signalized intersection with pedestrian crossings	CMF ID: 4117	very low
Convert from Walk/Don't Walk to Pedestrian Countdown	Vehicle-Pedestrian	All	0.3	0.3	0.3	Signalized Intersection with Walk/Don't Walk Pedestrian Signals	CMF ID: 5272	low
Convert Standard Crosswalk Pavement Marking to High-Visibility Crosswalk			0.63	0.63	0.63	Existing Pedestrian Crossing with Standard Crosswalk Pavement Markings	CMF ID: 2697	low
Implement Leading Pedestrian Interval	Vehicle-Pedestrian	Urban	0.413	0.413	0.413	Signalized Intersection with Pedestrian Heads and no leading pedestrian interval	CMF ID: 1993	very low
Convert Diamond Interchange to Diverging Diamond Interchange (DDI)	All	All	0.59	0.59	0.67	Traditional Diamond Interchange	CMF ID: 8258, 8278	very high
Convert Diamond Interchange to Single Point Urban Interchange (SPUI)	All	All	0.62	0.62	0.62	Traditional Diamond Interchange	VDOT Planning Level CMFs, ISATe	high
Interchange Lighting	Night Time	All	0.5	0.5	0.5	Freeway Interchange with no existing lighting	CMF ID: 1283	medium



Add Flashing Lights to Railroad (RR) Crossings with Signs	Vehicle-Train	All	0.23	0.23	0.23	RR Grade Crossing with Static Warning Signs	CMF ID: 487	medium
Add Gates to RR Crossings with Signs	Vehicle-Train	All	0.06	0.06	0.06	RR Grade Crossing with Static Warning Signs	CMF ID: 489	medium
Add 3-Inch Yellow Retroreflective Sheeting to Signal Backplates	all	Urban	0.85	0.85	0.85	Signalized intersection signal heads with no backplates present	CMF ID: 1410	low
Change from Permitted Left-Turn to Permitted/Protected Left-Turn	Left Turn	Urban	0.862	0.862	0.862	Signalized Intersection with Permissive Left-Turn Phasing	CMF ID: 4270	very low
Change from Permitted or Permitted/Protected Left-Turn to Protected on Major Approach	Angle	Urban	0.01	0.01	0.01	Signalized Intersection with Protected/Permissive or Vice-Versa Left-Turn Phasing on a Major Approach	CMF ID: 335, 339	very low
Change from Permissive Left-Turn to Flashing Yellow Arrow	Left Turn	Urban	0.635	0.635	0.635	Signalized Intersection with Permissive Left-Turn Phasing	CMF ID: 4175	low
Change from Permitted or Permitted/Protected Left-Turn to Protected on Minor Approach	Angle	Urban	0.04	0.04	0.04	Signalized Intersection with Protected/Permissive or Vice-Versa Left-Turn Phasing on a Minor Approach	CMF ID: 337	very low
Change from Pretimed Signal to Actuated Signal	All	All	0.8	0.8	0.8	Pretimed signalized intersection	NCDOT CRF List 1.6	low
Change from Protected/Permissive Left-Turn to Flashing Yellow Arrow	Left Turn	Urban	0.806	0.806	0.806	existing protected/permissive left turn at signalized intersection	CMF ID: 4177	very low
Increase All-Red Clearance Interval	All	All	0.863	0.863	0.798	Short All-Red Clearance Interval	CMF ID: 4211, 4212	very low
High-Friction Surface Treatment on Approach	All	All	0.799	0.799	0.799	Standard pavement on stop controlled intersection approach	CMF ID: 2259	low with resurfacing
Convert At-Grade Intersection to Interchange	All	All	0.58	0.43	0.58	existing at-grade 4-leg intersection	CMF ID: 459, 460, 461	very high
Convert Minor Stop-Control to All-Way Stop Control	All	All	0.23	0.23	0.319	existing stop control only on minor street approaches	CMF ID: 3127, 3128	low
Convert Signalized Intersection to Roundabout	All	All	0.52	0.22	0.52	existing signalized intersection	CMF ID: 225, 226	high
Convert Stop-Controlled Intersection to Roundabout	All	All	0.56	0.18	0.56	existing stop control only on minor street approaches	CMF ID: 227, 228	high
Convert to J-Turn Intersection	All	Rural	0.652	0.463	0.652	existing high speed at-grade intersection with stop control only on minor street approaches	CMF ID: 5555, 5556	high
Convert to Unsignalized Intersection to Unsignalized RCUT	All	Rural	0.37	0.37	0.54	existing high speed conventional unsignalized intersection	CMF ID: 4883, 4884	medium

Convert Unsignalized Intersection to Unsignalized Superstreet Intersection	All	Rural	0.37	0.37	0.54	existing high speed conventional unsignalized intersection	CMF ID: 4883, 4884	high
Install Interim Roundabout	All	All	0.23	0.23	0.319	existing stop control only on minor street approaches	CMF ID: 3127, 3128	medium
Add Cable Median Barrier	Cross-Median, Frontal, Opposite Direction Sideswipe, Head-On	Rural	0.09	0.09	0.09	Freeway with No Median Barrier Present	CMF ID: 1966	medium
Add Rumble Strips to Inside Shoulder	Single Vehicle	all	0.811	0.811	0.811	Freeway with no rumble strips on inside shoulder	HSM Eqn 18-36	low with resurfacing
Add Median Concrete Barrier	Cross-Median, Frontal, Opposite Direction Sideswipe, Head-On	Rural	0	0	0	Freeway with No Median Barrier Present	CMF ID: 1966	medium
Add Median Guardrail	Cross-Median	All	0.22	0.22	0.22	Freeway with No Median Barrier Present	CMF ID: 1966	medium
Add Rumble Strips to Outside Shoulder	Single Vehicle	All	0.811	0.811	0.811	Existing freeway with no rumble strips on outside shoulder	HSM Eqn 18-36	low with resurfacing
Add Raised Pavement Markers	All	Rural	0.87	0.87	0.87	Existing freeway with no raised pavement markers	CMF ID: 5498	low
Implement Variable Speed Limits	All	Urban	0.71	0.71	0.71	Existing freeway with static posted speed limit	CMF ID: 8730, 8731	low
Upgrade Horizontal Curve Signage	All	Rural	0.75	0.75	0.75	Freeway segment with no horizontal curve signs or dirty signs with no retroreflectivity	CMF ID: 2431, 2433	low
Upgrade Pavement Markings to Wet-Reflective Pavement Markings	All	All	0.881	0.881	0.881	Freeway segment with standard pavement markings	CMF ID: 8093, 8134	low
Add Centerline Rumble Strips (Including Sinusoidal/ Mumble)	Head-On, Opposing Direction Sideswipe	Rural	0.55	0.55	0.63	Non-Freeway segment with no centerline rumble strips	CMF ID: 3355, 3360	low with resurfacing
Add Chevron Signs at Horizontal Curves	Night Time	Rural	0.75	0.75	0.75	Non-Freeway segment small Radius Horizontal Curve on Rural Two-Lane Undivided Highway with no chevrons	CMF ID: 2439	low
Add Chevron Signs, Curve Warning Signs, and Sequential Flashing Beacons	Night Time	All	0.592	0.592	0.592	Non-Freeway segment horizontal curve on multilane highway with no curve delineation	CMF ID: 1852	medium
Add Raised Pavement Markers	All	Rural	0.81	0.81	0.81	Non-Freeway segment with no raised pavement markers	CMF ID: 5496	low
Add Safety Edge	Run off road	Rural	0.79	0.79	0.79	Two-lane undivided rural highway with no safety edge	FHWA Proven Safety Countermeasures	low with resurfacing
Add Shoulder Rumble Strips (Including Sinusoidal/ Mumble)	Run off road right	Rural	0.83	0.83	0.84	Non-freeway segment with no shoulder rumble strips	CMF ID: 3442, 3447	low with resurfacing
Add Left-Turn Lanes (4U to 5T)	All	Urban	0.45	0.45	0.45	Four-Lane Undivided Highway with no left turn lanes	CMF ID: 4084	high

Change 4" Wide Edgelines to 6" Wide Edgelines	All	Rural	0.635	0.635	0.825	Rural two-lane highway with 4" edgelines	CMF ID: 4737, 4738, 4736	low
Implement High-Friction Surface Treatment on Horizontal Curve	All	All	0.759	0.759	0.759	Horizontal curve on non-freeway segment with standard pavement	CMF ID: 7900	low with resurfacing
Prohibit On-Street Parking	All	Urban	0.78	0.78	0.74	Urban principal arterial with permitted on-street parking	CMF ID: 4574, 4575	low
Remove or Relocate Fixed Object to Outside of Clear Zone	Crashes with Fixed Objects	All	0.62	0.62	0.62	non-freeway segment with fixed object in clear zone	CMF ID: 1024, 1044	low
Road Diet (4U to 3T)	All	Urban	0.71	0.71	0.71	4-lane undivided minor arterial	CMF ID: 199	low
Upgrade Chevrons with Flourescent Sheeting	Night Time	Rural	0.65	0.65	0.65	Horizontal curve on two-lane undivided highway with no fourescent sheeting, or dirty signs present	CMF ID: 2434	low
Upgrade Pavement Markings by Increasing Retroreflectivity	Night Time	All	0.81	0.81	0.81	non-freeway segment with edgeline, skipline, and centerline pavement markings with low retroreflectivity	CMF ID: 2116, 2117, 2120	low
Upgrade Pavement Markings to Wet-Reflective Pavement Markings	All	All	0.881	0.881	1.032	principal arterial non-freeway segment with traditional pavement markings	CMF ID: 8093, 8134	medium
<u>Widen Average Shoulder Width</u>	<u>Head-On, Crashes With Fixed Objects, Opposing Direction Sideswipe</u>	<u>Rural</u>	<u>HSM Table 10-9 (CMF Clearinghouse studies range from 0.39 to 1.22)</u>					
Source: VDOT State Preferred CMF List: <a href="https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/VA-State-Preferred-CMF-List_acc050222.pdf">https://www.vdot.virginia.gov/media/vdotvirginiagov/doing-business/technical-guidance-and-support/traffic-operations/vhsip/VA-State-Preferred-CMF-List_acc050222.pdf</a>								

## Weighted Crash Costs

Virginia KABCO Crash Unit Costs (2020)			
Severity	Economic Crash Unit Costs	QALY Crash Unit Costs	Comprehensive Crash Costs
K	\$1,896,295	\$11,561,359	\$13,457,654
A	\$144,164	\$646,077	\$790,242
B	\$63,486	\$195,333	\$258,819
C	\$44,414	\$101,330	\$145,744
O	\$13,743	\$0	\$13,743

Virginia Weighted Crash Unit Costs (2020)	
Severity	Weighted Costs
K/A	\$2,214,590
K/A/B	\$684,050
K/A/B/C	\$550,747
K/A/B/C/O	\$194,546
A/B/C	\$308,895
B/C	\$225,341

## Funded Projects

Project Name/Roadway Name/Alias	From/at Intersection(s)	To	Municipality
<b>Funded Street Improvement Projects</b>			
Berryville Avenue	West of Elm Street/Fort Collier Boulevard	1-81 SB Ramps	City of Winchester
Fairfax Pike	Double Church Road	N/A	Frederick County
Martinsburg Pike	State Route 37 City of Winchester Bypass Merge	1-81 Interchange NB On-ramp/Redbud Road	City of Winchester
<b>Funded Sidewalk Projects</b>			
Middle Road	VA 37 City of Winchester Bypass	US 11	Frederick County/City of Winchester
Papermill Road	City of Winchester (eastern edge)	S Pleasant Valley Rd	Frederick County/City of Winchester
<b>Funded Intersection Projects</b>			
Berryville Pike	Millbrook Drive/Blossom Drive	N/A	Frederick County
I-81 Southbound Ramps	SR 277 Fairfax Street	N/A	Frederick County
Martinsburg Pike	34-761 Old Charles Town Road	N/A	Frederick County
Millwood Avenue	Apple Blossom Driver	Frontage Road (0.2000 MI)	Frederick County
Millwood Pike	US 522 Front Royal Pike/I-81 Northbound Famps	N/A	Frederick County
Plesant Valley Road	E. Cork Street	N/A	City of Winchester
Plesant Valley Road	Jubal Early Drive	N/A	City of Winchester
S. Pleasant Valley Road	Tevis Street	E. Jubal Early Road	City of Winchester

## MEMORANDUM

**TO:** Taryn Logan  
WinFred MPO

**FROM:** McCormick Taylor

**DATE:** January 5, 2024

**SUBJECT:** SAFETY ANALYSIS APPROACH  
WinFred MPO Safe Streets For All (SS4A) Action Plan

This memorandum documents McCormick Taylor’s proposed approach to traffic safety analyses for the WinFred MPO Task Work Order to develop a Safe Streets For All (SS4A) Action Plan. The study area includes the WinFred MPO, Frederick County, the City of Winchester, and the Town of Stephens City. One goal of the safety analysis will be full compliance with the July 5, 2023 executed SS4A Action Plan Grant award agreement with the United States Department of Transportation while working with community representatives on the Leadership Commitment Committee (LCC) to align with community needs and local initiatives already underway. The safety analysis will be based on criteria identified in the USDOT Safe Streets and Roads For All Self-Certification Eligibility Checklist

<https://www.transportation.gov/sites/dot.gov/files/2023-03/SS4A-Self-Certification-Eligibility-Worksheet-FY23.pdf>

Specifically, the safety analysis will provide the information in item number three of the checklist highlighted in italics below:

*Does the Action Plan include all of the following?*

- *Analysis of existing conditions and historical trends to baseline the level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region;*
- *Analysis of the location where there are crashes, the severity, as well as contributing factors and crash types;*
- *Analysis of systemic and specific safety needs is also performed, as needed (e.g., high risk road features, specific safety needs of relevant road users; and,*
- *A geospatial identification (geographic or locational data using maps)*

### **Data Needs**

To date, McCormick Taylor has found or been provided the following data and information in GIS layers, spreadsheets, websites, and reports (as noted).

- USDOT
  - <https://www.transportation.gov/sites/dot.gov/files/2023-04/SS4A-Implementation-Application-Checklist-FY23.pdf>

- Note the current checklist calls for crash data from 2016-2020 or 2017-2021.
- Census data layers
- [Explore the map - Climate & Economic Justice Screening Tool \(geoplatform.gov\)](#)
- WinFred MPO
  - WinFred MPO Title VI Plan
  - Long Range Transportation Plan [WinFred 2045 Metropolitan Transportation Plan - WinFred MPO](#)
  - Valley Mill Road Relocation Study [Valley Mill - WinFred MPO](#)
- VDOT
  - VDOT Staunton District 6 Year Work Program
  - 2022-2026 Strategic Highway Safety Plan <https://vdot.virginia.gov/about/safety-plan/>
  - VDOT Pedestrian Safety Action Plan [FAhttps://vdot.maps.arcgis.com/apps/webappviewer/index.html?id=02a155fedefa4e71bdb8c0cf524b636f](https://vdot.maps.arcgis.com/apps/webappviewer/index.html?id=02a155fedefa4e71bdb8c0cf524b636f)
  - Potential Safety Improvement Rankings 2016-2020, 2017-2021, and 2018-2022
  - VDOT Traffic Crash Costs [Memorandum - VDOT Traffic Crash Costs \(virginia.gov\)](#)
  - VDOT Preferred Crash Countermeasures Factors [VA-State-Preferred-CMF-List\\_acc050222.pdf \(virginiadot.org\)](#)
  - VDOT Highway Safety Improvements Program (HSIP) [Virginia Highway Safety Improvements Program | Virginia Department of Transportation](#)
  - **Project and study resources including Strategically Targeted and Affordable Roadway Solutions (STARS)**
    - **City of Winchester - South Pleasant Valley Road Corridor Improvement Study** [City of Winchester - South Pleasant Valley Road Corridor Improvement Study | Virginia Department of Transportation](#)
    - **Frederick County/City of Winchester – Route 50 (Northwestern Turnpike/Amherst Street) STARS Study** [Frederick County/City of Winchester – Route 50 \(Northwestern Turnpike/Amherst Street\) STARS Study | Virginia Department of Transportation](#)
    - **Route 17/50/522**
      - **Frederick County – Route 17/50/522 (Millwood Pike) Bridge over Interstate 81** [Frederick County – Route 17/50/522 \(Millwood Pike\) Bridge over Interstate 81 | Virginia Department of Transportation](#)
      - **City of Winchester - Millwood Avenue (Route 17/50/522)** [City of Winchester - Millwood Avenue \(Route 17/50/522\) | Virginia Department of Transportation](#) <https://vdot.virginia.gov/projects/staunton-district/city-of-winchester---millwood-avenue-route-1750522/>
    - **Frederick County – Route 277 (Fairfax Pike)** [Frederick County – Route 277 \(Fairfax Pike\) | Virginia Department of Transportation](#)
    - **Route 7**

- **Frederick County – Route 7 (Berryville Pike) Intersection Improvements** [Frederick County - Route 7 \(Berryville Pike\) Intersection Improvements | Virginia Department of Transportation](#)
- **City of Winchester – Route 7 (Berryville Avenue/Berryville Pike) STARS Study** [City of Winchester – Route 7 \(Berryville Avenue/Berryville Pike\) STARS Study | Virginia Department of Transportation](#)
  - **Route 11 (Valley Pike/Valley Avenue) Corridor Study: Battle Park Dr to Renaissance Dr, Frederick County & City of Winchester**
  - **Frederick County – Route 522 (Front Royal Pike) Opequon Creek Bridge Replacement** [Frederick County – Route 522 \(Front Royal Pike\) Opequon Creek Bridge Replacement | Virginia Department of Transportation](#)
  - **Interstate 81 Corridor Improvement Plan** [Interstate 81 Corridor Improvement Plan | Virginia Department of Transportation](#)
    - Traffic Counts [Traffic counts | Virginia Department of Transportation](#) [VDOT Traffic Volume | VDOT Traffic Volume | ArcGIS Hub](#)
    - VDOT Crash Analysis Tool [Microsoft Power BI \(powerbigov.us\)](#)
- City of Winchester
  - Capital Improvements Plan <https://www.winchesterva.gov/current-city-projects#City>
  - Bicycle and Pedestrian Mobility Plan <https://winfredmpo.org/wp-content/uploads/2018/06/bikepedestrianplan.pdf>
- Frederick County Capital Improvements Plan <https://www.fcva.us/home/showpublisheddocument/25797/638252049447600000> <https://www.fcva.us/departments/planning-development/transportation/road-plans-transportation-comp-plans>
- Roadway inventory of characteristics for each roadway segment and intersection to be analyzed:
  - Maintaining agency (VDOT Traffic data, spreadsheet)
  - Number of lanes (VDOT GIS layer)
  - Divided or undivided (in VDOT GIS layer)
  - Functional classification (in VDOT GIS layer)
  - Posted speed limit [VDOT Posted Speed Limits | VDOT Posted Speed Limits | Virginia Roads](#)
- Crash and injury data (VDOT GIS layer, spreadsheet)
- Community factors
  - Census data (VDOT GIS layer)
  - Land use data and location of community resources (VDOT GIS layer)

### **McCormick Taylor Action Items and Deliverables**

#### **Develop a High Injury Network (draft for review at January LCC, complete by end of January)**

McCormick Taylor will develop a high injury network that provides information needed to comply with the Action Plan requirements and to provide technical data for use by local government safety programs and any future grant

application by others, such as a SS4A Implementation Plan application. Note that preparation of an Implementation Plan Application is not in the scope of this Action Plan.

*Analysis of existing conditions and historical trends to baseline the level of crashes involving fatalities and serious injuries across a jurisdiction, locality, Tribe, or region;*

*Analysis of the location where there are crashes, the severity, as well as contributing factors and crash types;*

For the time period from 2017-2021, the Virginia Department of Transportation (VDOT) crash database lists 8,728 total crashes in Frederick County, Winchester, and Stephens City. The database includes a total of 63 fatal crashes (K), 303 severe injury crashes (A), 1,602 visible injury crashes (B), 106 non-visible injury crashes (C), and 6,656 property damage only crashes (O or PDO). Note that crashes are categorized according to the most severe instance. An individual fatality crash may have additional injuries and include more than one fatality. Injury crashes may also include more than one injury and other types of injury of lesser severity.

McCormick Taylor will individually analyze the VDOT Traffic Count roadway segments with K or A crashes from all available data (2015-2023) in Frederick County, the City of Winchester, and the Town of Stephens City. McCormick Taylor will also review roadway segments and intersections planned or funded for improvement in the VDOT Six-Year Improvement Program, the WinFred MPO Long Range Transportation Plan, or the CIP or Comprehensive Plan of either Frederick County, the City of Winchester, or the Town of Stephens City. That analysis will also include bicyclist/pedestrian crashes and large truck crashes. McCormick Taylor will calculate total crash rates and K+A crash rates per VMT using spreadsheet and GIS analysis tools. The High Injury Network (HIN) will be developed based on a weighted approach of K+A total crashes and crash rates and in consultation with the LCC.

Deliverable - A High Injury Network will be presented for review at the January LCC meeting and completed by the end of January 2024.

### **Countermeasures**

McCormick Taylor will evaluate the crash locations in the HIN, possible countermeasures, and crash mitigation factors to develop an initial list of candidate traffic safety upgrades. Candidate projects may include:

- Lower cost solutions such as
  - center line and edge line rumble strips
  - traffic delineators
  - addition or relocation of guardrail
  - modified traffic control by added signage and pavement markings
    - warning and advisory speed plaque signage
    - conversion of a two-way stop to an all-way stop intersection
  - minor roadway modifications
    - add crosswalks on legs of an existing intersection
  - sight triangle clearing.
- Medium cost solutions such as
  - a road or lane diet
  - minor widening at an intersection or mid-block to
    - add a paved shoulder
    - Add a turn lane
    - Add a traffic separator

- Add signal heads to facilitate protected movements
- Add high visibility crosswalks
- Higher cost solutions such as
  - roadway geometric changes
    - realignment or reconstruction of a short roadway segment
    - installation of a new traffic signal
    - conversion of an intersection to a roundabout),
    - addition of bicycle and pedestrian facilities.

### **General Safety Upgrade Recommendations**

Crashes systemwide will be analyzed for patterns to identify applicable countermeasures to improve safety for all users, along with relative crash mitigation factors. Particular attention will be paid to VDOT focus areas and the most common contributing factors and crash types across the study area.

Deliverable - General and Systemwide countermeasures will be presented for review at the January LCC meeting and completed by the end of January 2024.

### **Hotspot Location Analysis (draft for review at Feb LCC, complete by end of February)**

Hotspot locations will be identified for further evaluation based on concentrations or clustering of crashes of all modes. This includes the HIN analysis of VDOT Traffic Count segments above, VDOT or municipal CIP plans, and locations identified by VDOT as a 2017-2021 or 2018-2022 Potential Safety Improvement (PSI). Each roadway segment will be spatially analyzed to locate hotspots within a 250 foot intersection buffer and where the crash pattern continues beyond the intersection, up to 1 mile long.

As suggested by the LCC on 12/5, Hotspots will be compared on the basis of the methodology used by VDOT in the Highway Safety Improvement Program (HSIP).

McCormick Taylor will utilize the crash data and compare hotspots based on the methodology outlined in the 3/2/2022 VDOT Memorandum – VDOT Traffic Crash Costs Version 1 Comprehensive Crash Costs for K, A, B, C, and O crashes (scoring criteria). Hotspot crashes will be estimated and compared using scoring criteria, spatial analysis, including the ARCGIS FHWA plug-in, as well as spreadsheet analysis. The comparison will also include crash rates and identification of adjacent Census Tract(s) identified in the Equity Analysis as underserved.

Deliverable - Hotspot Location Analysis will be presented for review at the February LCC meeting and completed by the end of February 2024.

### **Specific HIN Safety Upgrade Countermeasure Recommendations (draft for review at Feb LCC, complete by end of February)**

Roadway characteristics at 30 of the highest scoring Hotspot locations will be identified using the scoring criteria. At each location, contributing factors and crash types will be analyzed for patterns in order to identify applicable crash countermeasure(s) for each location. The locations will each have a Safety Upgrade recommendation(s) and identify whether they are in Census Tracts identified in the Equity Analysis as underserved communities. Recent

and current plans and studies listed above will be reviewed and reflected in the Action Plan Safety Upgrade recommendations.

Specific Safety Upgrade Recommendations will be vetted through the LCC and may include lower, medium, or higher cost solutions outlined above in Countermeasures. These may include recommendations for traffic control, signing and pavement markings, roadway geometry modifications, bicycle or pedestrian facilities, or installation of specific safety features.

Deliverable - Specific HIN Safety Upgrade Countermeasure Recommendations will be presented for review at the February LCC meeting and completed by the end of February 2024.

### **Case Studies<sup>1</sup>**

~~Five hotspot locations, with at least two in underserved community Census Tracts and at least two in municipalities, will be selected in consultation with the LCC and each have a one-page Case Study in the Action Plan. Analysis of each Case Study will include a summary of the location crash data and specific countermeasure implementation recommendations based on provided, where available, plans for ROW, roadway design, signal plans, signing and pavement markings.~~

~~Deliverable – Case Study Locations will be selected from the specific HIN Safety Upgrade Locations presented for review at the February LCC meeting, and completed by the end of February 2024.~~

### **Action Plan Safety Analysis**

Spatial analysis, as time and resources permit, will be performed for up to five other hotspots in underserved community Census Tracts and as identified in the process (LCC, public engagement, media reports, emergency room data) to identify additional candidate locations with similarities to the conditions at High Injury Network Hotspot locations. Any additional analysis to be included in the SS4A Action Plan will be identified prior to or at the March LCC meeting.

The crash data above will be utilized to establish 2022 as a base year for the Safe Street For All Action Plan as the most recent Virginia Crash facts report year. [https://www.dmv.virginia.gov/sites/default/files/documents/crash\\_facts\\_22.pdf](https://www.dmv.virginia.gov/sites/default/files/documents/crash_facts_22.pdf) Crash data from prior years will be utilized to develop a trendline for fatalities, and serious injuries.

The data and analysis above in support of General Safety Upgrade Recommendations, Specific HIN Safety Upgrade Countermeasure Recommendations, and Case Studies will be the basis for the Safety Analysis section of the WinFred MPO SS4A Action Plan. The analysis will include maps and supporting graphics derived from the geospatial analysis.

Deliverable - The Action Plan Safety Analysis will be completed by the end of March 2024.

<sup>1</sup> Subsequently removed from project methodology following a meeting with the Leadership Commitment Committee (LCC) on January 10, 2024.

**SAFE STREETS & ROADS FOR ALL**  
*ACTION PLAN*

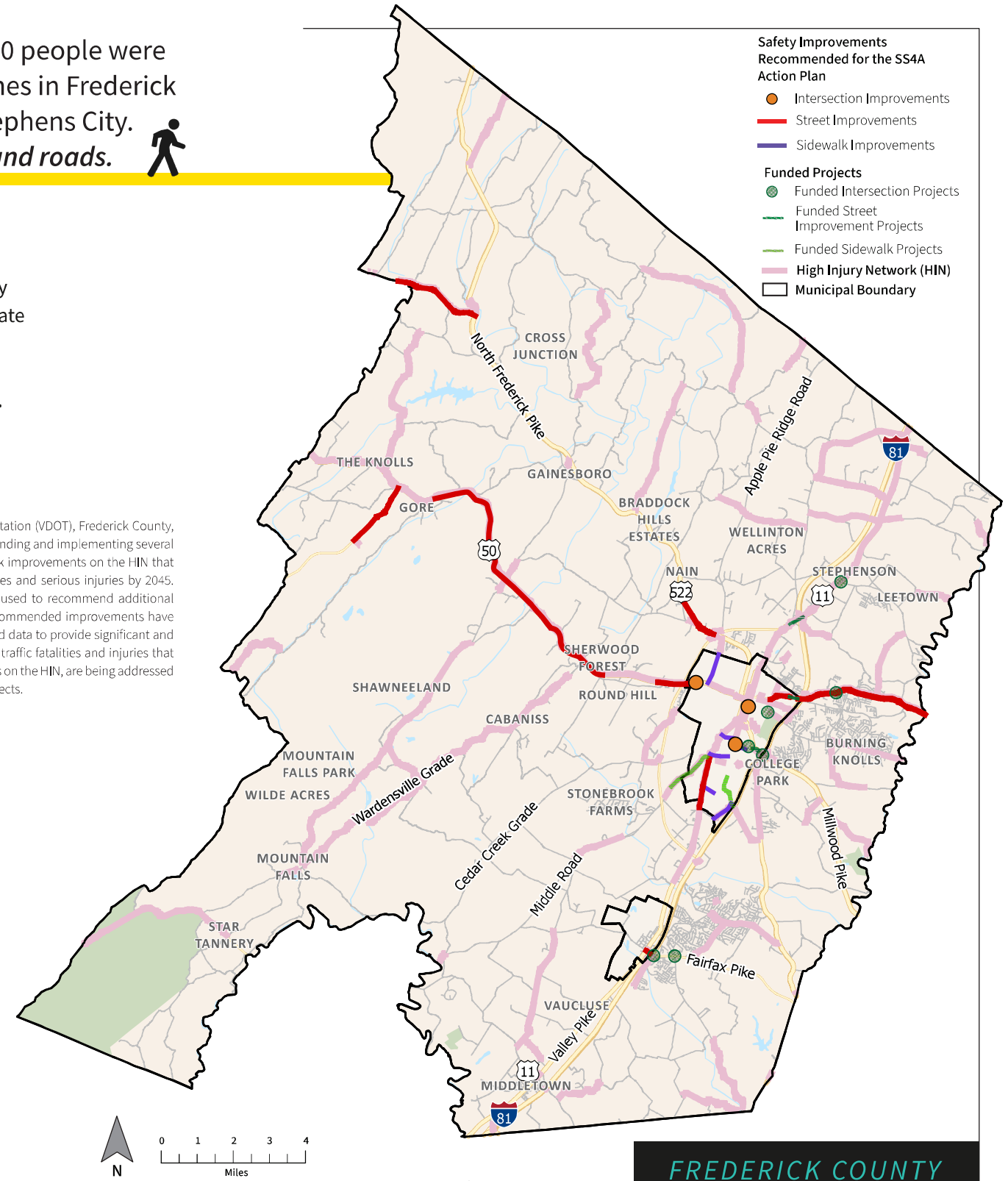
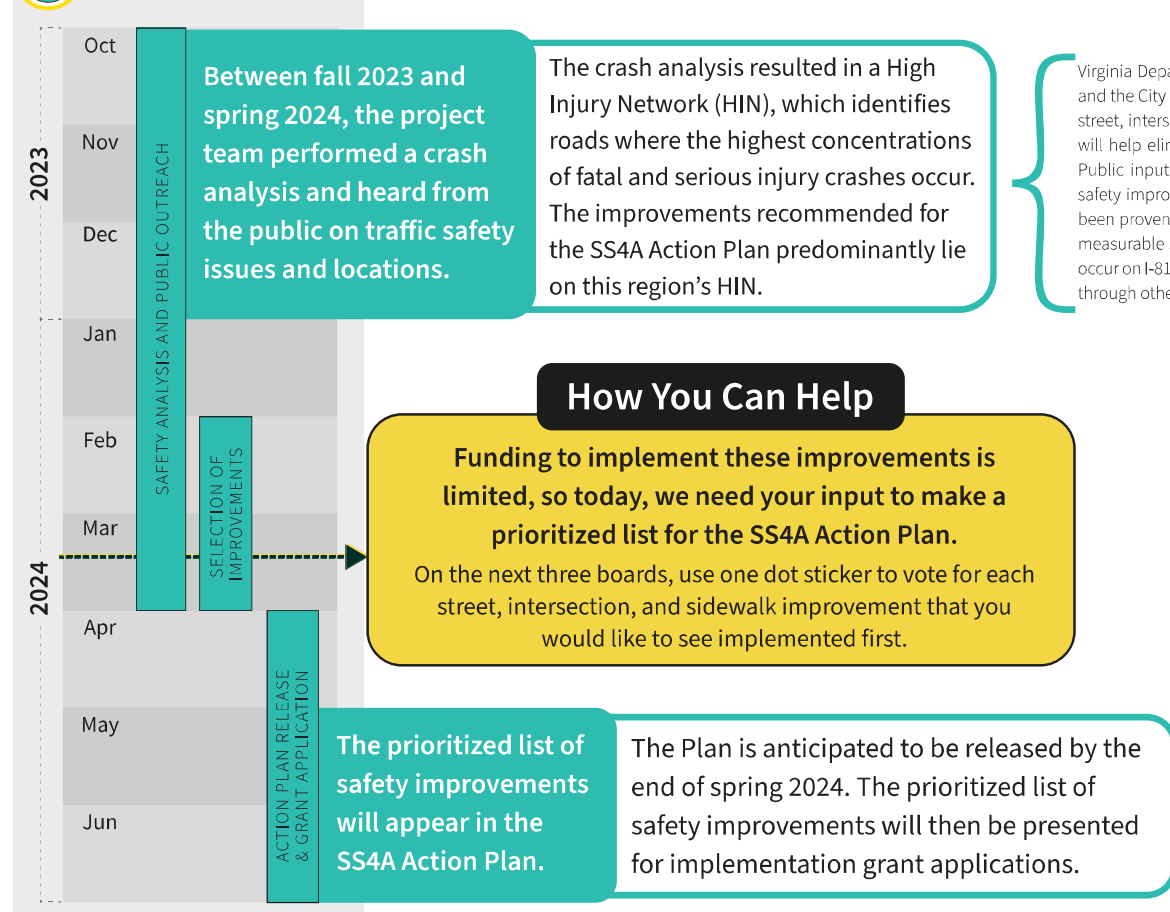
In the last eight years, almost 900 people were involved in life-altering car crashes in Frederick County, Winchester City, and Stephens City. *Everyone deserves safe streets and roads.*

**About Safe Streets and Roads for All (SS4A)**

Winchester-Frederick Metropolitan Planning Organization (WinFred MPO) and Northern Shenandoah Valley Regional Commission (NSVRC) are developing a Safe Streets and Roads for All (SS4A) Action Plan to eliminate traffic fatalities and serious injuries by 2045. The Action Plan will:

1. Identify roads with high traffic fatalities and serious injuries.
2. Recommend a prioritized list of safety improvements to address traffic fatalities and serious injuries.

**Development of Recommended Safety Projects**


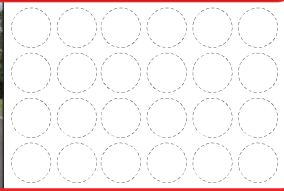

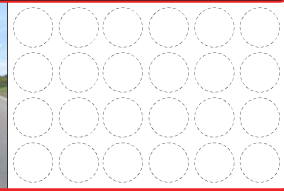

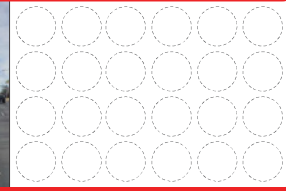

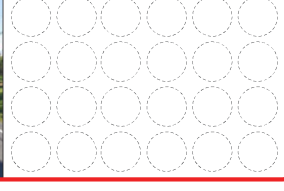

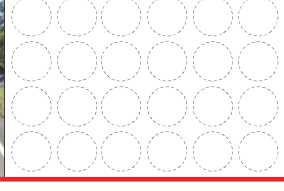

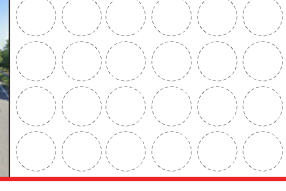

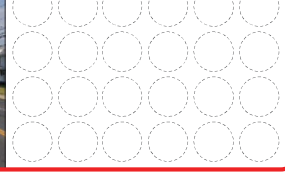

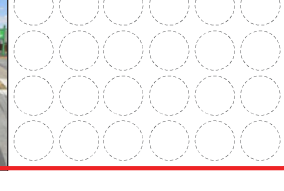

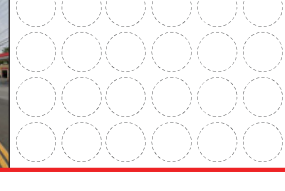


**REACH OUT TO US:**


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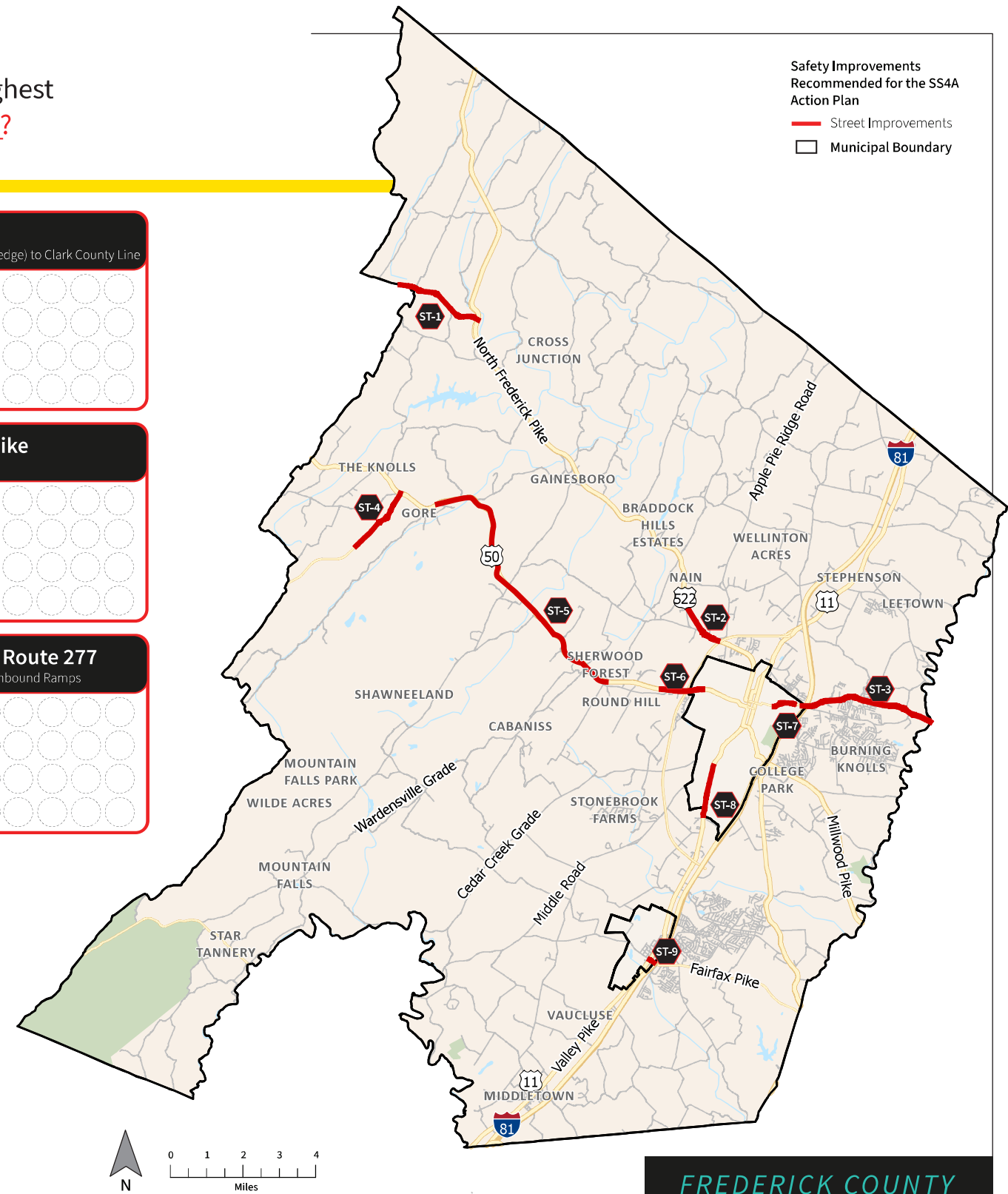
**SAFE STREETS & ROADS FOR ALL**  
*ACTION PLAN*

Which location should be the highest priority for **Street Improvements**?  
Use one dot sticker to vote.

<p><b>ST-1 Bloomery Pike</b> West Virginia State Line to US 522 Frederick Pike</p>  	<p><b>ST-2 Frederick Pike North</b> State Route 37 Ramps to Burnt Church Rd</p>  	<p><b>ST-3 Berryville Pike</b> City of Winchester (eastern edge) to Clark County Line</p>  
<p><b>ST-4 Carpers Pike</b> Owl Lane to US 50/17 (Northwestern Pike)</p>  	<p><b>ST-5 Northwestern Pike</b> Wardensville Grade to Gore Rd</p>  	<p><b>ST-6 Northwestern Pike</b> Round Hill Rd to Keating Dr</p>  
<p><b>ST-7 Berryville Ave</b> N Pleasant Valley Rd to W Elm St/Fort Collier Blvd</p>  	<p><b>ST-8 Valley Ave</b> City of Winchester (southern edge) to Middle Rd</p>  	<p><b>ST-9 Fairfax St/State Route 277</b> US 11/Main St to I-81 Southbound Ramps</p>  

**Examples of Street Safety Improvement Measures**  
The type of safety improvements to be implemented will depend on the local conditions of each street.

EDGE & CENTERLINE RUMBLE STRIPS	ACCESS MANAGEMENT	SHOULDER WIDENING
 <p>Edgeline and centerline rumble strips are cylindrical grooved patterns milled into the pavement that alert drivers through detectable noise and vibration when a vehicle's wheels leave the travel lane.</p>	 <p>Access management focuses on the location, spacing, and design of entrances, street intersections, median openings, and traffic signals. <i>Safety benefit: 5-23% reduction in total crashes along two-lane rural roads. 25-31% reduction in fatal injury and crashes along urban/suburban roads.</i></p>	 <p>Shoulder widening, particularly on curves, can provide drivers with an opportunity to regain control and re-enter the roadway.</p>



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SAFE STREETS & ROADS FOR ALL

ACTION PLAN

Which location should be the highest priority for Intersection Improvements?  
Use one dot sticker to vote.

IN-1 Amherst St & Campus Blvd / Meadow Branch Ave



Grid of 100 dot stickers for voting.

IN-2 S Cameron St & Cork St

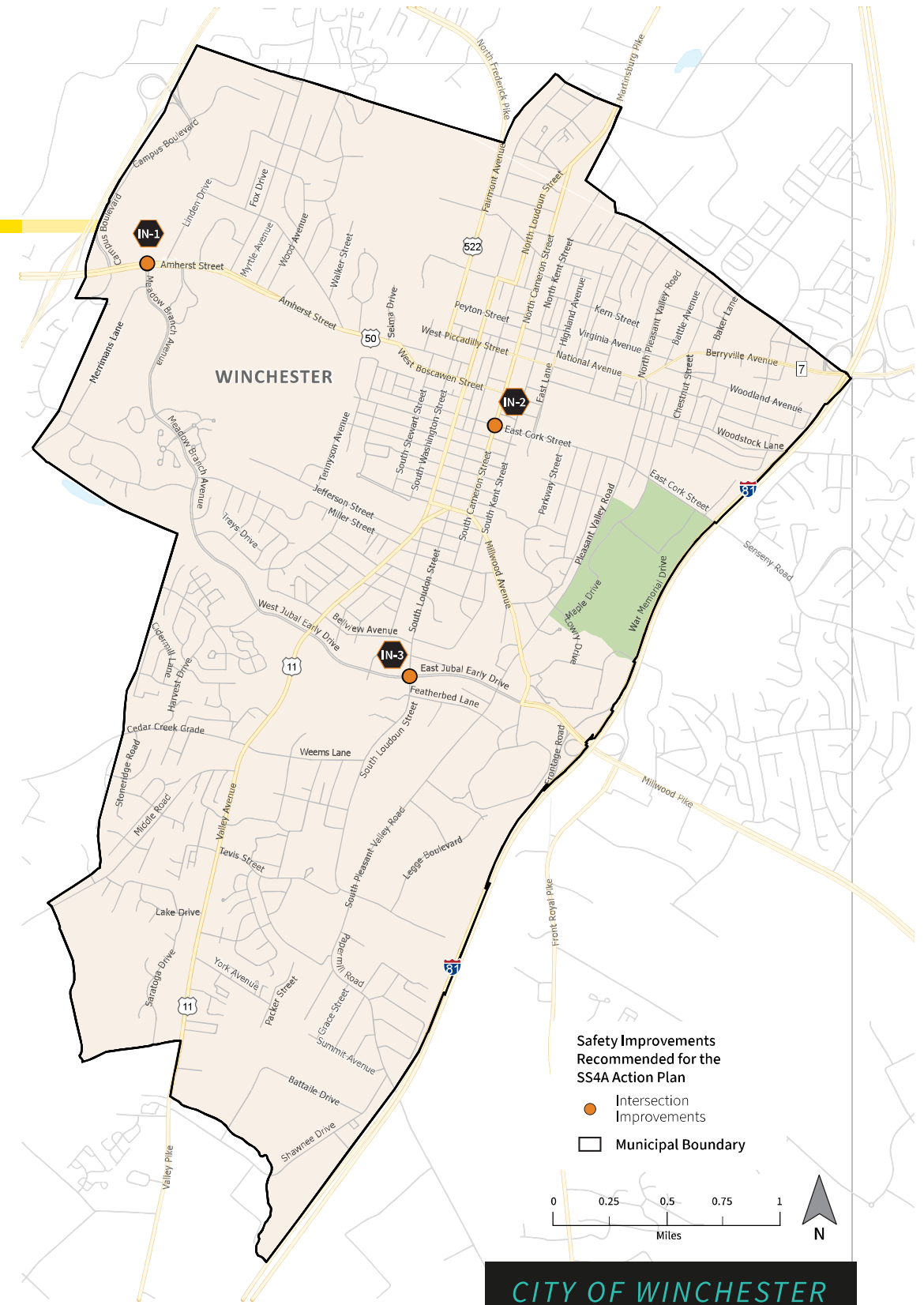


Grid of 100 dot stickers for voting.

IN-3 E Jubal Early Dr & S Loudon St



Grid of 100 dot stickers for voting.



Examples of Intersection Safety Improvement Measures

The type of safety improvements to be implemented will depend on the local conditions of each intersection.

HIGH-VISIBILITY CROSSWALKS	LEADING PEDESTRIAN INTERVAL	PROTECTED vs PERMISSIVE LEFTS
<p>High-visibility crosswalks use patterns (i.e., bar pairs, continental, ladder) that are visible to both the driver and pedestrian from farther away compared to traditional transverse line crosswalks. <b>Safety benefit: Up to 40% reduction in pedestrian injury crashes.</b></p>	<p>A Leading Pedestrian Interval (LPI) gives pedestrians the opportunity to enter the crosswalk at an intersection 3-7 seconds before vehicles are given a green indication. <b>Safety benefit: 13% reduction in pedestrian / vehicle crashes at intersections.</b></p>	<p>A protected left turn provides a green arrow for left turning vehicles while stopping both on-coming traffic and parallel pedestrian crossings to eliminate conflicts.</p>

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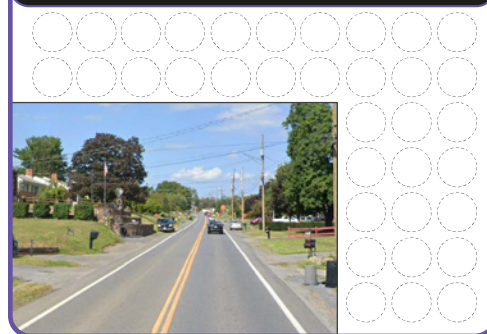


SAFE STREETS & ROADS FOR ALL

ACTION PLAN

Which location should be the highest priority for Sidewalk Improvements? Use one dot sticker to vote.

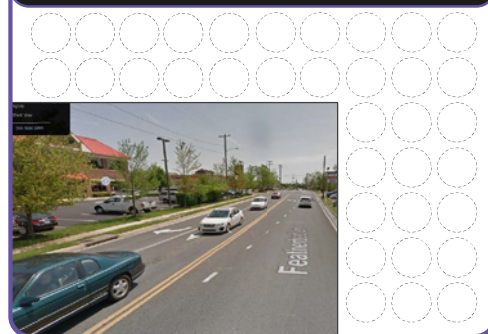
**SW-1 Fox Dr**  
US 50/Amherst St to City of Winchester (northern edge)



**SW-2 Bellview Ave**  
US 11/Valley Ave to Loudon St



**SW-3 Featherbed Ln**  
S Loudon Street to S Pleasant Valley Road



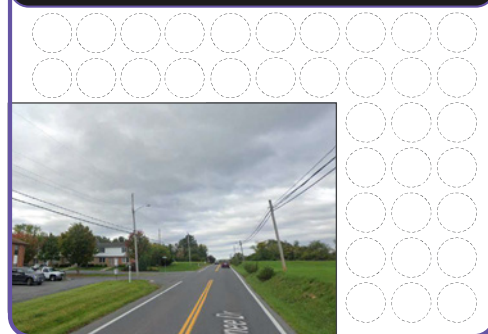
**SW-4 Weems Ln**  
US 11/Valley Avenue to S Loudon Street



**SW-5 York Ave**  
US 11/Valley Ave to Packer St



**SW-6 Shawnee Dr**  
City of Winchester (southern edge) to Papermill Rd

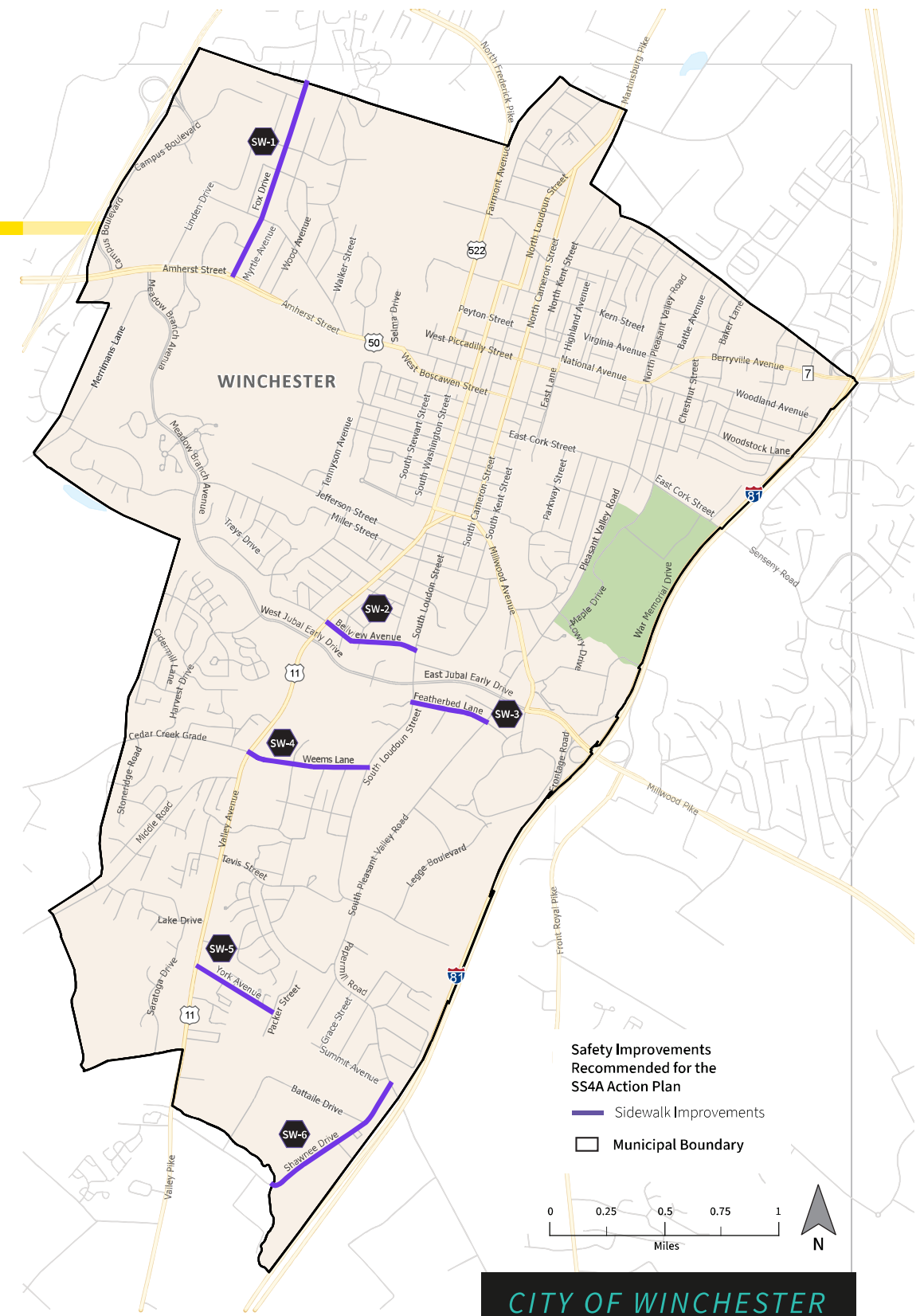


Sidewalks are a proven countermeasure for pedestrian safety.



According to the Federal Highway Administration, sidewalks can reduce crashes involving pedestrians along roadways by 65% to 89%.

Most of the proposed sidewalk improvements above are also identified in the City of Winchester's Sidewalk Master Plan, released in 2022.



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# E | WinFred MPO Vision Zero Resolution

WinFred Metropolitan  
Planning Organization  
400 Kendrick Lane, Suite E  
Front Royal, Virginia 22630  
Phone: 540-636-8800  
Website: [www.winfredmpo.org](http://www.winfredmpo.org)

**Policy Board**

**Chair:**  
Judith McCann-Slaughter  
*Frederick County*

**Vice-Chair:**  
Phil Milstead  
*City of Winchester*

**Secretary/ Treasurer:**  
Brandon Davis  
*NS/RC*

**City of Winchester:**  
\*Dan Hoffman  
*City Manager*  
\*Phil Milstead  
*Council Member*  
\*John W. Hill  
*Council Member*

**Frederick County:**  
\*Judith McCann-Slaughter  
*Board of Supervisors*  
\*Michael Bollhoefer  
*County Administrator*  
\*Josh Ludwig  
*Board of Supervisors*

**Stephens City:**  
\*Michael Majher  
*Town Administrator*

**VDOT:**  
\*Todd Stevens  
*District Administrator*

**Va. Dept. of Rail & Public Trans.:**  
Amy Garbarini  
*Transit Planning Manager*

**Federal Highway Administration:**  
Steven Minor  
*Planning and Environmental Specialist*

**Federal Transit Administration:**  
Tony Cho  
*Transportation Program Specialist*

\* Denotes Voting Members



**MPO RESOLUTION 24-01  
4/17/2024**

**A RESOLUTION OF THE WINCHESTER/FREDERICK COUNTY, VA  
METROPOLITAN PLANNING ORGANIZATION ADOPTING A  
VISION ZERO GOAL**

**WHEREAS**, the life and health of all persons living and traveling within the Winchester/Frederick County Metropolitan Planning Area are our utmost priority, and no one should die or be seriously injured while traveling on our streets;

**WHEREAS**, Vision Zero is the concept that traffic deaths and serious injuries on our roadways are unacceptable;

**WHEREAS**, Vision Zero is a holistic strategy aimed at eliminating traffic fatalities and severe injuries suffered by all road users while increasing safe, healthy, equitable mobility for all;

**WHEREAS**, Vision Zero aims to design streets and transportation systems to move all people safely, including people of all ages and abilities, pedestrians, bicyclists, public transit users, scooter riders, and motorcyclists, as well as drivers and passengers of motor vehicles;

**WHEREAS**, traffic crashes are among the leading cause of deaths in the United States;

**WHEREAS**, the Winchester/Frederick County Metropolitan Planning Organization's transportation infrastructure serves an increasing number of vulnerable road users such as pedestrians and bicyclists;

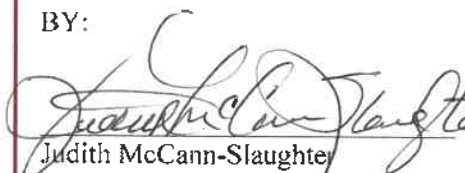
**WHEREAS**, making streets safer for all people using all modes of transportation will encourage people to travel on foot, by bicycle, and by public transit, which supports a healthier, more active lifestyle and reduces environmental pollution;

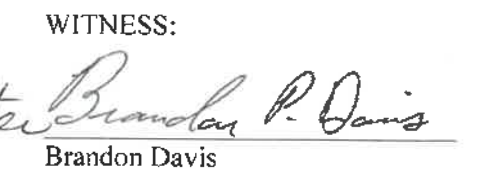
**WHEREAS**, successful Vision Zero programs are a result of both a complete government approach (i.e., interdepartmental, coordinated initiatives) and community support of Vision Zero objectives and action plans;

**WHEREAS**, the Winchester/Frederick County Metropolitan Planning Organization adopts the goal of zero traffic deaths and serious injuries, stating that no loss of life or serious injury is acceptable on our streets; and

**THEREFORE**, be it resolved that the Winchester/Frederick County Metropolitan Planning Organization adopts the goal of eliminating traffic deaths and serious injuries by 2045 and endorses Vision Zero as a comprehensive and holistic approach to achieving this goal.

\*\*\*\*\*  
This is to certify that the WinFred Metropolitan Planning Organization adopted the above resolution at its meeting held April 17, 2024.

**BY:**   
Judith McCann-Slaughter  
Chairman, WinFred MPO

**WITNESS:**   
Brandon Davis  
Secretary-Treasurer, WinFred MPO

For more information about the WinFred MPO SS4A Action Plan, visit:  
[winfredmpo.org/project/safe-streets-for-all-safety-action-plan/](https://winfredmpo.org/project/safe-streets-for-all-safety-action-plan/)