

# BALTIMORE VISION ZERO

## ACTION PLAN



Prepared by Mead & Hunt with support from Morgan State University, University of Maryland, Johns Hopkins University, Woodvalley Community Strategies, AB Consultants, PELA Design, SCR, and City Thread

DRAFT - 6/26/26



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An aerial, high-angle photograph of a city street. The street is paved with asphalt and has several white-painted lane markings, including a diagonal cross-hatch pattern in the upper right and a series of parallel lines forming a lane on the right. Several circular manholes are visible on the pavement. The overall scene is in grayscale, with a dark blue rectangular overlay in the top left corner containing white text.

# part one. the problem

# I. Introduction

## WHY VISION ZERO?

Every day in Baltimore, residents rely on the city's streets to live their lives. They walk children to school, ride bikes to meet friends, take the bus to work, drive to appointments, and stop by the grocery store on the way home. Streets connect neighborhoods, support local businesses, and make daily life possible.

Yet for too many Baltimoreans, traveling through the city comes with real risk.

Between 2019 and 2023, 2,364 people were killed or seriously injured in traffic crashes. This included 145 drivers who died and 1,402 who suffered serious injuries, as well as 119 people outside of vehicles who were killed and 698 seriously injured.

In 2024, the urgency became unmistakable.

**Traffic deaths rose nearly 40% from 46 in 2023 to 64 in 2024, with half of the fatalities being vulnerable roadway users: 28 pedestrians, two bicyclists, and two scooter riders. These were people simply trying to live their lives moving through Baltimore.**

**Vision Zero** represents the city's commitment to change this reality. Baltimore's goal is to eliminate all traffic fatalities and serious injuries by 2041, a timeline that allows for measurable, sustained progress while coordinating infrastructure investments, policy changes, and community engagement. This goal reflects a fundamental belief: traffic deaths and serious injuries are not inevitable. They are preventable.

Achieving Vision Zero requires leadership, coordination, and sustained commitment across the city. Agencies, policymakers, and community members must work together to redesign streets, prioritize safety, and direct resources strategically.

Vision Zero embodies the shared principle that no loss on our roadways is acceptable.

**Behind every number is a neighbor, a loved one, or a friend. Each loss leaves lasting impacts on families and communities.**

**Our goal is to eliminate all serious and fatal roadway crashes.**

## HOW VISION ZERO BUILDS ON TOWARD ZERO

Baltimore's Vision Zero initiative builds on years of safety work through the Toward Zero program, adopted in 2018 and aligned with the national strategy developed by Toward Zero Deaths. Toward Zero focuses on reducing traffic deaths and serious injuries.

The Toward Zero Initiative did not establish a target date for achieving zero fatalities and serious injuries. By rebranding the effort as Vision Zero, Baltimore signals a willingness to embrace the accountability that comes with setting a clear deadline.

Vision Zero begins from the principle that traffic deaths and serious injuries are preventable and unacceptable.

Vision Zero acknowledges that mistakes are inevitable and that the transportation system must be designed so that these mistakes do not result in death or serious injury.

This approach emphasizes street design, operational improvements, and data-driven decision making. Strategies include lowering vehicle speeds, improving pedestrian crossings, installing protected bike lanes, and identifying high-risk locations for targeted interventions.

Vision Zero also prioritizes the most vulnerable users including pedestrians, bicyclists, transit riders, older adults, and people with disabilities.

As a system-based approach, Vision Zero emphasizes collaboration and shared responsibility among transportation agencies, public health professionals, engineers, policymakers, law enforcement, and community members to take proactive steps to prevent traffic deaths and serious injuries.

Source: Mead & Hunt

## II. Commitment and Goals

**Baltimore's Vision Zero goal reflects a clear and unwavering commitment to eliminate traffic fatalities and serious injuries on city streets by 2041.**

Traffic crashes continue to take a significant toll on Baltimore's residents, families, and communities. Behind every statistic is a person whose life was cut short or permanently changed. These tragedies ripple through neighborhoods and families and highlight the urgent need for continued action.

In 15 years, the 2041 goal is selected to establish a clear, measurable timeline that allows Baltimore to make meaningful and sustained progress while coordinating investments across infrastructure, policy, and community engagement. Reaching zero traffic deaths requires long term commitment and consistent implementation of safety strategies across the city.

While the goal is ambitious, it is necessary and achievable. Baltimore has already taken important steps toward safer streets through our Toward Zero initiative, safety focused street design improvements, and expanded data analysis. This Vision Zero Action Plan builds on this work and provides a structured framework for accelerating progress.

By steadily eliminating fatalities and serious injuries each year, we can achieve the 2041 goal. It will require efficient coordination of resources, strong leadership, and a shared commitment across city agencies and partners to prioritize safety in every decision.

This Vision Zero Action Plan serves as the city's roadmap for reaching this goal. It aligns policies, projects, and investments around a single objective: preventing serious crashes before they occur and protecting the people most vulnerable on Baltimore's streets.

### GUIDING PHILOSOPHY: THE SAFE SYSTEM APPROACH

Baltimore's strategy is grounded in the **Safe System Approach**, a framework used to prevent traffic deaths and serious injuries.

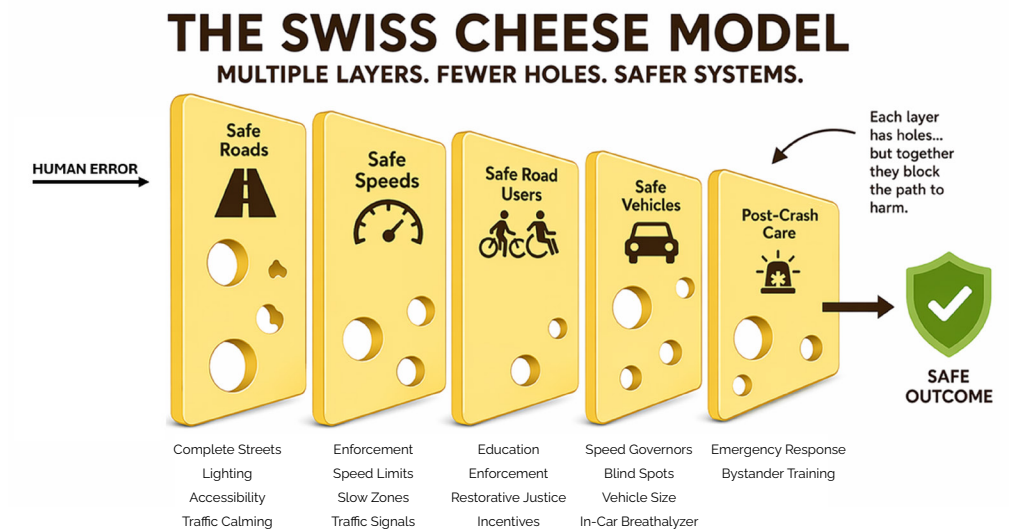
The Safe System Approach begins with several key realities. People will make mistakes while traveling. The human body has limited tolerance for crash forces. Responsibility for safety must be shared across everyone who plans, designs, manages, and uses the transportation system.

Traditional approaches to roadway safety often focus primarily on changing individual behavior. While education and enforcement remain important, the Safe System Approach recognizes that safer outcomes depend on designing transportation systems that reduce the likelihood of severe crashes and minimize the consequences when crashes occur.

This means designing streets that encourage safe speeds, improving visibility at intersections and crossings, and providing dedicated space for people walking, bicycling, or using mobility devices. It also means using data to identify high risk locations and targeting improvements where they will have the greatest impact.

The Safe System Approach recognizes that **transportation safety is a shared responsibility**. Transportation planners, engineers, public health professionals, policymakers, law enforcement, emergency responders, and community members all play an important role in creating intuitively safer streets.

By adopting this philosophy, Baltimore is committing to a transportation system that is safer, more forgiving of human error, and designed to protect all users.



The [Safe System Approach](#) is a comprehensive way to address and mitigate the risks inherent in complex transportation system. It works by building and reinforcing multiple layers of protection to both prevent crashes from happening in the first place and minimize the harm caused to those involved when crashes do occur.

**Transportation safety is a shared responsibility.**

Transportation planners, engineers, public health professionals, policymakers, law enforcement, emergency responders, and community members all play an important role in creating intuitively safer streets.

## Vision Zero Guiding Principles

To put the Safe System Approach into action, Baltimore's Vision Zero Action Plan is guided by a set of principles that shape how the city prioritizes projects, policies, and partnerships. These principles help ensure that resources are used effectively and that safety remains the central focus of transportation decisions.



**Use a data driven approach to prioritize safety improvements.**

Baltimore will rely on crash data, traffic analysis, and community input to identify the locations most likely to result in fatalities or serious injuries. By focusing on high injury corridors and intersections, the city can direct investments where they will save the most lives. This targeted strategy reflects the Safe System emphasis on addressing the highest risk areas first.



**Implement safety projects quickly to prevent further harm.**

When dangerous conditions are identified, the city will act quickly. Rapid safety improvements, pilot projects, and quick build interventions can reduce risks immediately while longer term solutions are developed. Acting with urgency reflects the Safe System commitment to preventing future injuries and fatalities as soon as possible.



**Empower more people to walk and roll safely.**

A safe transportation system is supported not only by infrastructure, but also by programs that encourage people of all ages and abilities to choose safe, active, and shared modes of travel. Through education, encouragement, and community engagement, including walk and bike buses, open streets events, ebike incentive programs, and safety campaigns, Vision Zero can foster a culture where walking, biking, rolling, and transit are attractive and accessible choices.



**Center the experience of the most vulnerable roadway users in roadway design.**

People walking, bicycling, using mobility devices, or waiting for transit often face the greatest risk in traffic crashes. Vision Zero prioritizes their safety by designing streets that reduce vehicle speeds, improve visibility, and provide safer crossings and dedicated infrastructure. When the system works for the most vulnerable users, it becomes safer for everyone.



**Expand awareness of proven safety solutions.**

Many roadway safety improvements are supported by national research and proven to reduce crashes and save lives. Baltimore will continue to communicate the benefits of strategies such as traffic calming, protected bike lanes, and safer intersection design so that residents understand how these changes improve safety in their communities.



**Work collaboratively across City agencies.**

Achieving Vision Zero requires coordination across departments and decision making processes. The city will work collaboratively across Department of Transportation divisions and other city agencies to integrate Vision Zero goals into policies, planning efforts, and project development. Embedding safety across government ensures that protecting human life remains a central priority in every transportation decision.

**Through continued collaboration, data driven decision making, and sustained investment, the City of Baltimore can move steadily toward a future where no one loses their life or suffers a serious injury on the road.**

# III. The State of Traffic Safety in Baltimore

## INTRODUCTION

**Traffic crashes remain one of the most serious and preventable threats to public safety in Baltimore, claiming lives and leaving hundreds of residents seriously injured each year.**

Understanding where, how, and why severe crashes occur is essential to preventing them. This chapter examines traffic safety trends in Baltimore City using crash data from 2019 through 2023, with supplemental information from 2024 where available. The analysis explores patterns in fatal and serious injury crashes across multiple dimensions, including crash type, vehicle type, time of day, age, and the experiences of vulnerable road users.

The findings in this chapter highlight key safety challenges on Baltimore's streets and identify the conditions that most often lead to severe outcomes. These insights inform the strategies and actions outlined in later chapters of the Vision Zero Action Plan.

## OVERVIEW OF SEVERE CRASHES

Between 2019 and 2023, Baltimore City recorded 2,279 crashes resulting in fatal or serious injuries. These crashes resulted in 2,346 people either killed or seriously injured, including:

- **157 motorist fatalities**
- **1,722 motorist serious injuries**
- **110 non-motorist fatalities**
- **624 non-motorist serious injuries**

Although crashes involving non-motorists represented less than 6% of all crashes, they accounted for 43% of fatal crashes and 34% of serious injury crashes, highlighting the disproportionate risks faced by pedestrians, bicyclists, and other vulnerable users.

Preliminary 2024 data<sup>1</sup> indicates the problem has intensified. Baltimore recorded 64 traffic fatalities in 2024, an increase from 46 fatalities in 2023. Of the 2024 fatalities:

- **28 were pedestrians**
- **Two were bicyclists**
- **Two were scooter riders**

This means half of all traffic deaths in 2024 involved people outside vehicles, reinforcing the need for stronger protections for vulnerable road users. These numbers underscore a central challenge for Baltimore:

**While crashes affect all road users, the most severe consequences are disproportionately experienced by the most vulnerable.**

## FATALITIES AND INJURIES: BALTIMORE CITY VS. MARYLAND VS. UNITED STATES

Traffic fatalities and serious injuries remain a persistent and urgent public safety issue at the local, state, and national levels. While Baltimore City experiences slightly lower overall fatality rates than the state and national averages, the data reveals significant disparities in risk—particularly for vulnerable road users.

### State of Maryland Context (2023)<sup>2</sup>

- 621 fatalities, the highest total in recent years
- 3,010 serious injuries
- 41,538 total injuries
- 110,401 total crashes

On average, Maryland experiences approximately 572 fatalities and 41,700 injuries annually. This equates to a daily toll of:

- 1 death every 14 hours
- 114 people injured per day

### Fatality Rate Comparison (2023)<sup>3</sup>

- Baltimore City: 8 deaths per 100,000 population
- Maryland: 10 deaths per 100,000 population
- United States: 12.2 deaths per 100,000 population

While Baltimore's overall fatality rate is lower than state and national benchmarks, this metric alone does not fully capture the severity of roadway safety challenges within the city.

<sup>1</sup>The latest available data at the time of preparing this Plan.

<sup>2</sup>National Highway Traffic Safety Administration, Maryland FY24 Annual Report

<sup>3</sup>Insurance Institute for Highway Safety

## ANNUAL TRENDS IN FATAL AND SERIOUS INJURY CRASHES

Every year in Baltimore, hundreds of crashes leave people seriously injured or killed. Crash trends show that while the numbers fluctuate, the overall level of harm on the city's streets remains persistently high.

Fatal and serious injury crashes declined to 493 in 2020, then increased 16% to 574 in 2021. Crashes declined again in 2022 to 503, but rose to 540 in 2023, representing a 7% increase from the previous year.

These patterns highlight the need for sustained action to address the systemic factors contributing to severe crashes.

## Who is Most at Risk?

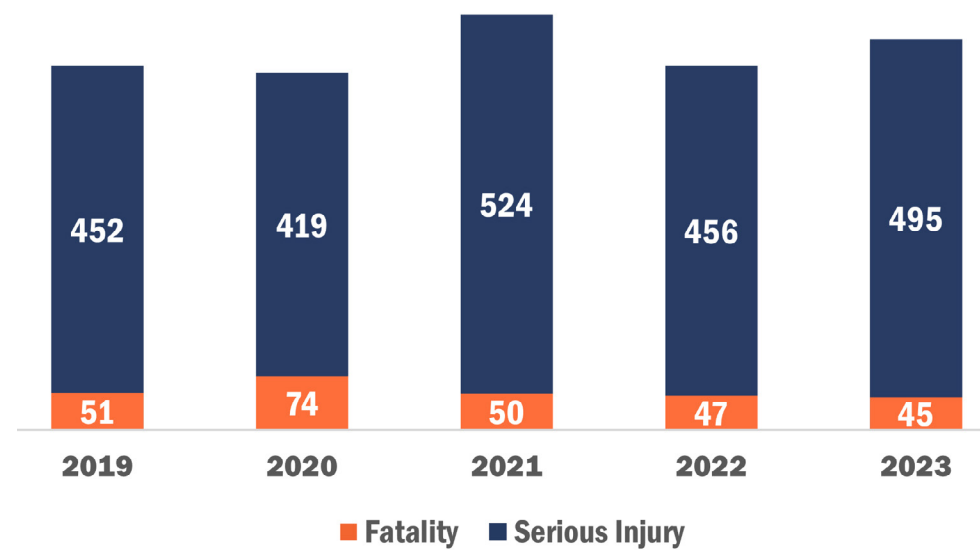
Not all crashes carry the same risk. While most crashes involve motorists, the likelihood of a crash resulting in serious injury or death is much higher for pedestrians and cyclists. This means that even though non-motorists are involved in far fewer crashes, each crash they experience is far more dangerous.

Understanding both **exposure** (how often crashes occur) and **risk** (how severe each crash is) helps the City target safety improvements where they can save the most lives.

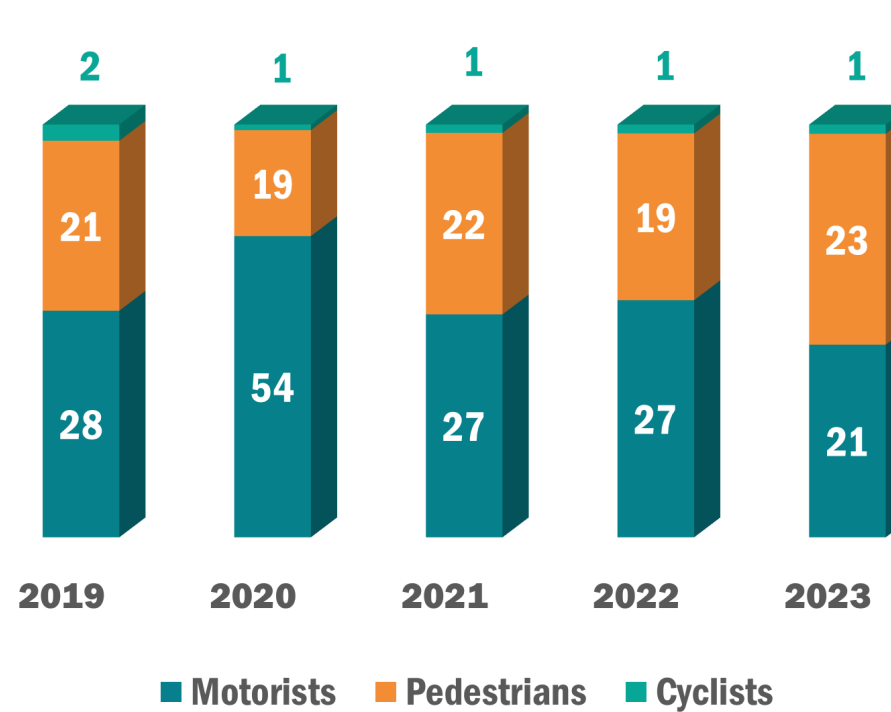
**Exposure:** Refers to the number of crashes.

**Risk:** Refers to the likelihood of a crash resulting in serious injury or fatality.

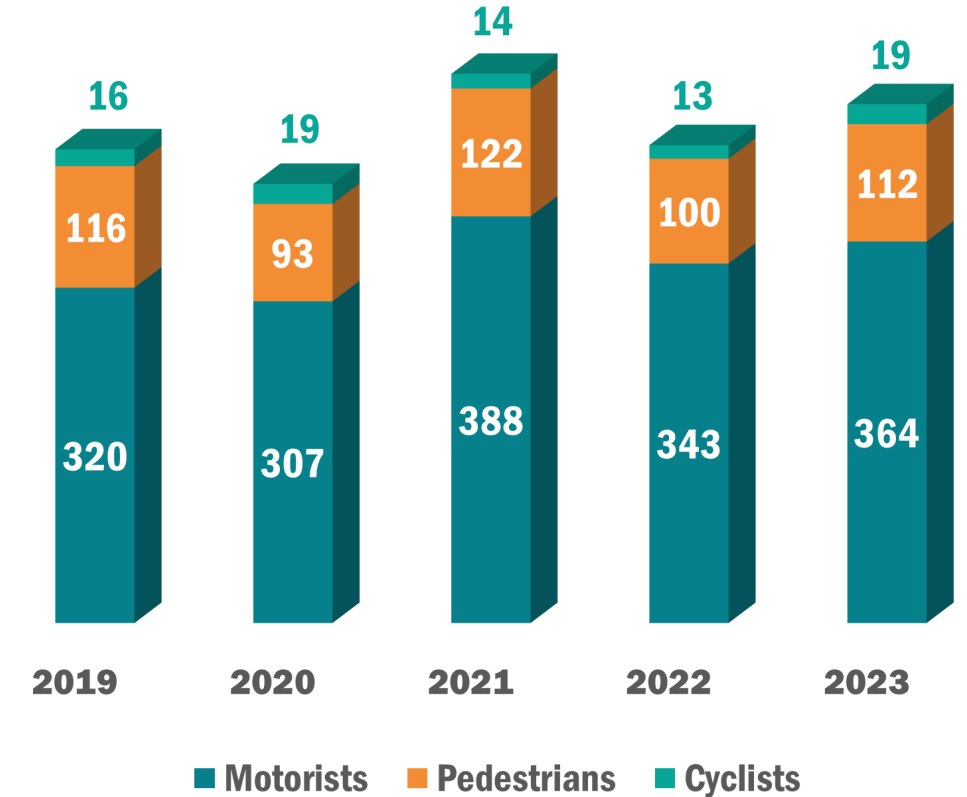
Fatal and Serious Injury Crashes by Year (2019-2023)



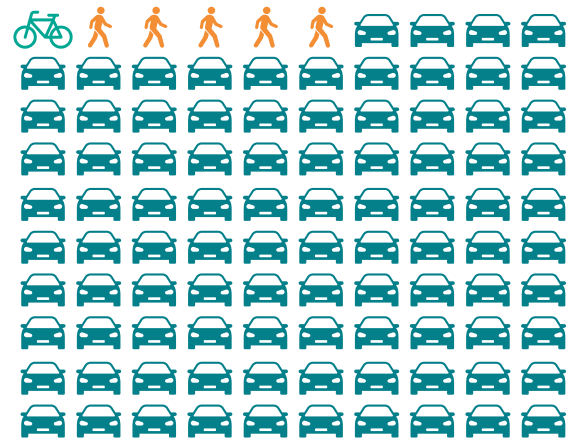
Fatal Crashes by Mode (2019-2023)



Serious Injury Crashes by Mode (2019-2023)

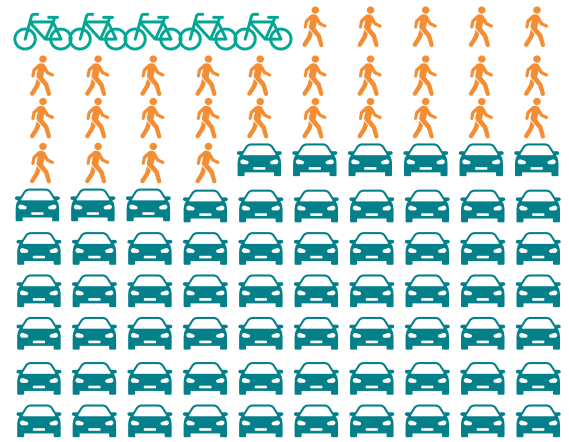


While the numbers fluctuate, the overall level of harm on the city's streets remains persistently high.



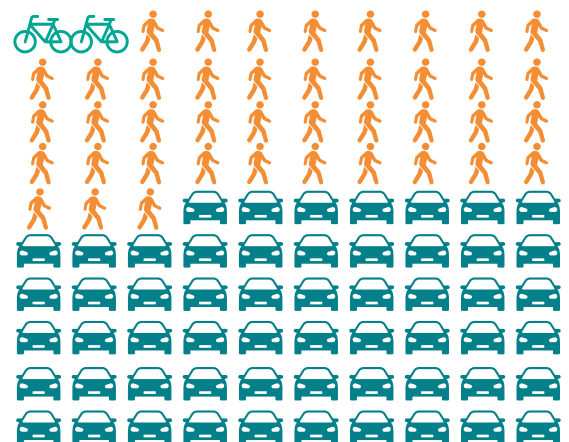
Percent of Total Crashes

In Baltimore, although only 6% of crashes involve cyclists and pedestrians,



Percent of Serious Injury Crashes

they represent 34% of all serious injuries,



Percent of Fatal Crashes

... and 43% of all fatalities.

This shows a disproportionately high risk per crash compared to motorists.

According to ACS, more than 1 in 4 Baltimore residents do not have access to a personal vehicle.



**Pedestrians are ~25X and cyclists ~6X more likely to die in crashes compared to motorists.**

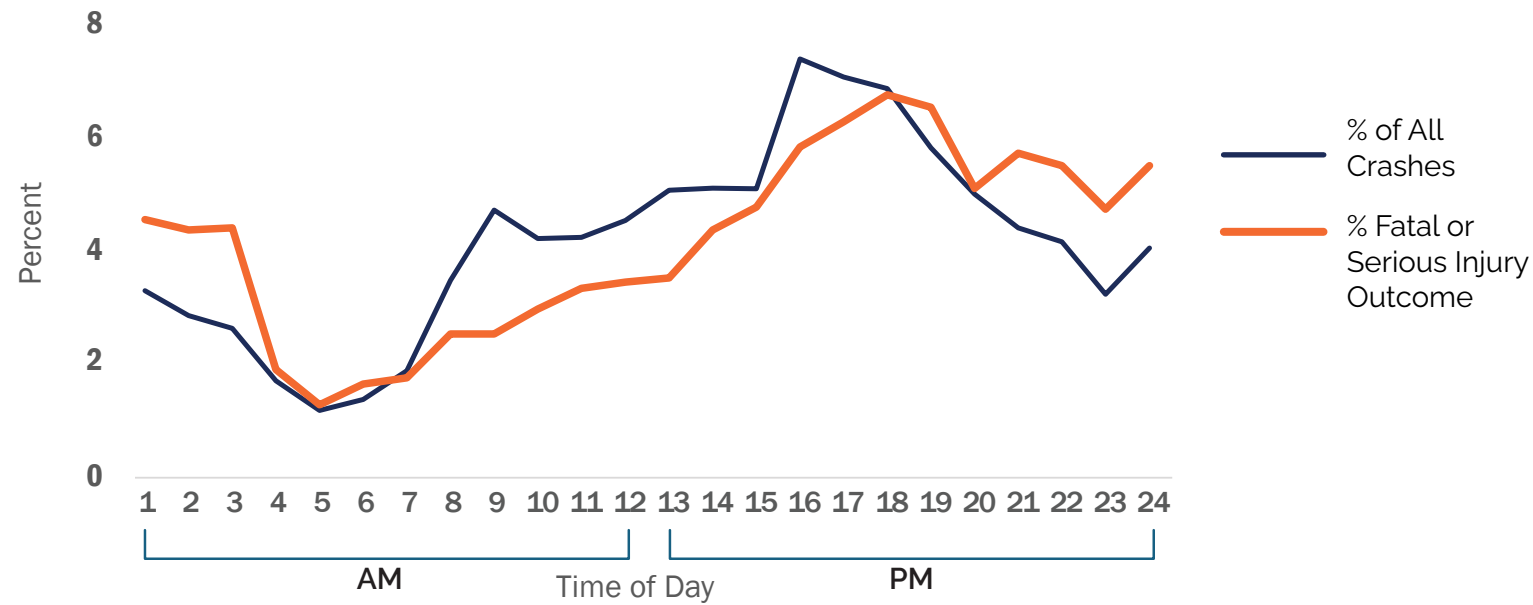
**This reflects a fundamental imbalance in the transportation system: those with the least physical protection face the greatest risk.**

**Addressing this disparity is central to Vision Zero and requires designing streets that better protect vulnerable users.**

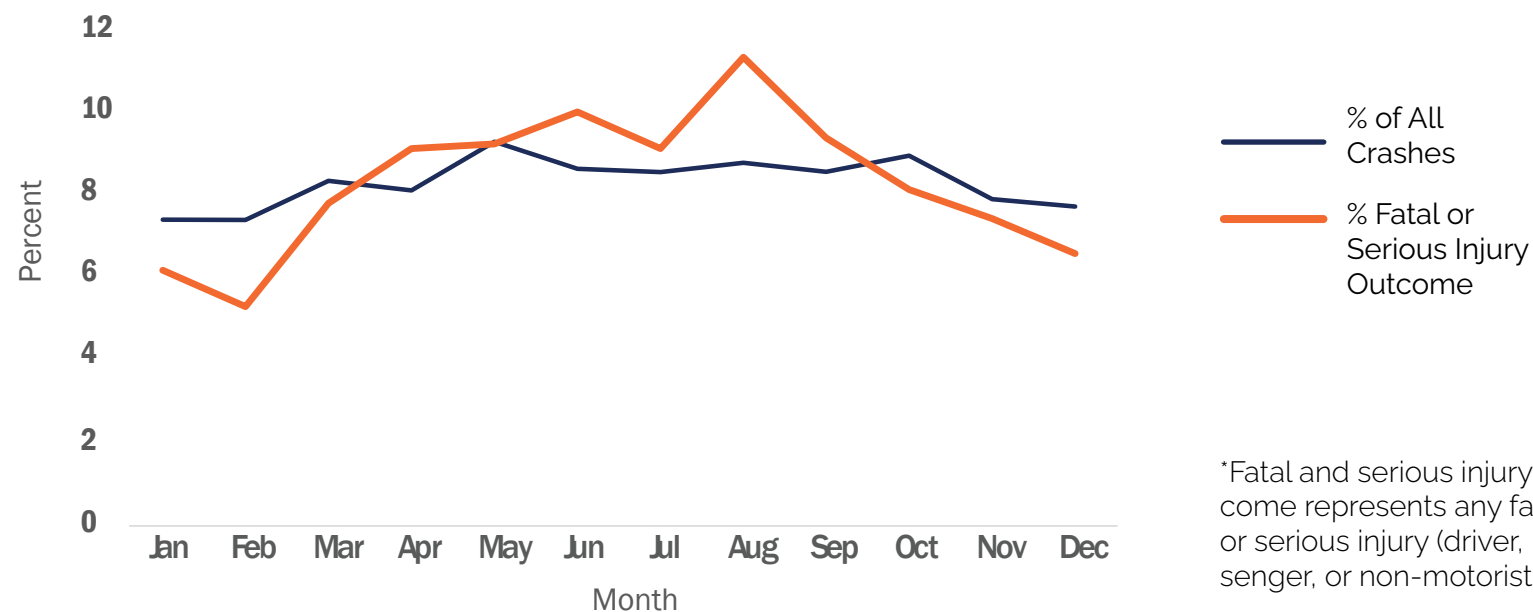
## Crash Trends

Traffic crashes in Baltimore are not evenly distributed across time, vehicle types, or crash circumstances. Some crashes occur frequently but rarely result in serious injury, while others are less common yet carry a disproportionately high risk of fatal or life-altering outcomes. Understanding this distinction between **exposure**, how often crashes occur, and **risk**, how likely a crash is to result in severe harm, is critical for effectively targeting interventions. Exposure reflects the frequency of crashes or travel, while risk highlights the severity, helping the City prioritize strategies that reduce fatalities and serious injuries most effectively.

Proportion of Crashes by Time of Day and Severity



Proportion of Crashes by Month of Year and Severity



\*Fatal and serious injury outcome represents any fatality or serious injury (driver, passenger, or non-motorist)

### Time of Day Highlights:

- **Two daily crash peaks: AM rush (7–9 AM) and stronger PM peak (3–6 PM)**  
**Most crashes happen during commute hours**
- **PM Peak: Highest severity risk**  
**Serious/fatal crashes rise faster than total crashes**
- **Evening Hours: Elevated danger (6 PM–midnight)**  
**Higher share of severe outcomes vs. crash volume**
- **Midday: Relatively lower risk window**  
**More stable, fewer severe crashes**
- **Night Risk: Persists despite lower volume of traffic**  
**Fewer crashes, but severity remains a concern**
- **Overall: Timing matters**  
**Crash risk and crash severity do not peak at the same time**

### Season Highlights:

- **Crashes Overall: Steady, with shifts in severity of outcomes**  
**Same number of crashes, different outcomes by season**
- **Winter: Lowest severity of crashes**  
**Fewest serious & fatal crashes (lowest in February)**
- **Spring: Turning point**  
**Severity starts rising in March**
- **Summer: Peak danger**  
**June–September has the highest share of severe crashes**

Risk is not equal year-round.

The chance of a severe outcome spikes in warmer months and evenings.

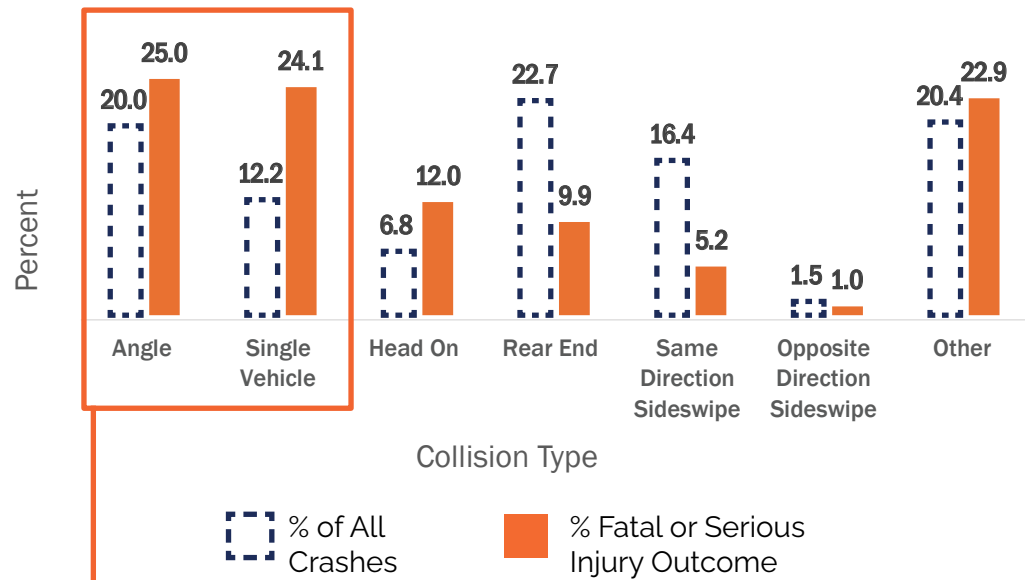
## Crash Type

Crash type analysis reveals that not all collisions carry the same level of risk, underscoring the importance of focusing on the types of crashes most likely to result in severe outcomes. Rear-end crashes are the most common, accounting for 23 percent of all crashes, yet they make up a much smaller share of fatal and serious injury crashes (10 percent), indicating they are less likely to result in severe harm.

In contrast, several less frequent crash types are disproportionately severe. Angle crashes represent 20 percent of all crashes but account for 25 percent of fatal and serious injury crashes. Similarly, single-vehicle crashes make up just 12 percent of total crashes but contribute to 25 percent of severe outcomes.

**Head-on crashes—while relatively rare at 7 percent of all crashes—are among some of the most dangerous, accounting for 12 percent of fatal and serious injury crashes.**

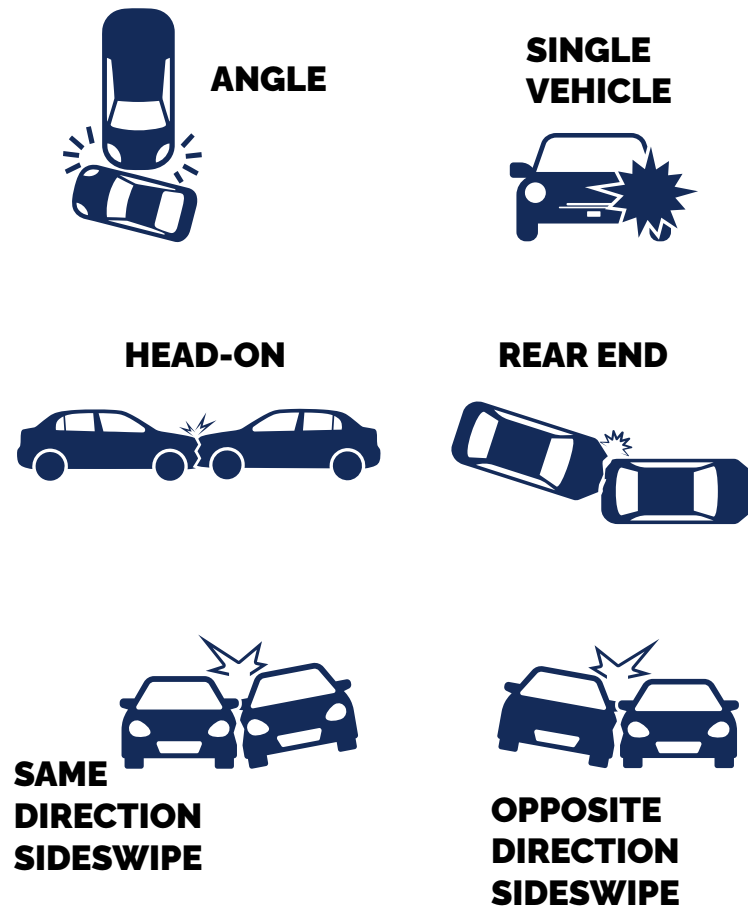
Proportion of Crashes by Collision Type and Severity



**Angle and single vehicle collisions represent about a third of all crashes, but account for half of all fatal and serious injury outcomes.**

By focusing on high-risk crash types such as angle, single-vehicle, and head-on crashes, the City can better target interventions that address the underlying conditions contributing to the most severe outcomes.

## Crash Types

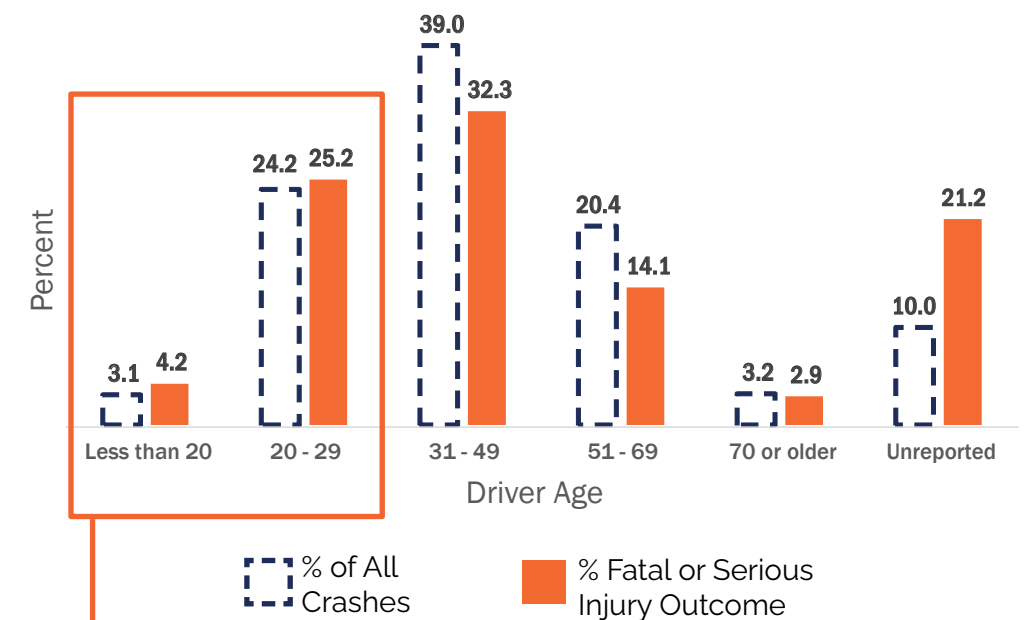


Crash data shows that while most crashes involve drivers ages 31 to 49, followed by those ages 20 to 29 and 51 to 69, the risk of severe outcomes is not evenly distributed across age groups. Drivers under age 20 and those ages 20 to 29 account for a relatively small share of total crashes, yet they are overrepresented in fatal and serious injury crashes, indicating a higher likelihood that crashes involving younger drivers result in severe outcomes.

In contrast, drivers ages 31 and older, while involved in the majority of crashes, are less likely to be involved in crashes that result in serious injury or death, suggesting comparatively lower risk per crash.

The elevated severity among younger drivers may reflect a combination of factors such as inexperience, risk-taking behaviors, and higher likelihood of speeding or impaired driving. **These findings point to the need for targeted strategies such as education, enforcement, and safe system design that reduce the likelihood that mistakes result in life-altering consequences. These findings point to the need for traffic safety strategies targeted at younger demographics.**

Proportion of Crashes by Driver Age and Outcome



**Drivers under age 29 account for around a quarter of total crashes, yet represent nearly 1 in 3 fatal and serious injury crashes.**

**Drivers age 30-70 account for nearly 60% of all crashes, but only represent 46% of fatal and serious injury crashes.**

## Crash Severity by Crash Type

Most crashes in Baltimore involve one vehicle striking another, making up the vast majority of total crashes. However, these crashes are relatively unlikely to result in serious injury or death.

**In contrast, crashes involving pedestrians and bicyclists occur far less frequently but are dramatically more severe, resulting in fatal or serious injury in 17 percent and 13 percent of cases, respectively.**

Similarly, crashes involving fixed objects or overturns, often associated with higher speeds, show elevated severity despite lower occurrence.

This contrast highlights a critical insight: the most common crashes are not the most dangerous.

To reduce fatalities, Baltimore must prioritize preventing the types of crashes most likely to result in severe harm, particularly those involving vulnerable road users.

Passenger vehicles are involved in the majority of crashes and account for a similar share of severe outcomes, reflecting their dominant presence on the roadway. However, some vehicle types present a much higher risk relative to how often they are involved in crashes. Motorcycles, for example, make up a very small share of total crashes but account for a disproportionately large share of fatal and serious injuries. Larger vehicles, such as trucks and sport utility vehicles (SUVs), also contribute to a higher share of severe outcomes compared to their involvement in total crashes, particularly for people outside the vehicle.

**This pattern underscores that risk is not evenly distributed across vehicle types, and that vehicle size, speed, and protection all play a role in crash severity.**

Crash Severity by Crash Type in Baltimore City, 2019-2023

Most Common First Harmful Event	# Crashes	# Resulting in Fatality or Serious Injury	% Resulting in Fatality or Serious Injury
Struck Another Vehicle	56,614	1392	2%
Struck Fixed Object	6,606	304	5%
Struck Parked Vehicle	9,656	107	1%
Struck Pedestrian	3,589	628	17%
Struck Bicyclist or Other Pedalcyclist	621	82	13%
Struck Other Object	523	15	3%
Vehicle Overturned	146	12	8%
Offroad	243	9	4%
Other/Unknown	689	23	3%



## Vehicle Type and Crash Severity

National research consistently shows that vehicle type plays a significant role in determining crash severity, particularly for people walking and biking. Data from the Insurance Institute for Highway Safety and the National Highway Traffic Safety Administration indicate that larger vehicles, such as SUVs and pickup trucks, are more likely to result in severe or fatal injuries than smaller passenger cars.

A key driver of this difference is vehicle size and front-end design. Vehicles with taller, more vertical front ends strike pedestrians higher on the body leading to more severe injuries. National studies show that vehicles with hood heights above 40 inches are about 45% more likely to cause fatal injuries in pedestrian crashes compared to lower-profile cars.

Vehicle type also interacts with speed to amplify risk. While higher speeds increase injury severity for all crashes, research shows that taller vehicles compound this effect, increasing the likelihood of both moderate and serious injuries at the same speed.

Beyond injury severity, vehicle type can also influence crash likelihood in certain situations. Larger vehicles are more likely to be involved in pedestrian crashes while turning at intersections, in part due to larger blind zones and reduced driver visibility.

Crash Severity in Baltimore City by Vehicle Type, 2019-2023

Vehicle Body Type	Driver Fatality	Driver Serious Injury	Passenger Fatality	Passenger Serious Injury	Bike Fatality	Bike Serious Injury	Pedestrian Fatality	Pedestrian Serious Injury	% All Crashes	% of All Fatalities & Serious Injuries
Passenger Car/ Station Wagon	62	803	29	333	2	39	46	307	71%	67%
Motorcycle/ Moped	26	207	0	13	0	0	1	3	1%	10%
SUV	15	76	0	27	2	9	12	28	6%	7%
Truck (Not Tractor Trailer)/ Van	13	88	5	36	2	8	14	35	7%	8%
Emergency Vehicle	1	27	0	10	0	1	1	4	3%	2%
Bus	1	5	1	11	0	3	3	5	2%	1%
Tractor Trailer	2	20	0	3	0	0	2	4	4%	1%

At a national level, the safety implications are clear: Larger vehicles provide greater protection for their occupants, but they impose greater risk on people outside the vehicle, including pedestrians, bicyclists, and occupants of smaller vehicles.

This creates what safety researchers often describe as a risk transfer, where safety gains for one group result in increased harm for others.

Importantly, vehicle type is not a marginal factor but a system-level contributor to crash severity trends.

National data shows that as SUVs and pickups have grown to dominate the vehicle fleet, they have also played a growing role in pedestrian fatalities, reinforcing concerns about the relationship between vehicle design and injury outcomes.



Dianne Yee/Flickr  
Source: NACTO

## Honoring Those We Have Lost

Each number in every table, chart, and graph represents a neighbor, a loved one, or a friend, each with individual stories, memories, talents, and passions. The impact of a premature and unexpected loss frays the fabric of the community, with those remaining left to mend the tear and strengthen its resilience.

During the development of the BCDOT Action Plan, the Baltimore community lost a 28-year-old individual on March 12, 2026. He was killed by a box truck while riding a scooter south of Orleans Street on North Collington Avenue.

Bikemore and Baltimore Families for Safe Streets gathered for a vigil on March 31, 2026 to honor his life and to demand concrete traffic calming measures in the City.



Ghost Bike Memorial to Nathan Krasnopoler  
Source: Mead & Hunt



**BALTIMORE FAMILIES FOR SAFE STREETS**

# DANGER

ORLEANS STREET

SCAN ME

OUR NEIGHBORHOOD IS NOT A HIGHWAY  
TOO MANY CRASHES  
BALTIMORE CITY: IT'S TIME FOR ACTION

## COMMUNITY VIGIL & SAFETY ASKS

TUESDAY, MARCH 31, 2026  
6:00 PM - 7:00 PM  
235 N MONTFORD AVE  
& ORLEANS STREET

JOIN BALTIMORE FAMILIES FOR SAFE STREETS  
TO HONOR THOSE WE'VE LOST

### DEMAND CONCRETE TRAFFIC CALMING MEASURES NOW

WWW.BALTIMOREFSS.ORG CONTACT: AMRIL HAMER  
@BALTIMOREFSS ON IG AMRIL@BALTIMOREFSS.ORG

Source: Bikemore



Sonya Thomas (Bikemore) and Amril Hammer (Families for Safe Streets) speak at a vigil for Mike Davis, a cyclist killed in Baltimore.

Source: Mead & Hunt



Ghost Bike Memorial to Tom Palermo  
Source: Mead & Hunt

# IV. The High Injury Network

Every year, lives are lost and families are forever changed by traffic crashes in Baltimore. Most of these tragedies happen in the same places. Just 7% of the city's streets account for over half of all traffic deaths and serious injuries. These streets form Baltimore's High Injury Network (HIN), where the risk of severe crashes is highest and targeted safety improvements can have the greatest impact.

While crashes can occur anywhere, focusing on the HIN allows Baltimore to move beyond reacting to individual incidents and address the systemic conditions that make these corridors dangerous. This data-driven, network-focused approach ensures interventions are prioritized where they will save the most lives, advancing the Vision Zero goal of eliminating traffic deaths and serious injuries by 2041.

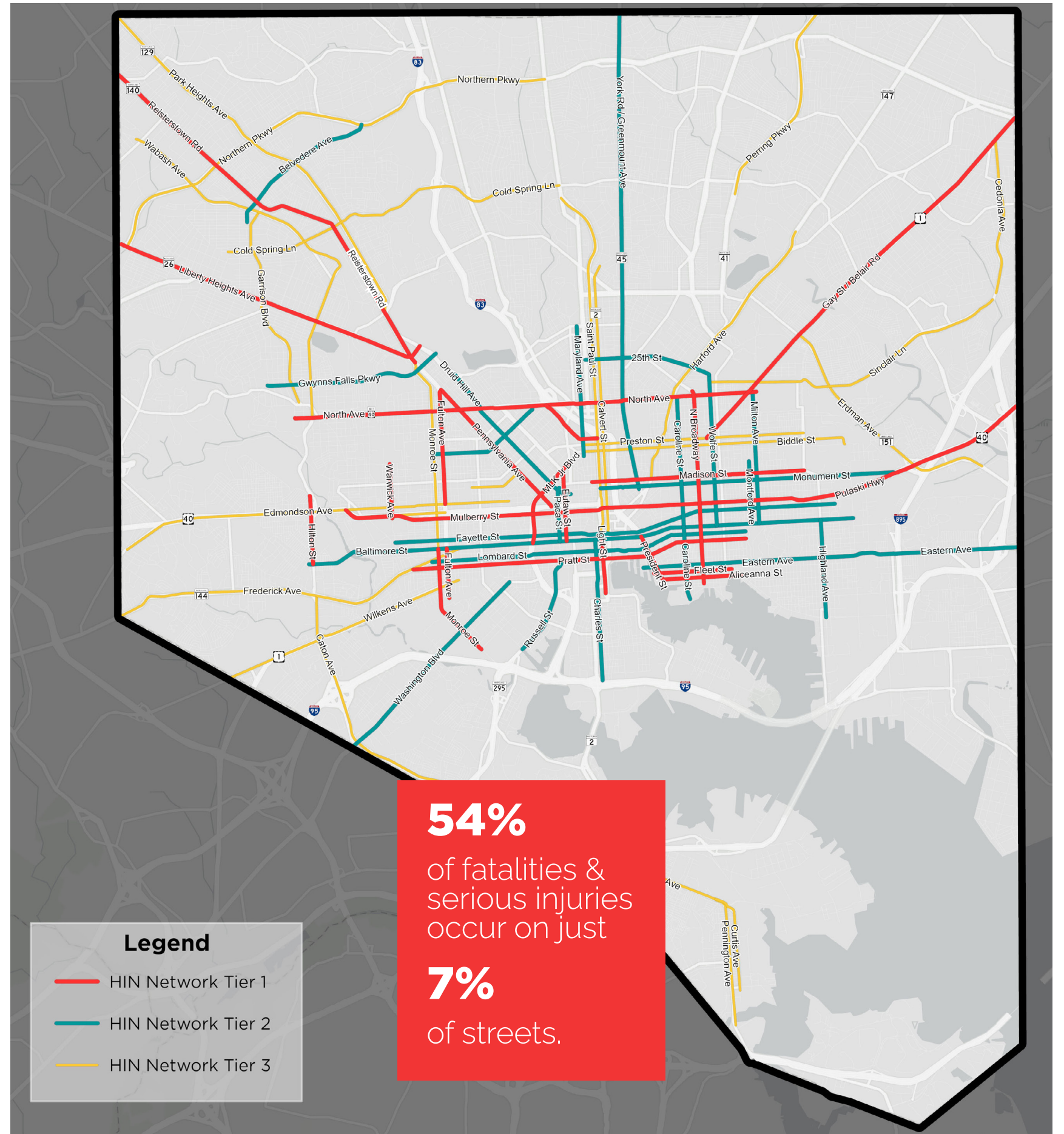
## HIN METHODOLOGY

The HIN was developed using a multi-step approach:

- 1. Crash Heat Mapping:** Crash data from 2019–2023 was mapped to visualize hotspots of fatal and serious injury crashes.
- 2. Network Translation:** These hotspots were connected into a continuous network of streets with the highest risk.
- 3. Tiered Classification:** Streets were grouped into three tiers based on crash frequency and severity relative to citywide averages:

This tiered structure allows the City to strategically target interventions for maximum life-saving impact.

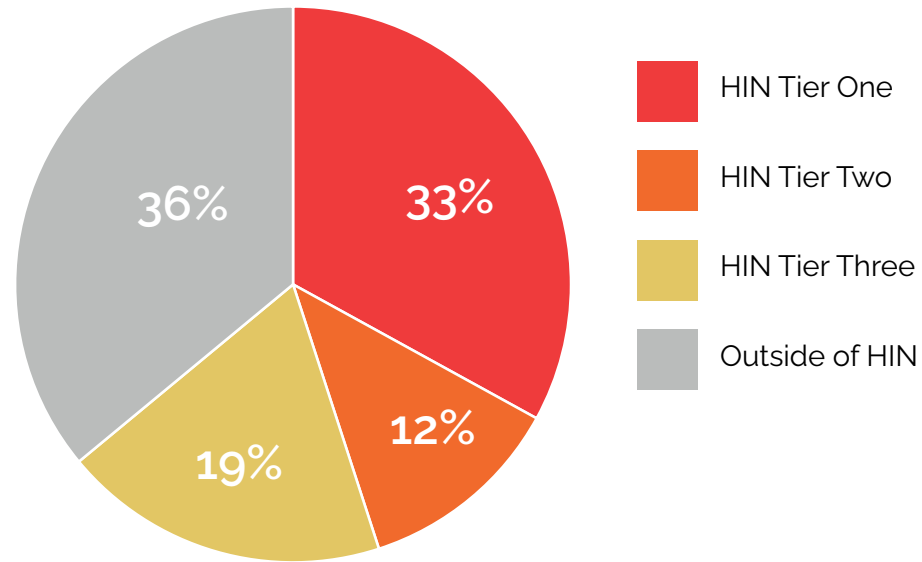
Tier	Description	Miles
<b>Tier 1</b>	<b>Highest incidence of fatal/severe injury crashes</b>	<b>45.19</b>
<b>Tier 2</b>	<b>Lower, but still significant risk</b>	<b>48.97</b>
<b>Tier 3</b>	<b>Moderate risk, elevated compared to other streets</b>	<b>68.85</b>



## HIN CRASH SUMMARY

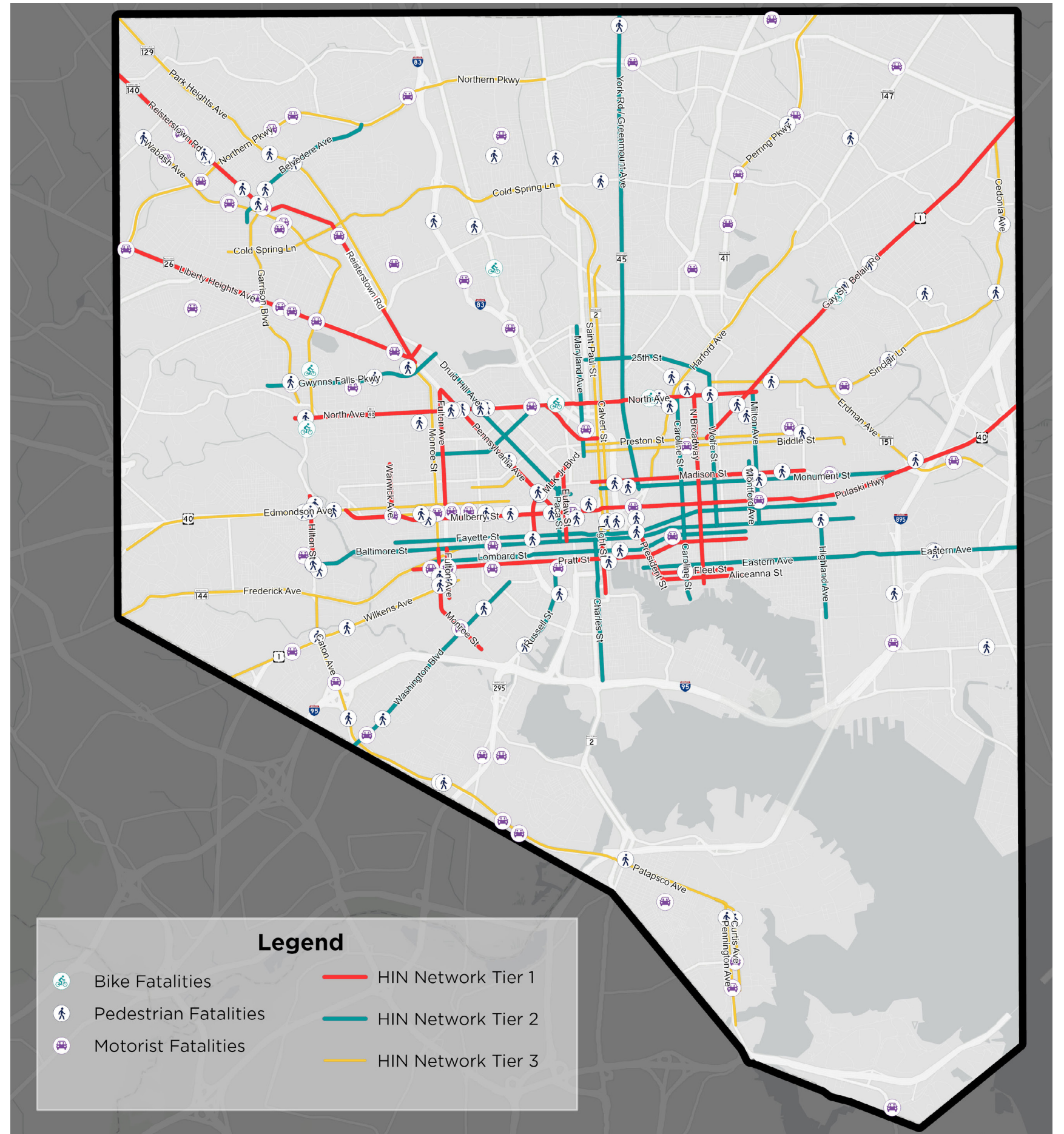
The HIN in Baltimore City highlights the roadways where residents face the greatest danger of severe injury or death due to traffic crashes. A detailed analysis of crash data from 2019 to 2023 reveals the distribution and severity of crashes across the three HIN tiers.

### Percent of Non-Motorist Fatalities by HIN Tier



### Crashes by HIN Tier in Baltimore City, 2019-2023

HIN Tier	Non-Motorist Fatality	Non-Motorist Serious Injury	All Other Non-Motorist Crashes	Motorist Fatal Injury	Motorist Serious Injury	Total Serious Crashes	% of HIN Crashes
Tier One	33	163	864	33	349	578	25%
Tier Two	12	96	702	5	157	270	12%
Tier Three	19	85	377	31	253	388	17%
Outside of HIN	36	295	2,100	77	702	1,110	47%
<b>Total</b>	<b>100</b>	<b>639</b>	<b>4,043</b>	<b>146</b>	<b>1,461</b>	<b>2,346</b>	<b>100%</b>



## TIER ONE

This highest-risk tier accounts for 25 percent of serious, fatal, and non-motorist crashes within the HIN. Notably, it is associated with the most fatalities, with 66 deaths occurring on these corridors.

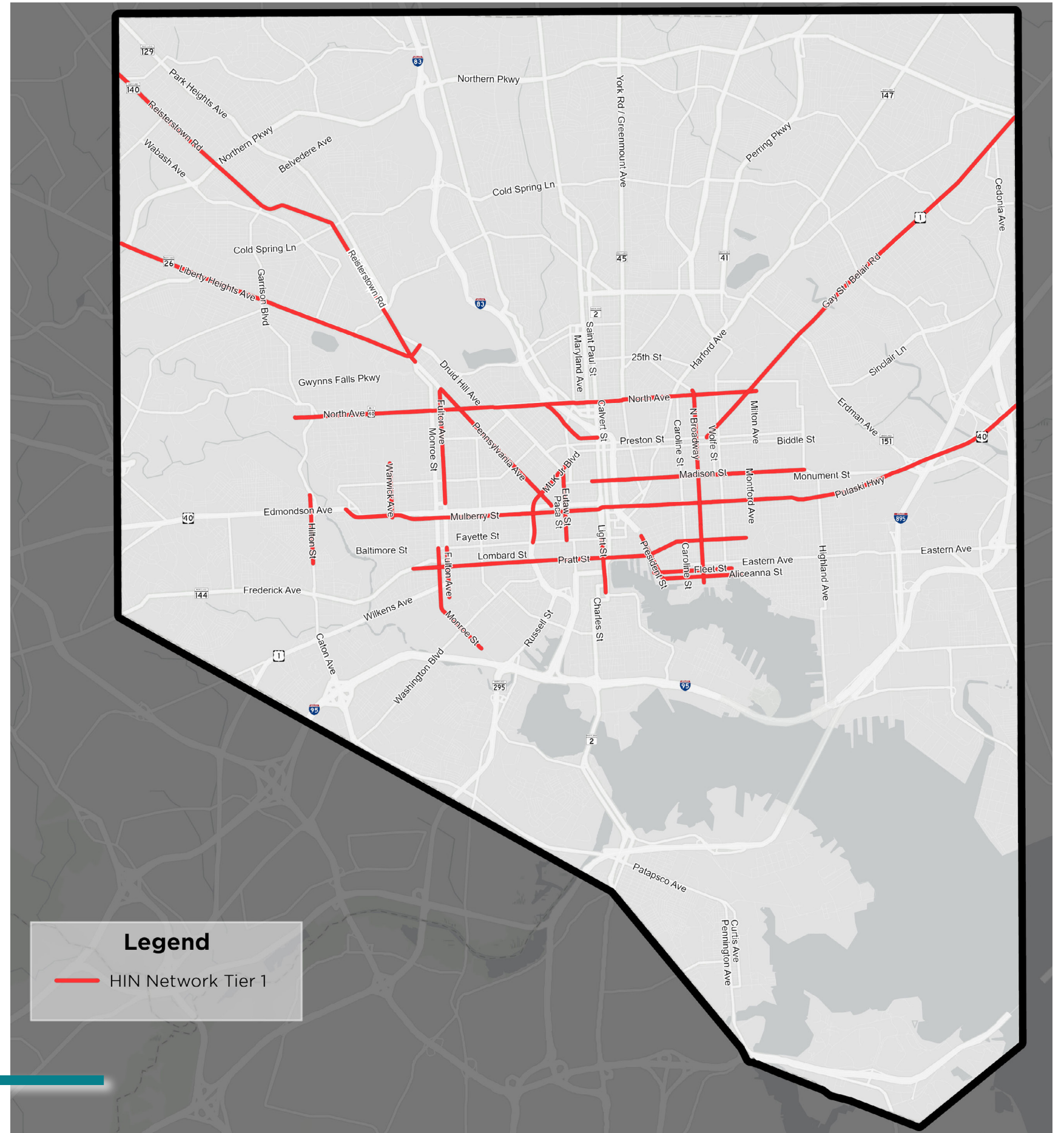
Tier One of the HIN in Baltimore City consists of central city streets and major corridors. Notable Tier One corridors include segments of Pulaski Highway, Liberty Heights Avenue, Reisterstown Road, and Belair Road. These roadways are characterized by the highest incidence of fatal and severe injury crashes within the city, making them priority areas for traffic safety improvements.

### HIN Roads: Tier One

Segments of these roads are within Tier One, as shown on the map to the right.

- PENNSYLVANIA AVE
- NORTH AVE
- N MARTIN LUTHER KING JR BLVD
- S MONROE ST
- PRATT ST
- BATH ST/ MULBERRY ST/  
PULASKI HWY/ ORLEANS ST/  
W FRANKLIN ST
- N BROADWAY
- E MADISON ST
- BELAIR RD/ N GAY ST
- REISTERSTOWN RD
- LIBERTY HEIGHTS AVE
- N FULTON AVE
- LIGHT ST
- N EUTAW ST
- S PRESIDENT ST
- S BROADWAY
- N HILTON ST
- S FULTON AVE
- FLEET ST
- ALICEANNA ST
- N WARWICK AVE
- W MOUNT ROYAL AVE

**Tier One accounts for 25% of serious, fatal, and non-motorist crashes within the HIN.**



**Legend**  
— HIN Network Tier 1

## TIER TWO

Representing a lower, yet still significant, level of risk, Tier Two comprises 12 percent of serious, fatal, and non-motorist HIN crashes. There were 17 fatal crashes on Tier Two roadways over the analyzed period.

Tier Two roads on the HIN in Baltimore City are comprised of key north-south corridors such as Greenmount Avenue/York Road, Maryland Avenue, and South Charles Street. Tier Two also includes outliers from the central city area, like Gwynns Falls Parkway and West Belvedere Avenue. Segments of these roads are within Tier Two, as shown on the map to the right.

These roadways collectively represent corridors with a lower but still noteworthy level of crash risk compared to Tier One. Over the analyzed period, Tier Two corridors saw 17 fatal crashes and are especially notable for a high number of non-motorist crashes, highlighting the need for targeted safety improvements along these streets.

While Tier Two exhibits fewer fatalities than Tier Three, it stands out for its high incidence of non-motorist crashes. Specifically, 702 “all other non-motorist crashes” occurred on Tier Two. These events are weighted as serious injury crashes even in the absence of reported serious injuries, reflecting the elevated vulnerability and risk faced by non-motorists.

### HIN Roads: Tier Two

Segments of these roads are within Tier Two, as shown on the map to the right.

- FAYETTE ST
- RUSSELL ST
- W BELVEDERE AVE
- LOMBARD ST
- BALTIMORE ST
- S HIGHLAND AVE
- N WOLFE ST
- GREENMOUNT AVE/ YORK RD
- S CHARLES ST
- E MONUMENT ST
- GWYNNNS FALLS PKWY
- LAURENS ST
- N MILTON AVE
- WASHINGTON BLVD
- N CAROLINE ST
- DRUID HILL AVE
- E 25TH ST
- MARYLAND AVE
- N PACA ST
- N MONTFORD AVE
- S CAROLINE ST
- EASTERN AVE



## TIER THREE

This tier includes 17 percent of HIN crashes and accounts for 50 fatalities on the HIN.

Tier Three roads on the HIN in Baltimore City are dispersed primarily outside the central part of the city. These corridors include extended stretches of East Patapsco Avenue, South Caton Avenue, West Patapsco Avenue, Northern Parkway, and Sinclair Lane, among others. Unlike Tiers One and Two, which are more concentrated in central and major corridor areas, Tier Three encompasses a network of roadways in the city's outer areas.

### HIN Roads: Tier Three

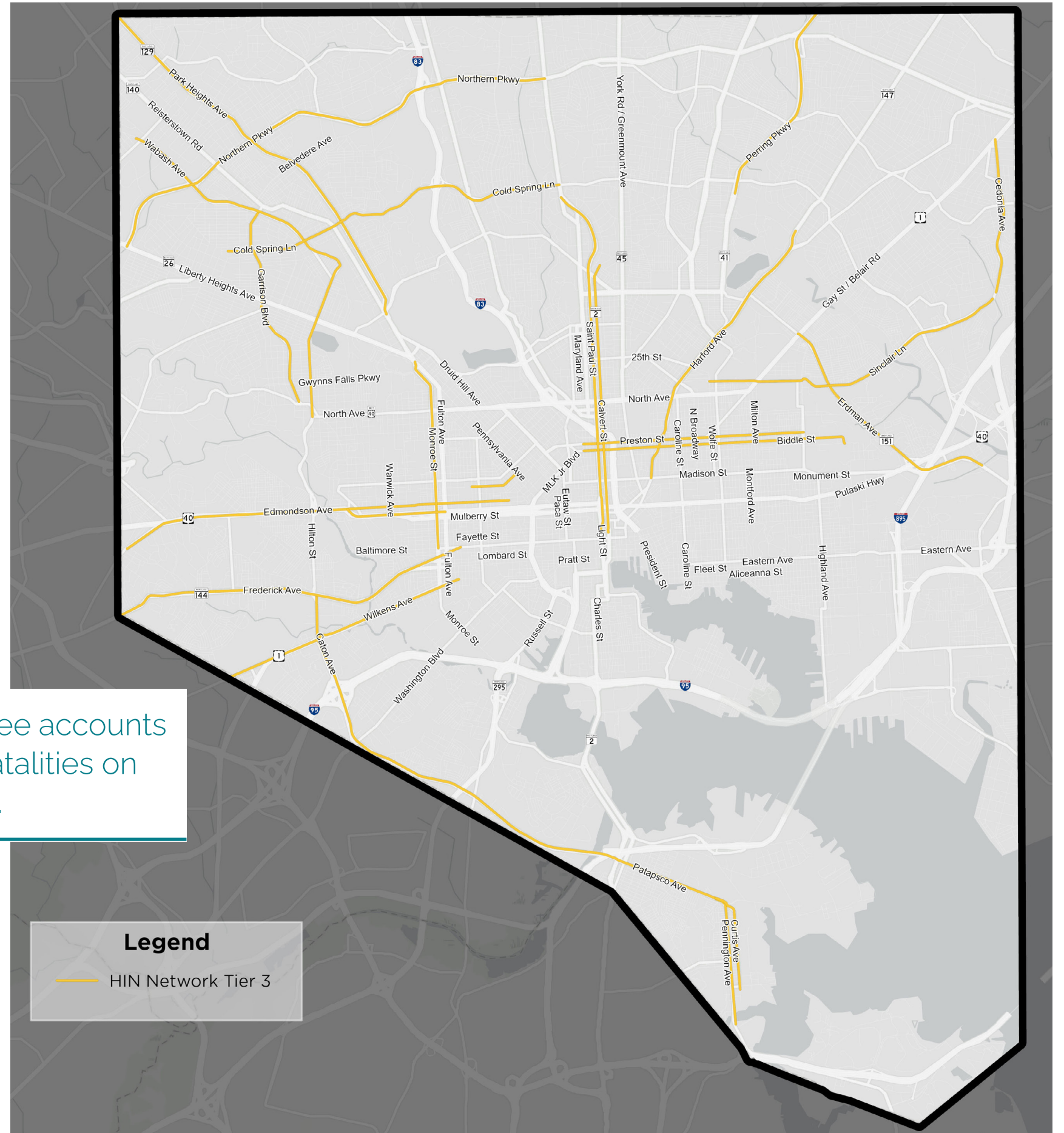
Segments of these roads are within Tier Three, as shown on the map to the right.

- EDMONDSON AVE
- GARRISON BLVD
- PARK HEIGHTS AVE
- HARFORD AVE/ HARFORD RD
- E PRESTON ST
- ERDMAN AVE
- SINCLAIR LN
- HILTON RD/ N HILTON ST/  
WABASH AVE
- N MONROE ST
- PATAPSCO AVE/ S CATON AVE
- WILKENS AVE
- E BIDDLE ST
- N CALVERT ST
- W COLD SPRING LN
- SAINT PAUL ST
- FREDERICK AVE

Tier Three accounts for 50 fatalities on the HIN.

### Safety Countermeasures and Corridor Assessments

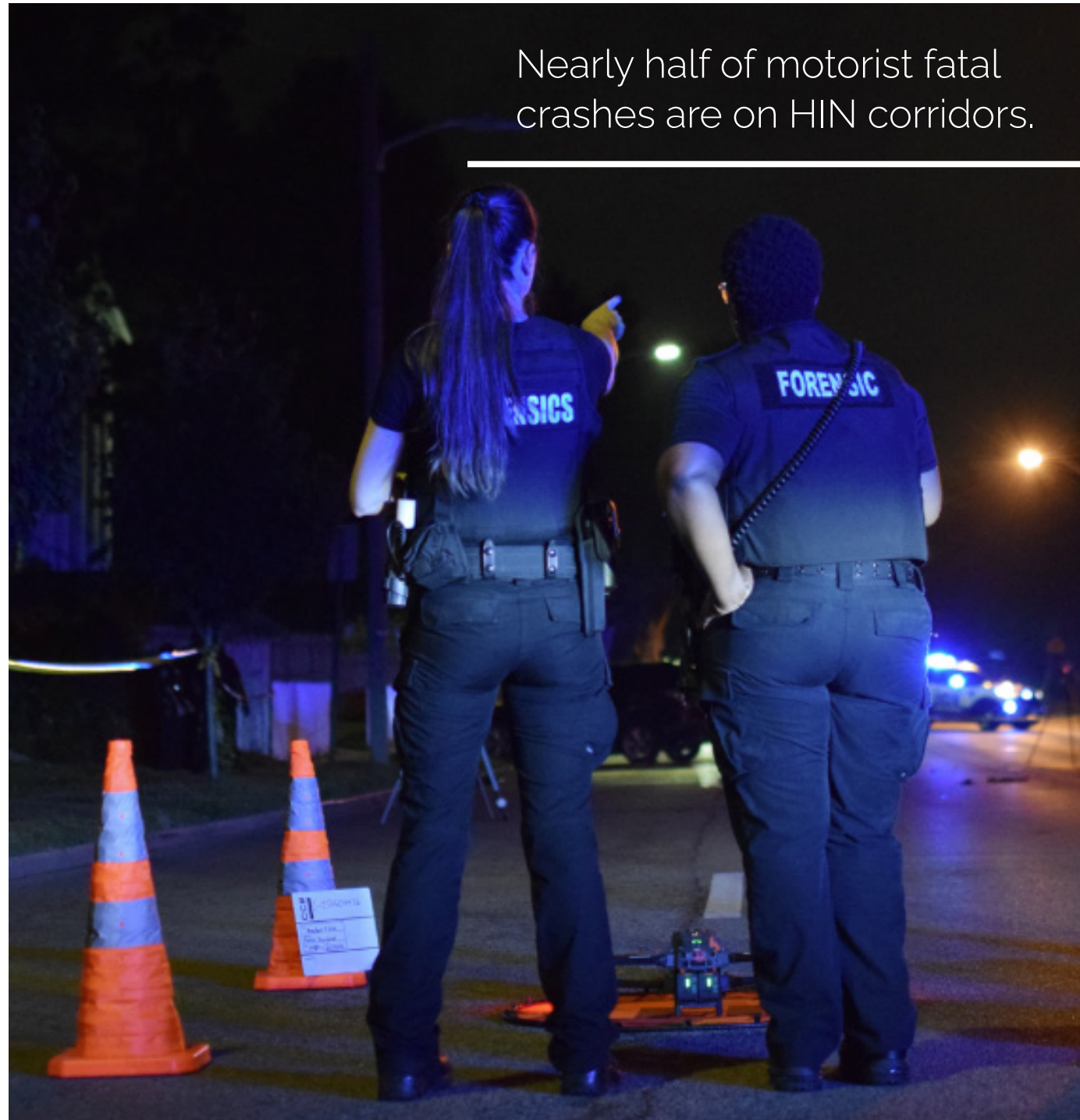
Strategically implementing safety countermeasures along the HIN can help Baltimore reach our Vision Zero goal of no serious or fatal crashes by 2041. Safety Countermeasures are strategies, interventions, or design features implemented to reduce the risk of traffic injuries and fatalities. Appendix I shares a Safety Countermeasure toolbox to guide implementation on Baltimore streets. Appendix II details corridor safety assessments for ten corridors within Baltimore's HIN network along with recommendations for specific safety improvements.



## MOTORIST CRASHES ON HIN

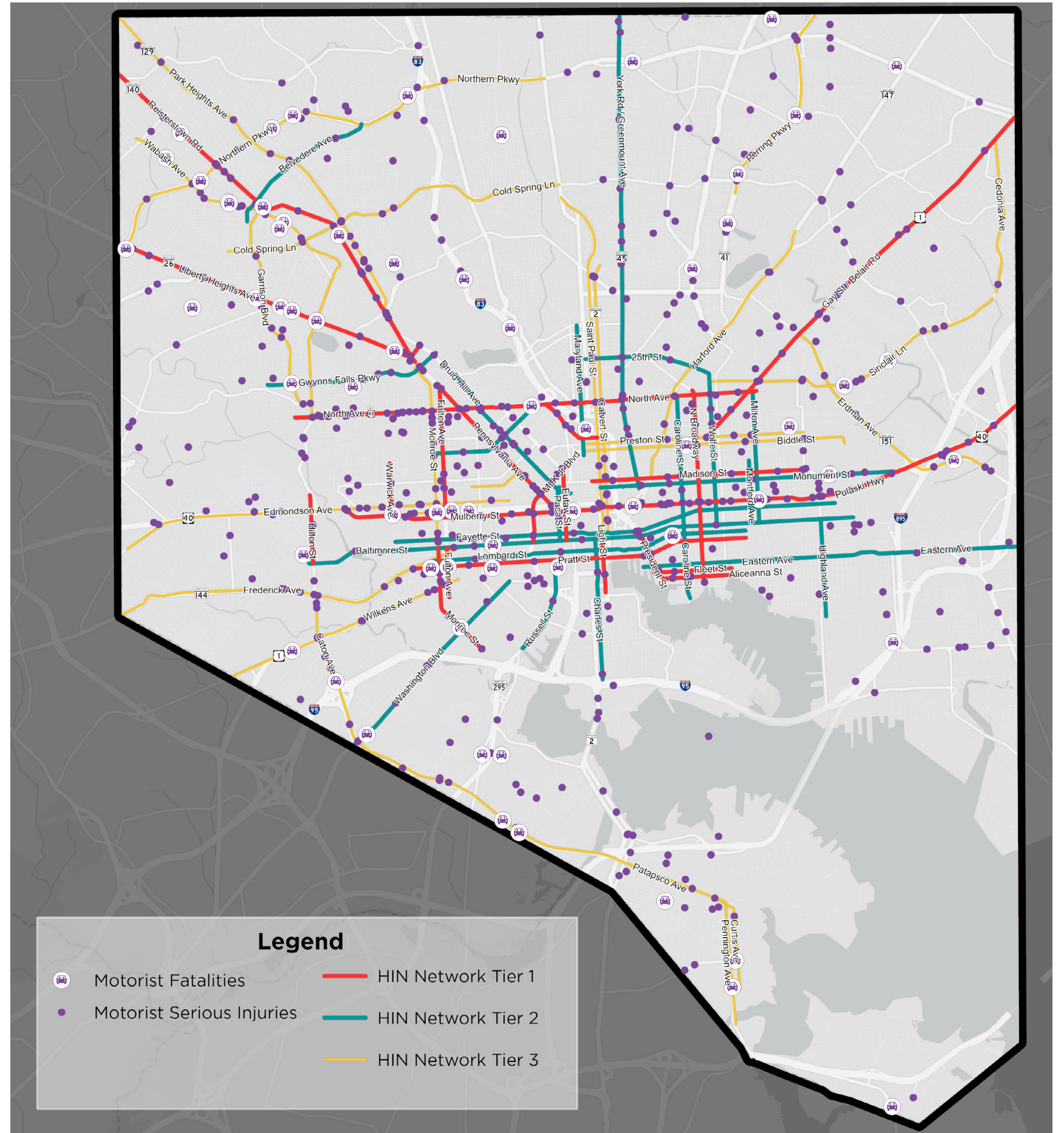
Motorist crashes on the HIN represent a significant portion of the city's most severe traffic incidents. Notably, 47 percent of all motorist fatal crashes and 52 percent of motorist serious injury crashes occur on HIN corridors.

Nearly half of motorist fatal crashes are on HIN corridors.



Baltimore Police Department investigate a crash on Liberty Heights Ave June 13, 2025.

Source: BCDOT



### Legend

- Motorist Fatalities
- Motorist Serious Injuries
- HIN Network Tier 1
- HIN Network Tier 2
- HIN Network Tier 3

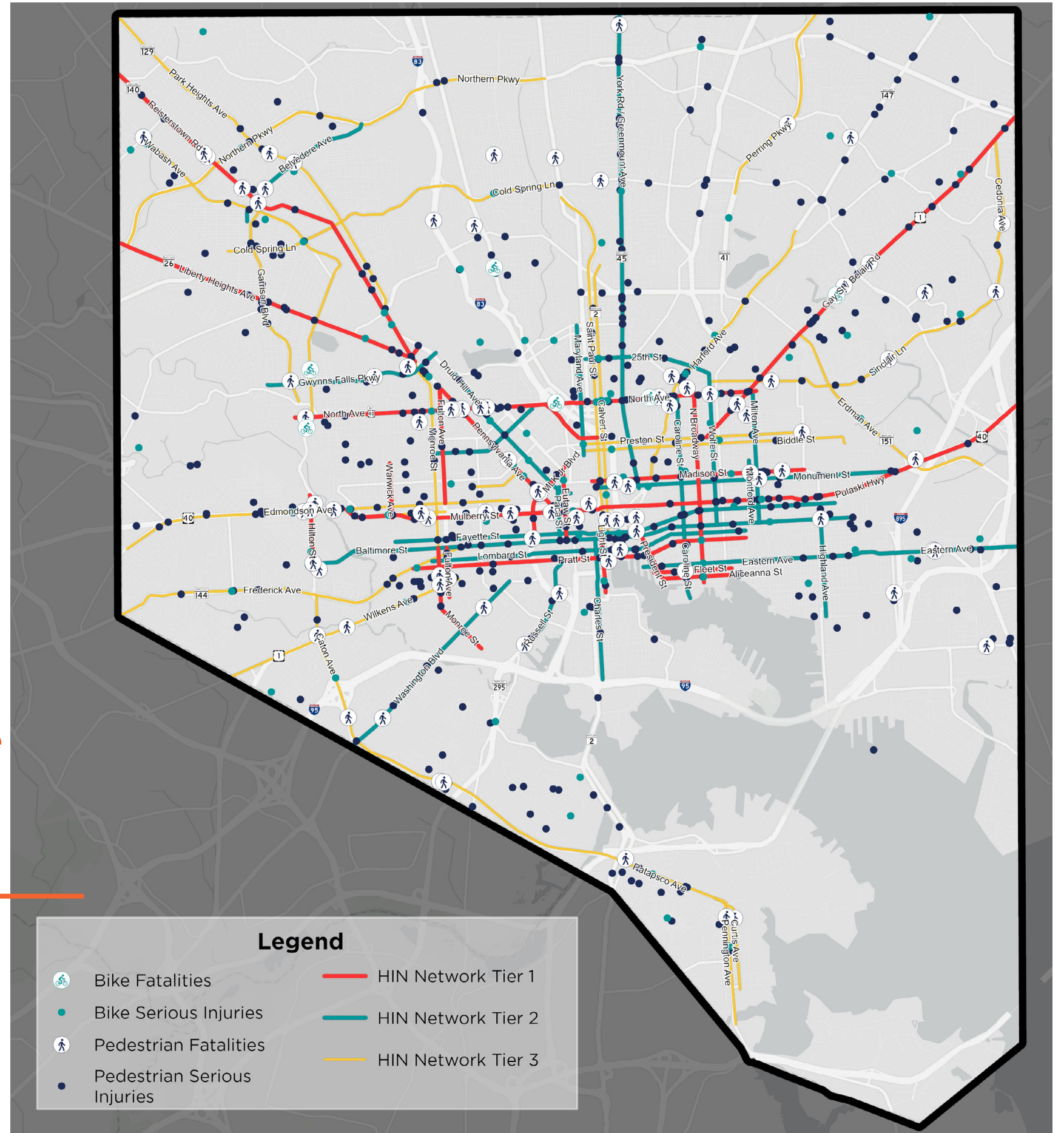
## NON-MOTORIST CRASHES ON THE HIN

Non-motorist crashes on the HIN represent a significant share of the city's most severe traffic incidents. The HIN corridors are especially hazardous for pedestrians, bicyclists, and other non-motorists, who face an elevated risk of fatal and serious injury crashes compared to motorists.

- **64 percent of all non-motorist fatal crashes occurred on HIN corridors**, highlighting the disproportionate danger these roadways pose to vulnerable road users.
- **54 percent of all non-motorist serious injury crashes also took place on the HIN**, underscoring the need for improved safety measures in these areas.
- **From 2019 to 2023, 4 out of 6 bicycle fatalities in Baltimore City happened on HIN corridors, further emphasizing the risk for cyclists.**
- **48 percent of all other non-motorist crashes were recorded on the HIN**, demonstrating that nearly half of such incidents occur along these high-risk streets.
- **Non-motorists involved in crashes on the HIN are 12 times more likely to die and 8 times more likely to be seriously injured than motorists.**

This concentration of non-motorist crashes on the HIN is particularly notable in Tier 2 corridors, which, despite fewer overall fatalities than Tier 3, experience a high incidence of non-motorist crashes. Specifically, 702 "all other non-motorist crashes" occurred on Tier 2 roads, with these events weighted as serious injury crashes due to the heightened vulnerability of non-motorists.

**Non-motorists involved in crashes on the HIN are 12 times more likely to die and 8 times more likely to be seriously injured than motorists.**



# V. The Impact of Crashes in Baltimore

## THE HIGH COST OF CRASHES

Traffic crashes impose a significant and persistent burden on public health, economic productivity, and community well-being in the United States. Urban areas experience a disproportionate share of these impacts, and Baltimore is no exception.

**In 2023 alone, a total of \$1.2 billion in direct economic costs and \$4.1 billion in indirect costs resulted from 53,337 traffic crashes within City limits<sup>1</sup>.** This includes medical expenses, property damage, emergency response services, legal and insurance administration costs (direct expenses); and lost household productivity, quality-of-life losses, and congestion and environmental impacts (indirect expenses), all of which have been documented in a study by the Johns Hopkins Bloomberg School of Public Health and the Hopkins Center for Injury Research and Policy<sup>2</sup>.

While individuals may feel the most direct economic costs of a crash in terms of medical bills or auto repair costs, the cost to fellow Baltimore residents and taxpayers is many times greater. Consider that:

- **Approximately 52% of all direct economic costs are paid by insurance companies, which pushes rates higher for all people who live and drive in the City.**
- While the cost of emergency medical services can sometimes be reimbursed to the City by insurance companies when a patient is transported to a hospital, the other incident-related costs: police response, traffic control, on-scene treatment, damage to City equipment (streetlights, fences, etc.) is not easily recovered from the person at fault or his/her insurance company.

<sup>1</sup> Multipliers derived from the National Highway Traffic Safety Administration estimate 1.48 unreported crashes for every reported crash.

<sup>2</sup> Drabo, E.F., Blincoe, L.J., Michael, J.P., Li, Q., and Kaushik, K. (2026). *The Economic Costs of Traffic Crashes in Baltimore City – A Comprehensive Analysis*.

In Baltimore City:



The annual cost of pedestrian and bicyclist crashes:

**\$758 million**

Costs attributable to driver alcohol use in crashes:

**\$594 million**

Average medical cost of a severe injury crash:

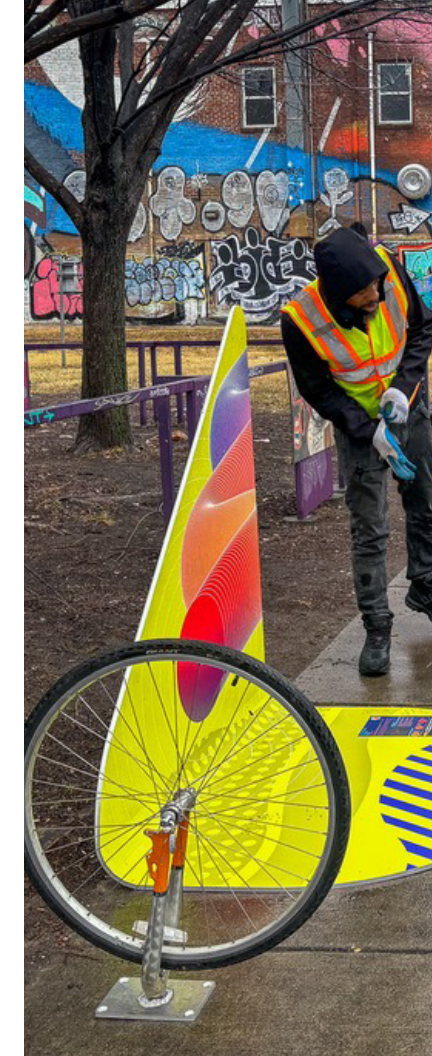
**\$363,229**



# VI. What Baltimoreans Say about Traffic Safety

BCDOT—in partnership with City THREAD and SCRD launched a robust communication engagement strategy to understand Baltimoreans' perceptions of current traffic safety conditions and to learn what improvements residents would like to see in the future. Community engagement included:

- An online community survey
- Near-Miss Map and Survey
- Community pop-up events around the City
- Resident "Brain Trust", a creative team of residents with diverse artistic skills to develop communication strategies such as workshops and art installations
- Stakeholder Advisory Committee



**CALL FOR ARTISTS, COMEDIANS, WRITERS, DESIGNERS, CREATIVES + SOCIAL MEDIA INFLUENCERS:**

**VISION ZERO Action Plan**

BALTIMORE CITY, MARYLAND.

We're putting together a creative Brain Trust to shape a public campaign that invites people to walk, bike, roll, and ride transit—not because they have to, but because it feels possible, joyful, and human. If you're a creative who cares about Baltimore, community, and justice—**this is for you.**

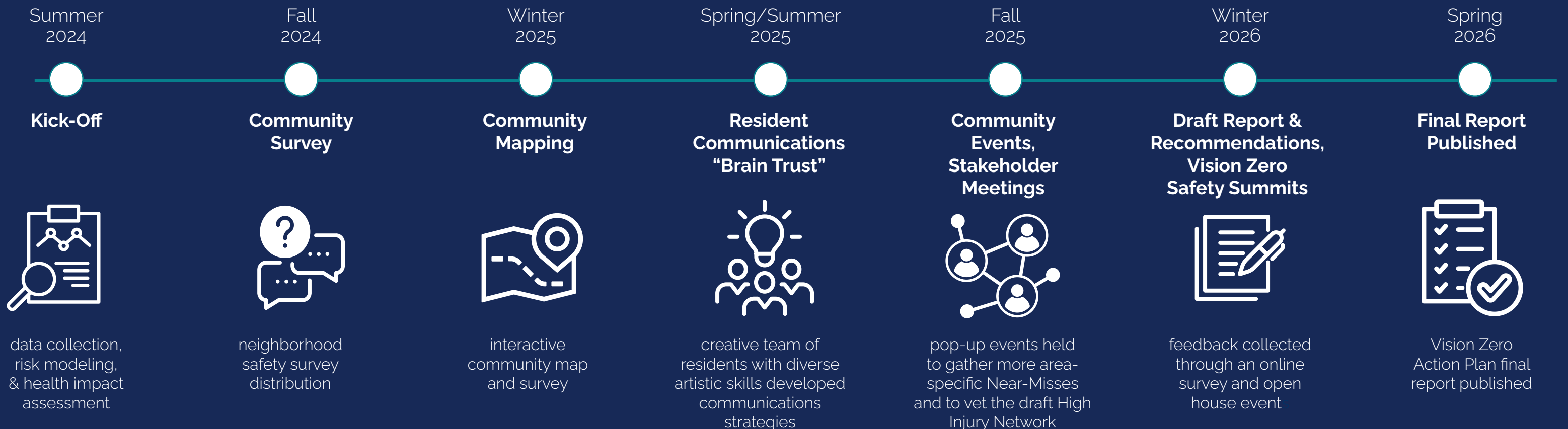
**APPLICATION DEADLINE:**  
JUNE 20, 2025

**TERMS OF REFERENCE** **APPLICATION FORM**

**dot** @BMORECITYDOT STREETSOFBALTIMORE.COM/VISIONZERO



## Community Engagement Timeline



## VISION ZERO SURVEY

The Baltimore Vision Zero Survey asked respondents about the impact traffic safety has had on them, on people they know, and on their transportation choices in Baltimore. The respondents represent a diversity of ages, racial backgrounds, and genders, and come from over 30 neighborhoods in the City.

See Appendix I for more detailed results of the survey

Total Survey Responses

# 712

## Nearly all

survey respondents think that **people driving must slow down to have safer streets.**



# 73%

of survey respondents are **fearful or anxious about drivers hitting them, and**



Walktober Pop Up Event

# 53%

of survey respondents **know someone who has been seriously impacted by a traffic crash in Baltimore.**



# 13%

of survey respondents have **been physically injured by a traffic safety incident.**

# 25%

of survey respondents have **considered moving out of Baltimore City due to traffic safety issues.**

**“ I have lost two close friends, one cyclist and one pedestrian, to speeding cars. The only way that I can remain in this city would be to know that traffic safety is a priority. ”**

- Survey Respondent

## AREAS OF CONCERN

Respondents conveyed a mix of fear, urgency, exhaustion, and deep frustration about traffic safety in the City, alongside genuine love for Baltimore. **Many residents explicitly say unsafe streets are the single biggest reason they are considering leaving the city, especially parents, disabled residents, pedestrians, and cyclists.** Several describe near-death experiences, serious injuries, or loved ones being hit or killed.

Many respondents named locations where they would like to see safety improvements:

- **Druid Park Lake Drive (especially excessive speed, lane reductions, pedestrian access)**
- **Auchentoroly / Gwynn's Falls park entrance (crossing time too short)**
- **North Ave, MLK Blvd, Greenmount Ave, Harford Rd, Northern Parkway, Cold Spring**
- **Orleans & Aisquith / Orleans & Chester**
- **Walther & Parkside**
- **29th & Huntington (Remington)**
- **S Hanover (Federal Hill)**
- **North Ann Street corridor**
- **Paca & Franklin crosswalks**
- **Moravia / Harford Rd**
- **Sinclair Lane, Erdman Ave**

Unsafe streets are a public health crisis, and people-centered street design must take precedence over vehicle speed and convenience.



Druid Park Lake Drive

## SURVEY RESULTS

### Traffic Safety Improvements

Participants ranked ideas for improving traffic safety in Baltimore. The top three choices selected were improving infrastructure for people walking, rolling, biking, and using scooters; improving public transit service, and designing streets for safety over speed.

- 1 Improve infrastructure for people walking, rolling, biking, and using scooters**
- 2 Improve public transit service**
- 3 Design streets for safety over speed**

- 4 Lower speed limits
- 5 Create incentives to deter drunk and drugged driving
- 6 Education/outreach on taking public transit and using bikes and scooters
- 7 Provide giveaways to promote micromobility (e.g. bikes, scooters) use



“ My neighborhood is heavily populated with the elderly and young children. Speeding is a major problem that we have complained about for years but to no avail. ”

- Survey Respondent



“ Baltimore is a very walkable and bikeable city. However, drivers do not obey the rules and put pedestrians and cyclists at risk. ”

- Survey Respondent

### Traffic Enforcement

Participants ranked ideas for enforcing traffic safety laws in Baltimore. The top three choices selected were to impound vehicles with multiple unpaid moving violations; target enforcement in locations where the most serious crashes have historically occurred, and use camera-based tickets for red light running and speeding.

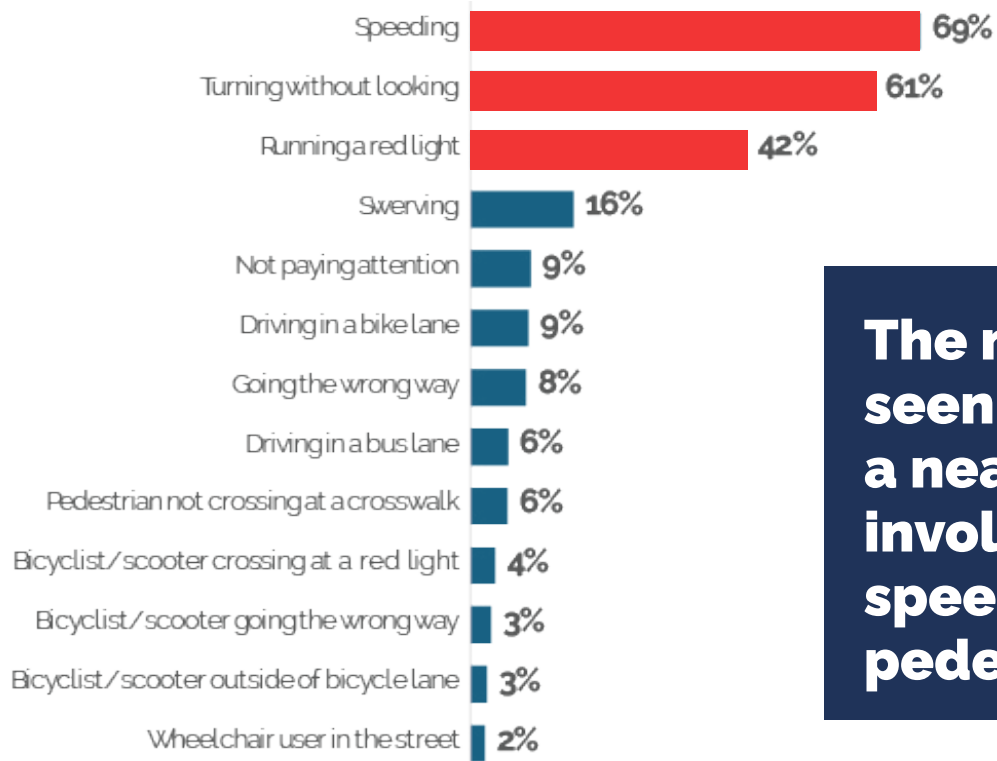
- 1 Impound vehicles with multiple unpaid moving violations (e.g. speeding)**
- 2 Target enforcement in locations where the most serious crashes have historically occurred**
- 3 Use camera-based tickets for red light running and speeding**

- 4 Rewards for going the speed limit, such as a sequence of green lights at intersections
- 5 Traditional traffic tickets from traffic stops

## NEAR MISS MAP AND SURVEY

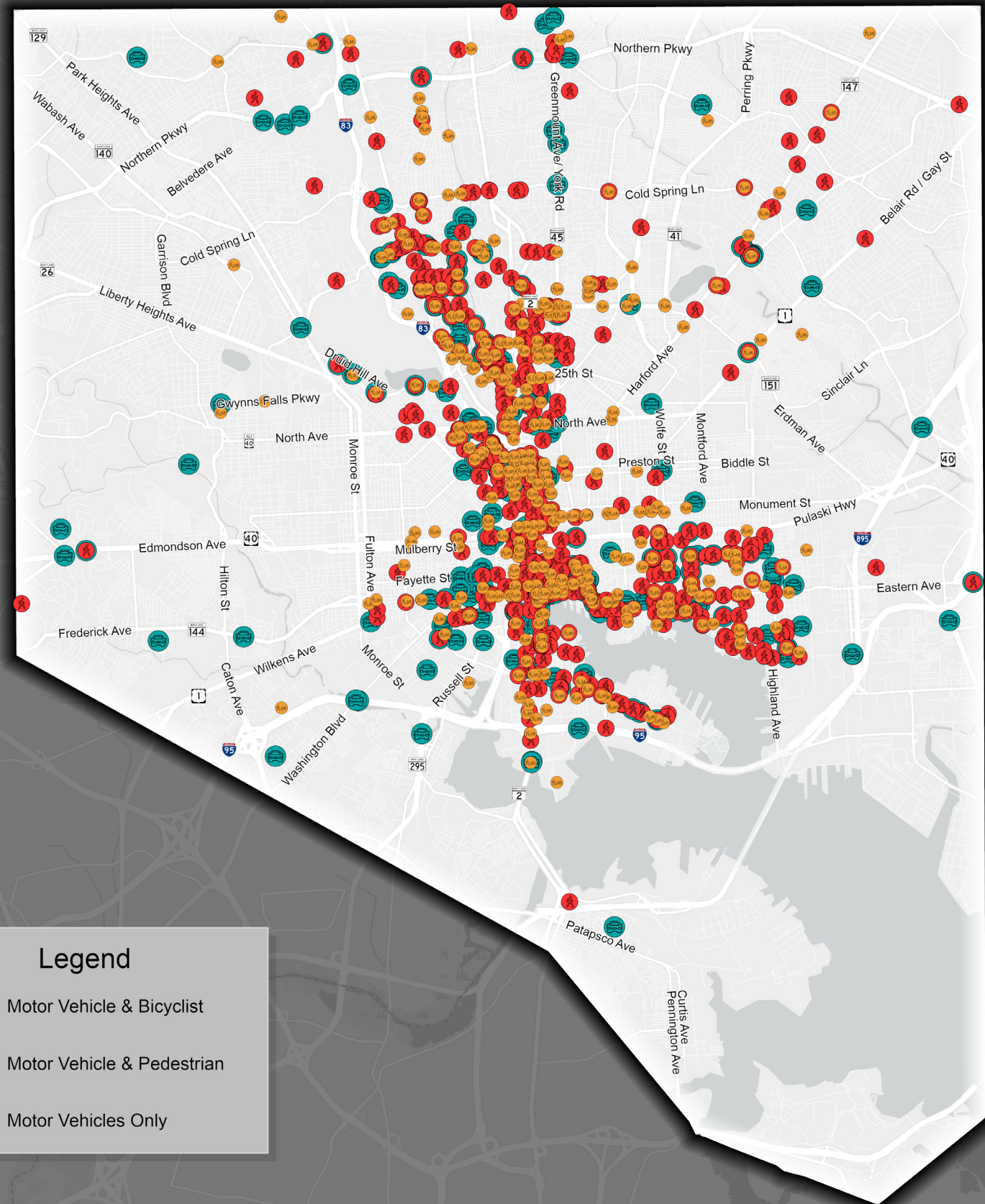
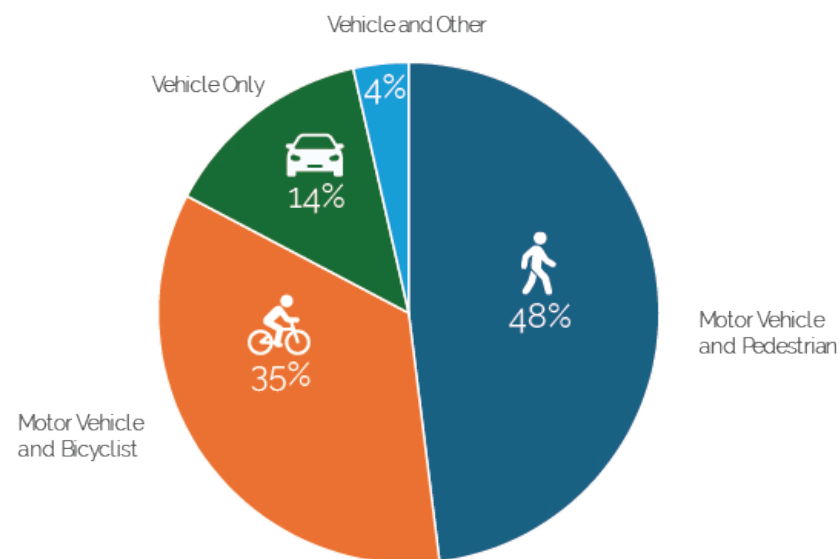
Over 1,600 respondents placed points on the interactive map or filled out the corresponding survey online regarding near-miss events. Based on the survey results, speeding was the number one observed behavior during a near-miss occurrence. **Additionally, safety concerns prevent respondents from walking and biking in specific locations.**

### Observations During Near-Miss Events



**The most commonly seen occurrence of a near-miss event involves a driver speeding and a pedestrian.**

### Modes of Travel Involved in Near-Miss Events



## STAKEHOLDER COMMITTEE

During the development of this Action Plan, BCDOT Planning Division enlisted collaboration from partnering divisions and departments across Baltimore City establishing a Stakeholder Advisory Committee comprised of representatives from the DOT Traffic Division, Automated Traffic Violation Enforcement Division, the Department of Planning, Baltimore City Health Department, Baltimore Police Department, Baltimore Fire Department, and the Mayor's Office of Infrastructure Development.

The Stakeholder Advisory Committee (SAC) met three times (9/29/25, 11/03/25, 04/27/26) through the planning process to share insights and feedback. The discussions helped to inform each of the recommendations listed in this plan.

### Stakeholder Interviews

Between April and July 2025, Baltimore City DOT conducted a series of confidential internal stakeholder interviews as a foundational component of its Vision Zero (VZ) planning process. Six senior leaders representing Planning, Traffic Engineering and Construction (TEC), Administration, and executive leadership participated. The interviews identified a consistent set of systemic challenges, including organizational silos, procurement inefficiencies, reactive community engagement, and the absence of a defined project prioritization pipeline, each of which independently limits BCDOT's capacity to advance safety projects at scale.



Lakewood Avenue

# VII. What's Working in Baltimore

## COMPLETE STREETS POLICY

Enacted in 2018, Baltimore's Complete Streets policy is a key part of the City's commitment to Vision Zero. It ensures that streets are designed and operated to be safe, comfortable, and accessible for everyone whether you are walking, biking, taking transit, or driving. The Complete Streets policy has been put into action and is producing real, measurable results across the city.

### Complete Streets Proven Results

Crash data collected at Complete Streets project sites indicates substantial safety improvements following the implementation of the Complete Streets policy in Baltimore. Overall injury crashes reduced from 345 to 284, marking an 18% decline relative to a 4% decrease citywide. While annual numbers of fatal and severe injury crashes may fluctuate due to their lower frequency, these findings demonstrate notable progress in reducing common crash types and enhancing public safety.

Complete Streets Projects	Before (2015-2017)	After (2022-2024)	% Change	% Change Citywide
<b>Total crashes</b>	1,276	767	-40%	-36%
<b>Fatal crashes</b>	2	1	-50%	60%
<b>Severe injury crashes</b>	23	22	-4%	112%
<b>Injury crashes</b>	345	284	-18%	4%
<b>Pedestrian crashes</b>	65	46	-29%	-29%
<b>Pedestrian injury crashes</b>	61	42	-31%	-25%
<b>Pedestrian severe injury crashes</b>	5	4	-20%	100%
<b>Driver/passenger severe injury crashes</b>	13	12	-8%	91%



### Complete Streets Projects

Baltimore has made significant progress in implementing Complete Streets through a growing number of projects each year, delivering improvements at a scale that is reshaping streets citywide.

In recent years, the City has:

- **Installed 1,076 speed humps** in just three years (113 in 2022, 462 in 2023, and 501 in 2024) to slow traffic on neighborhood streets.
- **Delivered 46 quick-build intersection projects** (12 in 2022, 16 in 2023, 18 in 2024) and **approximately 7.5 miles of quick-build corridor projects** to rapidly address safety concerns.
- **Resurfaced over 64 miles of roadway** (20.1 miles in 2022, 15.2 in 2023, and 29 in 2024), incorporating safer design features as streets are rebuilt.
- **Completed hundreds of sidewalk improvements each year**, including 268 projects in 2022 and 462 in 2023, improving accessibility and walkability across the city.
- **Expanded outdoor dining and activated street space**, growing from just 5 locations in 2023 to hundreds of installations citywide.

Baltimore is also making targeted investments to improve safety and access for people biking and taking transit:

- **115 intersections redesigned for bicyclists** (61 in 2022, 18 in 2023, 36 in 2024)
- **55 intersections redesigned to improve transit access** (36 in 2022, 3 in 2023, 16 in 2024)
- **102 new bus shelters installed over three years** (33 in 2022, 33 in 2023, 36 in 2024)
- **Expansion of dedicated bus lanes from 0.4 miles to 2.5 miles annually**, improving transit speed and reliability
- **234 flexible posts installed** (76 in 2023 and 158 in 2024) to better organize street space and protect people walking and biking.

These numbers reflect a shift toward faster, more flexible project delivery and demonstrate Baltimore's ability to move from policy to implementation at scale.



Graham Projects, Baltimore  
Source: The Neighborhood Design Center

## Public Support for Complete Streets

According to the citywide survey conducted by Johns Hopkins University in 2024 Baltimore residents strongly support the types of changes delivered through Complete Streets. Survey results show that:

- 88% support slowing down traffic
- 67% support removing a travel lane to improve safety
- 66% support removing a parking lane to improve safety
- 91% support policies that make it easier to walk, bike, and take transit

While 64% of residents are not yet familiar with the Complete Streets policy by name, the strong support for its outcomes highlights clear alignment with community priorities.

## Complete Streets and Vision Zero

Complete Streets is a proven, effective approach that is already helping Baltimore make meaningful progress toward Vision Zero. By reducing crashes, delivering over a thousand traffic calming installations, redesigning more than 150 intersections, and improving dozens of miles of streets, the policy is creating safer conditions across the city.

As Baltimore advances its Vision Zero Action Plan, Complete Streets will remain a central strategy to guide investments, shape street design, and ensure that safety is built into every project from the start.

## SPEED CAMERAS

Speed cameras were installed at 90 locations in Baltimore City between 2015 and May 2025. Speed cameras are moved between locations in response to changing crash patterns and driver behavior as necessary.

**When assessing crashes one year prior to the installation of speed cameras and one year after installation, there is a 20% reduction in the overall number of crashes across all speed camera locations. There is a 29% reduction in the number of crashes resulting in fatality or serious injury across all speed camera locations over the same periods.**

There are 16 locations with at least one crash resulting in fatality or serious injury in the year before speed camera installation that had no crashes resulting in fatality or serious injury in the year following speed camera installation. The speed camera locations with the greatest year-over-year reduction of crashes resulting in fatality or serious injury include Orleans St (between N Castle St and N Chester St) and Belair Rd (between Elmey Ave and Clifmont Ave).



Photo of speed camera in Baltimore City, 2025 (WBFF File)  
Source: Fox Baltimore

part two.  
**proposed policies  
& process changes**



*Harford Road at Rosekemp Ave*

# Introduction

A key component of implementing Baltimore's Safe Streets for All Vision Zero Plan is taking a holistic approach to problem solving with partnership and collaboration across agencies. This will require updates to policies and processes that determine how street projects are prioritized and designed, traffic laws are enforced, and traffic safety is taught to Baltimoreans. This chapter outlines several key policy and process changes that will streamline implementation of safety-related street projects, foster collaboration across departments, and help promote a culture of traffic safety.

This section outlines policies and programs to improve traffic safety in Baltimore built from the foundation and progress from the City's first Strategic Highway Safety Plan (2021) and the guiding principles for this Action Plan.

The guiding principles include:



Baltimore's Vision Zero policy and program recommendations aim to fundamentally reshape how the city approaches traffic safety, with the goal of eliminating traffic-related fatalities and serious injuries. The following section introduces key strategies and programs designed to streamline implementation, engage stakeholders, and build a culture where safety is integral to Baltimore's transportation system.

These recommendations include:

1. Create new vision zero working groups
2. Improve data management
3. Embed the High-Injury Network into all BCDOT functions
4. Implement project efficiencies
5. Simplify interagency requirements for HIN projects
6. Update design manuals
7. Implement training programs
8. Deploy strategic enforcement
9. Develop special programs for traffic safety
10. Expand proactive maintenance programs
11. Expand public engagement and accountability

Each of these recommendations are detailed further throughout this Chapter. Additionally, a Safety Countermeasures Toolbox is included in Appendix II, detailed corridor safety assessments for ten priority HIN corridors is included in Appendix III, and a detailed implementation plan matrix for these Action Plan recommendations is included in Appendix IV.



**A. Use a data-driven approach to prioritize safety improvements**



**D. Expand awareness of proven safety solutions.**



**B. Center the experience of the most vulnerable roadway users in roadway design.**



**E. Empower more people to walk and roll safely.**



**C. Implement safety projects quickly to prevent further harm.**



**F. Work collaboratively across City agencies.**

# the plan

## 1. CREATE NEW VISION WORKING GROUPS

### 1.1. Vision Zero Action Team

The Vision Zero Action Team would be a dedicated group of specialists from BCDOT focused on implementing policies and programs centered on traffic safety. This would include representatives across divisions with representatives from Planning, Traffic, Safety, Transportation Engineering and Construction (TEC), Maintenance, Transportation Services, and Community Engagement. This group would develop, implement, and monitor policies and programs focused on improving traffic safety throughout the city. Key activities would include analyzing crash data to identify hotspots, recommending and overseeing safety projects, and ensuring that proven, life-saving interventions are rapidly deployed.

The team would also work collaboratively with other city agencies and departments to embed the Vision Zero goal into city policies and processes, prioritize projects on high-injury corridors, and engage with the community to promote safe transportation options for all residents. **Ultimately, the Action Team would advocate for state and local policies and would serve as the driving force behind the effort to make Baltimore's streets safer for everyone.**

### 1.2. Vision Zero Task Force

Every Baltimorean has a role to play in eliminating traffic-related fatalities and serious injuries in the city. This is especially true of those working in city government. BCDOT staff are working collaboratively with other departments and offices to better understand crashes in the city, develop strategies to address crash hotspots, and build a culture of traffic safety. **One of the first steps that should be taken following the adoption of this plan is the creation of a Vision Zero Task Force tasked with delivering interdisciplinary and cross agency projects that will make zero traffic-related deaths and serious injuries in Baltimore a reality.**

This group would evolve from the Vision Zero Stakeholder Advisory Committee and should include representatives from BCDOT, the Department of Public Works, the Department of Planning, Baltimore City Health Department, Baltimore Police Department, Baltimore Fire Department, Baltimore City Public Schools, the Mayor's Office of Infrastructure Development, and elected officials or their appointees.

## 2. IMPROVE DATA MANAGEMENT

Data is at the heart of BCDOT analysis and decision-making. Accurate, up-to-date data is essential to allocating resources for projects on streets and roads that are most in need of traffic safety improvements.

### 2.1. Expand Data Tracking and Utilization

BCDOT staff should actively monitor and track key data points, including crash rates, average speeds, prevalence of speeding traffic, multimodal traffic counts, multimodal use, and multimodal access needs, especially on the HIN. BCDOT staff can use this data to assess the effectiveness of countermeasures and revise the HIN as needed. This data enables evaluation of countermeasures and updates to the HIN. Data can be collected periodically by teams or system-wide via big data sources using telematics for trip patterns, speed, congestion, etc. Validate data and apply corrections as needed, potentially partnering with local research and academic institutions. Host a site displaying Telraam data, locations, and maintenance information.

### 2.2. Update HIN Regularly

To ensure traffic safety initiatives are responsive to current conditions, the HIN should be reviewed and updated every two years using the latest available traffic safety data. By regularly analyzing crash rates, speed patterns, and multimodal access needs, BCDOT can identify the locations most vulnerable to fatalities or serious injuries under current conditions. This evidence-based approach allows targeted design interventions to be prioritized where they will have the greatest impact, ensuring resources are allocated efficiently and the HIN remains a dynamic tool for improving street safety throughout Baltimore.

### 2.3. Use Automated Traffic Violation Enforcement System Data

The Automated Traffic Violation Enforcement System (ATVES) used by BCDOT includes red light cameras and speed monitoring cameras to fine drivers who run red lights or exceed the posted speed limit by 12 mph or more. The use of ATVES helps reinforce safe travel behaviors for drivers, especially when it is initially put in use at a location.



The goal is that ATVES can be used until drivers have changed behaviors such that few are issued fines, but they are also a good data-collection tool.

ATVES can also be used to before and after effectiveness of traffic safety countermeasures. **ATVES should be deployed on HIN streets and roads, especially those where a significant number of crashes involve speeding or red light running to deter unsafe driving behavior and track success of implemented countermeasures.** As BCDOT reconfigures roads or makes other design improvements that address conditions leading to high vehicle speeds or other unsafe conditions, ATVES equipment can be moved to other HIN corridors.

Because ATVES systems capture license plate information, it can also be used to collect data on repeat offenders and identify patterns of whether speeding traffic is more commonly local traffic originating in the neighborhood or through traffic originating from vehicles who pass through the neighborhood. In some instances, commuter pass-through traffic might be causing safety concerns in a local neighborhood that affect quality of life. This differentiation can help to understand what countermeasures are most effective and how best to target enforcement to make neighborhood streets more safe.

## 2.4. Partnering with the Baltimore Police Department to Get Statistics in Real Time

One area for improvement in data tracking is crash reporting. Crash reports can take weeks, if not months, to be finalized by Baltimore Police Department (BPD) and processed by the Maryland State Police before they are available for download. This can lead to BCDOT using older data to prioritize streets in need of safety improvements, which is not optimal when conditions are rapidly changing.

**BCDOT should partner with BPD to receive crash statistics in real time, especially for crashes resulting in fatality or serious injury.**

These statistics will not be used in place of final crash reports but rather serve as initial indicators that BCDOT can use to make decisions that reflect current conditions.

## 3. EMBED THE HIGH-INJURY NETWORK INTO ALL BCDOT FUNCTIONS

Addressing traffic safety concerns on the HIN should be a top priority for BCDOT, and a variety of project types should reflect this priority.

### 3.1. Integrate the HIN as a Priority in Capital Improvement Program Requests

The Capital Improvement Program (CIP) is a process through which Baltimore City departments request funding for various infrastructure projects, such as roads, buildings, vehicles, and drinking water equipment. Each department prioritizes projects that staff would like to complete over a six-year window, and the City's Planning Commission, Board of Finance, and Board of Estimates approve the CIP before it is approved by City Council and integrated into the City's budget.

BCDOT's items in the CIP include bridge replacements, major sidewalk reconstruction, shared-use path installation, streetscape improvements, and general traffic safety improvements on specific corridors. **When BCDOT staff identifies projects to be included in the CIP requests each year, HIN projects should be a category in the prioritization matrix and given top priority across each category.** Whether it be a bridge replacement, roadway reconfiguration with the installation of bike lanes, or general safety improvements, repairing or replacing aging infrastructure provides an excellent opportunity to rectify unsafe conditions that have led to a high concentration of serious or fatal crashes. Appendix III highlights specific issues and recommendations for ten of the current HIN corridors to be prioritized for safety improvements.

### 3.2. Establish a Dedicated Vision Zero Safety Fund

In addition to prioritizing HIN projects within the CIP, BCDOT should set aside a dedicated amount of funding each year specifically for Vision Zero project implementation and as a local match for federal grants. By reserving these funds, the BCDOT can act quickly when new opportunities for federal funding arise, ensuring that critical safety projects are not delayed due to lack of matching resources. This proactive approach not only accelerates the delivery of much-needed improvements but also increases the competitiveness of BCDOT's grant applications, ultimately maximizing the impact of both local and federal investments in traffic safety.

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### 3.3. Integrate Vision Zero Countermeasures into Resurfacing Projects

Resurfacing is one of the more routine projects under the umbrella of BCDOT; however, the selection of streets and roads that are resurfaced each year can have a significant impact on how crash hotspots are addressed. Street improvements, such as the installation of bike lanes and road diets, are best to complete in coordination with resurfacing projects. New pavement markings and flex posts can be installed on the new pavement that would need to be restriped anyway, which presents cost savings. BCDOT should consider whether a street or road is on the HIN as a heavily weighted factor when determining which streets and roads are resurfaced each year. Appendix II contains a toolbox of countermeasures to improve traffic safety.

**The streets and roads with the worst pavement conditions that are on the HIN should be resurfaced first, and quick-build countermeasures should be installed in coordination with resurfacing.**

Through Vision Zero Action Team coordination, the BCDOT Planning Division should be made aware of resurfacing plans two-years in advance (or as early as possible) to provide adequate time for planning and design of quick builds and other safety improvements.

### 3.4. Integrate Vision Zero Countermeasures into Streetscaping Projects

Streetscaping projects take different forms, but these projects generally include elements that change the look and feel of a corridor beyond resurfacing and updated pavement markings. Improvements include planting street trees and other vegetation, which helps visually narrow the road and slow drivers, or the installation of decorative pavers and bump outs, which also helps reduce speeding.

Similar to the prioritization of resurfacing projects, **BCDOT can embed an emphasis on the HIN by prioritizing streetscaping projects on HIN corridors that have successfully implemented quick build projects, as well as addressing other streetscape enhancement needs.**

## 4. IMPLEMENT PROJECT EFFICIENCIES

Long project development and construction timelines may lead to additional people having their lives impacted from crashes on streets and roads with safety-related projects in the pipeline. One of the most important roles of the Vision Zero Action Team is to collaboratively address the causes of project delays and develop strategies to expedite traffic safety projects, especially those on the High-Injury Network (HIN).

### 4.1. Implement more Quick-Build Safety Improvements and Monitor Results for Long term Improvements

Quick-build projects involve the use of low-cost materials that can be easily installed or removed from streets, such as flex posts, parking stops, prefabricated concrete, and pavement markings/art. HIN projects should be considered quick-build if they are implemented within one year of project kickoff. One of the goals of the Vision Zero Action Team should be to develop and deliver five quick-build projects on the HIN each year following adoption of this plan. Once quick-build improvements are in place, continue to monitor results and plans to create more permanent solutions.



### 4.2. Use On-Call Traffic Safety Design & Construction Contracts for Safety Improvements

Procurement for design and construction contracts can be a long process that delays action and implementation. An on-call contract is a type of agreement between BCDOT and an engineering firm or construction contractor that allows the agency to quickly request engineering services as needed, without going through a lengthy procurement process each time. Instead of bidding out individual projects, the agency selects one or more companies from the on-call contract in advance and issues task orders for specific assignments under the terms of the contract. This approach streamlines the process for smaller or recurring projects, making it easier to address urgent needs or multiple assignments efficiently. BCDOT already uses on-call contracting for some design services, and this model can be expanded for priority traffic safety design and construction work.

### 4.3. Batch Together Traffic Safety Project Contracts

Currently, there is a separate process for engagement and education on each corridor BCDOT conducts major work – these are publicized on <https://streetsofbaltimore.com> and BCDOT social media, among other locations. Meaningful community engagement is essential to ensuring projects are addressing community needs without placing undue or unforeseen burdens on residents; however, it requires significant time and fundings to plan and execute engagement events for each project BCDOT facilitates.

By introducing several projects that address safety needs on the HIN at the same time and conducting engagement on these projects at the same time, BCDOT can more efficiently improve safety on streets and roads where Baltimoreans experience life-altering crashes.

The same approach can be employed for projects outside of the HIN that are similar in nature. For example, two traffic calming projects that include adding speed humps and daylighting can be presented to the public together.

To further expedite the delivery of traffic safety improvements, BCDOT can combine multiple small-scale projects into a single consultant design contract and construction contract. This approach allows for more efficient use of resources and reduces administrative overhead associated with procuring numerous individual contracts. By bundling projects into one comprehensive agreement, the agency can streamline procurement, foster consistency in design, and accelerate the implementation of safety enhancements across the city.

### 4.4. Create a Process for Expedited Project Reviews

Streamlining reviews is essential to accelerating the delivery of traffic safety projects. By establishing standardized review procedures and fostering interagency collaboration, BCDOT can reduce bottlenecks and ensure that safety improvements are integrated efficiently. Coordinated and expedited reviews enable agencies to address environmental and mobility concerns in tandem, minimizing delays and creating safer streets more quickly.

For example, every construction or roadway improvement project must undergo its own stormwater management review, which can be time-consuming and costly. Each project is required to demonstrate how it will manage runoff, control pollutants, and comply with environmental regulations. These requirements, while important for protecting water quality and reducing flooding, can slow the delivery of traffic safety and infrastructure enhancements, especially when multiple projects are in the pipeline.

### 4.5. Leverage Existing Infrastructure Improvement Programs

Existing roadway improvement programs provide valuable opportunities to implement traffic safety and multimodal enhancements

efficiently by coordinating with ongoing or planned infrastructure activities. Below is a description of each component:

- **4.5.1 Resurfacing** - When roads are scheduled for resurfacing, it presents a prime opportunity to incorporate safety upgrades, such as new crosswalks, bike lanes, or traffic calming measures. By aligning these safety improvements with regular maintenance schedules, cities can maximize resources and minimize disruptions to the public.
- **4.5.2 Traffic Signals and Operations** - Leveraging the City-wide Signal contract, retime traffic signals City-wide to comply with signal operations guidance in the Complete Streets manual. Enact proactive reviews of existing traffic signals with the safety and movements of pedestrians, bicyclists, and transit in mind. Conduct City-wide review for new traffic signals and all-way stop need, evaluating appropriate signal distance length in the urban core for pedestrian and bicycle crossing and slow vehicle speed. Consider dedicated pedestrian and bicycle signals and signal timing phases. School zones should be prioritized.
- **4.5.3 Utility Work** - Coordination with utility companies, such as Baltimore Gas and Electric (BGE), allows for the integration of safety elements during utility repair or upgrade projects. Since these projects often require street excavation or lane closures, it is cost-effective and efficient to add pedestrian or cyclist facilities, curb extensions, or updated traffic signals during the utility work phase.
- **4.5.4 Stormwater Management** - Stormwater management initiatives, such as installing green infrastructure or improving drainage, can be leveraged to include street safety enhancements. By combining these efforts, agencies can address both environmental concerns and traffic safety needs, optimizing funding and construction timelines.
- **4.5.5 Transit Improvements** - Transit improvements and transit-priority infrastructure serves to improve transit service, but also can have benefits of traffic calming. Ongoing coordination and support for transit considerations as part of complete street design can benefit roadway safety.

**4.5.6 Developer Agreements** - Partnerships with private developers through formal agreements can yield public benefits, including improved roadways and safer street designs. As new developments are built or redeveloped, cities can require or negotiate for the installation of sidewalks, bike infrastructure, or other safety features as part of the approval process.

By leveraging these existing programs, Baltimore City can streamline the implementation of Vision Zero initiatives, address urgent safety needs, and make efficient use of public and private resources. Achieving these benefits requires greater coordination between divisions within BCDOT as well as collaboration with other city departments and external partners. This enhanced coordination will ensure that safety improvements are integrated seamlessly into ongoing projects and that resources are maximized for the greatest public benefit.

## 5. SIMPLIFY INTERAGENCY REQUIREMENTS FOR HIN PROJECTS

As established earlier in this chapter, addressing safety concerns on the HIN is a top priority of BCDOT that should be embedded in all functions of the department. One of the ways to expedite the implementation of much-needed projects on the HIN is to collaborate with other departments that review street projects to revise standards and processes for these projects.

### 5.1. Streamline Stormwater Management Approvals

Street projects have to be reviewed for compliance with stormwater management regulations to ensure that improvements will not adversely impact the environment from runoff, which can affect the schedule and budget for implementing traffic safety projects. Projects that include the installation of new pavement on areas that were previously vegetated can cause rainwater (or other precipitation) to flow and carry any contaminants, rather than being slowly filtered and absorbed into the earth.

- **5.1.1. Stormwater Exemption** - One way to increase the rate at which traffic safety projects can be implemented is to exempt projects that neither add impervious surfaces nor affect sewer systems from stormwater management review. Exempt projects would include repurposing a travel lane to a bike lane, installing traffic islands on existing asphalt, or

installing flex posts. BCDOT should work with Department of Public Works to define the scale of project that should be exempt from stormwater management requirements.

**Example:** The City of Salisbury – another coastal city in Maryland with Municipal Separate Storm Sewer (MS4) permit for stormwater drainage discharges - has a local ordinance in Chapter 12.28 exempting any project under 5,000 square feet of disturbance from stormwater management requirements. This helps expedite implementation of small projects that have little to no effect on drainage.

- **5.1.2 Stormwater Management Credit Banking** - Some projects may require new pavement or affect drainage patterns, which could affect stormwater management needs and require more significant time and effort to design and permit these features. Stormwater management banking offers an innovative solution to this challenge. Instead of requiring each project to independently plan and implement its own stormwater controls, the city can establish centralized or regional stormwater management facilities known as “Banks.” Projects can independently add or subtract stormwater credit to the banks, thereby fulfilling their stormwater obligations without the need for individual reviews.

This approach streamlines the permitting process, reduces administrative burdens, and allows for a broader, more strategic view of stormwater management across the city.

**Example:** The Maryland State Highway Administration (SHA) maintains an agreement with the Maryland Department of Environment (MDE) that allows SHA to obtain credits or debits for water quality requirements on projects. This process is referred to as the water quality (WQ) bank. Allowances are made to debit the bank when water quality treatment cannot be provided either on or offsite. The option to debit the bank is limited to instances where stormwater management facility installation is not feasible. Credits and debits to the WQ bank require review and approval by the SHA Plan Review Division.

- **5.2 Integrate Needs for Emergency Medical Services (EMS) into Project Design** - One of the key elements of any major street project is ensuring emergency vehicles, especially larger vehicles like fire trucks and ambulances, can safely and efficiently navigate the street when responding to an emergency. There is often a tension between reducing vehicle speeds on a street, whether through the installation of curb extensions or the conversion of a travel lane to a 2-way cycle track, and maintaining space for emergency vehicles to pass vehicles or navigate large vehicles around tighter corners. Working through concerns from EMS providers when they review design plans for street projects is often a time-intensive process that may delay implementation. BCDOT should work with EMS providers to review and refine traffic calming and road reconfiguration standards. These design standards must balance traffic safety and emergency response needs. Supplemental training and design checklist should be developed to ensure updated standards are addressed as part of all project design.

**These standards may include prioritization of two-way cycle tracks instead of one-way bike lanes on each side of a road because firetrucks and ambulances can more easily navigate a 10' wide cycle track when responding to emergencies.**

**Another option is the use of speed cushions, which are speed bumps with cutouts for vehicles with wide wheelbases, such as ambulances and firetrucks, to pass through without slowing down.**



*Speed cushion on Guilford Ave in Baltimore City.*

## 6. UPDATE DESIGN MANUALS

### 6.1. Update Complete Streets Manual

In response to adoption of a Complete Streets ordinance in 2018 and a growing demand for more multi-modal accommodations in street design, Baltimore City adopted its award-winning Complete Street Manual in 2021. It was developed as a collaborative effort between City and State agencies, consultant teams, and industry professionals, with oversight from an Advisory Committee. At the time, this Manual was among the first nationwide to emphasize equity in project prioritization. This Manual also provides planning and design guidance to prioritize the safety and accessibility of vulnerable travelers on Baltimore's streets ahead of the mobility of single occupant vehicles.

The design guidance in this Manual focus on the unique needs of each community and street, allowing opportunities for improvements to be applied in an equitable manner. However, this Manual does not define specific typologies for Baltimore City's streets or provide specific design standards. It is up to the user to determine which street typology and design solutions apply to a specific project area, which in some cases may be subjective. It also generalizes some typologies that may not reflect needs for some unique situations. In addition, in recent years since this Manual's adoption, there have been new best practices emerge that could be added to this manual as applicable new design standards for Baltimore streets.

An update to the 2021 Complete Street Manual should address the following needs:

- **6.1.1. Define Street Typologies for each Baltimore City Street** - The manual already establishes street typologies but it does not define which streets fall into which typologies. A street hierarchy map would help to clarify which design standards apply in specific locations. By categorizing streets based on their unique characteristics, surrounding land uses, and transportation needs, designers can more effectively implement equitable and context-sensitive improvements. This approach ensures that each street receives the appropriate treatments for safety, accessibility, and multi-modal accommodations, addressing specific community needs and supporting the city's broader goals for Complete Streets. Identifying and documenting these typologies will also help streamline project reviews and promote uniform standards across different neighborhoods.

Additionally, new typologies should be considered to reflect a wider array of street contexts. For instance, School Zones represent unique circumstances with important safety needs for the most vulnerable roadway users – children walking. On the other hand, the City's Freight network is an important for economic development, but the movement of large freight trucks through City streets is less compatible with other traffic calming and multi-modal solutions. Adding typologies with applicable design standards for Freight Routes and School Zones or other unique areas can help to clarify and prioritize best practices to address a site's unique needs.

- **6.1.2. Develop More Robust Standards of Safety Countermeasures** - A more comprehensive set of design standards for safety countermeasures and Complete Street design solutions would allow designers to select and tailor interventions that most effectively promote safety, accessibility, and equity. These standards should define the dimensions, materials, and details acceptable to BCDOT for installation, and should include strategies for different street typologies, quick-build approaches, and context-specific treatments.

- **6.1.3. Expand Design Guidance for Traffic Calming** – Reducing traffic speed is a proven safety countermeasure, but effective and appropriate design techniques can vary by street typology. The Manual already de-emphasizes accommodations for through traffic, but the Manual can put more emphasis on effective traffic calming measures suitable to each of the roadway typologies. Expanding the direction and design standards for additional traffic calming features will support more implementation of traffic calming initiatives.

- **6.1.4. Include Quick-Build Design Guidance** – Quick-build design refers to the use of low-cost, flexible, and rapidly deployable materials and techniques to implement street improvements or transportation projects. These efforts allow cities to test new concepts, gather public feedback, and make adjustments before committing to permanent infrastructure changes. Quick-build projects typically include elements such as paint, bollards, planters, or temporary signage to reconfigure street space for improved safety and accessibility, supporting multi-modal transportation and community needs. Quick Build materials are typically intended to serve as a temporary streetscape design feature, but quick-build installations may be in place for a longer period requiring occasional maintenance and replacement.

In the context of Baltimore's Complete Street Manual, including quick-build design guidance would help streamline the process for implementing temporary traffic calming measures, protected bike lanes, or pedestrian enhancements, enabling the city to respond quickly to safety concerns and evaluate their effectiveness before making long-term investments.

- **6.1.5. Develop Curbside Management Guidance** – Managing curbside areas effectively is crucial for traffic safety, as these spaces bring together different modes of transportation and various street activities. Poorly managed curbs can lead to conflicts among drivers, pedestrians, cyclists, transit riders, and others engaged in things like outdoor dining, deliveries, or trash collection. Such clashes especially endanger vulnerable users, including pedestrians and cyclists.

It is important to design curbside zones that serve multiple purposes throughout the day, such as parking, loading, public transport access, and supporting green initiatives. This can minimize disputes, maintain ADA access, improve sightlines, and keep all users safe and able to move freely. Flexible strategies for curbside management make it possible to adapt to shifting needs, promote safer operations, and offer fairer access for everyone. These efforts align with the core principles of the Complete Streets approach and should be context-sensitive, understanding that different areas and street types should prioritize curbside needs differently.

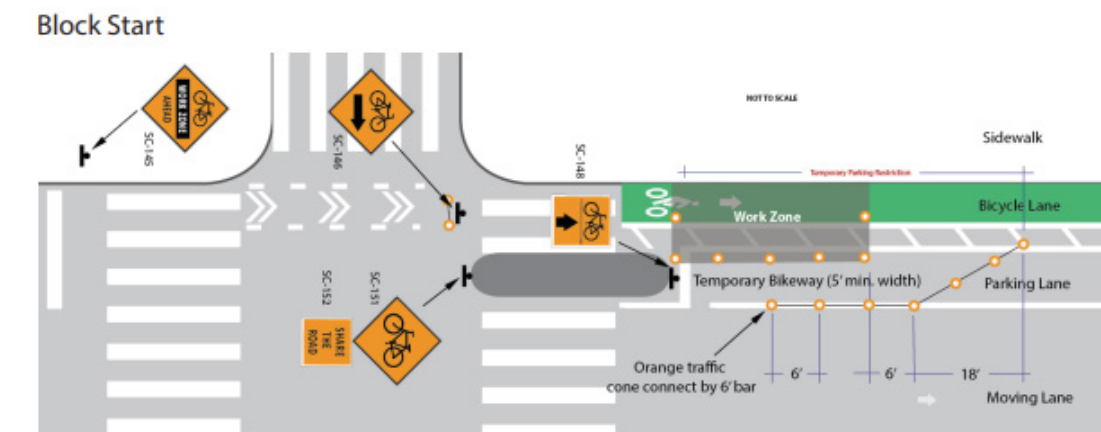
Curbside management requires understanding the linkages of transportation, land use, and economic development. The complexity arises from political and public demands that are built upon the historical understanding of the curb as a place to park vehicles and to generate reliable revenue from parking fees. New guidance for curbside management should weave together multimodal safety, ADA compliance, flexible parking policies, congestion and trip generation analyses, urban freight movement and delivery access, and active transportation and emerging mobility options. Managing curb space requires matching regulations and operations to clear policy goals including universal access, sustainability, economic growth, and creating a safe, reliable, and equitable transportation system.

- **6.1.6. Promote Roadway Rightsizing** - In the 1950s, Baltimore City had a population of one million people and was a leader in the industrial economy. Over the next 50 years, the proliferation of highway infrastructure made it possible for industries to relocate to more expansive and cheaper land and for City residents to relocate to suburbs. As a result, Baltimore City has oversized infrastructure for its needs today; this is particularly evident outside of peak commuting hours. Roads that have excess capacity are conducive to speeding. The Baltimore High Crash Reduction Plan identified a correlation between severe crashes and number of lanes. Right-sizing the road encourages lower speeds and creates more room in the public right-of-way for safer bike, pedestrian, and transit travel. There are several ways to reduce the amount of road space for vehicles, including lane reduction, width reduction, and intersection turning space reduction.

As a part of a new Complete Streets typology, identify oversized roads through a survey of AADT/AAWDT, lane widths, and number of lanes. Create a plan that recommends the replacement of excess roadway with a toolbox of bike facilities, pedestrian facilities, transit facilities, traffic calming infrastructure, and green space.

## 6.2. Update Maintenance of Traffic (MOT) Requirements

BCDOT requires private developers to maintain traffic on public streets during all phases of construction. MOT plans are required for projects that disrupt the public right-of-way and must be submitted to the Traffic Division for review and approval, along with the completed application for a Temporary Use of the Right of Way permit. The MOT plan lays out the temporary changes that will be implemented to keep pedestrians, cyclists, and motorists moving safely while sidewalks, bike lanes, and/or travel lanes are blocked during construction. BCDOT's Vision Zero Action Team should regularly review and refine MOT standards to ensure they meet latest needs and best practices for all roadway users, and share updates through internal memos or trainings with project development staff.



*Guidelines for the Maintenance and Protection of Traffic Plan for Cycling, NY Department of Transportation*

BCDOT has authority to fine contractors that do not adhere to their approved MOT plans during construction; however, there is little to remedy a situation where a contractor is complying with an approved MOT plan that does not meet BCDOT standards. It is essential that all BCDOT staff members who review MOT plans uphold the same standards for all projects across Baltimore City. Along with updated standards, training should be available to MOT design and review staff.

### 6.3. Update Design Stage Checklists

Projects are typically designed in five stages: Concept (15%), Preliminary Engineering (30%), Semi-final Design (65%), Final Design (90%), and Plans/Specifications/Estimates (100%). The level of design progresses in each stage, but there is not a uniform understanding of what level of design detail is required in the interim stages. Overall, it should be expected that each stage include the following, which will improve efficiency of project implementation:

- **Concept (15%):** The project vision, goals, and needs are identified. At this stage, designers should consider relevant street typologies, review existing conditions, and conduct initial community engagement to understand local priorities and constraints. Early identification of potential traffic calming measures or quick-build opportunities can help shape project direction.
- **Preliminary Engineering (30%):** Basic layouts, alignments, and major design elements are drafted. Designers should refine the street typology selection, begin outlining MOT strategies, and ensure that equity considerations and multi-modal accommodations are included. This is an appropriate time to solicit feedback from stakeholders and the Complete Streets Representative, if available.
- **Semi-final Design (65%):** More detailed engineering and design work is completed, including the integration of traffic calming features, quick-build pilot elements, and finalized MOT plans. At this stage, compliance with applicable design standards should be verified, and potential impacts on all road users should be assessed. Additional public input may be gathered to confirm that proposed solutions address community needs.
- **Final Design (90%):** Plans are finalized, with all technical details, specifications, and safety features incorporated. Final coordination with the Complete Streets Representative, stakeholder agencies, and community representatives should be completed to confirm that all project objectives and standards are met. Any necessary adjustments to MOT plans or traffic calming designs should be addressed here.

- **Plans/Specifications/Estimates (100%):** The project is fully documented and ready for bid and construction. This stage includes complete construction drawings, specifications, cost estimates, and maintenance plans. It is essential to ensure that all temporary and permanent features—such as quick-build installations and traffic calming measures—are clearly documented for implementation and future maintenance.

To promote consistency, it is recommended that a detailed checklist for each design stage, outlining the minimum required deliverables, the expected level of detail, and milestones for stakeholder and community input. This will help ensure that all project teams have a clear understanding of expectations at each phase, resulting in better coordination, more equitable outcomes, and streamlined project delivery. Incorporating this structured approach will also support effective reviews by BCDOT staff, including the Complete Streets Representative, and help maintain uniform standards across all projects.



## 7. IMPLEMENT TRAINING PROGRAMS

BCDOT planners, engineers, and community engagement liaisons complete a wide range of tasks including assessing which streets are most in need of improvement and determining how Baltimoreans will be impacted by the construction during projects. BCDOT staff is tasked with implementing many of the tasks in this plan, and it is essential that all staff members are given the resources they need to be successful – a significant part of this is ongoing training and education.

### 7.1. Support Professional Development

BCDOT planners and engineers should be given the opportunity to take part in professional development activities centered on best practices for complete street design and implementation. BCDOT leadership should dedicate funding for staff to attend conferences and other training programs, especially for staff members in divisions that have been less involved in the shift toward complete streets – Maintenance, Traffic Engineering & Construction, etc.

### 7.2. Establish a Vision Zero Training Program

A new Baltimore Vision Zero Training Program should be designed to equip BCDOT staff and consultants with the knowledge and skills necessary to incorporate Vision Zero principles into all aspects of their daily work. This program would emphasize the importance of understanding policy and program updates related to Vision Zero and ensures that every team member is prepared to implement these initiatives as an integral part of BCDOT's mission. Training modules cover best practices in street design, multi-modal accommodations, equity considerations, and data-driven decision-making. Additionally, the program could provide ongoing professional development opportunities, such as professional licensure continuing education credits while keeping staff updated on the latest strategies for eliminating traffic fatalities and serious injuries in Baltimore.

## 8. DEPLOY STRATEGIC ENFORCEMENT

Strategic traffic enforcement is a critical element in achieving zero fatalities and serious injuries on Baltimore City streets and roads. BPD and BCDOT have limited resources for enforcement, and it is essential that these resources be used to help enforce safe speeds and travel behaviors on streets and roads with a history of crashes resulting in fatalities and serious injuries. Speeding remains one of the most persistent and dangerous problems on Baltimore's roadways, frequently contributing to severe crashes and loss of life. Despite current enforcement efforts, many drivers continue to exceed speed limits, highlighting the urgent need for more robust enforcement measures.

**Example:** In 2024, Washington DC passed the STEER Act. It aims to enhance traffic enforcement and accountability for dangerous drivers. Key provisions include:

- **Civil Suits:** The D.C. Attorney General can sue out-of-state drivers for large unpaid traffic fines, regardless of their state of residence.
- **Vehicle Speed Governors:** For repeat reckless drivers, the DMV can install speed governors in their vehicles to automatically limit their speed.
- **Vehicle Booting and Towing:** A new point system allows D.C. to boot or tow vehicles with excessive speeding and moving violations within a six-month period.
- **Victim Protection:** Owners of stolen vehicles are not liable for fines incurred by thieves driving their vehicles.

These measures are part of a broader effort to improve road safety and reduce the number of traffic-related incidents in D.C.

### 8.1. Target Automated Enforcement on the HIN

BCDOT and BPD employ multiple strategies to enforce traffic regulations. One of these strategies is use of the Automated Traffic Violation Enforcement System (ATVES), which includes speed cameras and red-light cameras. These systems have been largely successful, especially on Interstate 83 within Baltimore City, but there is still room for improvement. **ATVES should be deployed strategically on the HIN in areas with high prevalence of crashes involving speeding and red light running to penalize and deter unsafe driving behavior.**

### 8.2. Targeted Officer Patrolling

The deployment of ATVES can be an effective solution to promote safer speeds and driving behaviors; however, there are numerous unsafe behaviors that are outside the scope of ATVES. Additionally, there are issues with the drivers of vehicles registered outside of Maryland not paying fines issues through ATVES.

**BCDOT should work with BPD to deploy officers at locations on the HIN, especially at locations with crash histories that are related to unsafe behaviors that cannot be enforced through ATVES – weaving, following too closely, not yielding to pedestrians in crosswalks, etc.** As possible, targeted officer patrols should take place during times and days that pose the greatest risk at these locations, such as school dismissal, religious gatherings, or recreational events.

### 8.3. Stronger Penalties for Repeat Offenders

One of the strongest criticisms of existing traffic enforcement, especially automated speed cameras, is that the penalties do little to deter some repeat speeding offenders who are willing to pay a \$40 fine from a speed camera citation.

**Effective October 1, 2025, Baltimore City implemented tiered fines for speed camera violations that range from \$40 for drivers travelling 12-15 mph over the speed limit to \$425 for “super speeders” travelling 40+ mph over the speed limit.**

Another strategy to boost compliance with speed limits is to increase fines for repeat offenders. For example, drivers who have already been issued one automated speed citation in the calendar year could have their second violation increased by 50%.



Promotional material for the tiered speeding fines in Baltimore City

In this instance, a driver who had already been issued a \$40 fine for travelling 12-15 mph over the speed limit would have to pay a fine of \$60 for a second offense in the same tier.

A step further would be towing vehicles or suspending licenses that are repeat offenders and don't pay their tickets. These programs would require state legislation for license suspension, and BCDOT can lobby for new legislature such as these to promote traffic safety in Baltimore.

#### 8.4. Install and Monitor Speed/Safe Driving Governing Devices on City Fleet Vehicles

There are over 5,600 vehicles in the Baltimore City fleet used across 29 City Agencies and Departments. It is essential that drivers of these vehicles lead by example and employ safe driving habits. Vehicle speed is one of the most significant factors in determining the severity of a crash. This is especially critical for larger vehicles that are used by some City employees and contractors. In the short term, the City's Department of General Services (DGS) will be implementing telematic trackers in City fleet vehicles to track speed and traffic safety compliance. This can allow for monitoring a driver track record and potential penalties by city staff who repeatedly disobey traffic safety rules. Remedial training should be made available to those who demonstrate unsafe habits. The level of penalty should be developed in collaboration with the City's Human Resources, Legal, and Risk Management teams.

In the long term, **BCDOT can work with other City leadership to procure and deploy speed limiting devices on all City vehicles.**

These devices dynamically limit a vehicle's speed to a certain amount above the posted speed limit, often 10 mph. There are also developing technologies that can be deployed to monitor driver behavior, such as aggressive acceleration and deceleration, that should be used to assess the habits of those operating City fleet vehicles.

### 9. DEVELOP SPECIAL PROGRAMS FOR TRAFFIC SAFETY

#### 9.1 Establish Slow Zones

The speed of a vehicle is one of the most significant factors in determining the severity of any injuries for victims. As shown in the image below, on average, a pedestrian has a 90% chance of surviving a crash with a vehicle travelling at 20 mph. Pedestrians have only a 10% chance of survival when struck by a vehicle travelling 40 mph.

**Reducing speed limits to 20 mph in neighborhoods or areas with high levels of pedestrian and bicyclist activity, such as school zones or streets surrounding public parks, would go a long way in reducing the severity of crashes that occur.**

There are several other measures that would need to accompany reducing speed limits – traffic calming and traffic signal retiming. Reduced speed limits should be paired with traffic calming measures to help reinforce the lower travel speeds. Drivers will generally travel at a speed that feels safe and comfortable. If a street has speed humps, chicanes, traffic islands, or other traffic calming measures, drivers are more likely to comply with a 20-mph speed limit.

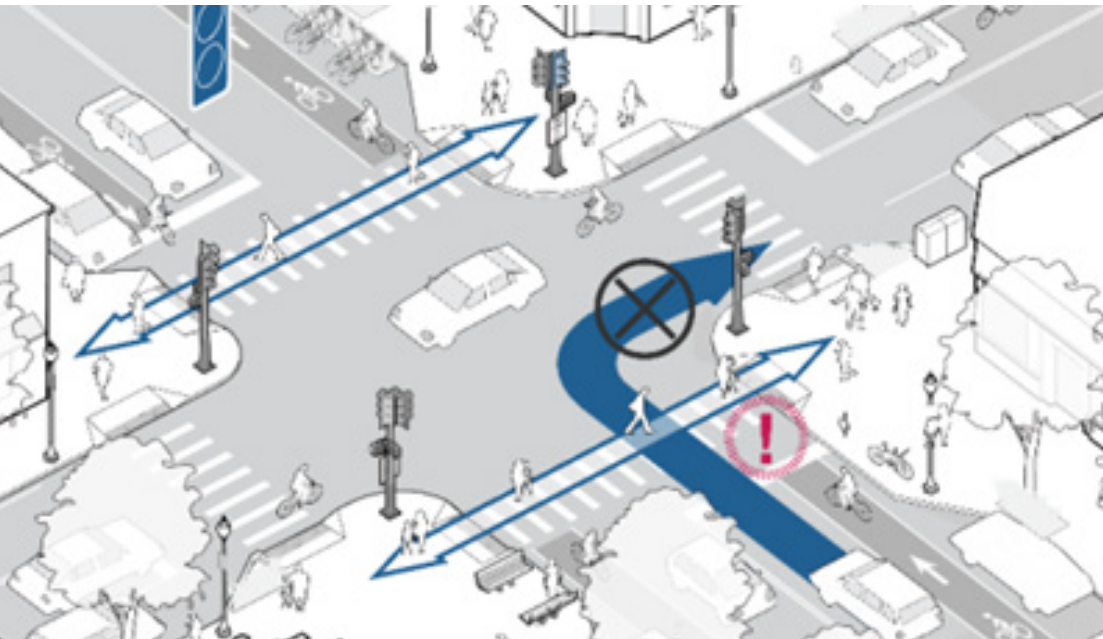
Traffic signals ("traffic lights") are programmed such that drivers travelling at the speed limit will have a series of green lights when they travel the posted speed limit – this is sometimes called a "green wave." When drivers exceed the posted speed limit, they are more likely to have to wait at a signal ahead. Reducing speed limits to 20 mph would necessitate retiming traffic signals to "reward" drivers who travel the posted speed limit with a green wave.

**Example:** The City of Hoboken, New Jersey reduced the speed limits on all City roads from 25 mph to 20 mph in 2022. The City paired the speed limit reductions with systemic safety improvements, including curb extensions, high visibility crosswalks, daylighting, and leading pedestrian intervals.

Hoboken is one of the few US cities to achieve zero traffic-related deaths on City-maintained streets.



*Los Angeles County Vision Zero, courtesy of AAA Foundation for Traffic Safety, Impact Speed and a Pedestrian's Risk of Severe Injury or Death. 2011.*



Source: Arlington County, VA

### 9.2. Expand Use of No Right Turn on Red

Drivers are generally allowed to turn right at a red light after coming to a complete stop and confirming that their path is clear, except in some special circumstances citywide. There are already many intersections in Baltimore City where right turns are not allowed during certain times of day (typically 7 AM – 7 PM). Allowing a right turn on red helps get more vehicles through an intersection and limit congestion, but can create an unsafe conflict for pedestrians trying to cross the street. The limitation of allowing drivers to make right turns at red lights is that they may not see pedestrians trying to cross the street in front of them.

**Restricting right turns on red can decrease conflicts between pedestrians and drivers, especially in areas where there are a large number of children, older adults, or people with disabilities.**

Expanding “no right turn on red” locations across broader geographic areas such as downtown, school zones, and neighborhoods with a high concentration of pedestrian activity would help improve safety for pedestrians by reducing potential conflicts between vehicles and people crossing the street.

### 9.3. Formalize Traffic Calming Request Program

Currently, most traffic calming requests come from citizen 311 requests, and BCDOT works to assess and respond to requests in a timely and effective manner while managing other construction projects and priorities. This process lacks clarity for residents, and it is not a sustainable practice for BCDOT staff. **BCDOT is designing a new traffic calming request program based on successes and failures from peer cities that includes clear criteria for evaluating requests and processes for BCDOT staff to follow. This may involve an annual or semi-annual evaluation of requests** and a published list of corridors where traffic calming will be prioritized based on scores from evaluation criteria.

### 9.4. Update Project Evaluation Criteria

There are many pertinent factors in evaluating a corridor for traffic calming, including traffic volume, pedestrian trip generators, freight vehicle access, and existing projects being developed. BCDOT should establish and publish criteria that staff will use in the evaluation of traffic calming requests. These criteria should vary by street typology as outlined in the Complete Streets Manual. In communicating these criteria, BCDOT should provide resources for citizens to learn more about certain safety countermeasures, the criteria for implementation to confirm if the street where they are requesting traffic calming meets the criteria. For example, BCDOT may determine that speed tables are appropriate for urban village neighborhood streets with extra priority given to streets with parks, schools, or libraries. A citizen submitting a request should be guided to a street typology map.

BCDOT should develop a process for evaluating traffic calming requests that lays out the responsibilities for different staff members. For example, analysts should be tasked with identifying the annual average daily traffic of a street using a standard resource, as well as the number of crashes that have occurred on that corridor within the last five years. Traffic investigators may be tasked with observing a corridor for unsafe speeds during a standard time period. Traffic engineers should be tasked with reviewing proposals for compliance with design standards and identifying any other potential consequences of traffic calming. Roadway safety is a primary concern, but project decisions must also be considered among the context of other public services, economic, environmental, and community needs.

It is essential that the process for evaluating traffic calming requests is well-defined and emphasizes safety while also balancing other competing or urgent needs of a roadway corridor. The process should make the best use of staff time and lead to decisions that are defensible and consistent.

### 9.5. Establish a Program for Private Project Financing

Establishing a clear policy for private or community financing is essential for expanding traffic safety initiatives and infrastructure improvements. Defining guidelines for how local organizations, neighborhood associations, or private stakeholders can contribute funding to traffic calming measures or pedestrian safety projects, Baltimore City can supplement municipal resources and accelerate the implementation of critical safety enhancements. Such a policy should outline transparent procedures for proposal submission, project selection, and fund management to ensure accountability and equitable distribution of improvements. In addition, partnering with community members and businesses can foster greater ownership of local safety outcomes, promote collaboration, and ensure that projects reflect the unique needs of each neighborhood.

**Example:** Milwaukee has a community-led traffic calming program that allows residents to fund small traffic calming improvements. Interested communities can choose traffic safety countermeasures from a guidebook. In addition to City design review, public engagement is required and signatures of support from at least 50% of the block are required for approval. The cost for implementation is paid for by the local community.

BCDOT already has the Community-Led Placemaking program that allows local stakeholders to fund and design aesthetic improvements to local streets. In some cases, traffic calming enhancements are implemented as a part of this program. It can be expanded to encourage more traffic calming and safety countermeasures.

## 9.6 REESTABLISH A ROBUST SAFE ROUTES TO SCHOOL PROGRAM

Safe Routes to School (SRTS) is a program overseen by the Federal Highway Administration with the aim of making it safe for all students to walk, bike, or roll to school. SRTS projects include infrastructure improvements, such as traffic calming, signage, and ADA improvements within school zones. Other SRTS projects include organize “bike buses” to school, where a group of parents or volunteers meet students at designated locations along a route as they bike to school. SRTS programs also include traffic safety education for students.

### 9.6.1. Volunteer Crossing Guards

School crossing guards play a vital role in ensuring student safety at busy intersections near schools, especially during peak arrival and dismissal times. With increased vehicular traffic, distracted drivers, and children often lacking the experience to navigate complex crossings, the presence of trained crossing guards helps manage traffic flow, reinforce safe pedestrian behaviors, and provide a reassuring adult presence for students and families. By facilitating safe crossings, crossing guards help prevent accidents and promote a safe environment that encourages more students to walk or bike to school.

Although Baltimore already has a robust Crossing Guard program, consistent staffing and coverage can sometimes be difficult. A new volunteer crossing guard program can supplement staffing needed for full coverage of school zone intersections. Local community members and student caregivers can be used to volunteer at the local schools. This can also free up resources for school educators assigned to traffic safety roles who might otherwise be able to focus on other educational needs. A recruiting and training program would be necessary.

### 9.6.2. Traffic Calming Infrastructure in School Zones

The Baltimore City Department of Planning currently oversees the INSPIRE (Investing in Neighborhoods and Schools to Promote Improvement, Revitalization, and Excellence) Program, through which street improvements within a quarter mile of modernized schools are assessed for safety improvements. BCDOT has also secured for funding to hire a SRTS coordinator. As part of the Vision Zero initiative, BCDOT should launch a robust SRTS program in collaboration with the Department of Planning with a mission to assess a specific number of school zones each year for traffic calming measures. As a part of this program, annual funding should also be dedicated in the CIP.

**Example:** In 2022, the Council of the District of Columbia (DC) passed the Safe Streets for Students Amendment Act. The Act expanded school zones to span 350' from the edge of school campuses (including playgrounds, parking lots, and buildings) and instituted 15 mph speed limits from 7 AM – 6 PM everyday within the school zone. Each year, the SRTS team develops designs for improvements in 25 school zones. These improvements are quick-build projects that can be constructed within a year, such as daylighting with flex posts, signage, speed humps, raised crosswalks, and new curb ramps.

### 9.6.3. Amending Complete Streets Manual to Include School Zones

One of the ways safer streets in school zones can be standardized is by amending the Baltimore City Complete Streets to include a School Zone street typology. Currently, streets within school zones may be categorized under different typologies depending, which leads to significant differences in street treatments. For example, a school that fronts an “Urban Village Main” street would have more priority given to pedestrian amenities that are conducive to school children than a school that is located on a road considered an “Urban Center Connector.”

**BCDOT should develop a School Zone typology in the Complete Streets Manual that overrides other street typologies within a school zone.** This category should have an emphasis placed on pedestrian and bicycle safety and connectivity, 9' recommended lane widths, allowances for traffic calming measures, and a greater emphasis on curb space for pick-up and drop-off.



The Washington DC Safe Routes to School program encourages schools to implement “School Streets”, which are temporary street closures just before arrival and just after dismissal allowing extra space for large volumes of student pedestrians. For this to be successful, there needs to be adequate traffic connectivity for through vehicles on detour streets and significant investment of time by local volunteers to manage brief roadway crossings twice a day.

### 9.6.4. Develop Bell Time Circulation Guidelines

School zones are prone to congestion from many parents and caregivers dropping off and picking up students at the same time. This leads to frustration for drivers and can lead to unsafe behaviors, such as making a U-turn in the middle of a street or double parking. These conditions can be mitigated to a degree when schools have circulation patterns that allow for parents and caregivers to pick up and drop off children efficiently without obstructing other road users. This includes designated curb space for pick-up and drop-off, traffic patterns that limit the number of drivers waiting to make left turns that may cause delays, and dismissing students from different doors or sides of a school building to help spread the traffic load across multiple streets.

**BCDOT should work with BCPS to develop circulation guidelines that lay out best practices that can be implemented when new schools are constructed, or existing schools undergo major renovations.**

### 9.6.5. Education on Traffic Safety

Building a culture of traffic safety requires all Baltimoreans to be knowledgeable about safe travel behaviors and aware of other road users. This type of knowledge can be built starting from a young age – children who learn the importance of traffic safety are more likely to carry those same principles into adulthood.

#### 9.6.5.1. Renovate and Reopen Safety City

Safety City in Druid Hill Park is a miniature likeness of downtown Baltimore that was used to teach Baltimore public school children in kindergarten through third grade about traffic safety. BCDOT hosted the first "Safety City Day" event in 2017. After being underused for the past several years, it is now closed due to disrepair.

**Safety City should be renovated and revived as part of the Vision Zero initiative with programming for elementary school students as part of their physical education curriculum.**

Safety City in Druid Hill Park

Source: Mead & Hunt



#### 9.6.5.2. Produce Age-Appropriate Lesson Plans and Educational Materials

Age-appropriate lesson plans and educational materials can be developed and used to build strong culture of traffic safety among Baltimore's students. Custom content for different grade levels can introduce and reinforce their grasp of key safety concepts such as safe walking behaviors, bicycle safety, and the importance of being alert near traffic. Integrating these lessons into the school curriculum, particularly through science, math, art, and physical education can empower students to develop lifelong safe habits and introduce students to future careers in transportation. Early and ongoing education not only protects children but also helps instill a broader community awareness of traffic safety that extends beyond the classroom.

#### 9.6.5.3. Partnership with Schools for Safety Programs

There are many opportunities for BCDOT to partner with Baltimore City Public Schools (BCPS) to promote traffic safety for school children of different ages. BCDOT can help facilitate traffic safety programs and events that teach the importance of awareness when walking or bicycling. There is the potential for joint advertising campaigns. Additionally, BCDOT can work with BCPS to introduce bicycle riding as part of the physical education curriculum through collaboration with volunteer-based community partnerships. Other events and programs that BCPS and BCDOT can collaborate to host include:

- **Walking school buses** – a group of children walking to school together under adult supervision, following a set route and schedule. The group may pick up additional students along the way, similar to a traditional school bus route,

and helps ensure students travel safely on foot while learning safe pedestrian behaviors.

- **Bike buses** – a group of students cycling to school together, accompanied by adults. Like a walking school bus, the bike bus follows a planned route, picks up riders along the way, and promotes bicycle safety and group riding etiquette.
- **"Bike or walk to school" events** – organized occasions encouraging students and their families to travel to school by biking or walking rather than using motor vehicles. Such events aim to promote active transportation, improve traffic safety awareness, and foster healthy habits among students.
- **School streets** – temporary street closures in front of schools just before and after bell time when there is a rush of students coming and going
- **Bike rodeos** - organized events where children and students learn and practice essential bicycle safety skills in a fun, interactive setting. These events typically feature a series of stations or obstacle courses designed to teach participants about helmet use, hand signals, navigating intersections, and other safe riding behaviors. Supervised by adults or safety instructors, bike rodeos help students build confidence in their cycling abilities while reinforcing important rules and etiquette for riding on roads and in the community. They are often held at schools, parks, or community centers and may include educational materials, bike inspections, and prizes to encourage participation and learning.



## 10. EXPAND PROACTIVE MAINTENANCE PROGRAMS

Decisions made by the Maryland General Assembly during the 2009-2010 Great Recession sharply reduced funding for road maintenance in Baltimore City with a cumulative loss of \$850 million to \$1 billion over the next 15 years. Deferred maintenance became common practice to triage maintenance needs during the extended time with a reduced budget.

Increasing Baltimore's share of Highway User Fund revenue has led to an increased budget for roadway maintenance. Although significant progress has been made towards fixing pot holes, there is still a significant backlog of maintenance needs. There are ongoing needs to upgrade and replace median barriers, pavement markings, signs, guardrails, crash cushions, and traffic signals. Except for the reconstruction of traffic signals, there has been no systemic effort in several decades to replace safety devices that longer meet engineering standards.

### 10.1. Identify and Replace Damaged Crash Barriers and Guardrails

Traffic safety devices are particularly important on roads designed for higher speeds and which have median dividers such Patapsco Avenue, Perring Parkway, Erdman Avenue, Wabash Avenue, and Northern Parkway, each of which are roadways on the HIN. These roads tend to have more crashes where vehicles run off the road and strike fixed objects than typical radial arterial roads like Harford or Reisterstown Road, for example. By upgrading safety devices to meet current standards, Baltimore City can have a more resilient infrastructure to minimize and mitigate the seriousness of crashes.



*Damaged crash barrels at Northern Parkway and I-83*

Because of their uniqueness within Baltimore City and with few crashes involving vulnerable road users, the supporting safety infrastructure for these roads can be easily overlooked. Unlike neighborhood streets where people live, work, and play, fewer community members feel ownership of roads like Perring Parkway or Patapsco Avenue. As a result, missing or failing safety devices like crash cushions and guard rails may go unreported. Comprehensive and citywide inspections can help to identify roadway appurtenances in need of replacement, and these needs should be prioritized as part of routine maintenance repairs.

### 10.2. Identify and Replace Damaged Traffic Signs

Also of concern are the many guide signs that direct drivers to their destination, and warning signs placed in advance of hills or curves. Changes to federal signage standards which took effect in 2012 have only gradually been complied with in Baltimore City and then only on roads and bridges which are otherwise being reconstructed such as the Baltimore Washington Parkway (MD 295)<sup>1</sup>. Adequately maintained retroreflective signs improve nighttime highway navigation and reduce the risk of crashes by bouncing light from vehicle headlights back toward the vehicle and the driver's eyes, making the signs appear brighter and easier to see and read. Because the retroreflective properties of traffic control devices deteriorate over time, BCDOT should actively manage the maintenance of signs to ensure that they remain clearly visible at night. BCDOT should prioritize replacement of signs based on engineering considerations such as the relative importance of the sign to the safety of the road user, volumes and speed of nighttime traffic. In some high priority locations with significant pedestrian activity, BCDOT might also consider using illuminated traffic signage.

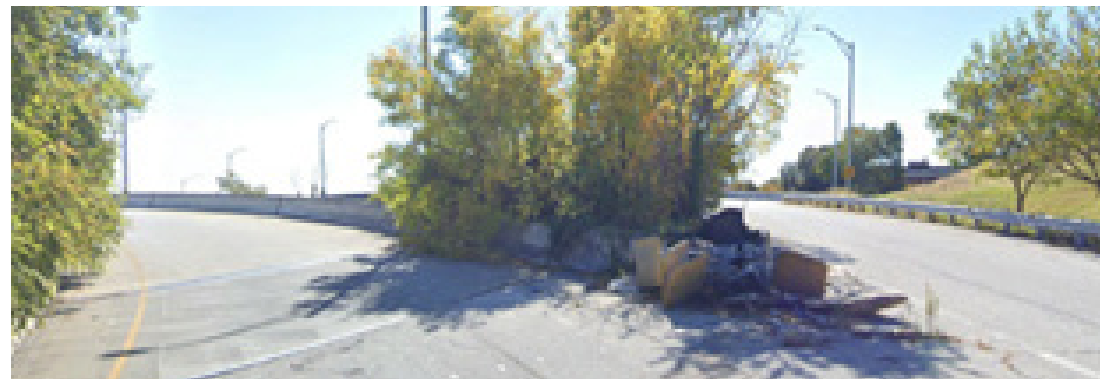
### 10.3. Upgrade Traffic Signals

Baltimore City owns and operates more than 1,300 traffic signals – more than every other local government in Maryland combined. When traffic signals fall (due to age or collision) or fail (due to power outage or wiring problems), intersections are less safe for all road users. Although BCDOT has made progress towards repair and replacement for some traffic signals, there remains a backlog of signals in need of repair and replacement. To lessen the burden of replacement and ongoing maintenance, BCDOT may wish to consider removing some signals from low volume intersections and replacing them with all way stops or mini-roundabouts.

For those traffic signals that can tolerate the additional loading, Baltimore should consider the systematic use of back plates. Studies by the Federal Highway Administration have shown that backplates can reduce crashes by more than 30% with even greater effectiveness in areas of bright sunlight, complex visual environments, and nighttime conditions; adding a retroreflective border is additionally beneficial for older drivers and those with color vision deficiencies<sup>2</sup>.

<sup>1</sup> The requirements for sign retroreflectivity are contained in Sections 2A.21 and 2A.22 of the 11th Edition of the Manual on Uniform Traffic Control Devices (MUTCD). The compliance date of June 13, 2014 applies only to the implementation and continued use of an assessment or management method that is designed to maintain regulatory and warning sign retroreflectivity at or above the minimum retroreflectivity levels in Table 2A-5.

<sup>2</sup> Backplates with Retroreflective Borders | FHWA



*Damaged crash attenuator in I-83.*



## 11. EXPAND PUBLIC ENGAGEMENT & ACCOUNTABILITY

The goals of the Vision Zero Action Plan are more likely to be achieved if the departments and offices tasked with implementation are held accountable for doing their part.

### 11.1 Create a Public Vision Zero Dashboard

A public online dashboard should track crash locations, severity, and key factors, as well as the status of BCDOT initiatives on the HIN. It can also display reviews of crashes with fatalities or serious injuries, summarize contributing factors, and outline countermeasures BCDOT will pursue to prevent similar incidents. An annual update on Vision Zero progress should be posted for public accountability.

### 11.2. Ensure Transparency in Project Selection Process

Ensuring transparency in the selection process for BCDOT initiatives is crucial for building public trust and community engagement. Publishing an annual list of the prioritization metrics and selection results for locations chosen enables constituents to understand how projects are chosen, design decisions are made, and which neighborhoods will benefit each year. This open approach allows for greater accountability, encourages feedback from the community, and helps residents track the progress of safety enhancements throughout Baltimore. Such transparency can also foster collaboration between city officials and residents, ensuring that traffic safety initiatives are implemented where they are most needed.

### 11.3. Implement Paid Partnerships with Local Representatives

Paid partnerships with local representatives refers to formal arrangements in which local community members, organizations, or individuals are compensated for serving as connectors between city officials, agencies, or projects and the broader community. These representatives use their local knowledge, relationships, and trust to facilitate communication, gather feedback, share information about programs or initiatives (such as Vision Zero safety efforts), and ensure that community perspectives are considered in planning and implementation.

By providing financial compensation as part of a dedicated fund in the annual CIP, the partnership recognizes the value of the liaison's time and expertise, promotes equitable engagement, and often leads to more effective outreach and stronger community buy-in for city projects.

### 11.4. Establish Restorative Justice Programs

Part of building a culture of traffic safety is going beyond the assessment of fines or the revocation of licenses for drivers who are charged with traffic violations. It is critical that these individuals understand that their actions, whether they be speeding or making an unsafe lane change, could have led to an irreversible effect on another human being and their loved ones. BCDOT and partnering departments and non-profit organizations should develop programs for drivers charged with traffic violations to participate in facilitated discussions on the impacts of unsafe driving behaviors. These programs may include hearing from victims of traffic violence, so participants can put faces to the potential impacts of

their decisions while driving. These restorative justice programs may be offered to reduce the fine assessed for a traffic violation.

### 11.5 Vision Zero Annual Report

BCDOT will publish an annual Vision Zero Progress Report to track implementation efforts, monitor safety outcomes, and measure progress toward eliminating traffic deaths and serious injuries. Regular reporting promotes transparency and accountability, helps evaluate the effectiveness of strategies, informs future investments, and keeps residents and partners engaged in advancing a safer transportation system for everyone.

### 11.6 Support Community Led Ciclovía Events

BCDOT will support local communities and partner organizations in hosting Ciclovía events that transform select streets into car free spaces for walking, biking, rolling, and community activities. By providing technical assistance, coordination, promotion, and other resources, BCDOT can help create opportunities for residents to safely experience active transportation in a fun and welcoming environment. These events encourage safer travel behaviors, strengthen community connections, and build public support for Vision Zero and a more people focused transportation system.

*Councilwoman Odette Ramos walks with Harwood neighborhood residents and representatives from BCDOT to hear traffic safety concerns on April 10, 2025.*

Source: Councilwoman Odette Ramos

# appendix i. stakeholder interview summary



## TRAFFIC SAFETY SURVEY RESULTS

Across hundreds of comments, residents expressed overwhelming frustration with dangerous driving behavior, lack of enforcement, and streets designed primarily for cars rather than people. The most repeated message is that nothing will work without consistent enforcement paired with physical, durable street design changes that force safer behavior.

There is also strong demand for protected bike infrastructure, better pedestrian crossings, and reliable public transit to reduce car dependency. Respondents support scooters and bikes as transportation options, but many residents want clear rules and enforcement to protect pedestrians as well.

### What Respondents See on Baltimore Streets:

#### 1. Lack of Enforcement

The most commonly-reported issue from the traffic safety survey was a problem of enforcement. Respondents reported:

- Rampant red light running, stop sign violations, speeding, illegal turns
- Violations happening in front of police with no response
- Lack of consequences creating a sense of "lawlessness"

Overall, respondents said that **lower speed limits, signs, and education do not work without enforcement.**



**“Nothing will work without consistent enforcement, paired with physical, durable street design changes that force safer behavior.”**

#### 2. Street Design Matters More than Signage

Respondents emphasized that they would prefer to see solid street design changes rather than new signage. The most requested design changes include:

- Narrower lanes and fewer car lanes
- Raised crosswalks and speed humps
- Curb extensions/ daylighting at intersections
- Elimination of multi-lane one way "racetrack" streets
- Conversion of one ways to two way streets
- Roundabouts and traffic circles
- Permanent materials (concrete, steel, planters) instead of paint or flex posts

There is a general preference for **physical barriers over "suggestions", such as paint and signs.**

#### 3. Bike Infrastructure is Important

Across the public comments, there is broad support for biking—but only if it is actually safe. The main points that respondents made clear:

- Painted bike lanes are widely viewed as ineffective
- Bike lanes must be protected, continuous, and maintained
- Barriers should be concrete/steel, not plastic
- Networks matter more than isolated segments
- East west connections are especially lacking

The general consensus is that **when bicycle infrastructure fails, cyclists end up either in vehicular traffic or on sidewalks, increasing risk for everyone.**

#### 4. Pedestrians Feel Unsafe

Respondents reported that, as pedestrians, they consistently feel endangered navigating Baltimore streets.

The top requests for pedestrian infrastructure include:

- Longer walk times and countdown signals
- Leading pedestrian intervals (LPIs)
- Raised crosswalks
- No right turns on red (citywide)
- Pedestrian scrambles (all walk phases)
- Better lighting
- Clearer, more visible crosswalk markings
- Removal of parking near intersections to restore sightlines

Overall, respondents would like to see improvements to pedestrian safety **so that they can freely traverse the City without a vehicle and not feel afraid for their lives.**

#### 5. Public Transit is a Safety Strategy

Many respondents view public transit as an essential component to reducing traffic violence.

Desired improvements include:

- More frequent and reliable buses
- Expanded light rail and metro
- Dedicated bus lanes with enforcement
- Bus Rapid Transit
- Night and weekend service
- Cleaner, safer transit stations
- Transit signal priority

Repeated sentiment:

**Reducing car dependence is essential for safety.**

#### 6. Scooters, E-Bikes, and Conflicts with Other Modes

Respondents support micromobility in principle, but they believe the use of scooters and e-bikes is poorly managed in practice.

Concerns include:

- Scooters riding on sidewalks at high speed
- Bikes and scooters ignoring traffic signals
- Unclear rules about where scooters belong

Common solutions proposed:

- Protected micromobility lanes
- Clear regulations and education
- Enforcement focused on dangerous behavior, not mode choice
- Infrastructure that keeps scooters out of sidewalks

#### 7. Road & Signal Maintenance

Quality of Baltimore street infrastructure repeatedly appears as both a safety and trust issue.

Respondents cited issues such as:

- Potholes, cracked pavement, debris in bike lanes
- Faded crosswalks and lane markings
- Broken pedestrian buttons
- Poor or outdated signal timing

They say that poorly maintained streets:

- Encourage unpredictable driving
- Force cyclists into traffic
- Discourage walking and biking altogether

#### 8. Reduce Car Dominance

Many respondents explicitly want the City to prioritize people over vehicles.

Ideas include:

- Car-free or car 'light' streets
- Congestion pricing
- Reduced parking supply
- Higher fees for larger vehicles
- Pedestrianized districts
- Outdoor public space replacing traffic lanes

#### Points of Tension Among Respondents

While respondents generally agree on most aspects of what would improve street safety, there were a few points of conflict regarding how to address traffic concerns.

These include:

- **Speed Cameras vs. Police Stops:** Some respondents prefer automated enforcement while others distrust cameras and want in-person ticketing.
- **Bike Lanes:** While these are widely supported, some neighborhood resistance exists where lanes were poorly implemented.
- **Enforcement vs. Over-Policing:** There is a strong desire for traffic enforcement, but many respondents would like this to be paired with accountability, de-escalation, and unarmed traffic units.

Enforcement + Physical Design +  
Transit Investment = Safer Streets

## What Respondents Think About Enforcement:

### 1. Enforcement Must Be Certain and Consequential

Many respondents emphasize that drivers do not believe enforcement is real.

Respondents report that they have frequently seen drivers:

- Running red lights and stop signs with impunity
- Speeding far above posted limits
- Blocking crosswalks, bike lanes, and bus stops
- Illegal turns, phone use, and aggressive maneuvers occurring in plain view of police

They propose the following enforcement tools:

- Red light, speed, stop sign, bike lane, and bus lane cameras
- Automated enforcement mounted on buses or municipal vehicles
- Dedicated traffic enforcement (many prefer civilian or unarmed units)
- License plate readers to identify unregistered, uninsured, or repeat offenders
- Immediate towing/impoundment for parking in crosswalks, bike lanes, bus lanes



### 2. Escalating Penalties for Repeat Offenders

There is strong consensus that fines alone do not work, especially for chronic offenders.

Common escalation ideas:

- More license points per violation
- Temporary or permanent license suspension after multiple offenses
- Mandatory speed governors for repeat speeders
- Vehicle impoundment regardless of ability to pay
- Mandatory re testing or driver education after violations
- Jail time for severe or repeat reckless driving and DUI

Many respondents stress:

**Driving should be treated as a privilege, not a right.**

### 3. Street Design Should Do Most of the Enforcement

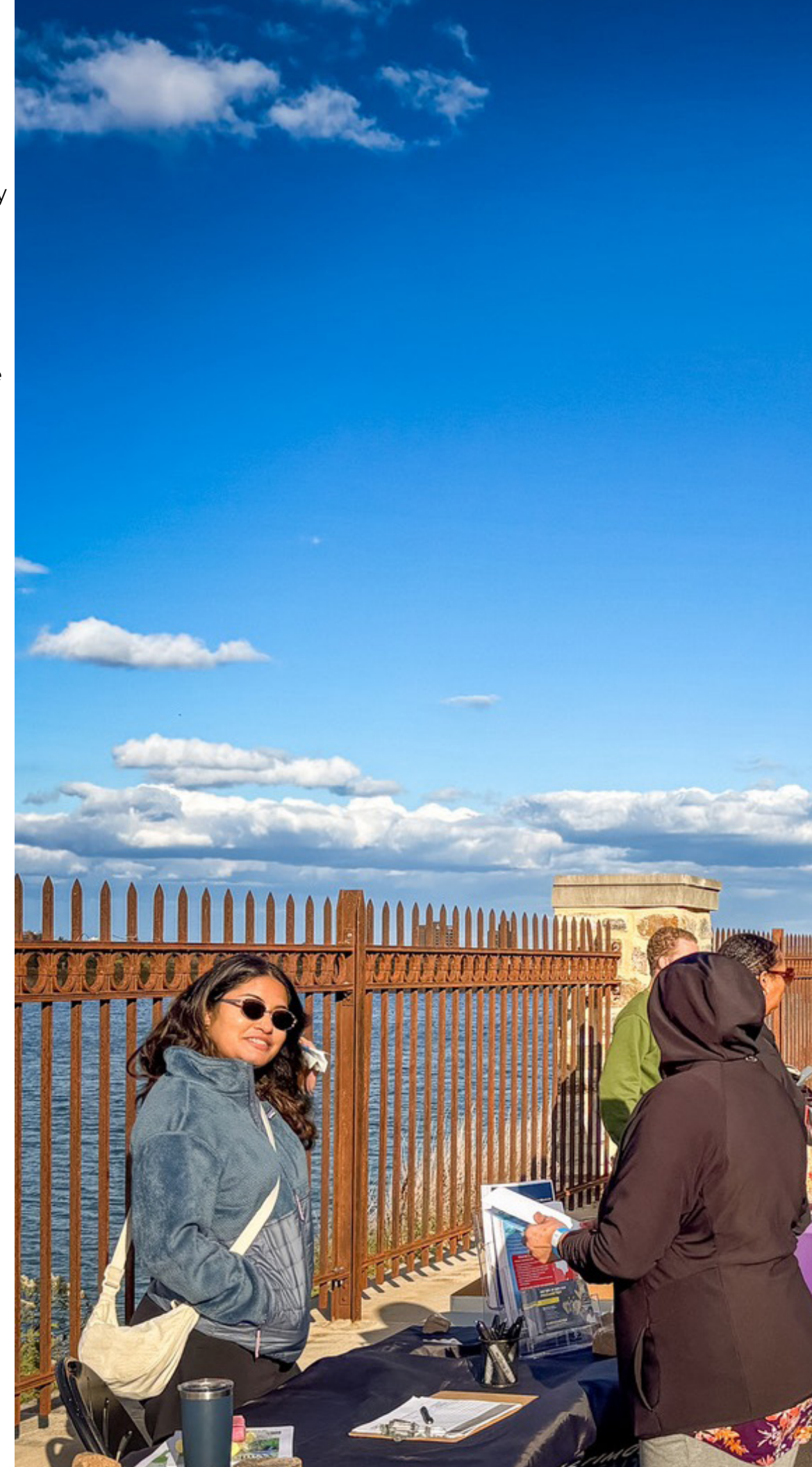
A major through line among respondents' feedback is that engineering beats policing.

Widely supported design interventions:

- Narrower lanes and fewer travel lanes
- Speed humps, chicanes, curb extensions, planters
- Raised crosswalks and pedestrian priority intersections
- Cobblestone or textured surfaces to reduce speed
- Converting one way streets to two way
- Removing car lanes in favor of protected bike lanes, sidewalks, and bus lanes

Repeated sentiment:

**If a road feels safe to speed on, people will speed—regardless of signs.**





Druid Hill Park

#### 4. Targeted, Data Driven Enforcement

Rather than blanket enforcement, many want focused action where harm is highest.

Examples of areas for targeted enforcement include:

- High-pedestrian areas (schools, parks, transit hubs)
- Known high crash corridors
- Event zones and construction zones
- "Super speeders" responsible for disproportionate harm

Respondents note that temporary targeted enforcement works, but it is not consistent.

#### 5. Out of State, Fake, and Obscured Tags

This is one of the strongest recurring grievances.

Concerns include:

- Drivers with Virginia or fake tags evading tickets
- Obscured license plates defeating camera enforcement
- Uninsured vehicles contributing to hit and runs

Suggested solutions:

- Aggressive plate enforcement and impoundment
- Closing loopholes that prevent camera ticket collection
- Inter state coordination
- Penalizing repeat violators regardless of residence

#### 6. Equity and Fairness Concerns

There is a clear tension around enforcement methods, with many respondents expressing concern that enforcement could unfairly impact low-income residents.

Respondents would like:

- Income-scaled fines so wealthy drivers are not insulated
- Consequences based on behavior (license/vehicle loss), not just money
- Civilian or DOT based enforcement instead of armed police
- Avoiding systems that disproportionately harm low income residents

A common compromise view:

**Automated enforcement + street design + serious penalties for repeat offenders strikes the best balance.**

#### 7. Education and Messaging as Support, Not a Substitute

Education is seen as helpful but insufficient alone.

Suggested complements:

- Flyers issued with tickets explaining harm
- Public safety campaigns focused on children, elders, and pedestrians
- Education around pedestrian right of way and emergency vehicles
- Clearer markings, signals, and lane paint to reduce "accidental" violations

Respondents generally say:

**Make it physically difficult to drive dangerously, and make the consequences unavoidable for those who still do.**

# appendix ii. **traffic safety countermeasure toolbox**



The following represents a sample of proven safety countermeasures that may be applicable to Baltimore streets.

# VISION ZERO | TRAFFIC SAFETY TOOLBOX

**An island cut-through intersection that blocks cut-through traffic, lowering car volumes while still allowing walking and bicycling**

Improvement Type **+**

Timeframe

Cost \$ \$ \$

**Access Control/Diverter**

**Flex posts or similar devices at intersections that slow turning speeds and guide drivers into proper lanes**

Improvement Type **+**

Timeframe

Cost \$ \$ \$

**Hardened Centerlines**

**Removing parking near intersections for visibility, using barriers like posts, wheel stops, or planters to keep the zone clear and improve visibility; street murals can be incorporated to improve placemaking**

Improvement Type **+**

Timeframe

Cost \$ \$ \$

**Daylighting**

**Reduces speeds and the number of conflict points at intersections while maintaining efficient traffic operations**

Improvement Type **+**

Timeframe

Cost \$ \$ \$

**Roundabout**

**Legend**

Improvement Type: Bicycle | Crossings & Signals | Intersection | Pedestrian | Speed | Transit

\* Opacity indicates efficacy (Low to High)


Timeframe


Cost \$ \$ \$



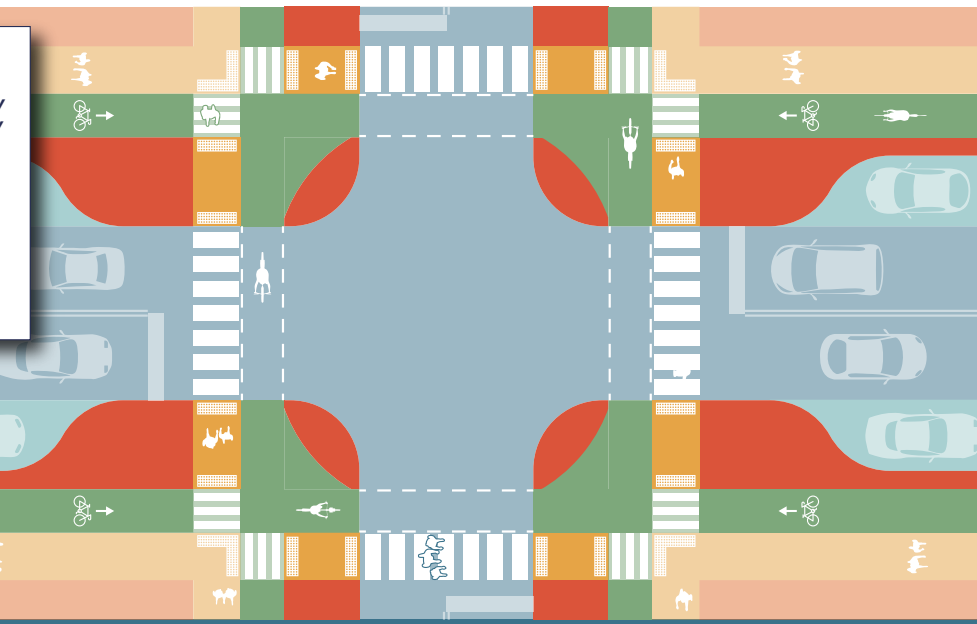
# VISION ZERO | TRAFFIC SAFETY TOOLBOX

**Protected intersections slow turns and reduce conflicts by offsetting bikeways for visibility and giving cyclists right-of-way**

Improvement Type 

Timeframe 

Cost \$ \$ \$



**Protected Intersection**

**Separates right turns from pedestrian signals to reduce conflicts**

Improvement Type 


Timeframe 


Cost \$ \$ \$



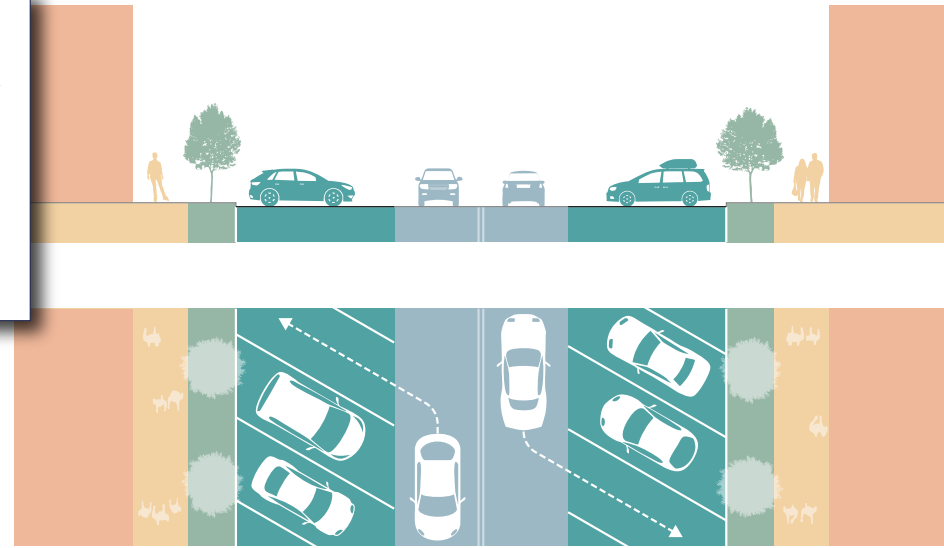
**No Turn on Red**

**A parking method where vehicles back into angled parking spaces rather than pulling forward (also known as back-in angle parking)**

Improvement Type 


Timeframe 


Cost \$ \$ \$



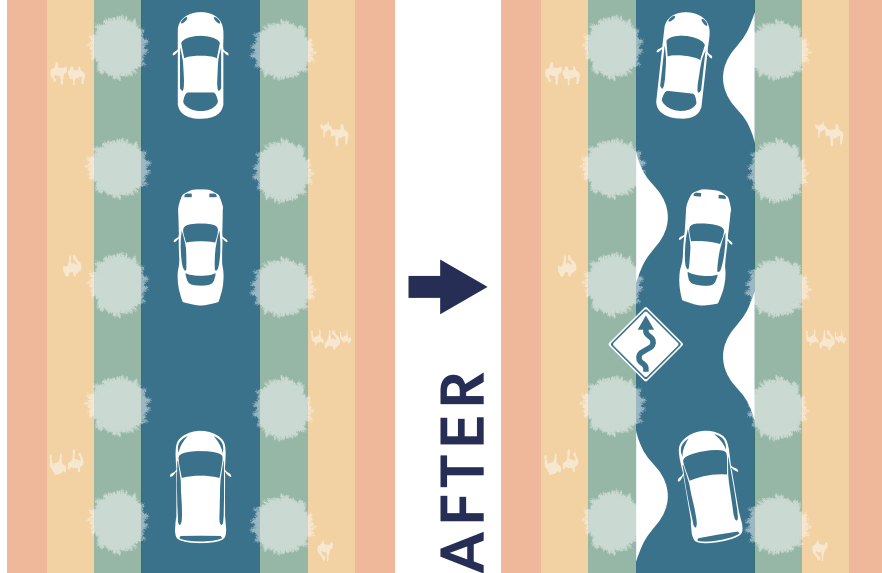
**Reverse Angle Parking**

**A series of curb extensions that create curves in the road, slowing traffic through horizontal deflection**

Improvement Type 

Timeframe 

Cost \$ \$ \$



**BEFORE** **AFTER**

**Chicane**

**Legend**

Improvement Type:  **Bicycle** |  **Crossings & Signals** |  **Intersection** |  **Pedestrian** |  **Speed** |  **Transit**

\* Opacity indicates efficacy (Low to High)


Timeframe   


Cost \$ \$ \$



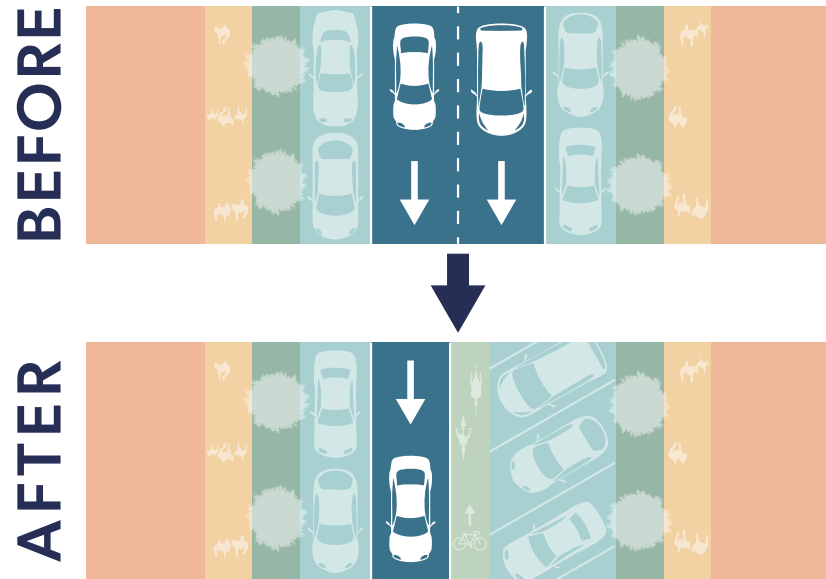
# VISION ZERO | TRAFFIC SAFETY TOOLBOX

Converting a multi-lane one-way street to a single lane one-way street reduces vehicular racing and weaving and creates space for other roadway users

Improvement Type 


Timeframe 


Cost \$ \$ \$



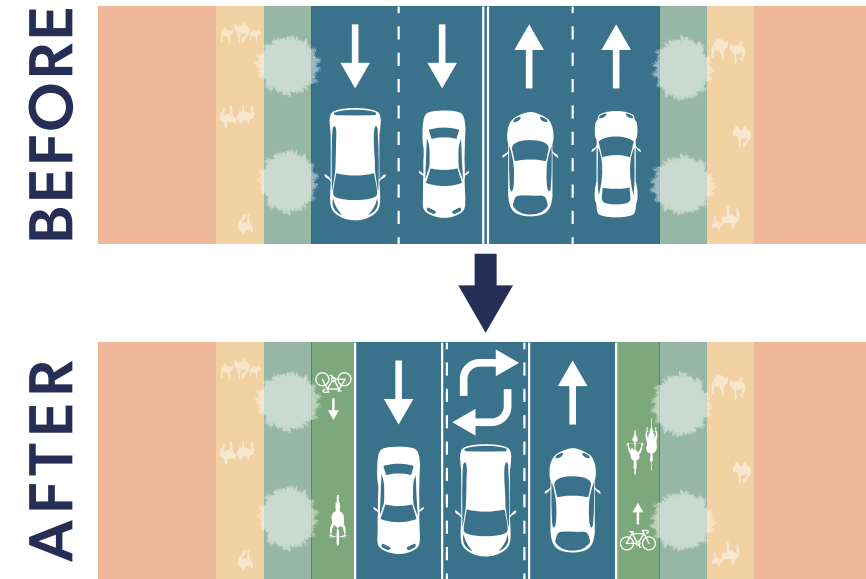
**Two-Lane One-Way to One-Lane One-Way**

Convert one through lane each way into a reversible left-turn lane at intersections

Improvement Type 


Timeframe 


Cost \$ \$ \$



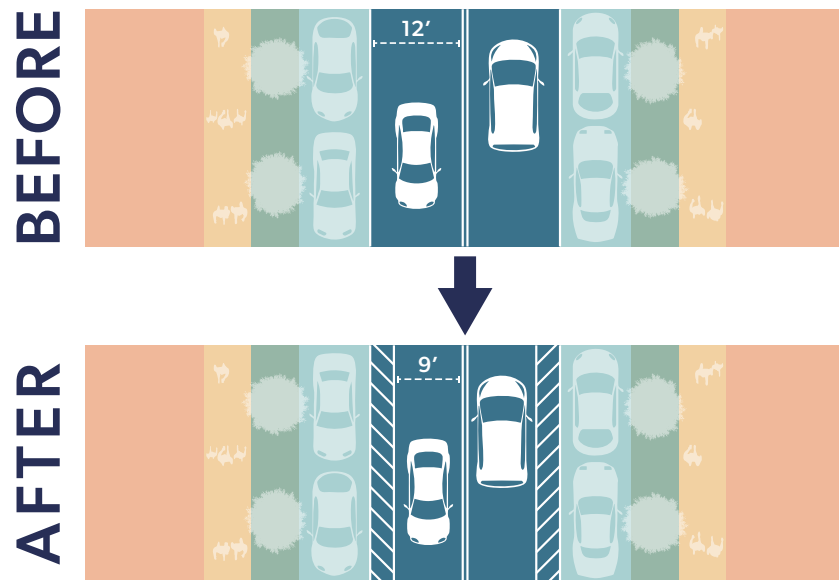
**Through Lane Reduction**

Decreasing the width of travel lanes for vehicles to reduce speeds and force drivers to give additional attention to other road users

Improvement Type 


Timeframe 


Cost \$ \$ \$



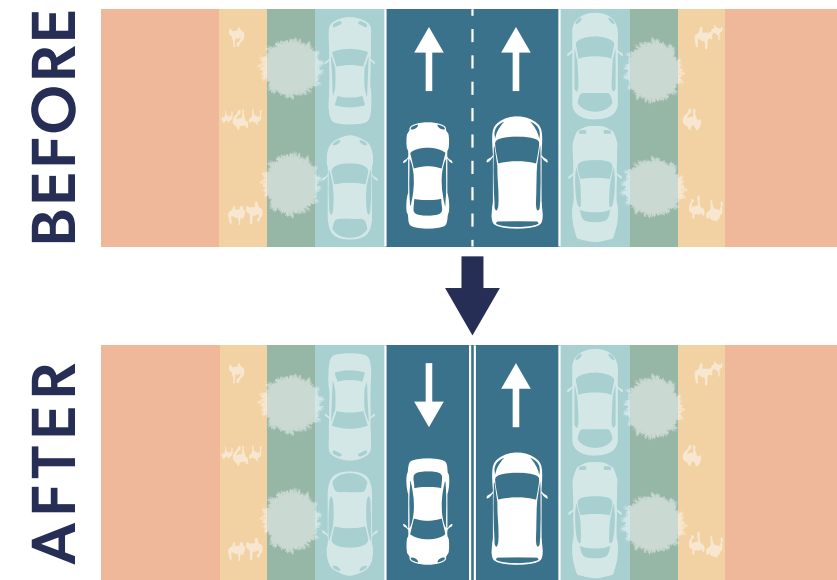
**Lane Narrowing**

Converting a multi-lane one-way street to a two-way street (one lane per travel direction for two directions, etc.)

Improvement Type 

Timeframe 

Cost \$ \$ \$



**One-Way to Two-Way Street Conversion**

**Legend**

Improvement Type:

- Bicycle 
- Crossings & Signals 
- Intersection 
- Pedestrian 
- Speed 
- Transit 

\* Opacity indicates efficacy (Low to High)


Timeframe   


Cost \$ \$ \$



# VISION ZERO | TRAFFIC SAFETY TOOLBOX

A concrete or modular median that provides a safe place for people walking to pause between traffic directions

Improvement Type 

Timeframe 


Cost \$ \$ \$




**Pedestrian Refuge Islands**

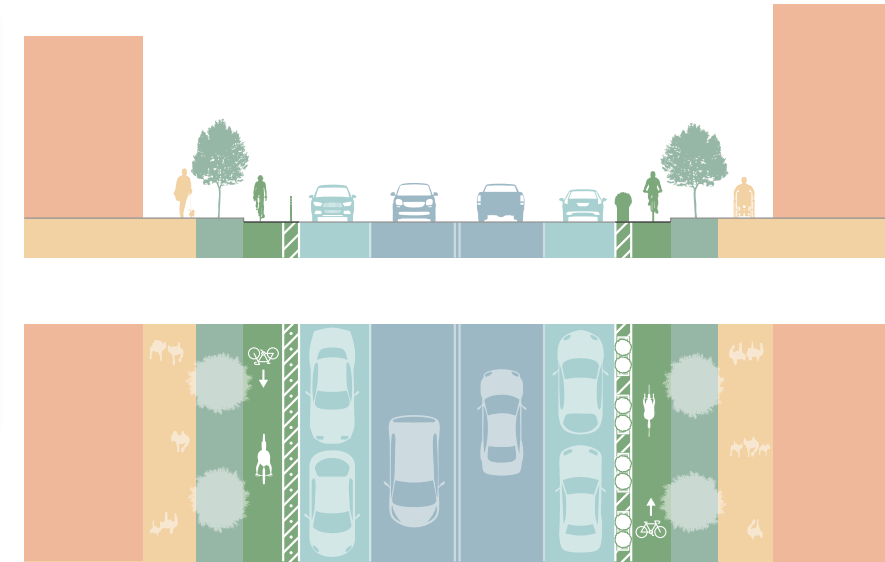
Using vertical elements (flex posts, bollards, planters) to delineate bicycle lanes and protect users

Even flex post-protected bike lanes, with plastic posts that separate bike lanes from traffic, are proven to improve safety

Improvement Type 


Timeframe 


Cost \$ \$ \$



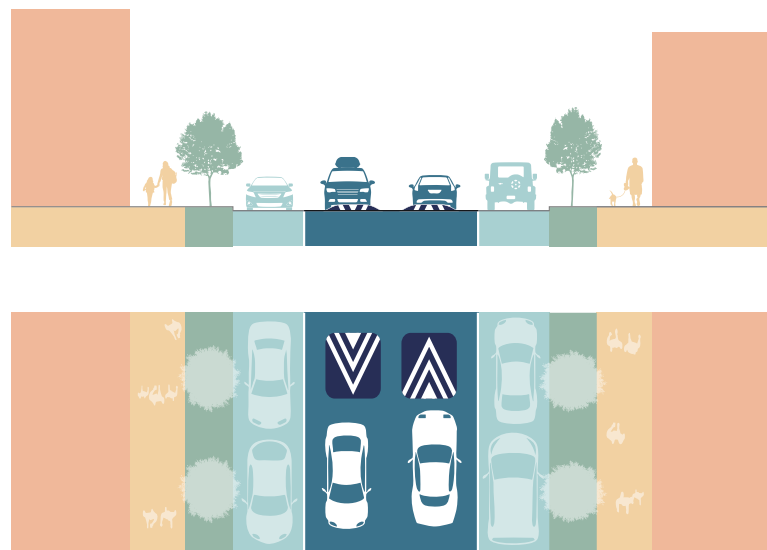
**Protected Bike Lane**

Adding raised speed humps reduces vehicular speed and improves driver awareness

Improvement Type 


Timeframe 


Cost \$ \$ \$



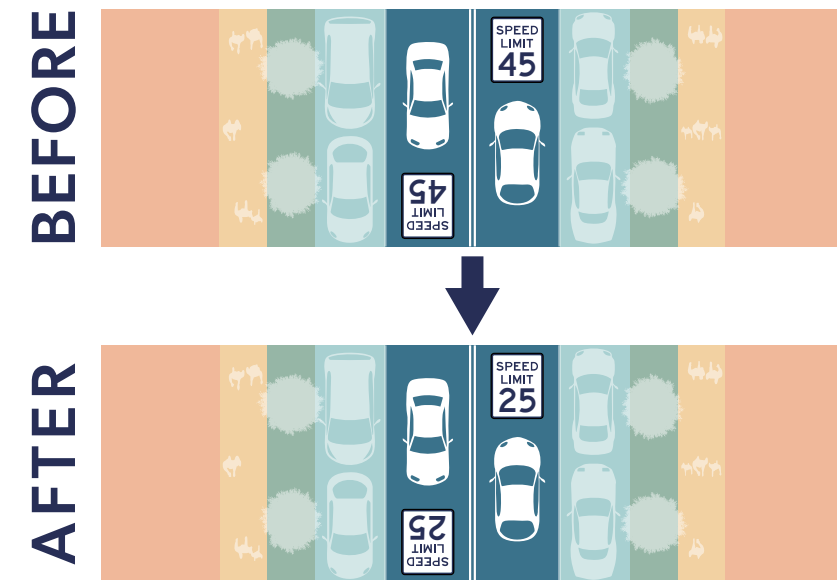
**Speed Humps**

Speed limit adjustments to better align with land use and safety contexts

Improvement Type 

Timeframe 

Cost \$ \$ \$



**Speed Limit Reduction**

**Legend**

Improvement Type:  Bicycle |  Crossings & Signals |  Intersection |  Pedestrian |  Speed |  Transit

\* Opacity indicates efficacy (Low to High)

Timeframe    | Cost \$ \$ \$



# VISION ZERO | TRAFFIC SAFETY TOOLBOX

Decreasing the radius of a corner and reducing pedestrian crossing distances by adding curb extensions

*"Asphalt art projects were associated with a 50% decrease in crashes involving pedestrians and other vulnerable road users and a 27% increase in drivers yielding to pedestrians."*  
(Bloomberg Philanthropies Asphalt Art Safety Study, 2022)

Improvement Type

Timeframe

Cost \$ \$ \$

*\*Optional: Painted Bump-outs*  
 Ex. Johnston Square

**Placemaking**

Increasing the amount of tree canopy coverage on a roadway

Improvement Type

Timeframe

Cost \$ \$ \$

**Tree Canopy**

Lighting with a height of 9' to 12' aimed to improve visibility of and for pedestrians

Improvement Type

Timeframe

Cost \$ \$ \$

**Pedestrian-Scale Lighting**

A bus boarding island is a raised area for transit riders, allowing buses to pick up without curb stops

Improvement Type

Timeframe

Cost \$ \$ \$

**Bus Boarding Island**

**Legend**

Improvement Type:		Crossings & Signals		Intersection		Pedestrian		Speed		Transit		* Opacity indicates efficacy (Low to High)	
												Timeframe	Cost

DEPARTMENT OF TRANSPORTATION  
BALTIMORE CITY

# appendix iii. corridor summaries



The following represents safety audit results and safety improvement recommendations for ten sample corridors within the HIN.

# High-Injury Network Segment Review

## Curtis Ave & Pennington Ave - E Patapsco Ave to Birch St

**SPEED LIMIT**  
30

**Corridor Length**  
0.9 miles

**Intersections**  
4 signalized  
25 unsignalized

**6.5K vehicles per day on average**

**Traffic Calming:**  
None

There is **no sidewalk** between Patapsco Ave and Spruce St.



Most intersections are **missing crosswalks** or have faded crosswalks.



**Bus stop** served by CityLink Silver near the Curtis Bay Rec Center.



**Sidewalk ends** south of Benhill St.



There was a crash resulting in a **motorist fatality** at the intersection of Birch St in 2021.

**Fallen School Zone sign.** There are "School Zone - Speed Limit Photo Enforced" signs in place.



**Long driveway apron** along the pedestrian path.



**Missing sidewalk segment** on the east side.

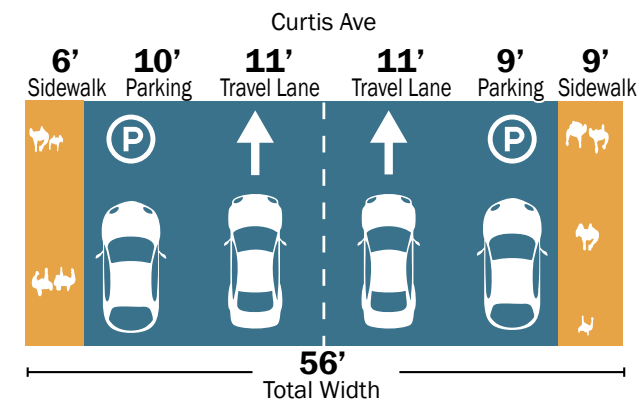
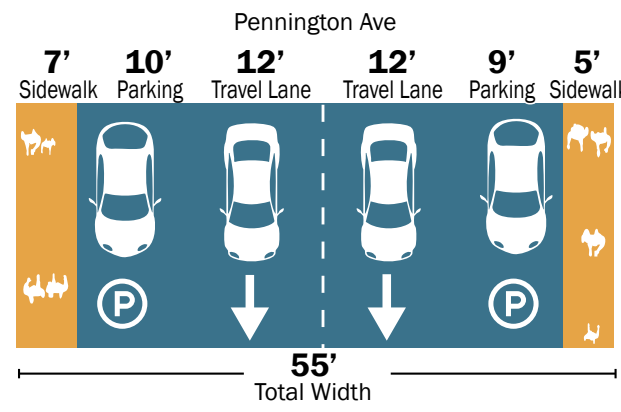


### Crash History 2019 - 2023

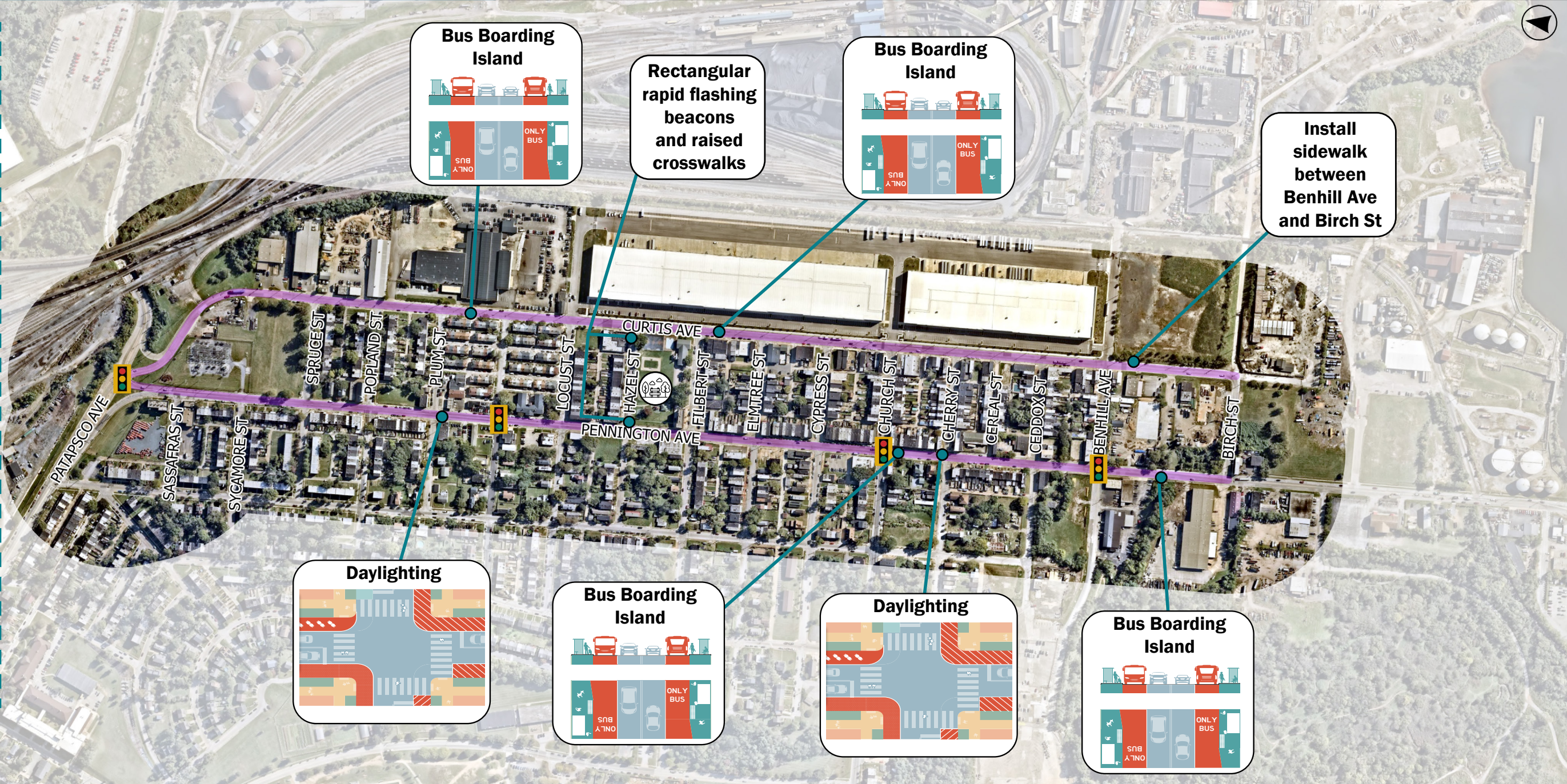
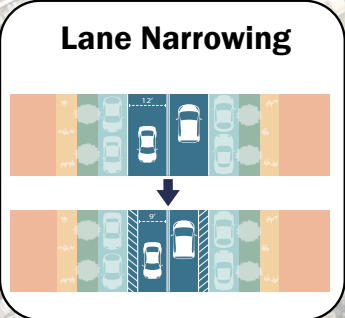
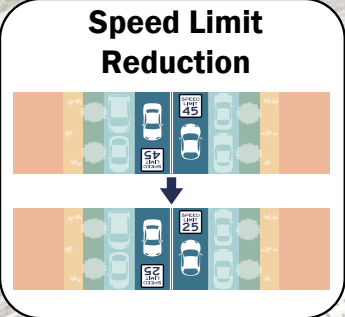
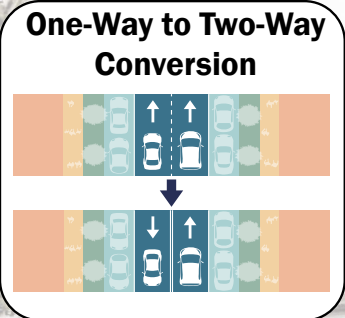
Fatal Crashes	Injury Crashes
<b>3 total</b>	<b>58 total</b>
<b>1 motorist</b>	<b>53 motorists</b>
<b>2 pedestrian</b>	<b>2 pedestrians</b>
<b>0 bicyclists</b>	<b>3 bicyclists</b>

### Other Observations

- Land use is predominantly residential, except for the industrial uses on the east side of Curtis Ave.
- One pedestrian was killed in a crash near Spruce St in 2023.
- There are few street trees and vegetated buffers separating sidewalks from the road.
- Drivers can travel at high speeds due to the wide lanes, one-way traffic, low traffic volumes, and lack of traffic control devices (stop signs or traffic signals).
- In addition to the Curtis Bay Recreation Center on the corridor, there are several schools and parks within walking distance of the corridor to the west.

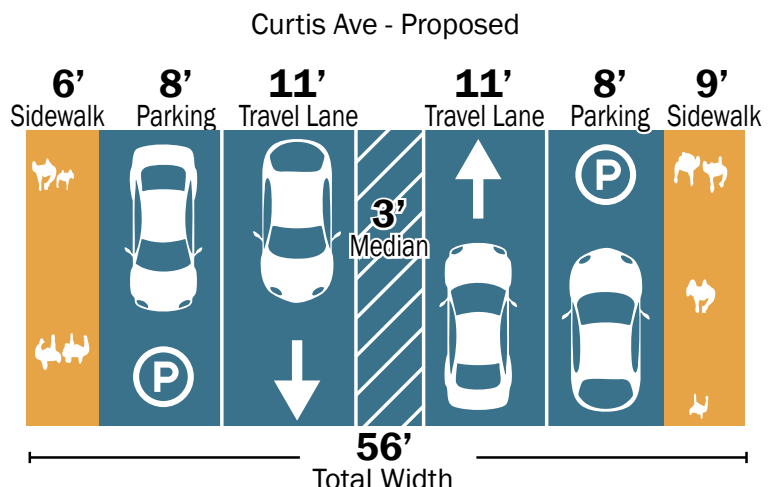
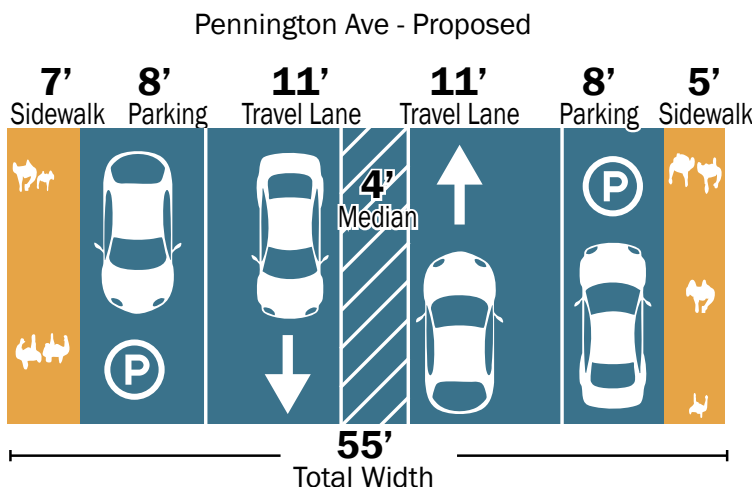


#### Corridor-Wide Improvements



#### General Improvements

- Restripe faded crosswalks and install missing crosswalks where missing.
- Add sidewalks where they are missing and repair segments of sidewalk that are not ADA compliant.
- Add "SCHOOL" pavement markings.
- Install School Zone Pedestrian Crossing signs.
- Stripe parking boxes to visually narrow the street
- "Right size" lanes (11' allows for freight traffic/wider vehicles) and use additional space as striped medians
- Install pedestrian refuge islands in medians if they are made permanent with concrete
- Lower speed limits from 30 mph to 25 mph



# High-Injury Network Segment Review

## E North Ave - Greenmount Ave to Belair Rd

SPEED LIMIT 30

Corridor Length  
1.4 miles

Intersections  
10 signalized  
16 unsignalized

20K vehicles per day on average

Traffic Calming: None



**Vehicles blocking crosswalk** on Greenmount Ave.



**Nonoperational pedestrian signal** at Harford Ave intersection.

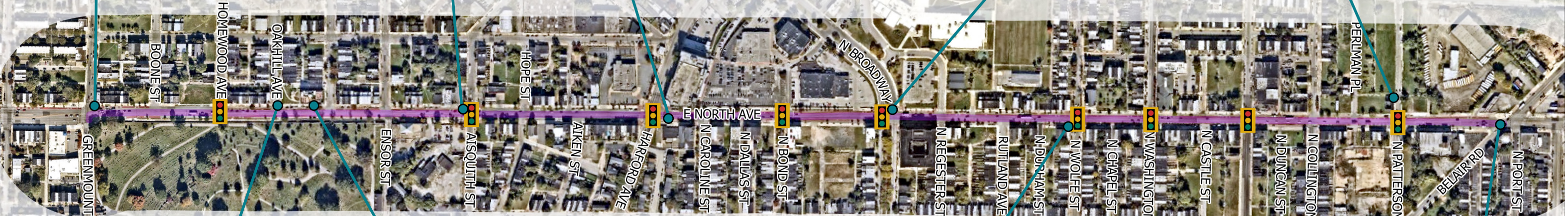


**Long crossing distances** at N Broadway intersection.



**Missing signage** on N Patterson Park Ave.

**Bicyclist killed in a crash** near Aisquith St in 2020.



**Missing stop bar** at intersection of E North Ave and Oakhill Ave.

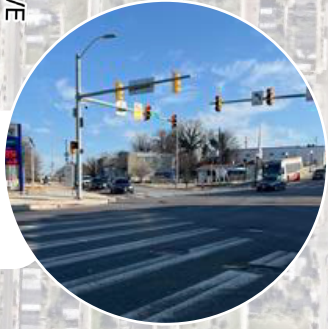


**School zone sign** east of Oakhill Ave. Cecil Elementary is several blocks north of the corridor.



**Vehicles using bus lane** for through movement at N Wolfe St.

**Vehicles stopping in crosswalk** on Belair Rd.

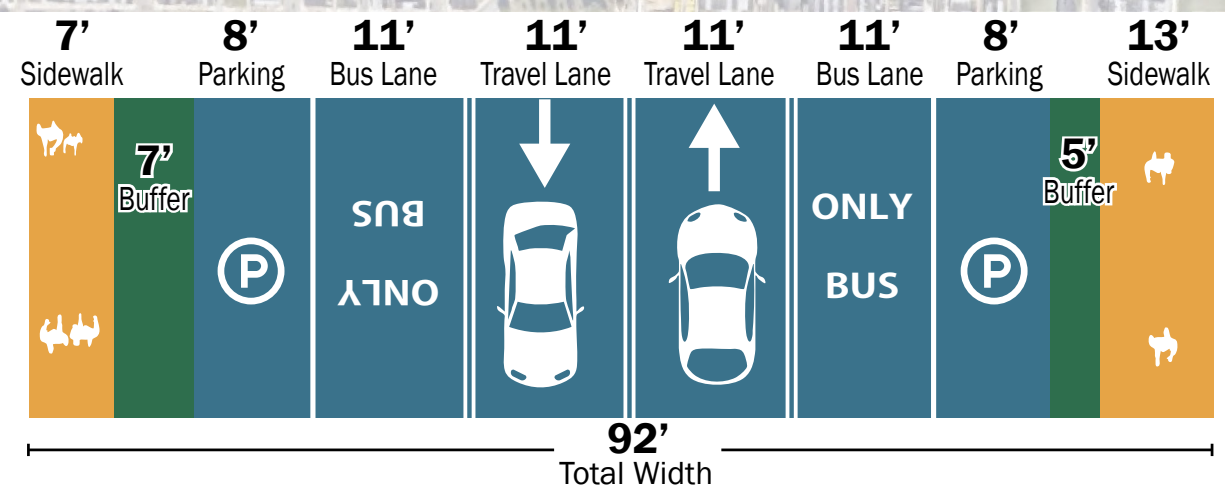


### Crash History 2019 - 2023

Fatal Crashes	Injury Crashes
3 total	301 total
0 motorist	231 motorist
2 pedestrians	63 pedestrians
1 bicyclists	7 bicyclists

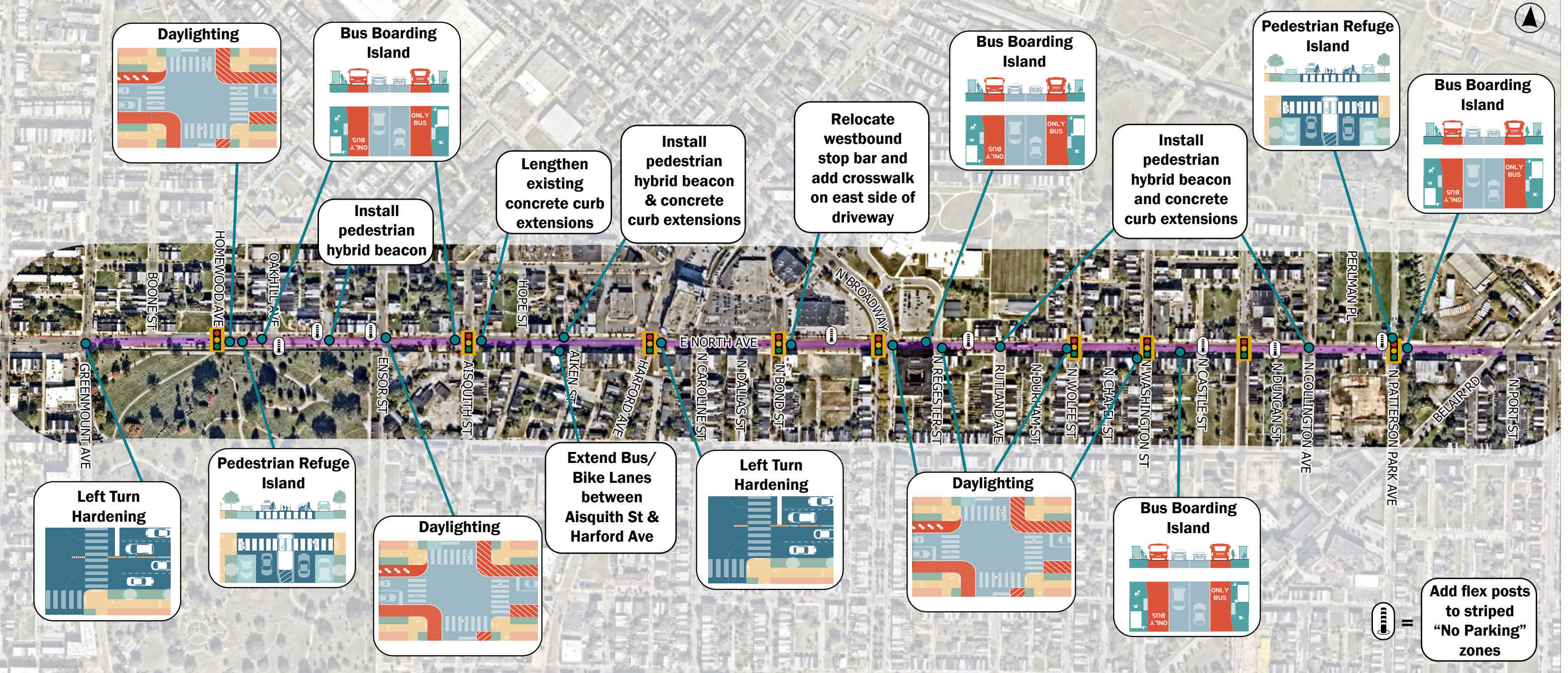
### Other Observations

- Compliance with the bus lanes is generally good, but there were several instances of drivers using the bus lanes to “jump the queue” at intersections.
- Some blocks have good street tree coverage, but it is inconsistent throughout the corridor.
- The cross section is variable, as the bus lanes transition from curb running to offset (travelling west to east).
- Crossing distances are generally long, though some are shortened by concrete curb extensions.



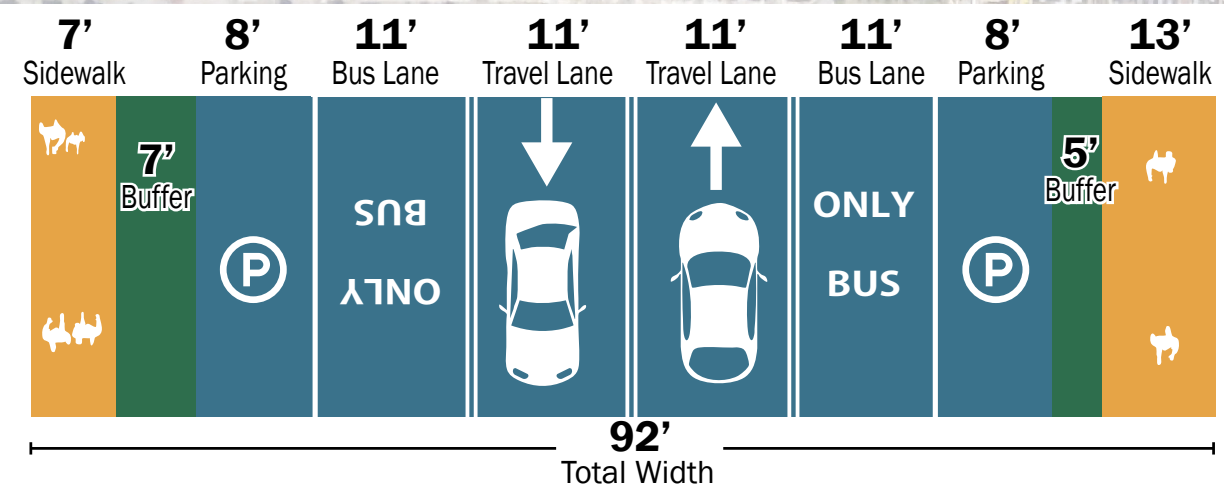
# High-Injury Network Segment Review E North Ave - Greenmount Ave to Belair Rd

## Proposed Countermeasures



### General Improvements

- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Repair broken pedestrian signals.
- Upgrade curb ramps for ADA compliance.
- Assess feasibility of reducing speed limit from 30 mph to 25 mph.
- Add flex posts to striped "No Parking" zones.
- Reduce distances between pedestrian crossings to 400' or less wherever possible.
- Update streetscape with street trees and pedestrian scale lighting where missing.



\*No changes proposed to cross section

# High-Injury Network Segment Review

## Greenmount Ave - E North Ave to E 29th St

**SPEED LIMIT**  
25

**Corridor Length**  
0.8 miles

**Intersections**  
5 signalized  
12 unsignalized

14.5K vehicles per day on average

**Traffic Calming:**  
Curb Extensions



**Noncompliant ADA curb ramps** observed on the east side of Waverly Towers.

**Faded crosswalks** seen at the intersection of E 25th St and Greenmount Ave.



**Damaged flex posts** at quick-build curb extensions at the intersection with E 24th St.



**Daylighting** on E 20th St is damaged, making bike crossing **increasingly dangerous**.



**Noncompliant sidewalks** west side south of E 27th St.



Missing **stop bar** at the intersection of E Lorraine Ave.

Faded crosswalk across E 24th St, which connects to Mund Park.



**Faded/missing crosswalks** on E 22nd St.

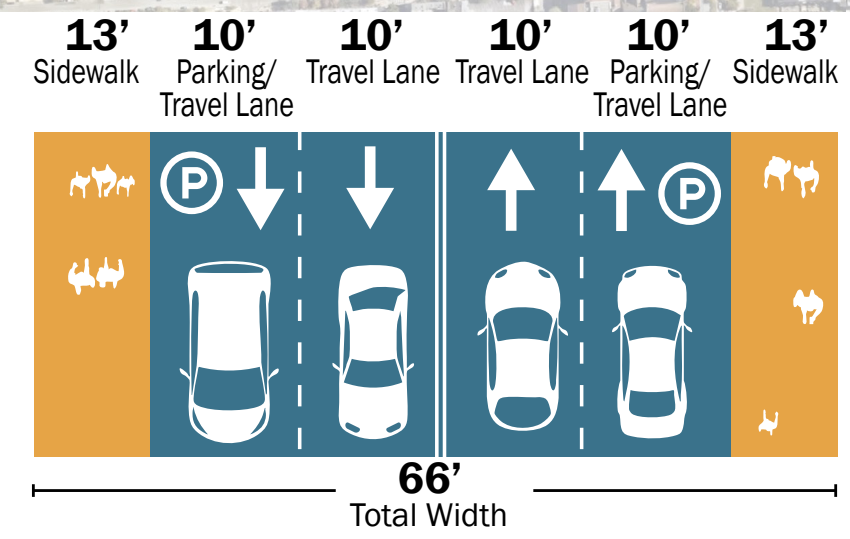
### Crash History 2019 - 2023

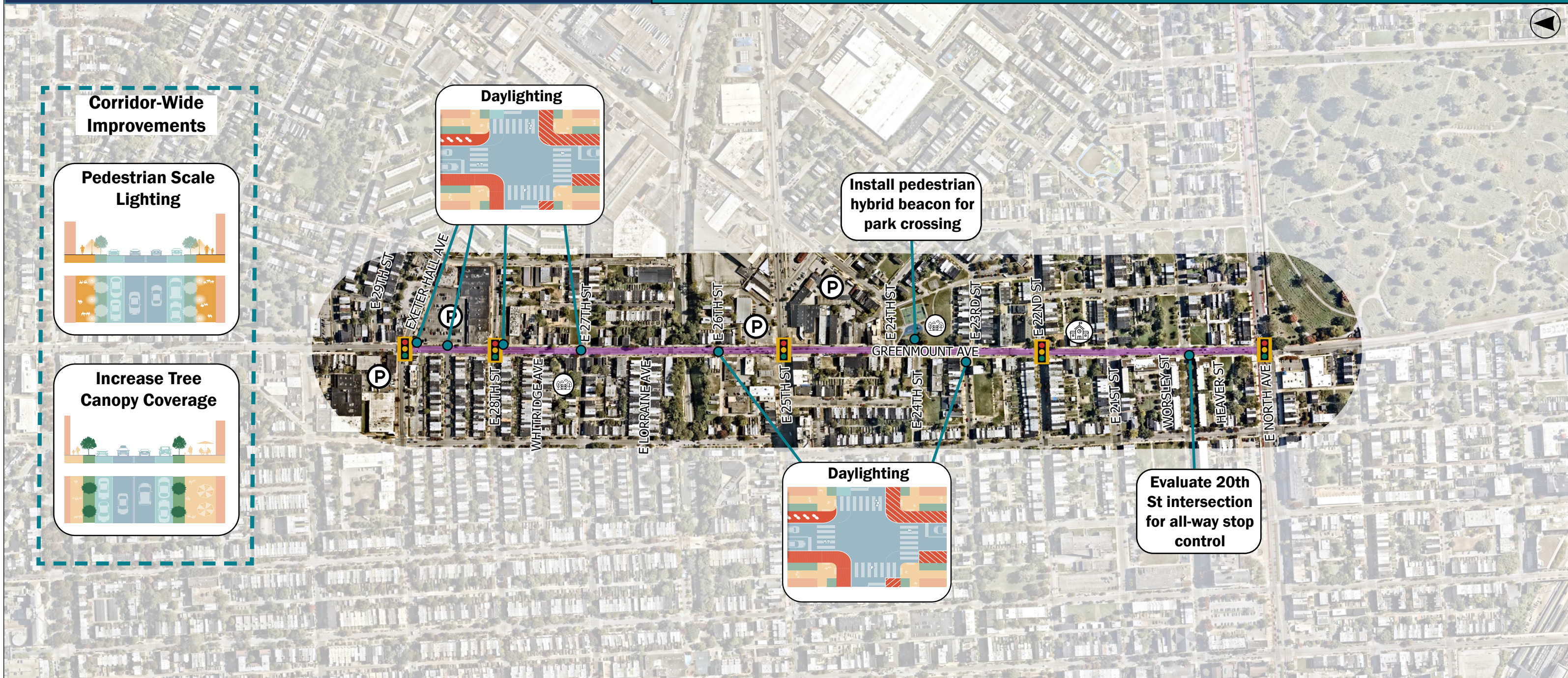
Fatal Crashes	Injury Crashes
1 total	153 total
1 motorist	121 motorist
0 pedestrians	28 pedestrians
0 bicyclists	4 bicyclists

### Other Observations

- **CityLink Red** (the highest ridership MDOT MTA bus route) travels the corridor.
- Pavement conditions are poor throughout the corridor.
- North Ave is relatively wide, which leads to **long crossing distance** for pedestrians.
- **Many pavement markings need to be repainted.**
- **Greenmount Recreation Center** and **Mund Park** near E 24th St are pedestrian trip generators.
- The intersection of Greenmount Ave & E 25th is a hot spot for crashes resulting in injuries to motorists, pedestrians, and bicyclists.
- Parking is NOT allowed 4 PM - 6 PM on weekdays.

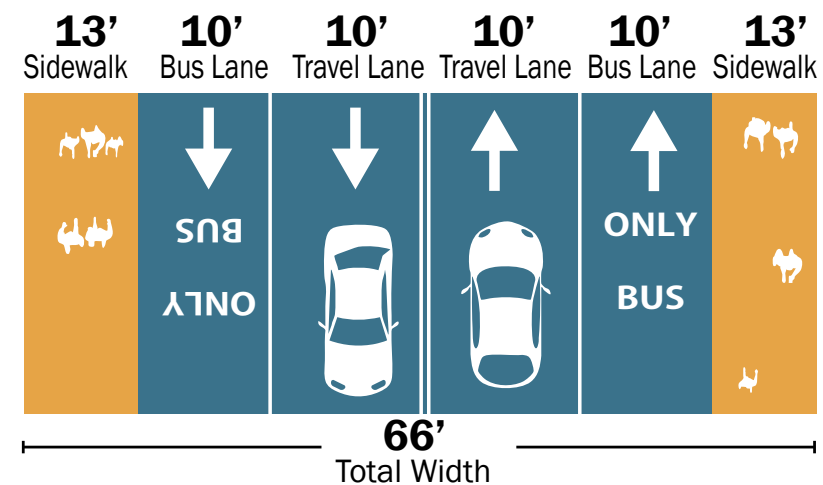
**DRAFT**





**General Improvements**

- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Upgrade curb ramps for ADA compliance.
- Update streetscape with street trees and pedestrian scale lighting where missing.
- Convert curb lanes to bus lanes (eventually connecting to York Rd bus lanes).



# High-Injury Network Segment Review Monroe St - W Baltimore St to Wicomico St

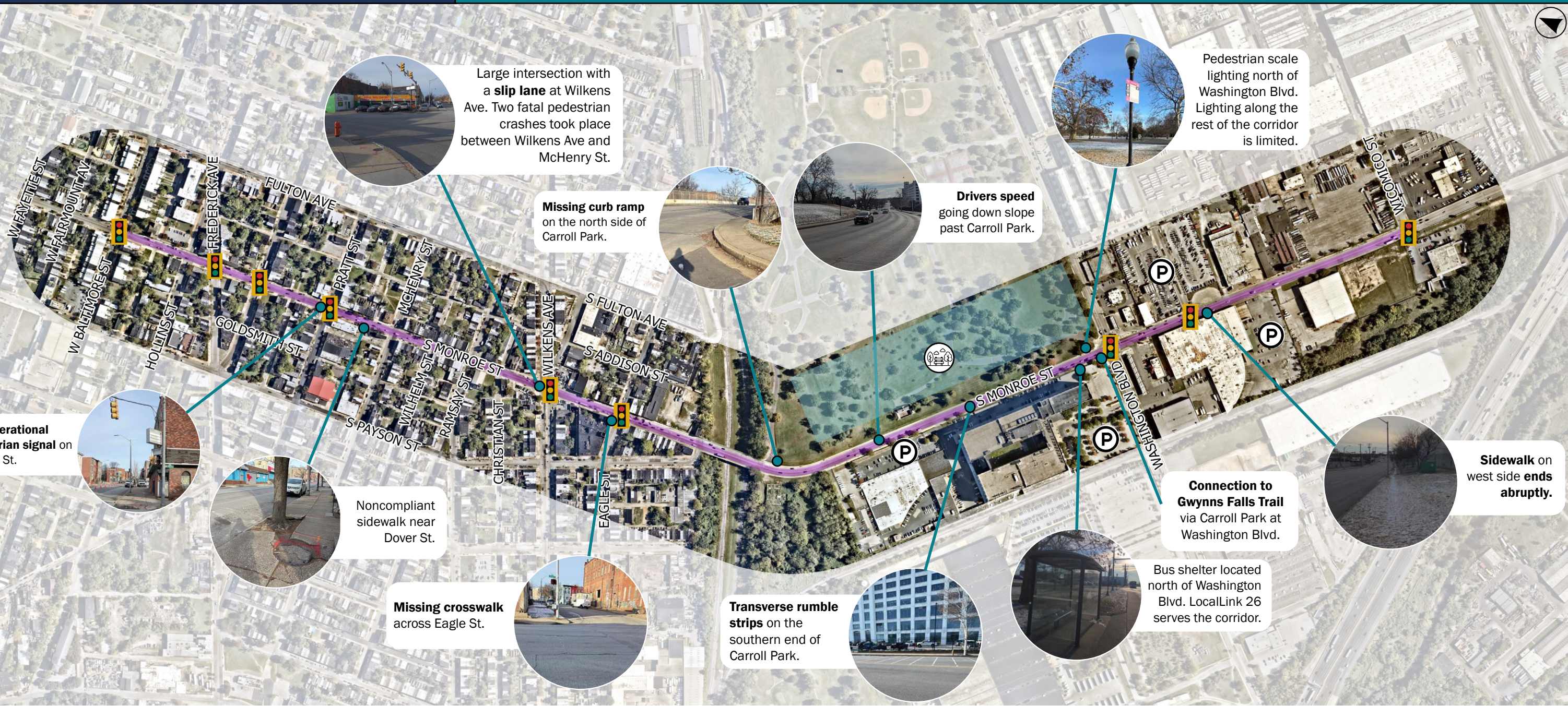
**SPEED LIMIT**  
30

**Corridor Length**  
1.30 miles

**Intersections**  
9 signalized  
12 unsignalized

20K vehicles per day on average

**Traffic Calming:**  
Transverse Rumble Strips

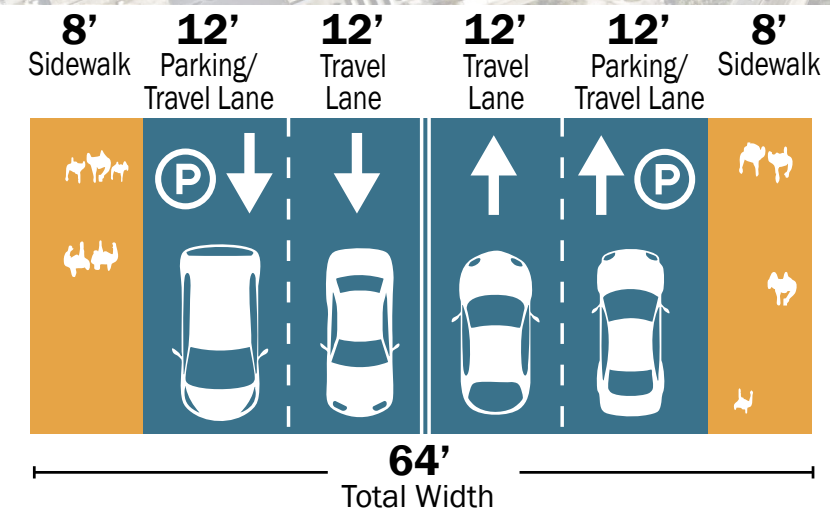


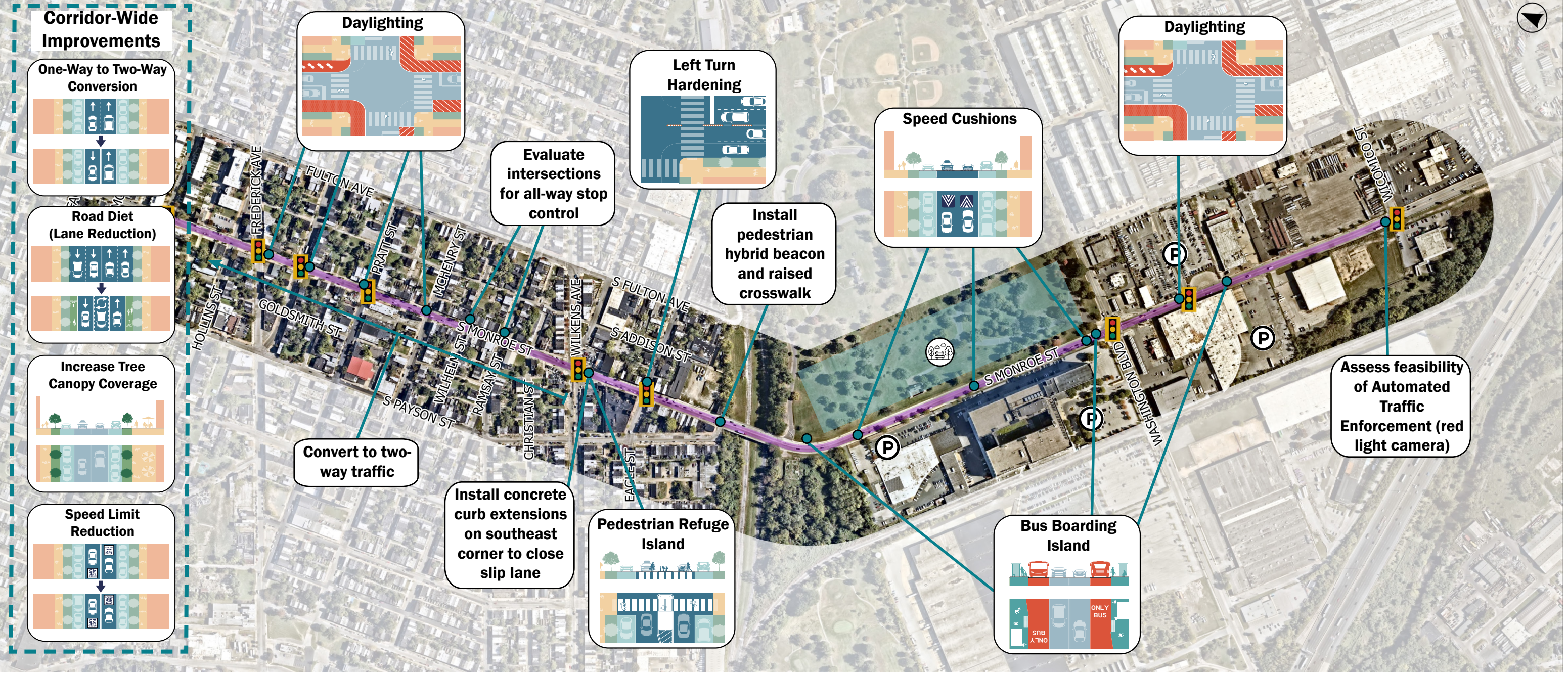
## Crash History 2019 - 2023

Fatal Crashes	Injury Crashes
5 total	177 total
3 motorists	153 motorists
2 pedestrians	23 pedestrians
0 bicyclists	1 bicyclists

### Other Observations

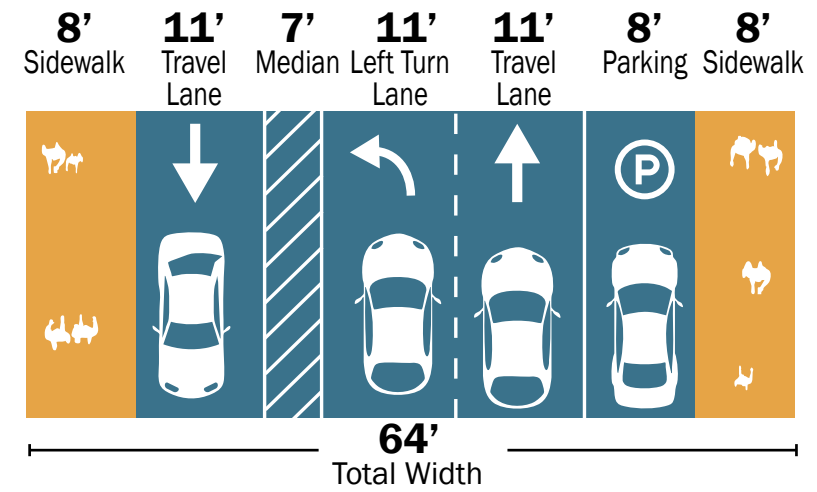
- Land uses along the corridor include residential, commercial, and recreational (Carroll Park).
- The corridor transitions from more urban in the northwest to more industrial in the southeast near the 295 interchange.
- Drivers consistently speed south of Wilkens Ave. The downward slope and ending of street parking contribute to this.
- Commercial truck drivers were seen running the red light at Wicomico St.
- Washington Blvd is a gateway between neighborhoods and recreational amenities. The intersection of Monroe St & Washington Blvd is a hot spot for serious crashes involving pedestrians and motorists.





### General Improvements

- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Upgrade curb ramps and repair sidewalk segments for ADA compliance.
- Update streetscape with street trees and pedestrian scale lighting where missing.
- Install sidewalk between Washington Blvd and Wicomico St on west side.
- Convert section north of Wilkens Ave to two way traffic (one lane in each direction).
- Assess feasibility of reducing speed limit from 30 mph to 25 mph.



# High-Injury Network Segment Review

## N Gay St/Belair Rd - E Preston St to Hamilton Ave



**Corridor Length**  
3.6 miles

**Intersections**  
16 signalized  
40 unsignalized

21K vehicles per day on average

**Traffic Calming:** None



**Noncompliant curb ramps and faded crosswalks** on E Preston St.



The **curb lane** is being used north of E Federal St.



**Long crossing distance** at the intersection on E North Ave.



**Vehicle parked on sidewalk** north of Hebrew Cemetary.



**Pedestrian signal** is missing on N Wolfe St.



The **intersection** of E Oliver St and N Washington St is **complex**.



Vehicles **blocking sidewalk** near Ravenwood Ave.



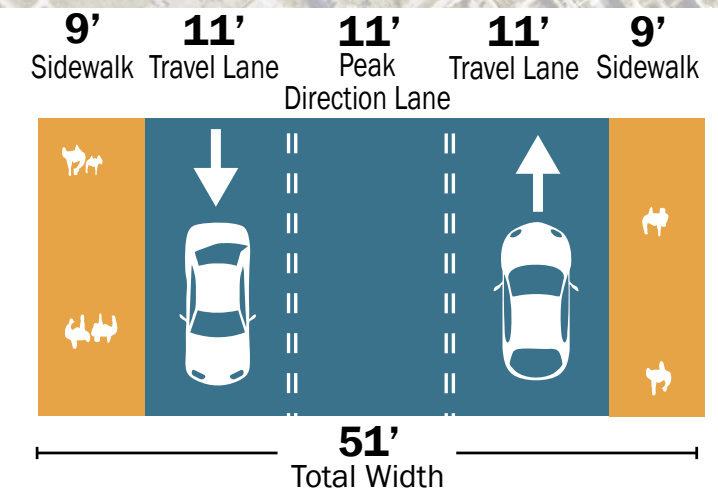
### Crash History

#### 2019 - 2023

Fatal Crashes	Injury Crashes
5 total	575 total
1 motorist	465 motorists
3 pedestrians	102 pedestrians
1 bicyclist	8 bicyclists

### Other Observations

- Drivers do not always understand (or simply disobey) the peak hour restrictions on N Gay St and use the curb lanes throughout the day.
- Several intersections have complex geometry due to the diagonal nature of N Gay St/Belair Rd.
- There are stretches without homes or businesses fronting on N Gay St/Belair Rd, which can further encourage speeding.
- CityLink Brown buses operate on the corridor with 15-minute peak headways.




# High-Injury Network Segment Review



## N Gay St/Belair Rd - E Preston St to Hamilton Ave

**SPEED LIMIT**  
**30**

**Corridor Length**  
3.6 miles

**Intersections**  
16 signalized  
40 unsignalized

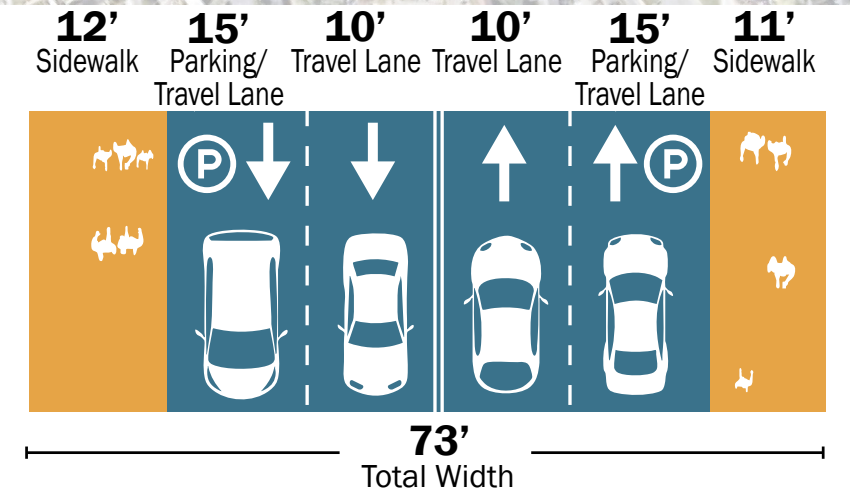
 21K vehicles per day on average

**Traffic Calming:**  None 



### Crash History

2019 - 2023	
Fatal Crashes	Injury Crashes
5 total	575 total
1 motorist	465 motorists
3 pedestrians	102 pedestrians
1 bicyclist	8 bicyclists



# High-Injury Network Segment Review

## N Gay St/Belair Rd - E Preston St to Hamilton Ave

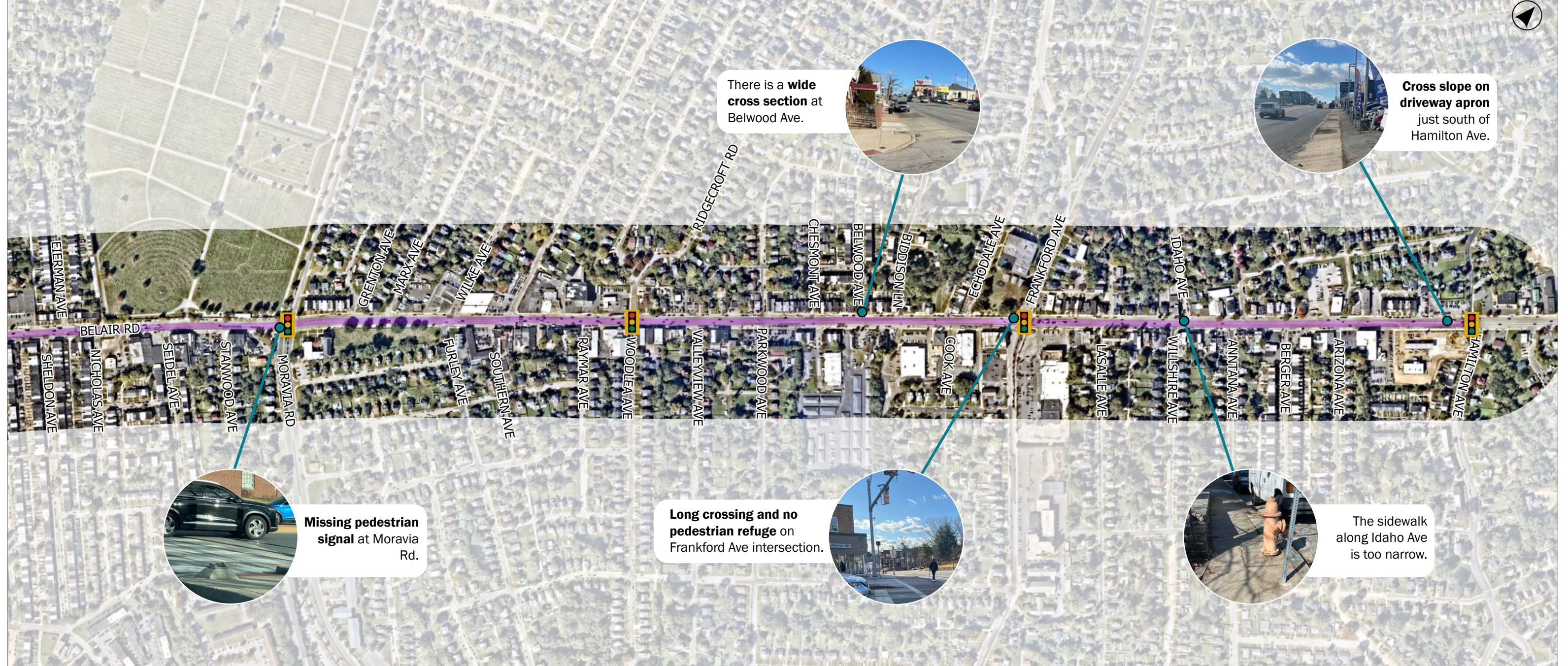
SPEED LIMIT  
**30**

**Corridor Length**  
3.6 miles

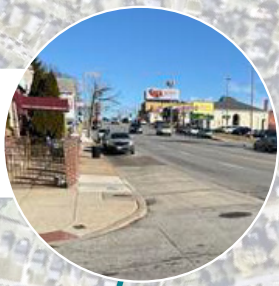
**Intersections**  
16 signalized  
40 unsignalized

21K vehicles per day on average

**Traffic Calming:**  
None



There is a **wide cross section** at Belwood Ave.



**Cross slope on driveway apron** just south of Hamilton Ave.



**Missing pedestrian signal** at Moravia Rd.

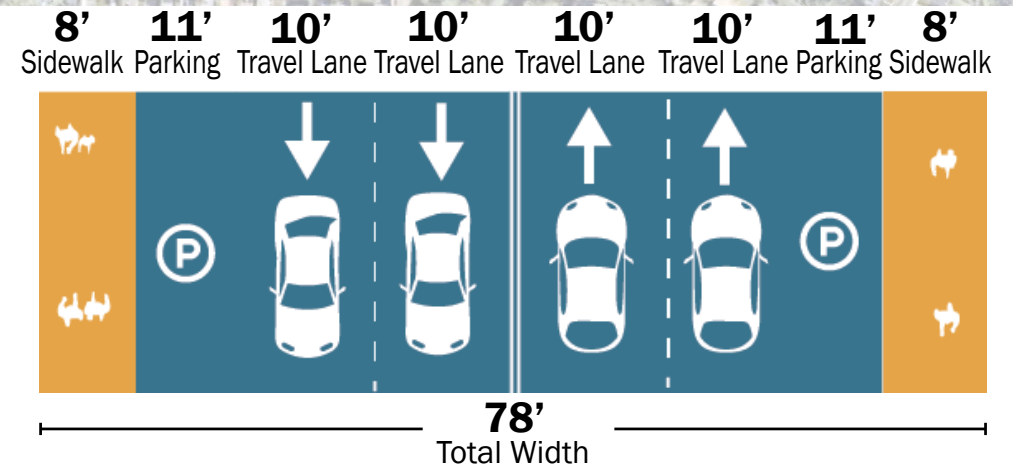
**Long crossing and no pedestrian refuge** on Frankford Ave intersection.

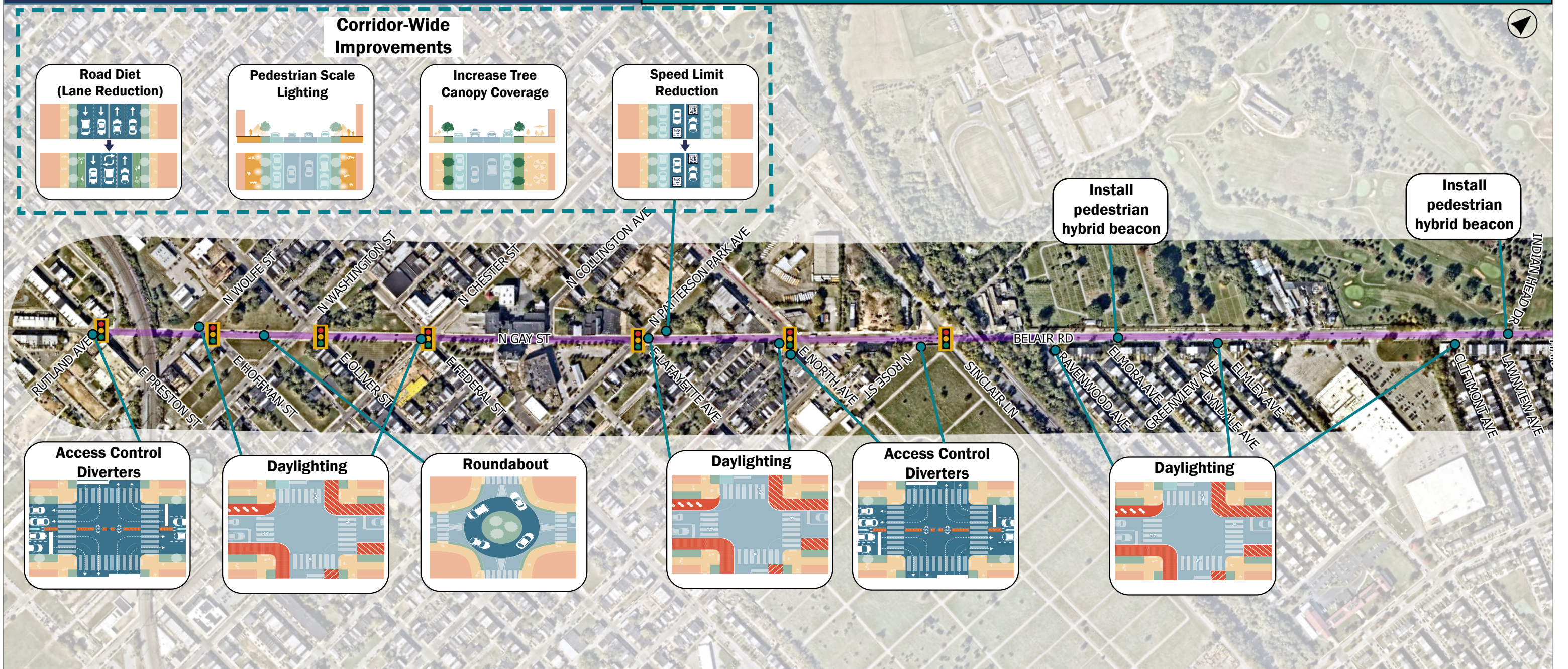


The sidewalk along Idaho Ave is too narrow.

### Crash History 2019 - 2023

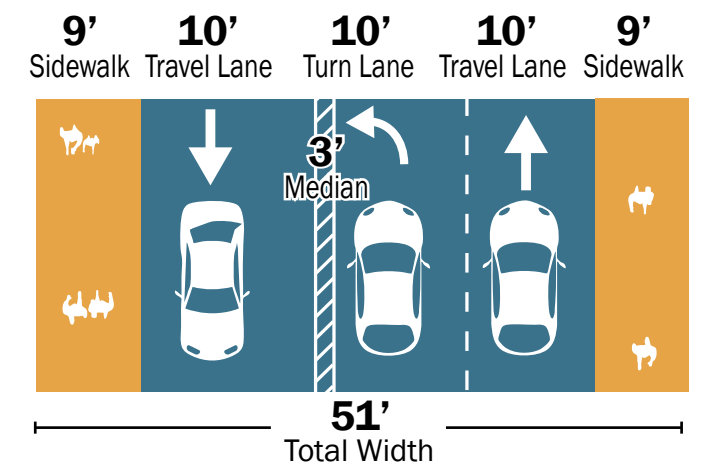
Fatal Crashes	Injury Crashes
5 total	575 total
1 motorist	465 motorists
3 pedestrians	102 pedestrians
1 bicyclist	8 bicyclists

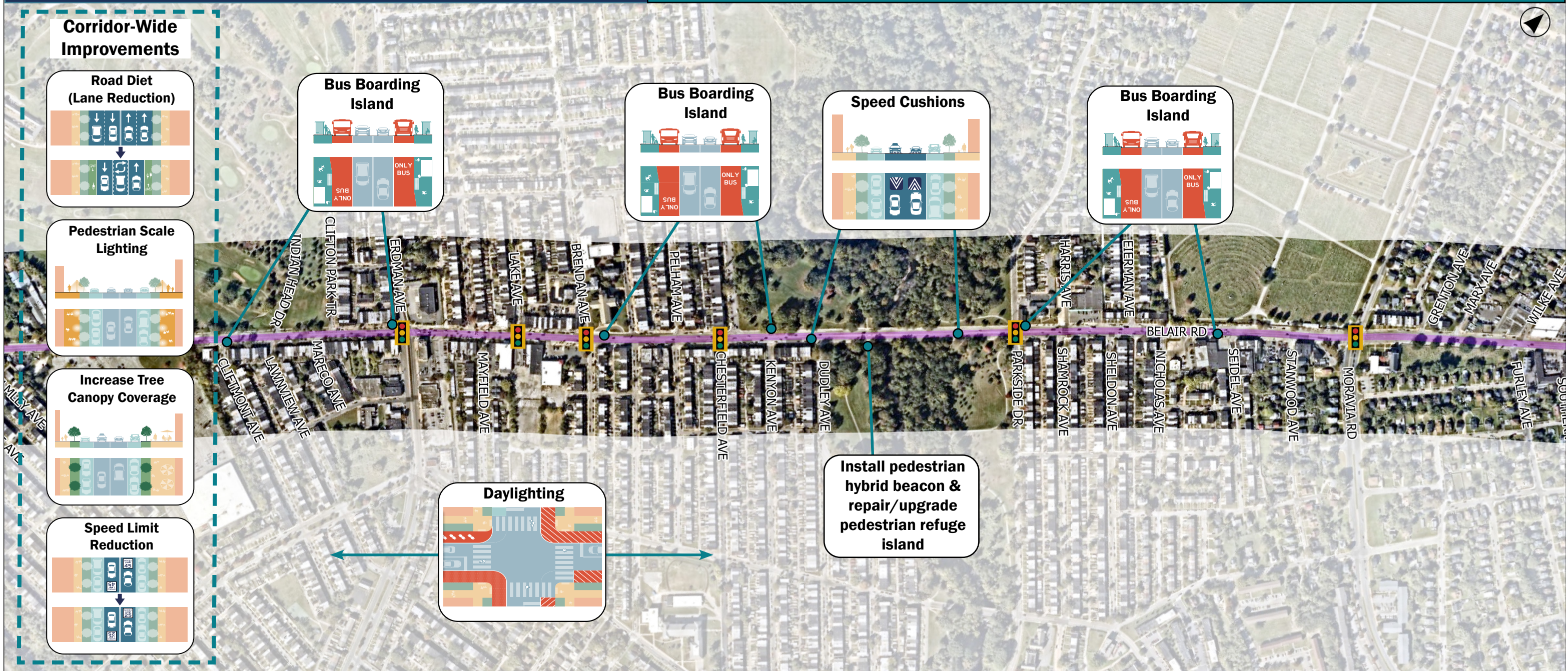




**General Improvements**

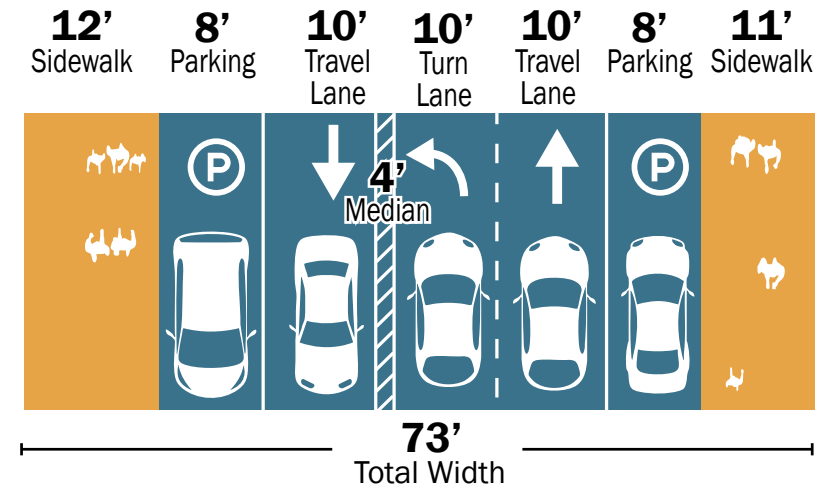
- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Upgrade curb ramps for ADA compliance.
- Assess feasibility of reducing speed limit from 30 mph to 25 mph.
- Update streetscape with street trees and pedestrian scale lighting where missing.

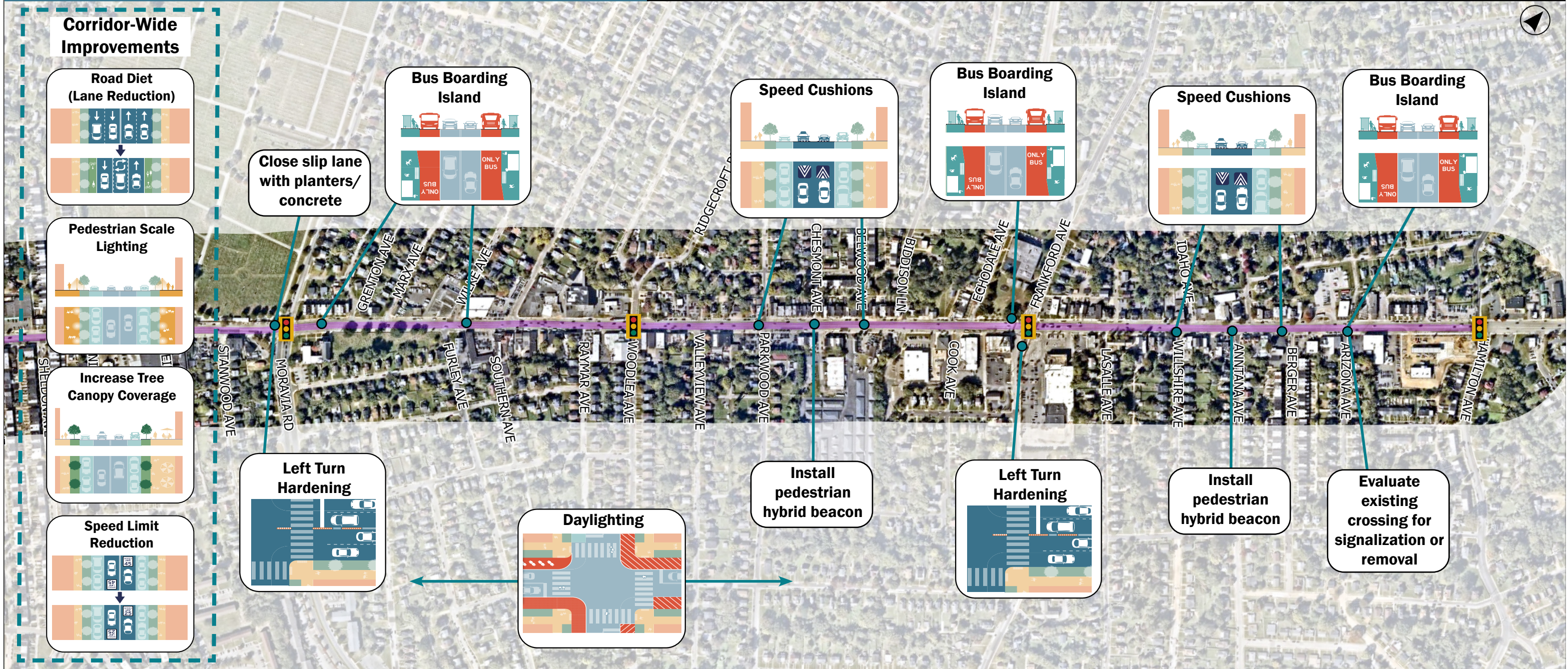




### General Improvements

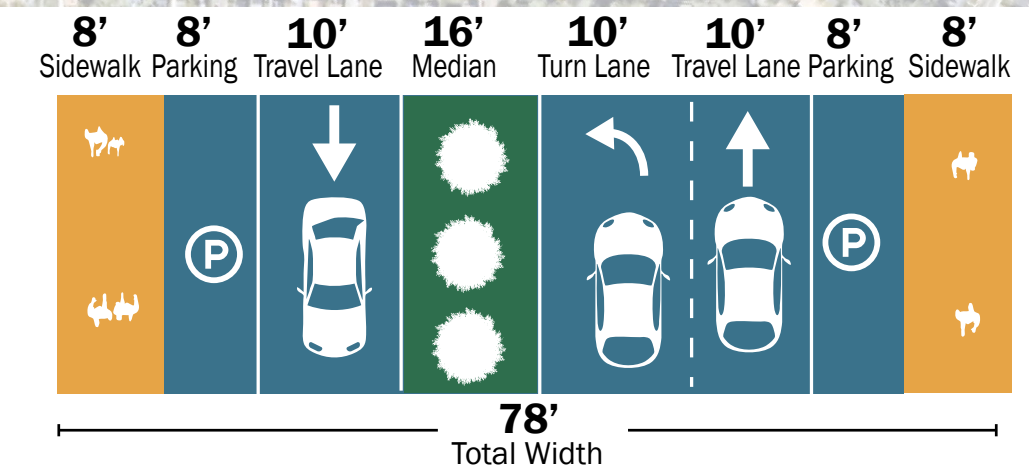
- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Upgrade curb ramps for ADA compliance.
- Assess feasibility of reducing speed limit from 30 mph to 25 mph.
- Update streetscape with street trees and pedestrian scale lighting where missing.





### General Improvements

- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Upgrade curb ramps for ADA compliance.
- Assess feasibility of reducing speed limit from 30 mph to 25 mph.
- Update streetscape with street trees and pedestrian scale lighting where missing.



# High-Injury Network Segment Review Orleans St - Wolfe St to Ellwood Ave

**SPEED LIMIT**  
30

**Corridor Length**  
0.9 miles

**Intersections**  
7 signalized  
7 unsignalized

24K vehicles per day on average

**Traffic Calming:**  
None on Orleans St



There are **many heavy vehicles** on Orleans St, which connects to Pulaski Hwy (a designated freight route).

**Oudated curb ramp** without a detectable warning surface. Landing for the ramp is obstructed by a fence.

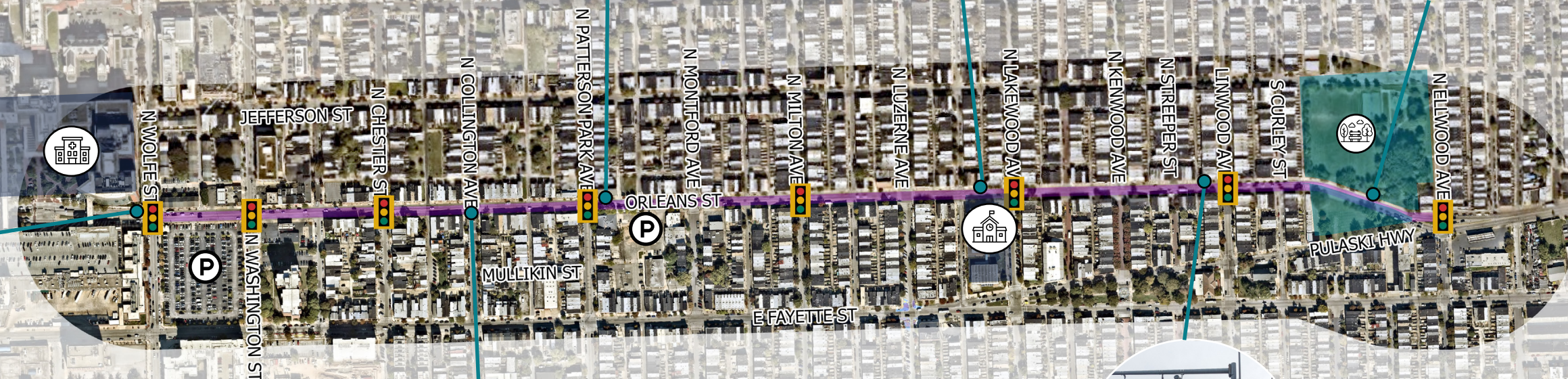


**Crossing guards** at William Paca Elementary School.



Evidence of a vehicle running into the fence at Elwood Ave park.

**7 pedestrian crashes** at intersection of Orleans & Wolfe, 6 resulting in injury.



Many **tree wells** along the curb are **empty**.

**Missing crosswalk** across Collington Ave. There are numerous intersections with missing crosswalks.



There is **only auto-scale** lighting on the corridor.



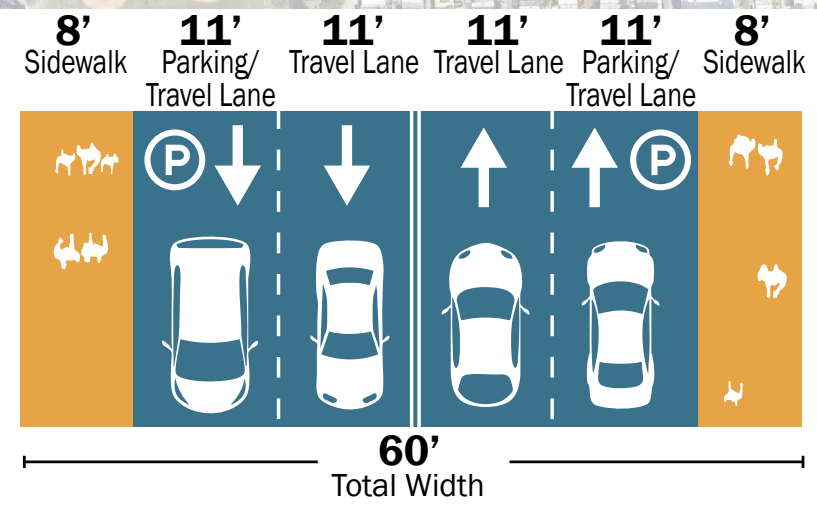
Red light photo enforcement in use.

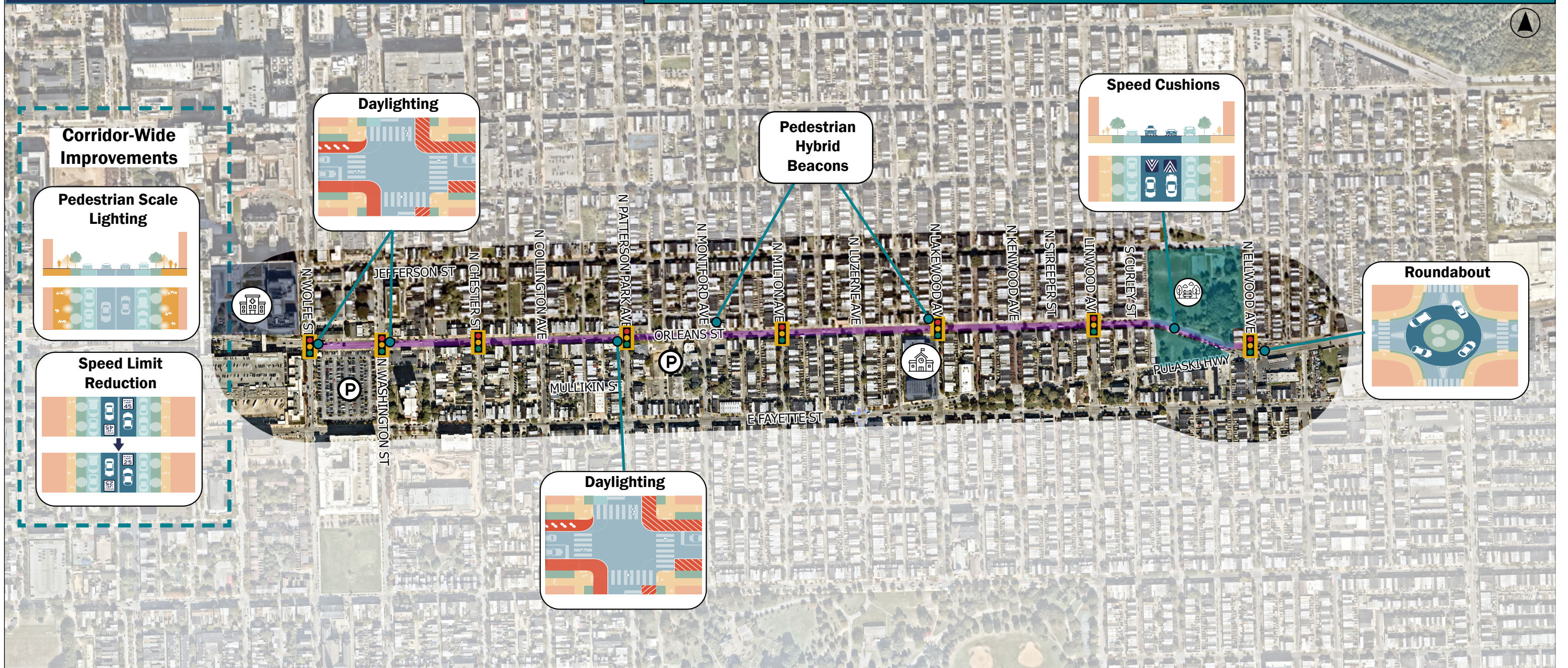
## Crash History 2019 - 2023

Fatal Crashes	Injury Crashes
1 total	270 total
1 motorist	211 motorist
0 pedestrians	52 pedestrians
0 bicyclists	7 bicyclists

## Other Observations

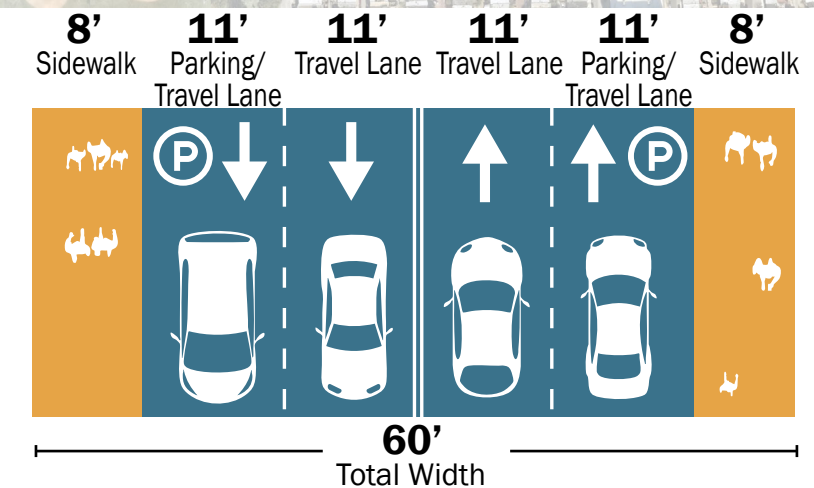
- **Long distances between signals** allow drivers to accelerate for long stretches.
- Sidewalk conditions are generally fair, but there are some areas requiring repair.
- Land use is predominantly residential with some commercial, institutional, and surface parking.
- **Many pavement markings need to be repainted** (crosswalks and stop bars).
- **Pedestrian signals are inconsistent.** Some are missing, and some do not work properly.
- **Parking is not allowed** for most of the day (9 AM - 3 PM), which limits "friction" for motorists.





**General Improvements**

- Restripe faded crosswalks and install missing crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Lower speed limit to 25 mph - it is currently posted at 25 mph for part of the school zone.
- Add leading pedestrian intervals where not currently present.
- A “peanut” intersection/modified roundabout may improve safety and operations at the intersection of Orleans St, Pulaski Hwy, and Ellwood Ave.
- Speed cushions slow drivers of personal cars while allowing freight vehicles with wider wheelbases to continue unimpeded.



\*No changes proposed to cross section

# High-Injury Network Segment Review Pennsylvania Ave - North Ave to Birch

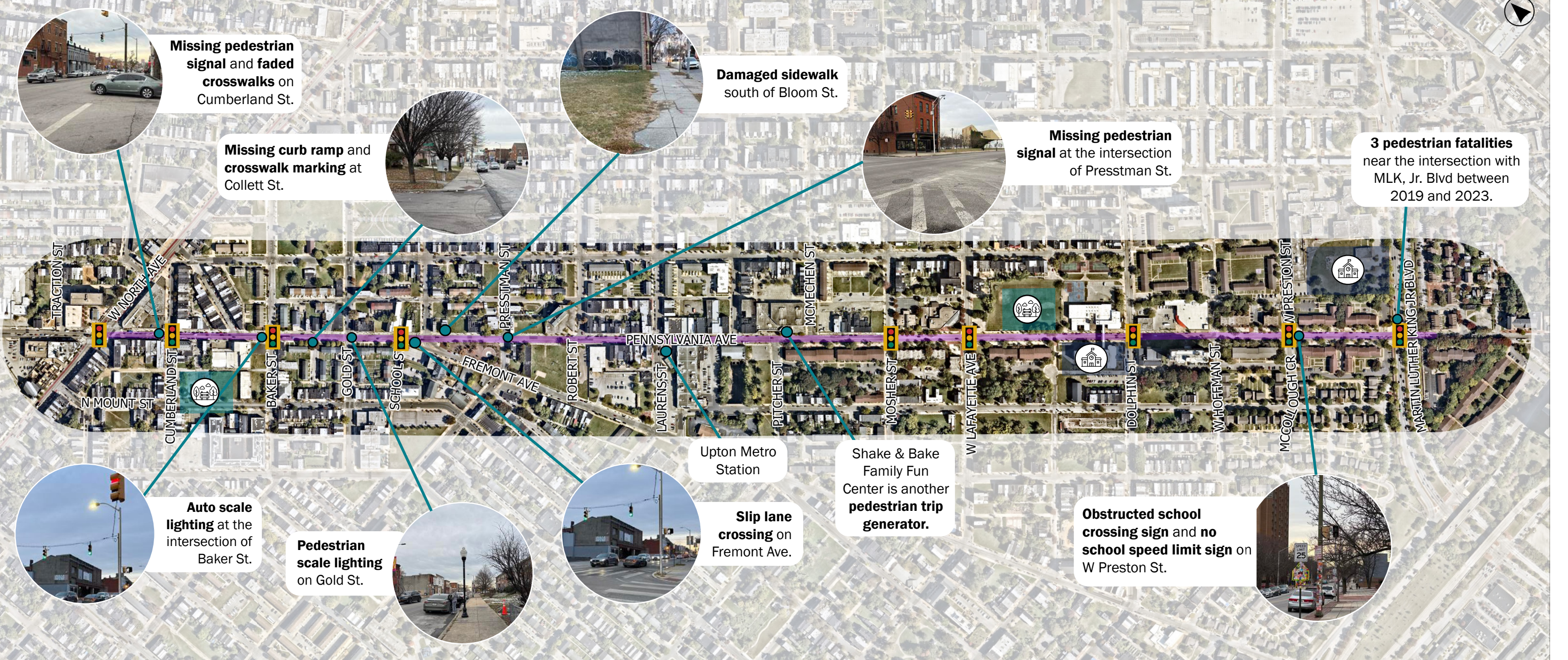
**SPEED LIMIT**  
**25**

**Corridor Length**  
1.25 miles

**Intersections**  
9 signalized  
7 unsignalized

8K vehicles per day on average

**Traffic Calming:**  
None

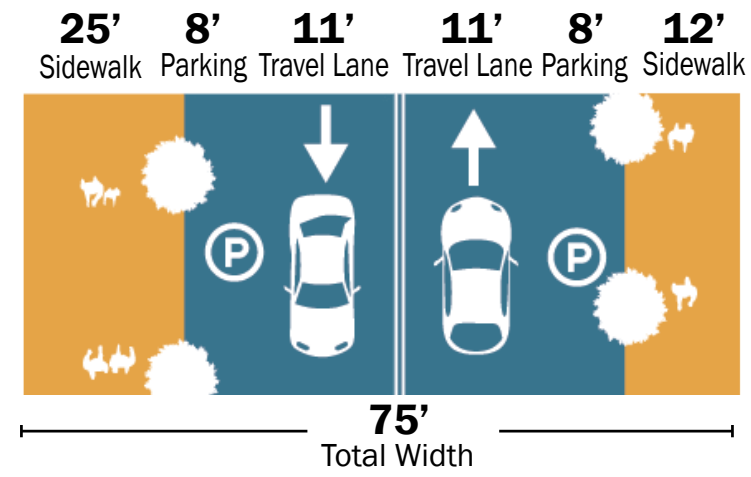


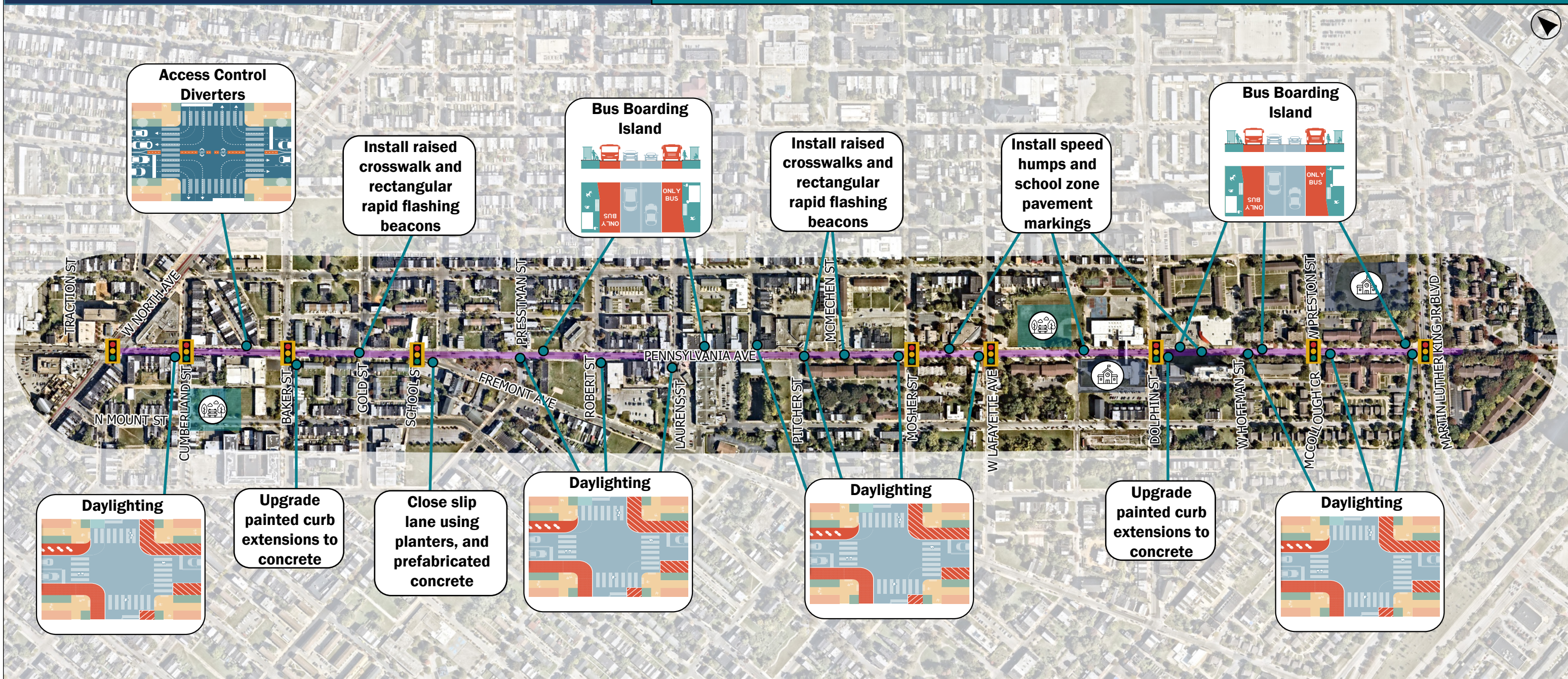
## Crash History 2019 - 2023

Fatal Crashes	Injury Crashes
<b>6 total</b>	<b>258 total</b>
<b>2 motorists</b>	<b>173 motorist</b>
<b>4 pedestrians</b>	<b>73 pedestrians</b>
<b>0 bicyclists</b>	<b>12 bicyclists</b>

### Other Observations

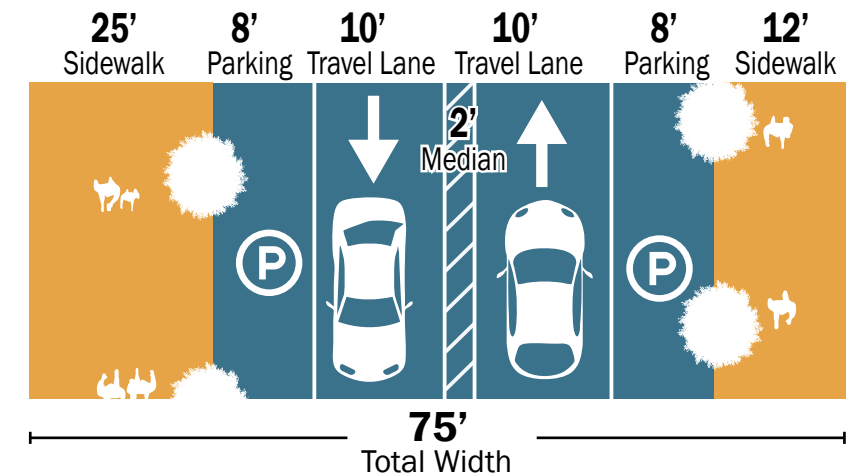
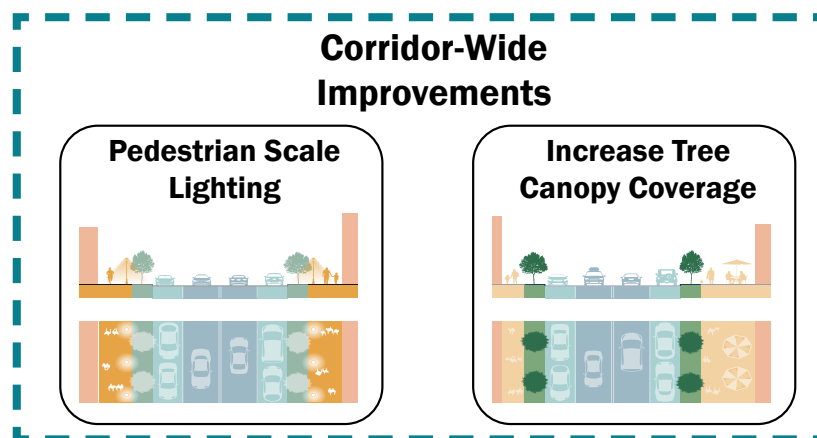
- Pavement markings are faded in many locations, and crosswalks are especially hard to see.
- Parking is allowed in the curb lanes, but there are no marked parking boxes or lines to delineate the parking lanes from travel lanes.
- There are numerous pedestrian trip generators on the corridor.
- Sidewalk conditions vary - brick sections are generally in worse condition than the concrete sections.
- The tree canopy is inconsistent with some blocks having a large amount of coverage and others having none.
- School zone signage is limited, and there are no "SCHOOL" pavement markings.





### General Improvements

- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Repair broken pedestrian signals and push buttons.
- Upgrade curb ramps for ADA compliance.
- Assess feasibility of reducing speed limit from 30 mph to 25 mph.
- Update streetscape with street trees and pedestrian scale lighting where missing.
- Allow full-time parking on north curb and convert road from four lanes to three.




# High-Injury Network Segment Review

## Reisterstown Rd - Primrose Ave to W Garrison Ave

SPEED LIMIT  
**30**

Corridor Length  
0.9 miles

Intersections  
5 signalized  
9 unsignalized

 21K vehicles per day on average

Traffic Calming:  
None 

**Pole obstructing sidewalk** in between Emmart Ave and Sunnyside Ave.



Bus shelter on W Rodgers Ave. The corridor is served by LocalLink 30, 34, 83, and 89.



**Faded crosswalk** on Lewiston Ave.



**Faded crosswalk** on Belvidere Ave. This intersection is a pedestrian crash hot spot.



**One motorist fatal crash** took place at the intersection with W Garrison Ave in 2021.



The intersection of Northern Pkwy and Reisterstown Rd is a **hot spot for pedestrian and motorist-only crashes.**



**Faded school crossing sign** on W Rogers Ave. There are several schools and childcare centers near the corridor.

**Noncompliant sidewalk** alongside Aquariam Pl.



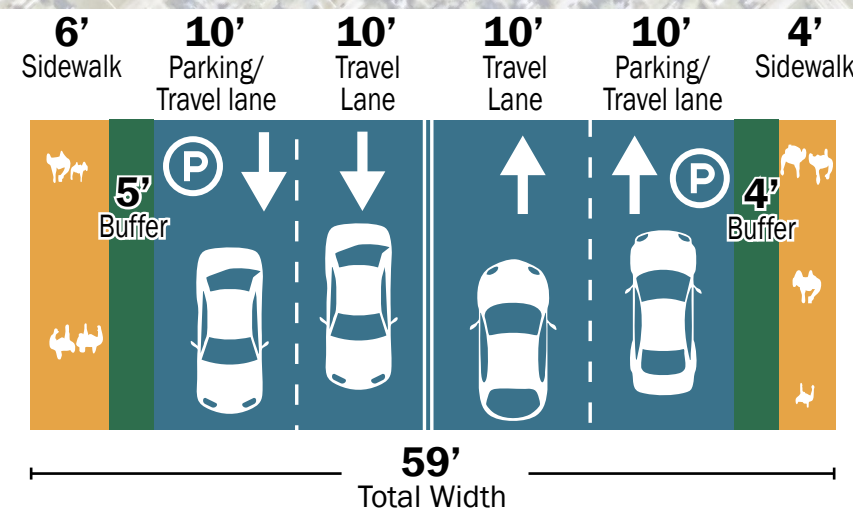
### Crash History

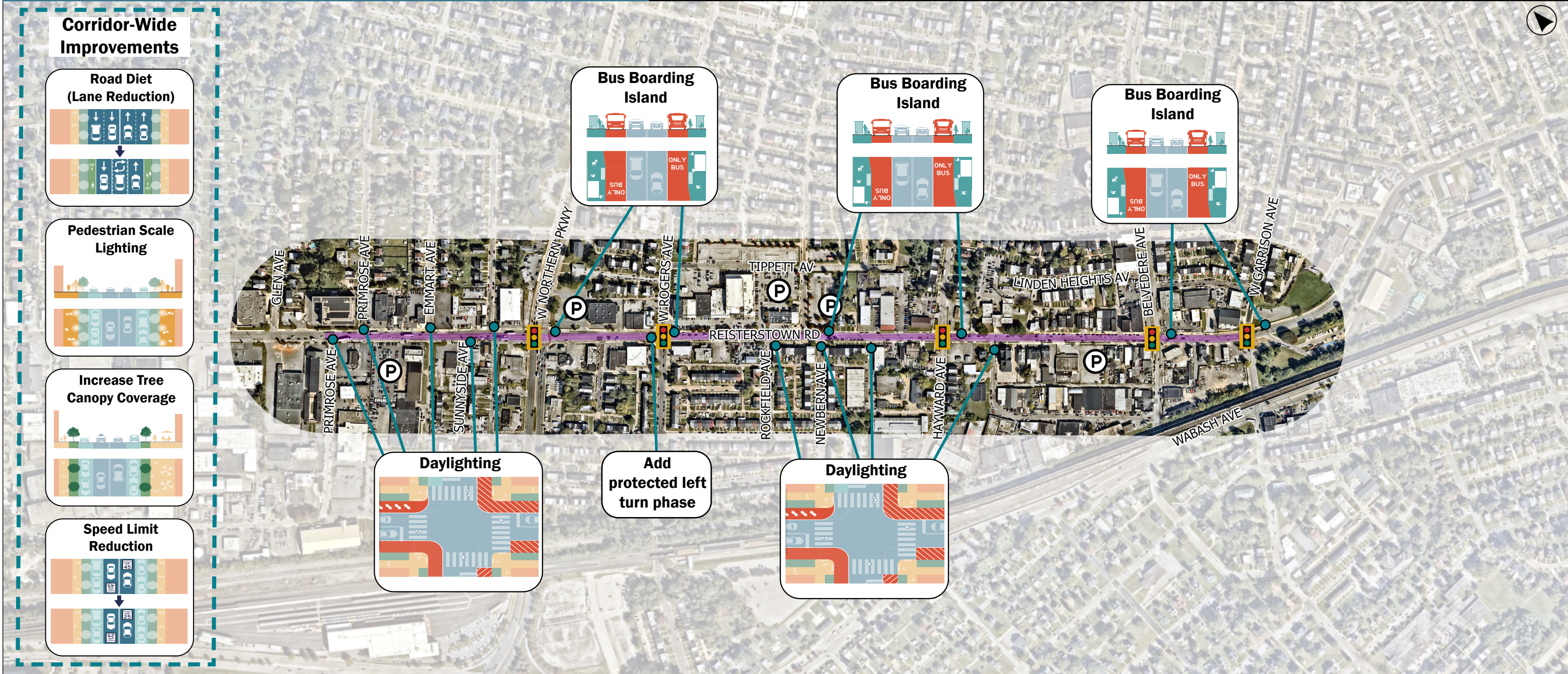
#### 2019 - 2023

Fatal Crashes	Injury Crashes
6 total	145 total
2 motorists	114 motorists
4 pedestrians	26 pedestrians
0 bicyclists	5 bicyclists

### Other Observations

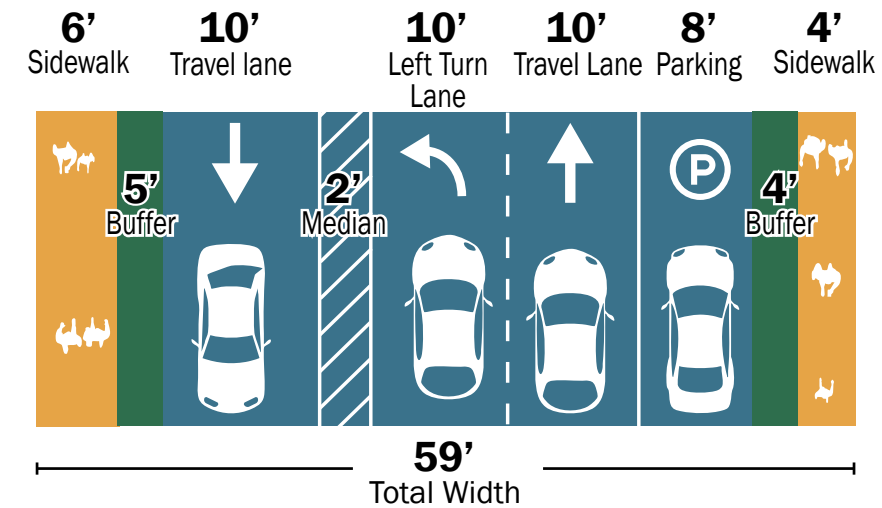
- The corridor transitions between typical sections of four travel lanes and typical sections of two travel lanes and curbside parking lanes.
- Street trees and vegetated buffers are present in sections of the corridor.
- There are residential, commercial, and institutional uses along the corridor.
- The Rogers Ave Metro station is within a quarter-mile of Reisterstown Rd, generating pedestrian and transit trips.
- There is a significant amount of surface parking along stretches of the corridor.





### General Improvements

- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Repair broken pedestrian signals and push buttons.
- Upgrade curb ramps for ADA compliance.
- Assess feasibility of reducing speed limit from 30 mph to 25 mph.
- Update streetscape with street trees and pedestrian scale lighting where missing.
- Allow full-time parking on north curb and convert road from four lanes to three.



# High-Injury Network Segment Review W North Ave - N Fulton Ave to I-83

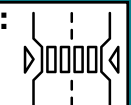
SPEED LIMIT  
**30**

**Corridor Length**  
1.25 miles

**Intersections**  
9 signalized  
7 unsignalized

30K vehicles per day on average

**Traffic Calming:**  
Quick-build curb extensions



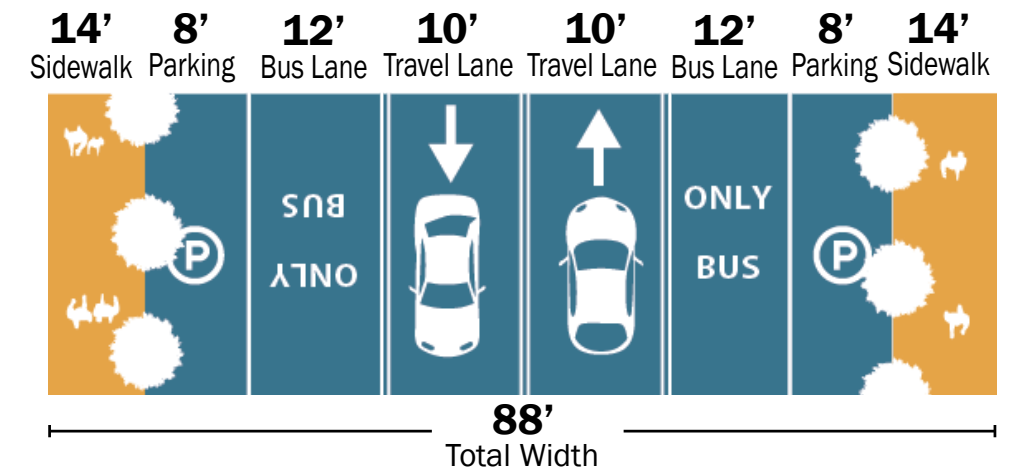
## Crash History

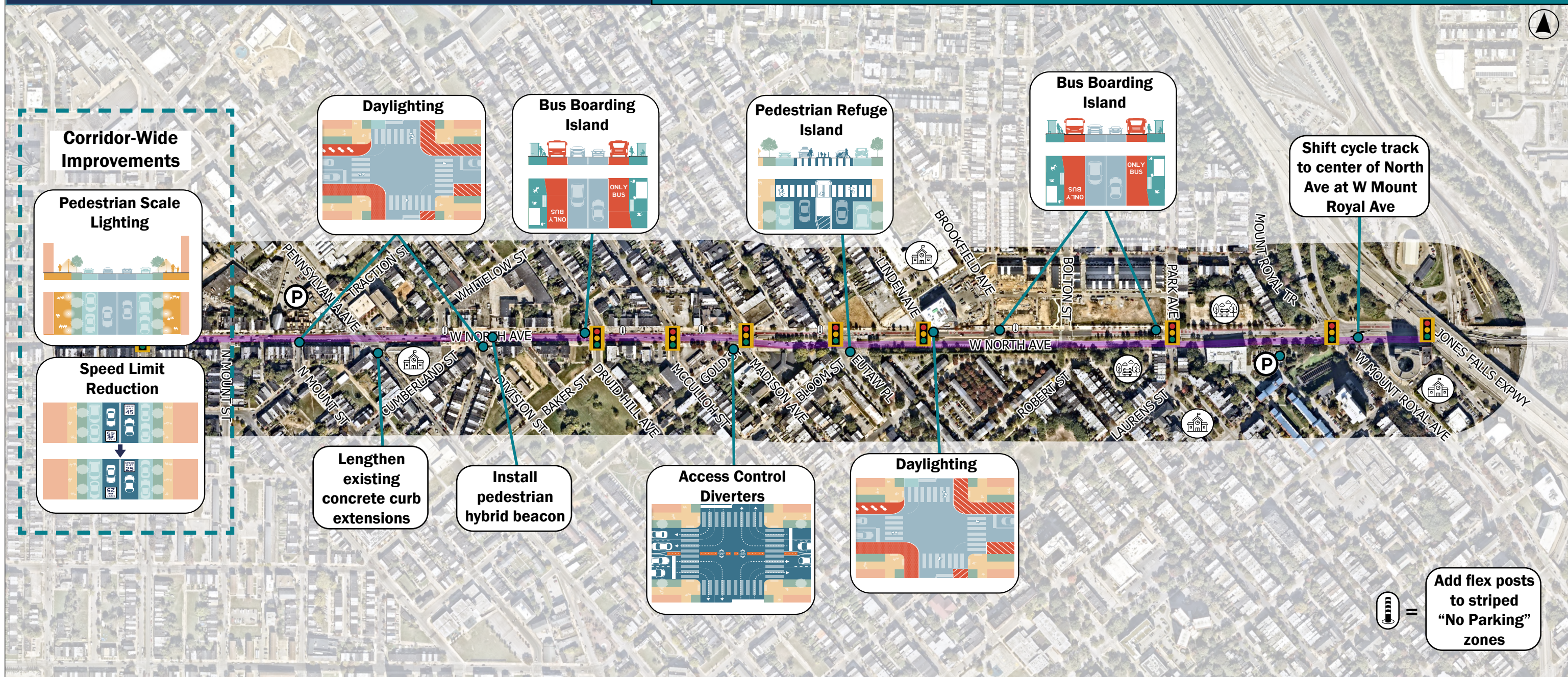
### 2019 - 2023

Fatal Crashes	Injury Crashes
8 total	312 total
2 motorist	219 motorist
6 pedestrians	80 pedestrians
0 bicyclists	13 bicyclists

## Other Observations

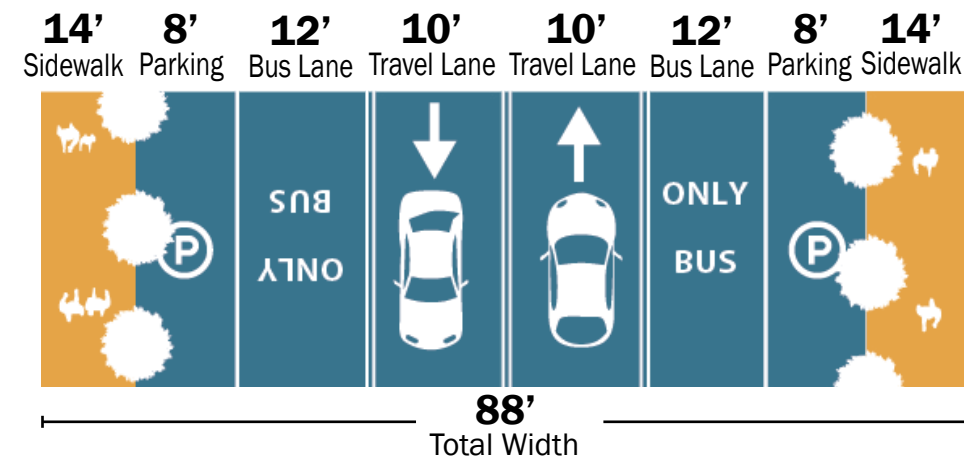
- There are parks, schools, transit stops, and other pedestrian trip generators along the corridor.
- The eastbound bus lane transitions from offset to curb running within the corridor, which allows for two eastbound travel lanes leading up to I-83.
- A vegetated median allows for pedestrian refuge islands in the middle of long crossings in some areas.
- There are pavement markings discouraging driver not to park within 20' of driveways, but there are no flex posts or curb extensions.





#### General Improvements















- Restripe faded crosswalks and install crosswalks where missing.
- Restripe side street stop bars where they are faded and add stop bars where they are missing.
- Add leading pedestrian intervals where they are not currently present.
- Assess potential of lowering speed limit from 30 mph to 25 mph.



\*No changes proposed to cross section

appendix iv.  
**implementation matrix**



Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
Actions	Timeframe	Lead Responsibility	Key Partners	Guiding Principles						
<b>1 Create new Vision Zero Working Groups</b>										
1.1	Vision Zero Action Team	Short term - Ongoing	DOT - Planning	DOT Traffic, Safety, TEC, Maintenance, Transportation Services, Community Engagement						
1.2	Vision Zero Task Force	Short term - Ongoing	DOT - Planning	DPW, DOP, BCHD, BPD, BFD, BCPS, MOID, and elected officials or their appointees						
<b>2 Improve Data Management</b>										
2.1	Expand data tracking and utilization	Short term - Ongoing	DOT - Planning	DOT ATVES						
2.2	Update HIN Regularly	Short term - Ongoing	DOT - Planning	DOT Traffic						
2.3	Use automated traffic violation enforcement systems data	Short term - Ongoing	DOT - Planning	DOT ATVES						
2.4	Partner with BPD to get statistics in real time	Short term - Ongoing	DOT - Planning	BPD						

<b>Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix</b>					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
Actions		Timeframe	Lead Responsibility	Key Partners	Guiding Principles					
<b>3</b>		<b>Embed the HIN into all DOT functions</b>								
3.1	Integrate the HIN as a priority in CIP funding requests	Short term - Ongoing	DOT - Planning	DOP						
3.2	Establish a dedicated Vision Zero safety fund	Short term - Ongoing	DOT - Planning	DOP						
3.3	Integrate Vision Zero Countermeasures into Resurfacing Projects	Short term - Ongoing	DOT TEC	DOT Planning						
3.4	Integrate Vision Zero Countermeasures into Streetscape projects	Short term - Ongoing	DOT TEC	DOT Planning						
<b>4</b>		<b>Improve project efficiencies</b>								
4.1	Implement more quick-build safety improvements and monitor results for long term improvements	Medium & Long term	DOT - Traffic	DOT TEC, Planning						
4.2	Use on-call Traffic Safety Design & Construction Contracts for Safety Improvements	Medium & Long term	DOT - Traffic	DOT TEC, Planning						

Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
Actions	Timeframe	Lead Responsibility	Key Partners	Guiding Principles						
<b>4</b>	<b>Improve project efficiencies (Cont.)</b>									
<b>4.3</b>	Batch together traffic safety project contracts	Medium & Long term	DOT TEC	DOT Planning, Community Engagement, Traffic, and Procurement						
<b>4.4</b>	Create a process for expedited project reviews	Medium term	DOT TEC	DOT Planning, Traffic, DOP, DPW						
<b>4.5</b>	<b>Leverage existing infrastructure improvement programs</b>									
<b>4.5.1</b>	Resurfacing	Medium term	DOT TEC							
<b>4.5.2</b>	Traffic signals and operations	Medium term	DOT Traffic							
<b>4.5.3</b>	Utility work	Medium term	DOT TEC	Utility Companies						
<b>4.5.4</b>	Stormwater Management	Medium term	DOT TEC	DPW						
<b>4.5.5</b>	Transit Improvements	Ongoing	DOT Transportation Services	DOT Planning and TEC, MTA						
<b>4.5.6</b>	Developer agreements	Medium term	DOT Planning	DOP						

<b>Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix</b>					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
Actions		Timeframe	Lead Responsibility	Key Partners	Guiding Principles					
<b>5</b>	<b>Simplified Interagency Requirements for HIN Projects</b>									
<b>5.1</b>	Streamline Stormwater Management Approvals									
<b>5.1.1</b>	Stormwater Exemption	Medium term	DPW	DOT TEC, City Council						
<b>5.1.2</b>	Stormwater Management Credit Banking	Medium term	DPW	DOT TEC, City Council						
<b>5.2</b>	Integrate needs for EMS into project design		DOT TEC	BPD, BFD						
<b>6</b>	<b>Update design manuals.</b>									
<b>6.1</b>	Update Complete Streets Manual	Medium term	DOT Planning							
<b>6.1.1</b>	Define street typologies	Medium term	DOT Planning	DOT Traffic, TEC						
<b>6.1.2</b>	Develop more robust standards for safety countermeasures	Medium term	DOT Planning	DOT Traffic, TEC						
<b>6.1.3</b>	Expand design guidance for traffic calming	Medium term	DOT Planning	DOT Traffic, TEC						
<b>6.1.4</b>	Include quick-build design guidance	Medium term	DOT Planning	DOT Traffic, TEC						

Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
Actions	Timeframe	Lead Responsibility	Key Partners	Guiding Principles						
<b>6 Update design manuals. (Cont.)</b>										
6.1.5	Develop curb-side management guidance	Medium term	DOT Planning	DOT Traffic, TEC						
6.1.6	Promote roadway rightsizing	Medium term	DOT Planning	DOT Traffic, TEC						
6.2	Update MOT Requirements	Medium term	DOT Traffic	DOT Planning						
6.3	Update design stage checklists	Medium term	DOT TEC	DOT Planning						
<b>7 Implement Training Programs</b>										
7.1	Support Professional Development	short term	DOT							
7.2	Establish a vision zero training program	Medium term	DOT Planning	DOT Traffic, TEC, Community Engagement						
<b>8 Deploy strategic enforcement</b>										
8.1	Target automated enforcement on the HIN	Medium	DOT ATVES	BPD						
8.2	Targeted officer patrolling	Medium	BPD							

<b>Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix</b>					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
Actions	Timeframe	Lead Responsibility	Key Partners	Guiding Principles						
<b>8</b>	<b>Deploy strategic enforcement</b>									
<b>8.3</b>	Stronger penalties for repeat offenders	Long term	BPD	City council						
<b>8.4</b>	Install and monitor speed/safe driving governing devices on City fleet vehicles	Long term	Mayor's Office	City Council						
<b>9</b>	<b>Develop special programs for traffic safety</b>									
<b>9.1</b>	Establish slow zones	Long term	Mayor's Office	DOT, City Council						
<b>9.2</b>	Expand use of no right turn on red	Long term	Mayor's Office	DOT, City Council						
<b>9.3</b>	Formalize a traffic calming request program	Medium term	DOT Planning	DOT Traffic, Community Engagement						
<b>9.4</b>	Update project evaluation criteria	Medium term	DOT Planning	DOT Traffic, Community Engagement						
<b>9.5</b>	Establish a program for private project financing	Medium term	DOT Planning	DOT Traffic, Community Engagement						

<b>Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix</b>					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
<b>Actions</b>		<b>Timeframe</b>	<b>Lead Responsibility</b>	<b>Key Partners</b>	<b>Guiding Principles</b>					
<b>9.6</b>	<b>Reestablish a robust Safe Routes to School program</b>									
<b>9.6.1</b>	Volunteer crossing guards		DOT Planning	BCPS						
<b>9.6.2</b>	Traffic calming infrastructure for school zones	Medium term	DOT Traffic	DOT Planning, TEC						
<b>9.6.3</b>	Amend the Complete Streets Manual to include School Zones	Medium term	DOT Planning	DOT Traffic, TEC						
<b>9.6.4</b>	Develop bell time circulation guidelines	Medium term	DOT Planning	DOT Traffic, BCPS						
<b>9.6.5</b>	<b>Education on Traffic Safety</b>									
<b>9.6.5.1</b>	Renovate and re-open Safety City	Medium term	DOT Planning	DRP, DOT Community Engagement						
<b>9.6.5.2</b>	Produce age-appropriate lesson plans and educational materials	Medium term	DOT Planning	BCPS, DOT Traffic and Community Engagement						
<b>9.6.5.3</b>	Partner with BCPS for safety programs	Medium term	DOT Planning	BCPS, DOT Traffic and Community Engagement						

<b>Baltimore City DOT SS4A Vision Zero Action - Implementation Matrix</b>					Use a data-driven approach to prioritize safety improvements	Center the experience of the most vulnerable in roadway design	Implement safety projects quickly to prevent further harm	Expand awareness of proven safety solutions	Empower more people to walk and roll safely	Work collaboratively across City agencies
<b>Actions</b>		<b>Timeframe</b>	<b>Lead Responsibility</b>	<b>Key Partners</b>	<b>Guiding Principles</b>					
<b>10</b>	<b>Expand Proactive Maintenance Programs</b>									
<b>10.1</b>	Identify and replace damaged crash barriers and guardrails	Short term	DOT Maintenance	DOT Traffic, TEC						
<b>10.2</b>	Identify and replace damaged traffic signs	Short term	DOT Maintenance	DOT Traffic, TEC						
<b>10.3</b>	Upgrade Traffic Signals	Long term	DOT Traffic							
<b>11</b>	<b>Expand public engagement and accountability</b>									
<b>11.1</b>	Create a public vision zero dashboard	Medium term	DOT Planning							
<b>11.2</b>	Ensure transparency in project selection processes	Medium term	DOT Planning							
<b>11.3</b>	Implement paid partnerships with local representatives	Long term	DOT Community Engagement	DOT Planning						
<b>11.4</b>	Establish restorative justice programs	Long term	Mayor's Office	BPD						
<b>11.5</b>	Publish a Vision Zero Annual Report	Medium term	DOT Planning							
<b>11.6</b>	Host Ciclovía Events	Short term	DOT Planning							