



VISION



ZERO

SAFE STREETS IN NASHVILLE

NOLENSVILLE PIKE STUDY

2022

NDOT



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Thank you!

We extend our thanks to the individuals and organizations who helped make this study and report possible. In particular, we appreciate all the community members who shared their thoughts, ideas, and stories. Your contribution is invaluable.

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Nolensville Pike Today

To envision a better future, we evaluated one of the most challenging roadway segments in Nashville, Nolensville Pike. The safety recommendations outlined here were developed with the specific context of the corridor in mind.

Why a Pilot Corridor Study?

The public right of way is one of a community's greatest assets. In Nashville, the roadways fuel access to jobs, recreation, education, shopping, and visiting friends and family. Nashville's significant growth means there is a need for roads that allow for efficient travel, but all too often this comes at a cost for our most vulnerable users: people who walk, bike, ride transit, or use mobility devices to get around.

The Tennessee Department of Transportation (TDOT) evaluated Nolensville Pike as part of their Pedestrian Road Safety Initiative (PRSI). This report builds on this effort, incorporating

goals and strategies identified in the 2022 Vision Zero Action Plan. This study report is a companion document to the Vision Zero Action Plan and the Vision Zero Implementation Plan.

Creating context-specific safety recommendations for the highest priority roads in Nashville is a critical step forward in Nashville's journey to reduce and eliminate traffic deaths and severe injuries. This report addresses important safety concerns and provides a model to conduct future studies.

Selecting sites for intervention

Many of the most deadly roads in Nashville are high capacity and high-speed roads controlled by TDOT, and close collaboration is critical to the success of Vision Zero. This corridor was chosen as it is a priority location both in Metro's high injury network, and TDOT's PRSI program.

HIGH INJURY NETWORK CRITERIA

- Crash severity
- Vulnerable users (people walking and biking)
- Identified highly vulnerable areas

PEDESTRIAN ROAD SAFETY INITIATIVE CRITERIA

- Based on the TDOT Pedestrian Safety Prioritization Tool, which incorporates an analysis of fatal and severe pedestrian crashes and internal and external stakeholder input.





A pedestrian is forced to use a flooded parking lane to navigate around obstacles in the sidewalk. Photo credit: Rochelle Carpenter

Our Goals

A pilot corridor study provides the opportunity to ask "Why?". Why are crashes happening? Why do people feel unsafe? By taking a deep dive into the crash data and by conducting targeted engagement, the proposed safety recommendations in this report are tailored to the specific site, respond to the crash trends, and reflect the community's wants and needs. The conceptual safety countermeasures and visioning can be applied to future funding efforts. This corridor study will:

- Provide deeper insight into specific crash causes.
- Engage with community members to lift up their wants, needs, and concerns.
- Propose context-specific safety improvements and countermeasures.
- Provide a template for future studies along identified high crash locations.

We are here

IDENTIFY
HIGH PRIORITY
AREAS

UNDERSTAND
LOCAL CONTEXT

PROPOSE SAFETY
IMPROVEMENTS

ENGINEERING
AND DESIGN
STUDIES

FUNDING AND
IMPLEMENTATION

Who lives here?

Though much of the land area around the study corridor is used for commercial and retail buildings, more than 16,000 people live in the area surrounding the study corridor.

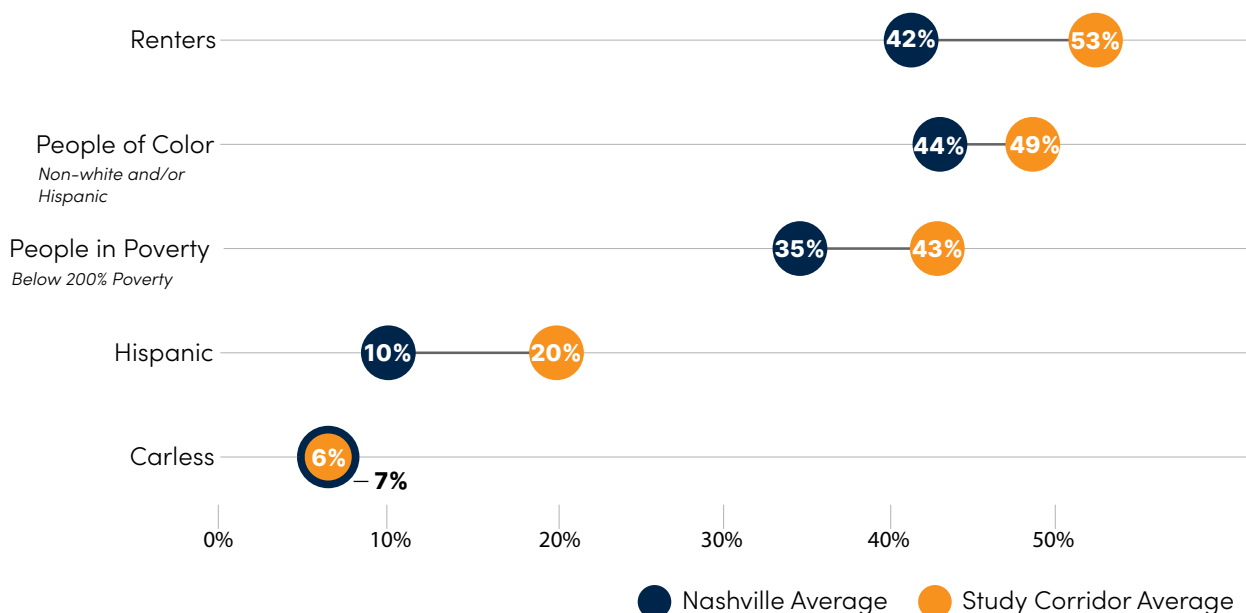
A diverse population lives along Nolensville Pike. Nashville is home to the largest Kurdish population in the United States, and the cultural center of the community lies along Nolensville Pike in a commercial district known as "Little Kurdistan". In addition, a significant Latinx population, double the average in Nashville, live along Nolensville Pike.

Compared with Nashville as a whole, the people who live along the study corridor are more likely to be renters, people of color, Hispanic, and live below 200% of the federal poverty line.



Azadi International Market and Bakery

DEMOGRAPHICS FOR NOLENSVILLE PIKE COMPARED WITH NASHVILLE AVERAGES

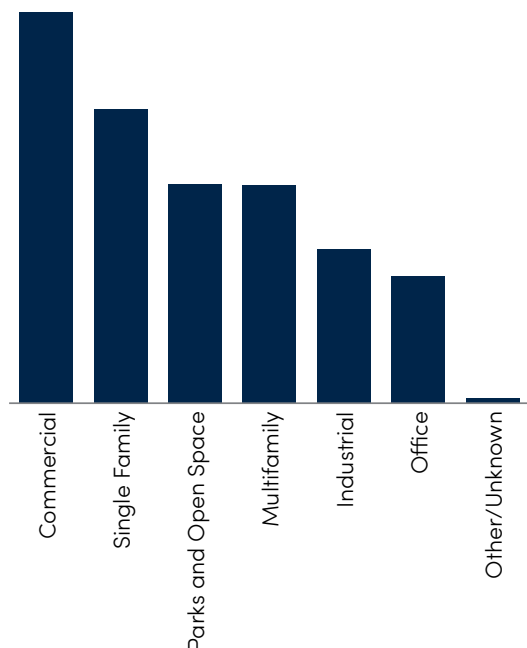


Nolensville Pike Today

This study evaluates Nolensville Pike from McNally Drive to Haywood Lane. Nolensville Pike is a major arterial road in Nashville, running north to south and connecting the downtown with the suburban and rural areas of Davidson County. Commercial land use dominates the properties within a quarter mile of the study corridor, followed by single family residences. There are also a number of park spaces, most notably the Nashville Zoo.

The study corridor has an average traffic volume of more than 26,000 cars per day. The posted speed limit is 40 mph. Most of the corridor has five lanes: four travel lanes and one center turn lane. Narrow bike lanes exist between McNally Drive and Harding Place but without any separation from vehicle traffic, they don't provide a low-stress experience. Sidewalk connectivity is low along the corridor, with essential sidewalks gaps between McNally and Elysian Fields Ct, and Cotton Lane and Haywood Lane.

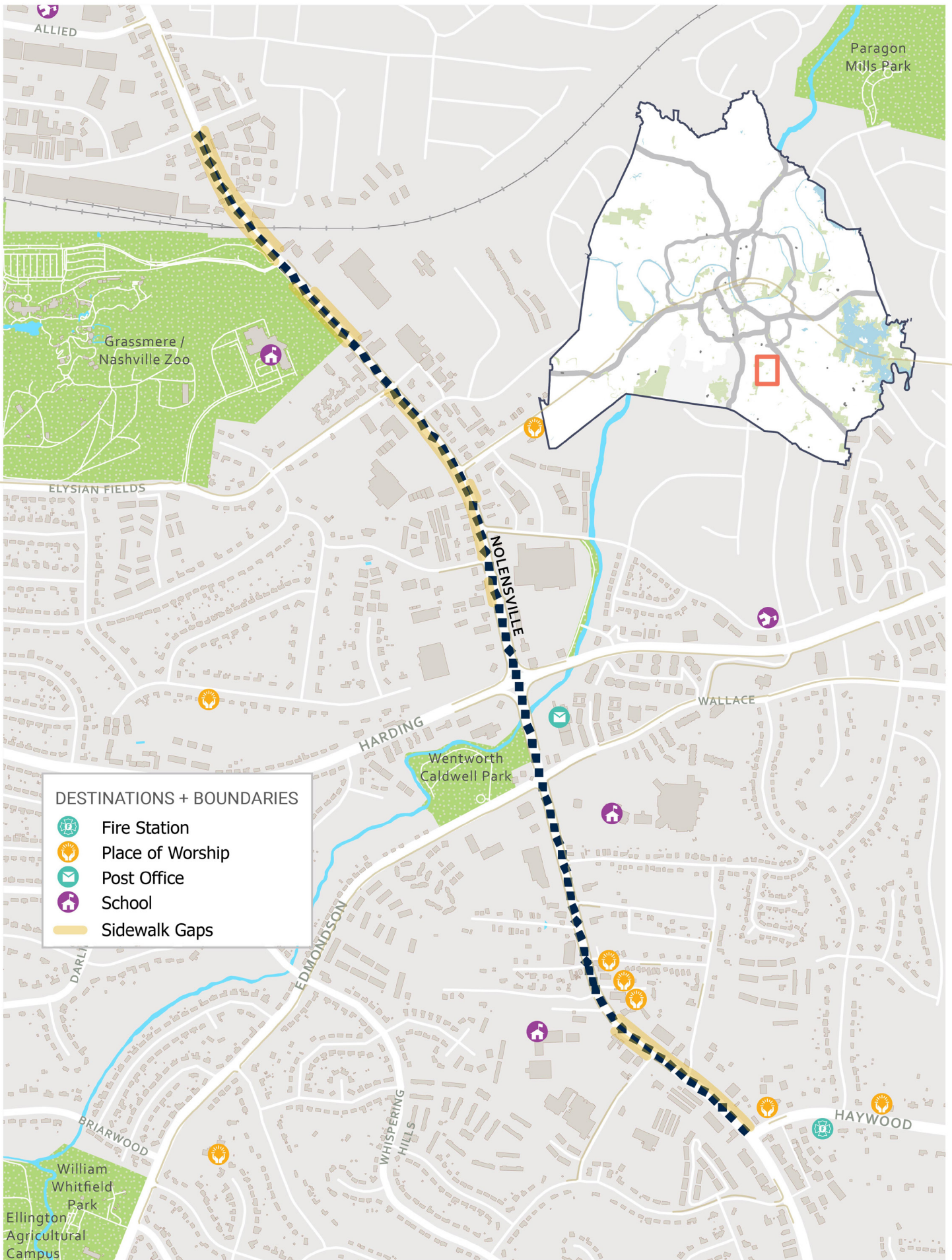
LAND USE WITHIN A 1/4 MILE OF NOLENSVILLE PIKE




Nolensville Pike North of Zoo Road.



Nolensville Pike South of Harding Place.



DESTINATIONS + BOUNDARIES

-  Fire Station
-  Place of Worship
-  Post Office
-  School
-  Sidewalk Gaps

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What You Told Us

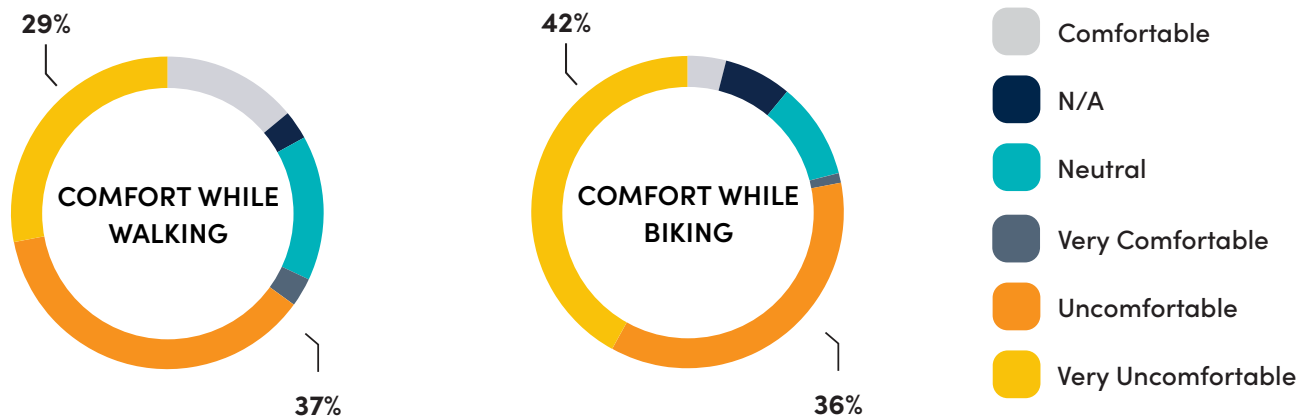
In general, people do not feel safe while walking or biking along the Nolensville Pike today.



Engagement Summary

The public response reflects the trends found in the crash data -- people do not feel safe traveling along Nolensville Pike today. A public survey gathered community feedback from 580 people along Nolensville Pike between McNally Drive and Haywood Lane. Key findings included:

- 42% of people feel very uncomfortable and 37% feel uncomfortable biking
- 29% of people feel very uncomfortable and 37% feel uncomfortable walking



People expressed they were particularly worried about the following safety concerns along Nolensville Pike:

- Excessive speeding
- Too many cars/too much traffic
- Lack of lighting on sidewalks and roads
- Missing sidewalks

The concern about too many cars suggest the community's desire for not only infrastructure improvements but solutions that could reduce the number of cars traveling along Nolensville Pike everyday.

400 versus 123 people stated they would choose a point to cross that is safer than the most convenient place to cross.

When asked what improvements they would like to see along Nolensville Pike, the two most requested improvements were **more sidewalks and more enforcement**. Some respondents specifically asked for **more enforcement officers who reflect their local culture and community, such as Spanish speaking police**. Both of these were requested by 19% of survey respondents.

Additional requested improvements include more **street lighting (17%) and more traffic signals (12%)**.

The following page represents key destinations that the public travels to on the study corridor. Top reported destinations include banks, grocery stores, restaurants, and places of worship. The public also pointed to key recreation destinations, namely the Nashville Zoo and Plaza Mariachi.



The project team conducted intercept surveys along Nolensville Pike to talk to people about their experiences and ideas.

Key Destinations

Salahadeen Center



Nashville Zoo



Azadi Market



Plaza Mariachi



Walmart



Taqueria



Banks



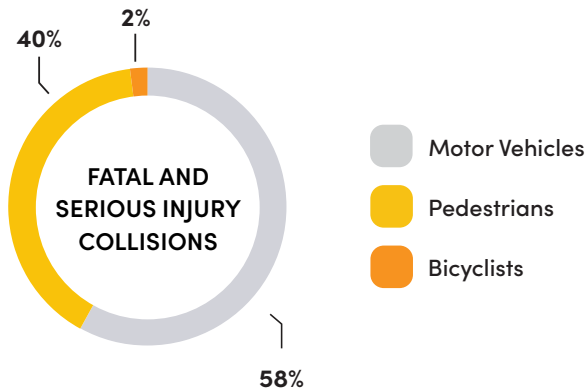
Sulav International Market

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Crash Findings

A more detailed crash analysis of the Nolensville Pike corridor was done in order to identify appropriate countermeasures based off of identified crash types.

Crash Trends



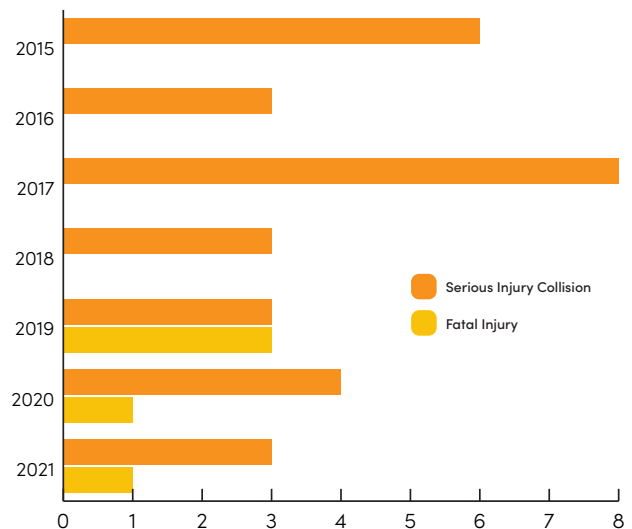
Since 2014, 18 people have died due to a traffic crash while traveling within the study corridor.

Overall, 816 reported crashes were examined to identify patterns and inform countermeasure selection.

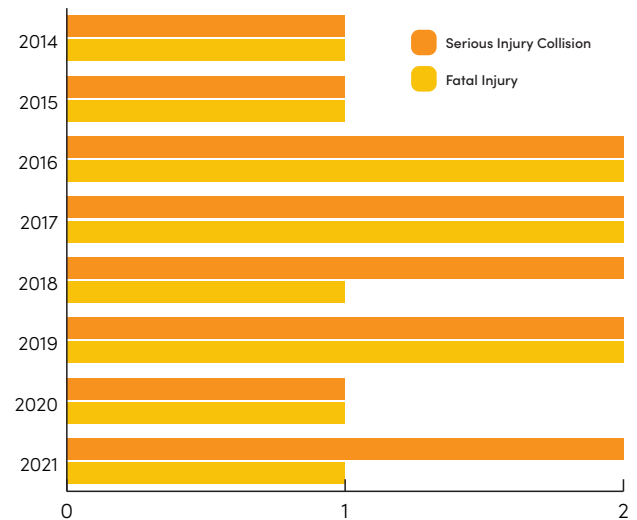
KEY FINDINGS

- The average age of the victims was 45 years old
- Pedestrians are most at risk along Nolensville Pike. In Nashville, people walking make up 17% of crashes where somebody is killed or severely injured, but along Nolensville Pike, pedestrians represent 40% of these types of crashes.
- 62 crashes happened with somebody walking, 8 with somebody biking, and 746 with somebody driving. Though the most severe collisions involved pedestrians and bicyclists.

CRASH TRENDS: PEOPLE DRIVING (2014-2021)



CRASH TRENDS: PEOPLE WALKING (2014-2021)



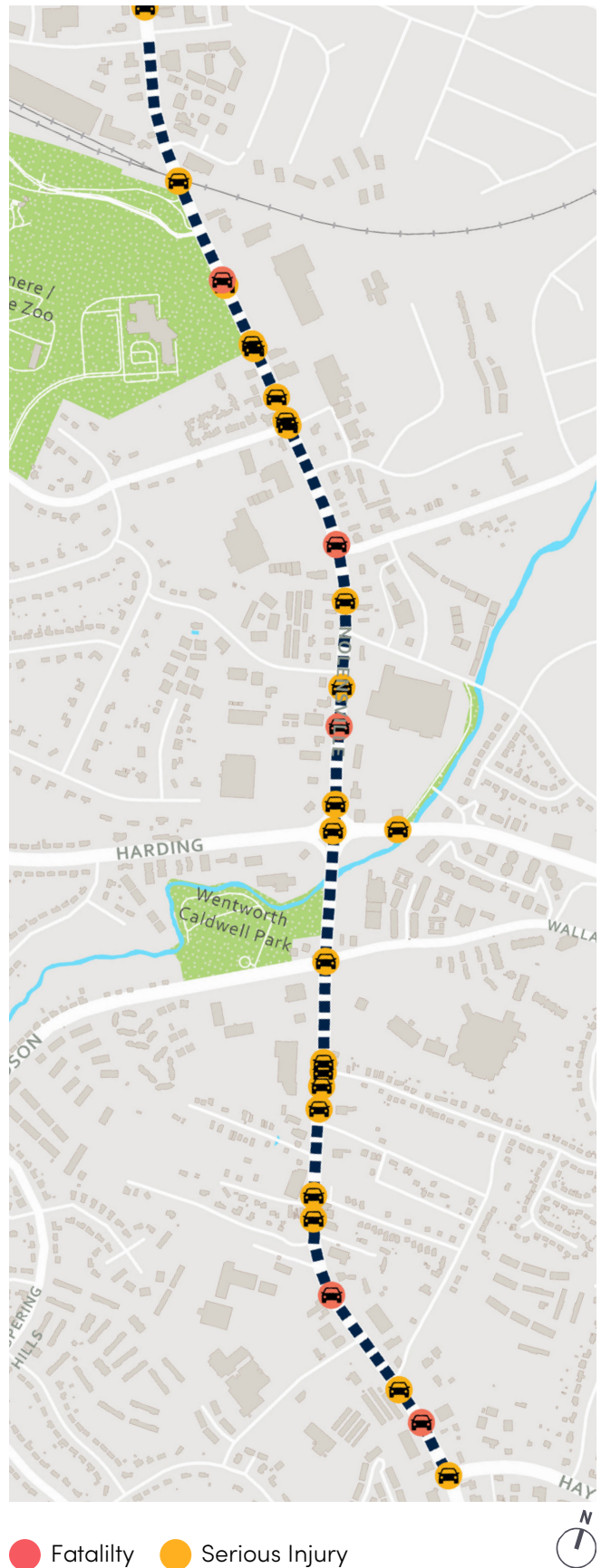
Crashes Involving People Driving

Since 2014, 746 people driving or riding as a passenger were involved in a crash. 5 crashes were fatal, 30 crashes resulted in serious injuries and 711 resulted in minor injuries.

The most serious crashes involving people driving, riding a motorcycle, or riding in a car as a passenger were due to speeding or reckless driving.

KEY FINDINGS

- All 5 fatal crashes stated that excessive speed was a factor in the collision.
- The average age of a person killed was 33 years old.
- For people who were seriously injured, crashes typically involved turning, a rear-end, or distracted driving.



Crashes Involving People Walking

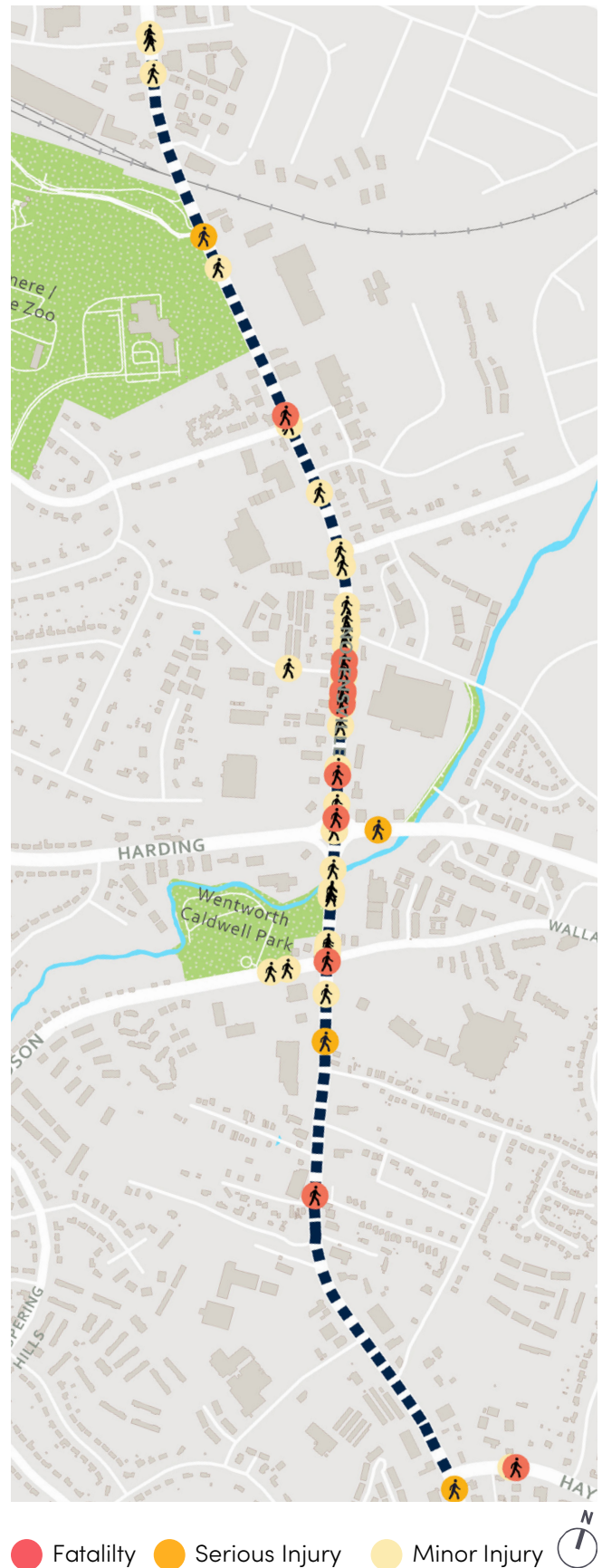
Since 2014, 62 people walking along Nolensville Pike were involved in a crash. 11 crashes were fatal, 13 crashes resulted in serious injuries and 37 resulted in minor injuries.

Compared with the rest of Nashville, people who walk to travel places along this segment of Nolensville Pike face more serious and fatal collisions. The share of people seriously injured while walking is more than double the average in Nashville. Since 2014, more than 1 in 6 crashes involving a person walking were fatal.

The dangers here are perhaps unsurprising, with fast moving traffic, long block lengths, lots of driveways, and portions of the corridor that lack sidewalks. The biggest crash hot spot for people walking is outside of an entrance to a Walmart and next to a bus stop, suggesting that people traveling to shop for groceries, household products, and clothing are at risk for being harmed while traveling on foot.

KEY FINDINGS:

- 75% of people seriously injured or killed while walking were not crossing at an intersection.
- 10 out of 11 traffic deaths happened after dark.
- 4 out of 11 traffic deaths were hit-and-runs.
- The average age of somebody killed or severely injured while walking was 53.
- Most victims were male.



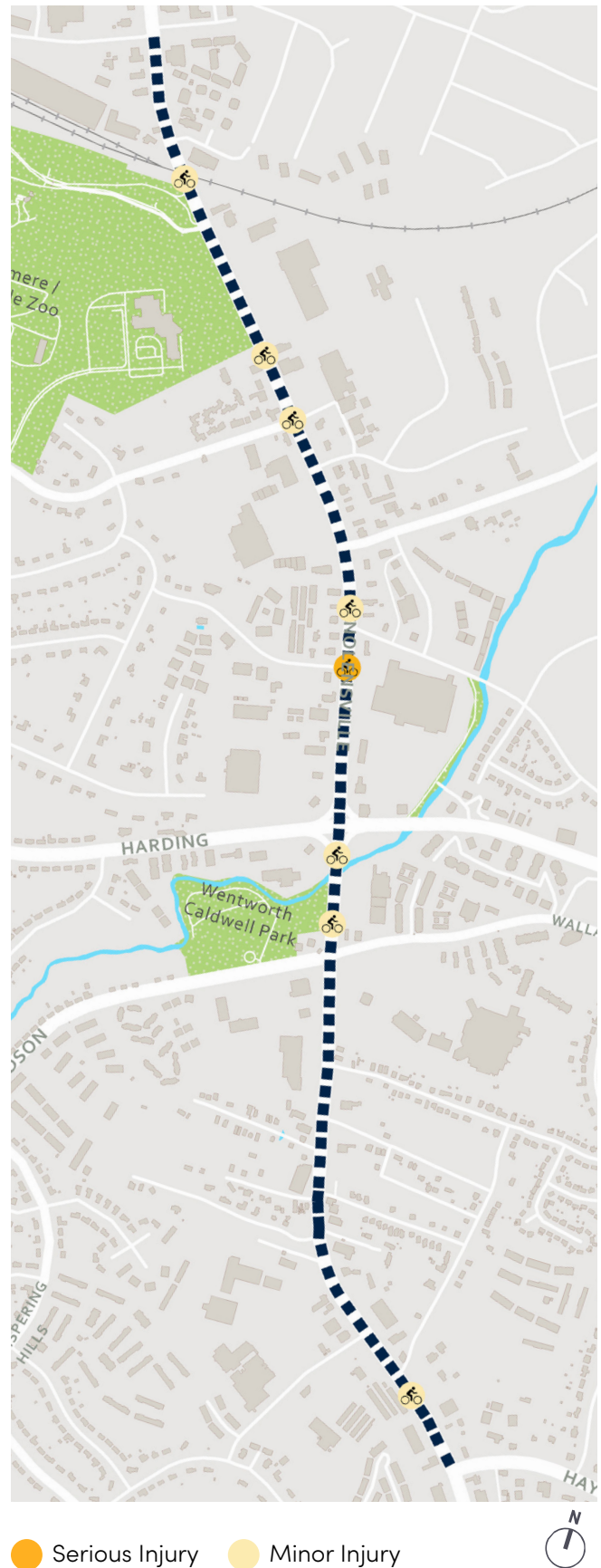
Crash Profile: Bicyclists

Since 2014, 8 people have been involved in a collision while riding a bicycle within the study area. 7 of these involved minor injuries and 1 involved a severe injury.

People who ride bikes on Nolensville Pike face high speeds and heavy traffic making the trip a stressful journey. Navigating turning traffic is particularly challenging for people riding on Nolensville Pike. As a dense commercial area, there are many places where traffic is frequently turning in and out of intersections or driveways.

KEY FINDINGS

- 63% of crashes were located at an intersection or driveway. The remaining crashes involved a driver swerving into a bike lane or a person riding a bike entering the travel lane from a bike lane.
- The median age of victims was 48 and most of the collisions involved men.
- 5 out of 8 crashes occurred in an intersection or at the entrance to a driveway.
- 6 out of 8 crashes occurred during daylight.



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Safety Improvements

TDOT and NDOT reviewed the corridor to identify key safety improvements. The recommendations will provide safer means to walk, bike, and drive along Nolensville Pike.

Nolnesville Pike from McNally Drive to Elysian Fields Ct.

TDOT PRSI Recommendations

Vision Zero Team Recommendations

Problem: Low Visibility
Recommendation: A funded NDOT project will improve pedestrian crossings, and add street lighting.

Problem: Low Visibility
Recommendation: Add high-visibility crosswalk markings.

Recommendation: Evaluate warrants for a pedestrian HAWK signal.

Problem: The railroad creates a gap in the sidewalk.
Recommendation: Add sidewalks or a shared use path.

Problem: Sidewalk visibility
Recommendation: Add crossings, construction or shared use path, turn lane.

Recommendation: Consider placing a supplemental head on Zoo road and signal. Consider pedestrian islands and add sidewalks approaches to the intersection.

and overpass
sidewalks.
construct new
ed use path

gaps, reduced
add pedestrian
t new sidewalks
protected left

evaluate
ental signal
head of the
pedestrian refuge
ewalks to all
intersection

Recommendation: Reduce curb
radii at the shopping center
entrance.

Problem: dangerous pedestrian
crossing.
Recommendation: new pedestrian
PHB/HAWK crossing, reduce curb
radii to improve visibility, consider
center median.

Problem: dangerous pedestrian
crossing.
Recommendation: signage, curb
ramps, realign crosswalk to
shorten distance, new sidewalk or
shared use path.



Problem: crash hot-spot.
Recommendation: improve street lighting, reduce curb radii, trim vegetation to improve visibility

Problem: crash h
Recommendation: remove or reduce
 consider curb ex
 PHB/HAWK signa

Problem: Many collisions occurring at this intersection are at an angle/sideswipe or involve somebody crossing the street.
Recommendation: evaluate access management.

Recommendation: median to reduce
 provide pedestri
 Consider a PHB o
 Walmart drivewa



Problem: missing sidewalk.
Recommendation: new sidewalks, reflective traffic signals, improved crossings, consider removal of northbound right-turn lane.

Problem: crash hot-spot
Recommendation: improve lighting, new bike signal, construct new sidewalks, consider a leading pedestrian signal, restripe the northbound stop line.

Problem: crash
 dangerous bu
Recommendation: pedestrian ref
 incorporate bi
 stop, consider
 lane.

Recommendation: consider crossings across Nolensville on both sides of the intersection. Consider a crossing across Paragon Mills on the western leg. Install medians to manage driveway access.

Nolensville Pike from Elysian Fields Road to Edmonson Pike.

 *TDOT PRSI Recommendations*

 *Vision Zero Team Recommendations*

hot-spot
n: truncated dome warning mat,
e right-turn lane at the driveway,
tension, install new pedestrian
l, improve lighting

n: install center
e conflicts and
an refuge.
crossing at the
y.

n hot-spot and
s stop.
tion: consider
uge island,
ke lane with bus
red paint in bus

Problem: dangerous intersection.
Recommendation: consider Smart
Channel designs, improve
crosswalk visibility, remove
continuous southbound lane,
improve street lighting, curb
ramps and ADA signals.

Recommendation: While Smart
Channel designs are a good
suggestion to "pinch:" the
intersection, completely removing
the "pork chop" slip lanes should
also be considered.

Recommendation: Add a median
on all approaches to shorten
crossing distance and provide
pedestrians refuge.
Evaluate pedestrian signal phasing
and LPIs.

Problem: obstructions in
sidewalk/bike lane.
Recommendation: pedestrian
signal improvements, realign
crosswalk, improve street lighting,
create new shared use path.



Recommendation:
The wide roadway width can be leveraged to narrow travel lanes and provide extra width for sidewalks and protected bike lane (preferably physical separation).

Recommendation: Along the entire section, add medians in center lane to reduce conflicts and create pedestrian refuge areas. Evaluate signalized mid-block crossing throughout that line up with bus stops.

Problem: visibility
Recommendation: reduce curb radii, add curb ramps, improve crosswalk visibility.

Recommendation: consider removing existing driveway apron, improve crosswalk visibility

Problem: dangerous crossing and bus stop.
Recommendation: reduce curb radii, consider replacing driveway apron, improve visibility, provide a crossing to cross behind WeGo buses, install new crossing controlled by PHB/HAWK

Problem: visibility
Recommendation: improve crosswalk visibility.

Recommendation: Protect the pedestrian crossing with a PHB and consider adding a pedestrian refuge island and mini median to break up center lane.

Problem: visibility,
Recommendation: improve crosswalk, reduce curb radii to pedestrian crossing



Problem: visibility
Recommendation: improve crosswalk visibility.

Problem: missing sidewalk.
Recommendation: add pedestrian crossing, construct sidewalks or shared use paths, bus boarding island with bike lane integration, reduce curb radii.

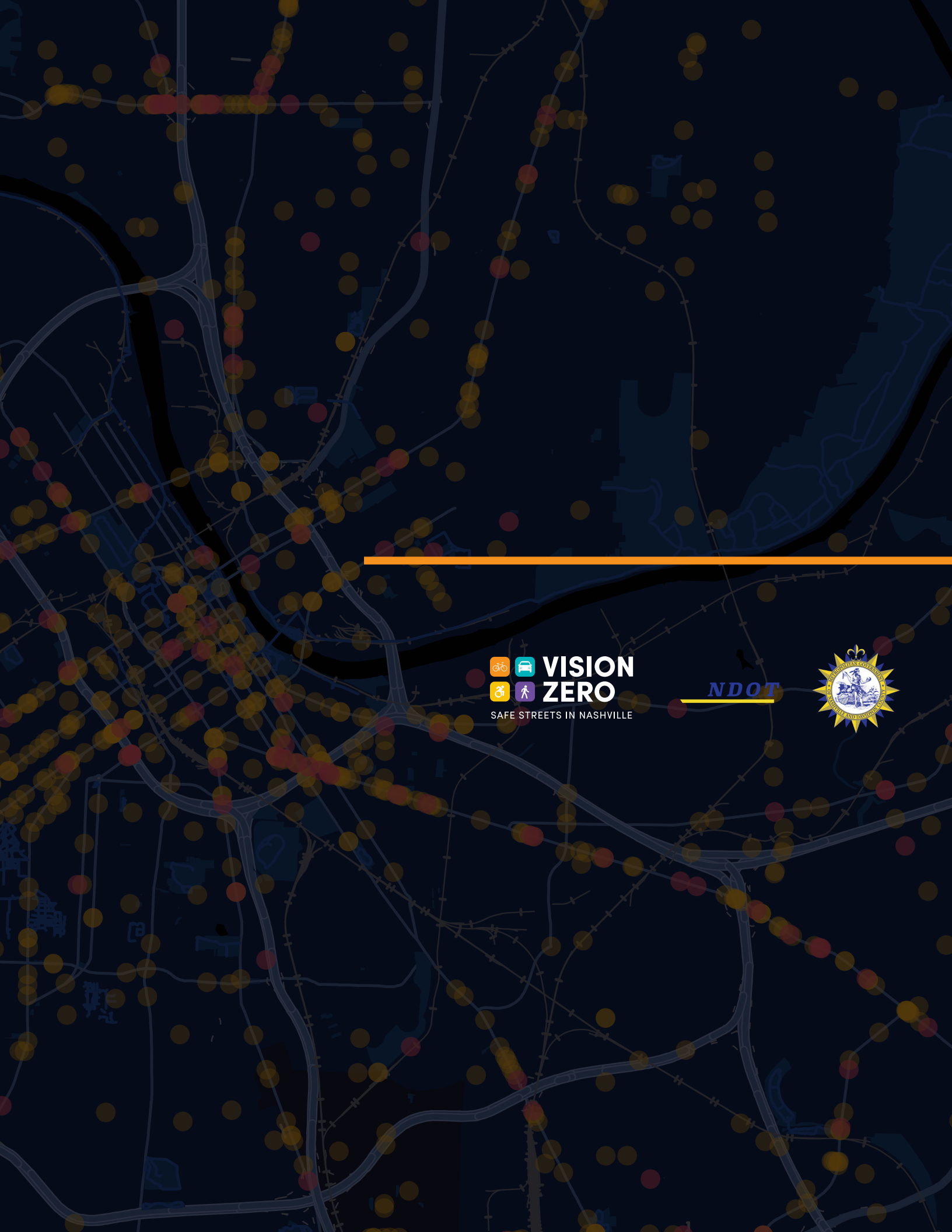
Problem: damaged pedestrian rail.
Recommendation: repair safety rail, improve visibility, reduce curb radii

Problem: bus stop access.
Recommendation: add pedestrian crossing, move northbound WeGo bus stop to south end of intersection, construct boarding island, and incorporate bike lane into bus stop design.

TDOT PRSI Recommendations
Vision Zero Team Recommendations

speed.
curb ramps,
visibility,
to reduce
g distances.

Nolensville Pike from Flora Maxwell Road to Haywood Lane.



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