REGIONAL ROADWAY SAFETY ACTION PLAN

tpo
KNOXVILLE REGIONAL

Adopted via resolution of the
Knoxville Regional TPO Executive Board
on June 28, 2023.

ACKNOWLEDGMENTS

The Regional Roadway Safety Action Plan is a product of the hard work and commitment of each of the members of the TPO's Safety Task Force and Knoxville's Steering Committee. Their efforts are a testament to the outstanding partnership and collaboration that will be necessary to achieve zero traffic deaths and severe injuries in the Knoxville Region.

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OUR COMMITMENT

The more than 10,000 miles of public roadways in the six-county Knoxville Region provide necessary connections to community, jobs, and recreation. These roadways need to be safe for users of all ages, abilities, and backgrounds regardless of where they live in the region or how they choose to get around.

The Knoxville Regional Transportation Planning Organization (TPO) strongly supports the vision set forth in the National Roadway Safety Strategy, a document with the steps required to meet the national goal to dramatically reduce fatalities and serious injuries. **The Knoxville TPO is doing our part with a commitment to reduce fatalities by 66% by 2045**.

This Action Plan spells out the steps we need to take to improve safety for everyone who uses our region's roadways. It is rooted in the Safe System approach, a holistic approach that encompasses the many dimensions of safety interventions required to reduce fatal and serious injury crashes.

We thank the residents, staff, and elected officials within the region for your commitment and work thus far toward meeting this goal. We ask that each of you continues to support roadway safety improvements and take personal responsibility to follow the rules of the road. While this work is difficult, it is essential. A brighter future, where nobody's life is tragically cut short by a traffic crash, is within our reach.

JEFFREY A. WELCH, AICP
KNOXVILLE REGIONAL TPO
EXECUTIVE DIRECTOR

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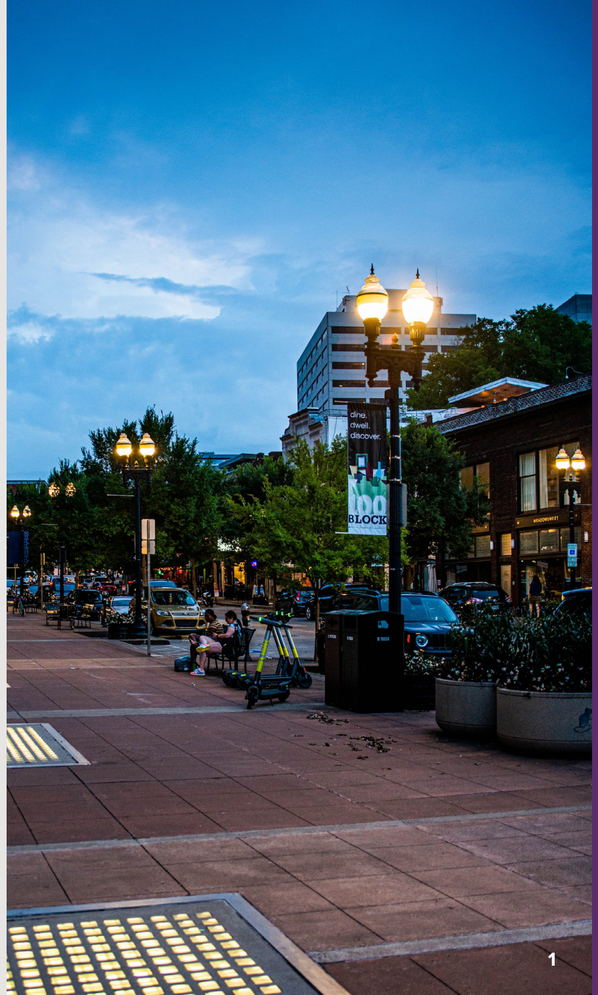
INTRODUCTION



Our Call to Action

Every year, hundreds of people who live, work, and travel throughout the Knoxville region are killed or seriously injured in traffic crashes. This Regional Roadway Safety Action Plan acknowledges that these life-altering traffic crashes are not acceptable. This plan is based on input from residents, stakeholders, and elected officials and will guide our transportation decision-making in the region by:

- **Designating** a high injury network, those roadway segments that see the most life-altering crashes in our region.
- **Identifying** projects and strategies that will reduce the number of fatal and severe injury crashes on our roadways.
- **Creating** a transparent platform for tracking our progress on improving roadway safety.
- **Coordinating** between municipalities in the region, which includes the ongoing partnership between the Knoxville TPO and City of Knoxville in producing and implementing this plan.

THE KNOXVILLE TPO IS DOING OUR PART WITH A COMMITMENT TO REDUCE FATALITIES AND SERIOUS INJURIES BY **TWO-THIRDS** BY **2045**.

5% ANNUAL REDUCTION 2024-2045

Basics of the Safe System Approach

The Safe System approach, developed and adopted by the United States Department of Transportation (USDOT), is a framework that guides safety efforts. The Safe System approach anticipates human mistakes by building redundancy into transportation systems, so if one aspect of the system breaks down, there are others in place to prevent life-altering crashes and injuries. This approach involves identifying multiple aspects of safety: safe road users, safe vehicles, safe roads, safe speeds, and post-crash care. The Safe System approach requires those who plan, govern, maintain, and use our roadways in the Knoxville region to adopt a culture of safety.

> *I only ride the greenways since the streets are unsafe for bicyclists.*
>
> *Community Survey Response*

Source: USDOT Safe System Approach

Our Shared Responsibility

The Knoxville TPO region is made up of a diverse range of communities, jurisdictions, and contexts. Collaboration and partnerships will be an essential part of working toward the shared goal of improving safety for all roadway users.

KNOXVILLE REGIONAL TRANSPORTATION PLANNING ORGANIZATION

The Knoxville TPO region consists of Knox County in its entirety, as well as the contiguous areas of Anderson, Blount, Loudon, Roane, and Sevier counties. Within those counties, these cities and towns are also included in the TPO: Alcoa, Clinton, Farragut, Knoxville, Lenoir City, Loudon, Maryville, and Oak Ridge.

LAND USE CONTEXT

Approximately 727,000 people live in the Knoxville TPO region. The region is not uniform in density or development pattern. It includes the focal city, Knoxville, as well as suburban and rural communities. This diversity in land use context contributes to the challenge of coordinating a regional Safe System approach, as appropriate countermeasures may vary by jurisdiction. Even so, the region as a whole can unite behind the shared goal of

reducing traffic deaths and serious injuries and overcoming barriers to improved traffic safety.

The Knoxville TPO's key safety responsibilities include the following:

- Improve the safety of the transportation system for all users, motorized and non-motorized. The TPO does not implement projects, but it does bring together agencies and people on shared goals and on determining funding priorities.
- Coordinate regional planning efforts by vetting and approving projects to be included in the long-range Mobility Plan and the four-year Transportation Improvement Program (TIP). The Mobility Plan and the TIP include all phases of transportation projects of regional significance for the Knoxville region.
- Provide vital technical assistance to all jurisdictions including safety analysis, contract procurement, evaluating performance measures, and prioritizing the perspectives of the traditionally underserved and underrepresented.

CITY OF KNOXVILLE

As the largest municipality in the region, the City of Knoxville plays a vital role in informing and advancing regional priorities. The City of Knoxville has been a regional trendsetter with respect to safety, with the City of Knoxville City Council passing a unanimous resolution to support a Vision Zero goal to eliminate serious injuries and traffic deaths in Knoxville.

The City has invested time and funds into plans and policies that support safer roads, including collecting and analyzing transportation safety data, establishing partnerships for comprehensive safety work, developing internal staff knowledge about safety best practices, developing Complete Streets design guidance, and recognizing the urgency and equity implications of biking and walking safety.

With these actions, detailed to the right, Knoxville has set the foundation for Vision Zero in the city.

vision zero
SAFER STREETS FOR KNOXVILLE

CITY OF KNOXVILLE SAFETY MILESTONES

2021

- **October 2021** City Council passes resolution endorsing Vision Zero goal.
- **November 2021** Council approves policy reducing speed limits to 25 mph on any street where a limit is not posted.

2022

- **January 2022** City finalizes its Safer and Complete Streets Study. Launches public survey on road safety.
- **February 2022** City launches the planning stage of the Vision Zero Plan.
- **May 2022** Vision Zero Steering Committee meets.
- **June 2022** WATE interviews Vision Zero leaders on speed limit reduction.
- **July 2022** City reduces speed limits on unposted roads and launches "Save Lives with 25" campaign.
- **July 2022** Tennessee Highway Safety Office announces "Operation Southern Slow Down."
- **August 2022** City Council workshop on active transportation studies.
- **October 2022** Bike Walk Knoxville releases "Crash Survivor Stories" video.

2023

- **January 2023** Knoxville joins a coalition of local governments as the TPO begins regional roadway safety planning process.
- **February 2023** City launches public outreach to gather input on life-altering crashes for regional plan.
- **June 2023** City finalizes Vision Zero Action Plan which is adopted as part of the TPO Regional Roadway Safety Action Plan.

LOCAL JURISDICTIONS

In addition to the City of Knoxville, local governments throughout the region play a key role in implementing the Safe System approach and reducing the number of life-altering traffic crashes. They oversee the operations and maintenance of their roadways, and often undertake projects using local funding. Rural communities and unincorporated areas face unique safety challenges in maintaining extensive roadway networks amid significant growth pressures.

TENNESSEE DEPARTMENT OF TRANSPORTATION

Nurturing and maintaining collaborative working relationships among all of the local governments and the Tennessee Department of Transportation (TDOT) is essential to reducing traffic deaths and severe injuries. As the primary owner of the major roadways throughout Tennessee, TDOT serves to connect regions of the state with each other. Agency missions should be coordinated and aligned with the common goal of reducing crashes and eliminating traffic fatalities and severe injuries.

Image Credit: City of Alcoa

Image Credit: Town of Farragut

Our Guiding Principles

The Regional Roadway Safety Action Plan is our call to action to significantly reduce traffic-related deaths and severe injuries. In light of the recent increase in traffic-related fatalities and serious injuries across Tennessee and the U.S., this can seem like an overwhelming task and out-of-reach goal. The opportunity to save lives is worth it. In order to make this plan a reality, it will require commitment to shared values and guiding principles. When design and policy challenges arise, these principles serve as a reminder of the importance of this work, the underlying values, and the necessary elements to make this goal a reality.

> *There are several areas where the sidewalk just ends before my destination requiring walking in the grass or side of the road.*
>
> *Community Survey Response*

Traffic deaths and severe injuries are unacceptable and preventable.

The region will prioritize actions that reduce crashes that result in a severe injury or death.

Human life is vulnerable and takes priority over moving cars.

The impact of heavy, fast-moving vehicles is often too much for our bodies. Saving lives is more important than improving roadway capacity.

Traffic safety is everyone's responsibility and should reflect community needs.

Everyone who lives in, works in, visits, or travels through the Knoxville region shares responsibility for the safety of our streets. This includes elected officials, government staff, advocates, the vehicle industry, and members of the public.

Roadways should be designed to account for human error and ensure that mistakes aren't deadly or life-altering.

We know humans make mistakes, but one mistake should not end a life. Design of our streets should anticipate these risks and minimize harm.

Quality data, transparent evaluation, and transparent decision-making are needed at all levels of government.

High-quality data is foundational to informing safety improvements. Data should be made available to the public to hold everyone accountable on progress toward zero traffic deaths.

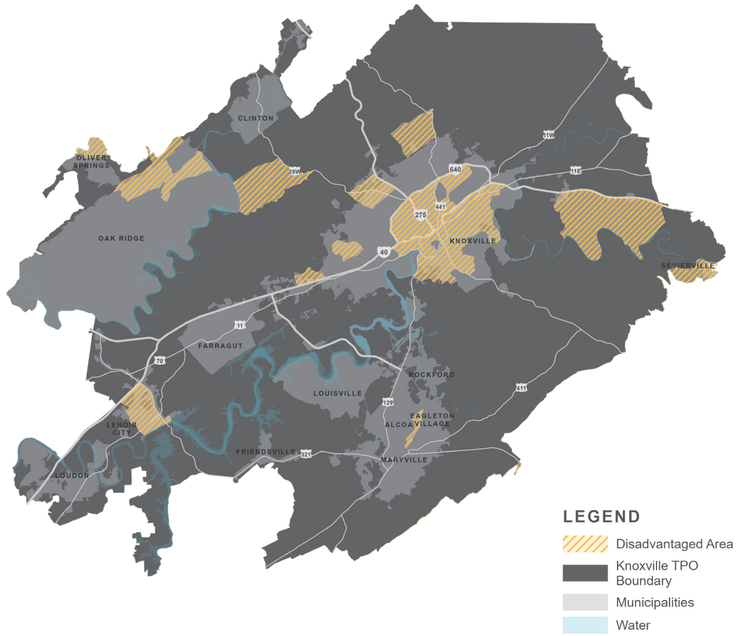
Prioritizing Equity

The Justice40 initiative provides tools used by USDOT to understand certain disadvantages experienced by communities.

The Equitable Transportation Community Explorer tool assesses indicators within five components: climate and disaster risk burden, environmental burden, health vulnerability, social vulnerability, and transportation insecurity. Scores within each component are used to create a final index score that shows areas that are considered disadvantaged.

The map to the right identifies the disadvantaged areas in the Knoxville region where safety projects should be prioritized

43% OF RESIDENTS IN THE KNOXVILLE REGION LIVE IN A DISADVANTAGED AREA



Safety in the Region Today

Between October 2016 through September 2021, 2,979 traffic crashes in the region resulted in a fatality or serious injury, which equates to one life-altering crash every **15 hours** in the region. During the same time period, 1,183 traffic crashes in the City of Knoxville resulted in a fatality or serious injury. This means there was a life-altering crash every **37 hours** in the City.

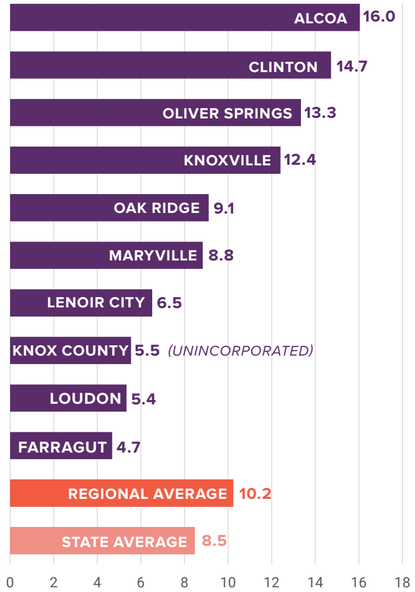
HOW OUR REGION COMPARES

According to Smart Growth America's Dangerous by Design 2022, Tennessee is the 17th most dangerous state in the country for pedestrians.

MOST DANGEROUS STATES, BY RANK

1. NEW MEXICO
2. FLORIDA
3. SOUTH CAROLINA
4. ARIZONA
5. DELAWARE
6. LOUISIANA
7. MISSISSIPPI
8. NEVADA
9. GEORGIA
10. CALIFORNIA
11. ALABAMA
12. TEXAS
13. HAWAII
14. NORTH CAROLINA
15. OKLAHOMA
16. MARYLAND
17. TENNESSEE
18. ARKANSAS
19. NEW JERSEY
20. OREGON

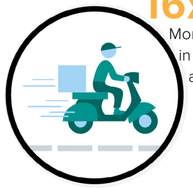
Annual Killed and Seriously Injured (KSI) Crashes Per 10,000 Population



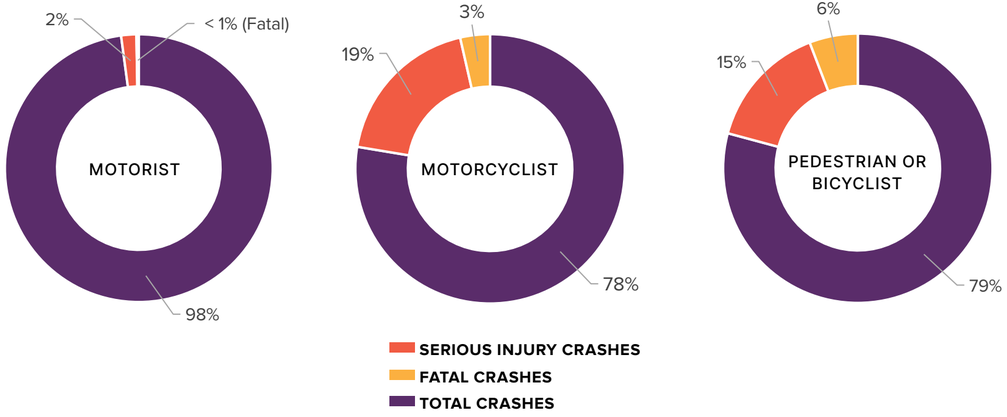
CRASH SEVERITY BY MODE

While pedestrians, bicyclists, and motorcyclists make up a smaller proportion of overall crashes, they are overrepresented in the most serious crashes throughout the Knoxville Region.

16x
More likely to be killed in a crash compared to a motorist.



25x
More likely to be killed in a crash compared to a motorist.

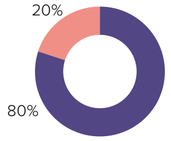


WHO'S GETTING HURT?

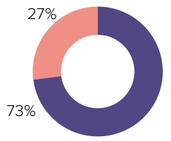
National studies have found that certain demographics are most at risk when it comes to pedestrian traffic crashes. People of color (including Black people, Latino/a people, and Indigenous people) are more likely to be killed in crashes, as are older Americans. Some of these disparities occur in the City of Knoxville and the surrounding area.

IN THE KNOXVILLE REGION

Drivers aged 65 and older are involved in 20% of life-altering crashes throughout the region. They are also involved in 27% of fatal and serious crashes on major arterials, which suggests that senior drivers are more at risk on these higher-speed, wider roadways.



Senior Drivers involved in KSI crashes on all roadways



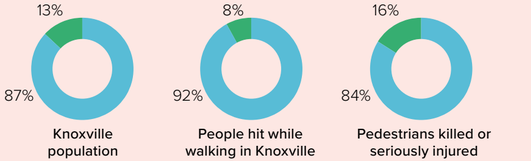
Senior Drivers involved in KSI crashes on major arterials

IN THE CITY OF KNOXVILLE

Disparities in Pedestrians Crashes

Black people represent a larger share of people hit by cars while walking, compared with their share of the Knoxville population.

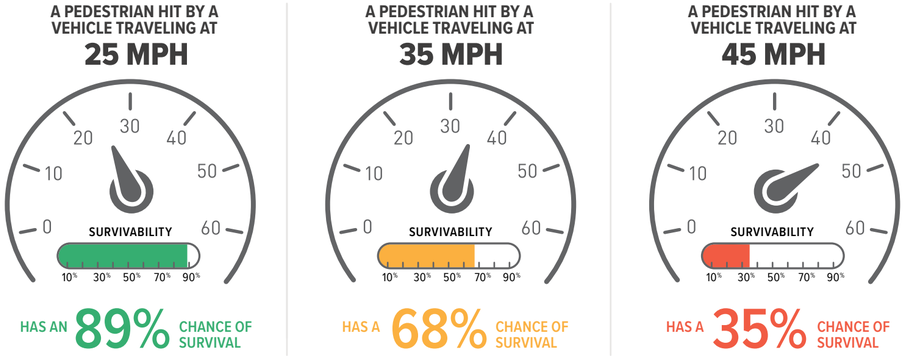
People age 65 and older are less likely to be hit as pedestrians, compared with their share of the population, but are more likely to be killed or seriously injured.



CONTEXT AND CRASH FACTORS

Speed

Speed is one of the most important predictors of whether a crash is survivable. Lower speeds make crashes more avoidable as well. Due to the high speeds common on major arterials and rural or suburban roads, crashes tend to be more severe on these roadways. This is a significant crash factor throughout the Knoxville region and for people using all modes of transportation. However, higher speeds are particularly dangerous for people walking, with a pedestrian's chance of surviving a crash declining to 35% when hit by a vehicle traveling at 45 mph.



Tefft, B. C. *Impact speed and a pedestrian's risk of severe injury or death.* Accident Analysis & Prevention 50 (2013) 871-878.

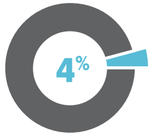
CONTEXT AND CRASH FACTORS

IN THE KNOXVILLE REGION

Major Arterials

Major arterials in the Knoxville region—roadways such as Clinton Highway and Lamar Alexander Parkway—are where a significant portion of life-altering crashes occur. These roadways make up 4% of the road network in the region, yet it is where 30% of fatal and serious injury crashes have occurred.

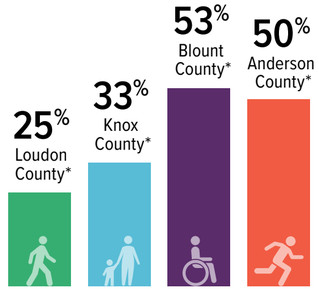
of **life-altering crashes** in the Knoxville region took place on **major arterial roads**



Major arterial roads are just **4%** of the road network in the Knoxville region.

Rural Roads

Most crashes in our region that involve people walking or bicycling occur in cities and towns. But they do occur on rural roads as well. The most common crash factor when a person is hit by a vehicle on a rural road is the lack of space for walkers. Accommodations for pedestrians on rural roads can include shoulders, trails, or sidewalks.



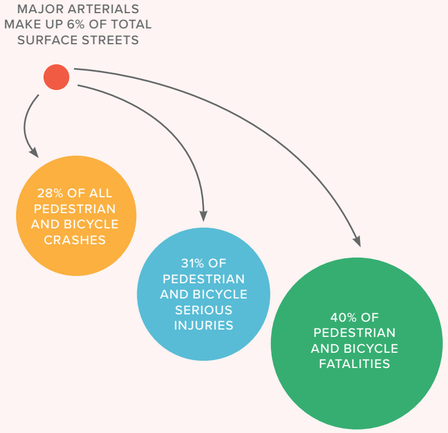
Percent of Crashes Due to Lack of Dedicated Space for People Walking

**Unincorporated*

IN THE CITY OF KNOXVILLE

Major Arterials

Major arterials make up six percent of the surface street mileage in Knoxville. Yet a disproportionate share of pedestrian/bicycle crashes, especially serious crashes, occur on major arterials (streets such as Broadway and Kingston Pike).



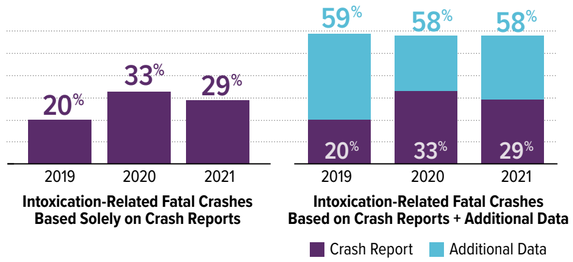
Case Study: Joint Fatal Crash Review

JOINT REVIEW PROCESS

The TPO began coordinating a joint review of fatal crashes in Knox County in 2019. The group brings stakeholders together every six months to discuss fatal crashes with the goal of identifying steps we can take to reduce and ultimately eliminate fatalities on our roadways. Attendees include local law enforcement, traffic engineers, the Knox County Health Department, the Knox County Regional Forensic Center, the Metro Drug Coalition, Mothers Against Drunk Driving, the Tennessee Department of Transportation, and the Tennessee Highway Safety Office. This joint review has helped share vital information, identify gaps in data collection, and build relationships among the different agencies working in traffic safety.

One key finding from the joint review is that driving under the influence (DUI) crashes are significantly underreported. This underreporting often happens because the driver who was under the influence of alcohol or other substances dies in the crash. Law enforcement has no need to order testing in those situations, and therefore DUI status is not included in those crash reports. Medical examiner staff does have access to that information but has no way to add it to the crash reports.

The TPO found that in 2019, based only on crash reports, the share of fatal crashes with an intoxicated driver was 20%. When information from the medical examiner's staff was factored in, the share of fatal crashes involving an intoxicated driver jumped to 59%. The TPO found a similar pattern in 2020 and 2021, with 33% (in 2020) and 29% (in 2021) of fatal crash reports noting involvement of an intoxicated driver. Those percentages jumped to 58% for both years once information from the medical examiner's office was included.



JOINT REVIEW IMPACT

The joint review helps us to see the true safety toll of substance abuse and misuse. Information on intoxicated driving is often included in Fatality Analysis Reporting System (FARS) data that is compiled by the state and reported to the National Highway Traffic Safety Administration (NHTSA), but local agencies often are not aware of the scope of the problem.

This new awareness has led to greater collaboration between the joint review group and Knox County Health Department's Overdose Fatality Review Team, which is dealing with the hundreds of fatal overdoses that occur annually in Knox County. The interventions they are discussing may also help reduce the incidence of intoxicated driving.

The joint review committee has also contributed to more collaboration and understanding among various agencies and individuals. This has even eased the process for law enforcement officers when they need to report things like malfunctioning traffic signals and broken guardrails to engineers. Reporting and repairing those problems in a timely manner can help save lives and prevent crashes.

The TPO found that in 2019, based only on crash reports, the share of fatal crashes with an intoxicated driver was 20%. When information from the medical examiner's staff was factored in, ***the share of fatal crashes involving an intoxicated driver jumped to 59%.***

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Chapter 2

THE HIGH INJURY NETWORK

Where Is the Risk?

In addition to understanding overall trends, it's important to know the places people have been killed or seriously injured in traffic crashes. The results of this crash analysis is the High Injury Network (HIN), which identifies specific roads that bear a disproportionate amount of serious crashes. These corridors are a small subset of the larger overall roadway network, highlighting opportunities for targeted investments where it is needed the most. Roads on the HIN that ranked particularly high for severe crashes are shown as a Tier 1 priority on the map on the following page. Two separate HINs were developed, one for the Knoxville region excluding the City of Knoxville, and one for the City of Knoxville.

Table 1. Knoxville TPO High Injury Network by Jurisdiction

Jurisdiction	HIN Mileage	Jurisdiction	HIN Mileage
Knox County	33.2	City of Clinton	2.1
Blount County	10.5	Lenoir City	1.7
City of Maryville	7.9	Loudon County	1.5
City of Oak Ridge	5.3	Sevier County	1.3
Anderson County	4.5	City of Alcoa	1.2
Town of Farragut	2.6	City of Sevierville	0.5
Town of Oliver Springs	2.3	Town of Louisville	0.3

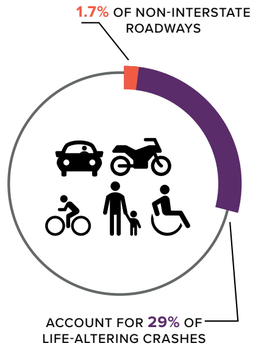
REGIONAL HIGH INJURY NETWORK

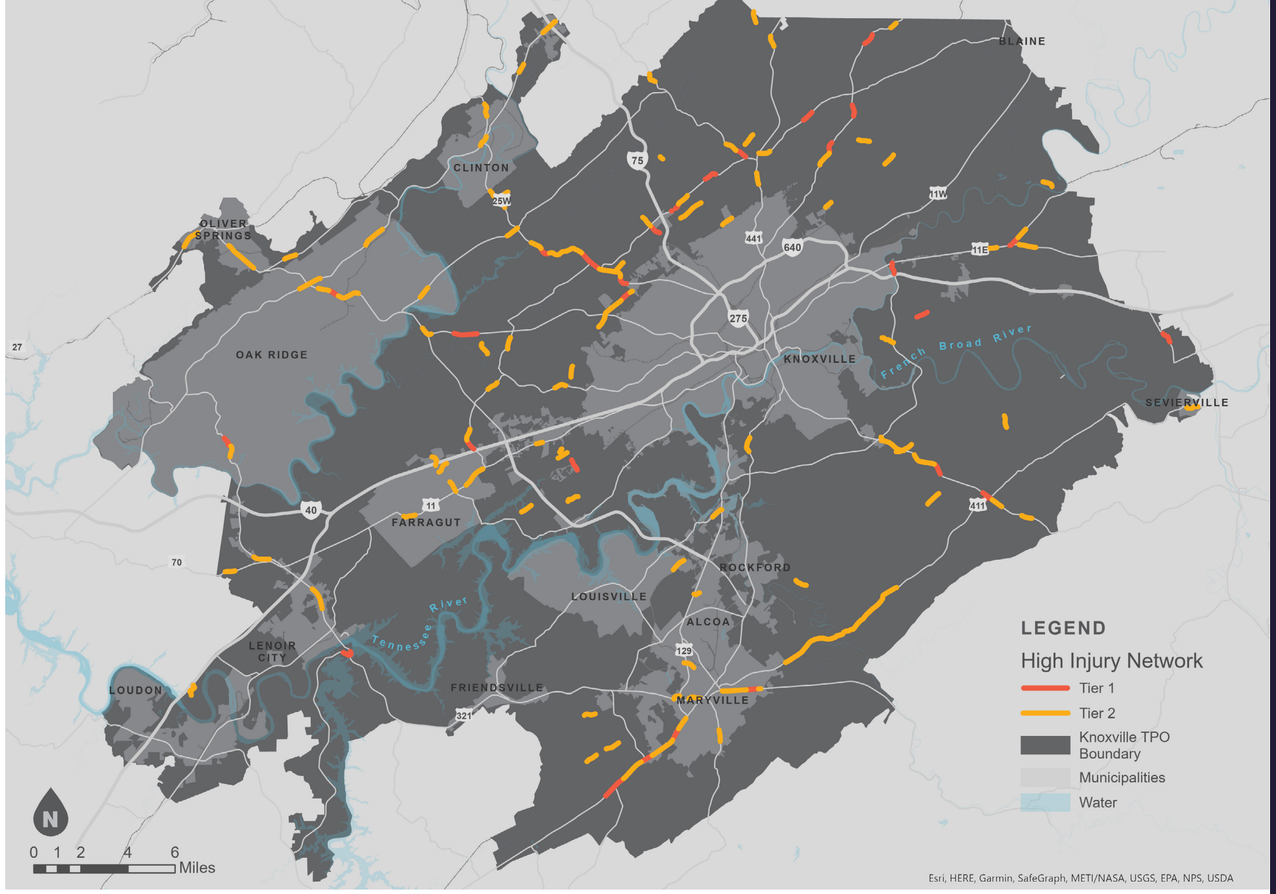
The regional HIN covers the entire Knoxville TPO region, with the exception of the City of Knoxville. Fatal and serious-injury crashes are more dispersed in the region compared with the City. Thus, the overall percentage of the roadway network captured by the HIN is lower, but the total roadway mileage is greater than the City of Knoxville HIN. See the Appendix for a full list of the regional HIN corridors.

THE REGION'S HIGHEST INJURY ROADS

The HIN analysis is a process of ranking roadways with the highest overall score, based on the number and severity of crashes on that road. Roads in the region with the highest overall score include:

- West Broadway Avenue from Foxglove Lane to Cooper Street **(Maryville)**
- White Wing Road (SR-95) from Lagoon Road to New Zion Patrol Road **(Oak Ridge)**
- East Lamar Alexander Parkway (US-321/SR-73) from Grandview Drive to South Washington Street **(Maryville)**
- Clinton Highway (US-25W/SR-9) from Old Callahan Drive to Stewart Run Way **(Knox County)**
- SR-131 from Dixon Spring Lane to Fortner Lane **(Knox County)**

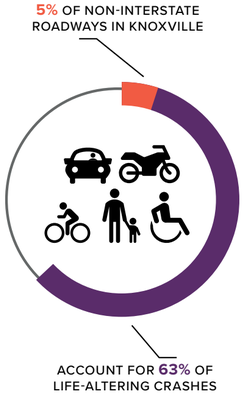




1.7% OF NON-INTERSTATE ROADWAYS IN THE REGION ACCOUNT FOR 29% OF SEVERE INJURY CRASHES

KNOXVILLE'S HIGH INJURY NETWORK

The HIN identifies the most dangerous roads, those with the greatest number of serious crashes. This analysis helps guide the City of Knoxville's investments in infrastructure and programs and ensures that Vision Zero projects support those most in need. The Knoxville HIN identifies a larger overall percentage of the roadway network, compared with the regional HIN.

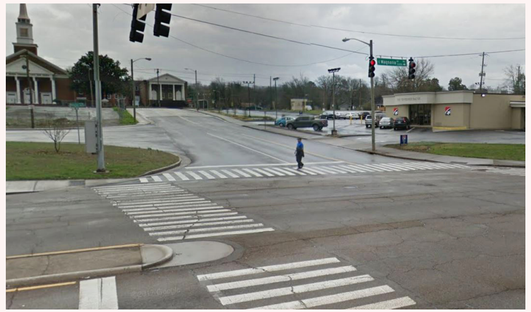


KNOXVILLE'S HIGHEST INJURY ROADS

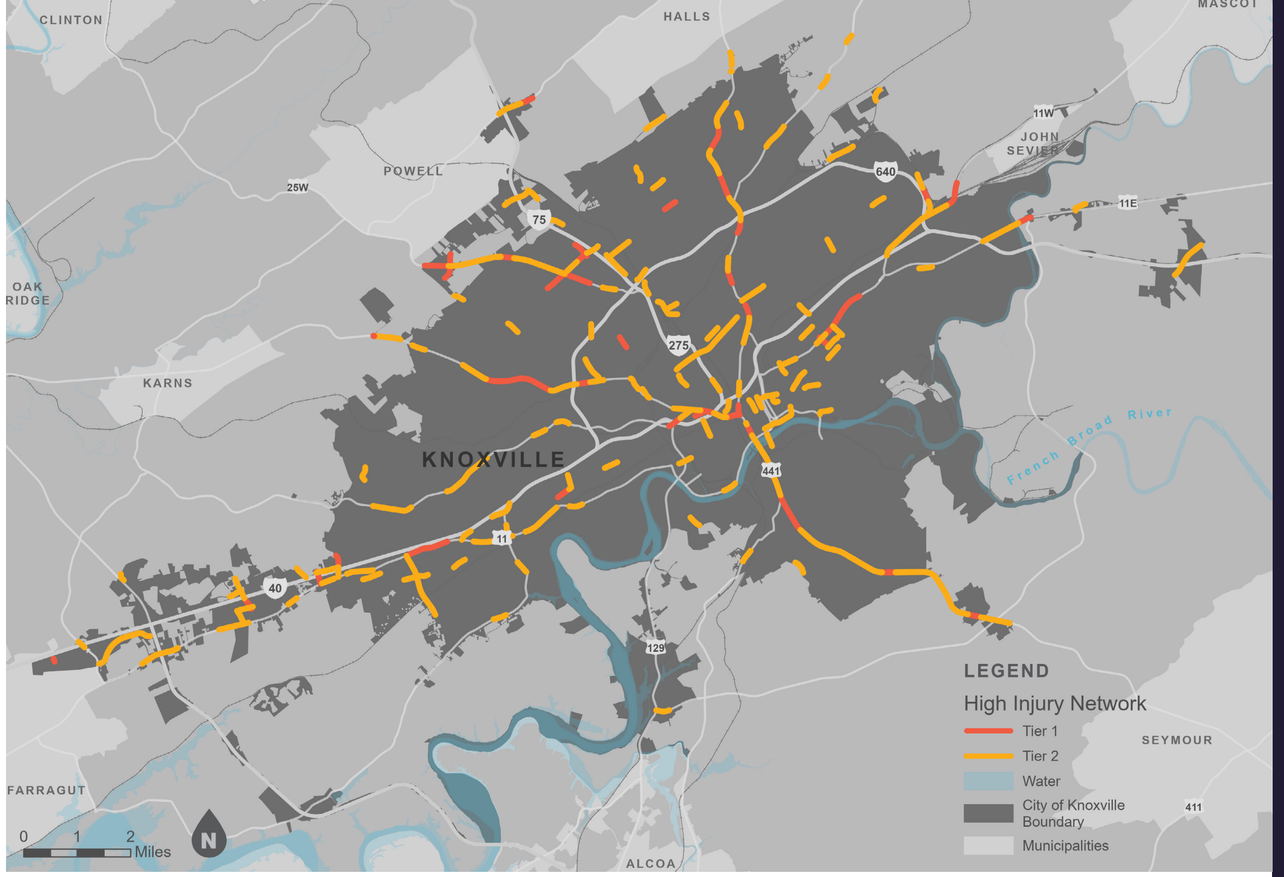
The HIN analysis is a process of ranking roadways with the highest overall score, based on the number and severity of crashes on that road. See the Appendix for a full list of the regional HIN corridors.

Roads in Knoxville with the highest overall score include:

- Clinton Highway (US-25W) from Old Callahan Drive to Schaad Road.
- North Broadway from Old Broadway to Highland Drive
- Chapman Highway (SR-71) from Nixon Road to Norton Road
- Western Avenue from 17th Street to Interstate 40
- East Magnolia Avenue from North Harrison Street to North Beaman Street



East Magnolia at Kirkwood Street is part of a roadway corridor on the City of Knoxville's HIN.



5% OF NON-INTERSTATE ROADWAYS IN THE CITY OF KNOXVILLE ACCOUNT FOR 63% OF SEVERE INJURY CRASHES

PREDICTING WHERE A CRASH MAY OCCUR BEFORE IT HAPPENS

This predictive crash analysis highlights roadways where severe crashes are likely to occur in the future. This is done by identifying characteristics associated with high-crash locations and identifying other roadways with those characteristics, even if they have not experienced a high number of actual crashes.

The following variables collected for each road segment were used in the analysis to compare roadways with observed crashes to other roadways throughout the area. These variables are focused on land uses near the roadway, road characteristics, and relation to intersections.

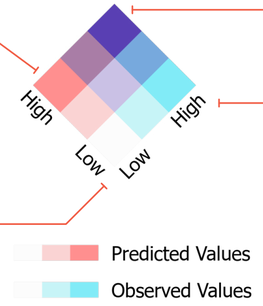
VARIABLE

- Near commercial land use
- Near multifamily land use
- Average annual daily traffic (AADT)
- At signalized intersection
- Speed limit
- Functional class
- At intersection (regardless of signal)
- Segment length
- Road curvature

HOW THE PREDICTIVE ANALYSIS IS USED

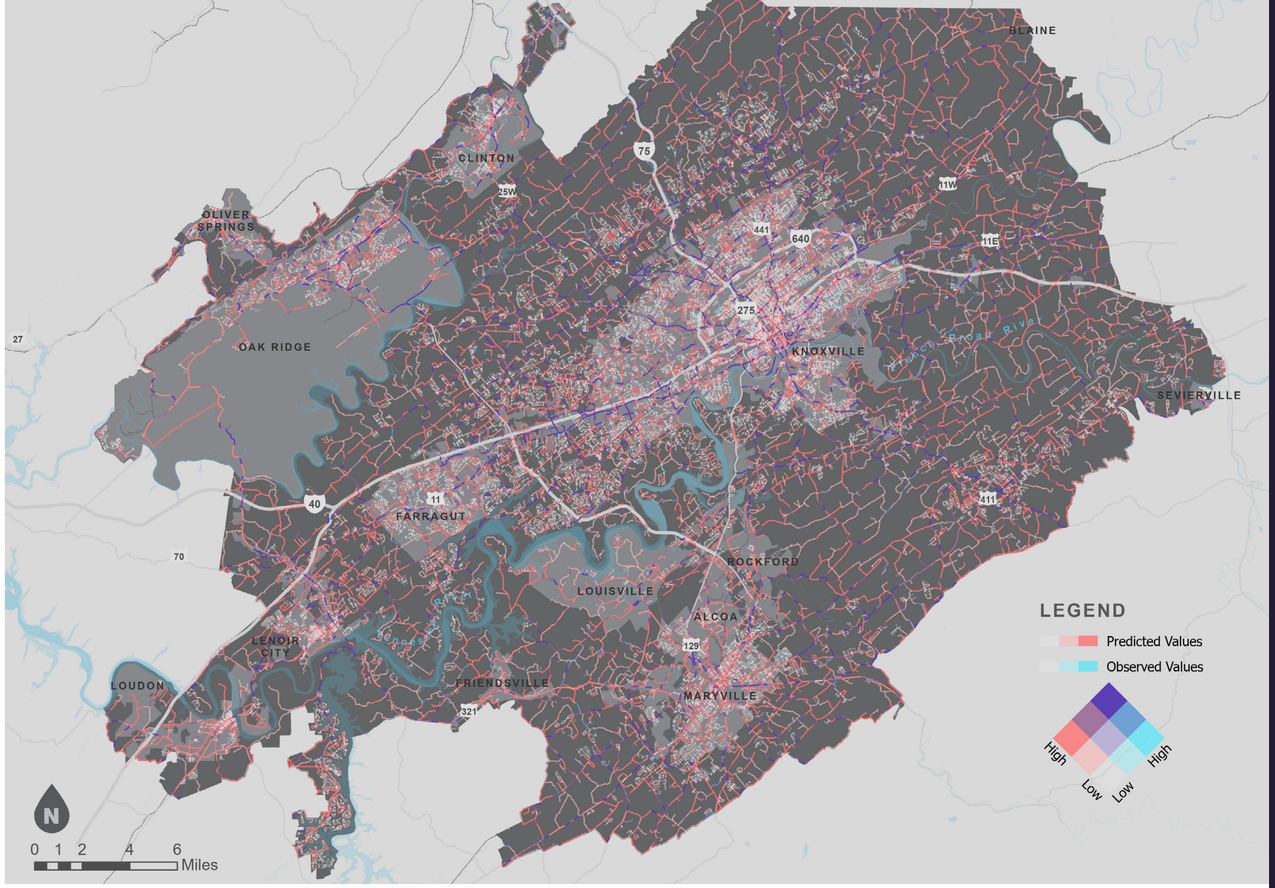
High Predicted but Low Observed: These segments have characteristics of high-crash roadways but have not seen as many actual crashes. They could experience near misses that are not captured in crash data, or there may be other variables not included in the model that reduce their risk of severe crashes. **Improvements on these segments should be a priority for preventing crashes before they happen.**

Low Predicted and Low Observed: These are low-crash roadways that have characteristics consistent with low-crash roadways. **These characteristics should be documented as potential countermeasures.**



High Predicted and High Observed: These are high-crash roadways that have the characteristics that the model has shown are consistent with high-crash roadways. **These roads should be considered as high priorities.**

Low Predicted but High Observed: These are high-crash roadways that we would not expect to have a high number of crashes based on the characteristics identified in the model. There may be other variables not included in the model that cause these roadways to see high numbers of severe crashes, such as a blind curve or poor street lighting. **These factors should be further investigated.**



KNOXVILLE TPO PREDICTIVE ANALYSIS MAP

ROADS WITH THE HIGHEST PREDICTED CRASH INDEX

The table below shows the roadways with the highest predicted crash index that have a high risk of injury crashes in the future. The results of this analysis can be used to identify roadways and intersections where safety improvements can be made to prevent injury crashes before they occur.

Table 2. Roads with the Highest Predicted Crash Index (all injury crashes)

Road Name	From	To
N. Hall Road	US 129 Ramp	Tyson Boulevard
Lovell Road	Simmons Road	I-40 Ramp
Clinton Highway	W. Emory Road	Bell Stanley Road
W. Broadway Avenue	William Blount Drive	Fairview Drive
Chapman Highway	Hendrons Chapel Road E.	Kimberlin Heights Road
Clinton Highway	Rhealand Lane	Lakewood Lane
Clinton Highway	W. Beaver Creek Drive	Larkspur Lane
Oak Ridge Highway	N. Burchfield Road	South of Melton Hill Reservoir Bridge
W. Lamar Alexander Parkway	Foothills Mall Drive	Bridgeway Drive
Chapman Highway	Sevierville Pike	E. Simpson Road

North Hall Road

PREDICTING WHERE SPECIFIC CRASH TYPES MAY HAPPEN

Three sets of analyses were run to make predictions for three types of crashes: injury crashes involving a **roadway departure**, **left-turn injury crashes**, and **all injury crashes**. The result show roadways and intersections that have a high risk of severe crashes within each of these crash types. Because these roads don't necessarily have a high number of observed crashes, they may not have been identified as areas of risk in the HIN. The results were used to inform priority projects, detailed in Chapter 5.

Chapter 3

CRASH PROFILES + COUNTERMEASURES

Crash Profiles

Through an examination of crash characteristics and contextual factors, the most pertinent crash trends were identified for further analysis. “Crash profiles” highlight specific conditions that account for a large share of fatal and serious injury crashes in the Knoxville region. These crash profiles are paired with potential countermeasures to identify system-wide safety interventions, in addition to the corridor interventions identified in the HIN.

The following crash profiles were identified and more detail is provided on the following pages per profile:

- **Crash Profile 1:** Motor Vehicle Crashes in Commercial Areas
- **Crash Profile 2:** Left Turn/U-Turn-Related Motor Vehicle Crashes at Signalized Intersections
- **Crash Profile 3:** Pedestrian/Bicyclist-related Crashes in Commercial Areas along Arterials
- **Crash Profile 4:** Motor Vehicle Crashes at Nighttime on Arterials
- **Crash Profile 5:** Motor Vehicle Roadway Departure Crashes on Slopes and Hill Crests
- **Crash Profile 6**: Crashes Involving Motorcycles

Safety Countermeasures are actions to counteract an identified danger to one or more modes of travel. A rectangular rapid flashing beacon (RRFB) is an example of a countermeasure.

CRASH PROFILE 1: MOTOR VEHICLE CRASHES IN COMMERCIAL AREAS

This factor analyzes crashes that resulted in death or serious injury that occurred within 200 feet of an area with commercial land use in the City of Knoxville.

OWNERSHIP

46% on local roads

54% on TDOT maintained roads

MODE: MOTOR VEHICLES

SERIOUS AND FATAL CRASHES

357

POTENTIAL COUNTERMEASURES

- Access management
- Driveway improvements, including sight distance improvements
- Lane narrowing
- Controlled pedestrian crossings

Clinton Highway & Callahan Drive / Schaad Road

Strawberry Plains Pike & Region Lane

CRASH PROFILE 2: LEFT TURN/U-TURN-RELATED MOTOR VEHICLE CRASHES AT SIGNALIZED INTERSECTIONS

This factor analyzes crashes that resulted in death or serious injury involving a motor vehicle making a left turn or U-turn at a signalized intersection in the City of Knoxville.

OWNERSHIP

27% on local roads

74% on TDOT maintained roads

MODE: MOTOR VEHICLES

SERIOUS AND FATAL CRASHES

83

POTENTIAL COUNTERMEASURES

- Reduced conflict intersections or other alternative intersections
- Protected left turn movements
- Flashing yellow arrow traffic signals (when protected left turn is not feasible)
- Retroreflective backplates
- One-lane roundabouts on lower volume roads
- Red light cameras
- Prohibit right turn on red
- Sight distance enhancements

Henley Street & Cumberland Avenue

Chapman Highway & Green Road

CRASH PROFILE 3: PEDESTRIAN/BICYCLIST-RELATED CRASHES IN COMMERCIAL AREAS ALONG ARTERIALS

This factor analyzes crashes that resulted in death or serious injury to a person walking within 200 feet of a commercial land use area along an arterial roadway in the City of Knoxville. The countermeasures address both pedestrians and bicyclists, even though bicyclist serious injuries or deaths did not occur in this crash profile, because people bicycling are vulnerable in this context as well.

OWNERSHIP

34% on local roads

66% on TDOT maintained roads

MODE: WALKING & BIKING

SERIOUS AND FATAL CRASHES

56

POTENTIAL COUNTERMEASURES

- Access management
- Add sidewalk
- Prohibit right turn on red
- Driveway improvements, including sight distance improvements
- Adding midblock crossings and improvements
- Pedestrian hybrid beacon (PHB) or Rectangular Rapid Flashing Beacon (RRFB)
- Pedestrian refuge islands
- Raised crosswalks and high-visibility crosswalks
- Road diets (cross-section reallocation)
- Bike facilities; including bike paths, protected bike lanes, cycle track, depending on context
- Lighting
- Speed management strategies

North Broadway & West 5th Avenue

Magnolia Avenue & Castle Street

CRASH PROFILE 4: MOTOR VEHICLE CRASHES AT NIGHTTIME ON ARTERIALS

This profile analyzes crashes that resulted in death or serious injury occurring during dark conditions along arterial roadways in the Knoxville Region.

OWNERSHIP

28% on local roads

72% on TDOT maintained roads

MODE: MOTOR VEHICLES

SERIOUS AND FATAL CRASHES

257

POTENTIAL COUNTERMEASURES

- Lighting
- Retroreflective traffic signal backplates
- Increase pavement marking reflectivity

Montvale Road & Boardman Avenue

Morganton Road

CRASH PROFILE 5: MOTOR VEHICLE ROADWAY DEPARTURE CRASHES ON SLOPES AND HILL CRESTS

This profile analyzes crashes resulting in death or serious injury that occurred when a motor vehicle leaves the roadway and hits a fixed object on a slope or hillcrest along a one or two-lane roadway in the Knoxville Region.

OWNERSHIP

75% on local roads

25% on TDOT maintained roads

MODE: MOTOR VEHICLES

SERIOUS AND FATAL CRASHES

273

POTENTIAL COUNTERMEASURES

- Remove or relocate fixed objects
- Crash cushions
- Breakaway posts/supports
- Longitudinal edge line rumble strips
- Safety edge
- Speed humps/cushions/tables
- High-friction surface treatment
- Speed feedback signs
- Wider edge lines
- Reconstruct roadway to flatten crest vertical curve
- Spot shoulder widenings

Maryville Pike

Boyds Creek Highway

CRASH PROFILE 6: CRASHES INVOLVING MOTORCYCLES

This factor analyzes crashes that resulted in death or serious injury of a motorcyclist on roads with posted speed limits of 35 MPH or greater in the Knoxville Region.

OWNERSHIP

37% on local roads

63% on TDOT maintained roads

MODE: MOTORCYCLES

SERIOUS AND FATAL CRASHES

183

POTENTIAL COUNTERMEASURES

- Longitudinal rumble strips and stripes
- Lane narrowing
- Safety edge
- High-friction surface treatment
- Sight distance improvements
- Systemic application of multiple low-cost countermeasures at stop-controlled intersections

US 321

Clinton Highway

Safety Countermeasures

Proven safety countermeasures can be a powerful tool in accelerating safety goals. Countermeasures can be implemented through different delivery, material, and installation methods which allows them to be installed as a quick build or more permanent solution. The following are some sources for countermeasures:

- **Federal Highway Administration's (FHWA's) Proven Safety Countermeasures initiative (PSCi)** is a collection of 28 countermeasures and strategies designed for all road users and all kinds of roads—from rural to urban, from high-volume freeways to less traveled two-lane state and county roads, from signalized crossings to horizontal curves, and everything in between. Each countermeasure addresses at least one safety focus area – speed management, intersections, roadway departures, or pedestrians/bicyclists – while others are crosscutting strategies that address multiple safety focus areas. Search Proven Safety Countermeasures.
- **TDOT** has compiled a list of Roadside Design Resources that includes Tennessee specific guidance as well as serves as a clearinghouse of national best practices and resources for safety countermeasure implementation.
- The **Crash Modification Factors (CMF) Clearinghouse** provides a searchable database of CMFs along with guidance and resources on using CMFs in road safety practice.

QUICK BUILD PROJECTS

Quick build is a method to help local governments improve safety on a minimal budget and on a compressed timeline. Projects can include safer crossings, slower streets, an extended bikeway network, or safer routes to transit, schools, and essential workplaces.

The City of Kirkwood, MO, installed quick build safety improvements as an engagement activity during the Vision Zero Action Plan development process.

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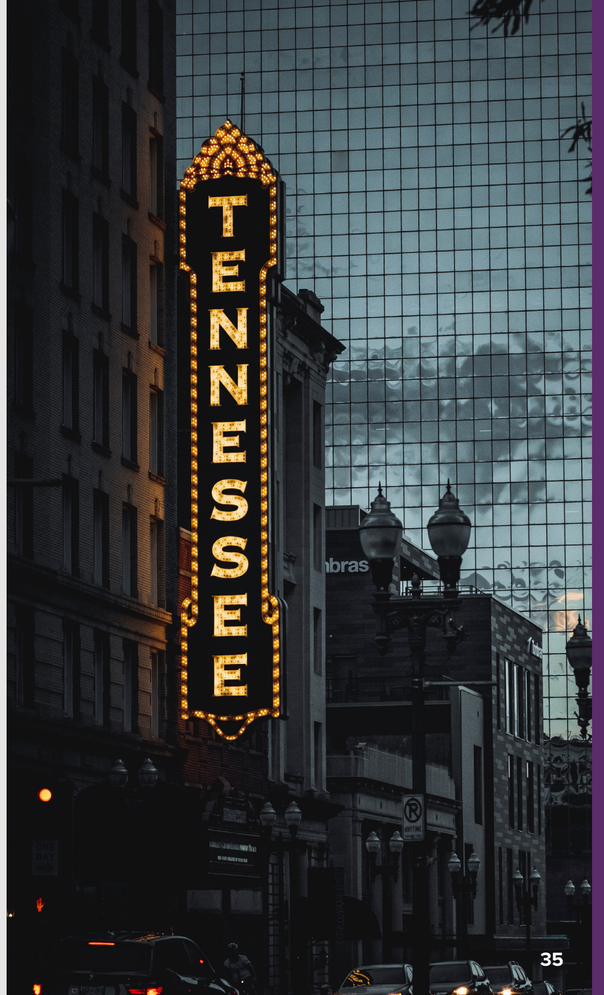
Chapter 4

ACTION PLAN



Building on Engagement

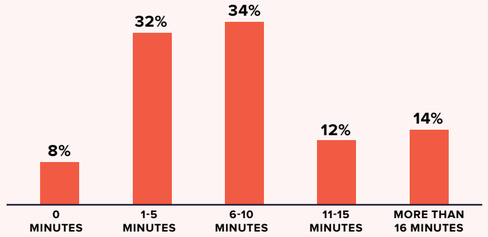
The regional safety actions and strategies were built on three “pillars” of information and data: the crash findings, existing policy and programs, and engagement with technical stakeholders as well as the general public. Engagement efforts were conducted at the regional scale, with additional engagement targeted specifically to Knoxville residents.

REGIONAL ENGAGEMENT SUMMARY

Key themes from engagement include:

- 61% of respondents felt either uncomfortable or very uncomfortable walking and 70% felt either uncomfortable or very uncomfortable bicycling.
- People are concerned about the number of drivers in the region who speed or drive distracted.
- There is a desire for expanding pedestrian and bicycle infrastructure, such as paths, crosswalks, and greenways.
- Over 50% of survey respondents supported reducing speed limits.

How many minutes would you be willing to add to your commute as a trade-off for safe streets in the Knoxville Region for all users?



The majority of survey respondents are willing to add at least some time to their commute in order to achieve safer streets.

142 *ONLINE SURVEY RESPONSES*

117 *FOCUS GROUP PARTICIPANTS*

341 *INTERCEPT SURVEYS COLLECTED*

14 *TASK FORCE PARTICIPANTS*

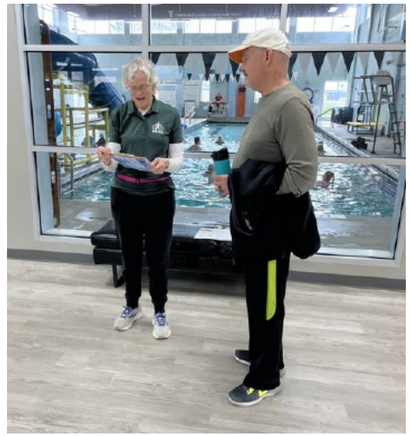
CITY ENGAGEMENT SUMMARY

Key themes from engagement include:

- People feel safest in their cars, and most people do not feel safe walking or biking. This is often due to missing or inadequate walking and biking facilities, such as unprotected bike lanes, unsafe crosswalks, or sidewalks in poor condition.
- People drive too fast, and there is not enough enforcement to address this issue.
- There are barriers to accessibility, such as sidewalk gaps and obstructions.
- People support expanded education on the rules of the road, and desire more transparent information on safety planning efforts.
- Knoxville residents highlighted unique safety concerns for vulnerable populations, such as elderly and young residents, unhoused individuals, and people with disabilities. Concerns included lack of visibility, hazardous conditions, and accessibility concerns.

Specific location concerns include:

- Broadway
- Magnolia Avenue
- Kingston Pike
- Chapman Highway
- James White Parkway
- Central Street
- Neyland Drive
- Sutherland Avenue
- Cumberland Avenue
- Summit Hill Drive
- Western Avenue



Action Plan Framework

To comprehensively identify solutions for transportation safety challenges and organize recommended strategies, this action plan's recommendations are organized into the following themes: Design, Land Use, Plans, Policies, and Programs.

In addition, the framework integrates the Safe System approach and identifies the corresponding category. Most recommendations fall into multiple categories, as the elements of a Safe System approach are interconnected.

SAFE SYSTEM CATEGORIES

SAFE ROAD USERS

SAFE SPEEDS

SAFE VEHICLES

SAFE ROADS

POST-CRASH CARE

HOW TO READ THE RECOMMENDATIONS

The table below outlines the definitions for the columns in the following pages.

Safe System Categories	Safe Road Users, Safe Vehicles, Safe Speeds, Safe Roads, Post-Crash Care
Recommendation	The key steps needed to achieve the recommendation.
Timeline	When the action should take place. Short (<1 Year) Medium (1-2 Years) Long (>2 years) 
Action Lead	Who are the leading and supporting partners?
Implementation Needs	Identifies if the action item will require funding, additional staff capacity, relationship building with external partners, or policy legislation in order to advance. (Significant)  (Minimal)
Example Performance Measure	How will the action be monitored, evaluated or communicated on progress?
Cost	What is the general expected cost to implement this recommendation?

DESIGN

D.1 IMPLEMENT SAFETY IMPROVEMENTS ON THE HIGH INJURY NETWORK.

Improving safety on the HIN should be a top priority as crash data shows those corridors as being the highest-risk crash areas for all road users. Quick build improvements should be considered for locations that need safety enhancements to be implemented rapidly and where traditional construction timelines would be lengthy. Specific vulnerable road user improvements should be incorporated as discussed in Strategy D.9.

Sample Performance Measure: Number of safety countermeasure projects implemented along HIN and the Crash Modification Factor or Crash Reduction Factor achieved through the countermeasure selection.

Timeline:

Cost:

$$$

Action Lead:

TDOT

Local Governments

Organizational Needs

D.2 USE PREDICTIVE ANALYSIS RESULTS TO IMPLEMENT PROACTIVE SAFETY IMPROVEMENTS.

Corridors with high crash risk are not reflected in historical crash data. Using the results of the Predictive Analysis to target safety improvements, in addition to the HIN, could help proactively prevent incidents. Quick build improvements should be considered for locations that need safety enhancements to be implemented rapidly and where traditional construction timelines would be lengthy. Specific vulnerable road user improvements should be incorporated as discussed in Strategy D.9.

Sample Performance Measure: Number of safety countermeasure projects implemented along the top tier of predictive analysis results.

Timeline:

Cost:

$$$

Action Lead:

TDOT

Local Governments

Organizational Needs

DESIGN

D.3 IMPROVE LEFT TURN AND U-TURN SAFETY.

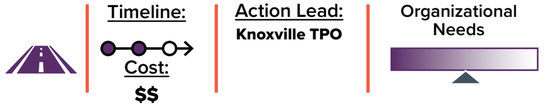
The Crash Profile analysis found that left turns and U-turns resulted in a notable proportion of serious crashes. Countermeasures cited in the Crash Profile analysis should be implemented as appropriate.

Sample Performance Measure: Number of targeted left-turn conflict projects and the associated Crash Modification Factor.

D.4 DEVELOP PEDESTRIAN AND BICYCLE COUNTERMEASURE GUIDANCE.

The Safety Practice Assessment showed a need for consistent design guidance on safety countermeasures for vulnerable road users. This should include pedestrian scale lighting standards and emphasize separated facilities where dictated by context.

Sample Performance Measure: Bicycle and pedestrian countermeasure guidance document.

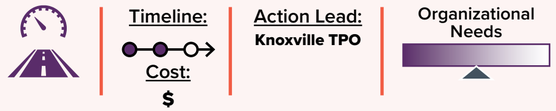


DESIGN

D.5 ESTABLISH A TPO WORKING GROUP TO COORDINATE REGIONAL COMPLETE STREETS EFFORTS.

While Complete Streets policies are already in use in the Knoxville Region, the Safety Practice Assessment identified the opportunity for coordination on those policies to ensure best practices are being used throughout the region. This strategy should coordinate with strategy PL.2

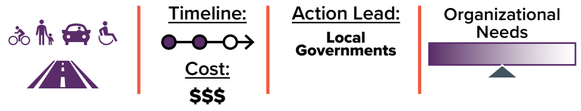
Sample Performance Measure: Establishment of working group to meet quarterly with regular distribution/posting of meeting minutes.



D.6 IMPROVE ROADWAY LIGHTING, ESPECIALLY ON HIN.

Nighttime traffic deaths on arterials were highlighted in the Crash Profile analysis as a crash type contributing to a large number of crashes involving fatalities or serious injuries. Lighting and visibility can also be especially important for vulnerable road users, which should be addressed through the addition of pedestrian scale lighting.

Sample Performance Measure: Decrease in numbers of traffic deaths and serious injuries associated with dark conditions.



DESIGN

D.7 MITIGATE HIGH SPEED FIXED-OBJECT CRASHES ON SLOPES AND HILL CRESTS.

The Crash Profile analysis showed that high speed vehicle collisions on curved or hilly roadways accounted for a lot of serious and fatal crashes in the Knoxville Region. A variety of countermeasures outlined in the Crash Profile analysis can help address the safety issues contributing to these crashes.

Sample Performance Measure: Decrease in numbers of traffic deaths and serious injuries associated with fixed-object collisions on curved roadways and hillsides.

Timeline:

Cost:
$$$

Action Lead:
TDOT
Local Governments

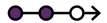
Organizational Needs

D.8 ADDRESS MOTORCYCLE SAFETY ISSUES.

Motorcycle crashes on roads with a speed limit of 35 mph or greater were a large source of fatal crashes in the Knoxville Region, according to the Crash Profile analysis. Refer to the Crash Profile analysis for specific countermeasures that an help improve safety for these users and pair with Strategies D.1, D.2, and PR.1.

Sample Performance Measure: Decrease in numbers of traffic deaths and serious injuries associated with motorcycle crashes on roads with a speed limit of 35 mph or greater.

Timeline:



Cost:
$$

Action Lead:
TDOT
Local Governments

Organizational Needs

DESIGN

D.9 IMPROVE PEDESTRIAN AND BICYCLE INFRASTRUCTURE AND ADDRESS GAPS.

Enhance pedestrian and bicycle safety and fill gaps in the network by contextually implementing proven safety countermeasures where necessary. These could include Americans with Disabilities Act (ADA) retrofits and treatments such as new and/or improved midblock crossings, roundabouts, sidewalks, bicycle infrastructure, and curb extensions. This strategy should coordinate with Strategies D.1 and D.2.

Sample Performance Measure: Facilities added and gaps filled.

Timeline:

Cost:
$$$

Action Lead:
TDOT
Local Governments

Organizational Needs

D.10 EXPAND THE CITY OF KNOXVILLE'S NEIGHBORHOOD TRAFFIC SAFETY PROGRAM.

Expanded program could include additional collaboration between the Office of Neighborhood Empowerment, the Engineering Department, and Knoxville Police Department; developing the framework for public education and community engagement; establishing new partnerships with community organizations; and emphasizing the need to slow streets with design and enforcement.

Sample Performance Measure: Corridors improved through program.

Timeline:

Cost:
$$

Action Lead:
City of Knoxville

Organizational Needs

Policy Changes

LAND USE

L.1 TARGETED REDUCTIONS TO OFF-STREET PARKING REQUIREMENTS.

Reducing government mandates to provide off-street parking can help make areas more walkable and mitigate vehicle conflicts with vulnerable road users, as well as reducing development costs. This strategy could be coordinated with access management policy efforts in Strategy PO.4.

Sample Performance Measure: Review of jurisdictions reducing their parking requirements.

L.2 REQUIRE NEW DEVELOPMENTS TO CONSIDER BICYCLE AND PEDESTRIAN IMPACTS.

A thorough analysis of the effect of new developments on bicycle and pedestrian travel, coupled with effective and appropriate mitigations, can improve roadway safety by ensuring that the needs of vulnerable road users are emphasized as a municipality grows. Long term, this could also contribute to lowering the high proportion of serious and fatal crashes for pedestrians along arterials in commercial areas in the City of Knoxville that was cited in the Crash Profile analysis.

Sample Performance Measure: Percent of jurisdictions specifically considering bicycle and pedestrian impacts in new development proposals.

LAND USE

L.3 EXPAND BICYCLE PARKING REQUIREMENTS IN APPROPRIATE LOCATIONS.

Bicycle parking requirements could be expanded and unbundled from vehicle parking. This could support multimodal transportation by advancing the feasibility of bicycle travel for short trips in densely populated areas, and ultimately improving safety for those users.

Sample Performance Measure: Percent of jurisdictions implementing new unbundled bicycle parking requirements.

L.4 EXPAND PEDESTRIAN- AND TRANSIT-ORIENTED DESIGN STANDARDS FOR DEVELOPMENTS.

Design standards are present in many zoning districts, and can help create safer and more comfortable streets for pedestrians, bicyclists, and transit users. For example, pedestrian-oriented building frontage requirements can frame pedestrian spaces and calm vehicle traffic.

Sample Performance Measure: Percent of jurisdictions implementing new pedestrian- or transit-oriented development design standards.

LAND USE

L.5 ANALYZE REGIONAL BARRIERS TO COMPACT DEVELOPMENT.

Reducing barriers to compact development can help facilitate denser development patterns where they are already intended to occur, which makes pedestrian travel easier and safer by reducing distances between destinations in high-activity areas. This strategy should be coordinated with Strategy L.1, since high off-street parking requirements can make compact developments less feasible.

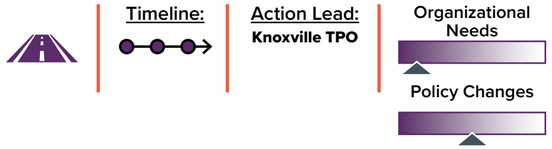
Sample Performance Measure: Number of barriers identified and mitigated.

PLANS

PL.1 INCORPORATE THE HIN, CRASH PROFILES AND PREDICTIVE ANALYSIS RESULTS INTO FUTURE PLAN UPDATES.

Ensuring that HIN is referenced in future plans and plan updates will carry recommendations forward for future implementation where needed, and potentially improve future funding applications.

Sample Performance Measure: The HIN integrated into every relevant plan.

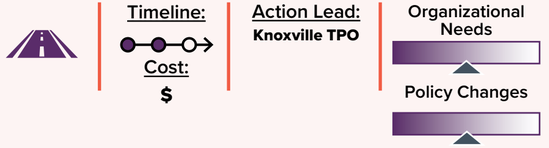


PLANS

PL.2 UPDATE THE KNOXVILLE TPO COMPLETE STREETS PLAN AND COORDINATE WITH REGION.

Strategy D.4 notes the need for regional Complete Streets design standards coordination, which may be best achieved through an update and re-examination of the Knoxville TPO Complete Streets Plan to act as a model for the region.

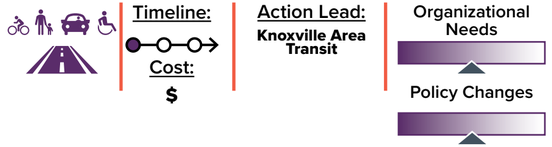
Sample Performance Measure: Knoxville TPO Complete Streets Plan revised/updated.



PL.3 AUDIT BUS STOPS ALONG THE HIN TO IDENTIFY BOTH QUICK BUILD STRATEGIES AND LONG-TERM IMPROVEMENTS NEEDED, INCLUDING ADA COMPLIANCE.

Safe access to transit is essential, and safety issues can arise for vulnerable users when transit stops lack comfortable and accessible connections. Transit stop improvements could include a variety of interventions such as relocations to enhance safety, ADA improvements, or the addition of rider amenities to improve comfort and accessibility.

Sample Performance Measure: Percent of regional bus stops audited. Number of bus stops improved.

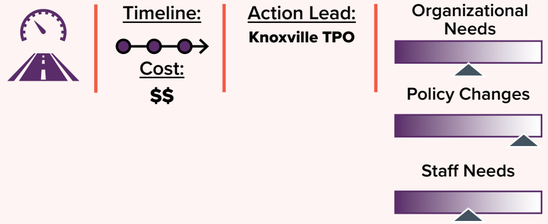


POLICIES

PO.1 ADVANCE REGIONAL VISION ZERO POLICIES AND HIRE OR APPOINT A VISION ZERO COORDINATOR.

Tackling traffic safety is not new to the Knoxville TPO, however the Knoxville TPO could lead coordination among policies and provide technical assistance for communities wishing to implement or update their own policies.

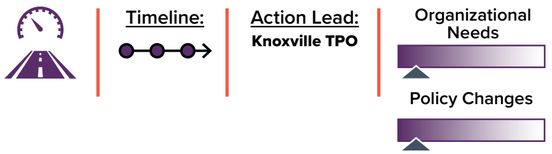
Sample Performance Measure: Vision Zero Coordinator hired or appointed. Percent of regional organizations adopting Vision Zero policies.



PO.2 MONITOR AND IMPROVE EXISTING SAFETY POLICIES.

The Safety Practice Assessment noted that there are a variety of safety policies throughout the region. The Knoxville TPO could assist with tracking these policies, and TDOT and local governments should continually monitor and evaluate these policies for ongoing improvements.

Sample Performance Measure: Number of safety policies adopted or improved in each local jurisdiction tracked by the TPO.

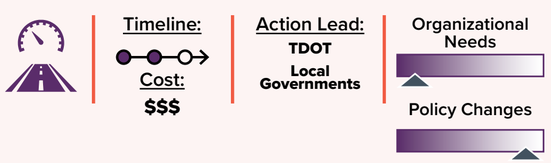


POLICIES

PO.3 DIVERSIFY SAFETY FUNDING SOURCES AND IDENTIFY DEDICATED FUNDING FOR VULNERABLE ROAD USER SAFETY IMPROVEMENTS.

Dedicated funding, such as reliable grant funding or new dedicated funding sources, can help improve vulnerable road user safety more quickly by making a larger, more consistent pool of funding available.

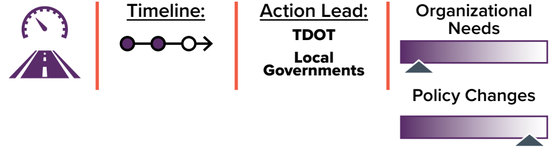
Sample Performance Measure: Total amount of dedicated funding.



PO.4 DEVELOP/UPDATE ACCESS MANAGEMENT POLICIES TO REDUCE DRIVEWAY CONFLICTS.

The Crash Profile analysis found that there were many vehicular traffic deaths in commercial areas. Access management policies can help address this by reducing conflicts along busy commercial corridors, making the roadway environment safer for all users.

Sample Performance Measure: Percent of jurisdictions/ organizations with updated access management policies.

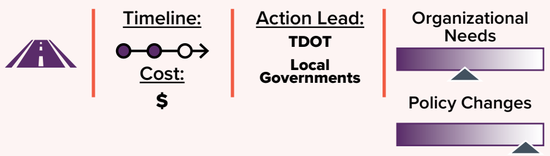


POLICIES

PO.5 EXAMINE OPPORTUNITIES FOR LOWERING SPEED LIMITS ON COMMERCIAL ARTERIALS.

Lowering speed limits on areas with a lot of conflicts between users can lower stopping distance, lower the likelihood of serious or fatal crashes, and greatly improve safety for all users. This strategy can also help address the Crash Profile analysis's finding of high proportions of both vehicular and pedestrian traffic deaths and serious injuries in commercial areas and arterials. Lower speed limits should be implemented in coordination with Strategies D.1, D.2, PR.1, and PR.4.

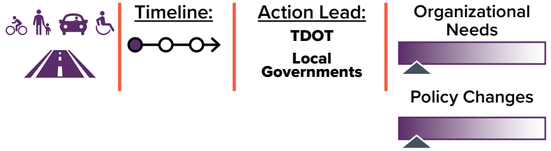
Sample Performance Measure: Percent of local roadway network with reduced speed limit (where applicable) and accompanied by relevant supporting strategies.



PO.6 PROVIDE FOR PEDESTRIAN AND BICYCLE MOBILITY IN EXISTING OR NEW MAINTENANCE OF TRAFFIC POLICIES.

Vulnerable road users should be provided with safe routes when construction projects or road work disrupt connections.

Sample Performance Measure: Maintenance of traffic policies implemented or improved that contain bicycle and pedestrian mobility requirements.

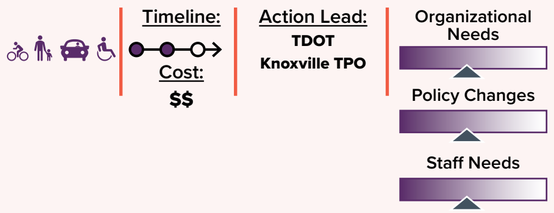


PROGRAMS

PR.1 DEVELOP TARGETED ROADWAY SAFETY EDUCATION AND ENFORCEMENT PROGRAMS.

Education and enforcement programs are most effective when paired together and/or with other safety improvements such as design changes. There should be clear and consistent messaging that includes high-quality materials that community stakeholders can distribute. Specific behaviors and groups can be targeted, which should be coordinated with findings in the Crash Profile analysis. Public outreach also showed that vehicle speeds, distracted driving, aggressive driving, and drivers failing to yield to pedestrian and bicyclists were the top four concerns of respondents, so these should be among the targeted behaviors.

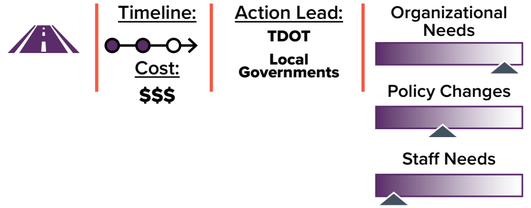
Sample Performance Measure: Reach and number of safety education and awareness programs.



PR.2 PRIORITIZE VULNERABLE ROAD USER FACILITY MAINTENANCE.

Improper facility maintenance can create safety hazards and additional conflict points with vehicles. For example, debris in bicycle lanes can cause cyclists to take evasive action into vehicle lanes, and barriers on sidewalks can make a sidewalk unusable for pedestrians.

Sample Performance Measure: Should measure proactive improvements in addition to tracking improvements to infrastructure.

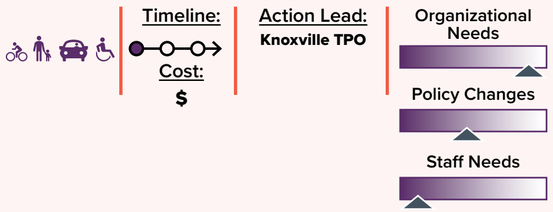


PROGRAMS

PR.3 SPREAD AWARENESS OF AND PARTICIPATION IN SMART TRIPS, THE EXISTING REGIONAL TRANSPORTATION DEMAND MANAGEMENT (TDM) PROGRAM.

The regional TDM program, Smart Trips, incentivizes alternatives to single-occupancy vehicle travel through centralized information and travel rewards. Increasing visibility and knowledge of this program could improve safety by spreading awareness of the travel needs of alternative modes. This strategy could be used in conjunction with changes to roadway design or enforcement measures, such as in Strategies PR.4, PO.4, D.1, and D.2.

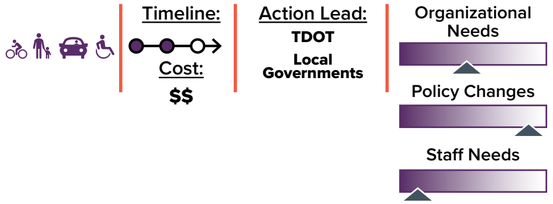
Sample Performance Measure: Number of new memberships and recorded trips in the Smart Trips program.



PR.4 EXPAND AUTOMATED ENFORCEMENT PROGRAMS.

Automated speed and/or red light enforcement programs have received very high effectiveness ratings through the National Highway Traffic Safety Administration's (NHTSA's) Countermeasures That Work. The Knoxville region can expand existing programs and pair these programs with Strategy PR.1.

Sample Performance Measure: Number of new automated enforcement efforts.

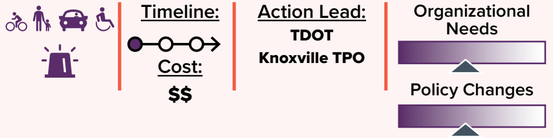


PROGRAMS

PR.5 IMPROVE CRASH DATA AND TRANSPARENCY.

Reliable crash data is essential to understanding and responding to crash patterns in the Knoxville Region. Crash data should be shared publicly and the TPO could explore ways to collect data on near misses and unreported traffic-related injuries. Data on near misses and unreported traffic-related injuries can contribute to advancing Strategy D.2.

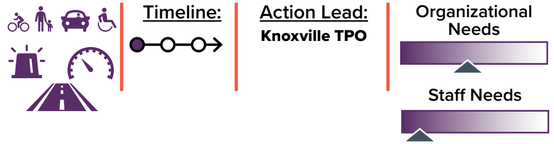
Sample Performance Measure: Launch a regional interactive data dashboard.



PR.6 ESTABLISH REGIONAL SAFETY EVALUATION WORKING GROUP TO MONITOR PERFORMANCE MEASURES.

A regional working group focused on monitoring performance measures would ensure that regional progress on addressing these strategies is tracked and documented over time. The Knoxville TPO could lead the formation and organization of this working group.

Sample Performance Measure: Establishment of working group with regular distribution/posting of meeting minutes.



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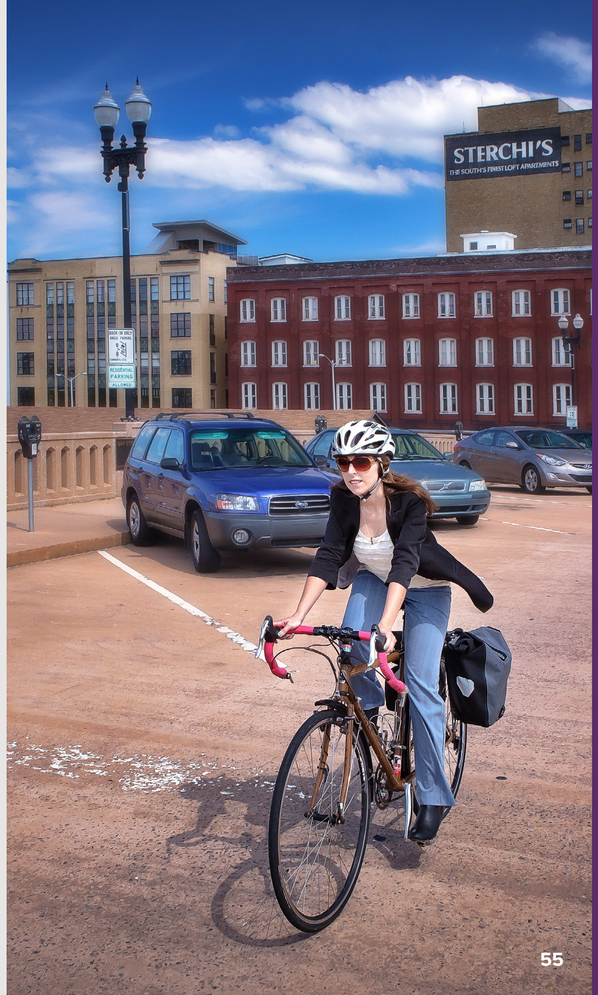
Chapter 5

PRIORITY LOCATIONS + FUNDING OPPORTUNITIES



Knoxville TPO Priority Actions

We are committed to reducing deaths and serious injuries on our streets. The strategies outlined in this action plan were developed to help guide the implementation efforts of the Knoxville TPO and its partners to improve safety in the Knoxville Region.

ACTION ITEMS

The following immediate action items are intended to be the priority steps that Knoxville TPO will take toward implementing the Regional Roadway Safety Action Plan. We're committed to making the Knoxville Region safer for all users, and we will update these action steps annually based on performance and progress.

PRIORITY PROJECTS

Priority projects will be identified using the HIN and predictive analysis. These will be detailed with planning-level cost estimates, and implementation will be pursued over time in accordance with the Action Plan Framework and through the various funding sources listed in Table 4.

PRIORITY ACTIONS

- Apply for Knoxville Regional Safe Streets and Roads for All Implementation Grant
- Conduct a regional roadway safety education and encouragement campaign
- Oversee the Regional Roadway Safety Task Force
- Collaborate with TDOT to prioritize, fund, and implement safety improvements along the state maintained HIN.
- Maintain crash data quality and transparency
- Make annual progress on implementing safety policy and program recommendations
- Monitor progress towards significantly reducing traffic fatalities and severe injuries by 2045

REGIONAL ROADWAY SAFETY CAMPAIGN

WHY IS THIS A PRIORITY?

An effective roadway safety marketing and education campaign will raise awareness about safety initiatives and educate all roadway users.

The campaign will feature both proactive safety messaging and a data-driven approach, responding to this study's crash findings in order to target specific behaviors. Specific behaviors and groups (and potentially HIN locations) would be targeted, coordinated with the findings of this safety plan's crash profile analysis.

CAMPAIGN TASKS + BUDGET

Knoxville TPO, and its partners, will develop a targeted, strategic roadway safety campaign to include a communications plan and brand identity for the Knoxville region's safety program as well as developing marketing and educational materials; printing collateral and developing promotional items (posters, postcards, yard signs, t-shirts, etc.); identifying audiences; developing innovative media ads (cell phone banners, convenience store and gas station displays, smart TVs, radio, buses, marquees, etc.); conducting outreach to residents, non-profits, students, community partners; developing earned and paid media strategies; and more. The TPO will coordinate efforts of the campaign with both internal and external partners to leverage resources and outreach activities to expand the reach of the campaign.

Task	Budget	Timeframe
Safety Campaign Planning Stakeholder Interviews and Listening Sessions; Marketing Strategy and Communications Plan	$50,000	Year 1 (Months 1-5)
Materials Production Messaging Development; Branding and Design; Production; Media Procurement and Print Management	$200,000	Year 1 (Months 5-12)
Campaign Implementation Community Outreach and Event Coordination; Campaign Coordination and Monitoring; Additional Collateral Production	$175,000	Year 2 (Months 12-22)
Campaign Evaluation Survey; Field Observations; Final Report and Summary	$75,000	Year 2 (Months 22-24)

CASE STUDY: ROANOKE SAFETY CAMPAIGN

The City of Roanoke developed three annual safety campaigns focused on crosswalk compliance (2020), traffic speed (2021), and traffic safety in school zones (2022), all funded by the Virginia Department of Motor Vehicles. The campaigns included robust paid media advertising, community outreach, and partnerships with local organizations.

The goal of the **crosswalk compliance campaign** was to help reduce the number of pedestrian-involved crashes in Roanoke and increase compliance with Virginia state law at crosswalks by both pedestrians and drivers. Education was focused on drivers and the law that requires that they stop for pedestrians at all marked and unmarked crosswalks, and to encourage pedestrians to be predictable by crossing at the corner or a designated crosswalk. Campaign materials emphasize that in Virginia, every corner is a crosswalk. Based on citywide online surveys conducted before and after the campaign, knowledge of the VA law that every intersection is a crosswalk whether it is painted or not increased by 12%

The goal of the **traffic speed campaign** was to reduce speeding and speed-related crashes and increase awareness of speeding as a pedestrian safety issue. The City completed traffic speed analyses to identify and prioritize locations to focus on in the No Need to Speed campaign. Although the campaign aimed to reach residents citywide (and did with an estimated 93% of the City's population), the selected corridors served as a basis for the campaign approach and locations for traffic speed studies. In order to evaluate the campaign's effectiveness, two online community surveys were conducted (one before the campaign and one after). The campaign produced nearly a 5% increase in the perception of speeding as a problem from before to after the campaign.

Transit ad displayed in city buses for the Crosswalk Compliance Campaign

Yard sign made available free of charge to residents for the Traffic Speed Campaign

ROADWAY DEPARTURE CRASHES

WHY IS THIS A PRIORITY?

Addressing roadway departure crashes will help address a major source of crashes outside of urban areas in the Knoxville TPO region.

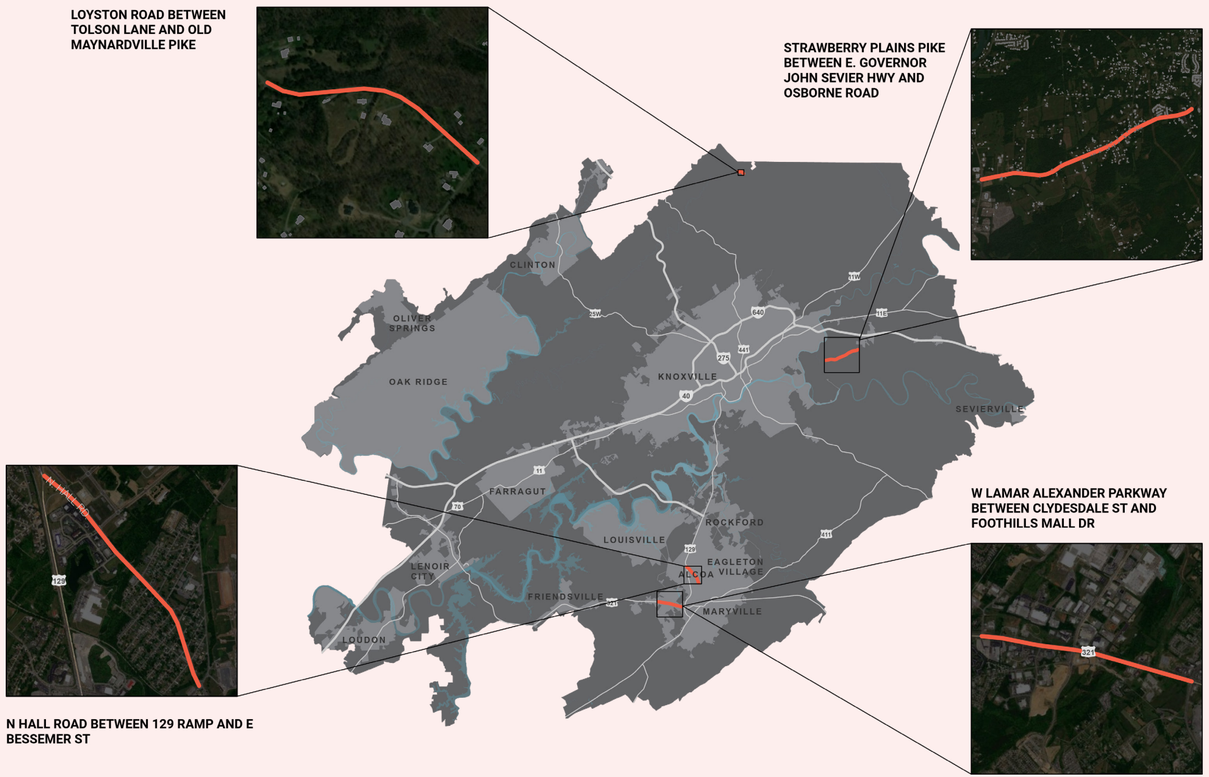
A roadway departure crash occurs when a vehicle crosses outside of its travel lane, either by departing the roadway or crossing over the center line into oncoming traffic. It represented one of the top crash profiles for the Knoxville TPO region. From 2016 to 2018 roadway departures resulted in an average of 19,158 fatalities, which is 51 percent of all traffic fatalities in the United States. Along rural roadways, it accounts for one-third of traffic fatalities nationally. In the Knoxville region, especially in rural contexts, these are most often crashes involving a single motor vehicle that leaves the roadway and strikes a fixed object. These single-motor-vehicle-only crashes account for more than 35% of traffic fatalities and serious-injury crashes in the Knoxville region. Chapter 3 contains a list of general potential countermeasures for this crash profile.

The map on page 55 highlights corridors in the TPO region that were selected as being most susceptible to this type of crash.

COUNTERMEASURE TOOLBOX (SEE ALSO PG. 29)

- Shoulder rumble strips
- Centerline rumble strips
- Safety edge
- Widening shoulders
- Flatten side slopes
- High friction surface treatment
- Speed feedback signs
- Raised pavement markers
- New edge lines
- Wider edge lines
- Fluorescent curve signs
- Chevron signs on curves
- Lighting
- Guardrail
- In-lane curve markings
- Cable median barriers

ROADWAY DEPARTURE PRIORITY PROJECTS



LEFT TURN CRASHES

WHY IS THIS A PRIORITY?

Left turn crashes were one of the most significant factors resulting in death and serious injury in crashes in the Knoxville TPO region. Addressing this crash type will improve safety in a variety of urban and rural contexts.

A left turn crash occurs when a vehicle makes a left turn and either strikes, or is struck by, another vehicle at an intersection or driveway. It represented one of the top crash profiles for the Knoxville TPO region.

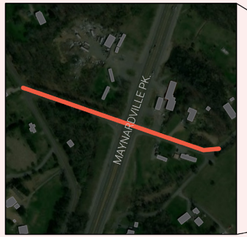
The map on page 57 highlights corridors in the TPO region that were selected as being most susceptible to this type of crash.

COUNTERMEASURE TOOLBOX (SEE ALSO PG. 26)

- Reduced conflict intersections
  - » Signalized and unsignalized
- Median u-turn
- Protected left turn movements
- Flashing yellow arrow traffic signals
- Retroreflective backplates
- Roundabouts
- Red light cameras
- Application of multiple low-cost countermeasures at stop-controlled intersections
- Centerline hardening

LEFT-TURN CRASHES PRIORITY PROJECTS

TEXAS VALLEY ROAD BETWEEN OLD MAYNARDVILLE PIKE AND OLD TEXAS VALLEY ROAD



S TULANE BETWEEN OAK RIDGE TURNPIKE AND S ILLINOIS AVENUE

STRAWBERRY PLAINS PIKE BETWEEN STEVIE ROAD AND 25W

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City of Knoxville Priority Actions

We are committed to reducing deaths and serious injuries on our streets. The strategies outlined in this action plan were developed to help guide the implementation efforts of the City and its partners to improve safety in Knoxville.

ACTION ITEMS

The following immediate action items are intended to be the priority steps the City will take toward implementing the Vision Zero Action Plan. While this is an aggressive approach, we're committed to making Knoxville safer for all users, and we will update these action steps annually based on performance and progress.

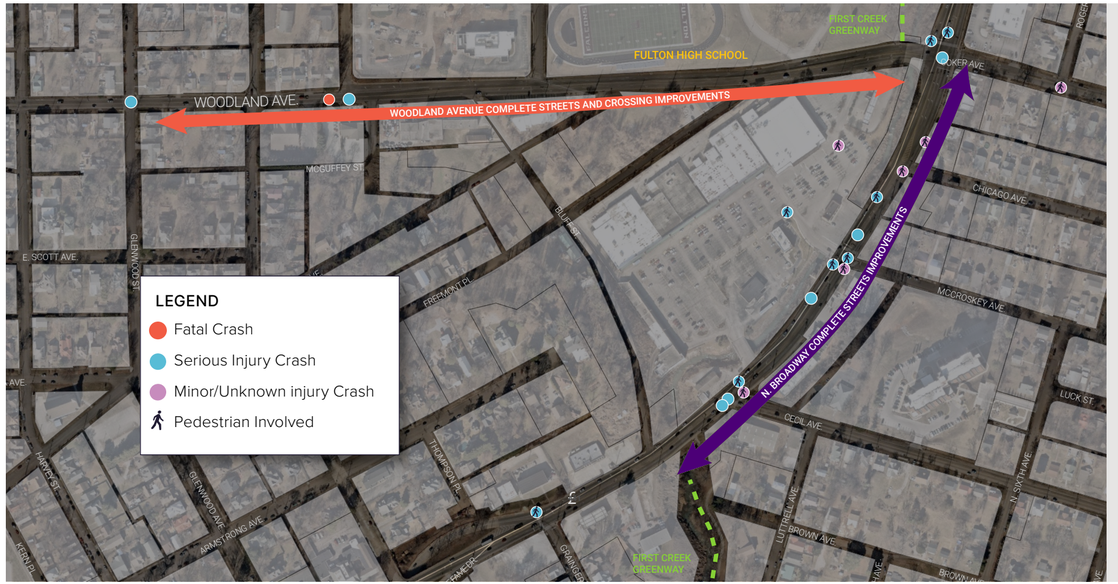
PRIORITY PROJECTS

Priority projects will be identified using the HIN and predictive analysis. These will be detailed with planning-level cost estimates, and implementation will be pursued over time in accordance with the Action Plan Framework and through the various funding sources listed in Table 4.

PRIORITY ACTIONS

- Apply for Safe Streets and Roads for All Implementation Grant for priority projects.
- Support the Knoxville Vision Zero Steering Committee.
- Collaborate with TDOT to prioritize, design, and fund safety projects on the HIN that are state maintained.
- Implement safety improvements along the HIN prioritizing Tier 1 project segments.
- Conduct demonstration projects to test new design ideas, engage the public, and implement safety improvements faster.
- Evaluate success towards the goal of zero traffic deaths and severe injuries.
- Launch a transparent data dashboard.

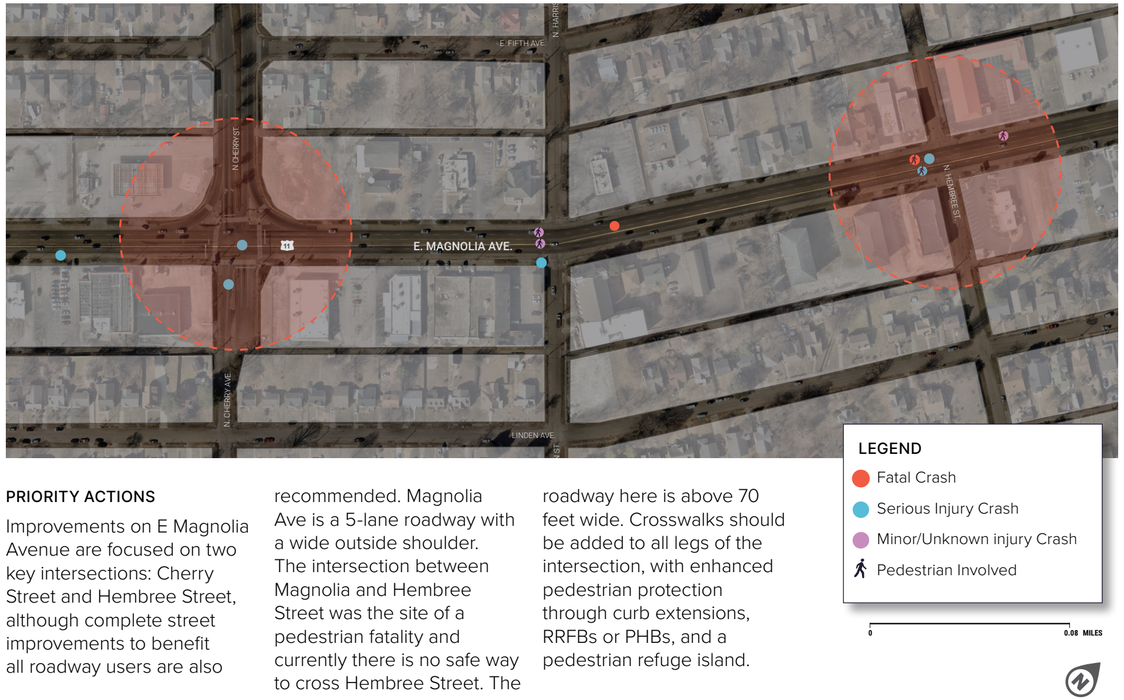
PRIORITY ACTION: NORTH BROADWAY / WOODLAND AVENUE



PRIORITY ACTIONS

Both Broadway and Woodland Avenue present opportunities for targeted investments in high-crash corridors. Improvements on N Broadway include adding a shared-use path. This would also provide a valuable connection to the First Creek Greenway trail. On E Woodland Avenue, improvements include a shared-use path, reducing travel lanes from four to two, an on-road bike lane, and a refuge island at Fulton High School.

PRIORITY ACTION: E MAGNOLIA AVENUE



PRIORITY ACTIONS

Improvements on E Magnolia Avenue are focused on two key intersections: Cherry Street and Hembree Street, although complete street improvements to benefit all roadway users are also recommended. Magnolia Ave is a 5-lane roadway with a wide outside shoulder. The intersection between Magnolia and Hembree Street was the site of a pedestrian fatality and currently there is no safe way to cross Hembree Street. The roadway here is above 70 feet wide. Crosswalks should be added to all legs of the intersection, with enhanced pedestrian protection through curb extensions, RRFBs or PHBs, and a pedestrian refuge island.

Partnering with TDOT

TDOT is responsible for the construction and maintenance of state roads. State roadways are typically higher speed and higher capacity roadways, and thus see a significant portion of severe crashes. TDOT plays a vital role in efforts to reduce the number of severe roadway crashes in the Knoxville region and across the state.

Key Departments within TDOT include:

- **The Region 1 Office**
  - » Oversees operations and design of TDOT routes in the region.
- **Traffic Operations**
  - » Responsible for the Traffic Management Center and Traffic Incident Management program, perform traffic engineering studies, prepare traffic signal, roadway lighting, and roadway signage designs.
- **Multimodal Division**
  - » Supports mobility for all through public transportation, bicycle and pedestrian infrastructure, complete streets, and Travel Demand Management. They also manage the Pedestrian Road Safety Initiative (PRSI) and Multimodal Access Grant (MMAG) program.

TDOT's Strategic Highway Safety Plan is the statewide road map to identify and mitigate safety concerns. The SHSP commits the state to moving toward zero fatalities and serious injuries on its roadways.

- **Long Range Planning**
  - » Responsible for planning, developing, and managing statewide transportation studies and planning tools that help guide statewide policy for the department. This division collects and maintains eTRIMS, the roadway inventory database, and manages the Congestion Mitigation and Air Quality and TDOT MMAG grant programs. They also oversee the Corridor Management Agreements, focusing on access management.
- **Roadway Design**
  - » Responsible for oversight of roadway design standards and policy updates. They also ensure roadway plans meet state and federal guidance.
  - » Provides geometric designs of state controlled roadways.

Funding Opportunities

The transformative actions needed to achieve zero traffic deaths will require a significant financial commitment. Fortunately, this does not fall entirely on the City of Knoxville to fund. The USDOT established historic discretionary grant awards for safety planning and implementation through the Safe Streets and Roads for All (SS4A) program, which is set to fund $1 billion in projects each year through 2026 (five years total). In addition to this huge federal investment in safety, other federal grant programs, and state programs can be used to leverage existing funds from the City of Knoxville.

Table 3. State Funding Programs

Funding Program	Administering Agency	Description and Eligible Recipients	Local Match
Federal Highway Safety Improvement Program (HSIP)	TDOT	"Umbrella" safety program that funds different programs like a Road Safety Audit and PRSI. Communities across TN. This is not a grant program, rather TDOT applies funding based on state priorities.	N/A
Pedestrian Road Safety Initiative (PRSI)	TDOT	Safety improvement program for pedestrian-related severe crashes. Cities and counties are eligible but not a grant application progress. This program is funded through the larger HSIP program.	N/A
Tennessee Highway Safety Office (THSO)	THSO	Grant program focusing on changing driver behavior. Cities, counties are eligible.	Varies
Transportation Planning Grant (TPG)	TDOT	Competitive grant program used to fund safety, congestion and access management for cities and counties. Available to communities within Metropolitan Planning Organization (MPO) areas across the state. The max award in 2023 is $200K.	20%
Transportation Alternatives Program (TAP)	TDOT/TPO	Local community enhancement grant. Cities and counties are eligible. The average award is $350,000.	20%
Congestion Mitigation and Air Quality Improvement (CMAQ)	TDOT	Provides funding for air quality improvement and congestion reduction projects. Air quality nonattainment or maintenance communities.	0-20%
Surface Transportation Block Grant (STBG)	TDOT/TPO	Flexible transportation program used to fund a variety of programs. Cities, counties, and state are eligible.	20%
Safe Streets and Roads for All (SS4A)	FHWA (state or local entity may administer project, working with FHWA if awarded)	Competitive grant; $1.2B available in FY23 for planning and implementation.	20%
RAISE (Rebuilding American Infrastructure with Sustainability and Equity)	FHWA (state or local entity may administer project, working with FHWA if awarded)	$7.5B over 5 years ($1.5B/year); funding for transportation projects (multimodal projects that address equity and safety will be favored under current administration). The maximum funding award is approximately $30M.	20% but projects with a higher local match are typically more competitive. Disadvantage communities may be eligible for local match waiver.
Active Transportation Infrastructure Investment (ATIIP)	FHWA (state or local entity may administer project, working with FHWA if awarded)	$1B over 5 years ($200M/year); funding for active transportation projects (mobility options powered primarily by human energy, including bicycling and walking) at the network scale, rather than on a project-by-project basis.	20% but disadvantaged communities may be eligible for local match waiver.
Reconnecting Communities and Neighborhoods (RCN) Program *Combines Reconnecting Communities Pilot (RCP) and Neighborhood Access and Equity (NAE) programs*	FHWA (state or local entity may administer project, working with FHWA if awarded)	Capital Construction: Funds both reconnecting-focused projects and smaller projects focused on reducing environmental harm and improving access in disadvantaged communities. $1.15 billion available ($148M RCP Construction / $1B NAE). Community Planning: Funds for planning activities to support future construction projects and allow for innovative community planning to address localized transportation challenges. $185 million available ($50M RCP Planning / $135M NAE). Regional Partnerships Challenge: Incentivizes stronger partnerships between local governments, MPOs/RPOs, State DOTs, and non-profit, private, and community partners to tackle persistent equitable acces and mobility challenges, as well as greenhouse gas emissions reductions. Applicants must consist of a partnership between two or more eligible agencies. $450 million available (NAE).	RCP Construction: Max 50% grant cost share, Max 80% Federal RCP Planning: Max 80% grant cost share NAE Planning and Construction: Max 80% grant cost share, except disadvantaged communities

Funding Program	Administering Agency	Description and Eligible Recipients	Local Match
Healthy Streets	FHWA (state or local entity may administer project, working with FHWA if awarded)	$500 million over five years, $15 million maximum award for projects that mitigate urban heat islands, improve air quality, reduce the extent of impervious surfaces, reduce stormwater run-off and flood risks, and reduce heat impacts to infrastructure and road users.	20%
Carbon Reduction Formula Program	TDOT/TPO	$139M over 5 years for the State of Tennessee; will be distributed through MPOs and the state.	Unknown
Multimodal Access Grant (MMAG)	TDOT	TDOT's MMAG is a state-funded program created to support the transportation needs of pedestrians, bicyclists, and transit users through infrastructure projects that address existing gaps along state routes. Projects in Distressed/At-Risk Counties: 95% of total project budget, up to a maximum award of $1,187,500 Project in All Other Counties: 90% of total project budget, up to a maximum award of $1,125,000	5%-10%

Appendix

KNOXVILLE REGION HIGH INJURY NETWORK BY CORRIDOR

Corridor Length (miles)	Street Name	From	To	County	City/Town	Full/ Partial Lighting	Max Number of Lanes	Max Speed Limit (mph)	Max HIN Index	Max HIN Tier
4.84	W. BROADWAY AVE.	Cooper St	Foxglove Ln	Blount County	Maryville	YES	4	50	116.78	Tier 1
0.69	WHITE WING RD.	Lagoon Rd	New Zion Patrol Rd	Roane County	Oak Ridge	NO	4	55	101.76	Tier 1
1.77	E. LAMAR ALEXANDER PKWY.	Grandview Dr	Hwy 321	Blount County	Maryville	YES	4	55	98.04	Tier 1
2.43	CLINTON HWY.	Old Callahan Dr	Stewart Run Way	Knox County	Knoxville	YES	5	55	97.95	Tier 1
0.95	E. EMORY RD.	Dixon Spring Ln	Fortner Ln	Knox County		YES	4	40	97.62	Tier 1
0.59	STRAWBERRY PLAINS PK.	Moshina Rd	Kennedy Rd	Knox County		YES	4	45	93.70	Tier 1
1.03	OAK RIDGE HWY.	Hackworth Rd	Pebble Pass Rd	Knox County		YES	4	55	92.85	Tier 1
0.55	W. GOV. JOHN SEVIER HWY.	I-40	Asheville Hwy	Knox County	Knoxville	YES	4	50	92.52	Tier 1
0.52	CHAPMAN HWY.	Burnett Ln	E Simpson Rd	Knox County		YES	6	55	92.31	Tier 1
1.72	S. ILLINOIS AVE.	Centrifuge Way	Badger Ave	Anderson County	Oak Ridge	YES	6	45	88.43	Tier 1
0.86	E. EMORY RD.	Brackett Rd	Stormer Rd	Knox County		NO	3	45	85.22	Tier 1
1.67	SCHAAD RD.	Pleasant Ridge Rd NW	Ball Camp Pike	Knox County	Knoxville	YES	4	45	82.48	Tier 1
0.53	DOUGLAS DAM RD.	Piney Rd	Clear Creek Way	Sevier County		NO	2	45	78.44	Tier 1
1.32	TAZEWELL PK.	McKinnon Ridge Ln	Carter Rd	Knox County		YES	3	50	77.84	Tier 1
0.54	MARYVILLE HWY.	Chapman Hwy SE	Colonial Cir	Sevier County		NO	2	45	77.45	Tier 1
0.57	CHAPMAN HWY.	Newell Village Dr	Marine Way	Sevier County		YES	6	55	76.94	Tier 1
0.60	TELLICO PKWY.	Tellico Reservoir Service Road	Hwy 321	Loudon County		NO	2	55	76.86	Tier 1
0.55	EBENEZER RD.	Canada Geese Way	Ebenezer Rd	Knox County		YES	4	45	76.61	Tier 1
0.93	CENTRAL AVE. PK.	Country Run Cir	Verton Dr	Knox County	Knoxville	YES	2	40	76.51	Tier 1
0.54	NORRIS FRWY.	Hwy 131	Whitworth Dr	Knox County		NO	4	50	76.36	Tier 1
0.67	TAZEWELL PK.	Old Tazwell Pike	Wood Rd	Knox County		NO	2	45	75.38	Tier 1
0.84	E. EMORY RD.	Pedigo Rd	Barnett Way	Knox County	Knoxville	YES	4	40	75.12	Tier 1
0.56	TAZEWELL PK.	Fairview Rd	Cove Ln	Knox County		YES	3	50	70.22	Tier 1
1.03	LOVELL RD.	I-40	Cornerstone Dr	Knox County	Knoxville	YES	4	45	70.21	Tier 1
2.18	US-HWY. 25W	Stewart Run Way	Mehaffey Rd	Knox County		YES	5	50	70.10	Tier 1
0.91	US-HWY. 25W	Hiway Dr	Peaks Station Rd	Anderson County	Clinton	YES	5	50	70.05	Tier 2
0.53	NORRIS FRWY.	Whitworth Dr	Gordon Smith Rd	Knox County		NO	4	50	68.69	Tier 2
0.56	PORTERFIELD GAP RD.	Seymour CDP Limits	W Union Valley Rd	Knox County		--	2	45	68.11	Tier 2
0.26	AIRPORT PLAZA DR.	Wright Rd N	Hwy 129	Blount County	Alcoa	YES	2	UNK	65.80	Tier 2
0.54	KARNS VALLEY DR.	Westcott Blvd	Dade Dr	Knox County		NO	2	30	65.17	Tier 2
0.91	ASHEVILLE HWY.	Wildow Newman Ln	Cash Rd	Knox County		YES	4	55	64.46	Tier 2
1.44	E. TRI-COUNTY BLVD.	Fowler St	Hannah Dr	Anderson County	Oliver Springs	YES	5	45	63.37	Tier 2
0.15	MAJESTIC GROVE BLVD.	Chapman Hwy	Hwy 168	Knox County	Knoxville	--	2	UNK	62.50	Tier 2
0.97	OAK RIDGE TURNPIKE	Athens Rd	Dresden Rd	Anderson County	Oak Ridge	YES	5	55	62.00	Tier 2
0.78	MORGANTON RD.	County Farm Rd	Dave Ln	Blount County		NO	2	45	61.93	Tier 2
0.28	BOYDS CREEK HWY.	Oak View Dr	Island Blvd	Sevier County	Sevierville	YES	2	45	61.64	Tier 2
1.27	MARTIN MILL PK.	Andy Harris Rd	At Crumley Rd	Blount County		NO	2	40	61.59	Tier 2
0.46	W. LAMAR ALEXANDER PKWY.	Simmons St	Belfast St	Blount County	Maryville	YES	5	65	61.57	Tier 2
0.55	WESTLAND DR.	Andover View Ln	Burch Cove Way	Knox County		NO	2	40	61.51	Tier 2
0.75	STATE HWY. 61	Brooks Rd	Old Beatty Rd	Anderson County		NO	4	55	60.80	Tier 2
1.03	PARKSIDE DR.	Turkey Cove Ln	N Campbell St	Knox County	Knoxville	YES	4	40	59.89	Tier 2
0.79	CHAPMAN HWY.	Garner Hollow Ln	Litton Dr	Sevier County		NO	4	55	57.09	Tier 2
0.53	LOUISVILLE RD.	Louisville Rd	Iris St	Blount County	Alcoa	YES	5	45	54.97	Tier 2
1.08	ANDREW JOHNSON HWY.	Dragonfly Way	Arms Rd	Knox County		--	4	55	54.92	Tier 2
0.51	LOVELL RD.	Hickey Rd	Plumb Branch Rd	Knox County		YES	4	45	54.61	Tier 2
1.18	OAK RIDGE TURNPIKE	N Tulane Ave	Adams Ln	Anderson County	Oak Ridge	YES	5	55	54.25	Tier 2

KNOXVILLE REGION HIGH INJURY NETWORK BY CORRIDOR

Corridor Length (miles)	Street Name	From	To	County	City/Town	Full/ Partial Lighting	Max Number of Lanes	Max Speed Limit (mph)	Max HIN Index	Max HIN Tier
0.81	MAYNARDVILLE PK.	Shotsman Ln	Cunningham Rd	Knox County	Knoxville	YES	4	55	54.24	Tier 2
0.71	OAK RIDGE HWY.	Joe Daniels Rd	Guinn Rd	Knox County		YES	4	55	54.16	Tier 2
1.07	CHAPMAN HWY.	Lobelia Ln	Hendrons Chapel Rd	Knox County	Knoxville	YES	6	55	53.86	Tier 2
0.96	CHAPMAN HWY.	E Simpson Rd	Whites School Rd	Knox County		YES	6	55	53.85	Tier 2
0.27	W. HENDRON CHAPEL RD.	Chapman Hwy	Tipton Station Rd	Knox County		NO	2	40	53.69	Tier 2
0.23	KINGSTON PK.	Essex Rd	N Seven Oaks Dr NW	Knox County	Knoxville	YES	6	45	53.50	Tier 2
1.01	KINGSTON PK.	Farlow Dr	West End Ave	Knox County	Farragut	YES	6	45	53.50	Tier 2
0.63	KINGSTON PK.	N Fox Den Dr	Everett Rd	Knox County	Farragut	YES	6	45	53.20	Tier 2
0.51	WASHINGTON PK.	Ellistown Rd	Golden Pond Way	Knox County		YES	2	45	51.31	Tier 2
1.09	BEAVER CREEK DR.	Dry Gap Pike NE	Green Estates Way	Knox County		NO	2	40	50.80	Tier 2
0.31	FOOTHILLS MALL DR.	Hwy 129	W Lamar Alexander Pkwy	Blount County	Maryville	YES	4	45	50.14	Tier 2
0.15	THEBES LN.	Thebes Ln eastern terminus	Thebes Ln western terminus	Knox County		YES	2	25	50.00	Tier 2
0.19	TYRONE DR.	Tyronne Dr terminus	Engert Rd	Knox County		--	2	25	50.00	Tier 2
0.41	GEORGE WILLIAMS RD.	S Peters Rd	School Acc	Knox County		NO	3	30	49.10	Tier 2
0.44	JOE HINTON RD.	Marty McGuiness Cir	Jenkins Creek Ln	Knox County		NO	2	30	47.54	Tier 2
0.63	WASHINGTON PK.	Luttrell Rd	McCampbell Dr	Knox County	Knoxville	YES	4	45	47.44	Tier 2
0.51	S. CHARLES G. SEIVERS BLVD.	E Broad St	Willow St	Anderson County	Clinton	YES	4	45	47.31	Tier 2
0.80	NORRIS FRWY.	E Raccoon Valley Dr	Prayer Ln	Knox County		NO	2	50	47.23	Tier 2
1.02	US-321	Highland Park Dr	Town Creek Pkwy	Loudon County	Lenoir City	YES	5	55	46.91	Tier 2
0.56	US-HWY. 25W	Mehaffey Rd	Old State Cir	Anderson County		YES	5	50	46.73	Tier 2
0.47	MONTVALE RD.	N Heritage Dr	Belwood Dr	Blount County	Maryville	YES	2	45	46.71	Tier 2
0.51	US-HWY. 25W	Peaks Station Rd	Wilbrook Ln	Anderson County		YES	5	50	46.70	Tier 2
0.49	BALL CAMP PK.	Barnard Rd	Schaad Rd	Knox County		NO	2	40	46.60	Tier 2
0.41	E. EMORY RD.	Hwy 33	Willow Fork Ln	Knox County		NO	3	45	46.46	Tier 2
0.57	MIDDLEBROOK PK.	Fox Lonas Rd	Andrewbrook Ln	Knox County		YES	4	50	46.45	Tier 2
0.71	MORGANTON RD.	Peak Way	Morganton Rd	Blount County		NO	2	45	46.43	Tier 2
0.77	TOPSIDE RD.	Hwy 129	Top Hill Rd	Blount County	Alcoa	NO	3	45	46.31	Tier 2
0.40	CHAPMAN HWY.	Down Home Park Ln	Newell Village Dr	Sevier County		YES	6	55	46.16	Tier 2
0.49	W. BEAVER CREEK DR.	Small Creek Way	Clinton Hwy	Knox County		NO	2	40	46.14	Tier 2
0.49	BYINGTON-BEAVER RIDGE RD.	Dolph Dr	Byington Solway Rd	Knox County		NO	2	35	46.00	Tier 2
0.52	EDGEMOOR RD.	Park Meade Dr	Centennial Village Dr	Anderson County	Oak Ridge	NO	3	55	45.31	Tier 2
0.56	EDGEMOOR RD.	Clinton Hwy	Old Edgemoor Ln	Anderson County		NO	3	55	45.28	Tier 2
0.76	RIFLE RANGE RD.	Grove Dr NE	Parkdale Rd NE	Knox County	Knoxville	YES	2	30	45.27	Tier 2
0.52	MCCLOUD RD.	Ventura Dr	Andersonville Pike	Knox County		--	2	30	44.33	Tier 2
0.59	THORNGROVE PK.	Hwy 168	Bales Ln	Knox County		--	2	30	43.40	Tier 2
0.85	N. MAIN ST.	Sharp St	Pumphouse Ln	Anderson County	Clinton	YES	4	45	42.83	Tier 2
0.77	HWY. 70	Abbott Rd	Carters Chapel Rd	Loudon County		NO	2	55	42.37	Tier 2
0.86	W. TRI-COUNTY BLVD.	Butler Mill Rd	Oliver Springs Town Boundary	Roane County	Oliver Springs	YES	4	55	42.25	Tier 2
0.50	HUFFS FERRY RD. N.	Club Dr	Hotchkiss Valley Rd W	Loudon County		--	2	35	41.59	Tier 2
0.74	N. CHARLES G. SEIVERS BLVD.	Eugene Fox Blvd	Doe Run Blvd	Anderson County	Clinton	YES	4	55	40.67	Tier 2
0.81	MAYNARDVILLE PK.	Texas Valley Rd	Loyston Rd	Knox County		NO	4	55	40.43	Tier 2
0.51	E. WOLF VALLEY RD.	Windsong Rd	Clinton Hwy	Anderson County		NO	2	45	40.35	Tier 2
0.24	MASCOT PK.	McBee Ln	Immel Mine Rd	Knox County		--	2	40	39.85	Tier 2
0.39	E. HENDRON CHAPEL DR.	Becky Ln	Chapman Hwy	Knox County		NO	2	40	39.82	Tier 2
0.37	LOYSTON RD.	Old Loyston Rd	Knox County Line	Knox County		NO	2	40	39.63	Tier 2
0.44	CAMPBELL STATION RD.	Kingston Pk	Sonja Dr	Knox County	Farragut	YES	4	40	39.43	Tier 2
0.57	CAMPBELL STATION RD.	Campbell Lakes Dr	Destiny Ridge Way	Knox County	Farragut	YES	4	40	39.42	Tier 2
0.74	WISE SPRINGS RD.	Rocky Ln	Ridgeview Rd	Knox County		--	2	30	39.38	Tier 2
0.52	US-321	Parkway Dr	Holiday Rd	Loudon County	Lenoir City	YES	5	55	39.10	Tier 2

KNOXVILLE REGION HIGH INJURY NETWORK BY CORRIDOR

Corridor Length (miles)	Street Name	From	To	County	City/Town	Full/ Partial Lighting	Max Number of Lanes	Max Speed Limit (mph)	Max HIN Index	Max HIN Tier	F
2.52	SEVIERVILLE RD.	Valentine Rd	Dell Rd	Blount County	Maryville	YES	2	45	38.68	Tier 2	
1.29	N. CHARLES G. SEIVERS BLVD.	Miller Rd	Indian Hills Cir	Anderson County	Clinton	YES	4	55	37.28	Tier 2	
0.72	ASHEVILLE HWY.	N Carter School Rd	Kitts Rd	Knox County		NO	4	50	26.71	Tier 2	
0.90	MARYVILLE PK.	Bayonet Ln	Berry Rd	Knox County		NO	2	40	17.88	Tier 2	
0.64	BURNETT STATION RD.	Hinkle Rd	McMurray Rd	Blount County		NO	2	45	7.79	Tier 2	
3.52	SEVIERVILLE RD.	Alfred McCammon Rd	Green Rd	Blount County		--	2	45	0.00	Tier 2	
0.61	MENTOR RD.	Clear Springs Way	Jones Rd	Blount County	Louisville	NO	2	35	0.00	Tier 2	
0.48	TAZEWELL PK.	Scott Rd	Clapps Chapel Rd	Knox County		--	2	40	0.00	Tier 2	
0.49	LONG POWERS RD.	Unity Way	John Sparks Dr	Blount County		--	2	25	0.00	Tier 2	
0.51	BLUEGRASS RD.	Straw Flower Dr	Pine Springs Rd	Knox County		--	4	30	0.00	Tier 2	

CITY OF KNOXVILLE HIGH INJURY NETWORK BY CORRIDOR

Corridor Length (miles)	Street Name	From	To	Full/ Partial Lighting	Max Number of Lanes	Max Speed Limit (mph)	Max HIN Index	Max HIN Tier
0.47	CLINTON HWY.	Callahan Dr NW	Old Callahan Dr	YES	5	55	246.46	Tier 1
0.48	N. BROADWAY	Highland Dr NE	Old Broadway NE	YES	6	55	201.99	Tier 1
0.59	CHAPMAN HWY.	Norton Rd	Nixon Rd SE	YES	6	55	200.04	Tier 1
0.28	WESTERN AVE.	Interstate 40	17th St NW	YES	7	55	182.81	Tier 1
0.70	E. MAGNOLIA AVE.	N Beaman St NE	N Harrison St	YES	4	45	171.93	Tier 1
0.72	WESTERN AVE.	Morningstar Storage driveway	Sullivan Rd NW	YES	7	55	167.57	Tier 1
0.25	N. BROADWAY	Hwy 640 ramp	Old Broadway NE	YES	6	55	155.38	Tier 1
0.31	N. BROADWAY	Cecil Ave NE	Lawson Ave NE	YES	6	55	155.22	Tier 1
0.55	RUTLEDGE PK.	Cement Plant Rd	N Chilhowee Dr NE	YES	4	55	154.44	Tier 1
0.49	CLINTON HWY.	Allen Dr	Marchants Dr NW	YES	5	55	154.04	Tier 1
0.51	CEDAR BLUFF RD.	Kingston Pike	Interstate 40	YES	6	40	141.65	Tier 1
0.22	N. BROADWAY	Ridgewood Rd	Jane Allen Dr	YES	6	55	139.84	Tier 1
0.29	MIDDLEBROOK PK.	21st St NW	Sutherland Ave NW	YES	4	35	134.38	Tier 1
0.27	CALLAHAN DR.	Crown Pointe Plaza driveway	Clinton Hwy	YES	4	45	133.44	Tier 1
0.22	AILOR AVE.	Western Ave	Interstate 40 ramp	YES	4	35	133.43	Tier 1
0.26	HENLEY ST.	W Hill Ave	W Clinch Ave SW	YES	8	45	131.55	Tier 1
0.23	GALLAHER VIEW RD	Ivy Falls Way	Interstate 40 ramp	YES	4	40	128.13	Tier 1
0.46	MERCHANT DR.	Central Ave Pike	Schubert Rd NW	YES	4	40	123.87	Tier 1
0.68	RUTLEDGE PK.	Transport Ln	Cement Plant Rd	YES	4	55	123.55	Tier 1
0.22	CLINTON HWY.	Metler Dr	Murray Dr NW	YES	5	55	123.20	Tier 1
0.54	CHAPMAN HWY.	E Ford Valley Rd SE	E Lake Forest Dr SE	YES	6	55	123.10	Tier 1
0.25	WESTERN AVE.	Shoppers Lane NW	Morningstar Storage driveway	YES	7	55	121.87	Tier 1
0.27	SUTHERLAND AVE.	Hollywood Rd NW	Forest Park Blvd NW	YES	3	35	120.35	Tier 1
0.20	GAP RD.	Ohio Ave NW	Larch St	YES	2	35	114.66	Tier 1
0.28	N. CHESTNUT ST.	Martin Luther King Jr Ave	E 5th Ave NE	YES	2	30	111.19	Tier 1
0.48	E. MAGNOLIA AVE.	N Harrison St	Spruce St	YES	4	45	109.41	Tier 1
0.28	N. BROADWAY	Emoriland Blvd NE	Atlantic Ave NE	YES	6	55	108.77	Tier 1
0.13	S. BROADWAY	W Jackson Ave SW	W Summit Hill Dr SW	YES	4	35	108.74	Tier 1
0.30	E. EMORY RD.	Knoxville City limit	Dannaher Dr	YES	4	40	108.40	Tier 1
0.36	MERCHANT DR.	Harriet Pl	Tillery Rd NW	YES	4	40	108.38	Tier 1
1.29	CHAPMAN HWY.	Nixon Rd SE	E Ford Valley Rd SE	YES	6	55	107.71	Tier 2
0.51	CHAPMAN HWY.	Larry Dr SW	Gwinfield Dr SE	YES	6	55	107.71	Tier 2
0.82	CHAPMAN HWY.	Woodlawn Pike SE	Maryville Pike	YES	6	55	107.67	Tier 1
1.02	ASHEVILLE HWY.	Holtson Ferry Rd NE	Interstate 40	YES	4	55	107.47	Tier 1
0.24	WALKER SPRINGS RD. NW.	Kingston Pike	Knoxville City Limit	YES	4	40	106.93	Tier 1
0.36	WESTERN AVE.	Chillicothe St	Interstate 640	YES	7	55	106.64	Tier 1
0.25	WESTERN AVE.	Henley St SW	Grand Ave SW	YES	7	55	106.64	Tier 1
0.42	SCHAAD RD.	Clinton Hwy	Pleasant Ridge Rd NW	YES	4	45	104.98	Tier 1
0.26	MERCHANTS CENTER BLVD.	Merchants Dr NW	Merchants Center Blvd NW terminus	YES	4	25	104.71	Tier 1

CITY OF KNOXVILLE HIGH INJURY NETWORK BY CORRIDOR

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0.05	FAMILY INN DR.	Parking Lot	Merchants Dr NW	--	4	25	100.00	Tier 1
0.06	WILD GEESE RD.	Parkside Dr NW	Turkey Dr NW	--	2	25	100.00	Tier 1
0.24	HIGHLAND DR.	Jenkins Rd	Woodfern Rd	YES	2	30	94.08	Tier 1
0.54	N. BROADWAY	Jane Allen Dr	Gibbs Dr NE	YES	6	55	93.23	Tier 1
0.14	MERCHANT DR.	Tillery Rd NW	Fredonia Rd	YES	4	40	92.90	Tier 1
0.81	KINGSTON PK.	Wesley Rd	Morrell Rd SW	YES	6	45	92.46	Tier 1
0.26	CLINTON HWY.	Cherrybrook Dr NW	Callahan Dr NW	YES	5	55	92.42	Tier 2
0.25	WESTERN AVE.	Grand Ave SW	Interstate 40	YES	7	55	91.40	Tier 2
0.27	WOODLAND AVE.	W Glendwood Ave NE	Shepherd St NE	YES	4	40	89.52	Tier 2
0.26	WOODLAND AVE.	St Mary St NE	W Glenwood Ave NE	YES	4	40	89.52	Tier 2
0.39	E. SUMMIT HILL DR.	Lula Powell Dr	James White Pkwy	YES	4	35	87.04	Tier 2
0.82	LOVES CREEK RD.	Rutledge Pike NE	Buffat Mill Rd	YES	2	30	85.56	Tier 2
0.45	W. OLDHAM AVE.	Interstate 275	Reed St NW	YES	4	30	80.42	Tier 2
0.24	NORTHSHORE DR.	Woodburn Dr	Kingston Pike	YES	4	40	79.28	Tier 2
0.25	PAPERMILL DR.	Westfield Rd NW	Kingston Pike	YES	5	40	78.92	Tier 2
0.26	N. CENTRAL ST.	Metroplex Ct	Atlantic Ave NE	YES	3	35	78.51	Tier 2
0.28	N. CENTRAL ST.	Atlantic Ave NE	Fox St	YES	3	35	78.51	Tier 2
0.53	PLEASANT RIDGE RD.	Western Ave	Meadowood Apartments	YES	2	45	77.73	Tier 2
0.17	PLEASANT RIDGE RD.	Murray Dr NW	Virginia Walker Apartments	YES	2	45	77.73	Tier 2
0.25	N. BROADWAY	Kenyon St NE	Cecil Ave NE	YES	6	55	77.69	Tier 2
0.29	N. BROADWAY	Old Magnolia Ave NW	Emory Pl	YES	6	55	77.63	Tier 2
0.32	OAK RIDGE HWY.	Beaver Ridge Rd	Knoxville City Limit	YES	4	55	77.37	Tier 2
0.86	KINGSTON PK.	S Cedar Bluff Rd	N Seven Oaks Dr NW	YES	6	45	77.11	Tier 2
0.33	CHAPMAN HWY.	E Martin Mill Pike SW	E Martin Mill Pike SE	YES	6	55	76.94	Tier 2
0.12	CHAPMAN HWY.	Mountain Grove Dr	Michaels Ln	YES	6	55	76.93	Tier 2
0.28	WASHINGTON PK.	Murphy Rd NE	Edmondson Ln	YES	4	45	76.60	Tier 2
0.26	CENTRAL AVE. PK.	Steeplechase Blvd	Murray Dr NW	YES	2	40	76.58	Tier 2
0.72	CENTRAL AVE. PK.	Bookwalter Dr	Merchants Dr NW	YES	2	40	76.58	Tier 2
0.71	TAZEWELL PK.	Villa Rd	Beverly Pl	YES	3	50	76.56	Tier 2
0.37	CENTRAL AVE. PK.	Barberry Dr NW	Callahan Dr NW ramp	YES	2	40	76.49	Tier 2
0.21	WESTERN AVE.	Nickle Rd	Ridgedale Rd	YES	7	55	76.17	Tier 2
0.33	WESTERN AVE.	University Ave	Eubanks Ave	YES	7	55	76.17	Tier 2
0.53	WOODLAND AVE.	Shepherd St	Interstate 275	YES	4	40	74.58	Tier 2
0.45	DANDRIDGE AVE.	Surrey Rd	Hazen St	YES	4	35	73.10	Tier 2
0.34	RAY MEARS BLVD.	Winston Rd SW	Downtown West Blvd SW	YES	4	40	72.69	Tier 2
0.25	PARKDALE RD.	Bonita Dr NE	Pilleaux Rd NE	YES	2	30	71.69	Tier 2
0.17	LULA POWELL DR.	Green Magnet Academy Driveway	Summit Hill Dr	YES	2	35	69.45	Tier 2
0.23	BLACKSTOCK AVE.	McGhee Ave	Hannah Ave	YES	2	30	67.13	Tier 2
0.22	GLEASON DR.	Gleason Dr SW roundabout	Morrell Rd SW	YES	4	30	66.98	Tier 2
0.23	PROSSER RD.	Buffat Mill Rd	Berean Cristian School Driveway	YES	4	40	64.69	Tier 2
0.23	INSKIP DR.	Fennel Rd	Central Ave Pike	YES	2	30	63.16	Tier 2

CITY OF KNOXVILLE HIGH INJURY NETWORK BY CORRIDOR

Corridor Length (miles)	Street Name	From	To	Full/ Partial Lighting	Max Number of Lanes	Max Speed Limit (mph)	Max HIN Index	Max HIN Tier
0.29	S. GAY ST.	E Blount Ave	Neyland Dr	YES	4	30	62.83	Tier 2
0.53	N. CENTRAL ST.	Fox St	Nerva Rd NE	YES	3	35	62.81	Tier 2
0.23	REED ST.	W Baxter Ave NW	Jourolman Ave	YES	2	30	62.69	Tier 2
0.24	BRIDGEWATER RD.	Walbrook Dr NW	Cross Park Dr NW	YES	4	35	62.67	Tier 2
0.24	WASHINGTON PK.	Glenview Dr	N Broadway	YES	4	40	62.43	Tier 2
0.26	WASHINGTON PK.	Newman St	Glenview Dr	YES	4	40	62.43	Tier 2
0.29	PARKSIDE DR.	Goodys Ln	Lovell Rd	YES	4	40	62.16	Tier 2
0.27	HOLSTON DR.	Holston Ct	Burns Rd SE	YES	2	30	62.09	Tier 2
0.59	MIDDLEBROOK PK.	Ed Shouse Rd NW	Third Creek Rd NW	YES	4	50	61.93	Tier 2
0.45	MIDDLEBROOK PK.	Woodview Ln	Millington Pkwy	YES	4	50	61.93	Tier 2
0.26	OAK RIDGE HWY.	Summerfield Dr NW	Beaver Ridge Rd	YES	4	55	61.90	Tier 2
0.50	MORRELL RD.	Devonshire Dr	Deane Hill Dr	YES	4	40	61.78	Tier 2
1.12	RUTLEDGE PK.	N Chilhowee Dr NE	Interstate 40	YES	4	55	61.78	Tier 2
0.43	W. GOV. JOHN SEVIER HWY.	Calvary Knoxville Church driveway	Alcoa Hwy	YES	4	50	61.72	Tier 2
0.26	KINGSTON PK.	Noelton Dr SW	Railroad tracks	YES	6	45	61.69	Tier 2
0.52	CLINTON HWY.	Kensi Dr	Allen Dr	YES	5	55	61.62	Tier 2
0.27	S. NORTHSHORE DR.	Park Glen Rd SW	Enclave Way	YES	4	45	61.46	Tier 2
0.20	CENTRAL AVE. PK.	Bruhin Rd NW	Railroad tracks	YES	2	40	61.25	Tier 2
0.40	RUGGLES FERRY PK.	Asheville Hwy	Drummer Ln	--	2	40	61.23	Tier 2
0.27	TAZEWELL PK.	Kesterbrooke Blvd NE	Luttrell Rd	YES	3	50	61.22	Tier 2
0.38	CEDAR LN.	Montrose Rd NE	Lyndell Rd NE	YES	4	40	60.99	Tier 2
0.29	NEYLAND DR.	Railroad tracks	Leinhard Ln SW	YES	5	45	60.96	Tier 2
0.20	WESTERN AVE.	Waverly St NW	Chillicothe St	YES	7	55	60.94	Tier 2
0.61	MARTIN MILL PK.	Brown Rd	Lester Rd SW	YES	2	40	60.90	Tier 2
0.25	WESTERN AVE.	Ed Shouse Rd NW	Shoppers Ln NW	YES	7	55	60.87	Tier 2
0.51	STRAWBERRY PLAINS PK.	Huckleberry Ln	Interstate 40	YES	4	45	60.64	Tier 2
0.20	WESTERN AVE.	Richmond Ave NW	Western Ave NW	YES	7	55	60.55	Tier 2
0.31	DEANE HILL DR.	Golf Club Rd	Cheshire Dr	YES	2	40	60.49	Tier 2
0.36	BUFFAT MILL RD.	Spring Hill Rd	Pulaski Rd	YES	2	35	60.28	Tier 2
0.30	SUTHERLAND AVE.	Liberty St NW	Bellemead Ave NW	YES	3	35	60.18	Tier 2
0.26	PINEY GROVE CHURCH RD.	W Forest Blvd NW	Creekhead Dr NW	YES	2	30	58.99	Tier 2
0.28	MARKET PLACE BLVD.	Kingston Pike	N Peters Rd NW	YES	4	25	57.88	Tier 2
0.36	EMERALD AVE.	Harvey St NE	N Central St	YES	2	25	57.02	Tier 2
0.18	N. GALLAHER VIEW RD.	Kingston Pike	Walbrook Dr NW	YES	4	40	55.54	Tier 2
0.39	CHEROKEE TR.	Cherokee Ridge Way	Medical Center Way	YES	2	40	49.07	Tier 2
0.25	INSKIP DR.	Dewey Way	Fennell Rd	YES	2	30	47.37	Tier 2
0.25	E. HILL AVE.	Hall of Fame Dr SW	S Gay St SW	YES	4	35	47.20	Tier 2
0.28	S. GAY ST.	Union Ave	W Jackson Ave SW	YES	4	30	47.12	Tier 2
0.38	STRAWBERRY PLAINS PK.	Interstate 40	Philips Dr	YES	4	45	46.85	Tier 2
0.16	LOVELL RD.	Interstate 40 Ramp	Dutchtown Rd	YES	4	45	46.81	Tier 2
0.39	GLEASON DR.	Morrell Rd SW	Forest Oak Dr	YES	4	40	46.68	Tier 2
0.23	N. BROADWAY	Greenway Dr	Hwy 640 ramp	YES	6	55	46.61	Tier 2

CITY OF KNOXVILLE HIGH INJURY NETWORK BY CORRIDOR

Corridor Length (miles)	Street Name	From	To	Full/ Partial Lighting	Max Number of Lanes	Max Speed Limit (mph)	Max HIN Index	Max HIN Tier
0.24	N. BROADWAY	Old Broadway NE	Greenway Dr	YES	6	55	46.60	Tier 2
0.40	MAYNARDVILLE PK.	Brown Gap Rd NE	Shotsman Ln	YES	4	55	46.49	Tier 2
0.30	MERCHANT DR.	Schubert Rd NW	Harriet Pl	YES	4	40	46.45	Tier 2
0.31	MIDDLEBROOK PK.	W Hills Rd	Woodview Ln	YES	4	50	46.45	Tier 2
0.41	MIDDLEBROOK PK.	Midpark Rd	Amherst Rd NW	YES	4	50	46.45	Tier 2
0.27	MIDDLEBROOK PK.	Old Weisgarber Rd	Dowell Springs Blvd	YES	4	50	46.44	Tier 2
0.44	MORRELL RD.	Gleason Dr	Kingston Pike	YES	4	40	46.34	Tier 2
0.31	MORRELL RD.	Deane Hill Dr SW	Gleason Dr	YES	4	40	46.33	Tier 2
0.60	MARYVILLE PK.	Ogle Ave SW	Eastend Rd SW	YES	2	45	46.28	Tier 2
0.35	KINGSTON PK.	S Gallaher View Rd SW	Walker Springs Rd NW	YES	6	45	46.26	Tier 2
0.98	KINGSTON PK.	Montvue Rd	N Gallager View Rd NW	YES	6	45	46.26	Tier 2
0.15	KINGSTON PK.	Homberg Dr SW	S Mohican St SW	YES	6	45	46.26	Tier 2
0.33	KINGSTON PK.	Gore Rd	Homber Dr SW	YES	6	45	46.26	Tier 2
0.46	CLINTON HWY.	Merchants Dr NW	Victor Dr	YES	5	55	46.21	Tier 2
0.67	CHAPMAN HWY.	W Hill Ave	Hawthorne Ave SW	YES	6	55	46.16	Tier 2
0.23	CHAPMAN HWY.	Maryville Pike	E Martin Mill Pike	YES	6	55	46.16	Tier 2
0.42	CHAPMAN HWY.	Michaels Ln	Norton Rd	YES	6	55	46.16	Tier 2
0.40	S. NORTHSHORE DR.	Westland Dr SW	Erin Dr SW	YES	4	45	46.09	Tier 2
0.37	TAZEWELL PK.	Tazewell Pointe Way	Comice Way	YES	3	50	45.96	Tier 2
0.75	WASHINGTON PK.	New Harvest Ln	Amber Ridge Way	YES	4	45	45.95	Tier 2
0.25	WILSON RD.	Peltier Rd NW	Bouldercrest Apartments	YES	2	30	45.91	Tier 2
0.33	MARTIN LUTHER KING JR. AVE.	S Harrison St	S Chestnut St	YES	2	30	45.81	Tier 2
0.80	WESTERN AVE.	Sullivan Rd NW	Goldenrod Cir	YES	7	55	45.70	Tier 2
0.20	WESTERN AVE.	Interstate 640	Ed Shouse Rd NW	YES	7	55	45.69	Tier 2
0.14	SHERRILL BLVD.	Shepherd of the Hills Church driveway	Knoxville City limit	--	4	40	45.10	Tier 2
0.33	N. PETERS RD.	Harry Lane Blvd	Market Place Blvd NW	YES	4	40	44.97	Tier 2
0.23	MIDDLEBROOK PK.	Western Ave	21st St NW	YES	4	35	44.82	Tier 2
0.27	CALLAHAN DR.	Central Ave Pike	Interstate 75	YES	4	45	44.48	Tier 2
0.77	CALLAHAN DR.	Interstate 75	Keck Rd	YES	4	45	44.48	Tier 2
0.25	JACKSBORO PK.	Grove Cir NE	Acorn Wds	YES	2	40	42.98	Tier 2
0.31	S. SEVENTEENTH ST.	Laurel Ave SW	Dale Ave NW	YES	4	30	34.40	Tier 2
0.56	PAPERMILL RD.	Interstate 40	N Weisgarber Rd	YES	6	40	34.20	Tier 2
0.21	SCHOFIELD ST.	Keith Ave NE	Vermont Ave	YES	2	30	34.08	Tier 2
0.21	WALBROOK DR. NW	N Gallaher View Rd NW	Interstate 40 ramp	NO	3	40	33.83	Tier 2
0.19	WALBROOK DR. NW	Interstate 40 Ramp	Walker Spring Rd	NO	3	40	33.83	Tier 2
0.26	S. CENTRAL ST.	Union Ave	Willow Ave SE	YES	2	30	33.38	Tier 2
0.25	N. WINONA ST.	E 5th Ave NE	McCalla Ave SE	YES	2	25	32.44	Tier 2
0.47	WASHINGTON AVE.	N Cherry St NE	N Olive St NE	YES	2	30	32.40	Tier 2
0.33	WILSON AVE.	S Cherry St	Ben Hur Ave	YES	2	30	32.24	Tier 2
0.29	ATLANTIC AVE.	Metler St	N Central St	YES	2	30	31.95	Tier 2
0.19	PARK WEST BLVD.	N Cedar Bluff Rd NW	Park 40 North Blvd	YES	4	30	31.78	Tier 2
0.24	S. HARRISON ST.	Louise Ave	E Magnolia Ave	YES	2	25	31.58	Tier 2

CITY OF KNOXVILLE HIGH INJURY NETWORK BY CORRIDOR

Corridor Length (miles)	Street Name	From	To	Full/ Partial Lighting	Max Number of Lanes	Max Speed Limit (mph)	Max HIN Index	Max HIN Tier
0.39	CEDAR BLUFF RD.	Interstate 40	Sherrill Blvd	YES	6	40	31.47	Tier 2
0.54	E. HILL AVE.	Howard Baker Jr Ave SE	Hall of Fame Dr SE	YES	4	35	31.43	Tier 2
0.28	E. MAGNOLIA AVE.	N Cruze St	Myrtle St NE	YES	4	45	31.26	Tier 2
0.23	N. CHERRY ST.	Interstate 40	Cherry St Arc	YES	4	40	31.24	Tier 2
0.19	PLEASANT RIDGE RD.	Walpine Ln	Merchants Dr NW	YES	2	45	31.09	Tier 2
0.23	N. BROADWAY	Jacksboro Pike NE	Old Broadway St NE	YES	6	55	31.08	Tier 2
0.24	N. BROADWAY	Wells Ave NE	Kenyon St NE	YES	6	55	31.08	Tier 2
0.25	N. BROADWAY	Ludlow Ave NE	Emoriland Blvd NE	YES	6	55	31.08	Tier 2
0.35	HOLLYWOOD RD.	Sutherland Ave NW	Interstate 40	YES	2	30	31.04	Tier 2
0.58	E. EMORY RD.	Dannaher Dr	Blueberry Rd	YES	4	40	30.97	Tier 2
0.39	MIDDLEBROOK PK.	Lonas Dr NW	Ed Shouse Rd NW	YES	4	50	30.95	Tier 2
0.30	KINGSTON PK.	Fort Sanders West Blvd	David Ln SW	YES	6	45	30.84	Tier 2
0.31	KINGSTON PK.	S Mohican St SW	Homberg Dr SW	YES	6	45	30.84	Tier 2
0.21	KINGSTON PK.	Capital Dr SW	Mabry Hood Rd NW	YES	6	45	30.84	Tier 2
0.28	KINGSTON PK.	Agnes Rd SW	Deane Hill Dr SW	YES	6	45	30.84	Tier 2
0.26	KINGSTON PK.	Gerald Ford St NW	Albunda Dr	YES	6	45	30.84	Tier 2
0.24	KINGSTON PK.	Deane Hill Dr SW	Gerald Ford St NW	YES	6	45	30.84	Tier 2
0.41	KINGSTON PK.	Volunteer Blvd SW	Neyland Dr	YES	6	45	30.84	Tier 2
0.27	KINGSTON PK.	Mabry Hood Rd NW	Fort Sanders West Blvd	YES	6	45	30.83	Tier 2
0.31	RIVERSIDE DR.	James White Pkwy	Lombard Pl	YES	3	35	30.82	Tier 2
0.43	CHAPMAN HWY.	Gwinfield Dr SE	Woodlawn Pike SE	YES	6	55	30.77	Tier 2
0.62	CHAPMAN HWY.	E Lake Forest Dr SE	Larry Dr SW	YES	6	55	30.77	Tier 2
0.76	RIFLE RANGE RD.	Grove Dr NE	Parkdale Rd NE	YES	2	30	30.18	Tier 2
0.39	MARTIN LUTHER KING JR AVE.	S Cruze St SE	Harriet Tubman St	YES	4	35	27.98	Tier 2
0.26	N. BROADWAY	Old Broadway St NE	Ridgewood Rd	YES	6	55	15.54	Tier 2
0.24	N. BROADWAY	Gibbs Dr NE	Highland Dr NE	YES	6	55	15.54	Tier 2
0.51	MIDDLEBROOK PK.	Amherst Rd NW	Old Weisgarber Rd	YES	4	50	15.48	Tier 2
0.38	CLINTON HWY.	Metler Dr	Victor Dr	YES	5	55	15.40	Tier 2
0.89	CLINTON HWY.	Murray Drive NW	Cherrybrook Dr NW	YES	5	55	15.40	Tier 2
0.54	KINGSTON PK.	S Martinwood Rd	Ebenezer Rd SW	YES	6	45	0.00	Tier 2
1.03	PARKSIDE DR.	Pellissippi Pkwy	Goodys Ln	YES	4	40	0.00	Tier 2
0.14	WESTERN AVE.	17th St NW	University Ave	YES	7	55	0.00	Tier 2