

CITY OF WORCESTER VISION ZERO

DRAFT SAFETY ACTION PLAN



JANUARY 2025

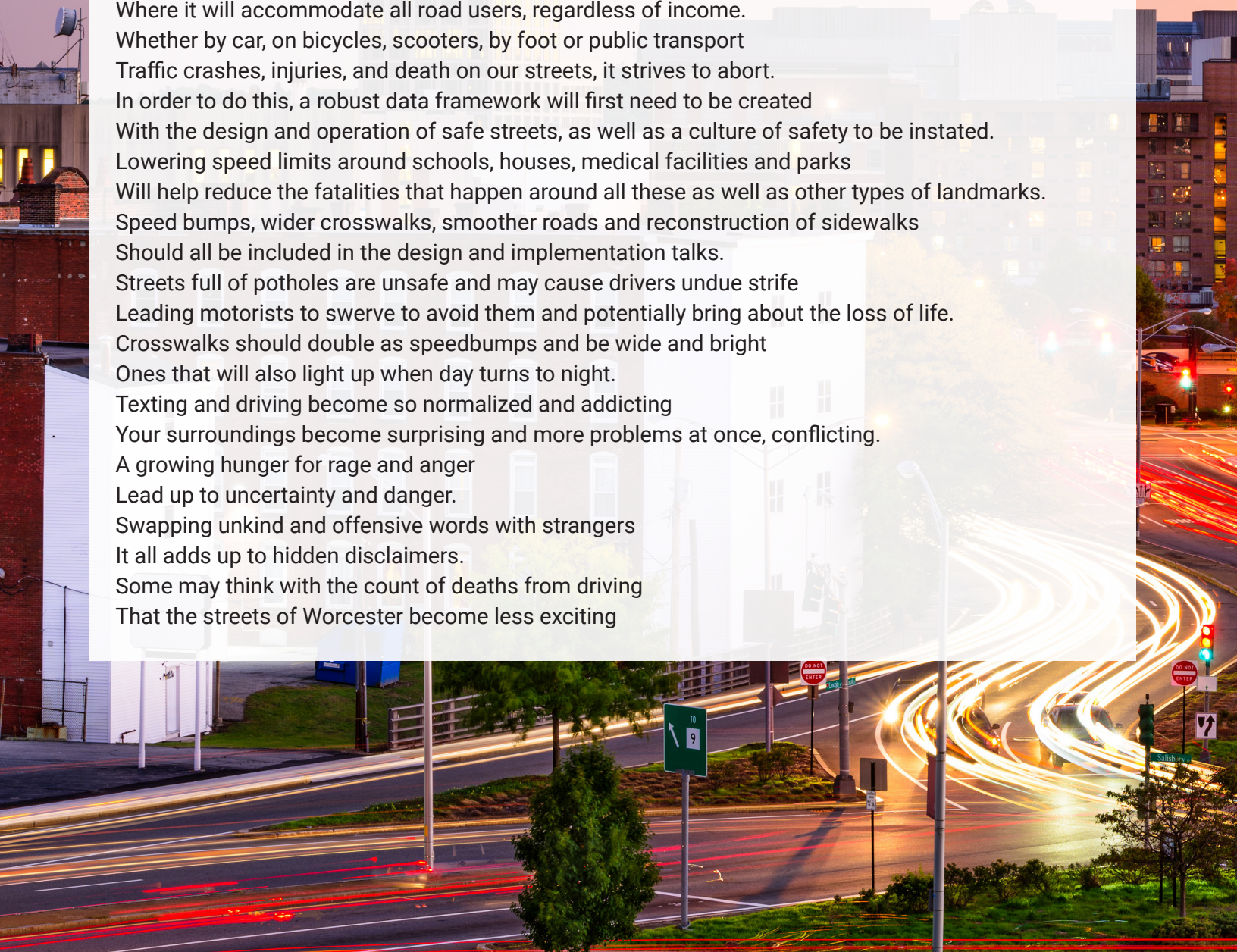


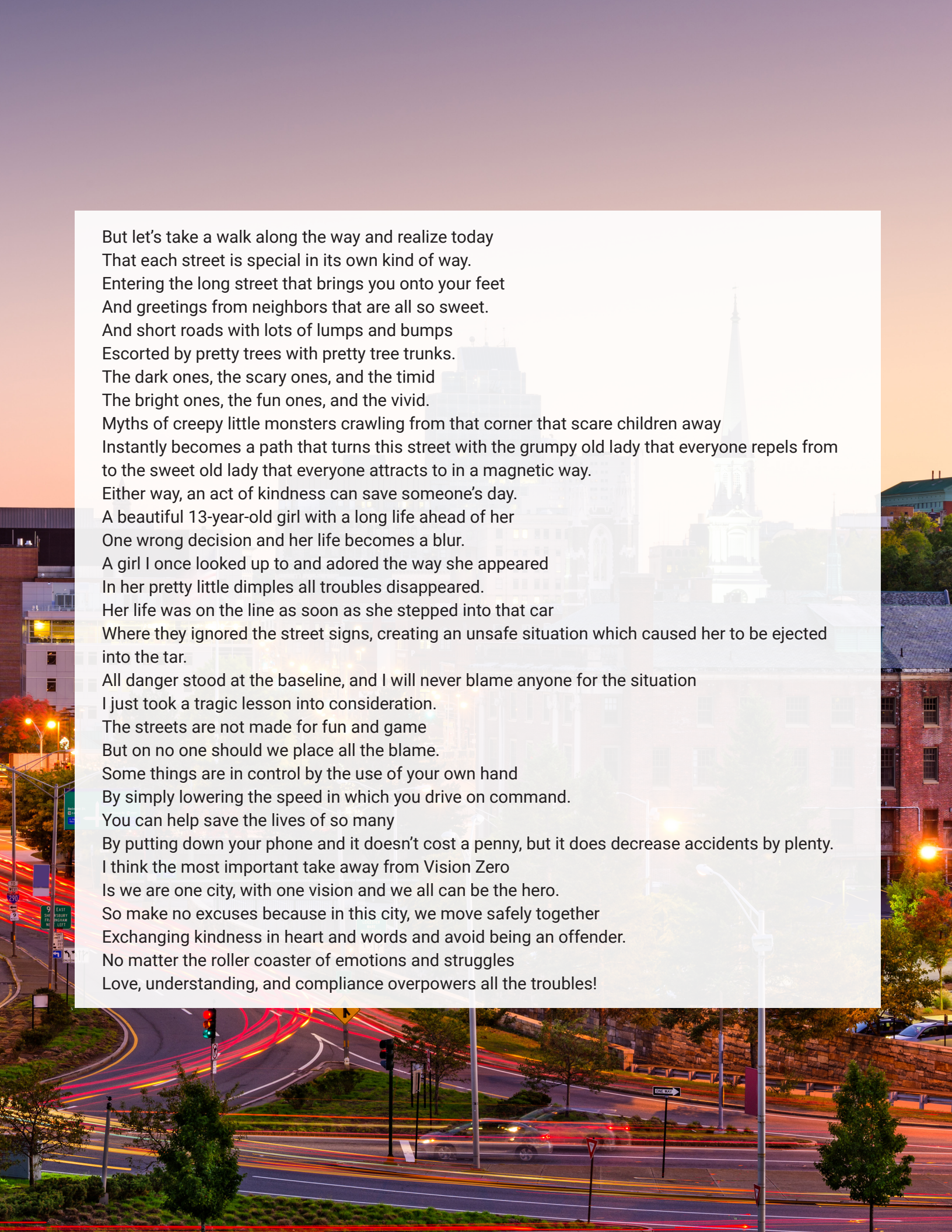
VISION ZERO.....SAFER STREETS

*A poem by Serenity C. Jackson
City of Worcester Youth Poet Laureate
Read at the Launch of the City of Worcester's Vision Zero
Safety Action Plan - Feb. 29, 2024*



What is Vision Zero you might ask?
A global movement to end traffic-related deaths and injuries is its task.
It's a systemic approach to road safety
And with its implementation the risks will be reduced greatly.
The goal of Vision Zero is to be reached by designing a system
Where it will accommodate all road users, regardless of income.
Whether by car, on bicycles, scooters, by foot or public transport
Traffic crashes, injuries, and death on our streets, it strives to abort.
In order to do this, a robust data framework will first need to be created
With the design and operation of safe streets, as well as a culture of safety to be instated.
Lowering speed limits around schools, houses, medical facilities and parks
Will help reduce the fatalities that happen around all these as well as other types of landmarks.
Speed bumps, wider crosswalks, smoother roads and reconstruction of sidewalks
Should all be included in the design and implementation talks.
Streets full of potholes are unsafe and may cause drivers undue strife
Leading motorists to swerve to avoid them and potentially bring about the loss of life.
Crosswalks should double as speedbumps and be wide and bright
Ones that will also light up when day turns to night.
Texting and driving become so normalized and addicting
Your surroundings become surprising and more problems at once, conflicting.
A growing hunger for rage and anger
Lead up to uncertainty and danger.
Swapping unkind and offensive words with strangers
It all adds up to hidden disclaimers.
Some may think with the count of deaths from driving
That the streets of Worcester become less exciting





But let's take a walk along the way and realize today
That each street is special in its own kind of way.
Entering the long street that brings you onto your feet
And greetings from neighbors that are all so sweet.
And short roads with lots of lumps and bumps
Escorted by pretty trees with pretty tree trunks.
The dark ones, the scary ones, and the timid
The bright ones, the fun ones, and the vivid.
Myths of creepy little monsters crawling from that corner that scare children away
Instantly becomes a path that turns this street with the grumpy old lady that everyone repels from
to the sweet old lady that everyone attracts to in a magnetic way.
Either way, an act of kindness can save someone's day.
A beautiful 13-year-old girl with a long life ahead of her
One wrong decision and her life becomes a blur.
A girl I once looked up to and adored the way she appeared
In her pretty little dimples all troubles disappeared.
Her life was on the line as soon as she stepped into that car
Where they ignored the street signs, creating an unsafe situation which caused her to be ejected
into the tar.
All danger stood at the baseline, and I will never blame anyone for the situation
I just took a tragic lesson into consideration.
The streets are not made for fun and game
But on no one should we place all the blame.
Some things are in control by the use of your own hand
By simply lowering the speed in which you drive on command.
You can help save the lives of so many
By putting down your phone and it doesn't cost a penny, but it does decrease accidents by plenty.
I think the most important take away from Vision Zero
Is we are one city, with one vision and we all can be the hero.
So make no excuses because in this city, we move safely together
Exchanging kindness in heart and words and avoid being an offender.
No matter the roller coaster of emotions and struggles
Love, understanding, and compliance overpowers all the troubles!



City of Worcester

DEPARTMENT OF TRANSPORTATION AND MOBILITY

Commissioner Stephen Rolle
Todd Kirrane
Betsy Goodrich
Scott Galbraith
Brian Pigeon
Pedro Shimizu-Costa
Mary Turner

Working Groups

VISION ZERO INTERNAL WORKING GROUP

Joseph M. Petty, Mayor
Eric D. Batista, City Manager
Eliana C. Agudelo, Chief of Staff, Mayor Petty
Peter Dunn, Chief Development Officer
Martin W. Dyer, Fire Chief
Michael P. Hirsh, M.D., Medical Director, Division of Public Health
Matthew C. Morse, Ed.D., Director of Safety, Worcester Public Schools
Hung Nguyen, Assistant City Manager
John W. Odell, Chief Sustainability Officer
David E. Quiroa, Community & Intergovernmental Affairs Manager, Office of the City Manager
Stephen S. Rolle, Commissioner, Department of Transportation & Mobility
Richard W. Saltrick, (former) Assistant Commissioner – Engineering, Department of Public Works & Parks
Paul B. Saucier, Police Chief
Michelle M. Smith, Assistant Chief Development Officer, Planning & Regulatory Services
Amy Vogel Waters, Director, Senior Center

VISION ZERO COMMUNITY WORKING GROUP

Sandy Amoakohene, (former) Division of Public Health
Ché Anderson, UMass Chan Medical School
Joe Bellil, Easter Seals
Joshua Boucher, Worcester Regional Research Bureau
Deb Carey, Mass Audubon
Anthony Clough, Worcester Regional Research Bureau
Danielle Delgado, YMCA Central Massachusetts
Daniel Durand, Saint Vincent Hospital
Joseph D. Early, Worcester County District Attorney
Yahaira Graxirena, Central Massachusetts Regional Planning Commission
Susan Hunt, College of the Holy Cross
Michael Kane, Worcester Chamber of Commerce
Tiffany Lillie, Girls, Inc.
Colin Novick, Greater Worcester Land Trust
Andrew Piazza, PhD, Worcester State University
Joshua Rickman, Worcester Regional Transit Authority
Alex Salcedo, MassBike
Mimi Sheller, PhD, Worcester Polytechnic Institute
Asia Simpson, UMass Memorial Health
Karin Valentine Goins, Walk/Bike Worcester
Ian Wong, Division of Public Health
Suzanne Wood, UMass Chan Medical School
Liz Myska, Worcester Accessibility Advisory Commission

Consulting Partners



Stantec

STANTEC

Jason Schrieber
Catrina Meyer
Whitney Burdge
Yeonjin Kim



SPECK DEMPSEY

Jeff Speck
Chris Dempsey
Jahnvi Kirtane

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In Memoriam

One life
lost on our
streets is

ONE
TOO
MANY

WEST
BOYLSTON

We remember and
honor all victims who
have died walking,
biking, and driving on
Worcester's streets.





Invitation from the City Manager

To the Worcester Community:

I am pleased to introduce Worcester's first Vision Zero Safety Action Plan. Over the past several years Worcester has been taking a new approach to mobility and road safety. The municipality established a Department of Transportation & Mobility (DTM) in 2022, which swiftly began work on a Mobility Action Plan (MAP). Many of the recommendations from the MAP centered on safety, and in response DTM began work on a Vision Zero Plan and program in 2024.

This Plan is our roadmap for reducing the number of deaths and severe injuries from traffic violence in Worcester to zero by 2035. This Plan unites all municipal departments to focus on a shared goal: creating a transportation system free of death and severe injury. It is also a key component to implementing our 2025-2029 municipal Strategic Plan, under which we aim to build and operate a transportation network that is safe and accessible to all users.

When Mayor Joseph Petty and I [declared a Road Safety and Traffic Violence Crisis on August 1st 2024](#) in response to a tragic series of traffic crashes resulting in deaths and severe injuries, we understood the gravity of the problem and the need for coordinated community action.

Even as we've worked to develop this Plan to address safety, Worcester's streets have continued to claim victims of traffic violence, including three deaths and two incidents of severe injuries. In the past five years, a staggering 5,000 injury crashes in Worcester have impacted individual families and the community as a whole. Many victims are children or seniors, who often suffer more severe injuries when involved in a crash. These tragedies represent just a fraction of the number of lives impacted by traffic violence in Worcester.

This Plan is the culmination of year one of Vision Zero action in Worcester. Through the development of this Plan we have formed an Internal Working Group, completed crash data analysis that resulted in the Vision Zero Priority Network, carried out a student-driven crosswalk painting project at Vernon Hill School, and developed a Rapid Response program for immediate municipal action after fatal crashes occur on our streets.

The program will continue with the support of the Transportation Advisory Group (TAG) to oversee development, implementation, and monitoring of the Vision Zero program, including leading annual reporting and development of future editions of the Vision Zero Safety Action Plan.

This Plan and the ongoing Vision Zero program center equity, community engagement, data-driven decision making, and transparency. We know that we can count on all members of the community to join us in this commitment to achieving a Worcester where people traveling on the city's roads can be safe.

Sincerely,



Eric D. Batista
City Manager



Glossary of Terms in this Plan

CRASH REDUCTION FACTOR (CRF)

The percentage by which we estimate that a street design intervention, also known as a safety countermeasure, will reduce the number of crashes at a given location. CRFs are based on before-and-after studies collated in the U.S. Department of Transportation (USDOT) Crash Modification Factors Clearinghouse. One minus the CRF is the Crash Modification Factor (CMF) which can be multiplied by the existing number of crashes to estimate the new, reduced, number of crashes.

ENVIRONMENTAL JUSTICE (EJ)

The fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

EQUITABLE MOBILITY

A foundational approach to allow everyone, regardless of race, age, ability, gender, or income, to travel safely, easily, and affordably, with fair distribution of the benefits and burdens that arise from the transportation system.

HIGH INJURY NETWORK (HIN)

A map of corridors where high numbers of people have been killed or severely injured in traffic crashes.

REDUNDANCY

The inclusion of extra safety components and improvement of all parts of the transportation system, so that in case one component fails, people are still protected.

SAFE STREETS FOR ALL (SS4A)

The federal grant program that funded this Plan. This grant program funds planning and implementation projects that seek to prevent roadway deaths the serious injuries.

SAFE SYSTEM APPROACH

An approach that underpins Vision Zero plans and includes five elements: safe speeds, safe streets, safe people, safe vehicles, and post-crash care. These elements work together as layers of redundancy to prevent crashes.

STAKEHOLDER ENGAGEMENT

A multifaceted approach that brings together stakeholders, such as transportation professionals, policymakers, public health officials, police, and community members to plan and collaborate for a unified purpose.

TRAFFIC VIOLENCE

Any occurrence of a car-related crash that results in injury or death, particularly for cyclists and pedestrians.

VISION ZERO

A strategy to eliminate traffic fatalities and severe injuries by treating them as preventable. The approach recognizes that mistakes are inevitable and that road systems and policies should be designed to prevent them from resulting in fatalities or severe injuries.

Executive Summary

The City of Worcester is the heart of the Commonwealth of Massachusetts. Worcester has a proud history as a center of industry, innovation, and culture. And with a growing community, it has a bright future ahead. The 2020 census confirmed that Worcester had reached a new peak population, having crossed the 200,000-resident threshold for the first time since the 1950s. The city's notable rise in recent decades has required an all-of-city effort, with municipal government partnering with the business community, universities, non-profits, institutions, community groups, and residents to build new housing, revive diverse neighborhoods, and emerge from the COVID-19 pandemic stronger than ever.

Today, Worcester is faced with another challenge that will require an all-city effort. In August 2024, Mayor Joseph M. Petty and City Manager Eric D. Batista declared a Road Safety and Traffic Violence Crisis in response to a tragic series of traffic crashes resulting in deaths and severe injuries. By calling out the crisis, Worcester's municipal leadership made clear the necessity of drawing attention to the serious and worsening problem of traffic violence and the imperative of rallying the community behind actions to address it.

Worcester's record on traffic violence is highly concerning, trailing several other large cities in Massachusetts and New England. From 2019 to 2023, 45 people died on Worcester's streets from traffic crashes. Hundreds more suffered life-changing severe injuries. In contrast, Boston's average of 1.7 annual fatalities is less than half of Worcester's 4.4 average annual fatalities (both per 100,000 residents, and based on 2019-2023 crash data and 2022 population estimates). Springfield averages 10.1 per 100,000.

This large number of deaths and injuries is not inevitable. As stated by the Mayor and City Manager in their declaration of the Crisis, these tragedies can be reduced through concerted actions taken by the same stakeholders who have helped the city rise in recent decades. This all-city approach must bring together every part of Worcester to bring the desired change.

This report recommends that the City adopt an ambitious goal: **reducing the number of deaths and severe injuries from traffic violence in Worcester to zero by 2035**. This goal and the movement surrounding it is known as "Vision Zero," which has become a best practice for communities around the world and has bipartisan support at the federal level, where Congress allocated \$5 billion in federal funds to support roadway safety through the Safe Streets for All (SS4A) program administered by the U.S. Department of Transportation (USDOT). While Worcester recognizes that this goal is ambitious, **we should not be satisfied until it is met.**

In Worcester...

Every 5 days,
**one pedestrian
crash** occurs



Every 25 days,
**one serious or fatal
injury pedestrian
crash** occurs

Every 17 days,
**one bicycle
crash** occurs



Every 140 days,
**one serious or fatal
bicycle crash** occurs

Every day,
**three vehicle
crashes** occur



Every 4 days,
**one serious or fatal
vehicle crash** occurs

Changes in transportation policy can be slow, but some cities roughly of Worcester's size have actually achieved zero traffic fatalities. These include Hoboken, NJ which has not had a fatality since 2015 and Alexandria, VA, which has not had a fatality since 2022. Their success has been driven, in part, by an all-of-city approach and by a relentless pursuit of quick-build street design interventions at high crash locations. No two municipalities are the same. But Worcester can learn from the best practices used in these communities and others that have made progress in reducing road deaths and severe injuries in recent years.

Throughout 2024, Worcester's Department of Transportation and Mobility (DTM), with support from the City Manager's Office and in partnership with peer departments, undertook the first steps toward Vision Zero that are detailed in this Vision Zero Plan. They include:

- Convening an Internal Working Group composed of department heads.
- Convening a Community Working Group composed of community stakeholders including advocates, service providers, educational and other institutions, and partner government agencies.
- Surveying over 1,200 Worcester residents about traffic safety experiences and locations where they feel unsafe on the streets. Inviting input from the community at pop-up events and other programs.
- Developing and mapping the Vision Zero Priority Network to focus interventions on the most impactful locations.
- Sharing the Priority Network and how it was developed through an online StoryMap.
- Conducting community Walk Audits at top priority locations to inform near-term design interventions.

These are important steps, but there are more actions to be taken to reduce crashes and end the Crisis. This Plan includes a series of recommendations for the city's continued progress toward Vision Zero. They include:

DESIGN: Near-term and longer-term infrastructure improvements at specific locations (the Near-Term Focus Corridors from the Priority Network).

SYSTEMIC: Infrastructure improvements that are not focused on a specific location, but are rather programmatic in nature, including focusing on safety near schools and bus stops.

POLICY, COORDINATION, and STRATEGY: Non-infrastructure improvements that support improved collaboration, proactivity, and responsiveness to roadway safety, including between multiple City departments and local institutions and non-profits..

CONTINUED ENGAGEMENT: Next steps to continue public awareness and accountability as the city continues to implement this Vision Zero Action Plan.

There is no place quite like Worcester. As the second most populous city in New England, Worcester is increasingly known for attracting people and businesses from around the world, and places like Downtown and the Canal District speak to the city's potential for future growth and vibrancy. But Worcester is also a city of neighborhoods, each with their own character and customs. The City's streets tie these neighborhoods together. Yet, too many of these streets are unsafe because of road design that did not prioritize people. Worcester deserves streets that are designed for the safety of all users – people walking, people traveling with mobility devices, people bicycling, people riding the bus, people traveling in a car, and more. This Vision Zero Plan lays out a path to get there. **Now it is up to Worcester's leaders – and the entire city working together – to take these steps.**



Introduction

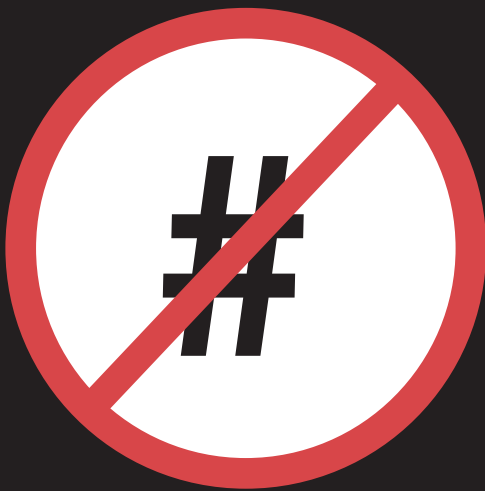
WHAT IS VISION ZERO?

What if we aimed for zero fatal and severe injury crashes on Worcester's roadways? Starting this year, the City of Worcester is approaching transportation safety in a new way. **This approach is called Vision Zero and is motivated by a goal to eliminate fatal and severe injury crashes.**

Vision Zero is a goal. It is also an international movement that asserts that deaths and severe injuries on our roadways are not acceptable. The movement started in Sweden in the 1990s and has spread worldwide. In the US, cities like Alexandria, VA and Hoboken, NJ have achieved zero traffic fatalities thanks to concrete action. Many more cities, including some in Massachusetts, have made progress toward this goal.

Vision Zero represents a fundamental change in priorities. Embracing this goal focuses all municipal departments around saving lives on roadways. This goal refocuses away from past priorities around speed and vehicle throughput, toward safe and equitable transportation access. It is not enough to say that "accidents happen," instead we must ensure that people are not killed or seriously injured on our roadways.

The Vision Zero Network provides more details and context about this approach: visionzeronetwork.org/about/what-is-vision-zero/



**NO DEATHS
OR SERIOUS
INJURIES**

VISION ZERO, a campaign to achieve zero fatalities and serious injuries on our roads, acknowledges that even one death on our transportation system is unacceptable.

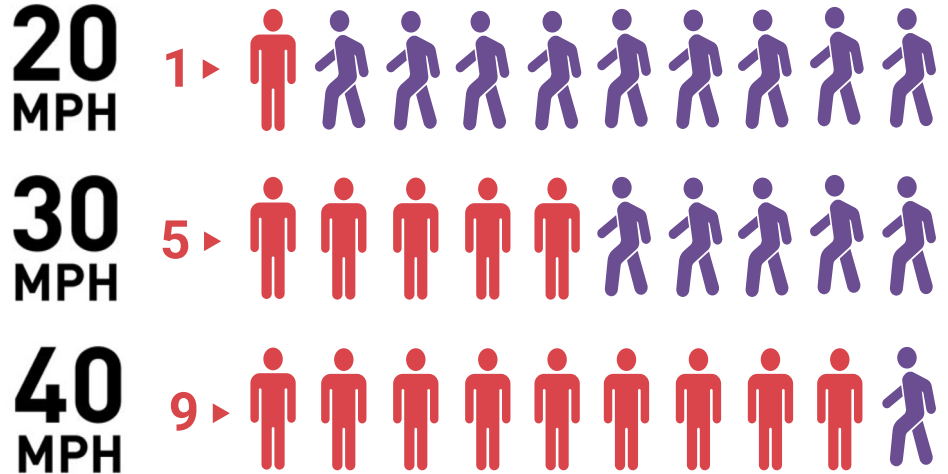
Although pursuing this goal requires radical change, solutions are needed today, and the **City of Worcester is committed.**

Unsafe streets impact many components of a healthy and vital city.

Personal Health

The faster a vehicle is traveling, the greater the risk of serious injury or death for someone walking.

How many people in 10 die when hit by cars at these speeds?



The Economy

When people don't feel safe using the roads, they are less likely to visit or spend time in the city. It is also more likely that they will have difficulty finding a job that is accessible with their personal travel options.



The Environment

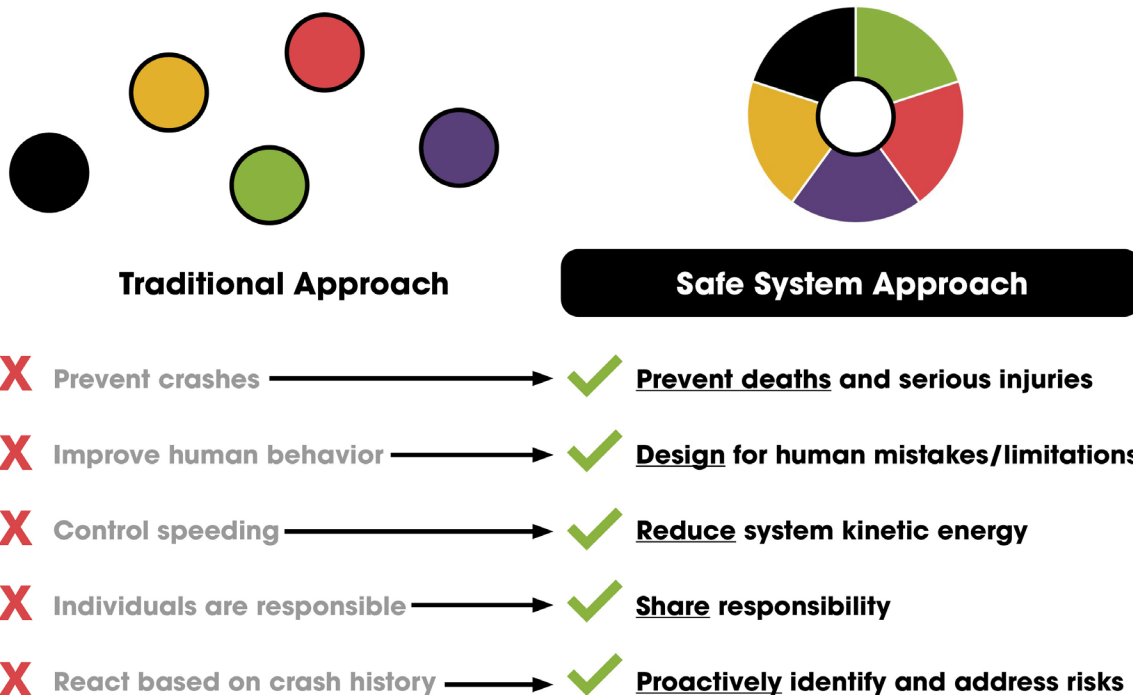
Streets that do not safely accommodate pedestrians, cyclists, and transit-users increase dependence on automobiles for travel, which generates more emissions. Safe street designs also support healthy environments.



WHAT IS THE SAFE SYSTEM APPROACH?

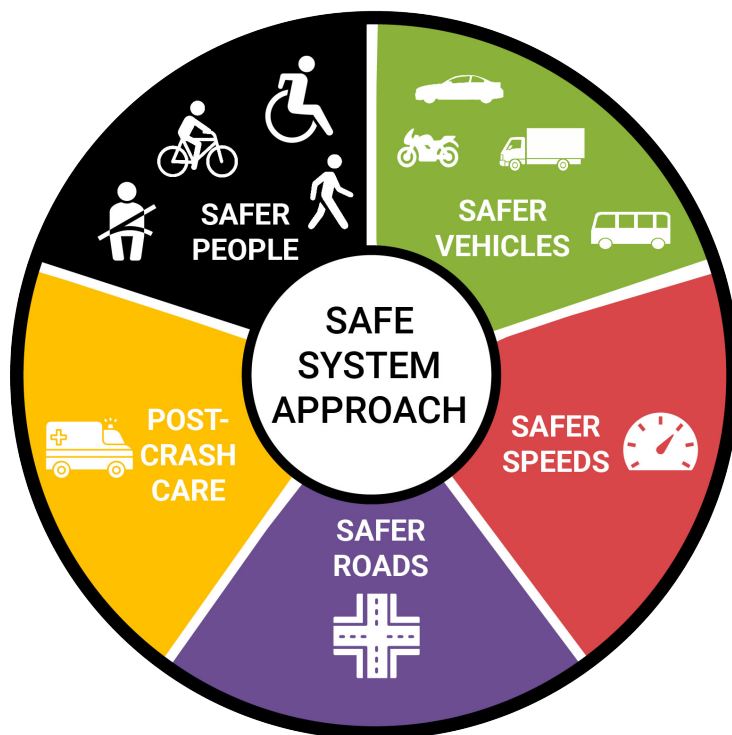
How do we get to zero? The USDOT has begun recommending the Safe System Approach as the most effective process to achieving safer streets.

The Safe System Approach begins with a set of powerful statements that offer a common starting point for tackling safety challenges (see facing page). In these statements, the Safe System Approach calls us to acknowledge that people make mistakes, and that those mistakes should not result in fatalities or severe injuries.



The Safe System Approach offers five holistic objectives to work toward:

The Safe System Approach makes safety the highest priority and is driven by the recognition that even **one fatality on our roads is too many**. Multifaceted solutions aim to improve all aspects of risk in the transportation system, from how people travel, to their speeds, to post-crash care.





We invite you and the others in your circle and community to pledge and commit to the core principles of the Safe System Approach.

POWERFUL STATEMENTS THAT UNDERPIN THE SAFE SYSTEM APPROACH

- 1 Traffic deaths and severe injuries are preventable and unacceptable.**
- 2 Humans make mistakes.**
Our transportation system should be designed so human error does not result in death or severe injury.
- 3 Humans are vulnerable.**
It is critical to design and operate a transportation system that recognizes that our physical bodies can only sustain so much force.
- 4 Responsibility is shared.**
Everyone has a role to play in ensuring that crashes do not lead to serious injury or death.
- 5 Safety is proactive.**
Rather than waiting for a crash to happen and reacting afterward, we should use all tools available to identify and mitigate the risks of crashes before they happen.
- 6 Redundancy is critical.**
All elements of transportation safety should be strengthened so that if one part fails, the others still protect people.

The Big Picture

MEETING THE MOMENT

Recent fatal and severe crash trends have been alarming, both locally and nationwide. Nationally, there was an increase in the loss of lives on the country's roadways in 2020 (7.3% increase from 2019) and 2021 (10.8% increase from 2020), when less people were driving and speeding abounded as the country changed its travel patterns to cope with a global pandemic. Trends were even more stark in Worcester. From 2020 to 2021 there was a 56% increase in severe injury crashes (from 73 to 114 crashes) and a 56% increase in fatal crashes (from 9 to 14 crashes).

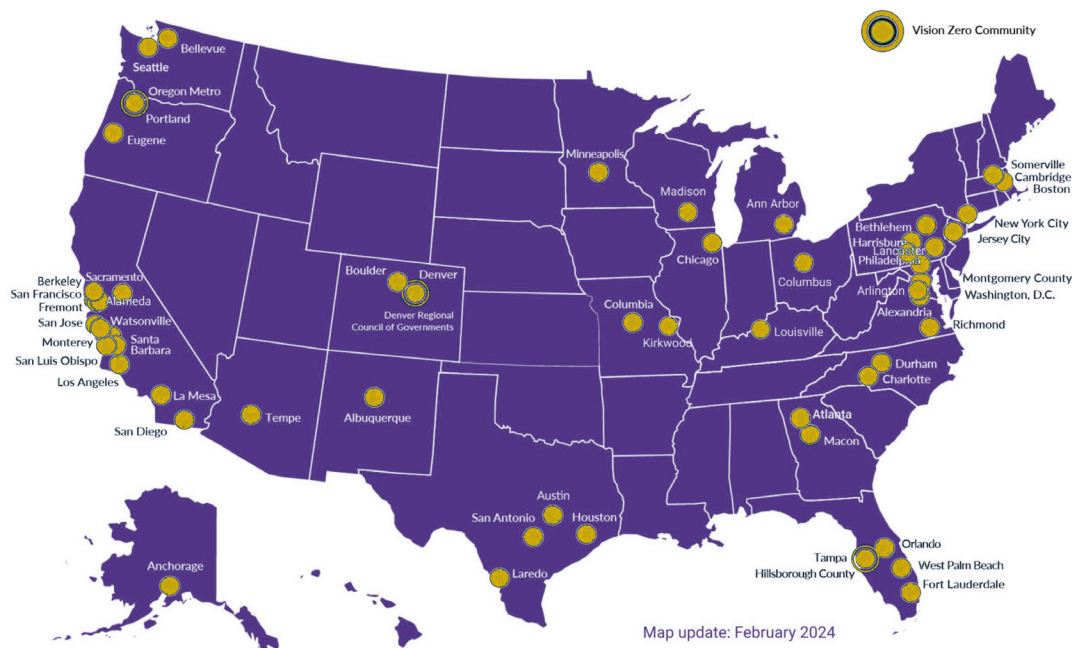
In 2022, the USDOT published the *National Roadway Safety Strategy*, which asserts their embrace of safety as the most important principle for roadway design and management, above speed, throughput, and efficiency which have been prioritized in the past. **This is a fundamental shift in our national approach to transportation.**

To enable communities to respond at the local level, the federal government developed a **first-of-its-kind funding opportunity through the SS4A (Safe Streets**

for All) grant program. Funded by the 2021 Bipartisan Infrastructure Law (BIL), the grant was a catalyst in greatly increasing municipal interest in the pursuit of Vision Zero policies and related solutions across the country. Between 2022-2024 **\$1,155,000,000 in grant awards were distributed.** The SS4A program funds the development of Safety Action Plans, such as Worcester's, to establish a multifaceted roadmap - consistent with the Safe System Approach - for addressing localized safety concerns. Once a community completes its Safety Action Plan, it is then eligible for further Implementation grants to carry out the recommendations outlined in the plan.

With the adoption of this Vision Zero Safety Action Plan, Worcester, the second largest city in New England, joins the ranks of other leading Vision Zero cities nationwide. With the adoption of this Plan, Worcester is also meeting the moment and seeking to understand the trends behind the Road Safety and Traffic Violence Crisis and establish a detailed roadmap to offering a fundamentally safer roadway system.

VISION ZERO NETWORK



CITY SUCCESSES

Worcester has been taking deliberate and meaningful steps in recent years to build the momentum that will effect systemic change in the transportation system through a range of coordinated initiatives.

Dec. 5, 2017



City adopts Complete Streets policy

Apr. 27, 2021



City adopts Green Worcester Plan

Aug. 9, 2022



City establishes Department of Transportation & Mobility (DTM)

Feb. 26, 2024



City Manager and DTM convene Vision Zero Internal Working Group

Feb. 29, 2024



Vision Zero public launch and State of our Streets forum

Mar. 20, 2024



City adopts Now | Next Citywide Plan

May 20, 2024



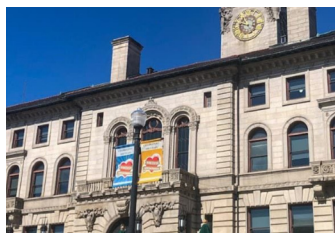
DTM releases Draft Mobility Action Plan

Aug. 1, 2024



Mayor and City Manager declare a Road Safety and Traffic Violence Crisis in Worcester

Sept. 9, 2024



Worcester Board of Health votes to also declare the Traffic Violence Crisis and to support the resolution on posted speed limits

Sept. 10, 2024



Worcester City Council passes a resolution supporting the inclusion of traffic calming and other Complete Streets safety improvements as part of all city roadway projects

Sept. 24, 2024



Worcester City Council unanimously adopts 25mph citywide statutory default speed limit and 20mph Safety Zones policy for particularly high-risk areas

More to come!



CRASHES

Past crash data is the most critical input into the Vision Zero analysis. Even one death on Worcester's roadways is too many – **in the last five years there were 45**. The crash analysis underpinning this Action Plan was led by the consulting team Stantec, and is based on the most recent five years of crash data (2019-2023) collated by the Massachusetts Department of Transportation (MassDOT). This analysis focuses on injury crashes and identifying the highest risks for injuries. Therefore, this analysis excludes property damage only (PDO) crashes.

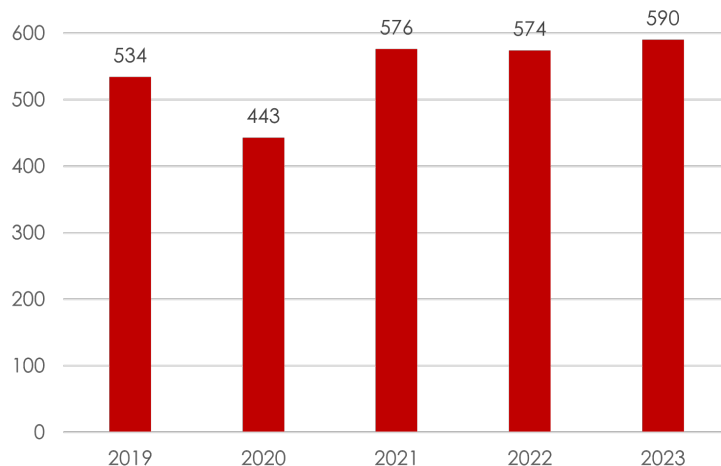
Crashes where the severity was unknown and crashes that were not geolocated by MassDOT or Stantec or were geolocated outside of Worcester are also excluded throughout. The full crash analysis is included in Appendix E.

While the prevalence of vehicular safety devices such as automatic braking and blind spot detection has increased dramatically, overall injury crash rates have not changed for many years, other than during the pandemic. In 2023 there were 590 injury crashes, the highest in recent years. However, serious and fatal crashes have been slowly declining, and safety devices are a likely reason. Nonetheless, nearly 100 such violent crashes still occurred in the most recent reporting year.

Of the **injury-related crashes** that occur in Worcester, those that impact bicyclists and pedestrians are disproportionately much more likely to result in a severe or fatal injury. The locations of crashes in Worcester are identified by transportation mode on the following pages.

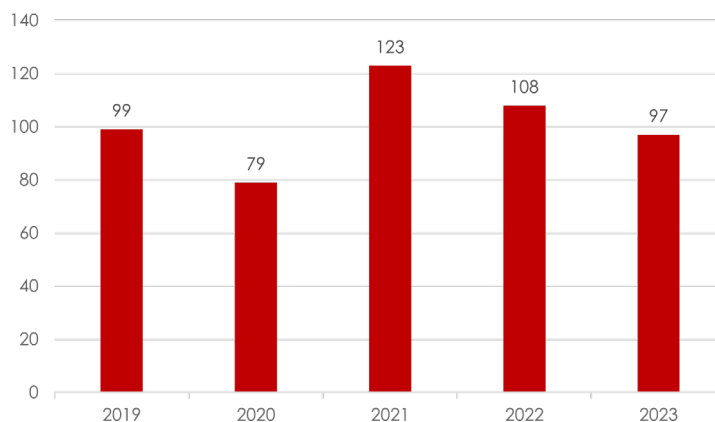
Total Confirmed Injury Crashes 2019-2023

(Including fatal, severe, and minor injury crashes, but data excludes possible injury crashes)



Total Severe* Injury and Fatal Crashes, only 2019-2023

*severe injury crashes includes "Non-Fatal injury - incapacitating" and "Suspected Serious Injury" crashes



Victim of latest fatal pedestrian crash in Worcester described as 'beautiful person'



Marco Cartolano

Worcester Telegram & Gazette

Published 10:57 a.m. ET Sept. 19, 2024 | Updated 10:57 a.m. ET Sept. 19, 2024



Pedestrian, 13, dies after being hit on Belmont Street in Worcester



Marco Cartolano

Worcester Telegram & Gazette

Published 7:02 p.m. ET June 28, 2024 | Updated 10:55 a.m. ET June 29, 2024



WORCESTER — A 13-year-old girl has died after a Thursday-afternoon pedestrian crash on the area of 370 Belmont St., Worcester police said Friday.

Pedestrian hit by vehicle, critically injured in Worcester, police say

This latest crash comes after several pushes for safer streets from Worcester authorities.



File Photo

By **Eva Levin**

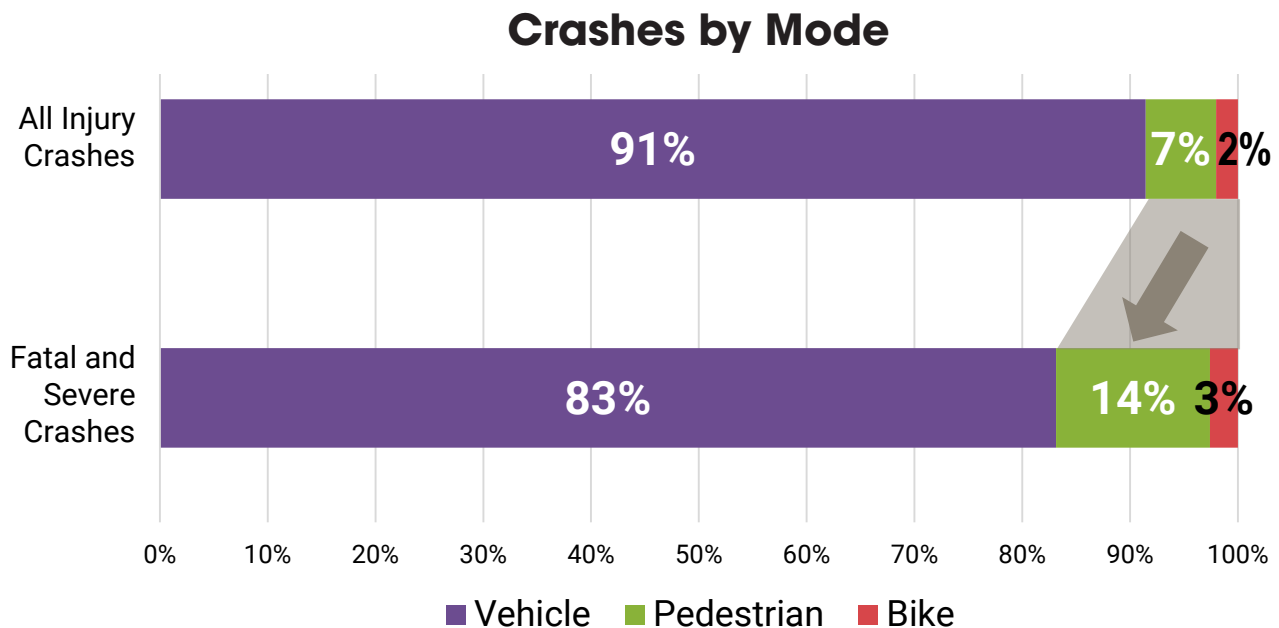
August 11, 2024



UNDERSTANDING CRASHES BY MODE

With the vast majority of trips in Worcester conducted by a vehicle, 91% of all injury crash victims are motorists or their passengers. However, a lower share - 82% - of fatal or server injuries are motorists or passengers, owing to the protection afforded by the vehicle and its safety features. People traveling outside of a vehicle, such as people walking and biking, are more likely to be involved in a fatal or severe injury crash, disproportionate to their share of trips by all modes of travel.

People walking and biking in Worcester are involved in 9% of all injury crashes and, disproportionately, a full 17% of all fatal and severe crashes (based on the U.S. Census American Community Survey 2022 5-Year estimates).

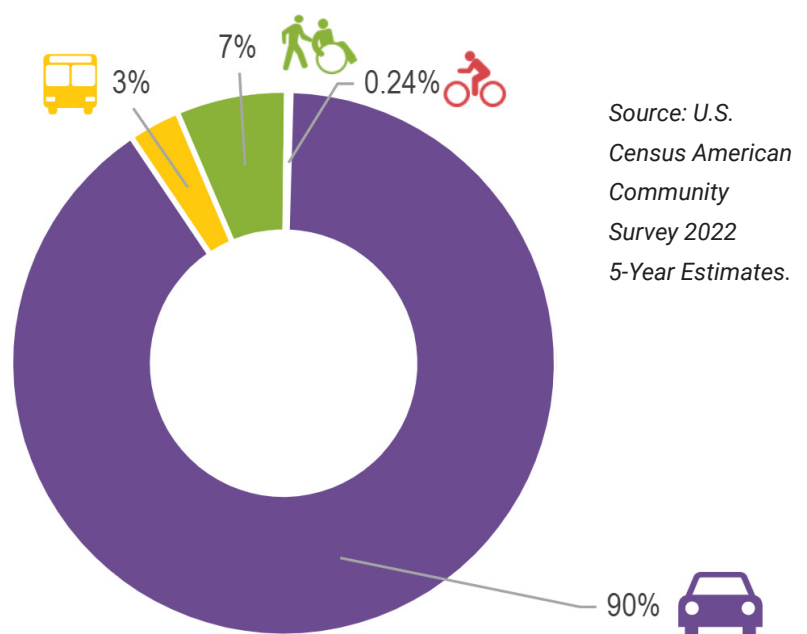


Note: Crashes exclude property damage only, crashes where severity is unknown, and crashes that were not geocoded by MassDOT/Stantec or geocoded outside of Worcester.

Commute Mode Split

A large majority of trips in Worcester are made by automobile. While complete data on all trips is not available, a look at commute trips to and from work illustrates the dominant role automobiles have in transporting people in the community.

Increasing the use of other transportation options is one means toward creating a safer transportation network that benefits everyone.



All Modes Crash Locations (2019-2023)



5,218

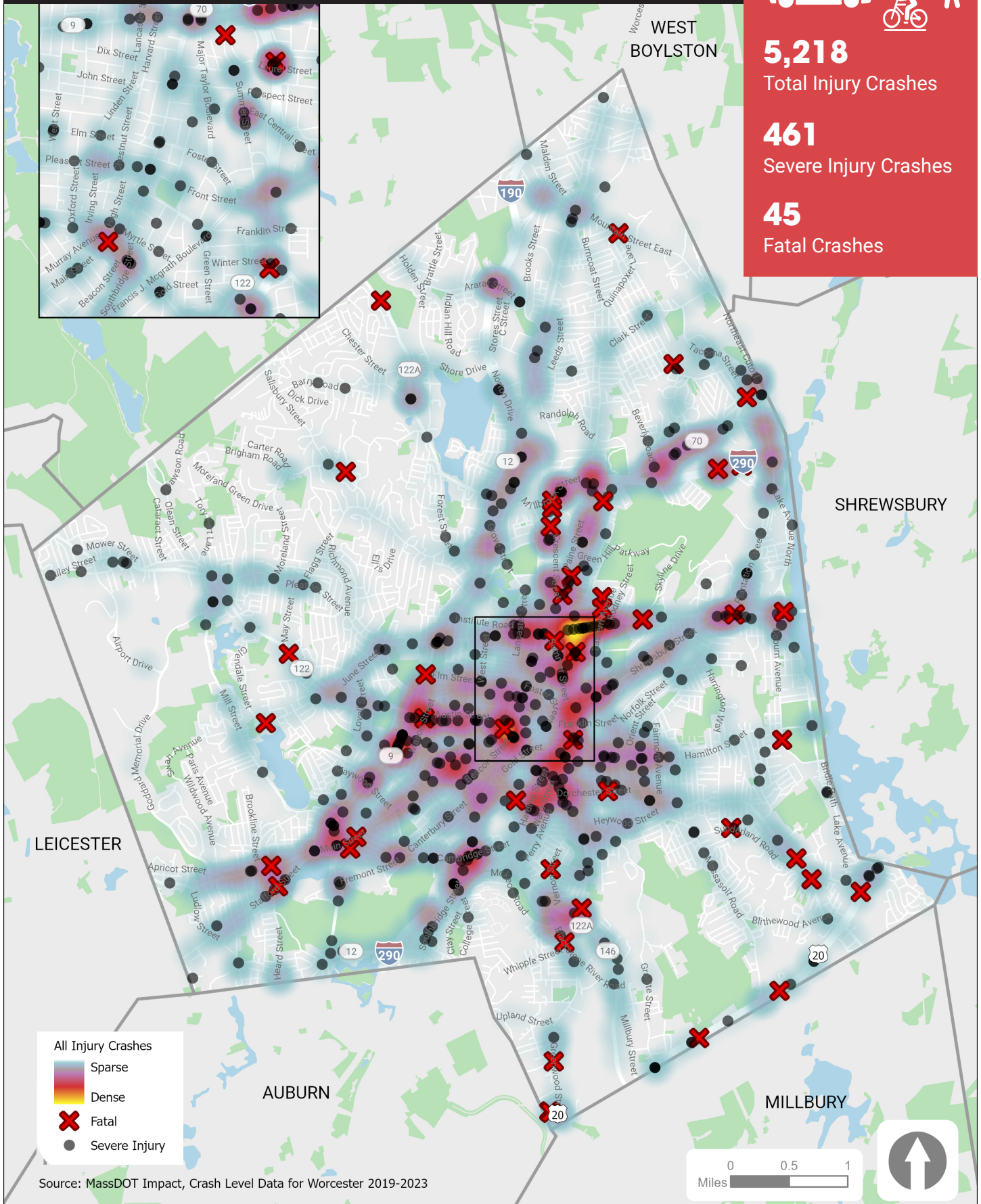
Total Injury Crashes

461

Severe Injury Crashes

45

Fatal Crashes



Pedestrian Crash Locations (2019-2023)



341

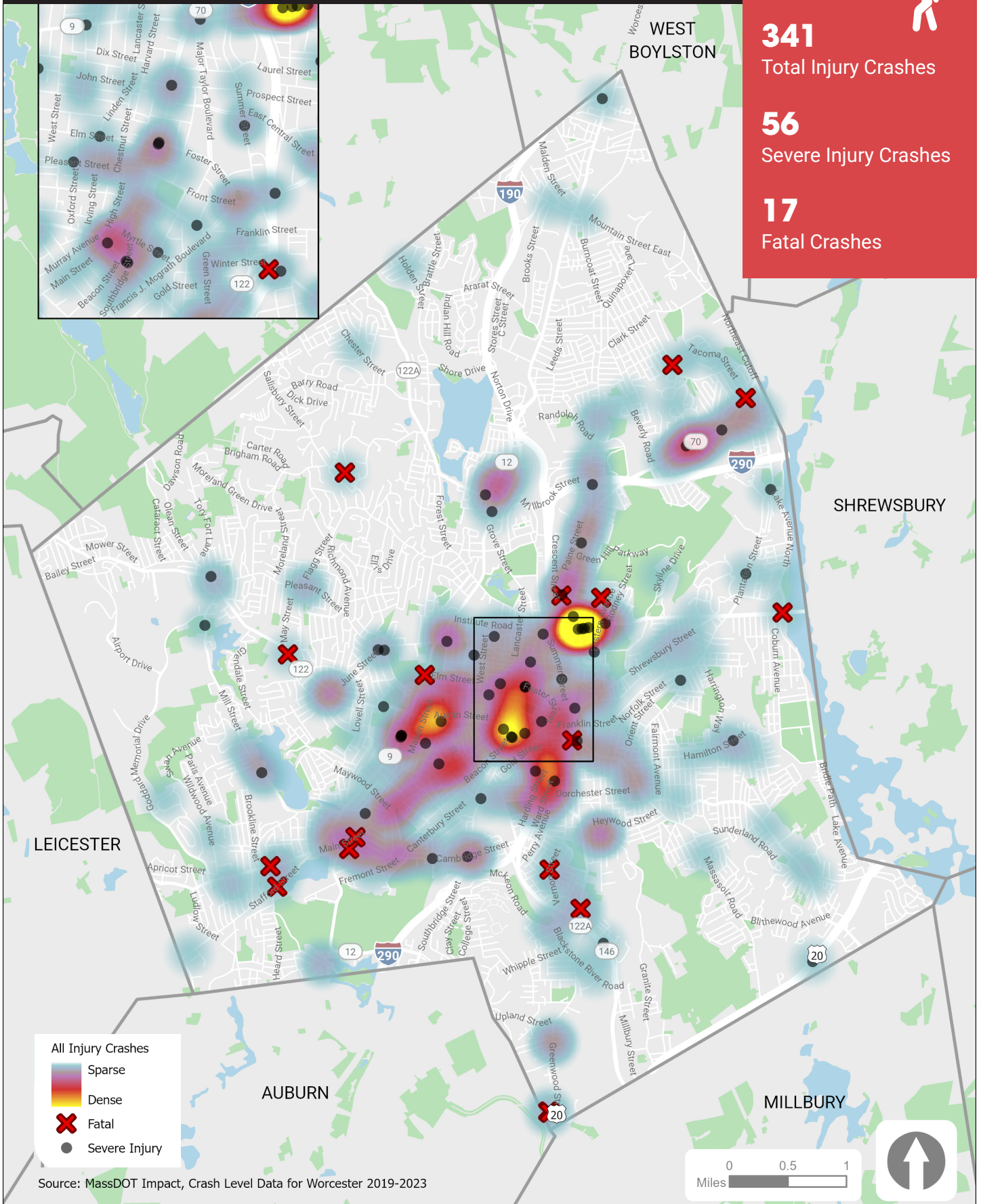
Total Injury Crashes

56

Severe Injury Crashes

17

Fatal Crashes



Bicycle Crash Locations (2019-2023)



106

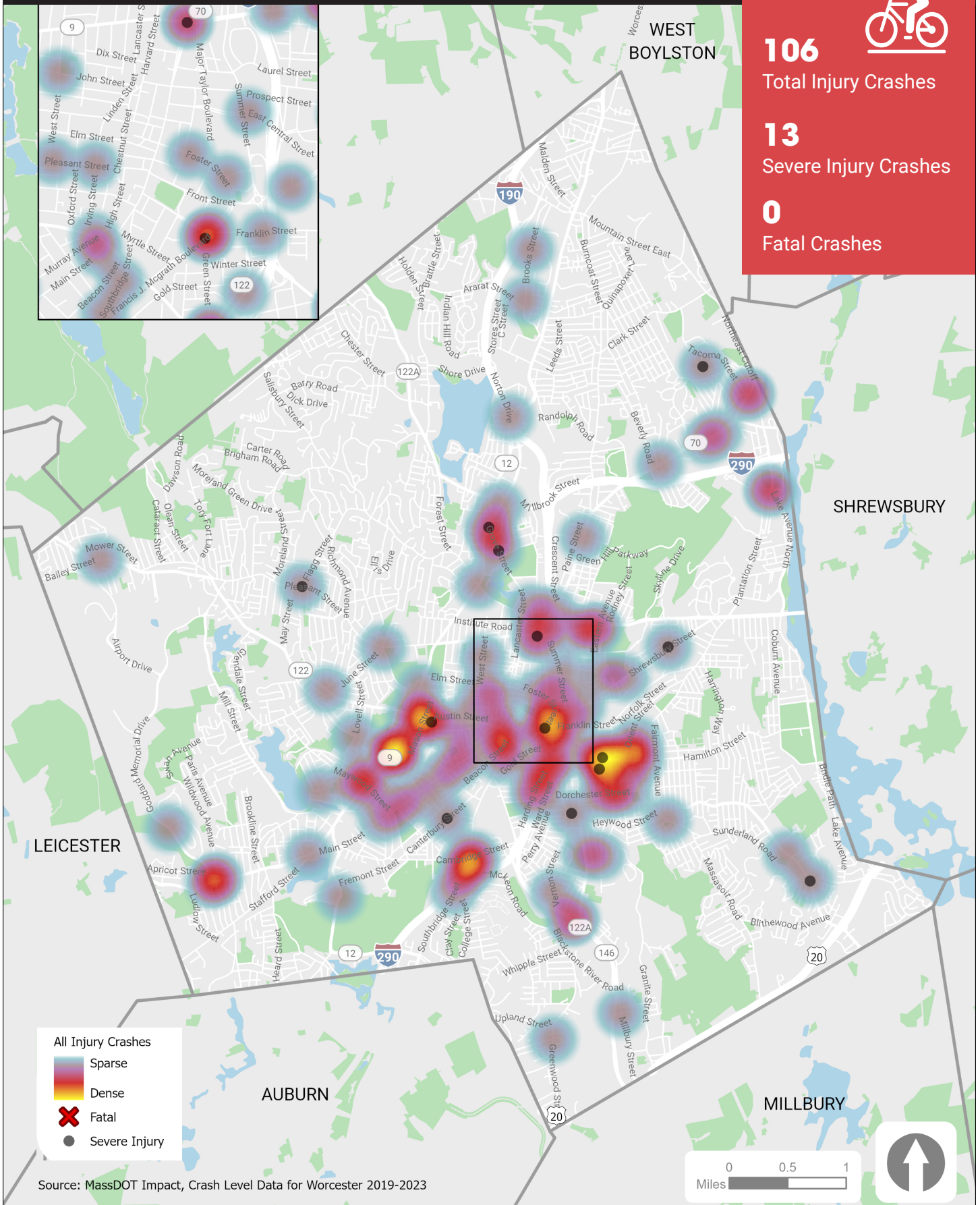
Total Injury Crashes

13

Severe Injury Crashes

0

Fatal Crashes



Source: MassDOT Impact, Crash Level Data for Worcester 2019-2023



CHALLENGES ON THE ROADS TODAY

Many factors within the road network today have an impact on safety for users, regardless of mode.

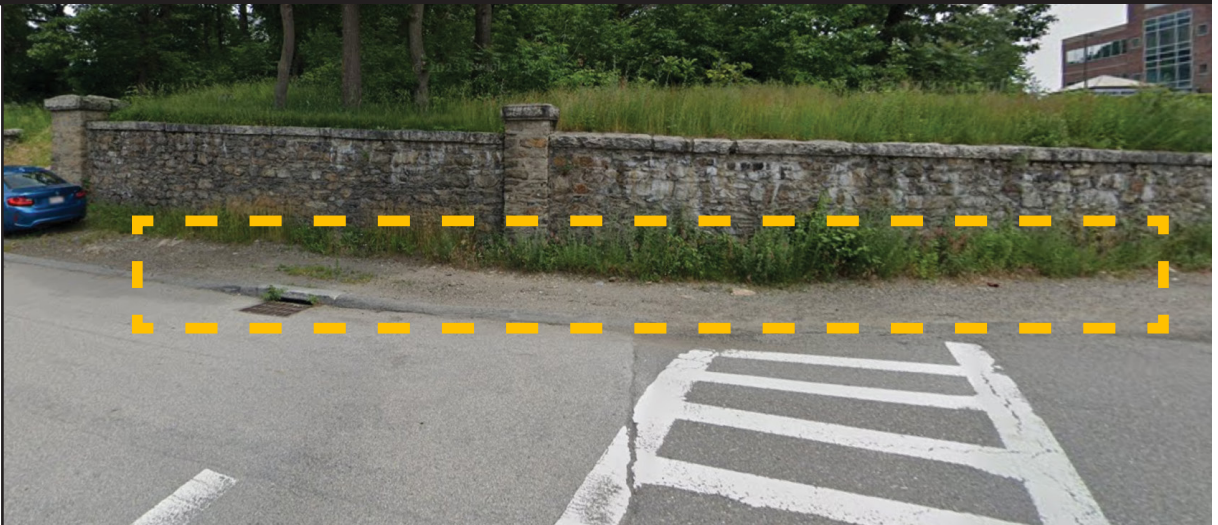
ROAD GEOMETRY

Places where a lack of definition between modes can cause conflict (the example to the right requires pedestrians to “create their own path”)



INFRASTRUCTURE MAINTENANCE

Areas with sidewalk obstructions, gaps in the sidewalk network, or other maintenance issues



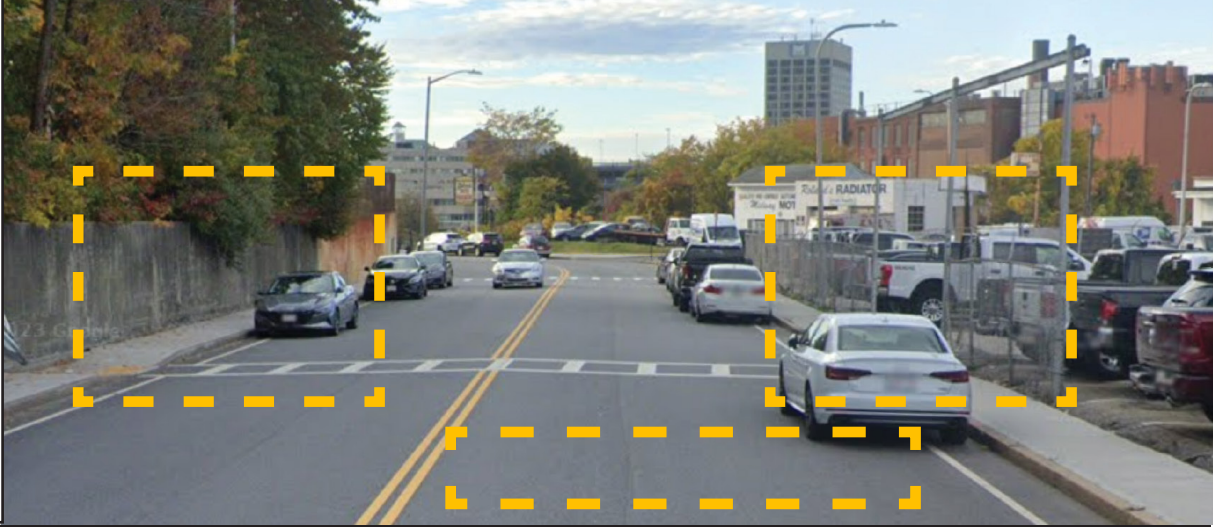
WHERE ROAD CHARACTERISTICS DO NOT REINFORCE SPEED LIMITS

Areas where speed limits are either inappropriate for road characteristics or where signs are needed (the example to the right should include a sign nearby)



PEDESTRIAN ACCESSIBILITY

Locations that lack additional features to improve safe crossings or where crossings are missing to connect between long blocks



VISIBILITY AND SIGHTLINES

Areas where topography, buildings, and other factors contribute to reduce sightlines for both drivers and pedestrians/cyclists



AMENITIES AND EXPERIENCE

Places that are unsafe for walking because of low lighting (example to the right), narrow sidewalks without a road buffer, and other factors



The Priority Network

HOW IT WAS CREATED/METHODOLOGY

Part of the challenge of Vision Zero is to narrow down the roughly 600 miles of roadway in the city to a Priority Network where improvements will be most impactful at reducing crashes and injuries. The multifaceted Priority Network is a product of the data analysis and a tool to focus safety investment. From the Priority Network we then define the Top Priorities, then the Near-Term Focus Corridors.

The Priority Network reflects a number of factors, chief among them the concentrations of fatal and severe injury crashes. It also includes an analysis of contextual roadway and land use characteristics, as well as community input. The Priority Network combines:



TRENDS-BASED NETWORK

Where existing fatal and severe injury crashes occur based on past crash trends. These data are represented in a **High Injury Network (HIN)**, where 75% of Worcester's severe and fatal crashes (380 of 506 crashes) occur, representing just 11% of Worcester streets, highways, and interstates (67 of 605 miles). A segment must be part of the HIN in order to be included in the map of Top Priorities.



RISK-BASED NETWORK

Where high-risk contexts occur, regardless of crash history, based on roadway and land use context characteristics. Data analysis comparing the prevalence of fatal and severe crashes near a number of context characteristics (Appendix E) highlighted which of those characteristics saw an overrepresentation of more severe crashes.

Massachusetts Environmental Justice (EJ) Population OR Federal Climate and Economic Justice Screening Tool (CEJST) Population areas.

- 74% of fatal and severe crashes occur in **MA EJ areas**, which represent just 35% of the city's land area.
- 68% of fatal and severe crashes occur in **CEJST areas**, which represent just 28% of the city's land area.

The locations of community facilities like schools, healthcare facilities, community centers, libraries, and shelters (within 1,000 feet).

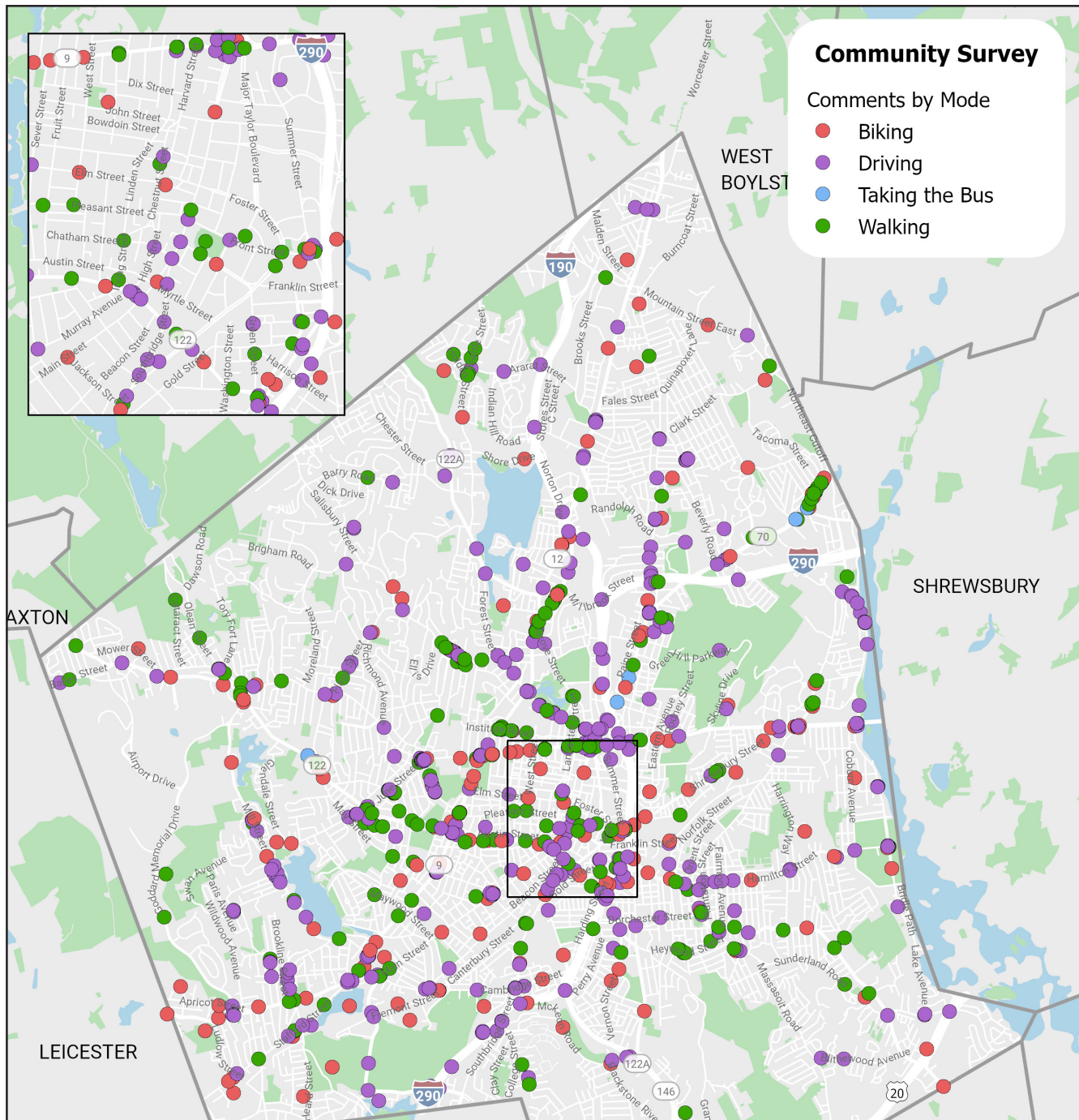
- Schools: 30% of pedestrian and 32% of bicycle injury crashes occur within 1,000 feet of a school. Only about 14% of Worcester's land area (within 1,000 feet).
- Shelters: 23% of pedestrian and 21% of bicycle injury crashes occur within 1,000 feet of a shelter. Only about 4% of Worcester's land area (within 1,000 feet).

Where the posted speed limit is above 35 mph or traffic data indicates most cars are traveling more than 35mph.

- 59% of fatal crashes occur on roadways with **observed 85th percentile** (the speed at or below which 85% of the drivers are operating) speeds **greater than 35 mph**.
- 40% of all injury crashes occur on roadways with **observed 85th percentile speeds greater than 35mph**.
- These roadways only represent 11% of Worcester's roadway miles.

COMMUNITY-BASED NETWORK

Where do people feel unsafe? Crashes may be underreported. There may be common near-miss locations. Community members provided input in the Vision Zero interactive webmap (open February to June 2024). The map (below) received **744 comments** across all modes of transportation. The most common type of comment related to pedestrian safety (20% of all comments).



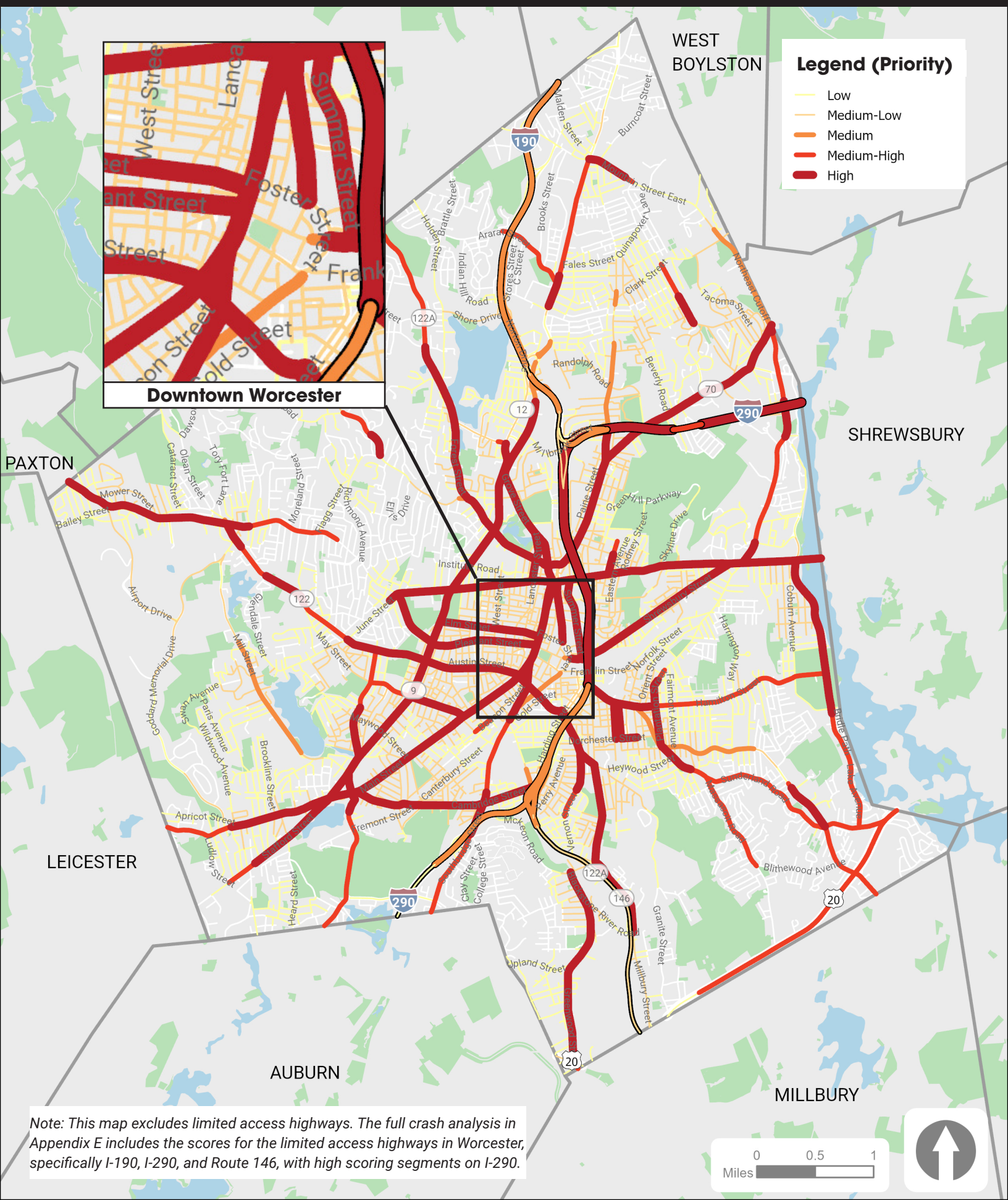
The Priority Network isn't the only location where safety improvements will be implemented; rather it provides a focus for investment. **While the highest scoring corridors will be the City's top priorities, all corridors with a score need attention.** Lower scoring areas may receive neighborhood-appropriate traffic calming or Safe Routes to School programs, for example.

Priority Network Development Approach

This graphic summarizes the overall process that led to the establishment of the Priority Network defined on the following page.



The Worcester Priority Network



Top Priorities represent the locations most in need of safety investment. These locations scored in the “High” category on the previous map. The medium and low scoring (orange and yellow) segments on the previous map are also priorities to be addressed following high priority improvements. Most often, these segments are included because they represent the local streets around schools and other community facilities.

The **Top Priorities** represent:

- **56% of Worcester’s severe and fatal crashes (282 of 506 crashes)**
- **10% of Worcester’s public streets* (43 of 438)**

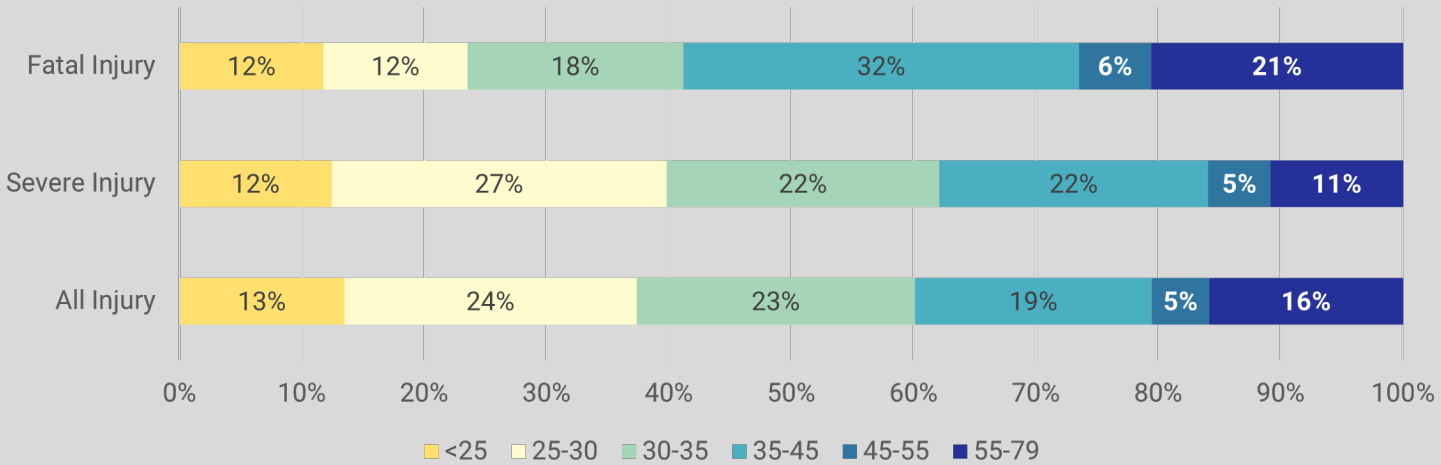
73% of the Top Priority mileage is located in federal CEJST zones that have been historically overburdened and underresourced. These corridors include most major arterials that provide access to the commercial areas of the city, neighboring communities, and highways. All of these segments are owned by the City of Worcester, other than Pleasant Street, which borders the Town of Paxton.

**Excludes private streets and limited access highways*

SPEED AND SAFETY

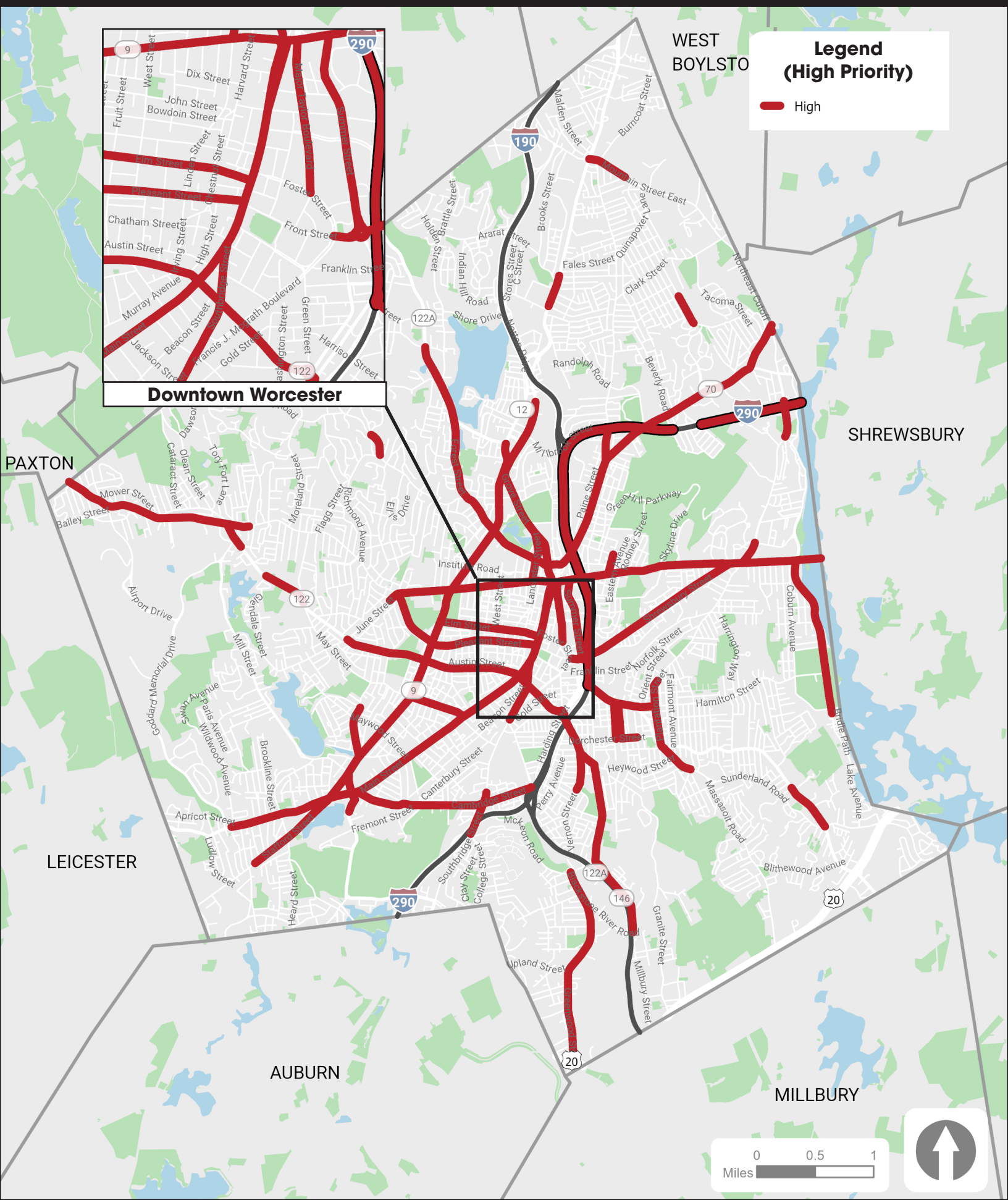
Fatal injury crashes tend to happen more frequently on roads with faster observed 85th percentile speeds (greater than 35 mph). In crashes with higher speeds, the human body sustains a larger impact that is more likely to be fatal. These roads are where 59% of fatal crashes occur, compared to 38% of all injury crashes.

Crash Distribution, By Observed 85th Percentile Speed by Severity



| Top Priority Near-Term Corridors | | | | | | | |
|----------------------------------|---|--|---|-----------------------------------|---|-------------------------|-----------------------------|
| Corridor Name | Part of High Injury Network? (Trends-Based) | Environmental Justice Area? (Risk-Based) | Near Community Facilities? (Risk-Based) | High-Speed Corridor? (Risk-Based) | Top community comment location? (Community-Based) | Total Number of Crashes | Fatal/Severe Injury Crashes |
| A. Lincoln Street | Yes | Yes | Yes | No | Yes | 176 | 13 |
| B. Belmont Street | Yes | Yes | Yes | Yes | Yes | 166 | 18 |
| C. Park Avenue | Yes | Yes | Yes | Yes | Yes | 225 | 19 |
| D. Shrewsbury Street | Yes | Yes | Yes | Yes | Yes | 84 | 6 |
| E. Main Street | Yes | Yes | Yes | No | No | 100 | 4 |
| F. Cambridge Street | Yes | Yes | Yes | No | No | 50 | 6 |

The Worcester Priority Network: Top Priorities



With the Top Priorities determined, the next step is action. The map on the following page breaks down the Top Priorities into the following four categories:

Progress Is Underway

These corridors on the High Priority Network already have design or construction projects underway.

1. **Grove Street:** In 2024, the City implemented safety improvements to reduce speeds that include a road diet, bike lanes, new ADA-compliant crosswalks, and removal of a high speed exit slip lane.

2. **Pleasant Street (led by MassDOT):** Redesign is underway from Tatnuck Square to the Paxton town line and will include pedestrian and bicycle safety improvements.

3. **Mill Street:** The City implemented interim road diet, bicycle accommodation, and increased pedestrian safety measures. Design for additional, permanent improvements will begin in 2025.

4. **Stafford Street:** In 2024, the City implemented improvements including a road diet, formalizing on-street parking, adding buffered bike lanes, and making safety improvements for pedestrians.

5. **Chandler Street & May Street:** Intersection redesigns are nearing 75% design with funding for construction in FFY 2026.

6. **Chandler Street (Park Street to Main Street):** Redesigned for full construction including a road diet, new bike facilities, updated intersections, and safety measures. Federal funding for construction is programmed for FFY 2027.

Improvements Implemented

Improvements along these corridors were recently reconstructed and have seen promising crash reductions. However, due to the timing of the reconstruction, the improved crash data is not shown in the Vision Zero data time period.

7. **Main Street (Chandler Street to Highland Street):** Reconstructed in 2022 to include a road diet and on-street bike lanes. Resulted in the average annual fatal and serious injury crashes decreasing from 4 to 1.5 and the average annual total crashes decreasing from 59 to 36 (comparing 2018-2019 with 2022-2023).

8. **Grafton Street (Winter Street to Hamilton Street):** Reconstructed in 2022 to include replacing the intersection at Hamilton Street with a roundabout along with more crosswalk and traffic signal upgrades. Resulted in the average annual fatal and serious injury crashes decreasing from 1.5 to 1 and the average annual total crashes decreasing from 59 to 51 (comparing 2018-2019 with 2022-2023).

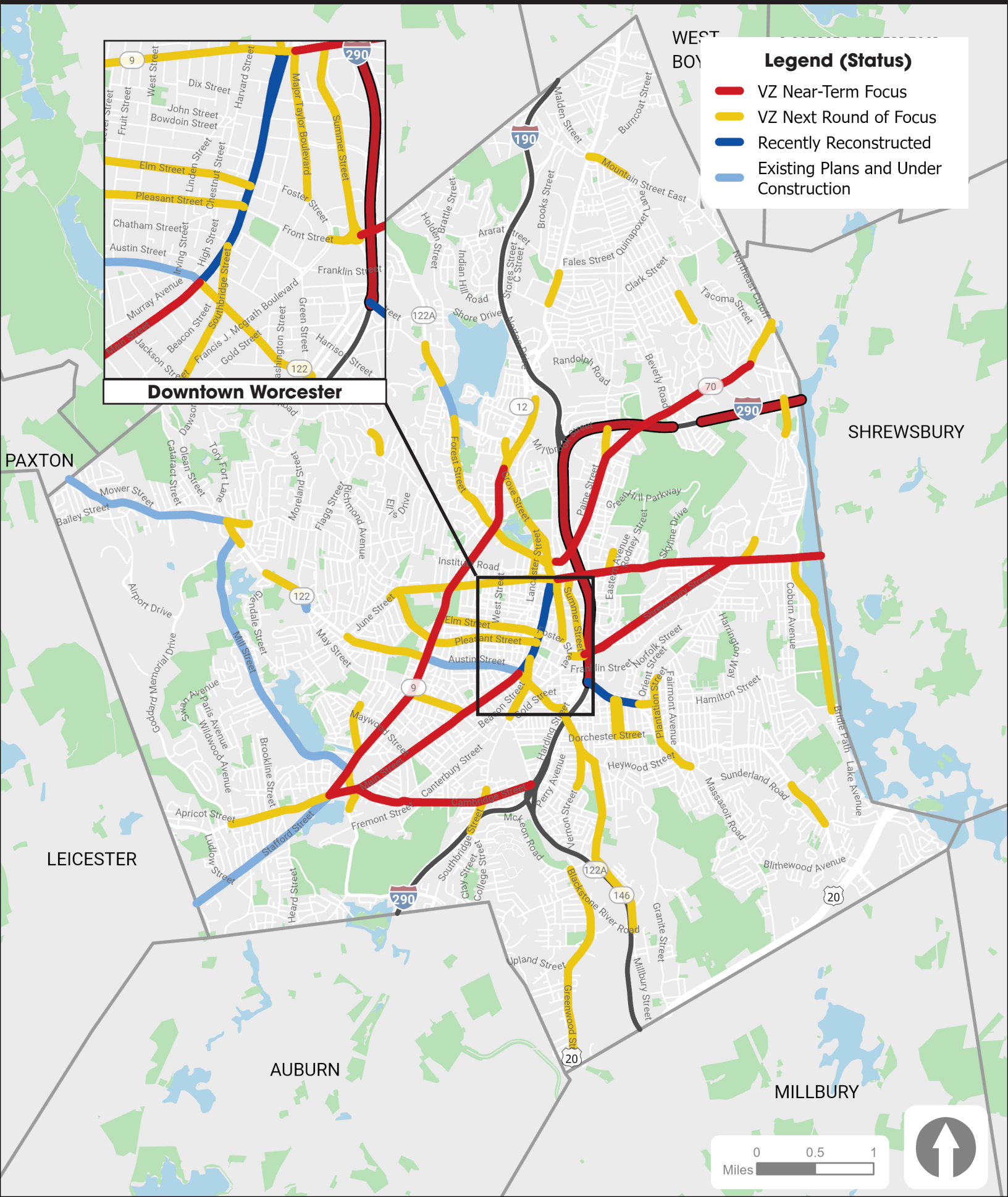
Near-Term Focus Corridors

These corridors represent the highest priority for action. Most of these corridors were the subject of public Walk Audits conducted by the City the week of Sept. 9, 2024. Preliminary concept recommendations for locations on these corridors are detailed later in this plan.

Future Priority Areas

These corridors represent the next round(s) of priorities where the City will focus their efforts in future years.

The Worcester Priority Network: Action Status



Outreach

EQUITY APPROACH AND MAKING CONNECTIONS

This plan has no impact without equity at its core. **All residents and visitors to Worcester deserve the basic right of safe streets** regardless of mode choice, age, race, or physical ability, and whether actively using the streets or living or working next to them. Worcester is committed to engaging and empowering those who are most vulnerable to traffic violence. The Vision Zero message was relayed to the community through a wide variety of formats (e.g., flyers and social media posts in multiple languages, public meetings, press releases) throughout 2024. Central Massachusetts Regional Planning Commission (CMRPC) and MassBike were strong partners and also supported by tabling at several events.

Did we see you along our Vision Zero journey this year?

VISION



Vision Zero Project Kickoff
Feb. 29

ZERO



World of Foods Worcester
June 1



**Vernon Hill School Tactical
Demo and Bike Rodeo**
June 6



Community Walk Audits
June 6, 10



Out to Lunch Festival
July 18, 25, Aug. 1



REC Farmer's Market
July 20, Aug. 18



George St. Challenge
July 21



MassBike Ice Cream Bike Ride
July 28



Green Hill Block Party
Aug. 3



National Night Out
Aug. 7



**Priority Location Community
Walk Audits** Sept. 9, 12



COMMUNITY VOICES

Stories we learned from you about how Worcester's street experience impacts everyone on a personal level.

Over the first half of 2024 we heard from more than **1,200 Worcester residents** about their safety experience on the city's roads, as part of the Vision Zero community survey.

One in four respondents report having been involved in a crash in Worcester, and two out of every three respondents know someone who has been involved in a crash in Worcester, one quarter of which were fatal or severe.

Survey respondents also told us:




"Driving on Belmont Street last year, I slowed to come to a stop behind another vehicle that had stopped at a cross walk to allow a pedestrian to cross at a marked side walk. As a result of slowing down from the speed of traffic to a full stop and the excessive speed of the driver behind me, I was rear ended near Bell Hill Park and have suffered whiplash symptoms for over a year. I ... now fear that I might experience chronic pain for my foreseeable future. I think that traffic goes too fast on Belmont Street to be safe for pedestrians or the drivers stopping for pedestrians."

"Was walking with my service dog. We had the walking light and a car turned into us. Luckily we weren't hurt. It was very scary and we specifically waited for the walking light not to have this happen."

"Our building ... has been hit 6 times in the last 10 years. A mini van ended up inside the office from one collision. We need speed bumps ... and better lighting. We also need the sidewalk extended so we can put bollards in front of our glass storefront. The excessive speeding in the very early morning hours is out of control."


Children provide an essential perspective about the safety and experience of the roads that is often overlooked. Valuable qualitative and quantitative information was gathered through an in-class exercise at Vernon Hill Elementary School in June, allowing students to map their own individual routes and concerns on streets to and from school.

Sometimes it can be scary to use the streets.
What safety issues do YOU see when you travel to school?

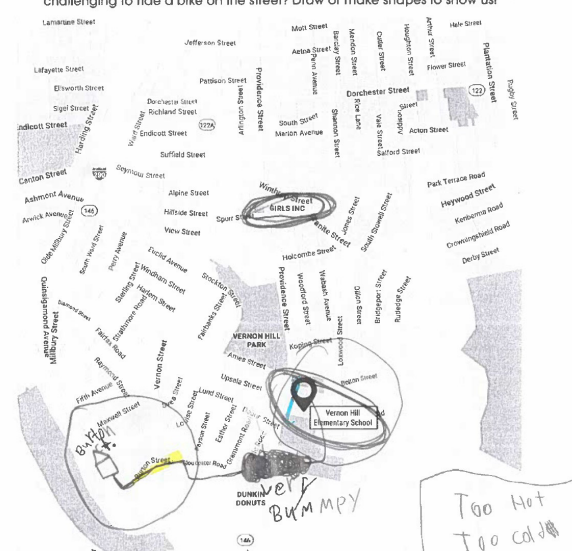


Map your walk, bike, or bus route to school!

NAME and GRADE
On the map below, please draw the route from your home to school and tell us what you have noticed about the streets. Are there places you don't like crossing or places you have a hard time seeing cars? Where is it too dark? Where is it challenging to ride a bike on the street? Draw or make shapes to show us!



NAME and GRADE
On the map below, please draw the route from your home to school and tell us what you have noticed about the streets. Are there places you don't like crossing or places you have a hard time seeing cars? Where is it too dark? Where is it challenging to ride a bike on the street? Draw or make shapes to show us!



LEGEND

- Biking challenges
- Crossing challenges
- Busy or congested places
- Dark places
- Key destinations
- Safety challenges

201 Vernon Hill Elementary School students mapped the following:

- Routes from home to school
- Places uncomfortable to ride bikes
- Places challenging to cross the street
- Areas that are dark, have hills, or rough pavement
- Areas that feel unsafe because of fast cars, sightline challenges, etc.
- Places that feel busy or congested with many cars or people

INSPIRATION FROM PEERS AND BEST PRACTICE

Feedback from the community reflects key themes raised in similar Northeast cities that have successfully pursued and achieved Vision Zero through a combination of best practice improvements and policies, such as those highlighted on the opposite page. The City of Worcester is already taking action in some of these areas.

Narrowing lane widths. Drawing from compelling national evidence that wider vehicle lanes lead to higher vehicle speeds, multiple cities - from Burlington, VT to Hyannis, MA and Bangor, ME to Hartford, CT have been narrowing lanes through painting and repaving programs, which also allows space to be added for other modes, especially bike and bus lanes with safety buffers. Worcester's DTM has already implemented several successful projects that demonstrate this benefit and is working with the Department of Public Works & Parks (DPW&P) to revise the City's street design manual to make these standard throughout Worcester.

Lower speed limits. Crash severity increases dramatically with speed, especially for those walking. With the human body more likely to suffer severe or fatal injury than not when hit by a vehicle traveling above 25 mph, cities across the Commonwealth have responded to the public health crisis of traffic violence by actively lowering speed limits to help enforce safer streets. On the heels of new statewide enabling legislation, Worcester recently adopted a citywide statutory speed limit of 25 mph where not otherwise posted.

Education and enforcement. Spreading the word about a traffic violence crisis and its potential solutions has helped many Vision Zero cities achieve their goal when citizens recognize how easy it can be to drive safer and save lives. From online tools and advertising campaigns to public events and advisory enforcement, many city governments such as Somerville, New Haven, and Providence have worked successfully with stakeholders and non-profits to change driving attitudes and reduce or eliminate traffic fatalities. Already, Worcester's Vision Zero planning process has reached thousands of residents and shared tragic stories and hopeful results that have galvanized support for safer strategies. Combined with new speed limits, this growing awareness helps the Worcester Police Department (WPD) improve safety more easily and effectively.

Calming traffic by design. While narrowing lanes and reducing speed limits can help, physical interventions that force slower operating speeds by design are the most effective, long-term solutions for keeping our streets slower and safer, without continuous police presence. In the absence of complete roadway reconstruction, many proven spot interventions now seen in places as varied as Everett, Beverly and Westborough, MA are highly effective at reducing vehicle speeds, including curb extensions, speed humps, raised crosswalks, speed tables, roundabouts and circles, road and intersection diets, adding on-street parking, and more. DTM has already installed several interventions, and more are planned—with many recommended in this report.

Smarter signalization. For many years the optimization of traffic signal timing has focused on maximizing vehicle throughput, but many characteristics of this design approach can reduce safety—from long queue-clearing green lights that encourage speeding to short walk intervals that threaten pedestrians. Vision Zero cities like Cambridge, MA and Hoboken, NJ have upended signal design to include longer “flashing Don't Walk” intervals that accommodate the differently-abled, shorter cycle lengths that make the next crossing opportunity arrive sooner, bicycle signals that allow safe bike moves, leading pedestrian intervals that improve the visibility and establish presence for pedestrians during concurrent walk phases, and other techniques that are beginning to be part of Worcester's intersection design approaches.

Monitoring and maintaining. Ensuring long-term safety requires a commitment to maintaining the policies and improvements that achieve Vision Zero. Smart cities like Somerville, Arlington, VA and Jersey City, NJ

regularly conduct counts, monitor speeds, survey users, and collect new data to evaluate their approach to safer streets so they can adapt to changing patterns, needs, and technologies and make new improvements where needed. Maintaining what's been effective also requires a commitment, which often involves re-orienting traditional roadway maintenance functions to focus more on vulnerable non-motorized road users and the facilities they need to be safe, whether that's clearing curb ramps, maintaining signal push-buttons, replacing light bulbs, fixing sidewalk cracks, plowing bike lanes, shoveling out bus stops, or doing the other simple tasks that make roads safer.

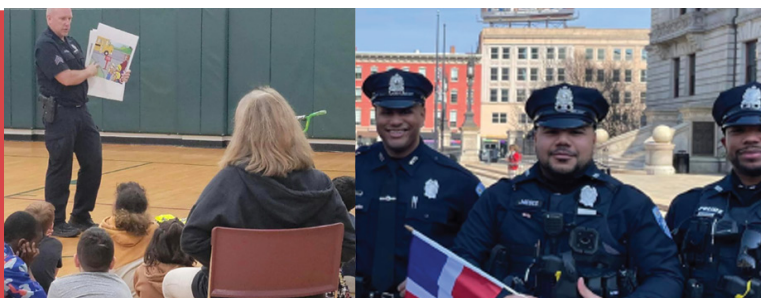
Appropriate widths of the road and signage to accommodate each mode



Appropriate speed limits depending on the road characteristics



Education and sufficient enforcement to disincentivize unsafe behavior



Built-in techniques that force calming of traffic



Traffic signal timings that support the safe movement of different users



Regular monitoring and prioritized road maintenance when unsafe conditions arise





Recommendation Strategy

ACTIONS TO GET TO ZERO!

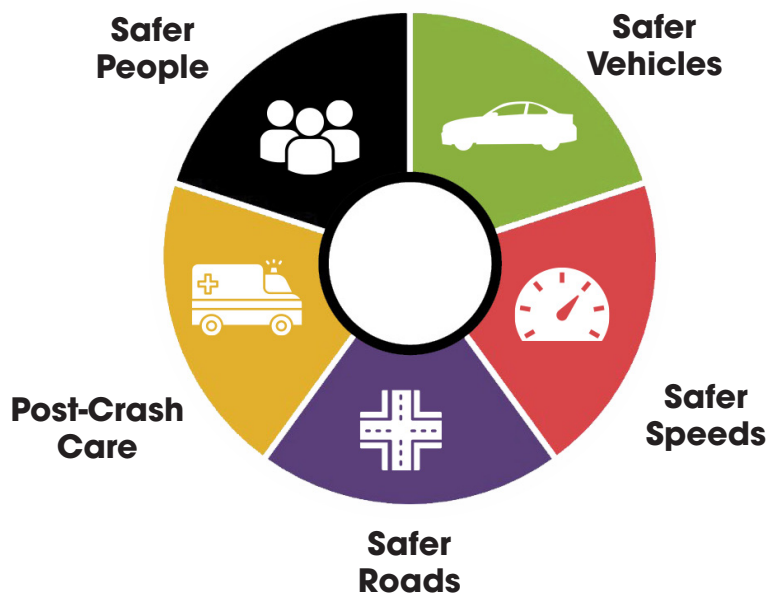
Worcester's Vision Zero Strategy

REALIZING THE CITY'S SAFETY POTENTIAL BY "FOCUSING ON 4"

Worcester can learn from the community, peer cities, and best practices to build upon its early successes and evolve successful solutions for traffic violence on Worcester's streets. The following pages outline several immediate recommendations to carry on this process.

The recommendations in this section fall within four broad strategy areas that, together, act as the supporting foundation of the Safe System Approach:

Safe System Approach

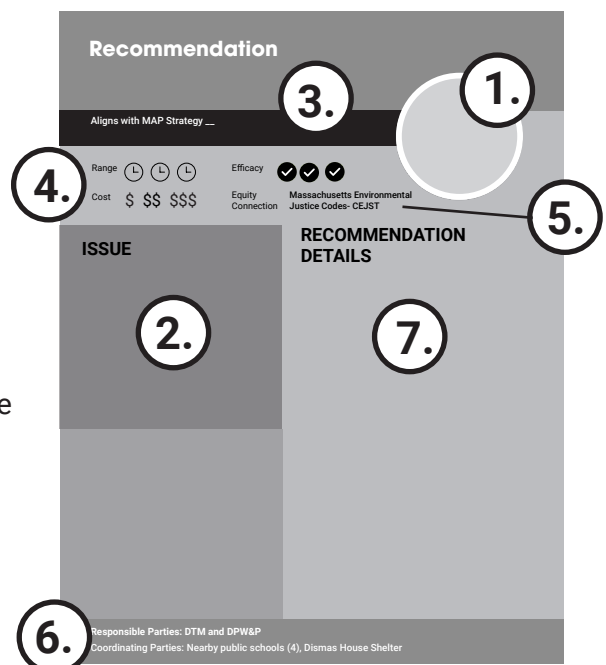


Four Strategy Recommendation Areas



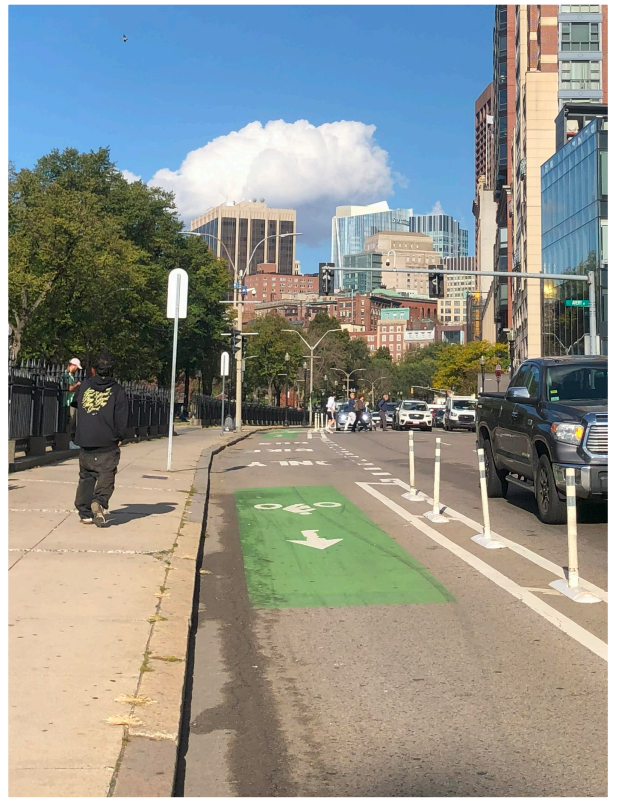
Within the four strategy recommendation areas, each individual recommendation identifies:

1. Which Safe System components it supports
2. The safety issue that it aims to address
3. How it aligns with the City's Mobility Action Plan
4. The general timeframe, cost, and efficacy to complete
5. How it supports equity
6. Key responsible parties
7. Other specific details and guidance, as relevant



Design

Near term infrastructure improvements at specific locations- the Near-Term Focus Corridors from the Priority Network



Concepts for these corridors were developed in partnership with the community. DTM hosted community Walk Audits at these locations in June and September 2024 to experience and discuss safety issues, and ideate potential solutions.



SUMMARY LIST OF DESIGN RECOMMENDATIONS

The recommendations in bold below have been detailed on the following pages after discussions with responsible City parties, with “early wins” that are already underway noted. Other, highlighted “additional” recommendations are included in less detail as the framework for future safety planning efforts by City departments and the Transportation Advisory Group in the coming months and years.

- p.44 Park Avenue Road Diet** - A “road diet” that removes a travel lane by adding medians, midblock crossings, new protected bicycle lanes, dedicated turning pockets, and formal, on-street parking areas. While a road diet may not be feasible at high-volume intersections such as at Chandler Street or Salisbury Street, other segment of this corridor could benefit from the approach.
 - p.46 Cambridge/Canterbury/Richards Streets Intersection Diets** - Transformation of the Cambridge Street with Canterbury Street and Richards Street intersections to smaller T intersections by extending curbs, adding on-street parking, and widening sidewalks to shorten crossing distances and narrow traffic lanes
 - p.48 Belmont Street Road Diet** - A “road diet” with intersection improvements including a raised intersection and curb extensions to slow vehicle speeds, improve sightlines, and shorten crossing distances near the Belmont Community School
 - p.50 Belmont Street + Shrewsbury Street Intersection Diet** - An “intersection diet” and realignment of travel lanes at the intersection to slow turning vehicle speeds, add safer crossings, improve crossing islands, and create new public space at a key city intersection
 - p.52 Shrewsbury Street + E. Central Street Intersection Diet** - An “intersection diet” that realigns travel lanes, extends the median, and adds curb extensions to reduce vehicle turning speeds and shorten pedestrian crossing distances
 - p.54 Lincoln Street + Country Club Boulevard Intersection Diet** - An “intersection diet” that adds curb extensions and larger crossing refuges to shorten crossing distances and lower vehicle turning speeds (*Note: this project interfaces with the upcoming Complete Streets project on Country Club Boulevard*)
-
- p.56 Main Street - A design process complete with community engagement to determine the best design elements, learning from the two ongoing/upcoming demonstration and placemaking projects that the City (DTM) and the Main South CDC are leading




To Note: Recommendations in this section include a table of Crash Reduction Factors (CRFs). This table summarizes the safety improvement elements, also known as safety countermeasures, of the concept design and their expected effect on crashes. Each individual countermeasure has an associated CRF from the USDOT Crash Modification Factors Clearinghouse, or another reputable source (see Appendix F for the source of each CRF). Some countermeasures do not have an associated reduction documented in the research. Where multiple CRFs apply, they are combined using the Turner method, recommended in the Clearinghouse. This combined CRF is then applied to the average annual number of crashes at the project location (based on 2019-2023 crash data) to determine the estimated reduction in crashes, per year.



Park Avenue Road Diet

Aligns with MAP Strategy 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets*



Range   

Efficacy   

Cost \$ \$\$ \$\$\$

Equity Connection

Massachusetts Environmental Justice Codes- CEJST

ISSUE

Park Avenue generally has four lanes, with an additional turn lane provided at the major intersections of Chandler Street and Salisbury Street. While the intent of a four-lane cross section is to accommodate more traffic, in practice these configurations are typically inefficient and perform very poorly from a safety perspective. A segment between May and Parker Streets also scores “High” on Worcester’s Priority Network.

RECOMMENDATION DETAILS

On four-lane streets, multiple turning movements in and out of driveways and to intersecting streets regularly compete with through vehicles, leading motorists to jockey for position to avoid turning cars. This results in unexpected stop-and-go conditions, frequent and abrupt lane changes, more aggressive driving, and distracted drivers. In addition, it is very difficult and dangerous for pedestrians to cross except where signal-controlled.

Countless examples across Massachusetts and the country have proven that four- to three-lane conversions via a “road diet” is an effective way to improve safety, create space for more productive uses, and accommodate traffic. In these configurations, one through lane is provided in each direction with a median turn lane to accommodate left-turning traffic. Because conflicts between turning and through traffic are removed, streets can accommodate similar volumes with improved safety.

Strategically located protected median refuges can also enhance mid-block pedestrian crossing safety. The space gained by eliminating a travel lane can be repurposed for protected bike lanes, on-street parking, bus priority lanes, expanded sidewalks, landscaping, or green infrastructure.

Note: The early concept proposed on the following page is illustrative only and would require further engineering analysis to refine and develop a final design, pursue appropriate funding, and the production of construction-ready plans



Responsible Parties: DTM and DPW&P
Coordinating Parties: WRTA



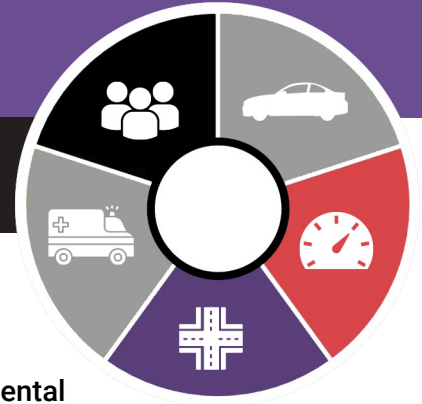
Note: This block is a demonstration sample only of a concept that could be applied broadly across the corridor.

Estimated Concept Crash Modification

| Design Element | Crash Reduction Factor (CRF) | Crash Type (that CRF applies to) | Combined CRF | Annual Avg Injury Crashes | Estimated reduction in crashes (i.e., X fewer crashes per year) |
|--|------------------------------|----------------------------------|--------------|---------------------------|---|
| Four lanes to two lanes with a median/center turn lane | 47% | All | 54% | 3.4 | 1.85 |
| Separated bicycle lane | 45% | | | | |
| Mid-block crossing | 37% | | | | |
| Pedestrian refuge island | 56% | Vehicle/pedestrian | 37% | 0.4 | 0.15 |

Cambridge/Canterbury/Richards Streets Intersection Diets

Aligns with MAP Strategy 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets*



Range

Efficacy

Cost \$ \$\$ \$\$\$

Equity Connection Massachusetts Environmental Justice Codes- CEJST

ISSUE

Cambridge Street by Canterbury Street scores “High” on Worcester’s Priority Network as it is part of the High Injury Network and it falls within the Risk-based buffers and the CEJST and Mass EJ census tracts.

RECOMMENDATION DETAILS

Through its Canterbury and Richards Street intersections on either side of the CSX Mainline overpass, Cambridge Street widens significantly, reflecting the historic roadway alignments that existed before the bridge was built. The resulting intersections are two to three times larger than they need to be, leaving large swaths of pavement that can encourage speeding and make crossings on foot very uncomfortable. By reconceiving each as a simple T intersection, vehicular turns can be regularized and slowed, while narrowing Cambridge’s width encourages slower speeds. Supported by curb extensions, new on-street parking, and shortened crosswalks, this part of the corridor can become more of a place—reinforced by two large corner parks that better-define the roadways and the remaining public outdoor space.

Note: The early concept proposed on the following page is illustrative only and would require further engineering analysis to refine and develop a final design, pursue appropriate funding, and the production of construction-ready plans. Alternative configurations for these intersections are feasible, warranting the development of several options and a community-based prioritization process.



Responsible Parties: DTM and DPW&P

Coordinating Parties: Nearby public schools (4), Dismas House Shelter






Estimated Concept Crash Modification

| Design Element | Crash Reduction Factor (CRF) | Crash Type (that CRF applies to) | Combined CRF | Annual Avg Injury Crashes | Estimated reduction in crashes (i.e., X fewer crashes per year) |
|-----------------------|------------------------------|----------------------------------|--------------|---------------------------|---|
| Curb Extension | 30% | All | 30% | 4.8 | 1.44 |
| T-ing up intersection | N/A | - | | | |
| Narrow travel lane | N/A | - | | | |
| Add on-street parking | N/A | - | | | |

Belmont Street Road Diet

Aligns with MAP Strategy 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets*



Range   

Efficacy   

Cost \$ \$\$ \$\$\$

Equity Connection Massachusetts Environmental Justice Codes- CEJST

ISSUE

Belmont Street between Stanton Street and Rodney Street scores “High” on Worcester’s Priority Network as it is part of the High Injury Network and it falls within the Risk-based buffers and the CEJST and Mass EJ census tracts.

RECOMMENDATION DETAILS

Belmont Street has long been a regional cut-through of Route 9, but its volumes between major intersections do not warrant a three-lane section—particularly when the extra lane is downhill and encourages higher vehicle speeds. This is exacerbated by safety concerns at the Belmont Street Community School and near UMass Memorial Hospital, where cars travel at higher speeds right up against sidewalks with school children and hospital workers. A three to two-lane road diet would greatly increase friction to reduce speeds, and key crossings along the corridor would add calming and pedestrian safety with prominent curb extensions. The intersection with Stanton at the top of the hill and the gateway to Bell Hill Park should be tabled to make crossings even safer while discouraging cars from traveling fast over the rise where sightlines are limited.

Note: The early concept proposed on the following page is illustrative only and would require further engineering analysis to refine and develop a final design, pursue appropriate funding, and the production of construction-ready plans. As suggested in the inset, three lanes will need to be retained closer to major intersections like those near the I-290 interchange.



Responsible Parties: DTM and DPW&P

Coordinating Parties: WRTA, Belmont St. Community School, UMass Memorial Medical Center

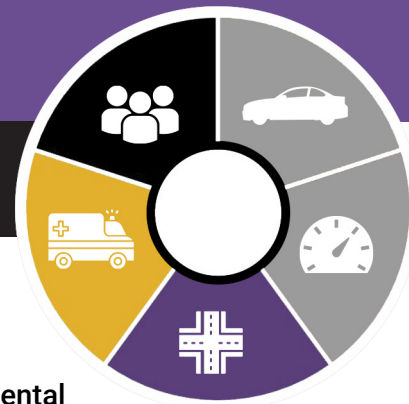


Note: This block is a demonstration sample of a concept that could be applied broadly across the corridor, with some exceptions requiring variation; for example, further west near UMass Memorial, the concept would likely be different, with just one lane in each direction and a dedicated center turn lane.

| Estimated Concept Crash Modification | | | | | |
|---|------------------------------|----------------------------------|--------------|---------------------------|---|
| Design Element | Crash Reduction Factor (CRF) | Crash Type (that CRF applies to) | Combined CRF | Annual Avg Injury Crashes | Estimated reduction in crashes (i.e., X fewer crashes per year) |
| Speed table/raised intersection | 40% | All | 39% | 2.6 | 1.01 |
| Curb Extension | 30% | | | | |
| Add on-street parking | N/A | | | | |
| Remove one lane, resulting in one lane each direction | N/A | | | | |

Belmont Street + Shrewsbury Street Intersection Diet

Aligns with MAP Strategy 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets*



Range

Efficacy

Cost \$ \$\$ \$\$\$

Equity Connection Massachusetts Environmental Justice Codes- CEJST

ISSUE

Shrewsbury Street and Belmont Street both score “High” on Worcester’s Priority Network. They are both a part of the High Injury Network and fall within the CEJST and Mass EJ census tracts. Shrewsbury Street is also part of the Community-based Network.

RECOMMENDATION DETAILS

Belmont and Shrewsbury Streets are two of Worcester’s most prominent and well-known streets, but near their intersection, they lose their character in a widened swath of pavement designed in an earlier era to accommodate traffic. However, the added swooping lanes have hurt each street’s character while introducing higher speeds, long crossings, and difficult walking and biking. A rationalized approach to this important gateway would square-up the intersection to avoid unnecessary curves and rely on smarter signalization to process turns at a tighter intersection without two extra lanes per roadway. A T-intersection also provides new public space, shortened crossings, new crosswalks, and new on-street parking.

Note: The early concept proposed on the following page is illustrative only and would require further engineering analysis to refine and develop a final design, pursue appropriate funding, and the production of construction-ready plans.



Responsible Parties: DTM and DPW&P

Coordinating Party: WRTA






Estimated Concept Crash Modification

| Design Element | Crash Reduction Factor (CRF) | Crash Type (that CRF applies to) | Combined CRF | Annual Avg Injury Crashes | Estimated reduction in crashes (i.e., X fewer crashes per year) |
|----------------------------|------------------------------|----------------------------------|--------------|---------------------------|---|
| Curb extension | 30% | All | 32% | 3 | 0.95 |
| Extend/add a raised median | 25% | | | | |
| Restrict left turn lane | 10% | Vehicle/ pedestrian | 51% | 0 | 0.00 |
| Pedestrian refuge island | 56% | | | | |
| Add a crosswalk | 40% | | | | |
| Add on-street parking | N/A | | | | |
| T-ing up intersection | N/A | | | | |
| Remove a lane | N/A | | | | |

Shrewsbury Street + E. Central Street Intersection Diet

Aligns with MAP Strategy 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets*



Range   

Efficacy   

Cost \$   

Equity Connection

Massachusetts Environmental Justice Codes- CEJST

ISSUE

Shrewsbury Street by East Central Street scores “High” on Worcester’s Priority Network as it is part of the High Injury Network and Community-based Network and it falls within the Risk-based buffers and the CEJST and Mass EJ census tracts.

RECOMMENDATION DETAILS

Aligned simply with straight centerlines, the intersection of Shrewsbury Street & East Central Street serves drivers at speed very well but compromises local access, pedestrian safety, and cycling. Aligning the streets to create a regular T intersection at this location would greatly simplify and shrink it. Importantly, by making both Shamrock and Cross Streets intersect away from the main intersection like other side streets, complexity and delay can be greatly reduced.

This design enables that same level of mainline vehicular capacity while providing significantly safer crossings, slower speeds, and dramatic new public open space at this important node between dining destinations and the nearby neighborhood.

Note: The early concept proposed on the following page is illustrative only and would require further engineering analysis to refine and develop a final design, pursue appropriate funding, and the production of construction-ready plans.



Responsible Parties: DTM and DPW&P

Coordinating Parties: WRTA, City View Elementary School, Shrewsbury Street Merchants



Estimated Concept Crash Modification

| Design Element | Crash Reduction Factor (CRF) | Crash Type (that CRF applies to) | Combined CRF | Annual Avg Injury Crashes | Estimated reduction in crashes (i.e., X fewer crashes per year) |
|---|------------------------------|----------------------------------|--------------|---------------------------|---|
| Curb extension | 30% | All | 32% | 1.4 | 0.44 |
| Extend/add a raised median | 25% | | | | |
| Pedestrian refuge island | 56% | Vehicle/ pedestrian | 49% | 0 | 0.00 |
| Add a crosswalk | 40% | | | | |
| Remove one lane | N/A | | | | |
| Legthen the travel lanes to reduce the size of the intersection | N/A | | | | |
| Move the crosswalk up for a T-intersection | N/A | | | | |
| T-ing up intersection | N/A | | | | |
| Remove two crosswalks for one crosswalk (unsignalized?) | N/A | | | | |

Lincoln Street + Country Club Boulevard Intersection Diet

Aligns with MAP Strategy 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets*



Range

Cost \$ \$\$ \$\$\$

Efficacy

Equity Connection Massachusetts Environmental Justice Codes- CEJST

ISSUE

Lincoln Street by Country Club Boulevard scores “High” on Worcester’s Priority Network as it is part of the High Injury Network and Community-based Network and it falls within the Risk-based buffers and the CEJST and Mass EJ census tracts.

RECOMMENDATION DETAILS

A relic of suburban road design, this important gateway between Lincoln Plaza and many surrounding neighborhoods like Lincoln Village is hampered by excessive lane capacity, with one crosswalk nearly 100 feet long. While further study might support road-dieting Lincoln Street, a simple extension of the intersection’s corners and median refuge can make walking safer and support another crosswalk. With two receiving lanes to easily receive wider truck turns, corners can be notably tightened, particularly to the northeast where only one northbound lane needs to exit the intersection. Removing a southbound lane should be considered as well if design advances, and Lincoln Street’s overall width might be able to accommodate protected bike lanes in a future road diet study.

Note: The early concept proposed on the following page is illustrative only and would require further engineering analysis to refine and develop a final design, pursue appropriate funding, and the production of construction-ready plans.



Responsible Parties: DTM and DPW&P
Coordinating Party: WRTA



Estimated Concept Crash Modification

| Design Element | Crash Reduction Factor (CRF) | Crash Type (that CRF applies to) | Combined CRF | Annual Avg Injury Crashes | Estimated reduction in crashes (i.e., X fewer crashes per year) |
|--|------------------------------|----------------------------------|--------------|---------------------------|---|
| Curb Extension | 30% | All | 32% | 2.4 | 0.76 |
| Extend/add a raised median | 25% | | | | |
| Pedestrian refuge island | 56% | Vehicle/ pedestrian | 49% | 0.4 | 0.20 |
| Add a crosswalk | 40% | | | | |
| Add a crosswalk with a Pedestrian Refuge Island (signalized) | N/A | | | | |

Additional Recommendation



Main Street- Complete community engagement and determine appropriate design elements, learn from ongoing demonstration and placemaking project that the Main South CDC is leading

Aligns with MAP Strategy 2.1:

Conduct Corridor and Intersection Studies to Advance Complete Streets

Range



Cost

\$ \$\$ \$\$\$

Efficacy



Equity Connection

**Massachusetts
Environmental
Justice Codes-
CEJST**

ISSUE

Main Street between Webster Street and Mill Street scores “High” on Worcester’s Priority Network, as it is part of the High Injury Network and falls within the Risk-based buffers and the CEJST and Mass EJ census tracts.

Responsible Parties: DTM and DPW&P

Coordinating Parties: WRTA, Main South CDC



This crossing is an example of conditions that do not allow larger groups of pedestrians to safely cross the street while waiting for a pedestrian signal.

RECOMMENDATION DETAILS

Additional study and concept development is needed before projects can be advanced on this corridor.

Main Street may be divided into two distinct segments for the purpose of further study:

Webster Square (Park Avenue to Cambridge Street):

This segment of Main Street intersects with Cambridge Street, Mill Street and Park Avenue in a chaotic jumble of intersections. Reconfiguring these intersection to simplify traffic movements and reduce their footprint, creating safer and more convenient crossings for pedestrians, is a top priority. An overall concept plan for improvement of Main Street, Park Avenue and Mill Street is recommended, given their interconnectedness and shared context.

Cambridge Street to Chandler Street: This long segment is true to its name, functioning as the “Main Street” for the Main South neighborhood. A portion of the street near Clark University has been improved to add bike lanes, enhance pedestrian crossings, add street lighting, and improve streetscaping, but the remainder of the corridor is in deteriorated condition, has antiquated traffic control and street lighting, no bicycle accommodations, and does not prioritize pedestrian safety or convenience.

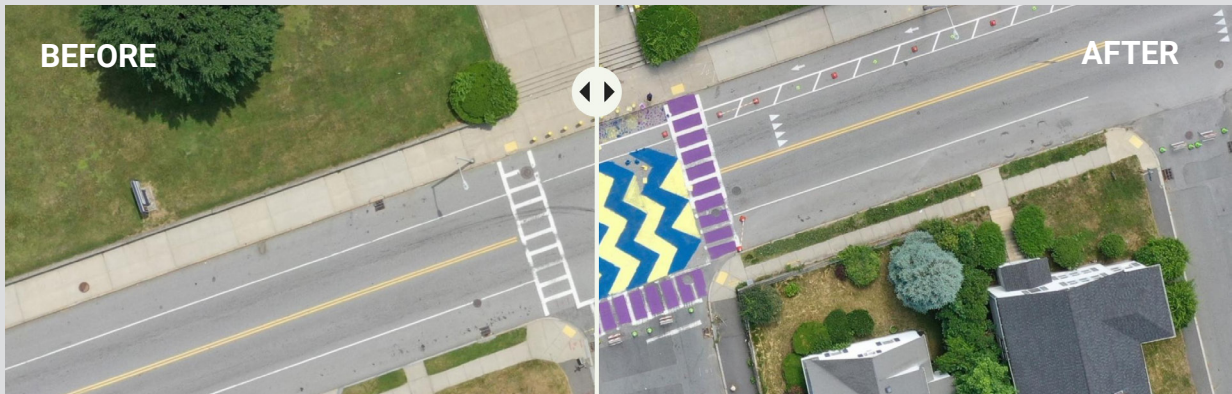
The adjacent intersections at Hammond Street, May Street and King Street are an opportunity for an initial project to reconfigure these intersections and improve the operation of these traffic signals to facilitate safer movement of vehicles and people.

Other Considerations: Quick Build and Acting Now

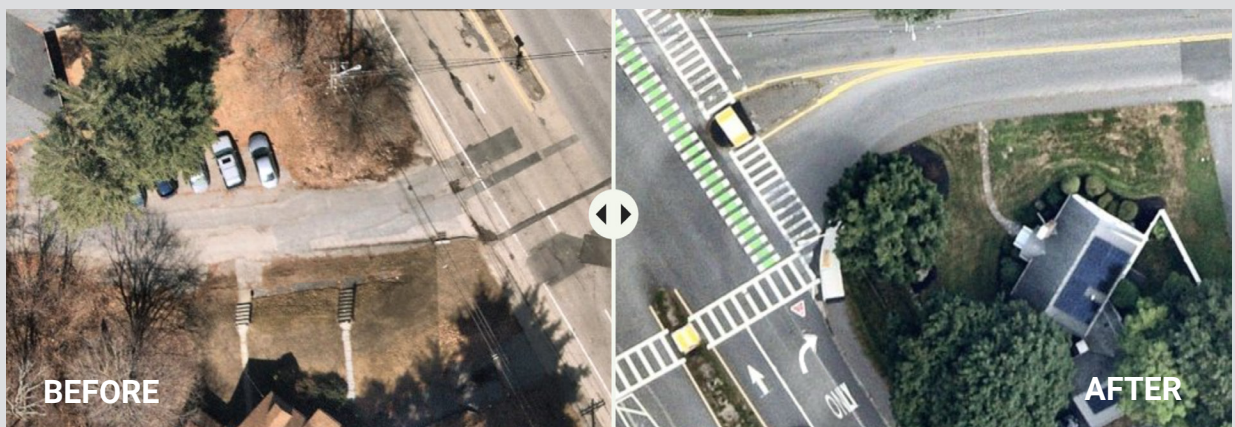
Initial solutions can be quick-build investment to act now, followed by future, bigger investment.

While in the long run the City may want to complete full redesigns and reconstructions of some streets (expanding sidewalks and moving the curb), it is critical that Worcester acts now and maximizes funds. To that end, many of the initial projects may be “quick-build” or “demonstration” projects that can be accomplished using paint on existing asphalt, bollards, and signage, with smaller budgets and in more locations.

- In June 2024, the City completed a Demonstration Project at the Vernon Hill School. Some changes were implemented using paint, which is still on the roadway today, while other elements were implemented using cones and hay bales that were only present on the day of the demonstration. This is an example of a “demonstration” project used to effect immediate change on a low budget.

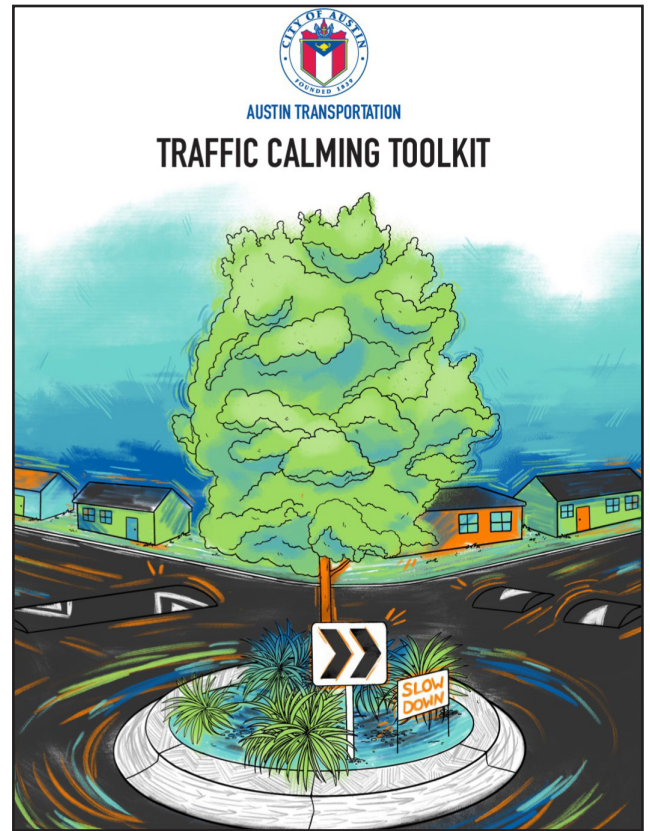


- In 2023, the City of Worcester completed an Interim Complete Streets Project on Mill Street. This project included revisions to lane markings implemented as part of a pavement preservation project to improve safety and expand accommodations for nonmotorized modes on an interim basis, while comprehensive improvements are designed and implemented. The future Transformative Enhancements will entail full roadway reconstruction.



Systemic

Infrastructure improvements that are not focused on a specific location, rather are programmatic in nature, addressing identified safety risk factors



SUMMARY LIST OF SYSTEMIC RECOMMENDATIONS

The recommendations in bold below have been detailed on the following pages after discussions with responsible City parties, with “early wins” that are already underway noted. Other, highlighted “additional” recommendations are included in less detail as the framework for future safety planning efforts by City departments and the Transportation Advisory Group in the coming months and years.

- p.60 Implement pedestrian safety improvements around uncontrolled crosswalks**
- p.62 Implement pedestrian and bicycle improvements around schools**
- p.64 Implement multimodal improvements around housing shelters and resource centers**
- p.66 In partnership with WRTA, audit and implement safety improvements at bus stops**

- p.68 Audit posted speeds on corridors where the statutory speed limit does not apply
- p.68 From the Priority Network scoring, identify the next priorities on the next round of focus
- p.69 Develop a road diet program to address the 4+ lane arterials
- p.69 Develop an intersection diet program, focusing on slip lane elimination
- p.70 Develop a traffic calming toolkit and Neighborways program

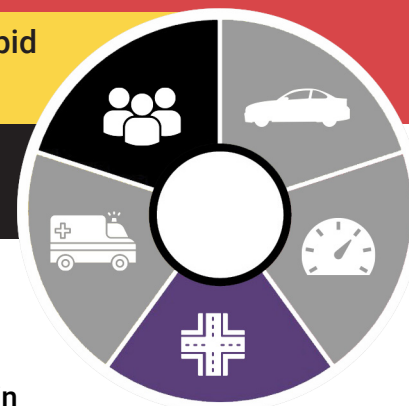


Implement pedestrian safety improvements around uncontrolled crosswalks

EARLY WIN! Shrewsbury Street daylighting improvements as part of Rapid Response analysis following a crash at this location

Aligns with MAP Strategy 2.4:

Develop a Pedestrian Infrastructure Toolkit



Range   

Cost \$  

Efficacy   

Equity Connection All of the top 5 locations are in MA EJ/CEJST areas

ISSUE

The majority of pedestrians involved in an injury crash were attempting to cross a road (62%, or 189 of 303 people) when they experienced a crash.

Most pedestrian injury crashes occur within 100 feet of a crosswalk (71%).

RECOMMENDATION DETAILS

According to available data, crossing a street in a marked crosswalk is often a pedestrian's most vulnerable experience. Even with markings and controls, pedestrian crashes are concentrated at the locations they are allowed to be. While available data does not differentiate signalized crossing crashes from unsignalized, the lack of signalized stop and walk controls at unsignalized, often mid-block crossings makes these an immediate area of focus. These legal crossings exist because of pedestrian demand and should therefore have greater safety.

The City can begin by assessing visibility, yield rates, and volumes of cars and pedestrians to help prioritize crossings in need and identify appropriate improvements. Physical safety measures may include installing high-visibility, continental-standard or "ladder" markings, daylighting the space before a crosswalk (preventing parking near crosswalks), extending the curb to make pedestrians more visible when waiting to cross, adding a midway pedestrian refuge island, raising the crossing, and reducing the number of travel lanes to be crossed.

Similarly, control devices should be considered, including clear, MUTCD-compliant signing, advanced yield markings and signs, such as signalization, Pedestrian Hybrid Beacons (PHBs) or Rectangular Rapid Flashing Beacons (RRFBs).



▲ Uncontrolled crosswalk on Belmont Street during the Sept. 9, 2024 Community Walk Audit








Responsible Party: DTM

Coordinating Parties: N/A

The short list of locations in this table deserve immediate attention, even where they include signalization, because shorter wait times, leading pedestrian intervals, no turn on red signing, and other associated improvements may be needed.

| Top 5 Crosswalks with the Most Fatal and Severe Crashes (within 100 ft) | | | |
|---|--|--------------------------------------|----------------------------|
| Location | Rank based on Fatal and Severe crashes | # Fatal and Severe Crashes (2019-23) | # Injury Crashes (2019-23) |
| Park Ave & Parker St | 1 | 6 | 10 |
| Madison St & Southbridge St | 2 | 5 | 21 |
| Main St & Chandler St | 3 | 4 | 18 |
| Lake Ave & Belmont St | 3 | 4 | 14 |
| Vernon St & Dorchester St | 3 | 4 | 13 |

**Note that existing data does not distinguish between signalized and uncontrolled crosswalks. This list is based on all crosswalks.*

| Potential Crosswalk Safety Improvements | | |
|--|---|---|
| | Countermeasure | Crash Reduction Factor |
|  | Daylight corners | 30% reduction in crashes |
|  | Install Refuge Island | 56% reduction in pedestrian crashes |
|  | Advanced stop or yield markings, ahead of crosswalk | 25% reduction in pedestrian crashes |
|  | Pedestrian Hybrid Beacons (PHBs) | 55% reduction in pedestrian crashes 29% reduction in total crashes |
|  | Rectangular Rapid Flashing Beacons (RRFBs) | 47% reduction in pedestrian crashes |
|  | High-visibility crosswalk | 40% reduction in pedestrian crashes |
|  | Raised pedestrian crosswalks | 36% reduction in total crashes |

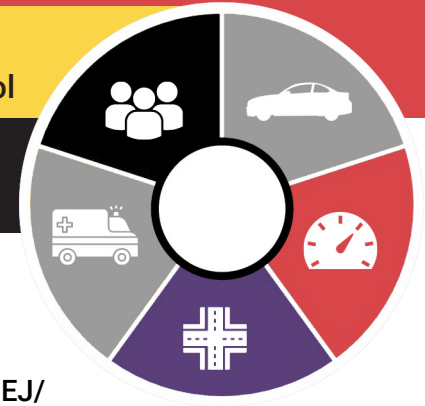





Implement pedestrian and bicycle improvements around schools

EARLY WINS! Vernon Hill Elementary School, Belmont Street School, Thorndyke Road Elementary School, Burncoat Street Preparatory School

Aligns with MAP Strategy 1.1:

Expand Safe Routes to School (SRTS) Program



Range   

Cost \$   

Efficacy   

Equity Connection

All Top 5 locations are in MA EJ/CEJST areas and focus on a vulnerable population

ISSUE

Schools present high risk areas, especially for vulnerable populations. The majority of pedestrians involved in an injury crash were attempting to cross a road (62%, or 189 of 303 people). In addition, 30% of pedestrian and 32% of bicycle injury crashes occur within 1,000 feet of a school, although only about 14% of Worcester's land area.

Most pedestrian injury crashes occur within 100 feet of a crosswalk (71%).

RECOMMENDATION DETAILS

Partnering with schools, parent groups, and the MassDOT Safe Routes to School (SRTS) program, the City should initiate assessments of safety need near schools, beginning with the top crash locations (opposite page).

This includes engaging with faculty, students, and families to determine:

- (1) key paths of travel
- (2) a project focus area (may extend at least 1,000 feet beyond the school), and
- (3) key safety issues along each path

A variety of infrastructure improvements should be considered and tailored to each path at each school. These may include a variety of solutions that make sidewalks wide enough- especially next to travel lanes, complete gaps in a walking network, enhance crosswalks, add visibility, protect those bicycling, add pedestrian signals or crossing guards, and more.

The City should also consider education, encouragement, engagement, and evaluation programs described in the MassDOT SRTS Toolkit that support the engineering solutions and increase student and driver awareness near schools.



▲ Students test out a temporary bike lane during the bike rodeo at Vernon Hill Elementary on June 6, 2024

Responsible Party: DTM

Coordinating Parties: Worcester Public Schools, Safe Routes to School (MassDOT)

Top 5 Public Schools with the Most Fatal and Severe Crashes (within 1000 ft)

| Location | Rank based on Fatal and Severe Crashes | # Fatal and Severe Crashes (2019-23) | # Injury Crashes (2019-23) |
|---|--|--------------------------------------|----------------------------|
| Adult Learning Center, 24 Chatham St | 1 | 8 | 87 |
| Chandler Elementary Community School, 114 Chandler St | 1 | 8 | 62 |
| Worcester East Middle School, 420 Grafton St | 2 | 7 | 44 |
| Belmont Street Community School, 170 Belmont St | 3 | 6 | 90 |
| Grafton Street Elementary School, 311 Grafton St | 3 | 6 | 66 |

SECTION 2: INFRASTRUCTURE PROGRAMS AND RESOURCES

The Infrastructure Resources segment of the MA SRTS Program focuses exclusively on the Engineering aspect of the SRTS's six Es, dedicated to enhancing the physical environment for travel to, from, and within school campuses. This vital component aims to implement bicycle and pedestrian infrastructure improvements, directly benefiting students who walk, bike, or roll to travel to and from school.

ENGINEERING

Learn about engineering tools to improve safety and seek opportunities for SRTS-related infrastructure funding.

The Engineering "E" of the MA SRTS Program enhances safety, access, and mobility through infrastructure improvements, or changes to the built environment, encouraging more K-12 students to walk, bike, or roll to school. The MA SRTS Program facilitates such improvements by providing funding for infrastructure projects of various sizes through its grant programs. The MA SRTS Program also provides educational resources related to engineering concepts.

ENGINEERING EDUCATIONAL MATERIALS

Changes to the built environment through engineering improvements are a critical component of SRTS. The MA SRTS Program aims to provide educational resources for Partners to learn about different design interventions that can improve roadway safety for all users.



POP-UP PROJECTS FOR SAFE ROUTES TO SCHOOL

K-5 GRADE 6-8 GRADE 9-12 GRADE

This guide explores how schools can use pop-up demonstration projects to improve safety on and around campus. These temporary activations, often referred to as "tactical urbanism," can be used to promote walking and biking to, from, and around campus. You will find examples of local, national, and international projects; tips to support implementation efforts; and links to additional resources.

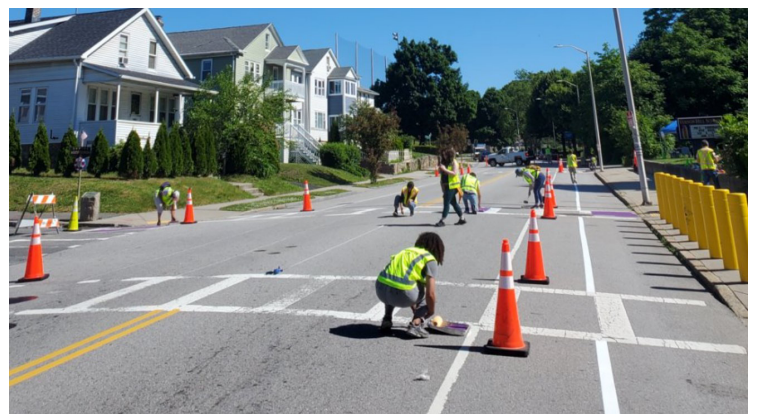
ENGINEERING GRANTS



SIGNS & LINES PROGRAM

K-5 GRADE 6-8 GRADE 9-12 GRADE

The SRTS Signs and Lines Program is an annual grant program that provides design services and up to \$10,000 in construction funding for low-cost infrastructure projects near public schools. These projects aim to remove small obstacles students face when walking, biking, or rolling. Examples of qualifying projects include new signage or pavement markings. The MA SRTS Program created step-by-step instructions on how to apply to the program along with detailed requirements available on the MA SRTS website. The Program also offers training webinars and personal application assistance. Recorded webinars from previous years can be found on the MA SRTS website.

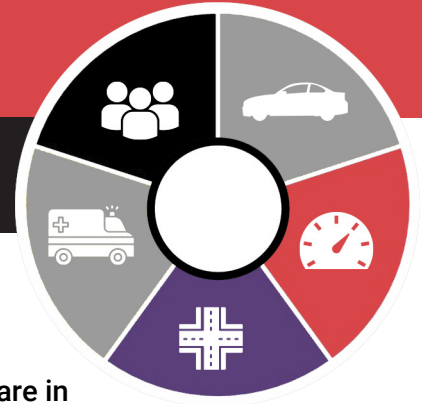



Excerpt from [MassDOT Safe Routes to School Program Guide](#)

Scenes during the installation and activation of the June 6, 2024 tactical demonstration at Vernon Hill Elementary

Implement multimodal improvements around housing shelters and resource centers

No direct MAP Strategy alignment



Range   

Cost \$  

Efficacy   

Equity Connection All of the top 5 locations are in MA EJ/CEJST areas

ISSUE

In Worcester, 23% of pedestrian and 21% of bicycle injury crashes occur within 1,000 feet of a shelter. Only about 4% of land in Worcester is within 1,000 feet of a shelter.

RECOMMENDATION DETAILS

With a disproportionate amount of injury crashes near Worcester's shelters, the City should initially partner with those facilities near the top crash locations, as well as with the City Manager's Task Force for Sustaining Housing First Solutions to initiate an assessment of potential roadway safety improvements along nearby streets.

The initial assessment should be followed by engaging directly with service providers and the people experiencing homelessness and/or being served by the shelter or resource center to help determine:

1. travel patterns and access barriers when visiting the facility,
2. the appropriate focus area(s) for improvements, which may not be only at the front door, and
3. key safety issues

The USDOT provides guidance for addressing needs of vulnerable populations that may go beyond traditional roadway safety improvements by acknowledging differing physical abilities. The principles and associated infrastructure of Universal Design are applicable in these focus areas, especially attempts to exceed the design minimums available at these Federal resources.



Responsible Party: DTM

Coordinating Parties: Identified non-profit groups/shelter operators

**Top 5 Housing Shelters and Resource Centers with the Most Fatal and Severe Crashes
(within 1000 ft)**

| Location | Rank Based on Fatal and Severe crashes | # Fatal and Severe crashes (2019-23) | # Injury crashes (2019-23) |
|--|--|--------------------------------------|----------------------------|
| SS Francis & Therese Catholic Worker, 52 Mason St | 1 | 19 | 98 |
| Greater Worcester Housing Connection, 25 Queen St | 2 | 12 | 108 |
| Massachusetts Dept. of Transitional Assistance (DTA), 50 SW Cutoff | 3 | 10 | 61 |
| Interfaith Hospitality Network, 91 June St | 4 | 9 | 91 |
| Village at Cambridge Street, 510 Cambridge St | 5 | 8 | 64 |

The crash data for the City of Worcester does not include information about whether or not victims of traffic violence are experiencing homelessness or residing in temporary shelters. However, the spatial analysis does reveal an overrepresentation of all types of crashes near Worcester's crisis shelters. This trend is consistent with national trends that find an increased risk of death or severe injury in crashes for people experiencing homelessness.

There are emerging best practices on how to improve roadway safety for this vulnerable population, including coordination with social service agencies and housing programs. Some current best practices identified by USDOT include:

- **Engage People** experiencing homelessness in planning and decision-making.
- **Collect and Analyze Data** to guide decisions.
- **Leverage DOT Resources** to support affordable housing and services.
- **Offer Training** to increase capacity and improve treatment of people experiencing homelessness in the right of way (ROW).
- **Lead Coordination** to maximize effectiveness of addressing homelessness.

Source: [*USDOT, Promising Practices to Address Road Safety among People Experiencing Homelessness*](#)

Universal Design is a principle by which spaces are designed to be accessible for people, regardless of age and ability. In other words, accessibility features do not just benefit people with disabilities, they also benefit everyone, including but not limited to, children, people traveling with strollers, the elderly, and the unhoused.

Potential accessibility improvements that may also benefit people experiencing homelessness or residing in temporary shelters include:

- Extended crossing time at crosswalks
- Detectable warning strips at crosswalks
- Filling sidewalk gaps
- Consistent pedestrian-scale lighting

Source: [*NACTO, Transit Street Design Guide*](#)

In partnership with MassDOT and WRTA, audit and implement safety improvements at bus stops

EARLY WIN! MassDOT and WRTA have begun this process.

Aligns with MAP Strategy 4.1:

First/Last Mile Strategic Plan to Improve Access to Transit

Range 

Cost \$ 

Efficacy 

Equity
Connection

All Top 7 locations are in MA
EJ/CEJST areas and focus on
transit critical bus riders



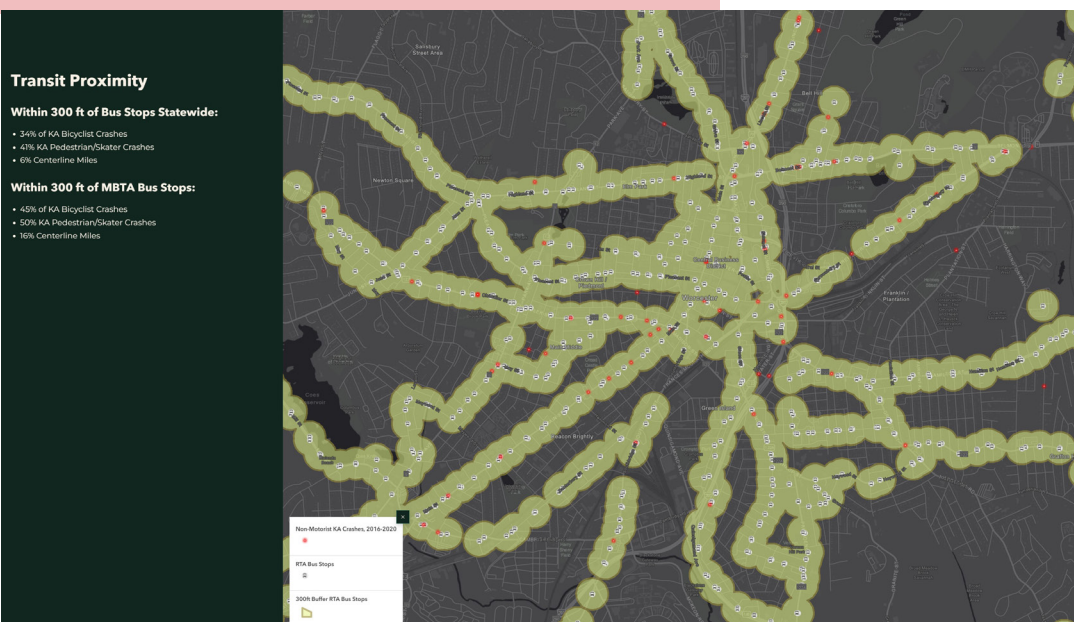
ISSUE

In Worcester, 62% of pedestrian and 60% of bicycle injury crashes occur within 200 feet of a bus stop. Only about 8% of land in Worcester is within 200 feet of a bus stop.

RECOMMENDATION DETAILS

Beginning with the top crash locations near bus stops in Worcester, the City should coordinate with MassDOT, which has already identified these and other specific locations in need and completed site inspections to introduce safety improvements for riders.

Typical areas of focus include the adequacy of sidewalk space, opportunities to cross the street near stops, and the quality of crosswalks, lighting, and bus stop amenities. Solutions may include widening sidewalks, adding new crosswalks, installing RRFBs, adding lighting, and using far-side bus stops.



This program is precipitated by [MassDOT's Vulnerable Road User Safety Assessment](#). MassDOT found that, across the state, 41% of pedestrian/skater fatal and severe injury crashes and 34% of bicyclist fatal and severe injury crashes occur within 300 feet of bus stops, although only 6% of the state's roadway miles are near bus stops.

Responsible Parties: MassDOT, DTM






Coordinating Party: WRTA

Top 7 Bus Stops with the Most Fatal and Severe Crashes (within 200 ft)

| Location | Rank based on Fatal and Severe crashes | # Fatal and Severe Crashes (2019-23) | # Injury Crashes (2019-23) |
|---------------------------|--|--------------------------------------|----------------------------|
| Park Ave/Parker St | 1 | 6 | 12 |
| Main St/DMV | 2 | 5 | 25 |
| Southbridge St/Madison St | 2 | 5 | 20 |
| Chandler St/Main St | 3 | 4 | 27 |
| Vernon St/Dorchester St | 3 | 4 | 16 |
| Belmont St/Lake Ave | 3 | 4 | 15 |
| Vernon St/Richland St | 3 | 4 | 14 |



Potential Bus Stop Safety Improvements

| | Countermeasure | Crash Reduction Factor |
|---|---|---|
|  | Far-side bus stops (bus stop is located after rather than before an intersection) | 45% reduction in transit-related crashes |
|  | Install pedestrian crossings (signed and marked with curb ramps and extensions) | 37% reduction in total crashes |
|  | Pedestrian Hybrid Beacons (PHBs) | 55% reduction in pedestrian crashes 29% reduction in total crashes |
|  | Rectangular Rapid Flashing Beacons (RRFBs) | 47% reduction in pedestrian crashes |
|  | Intersection lighting | 40% reduction in pedestrian crashes |












Additional Recommendations



Audit posted speeds on corridors where the statutory speed limit does not apply

EARLY WIN! DTM is currently conducting several speed studies.

Range    Cost    Efficacy    Equity Connection **Not defined**

ISSUE

Fatal injury crashes happen more frequently on roads with faster posted speed limits (greater than 35 mph). These roads are where 36% of fatal crashes occur compared to 24% of all injury crashes, and they represent only 7% of Worcester's roadway miles.

Responsible Party: DTM
Coordinating Party: City Council










RECOMMENDATION

- Respond to the City Council with a plan for carrying out speed evaluation
- Identify streets that have posted speed limits and are on the Priority Network
- Collect data on operating speeds using in-field devices and transportation analytics through subscription software
- Recommend new safety focused speeds following the guidance in NACTO's City Limits: Setting Safe Speed Limits on Urban Streets guidelines



From the Priority Network scoring, identify the next priorities on the next round of focus

Aligns with MAP Strategy 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets*

Range    Cost    Efficacy    Equity Connection **Priority Network scoring based on MA EJ and CEJST**

ISSUE

Design recommendations cover about 43 miles of the Top Priorities that scored "High." About 13 miles are assigned to be addressed in the near-term, 25 miles to be addressed next, and the rest are either in the existing plans, currently under construction, or recently reconstructed.

Responsible Party: DTM
Coordinating Party: Transportation Advisory Group (TAG)










RECOMMENDATION

- Update a web version of the Priority Network map to track progress addressing Priority Network corridors
- Identify the next 3-5 corridors to address by considering opportunities to leverage potential synergy with development projects, repaving needs, and community engagement
- Define next round of corridors in the annual report
- Engage a consulting team or in-house engineers to design solutions that deploy safety countermeasures



Develop a road diet program to address the 4+ lane arterials

Aligns with MAP Strategy 6.2: *Conduct Road Diets*

Range    Cost \$    Efficacy    Equity Connection Not defined

ISSUE

Roadways with 4 lanes are more likely to be where fatal crashes occur – 23% of fatal crashes occur on 4 lane roadways, while only 18% of all injury crashes occur on 4 lane roads. While most roads in Worcester have 1 or 2 travel lanes (93%), only 71% of injury crashes occur on these roads.

Responsible Party: DTM

Coordinating Parties: DPW&P & TAG










RECOMMENDATION

- Flag all street resurfacing/reconstruction projects on 4+lane arterial corridors for Vision Zero review
- Coordinate opportunities to leverage potential synergy with MAP, development projects, repaving needs, and community engagement on arterials
- Engage a consulting team or in-house engineers to design solutions that deploy safety countermeasures
- Conduct traffic modeling to confirm operational suitability on high-volume streets.
- Monitor crash data and speeds post-construction to build a Worcester-specific road diet toolkit



Develop an intersection diet program, focusing on slip lane elimination

Aligns with MAP Strategy 6.3: *Develop and Launch Traffic Signal Improvement Program*

Range    Cost \$    Efficacy    Equity Connection Not defined

ISSUE

Roadways with 4 lanes are more likely to be where fatal crashes occur – 23% of fatal crashes occur on 4 lane roadways, while only 18% of all injury crashes occur on 4 lane roads. While most roads in Worcester have 1 or 2 travel lanes (93%), only 71% of injury crashes occur on these roads.

Responsible Party: DTM

Coordinating Party: City Council

RECOMMENDATION

- Document metrics of success from Mill Street road diet
- Develop road diet best practices and outreach tools
- Identify early location(s) and initiate outreach
- Develop tactical/temporary design on selected corridor
- Record pilot implementation data
- Request funding & develop permanent design based on evaluation results














Develop a traffic calming toolkit and Neighborways program

Aligns with MAP Strategies 2.5 and 6.1:

Create a Neighborways Program and Develop Traffic Calming Toolkit

Range    Cost \$    Efficacy    Equity Connection Programs may give priority to EJ neighborhoods

ISSUE

Many segments of the Priority Network that are not in the Top Priorities category are local roads near community facilities and in Environmental Justice zones. These are locations where traffic calming and Neighborways programs are appropriate solutions.

Responsible Party: DTM

Coordinating Parties: DPW&P, DSR

RECOMMENDATION

- Develop a traffic calming toolkit that includes Worcester specific tools and guidance on which traffic calming measures are most effective in different contexts
- Establish a traffic calming procedure that incorporates crash data, speeding data, and community feedback to identify traffic calming needs
- Develop a Neighborways program to implement neighborhood scale greenway on local residential street that enhances pedestrian and bike use
- Focus on the streets with Priority Network scores and streets identified in MAP
- Continue the potential expansion of the existing Speed Hump Program through evaluation of whether temporary-installed locations should be made permanent, and with particular consideration of new locations based on the Priority Network Map

Other Considerations: Repurposing the right of way

Road diets, intersection diets, and other safety changes to street design are likely to result in less space allocated to the pavement—thus providing an opportunity to repurpose space in the right of way (ROW) for other uses. As described previously under road diet recommendations, this space is often reallocated to another street purpose such as bike lanes or wider sidewalks. In some cases, space may be available to use for other purposes.

Potential uses for the ROW should be assessed in coordination with Worcester's Now | Next goals. These decisions should be coordinated with the Planning Division and DSR and integrated into the community engagement process.



POTENTIAL USE

Housing Development
(If land is removed from the ROW it may be combined to make adjacent parcels more viable for development)

Park Space
(such as pocket parks)

Green Infrastructure

Community Garden

Transit Station and/or Shelter

Public Art

NOW | NEXT GOAL CONNECTION

► *Increase Worcester's housing supply with a diversity of housing types.*

► *Partner to equitably expand the network of quality neighborhood parks, playgrounds, and recreation facilities.*

► *Equitably invest in Worcester's urban forest and green infrastructure.*

► *Support the expansion and improvement of local food systems for the benefit of everyone in Worcester.*

► *Invest in Worcester's public transit.*

► *Cultivate a thriving arts and creative community.*



Policy Coordination and Strategy

Non-infrastructure
improvements that support
improved collaboration,
proactivity, and
responsiveness to roadway
safety



SUMMARY LIST OF POLICY COORDINATION AND STRATEGY RECOMMENDATIONS




The recommendations in bold below have been detailed on the following pages after discussions with responsible City parties, with “early wins” that are already underway noted. Other, highlighted “additional” recommendations are included in less detail as the framework for future safety planning efforts by City departments and the Transportation Advisory Group in the coming months and years.

- p.74 Develop an interagency agreement between DTM and Fire Department, building upon a strong, pre-existing relationship**
 - p.75 Amend zoning ordinance to incorporate TDM and promote walkable, transit-oriented development**
-
- p.76 Include safety updates as part of planned improvements and maintenance
 - p.76 Make roadway safety a top priority of the Worcester Police Department
 - p.77 Elevate street safety as a matter of public health
 - p.77 Get an early start on safer streets by integrating Vision Zero into Worcester’s Public Schools
 - p.78 Enhance DPW&P’s capacity to prioritize safe streets through its construction, maintenance, and operations programs
 - p.78 Formally become a Vision Zero city with a resolution by Worcester City Council

Develop an interagency agreement between DTM and Fire Department, building upon a strong pre-existing relationship

Aligns with MAP Strategy 7.1:
Design and Process Standardization



Range   

Efficacy   

Cost   

Equity Connection Not defined


ISSUE

The size of emergency vehicles and legitimate concerns about quick response create a design conflict with contemporary street design, which is focused on injury and fatality reduction through road diets, slowing speeds, and other safety design elements. Continual collaborative working relationships between public safety and street engineers is important to the design process.



RECOMMENDATION DETAILS

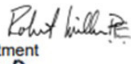
As an essential first responder and public-safety agency, the Fire Department is a key user of Worcester's streets and has a vested interest in reducing crashes and injuries. In the City of Austin, TX, the Fire Department and the Planning Department worked together on a memorandum of understanding committing their departments to partnership and collaboration. Worcester's Fire Department and Department of Transportation and Mobility will work together on a similar agreement that commits the departments to working together on street design and vehicle procurements that align with the City's goals for emergency response and Vision Zero.

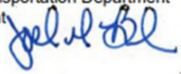


AUSTIN TRANSPORTATION DEPARTMENT
MEMORANDUM

TO: Mayor and Council Members

CC: Spencer Cronk, City Manager
Rey Arellano, Assistant City Manager
Jim Smith, Interim Assistant City Manager

FROM: Robert Spillar, P.E., Director, Austin Transportation Department
Joel Baker, Chief, Austin Fire Department 

DATE: March 4, 2019 

SUBJECT: Final Update on 2015 International Fire Code Local Amendments and Street Design – Austin Transportation and Austin Fire Departments

This memorandum reports final findings and recommendations resulting from a year-long collaborative effort between the Austin Fire Department (AFD) and the Austin Transportation Department (ATD) on emergency response and street design. The short- and long-term

Responsible Party: DTM

Coordinating Party: Fire Department

Amend zoning to incorporate TDM and promote walkable, transit-oriented development





Aligns with MAP Strategy 7.2:

Traffic Analysis Requirements & Development Code Audit



Range   

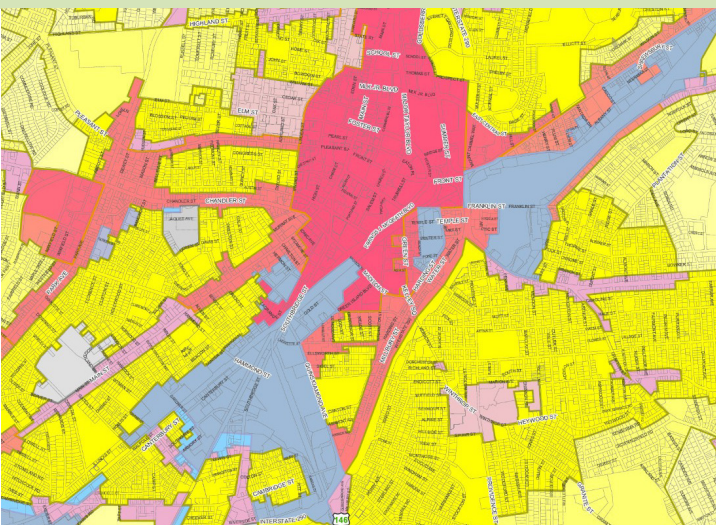
Efficacy   

Cost    

Equity Connection Not defined

ISSUE

Too many of Worcester's zoning regulations and guidance documents are written to promote 20th-century suburban style growth and development. These design choices prioritize automobile travel over other transportation modes, even at the expense of safety for pedestrians and other vulnerable road users. These standards can be especially harmful when applied to more urban parts of the city, eroding the experience of walking in some of Worcester's (traditionally) more pedestrian-oriented neighborhoods.



RECOMMENDATION DETAILS

Recognizing the demonstrated value of denser mixed use and walkable-oriented zoning in many communities in the Commonwealth and across the United States, Worcester should embrace changes to outdated zoning ordinances that are encouraging too much auto-oriented development and the resulting traffic that encourages speeding and safety concerns.

Drawing upon frameworks from places like Brookline and Somerville, revised codes have resulted in less traffic, better places, and safer streets.

- Conduct best practice research and review potential language with City Planning Board
- Implement *Worcester Now / Next* zoning recommendations supporting mixed use development, increased urban densities, and reducing parking minimums
- Work with DTM on citywide transportation guidelines that advance Vision Zero (e.g., bike parking guidelines and sidewalk and pedestrian crossing guidelines)

Responsible Party: Planning Division










Coordinating Parties: DTM and DPW&P

Additional Recommendations



Include safety updates as part of planned improvements and maintenance

Aligns with MAP Strategies 2.1: *Conduct Corridor and Intersection Studies to Advance Complete Streets* and 7.1: *Design and Process Standardization*

Range    Cost \$    Efficacy    Equity Connection Not defined

ISSUE

Roadway improvements and maintenance of city streets do not always incorporate basic opportunities for upgrading safety.

Responsible Party: DTM
Coordinating Party: DPW&P










RECOMMENDATION

- DTM and DPW&P must continue to coordinate road safety improvements when planning and implementing roadway maintenance
- Update Complete Streets policy periodically to improve processes
- Develop a 5-year transportation capital improvement plan to identify projects earlier, allowing sufficient time for planning, design, and funding



Make roadway safety a top priority of the Worcester Police Department

Aligns with MAP Strategy 1.4: *Encourage Community-Based Education Programs*

Range    Cost \$    Efficacy   

Equity Connection- Policing has a disproportionate impact on groups that have historically been marginalized. This approach centers proactive safety improvement rather than enforcement.

ISSUE

The Worcester Police Department (WPD) has a challenging and wide-ranging set of responsibilities and makes the most of a limited budget. The Department has not always prioritized road safety relative to other demands and public safety issues. However, it is not possible to enforce traffic everywhere at all times, so collaborative education efforts are needed.

Responsible Party: WPD
Coordinating Party: DTM











RECOMMENDATION

- Development and completion of interagency agreement between Police Department and DTM
- Regular monthly meetings and coordination between DTM and WPD traffic enforcement
- Adopt MassDOT "crash," not "accident" terminology
- Community engagement including school and car seat safety programs
- Continue crossing guard training in conjunction with WPS
- Police being messengers for Vision Zero through public relations campaign
- Convert from paper to digital citations



Elevate street safety as a matter of public health

Aligns with MAP Strategy 1.4: *Encourage Community-Based Education Programs*

Range    Cost     Efficacy    Equity Connection Not defined

ISSUE

The Worcester Division of Public Health (WDPH) has been a champion of safer streets. Further coordination between Public Health and DTM is warranted to ensure these departments are maximizing the impact of their efforts.

RECOMMENDATION











- Commit to co-leading Vision Zero working group with DTM
- Integrate Vision Zero into divisional messaging

Responsible Parties: WDPH and DTM
Coordinating Party: N/A



Get an early start on safer streets by integrating Vision Zero into Worcester's Public Schools

Aligns with MAP Strategy 1.1: *Expand Safe Routes to School (SRTS) Program*

Range    Cost     Efficacy    Equity Connection Focus on a vulnerable population

ISSUE

As the second largest school district in Massachusetts, the Worcester Public Schools, educating more than 24,000 students, are perhaps more responsible than any entity for Worcester's future. WPS is a strong ally for safer streets, but needs more support to integrate and extend programs like Safe Routes to School to all schools.

RECOMMENDATION

- Formalize School Department commitment to Vision Zero and Safe Routes to School
- School Committee resolution in support of active transportation to and from Worcester Schools
- Encourage bottom-up actions from school administrators and parents' organizations
- Meet with DTM and Girls Inc. to discuss success of Walking Bus for Vernon Hill after-school program











Responsible Party: Worcester Public Schools
Coordinating Party: DTM



Enhance DPW&P's capacity to prioritize safe streets through its construction, maintenance, and operations programs

Aligns with MAP Strategy 1.5:

Identify and Address Transportation Barriers by Past Transportation Decisions

Range    Cost     Efficacy    Equity Connection **Not defined**

ISSUE

As the Department of Public Works & Parks transitions with new staffing in the Commissioner's office, this leadership change presents an opportunity to expand the department's ability to construct, maintain, and operate infrastructure required to achieve Vision Zero.

RECOMMENDATION

- Consider hiring a complete-streets focused engineer as a liaison to DTM
- Expand snow removal and treatment operations to include bike facilities and key sidewalks/crosswalks
- Engage in regular interdepartmental coordination around project implementation and operations











Responsible Parties: DTM and DPW&P

Coordinating Party: N/A



Formally become a Vision Zero city with a resolution by Worcester City Council

Aligns with MAP Strategy 7.3: *Create and Implement Vision Zero Safety Action Plan*

Range    Cost     Efficacy    Equity Connection **Not defined**

ISSUE

Communities around the country have stated their commitment to reducing traffic deaths to zero. Worcester has one of the worst records for traffic safety in Massachusetts, but the city is turning the corner. Political support to make improvements and advance change will be essential to continuing momentum in the right direction.

RECOMMENDATION

The decision by Mayor Petty and City Manager Batista to declare a Road Safety and Traffic Violence crisis in 2024 was an important moment for the city, acknowledging the challenges facing the city when it comes to safer streets. It will be important for the city to continue to show commitment; a resolution from the City Council will have a meaningful impact. In particular, the federal government may look for City Council support before awarding future dollars for implementing Vision Zero projects.

Responsible Parties: City Council and DTM

Coordinating Party: Mayor's Office

Other Considerations: **Resolve!**

The following excerpts from the City of Minneapolis' Vision Zero Resolution is one of many strong examples that Worcester can refer to for inspiration for its own City Council commitment.

RESOLUTION

By Reich, Palmisano, Bender, Gordon, Yang, and Glidden

Providing for a Vision Zero policy to eliminate fatalities and serious injuries that are a result of crashes on City streets within the City of Minneapolis by 2027.

Whereas, one death on our streets is one too many; and

Whereas, crashes that result in death or serious injury are not inevitable but largely preventable and stem in part from human inattention and designs that are ineffective in accommodating multimodal uses in urban environments; and

Whereas, a commitment to Vision Zero is a commitment to life and equitable opportunity for people in the City of Minneapolis; and

Whereas, it is the role of government to do its part to serve and protect the populace; and

Be It Further Resolved that the Vision Zero Action Plan will put equity at its forefront, striving to impact the most vulnerable and dependent users of the most dangerous parts of the transportation network to improve the health and well-being of those traveling on streets in the City of Minneapolis, and the Plan will use data and community outreach to develop strategies that aim to end death and serious injuries on City streets in the effort to ensure outcomes will be experienced equitably throughout the City.

Be It Further Resolved that the Vision Zero Action Plan will draw heavily from those who use our streets, including those who live in areas that experience high crash rates, those who advocate for safer streets for all modes, and the general public, through a diverse range of outreach activities designed to understand both concerns and opportunities with advancing this vision, and by using their input and refined data to determine appropriate and effective steps to achieve in the Vision Zero Action Plan.

Be It Further Resolved that the Vision Zero Action Plan will use data and best practices to outline concrete steps in planning, engineering, policy, enforcement and education to reach interim steps toward zero deaths.

Be It Further Resolved that the City of Minneapolis will work with partners in the region who own and manage streets in the City to influence the street planning, design, maintenance, operations, and law enforcement, including the State of Minnesota, Hennepin County, the Minneapolis Park and Recreation Board, Metro Transit, and neighboring municipalities to combine similar efforts and leverage individual work efforts to contribute to improvements in safety region-wide.

Be It Further Resolved that the Director of Public Works or her designee will establish a Vision Zero Task Force comprised of leaders from the City's Communications Department, Health Department, Police Department, Community Planning and Economic Development Department, Civil Rights Department, Intergovernmental Relations Department, Neighborhood and Community Relations, City Coordinator's



Continued Engagement

Next steps to continue public awareness and accountability as the city pursues next steps toward Vision Zero.



EYES UP
WORCESTER
PHONES DOWN



SUMMARY LIST OF CONTINUED ENGAGEMENT RECOMMENDATIONS

The recommendations in bold below have been detailed on the following pages after discussions with responsible City parties, with “early wins” that are already underway noted. Other, highlighted “additional” recommendations are included in less detail as the framework for future safety planning efforts by City departments and the Transportation Advisory Group in the coming months and years.

p.82 Enlist the Transportation Advisory Group (TAG) to adopt the role of leading Vision Zero implementation and oversight

p.84 Establish a dedicated Rapid Response program

p.86 In the annual City budget, clearly highlight funds allocated to street safety improvements

p.86 Plan or participate in at least one tactical urbanism event each year

p.87 Conduct an annual education and awareness campaign to support Vision Zero

p.87 Every spring, release an annual report tracking the previous year’s Vision Zero progress

p.88 Periodic public qualitative and quantitative data collection



Enlist the Transportation Advisory Group (TAG) to adopt the role of leading Vision Zero implementation and oversight

EARLY WIN! The TAG and its members have been established to lead Vision Zero implementation and oversight



Range   

Cost   

Efficacy   

Equity Connection Not defined

ISSUE

The Safe System approach calls for a committee, task force, implementation group, or similar body established and charged with the Vision Zero plan's development, implementation, and monitoring. Today, there is no body that includes representation beyond City departments to oversee transportation and mobility planning decisions.

RECOMMENDATION DETAILS

- Expand the scope of this advisory group to encompass Vision Zero in conjunction with the Complete Streets program approach and prioritization plan. The group would not be delegated as a formal board or committee, but rather a task force/working group.
- Finalize the roles and responsibilities of the group to include "developing, implementing, and monitoring of the Vision Zero program including overseeing Annual Reporting and development of future revisions to the Vision Zero Safety Action Plan."
- Identify members from the Vision Zero Internal and Community Working Groups, or others who are committed to advancing Vision Zero to participate.
- At the inaugural meeting of the revised group, establish procedures including membership terms and frequency of meetings (at least quarterly).



◀ Meeting with the Working Group

Responsible Party: DTM, City Manager

Coordinating Party: TAG

Worcester's 2017 Complete Streets Policy created and outlined the responsibilities of a Transportation Advisory Group that will be critical in leading and advancing the implementation of the Vision Zero Action Plan recommendations:

Transportation Advisory Group (TAG)

- Community and stakeholder participation is an important aspect of identifying transportation needs and selecting the best solutions to address these needs. The City Manager will therefore establish a Transportation Advisory Group (TAG) consisting of representatives from municipal departments, city boards and commissions, Worcester Public Schools, other relevant agencies, and community stakeholders. The TAG will be multi-disciplinary in nature and should include a diverse range of expertise in related policy, planning, and design fields.
- The TAG will assist in developing guiding policies, provide input and feedback on transportation proposals, and foster interdepartmental coordination.
- The TAG will further the City's implementation of Complete Streets by participating in the development of transportation policy, assisting in the preparation of transportation plans and studies, and coordinating interdepartmental and stakeholder review of major projects.
- **The TAG will be charged with development, implementation, and monitoring of the Vision Zero program including overseeing Annual Reporting and development of future revisions to the Vision Zero Safety Action Plan.**






The formation of this group fulfills one of the requirements for Safety Action Plans that are funded by the federal SS4A program. The Planning Structure requirement states that an Action Plan must have a committee or group that is charged with the Plan's development, implementation, and monitoring.



Establish a Dedicated Rapid Response Program

EARLY WIN! In October 2024 a Rapid Response Program was announced, to be led by DTM & Worcester Police Department



Range   

Efficacy   

Cost \$   

Equity Connection Not defined

ISSUE

Worcester has not had a program in place that both responds to the people involved in crashes that resulted in serious injuries, and also catalyzes analysis and countermeasures targeted at the specific location of the incident. While it is important to be proactive in addressing traffic safety on a case-by-case basis, a Rapid Response program can contribute to improving systemic safety issues by more deliberately understanding *why* crashes are occurring.

RECOMMENDATION DETAILS

The program should be launched with the development of a Rapid Response Plan, including the formalization of response team roles and pre-/post-incident steps such as those identified on the following page.

The plan should also include details about:

- Associated staffing commitments
- A notification system for activating response team
- A data collection protocol for immediate deployment to evaluate pre- and post-improvement conditions (an example data dashboard used by Denver's Department of Transportation and Infrastructure for rapid response analysis is shown on the opposite page)
- A data sharing procedure. This program should be a direct conduit with the TAG who may shift and advance recommendations based on incident data
- A short-list of immediate safety measures that can be deployed rapidly (e.g., signing, pavement markings)
- A rapid deployment schedule, advertised online
- A rapid deployment budget, updated annually

The City should conduct a test phase of the program for one year and revise the plan based on experiences learned from the year to improve procedures. At this time, the team should develop a Council Memo to introduce DTM's pilot program and memorialize its deployment, with an intent of providing an annual program review and summary within the Vision Zero annual plan update.



Responsible Party: DTM

Coordinating Parties: City Manager, TAG

PRE-INCIDENT STEPS

Step 1. Establish a specialist unit to investigate road collisions

This unit should focus on identifying the causes of road collisions, rather than criminal culpability. This information can inform priorities for recommendations to be implemented or re-evaluated as part of the Safety Action Plan Implementation.

Step 2. Enlist and inform a broad response team to be "on-call" for each incident

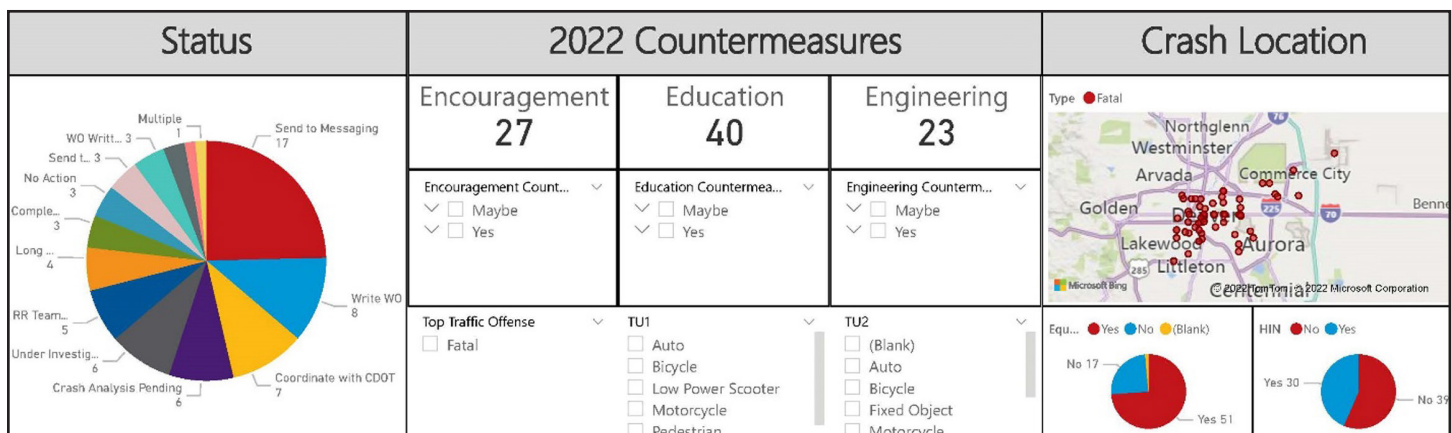
Example roles are to the right, based on a model successfully implemented in San Francisco. A process should be defined for how the team is activated when an incident occurs (e.g., calling tree)

POST-INCIDENT STEPS

- Activate Response Team and direct victims and families to resources
- City prepare public response within # day(s) on Vision Zero website/social media (e.g., "This incident is why our work towards Vision Zero must continue, and here's how you can help...")
- Hold public memorial at location (within # days) with visible representation from City government, TAG, and with VZ toolkits for public handout
- Conduct a site assessment with DPW&P and Police Department within # days
- Track, share analysis data with response team
- Hold meeting with TAG within # days/weeks to discuss incident, identify potential, short-term countermeasures, and evaluate priority locations
- Update StoryMap with new data
- Communicate countermeasures to the public

Post-Incident Response Team and Roles










| Provider (including contact number, operating hours, and whether translation services are available) | Services |
|--|---|
| Medical Examiner's Office | <ul style="list-style-type: none"> • Conducts medical exam and completes medical record |
| Worcester Police Department Crash Reconstruction Unit | <ul style="list-style-type: none"> • Investigates crash |
| District Attorney's Office, Victim Services | <ul style="list-style-type: none"> • Crisis intervention • Resources and referrals • Access to Massachusetts Victims of Violent Crime Compensation Program • Assistance navigating the Criminal Justice System |
| Division of Public Health, Crisis Response | <ul style="list-style-type: none"> • Resources for Families • Individual Therapy/Treatment • Therapy |
| Advocacy Group such as Families for Safe Streets | <ul style="list-style-type: none"> • Peer support for survivors and family members of victims of traffic violence • resources for survivors and family members |
| WRTA | <ul style="list-style-type: none"> • Provide options for alternative transportation and resources if victim's vehicle or bicycle was impacted |
| City Manager's Office or Public Information Officer | <ul style="list-style-type: none"> • Coordinate to notify and/or make a statement on City response or recommended messaging to reinforce association with other Vision Zero news (e.g., including a #WVZ hashtag that leads to the City Vision Zero website and resources) |



Additional Recommendations



In the annual City budget, clearly highlight funds allocated for street safety improvements

Range    Cost    Efficacy    Equity Connection **Not defined**

ISSUE

Today, there is no process for tracking City investments related to Vision Zero.

Responsible Party: DTM

Coordinating Party: City Manager

RECOMMENDATION

Consider developing a standalone 5-year Transportation Improvement Plan separate from but input to the City CIP/ Operating budgets.








- In the interim, begin tracking and include budget footnotes about safety investment. This ensures good tracking of where DTM initiates safety projects and, indirectly, where synergy is found with other DPW&P projects.
- Report on this spending in the Vision Zero annual report
- Ensure that the funding allocated for Vision Zero is commensurate with addressing the Road Safety and Traffic Violence Crisis



Plan or participate in at least one tactical urbanism event each year

EARLY WIN! Partnership with Main South CDC

Aligns with MAP Strategy 2.2: *Execute Interim or Pop-Up Safety Projects*

Range    Cost    Efficacy    Equity Connection **Not defined**

ISSUE

Some of the traffic calming and multimodal design solutions that may create safer streets would be new to Worcester. Tactical urbanism events offer an opportunity to advance implementation in coordination with community engagement that will build local support and comfort with new types of roadway redesigns.

Responsible Party: DTM

Coordinating Parties: Community Partners

RECOMMENDATION








- Using the materials acquired by DTM, identify future opportunities for tactical urbanism projects at Priority Network locations
- Find partners such as schools and community groups to collaborate with
- Identify programming such as bike rodeos, walks audits, and street fairs to compliment tactical urbanism projects, and facilitate community engagement and ownership
- Document and publicize results of the tactical urbanism projects including photos, drone photos, community/ constituency quotes, speed data, volume data, etc.
- Tie temporary improvements into a plan for more permanent improvements



Conduct an annual education and awareness campaign to support Vision Zero

EARLY WIN!

Aligns with MAP Strategy 1.4: *Encourage Community-Based Education Programs*

Range    Cost \$    Efficacy    Equity Connection Not defined

ISSUE

The Vision Zero program is new to Worcester and offers ideas that may be unfamiliar to many in the community about road design and safe traveling behavior.

Responsible Party: DTM










Coordinating Parties: DPH, DA, TAG, various CWG members

RECOMMENDATION

- Identify theme based on crash patterns and community feedback (recognizing visibility limitations at uncontrolled crosswalks, driving slow saves lives, etc.)
- Identify outreach partners including, DPH, the DA's office, sports teams, and other Community Working Group members
- Develop outreach strategy and materials including social media campaign, public posters (in bus advertisements, at bus stops, at train station, billboard, etc.), and focused strategies for underrepresented/hard to reach groups, especially those identified in the systemic analysis



Every spring, release an annual report tracking the previous year's Vision Zero progress

Range    Cost \$    Efficacy    Equity Connection Not defined

ISSUE

The Safe System approach calls for a publicly accessible means of measuring progress over time that includes outcome safety data and other proposed metrics.

Responsible Party: DTM

Coordinating Parties: TAG

RECOMMENDATION

- Every year, develop an annual report with the help of the TAG and Internal Working Group that reports on crash data, dollars spend on vision zero, and progress on all Vision Zero recommendations
- Release the report with accompanying outreach and email the report external agencies and community groups with an invitation to engage at one or two education and input opportunities throughout the upcoming year (the message can be general, such as "Stay tuned this spring for...")
- Post the report publicly online
- See Framework for Success section for Annual Report template





Periodic public quantitative and qualitative data collection

Range



Cost



Efficacy



Equity

Connection

Public input

ISSUE

The Vision Zero community survey found that 22% of respondents felt unsafe driving, 29% walking, and 63% bicycling.

Responsible Party: DTM

Coordinating Party: TAG

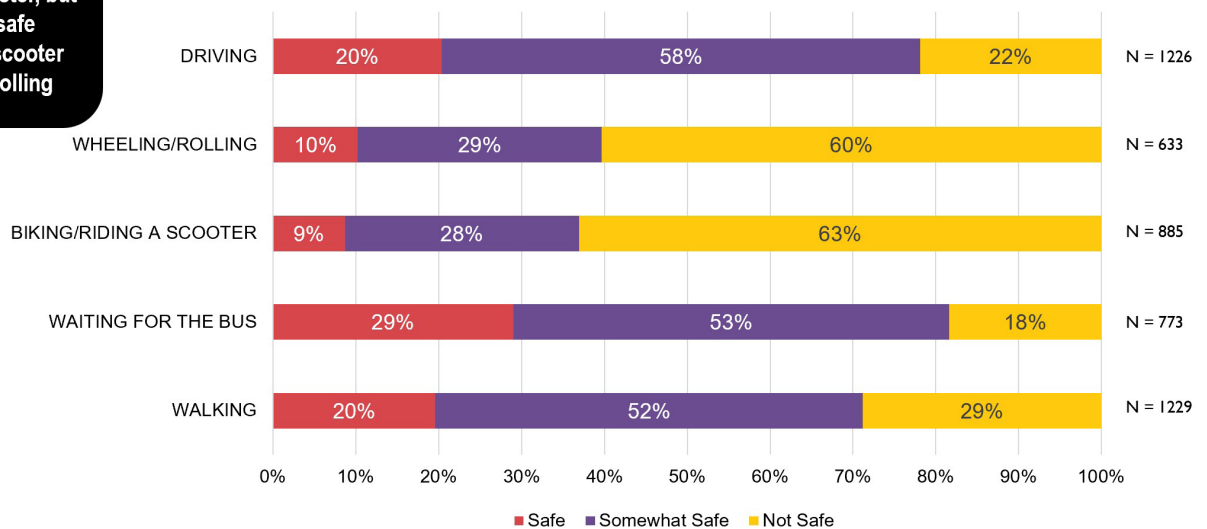
RECOMMENDATION

In addition to the primary objective of reducing fatal and severe injury crashes, the Vision Zero initiative also seeks to improve the community's comfort and sense of safety, especially when using non-vehicle modes of transportation

- Periodically re-deploy the Vision Zero survey using the same or similar questions to allow for tracking change over time
- Advertise the survey at Vision Zero related event, through online, physical flyers, community groups, and neighborhood group channels
- Report survey response changes over time in the Annual Report

People feel safest driving, waiting for the bus, and walking in Worcester, but feel most unsafe biking/riding a scooter and wheeling/rolling

How safe do you feel the travel conditions are when traveling by any of the following modes in the City of Worcester?



▲ Sample question and responses from the public survey, with a focus on qualitative input

Getting to Zero Together!

Achieving a truly safe transportation network with zero incidents of traffic violence will require shifts in how government agencies and departments work together but also requires intentional safe behavior and awareness of Worcester residents and visitors. The recommendations outlined in this section are introduced with the caveat that each community member must be committed to their individual roles in the transportation system (whether personally or professionally) in order for Vision Zero to be fully realized.





Framework for Success

MAKING IMPACTS FROM DAY ONE

Recommended Monitoring

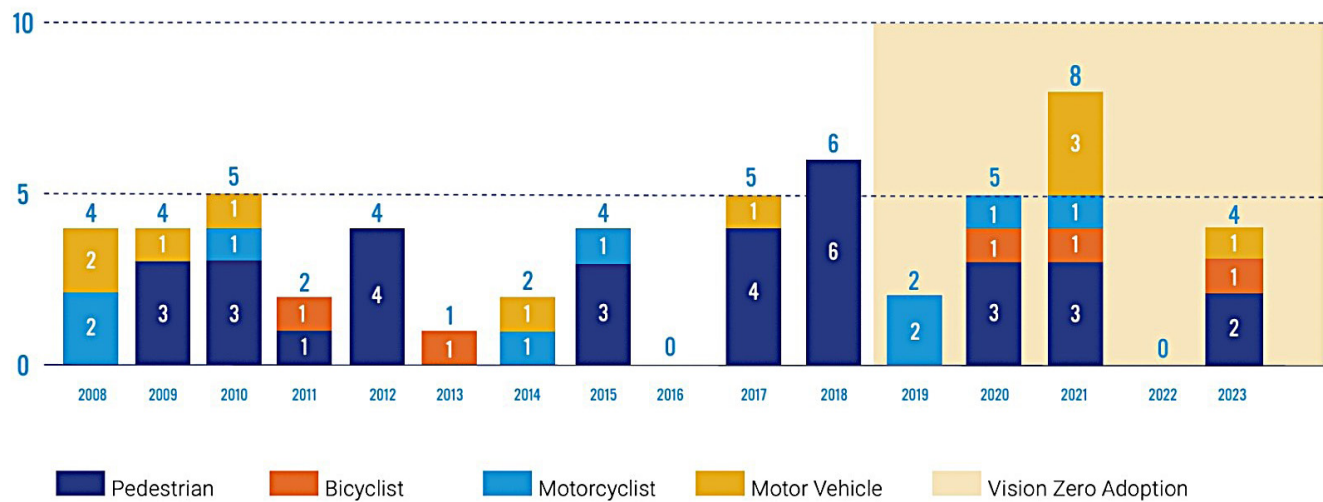
Periodic data is the linchpin to understanding more comprehensively how Worcester’s streets influence safety for all users, and should be used to regularly inform appropriate mitigative measures and action.

Once the Vision Zero Safety Action Plan has been adopted, regular monitoring of quantitative data will allow the City to be able to track the Key Performance Indicators (KPIs) related to the pursuit of zero severe injury and fatal crashes over a period of time. An example of one data point is shown below, with all recommended data points identified in detail in the table on the following page. This data requires coordination between various parties, such as identifying key contacts for who will share the data (e.g., designated organization and title), at what time (e.g., every January), how the data will be transferred (e.g., secure file-sharing platform), and protocol for data use (e.g., not publicizing data that includes personal details of involved individuals, etc.). This will allow for the continuity and maintenance of data for the long-term, regardless of future organizational and staffing changes.

This Safety Action Plan prioritizes transparency in data relating to crashes and trends. Some data is recommended for inclusion in the public-facing Vision Zero Storymap on the City’s website. Other data is recommended for analysis by members of the TAG and other parties to help further the prioritization and implementation of Vision Zero recommendations.

The KPIs should also be supplemented by essential *qualitative* data to provide a layer of understanding of the backstory of the quantitative data, as well as the real experience of being a driver, rider, or pedestrian on Worcester’s streets. These data points should be captured as part of the Vision Zero Continued Engagement Approach (see Appendix I).

Fatal Traffic Crashes - City Streets (2008 - 2023*)



Key Performance Indicators: Periodic Quantitative Data

| Data Point (within the boundaries of the City of Worcester) | Purpose | Data Source | To update on the Vision Zero web Storymap |
|--|---|----------------|---|
| Annual crash numbers <ul style="list-style-type: none"> By mode (Car, Truck, Bicycle, Pedestrian) By type (Property or vehicle damage only, injury, severe injury, fatality) By crash location characteristics (Intersection, one-way street, school zone, state vs. municipal-owned road, etc.) | <ul style="list-style-type: none"> Understand trends in relation to recent years Identify broad correlations between trends and implemented Vision Zero improvements Reveal specific conditions of crashes that require further analysis, and priority for mitigative measures | MassDOT WPD | Yes* |
| Annual crash locations (mapped) <ul style="list-style-type: none"> All, by mode (Vehicle, Bicycle, Pedestrian) Severe crashes, only (severe injury, fatality) | <ul style="list-style-type: none"> Identify “hotspots” of intensity of crashes in relation to trends from previous years Identify if new areas are becoming more prominent with occurrences Reveal any correlation between increase or decrease of severe crashes and Vision Zero-related improvements | MassDOT WPD | Yes* (including an update of the High Injury and Priority Network maps) |
| Annual traffic violation totals (by type) <ul style="list-style-type: none"> Speeding Drive through stop sign Drive through red light Failure to stop at crosswalk | <ul style="list-style-type: none"> Understand trends in behaviors that potentially lead to severe crashes for all modes Reveal violation types that may warrant further focus or priority through Vision Zero-related enforcement, education, or street design | WPD | No |
| Speed analysis counts at select locations recommended by DTM (comparison data should take place under the same conditions, e.g., season, weather) | <ul style="list-style-type: none"> Identify trends in speeds compared to posted speed limits to inform where traffic calming techniques or amended speed limits should be pursued in areas with persistent issues | DTM, DPW&P | No |
| Annual bus ridership for all WRTA stops within Worcester | <ul style="list-style-type: none"> Understand trends in relation to recent years Identify broad correlations between change in trends and implemented Vision Zero improvements | WRTA | No |
| Pedestrian/Bicycle counts at select locations recommended by DTM (comparison data should take place under the same conditions, e.g., season, weather) | <ul style="list-style-type: none"> Reveal any correlation between increase or decrease of pedestrians and bicyclists and Vision Zero-related improvements | DTM, DPW&P | No |
| Locations of street crime incidents (by type) and relevant conditions (e.g., day or evening incident, whether lighting was present) <ul style="list-style-type: none"> Road rage altercation Vandalism Theft or robbery Physical assault | <ul style="list-style-type: none"> Understand trends in behaviors that potentially lead to a reduction in pedestrian and bicyclist numbers and contribute to the perception of streets being unsafe Identify and evaluate correlations between street conditions/enforcement that should be prioritized as part of Vision Zero-related improvements to reduce incidents | WPD | No |

*This data should be further refined to display location of crashes in relation to 1. Schools 2. Community Centers and Libraries 3. Health Care Facilities 4. Shelters 5. Bus Stops. 6. MA CEJST Population Areas.

Annual Report Template

The Vision Zero campaign and implementation plan requires consistent maintenance and should never be “out of sight, out of mind.”

There are several benefits that correlate with the release of an annual status report on Worcester’s pursuit toward achieving zero serious injuries or fatalities on city roads.

Maintain momentum and urgency

Although the hope is that Worcester can “get to Zero” within several years, the City should expect that the annual reporting process will join the list of its other periodic reporting efforts (e.g., annual city budget, comprehensive plan updates) for the long-term. Committing to a regular schedule will support the continued need for awareness and a renewed look at the transportation network in relation to current data; this may result in some priority locations associated with some recommendations from the Vision Zero Safety Action Plan shifting. Annual reporting will also ensure that the City has an established process and resources to sustain momentum of the Vision Zero effort, regardless of administrative or staffing changes over time.

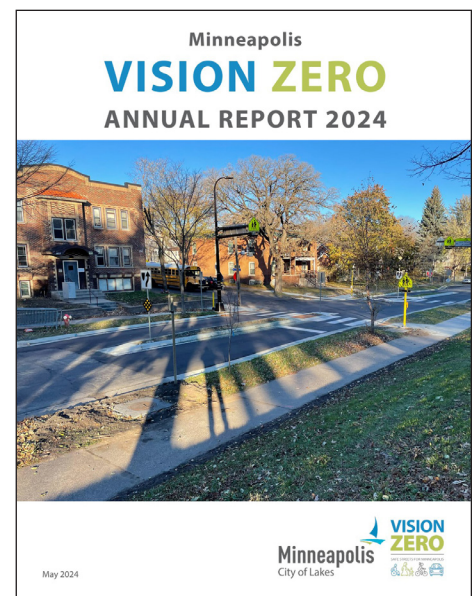
Promote transparency

As the Vision Zero Safety Action Plan identifies, City staff, agencies, and all community members play a part in mitigating occurrences of traffic violence. By clearly and deliberately documenting the state of Worcester’s streets through data (whether it tells a good story or bad story), and status updates of recommendations identified in the Safety Action Plan, areas of improvement and collaboration are revealed for the whole community, and individuals are reminded of their real role in the Vision Zero effort and urged to re-evaluate or recommit.

Celebrate progress

An annual report helps the community maintain visibility as a proactive part of the national Vision Zero campaign and all of its participating communities. The City of Worcester has and continues to take bold steps using a Safe Systems Approach, and should proudly celebrate successes as a Vision Zero peer leader, both for cities in Massachusetts, and nationwide.

Taking inspiration from other communities that are regularly reporting Vision Zero progress, the annual report template on the following pages includes a basic structure for the City of Worcester to be able to easily update and populate with new information, year-to-year.



This template includes a suggested outline and layout for an annual report, generally. Placeholders have been identified for potential content and relevant graphics that would be updated at the time of production.

CITY OF WORCESTER VISION ZERO ANNUAL REPORT

2025

Placeholder for photo of City Vision Zero
work in action



Placeholder for annual letter from City Manager and/or Mayor

WHY WE CAN'T REST ON THIS JOURNEY

We remember and honor all victims who have died walking, biking, and driving on Worcester's streets.

Placeholder image

VISION ZERO TRAFFIC ADVISORY GROUP

Worcester's TAG is committed to overseeing and leading the efforts related to the Vision Zero Safety Action Plan 2024.



TRAFFIC ADVISORY GROUP MEMBERS

To be populated at the time of report production

Placeholder for TAG group photo or meeting photo

WHY VISION ZERO?

Because every life on Worcester's streets matters and when everyone focuses on the safety approaches that align with Vision Zero, it works. The Vision Zero national campaign was first adopted in Sweden in 1997 and has rapidly spread around the world as people seek resources to catalyze immediate change around transportation safety in their communities. The Vision Zero movement is high-profile, backed by data, inclusive in how it is pursued, and supported by the highest levels of government. As of the date of this report, Worcester joins # other Massachusetts communities who have developed Vision Zero Safety Action Plans, and # who have formally declared themselves as Vision Zero cities.

Placeholder for testimonials from community leaders, politicians, social advocates, etc. on the positive impacts resulting from Vision Zero-related efforts.

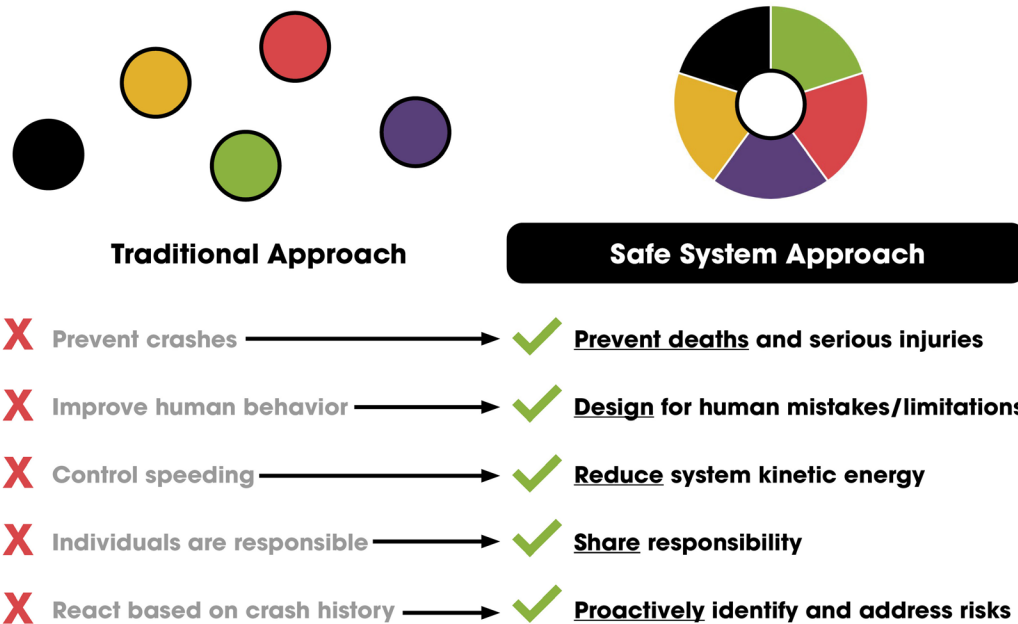
Recent aspirational news articles/ headlines celebrating Vision Zero successes may also be placed here

Placeholder for map of Massachusetts communities with Vision Zero Safety Action Plans in place

THE SAFE SYSTEM APPROACH

How do we get to zero? The USDOT has begun recommending the Safe System Approach as the most effective process to achieving safer streets.

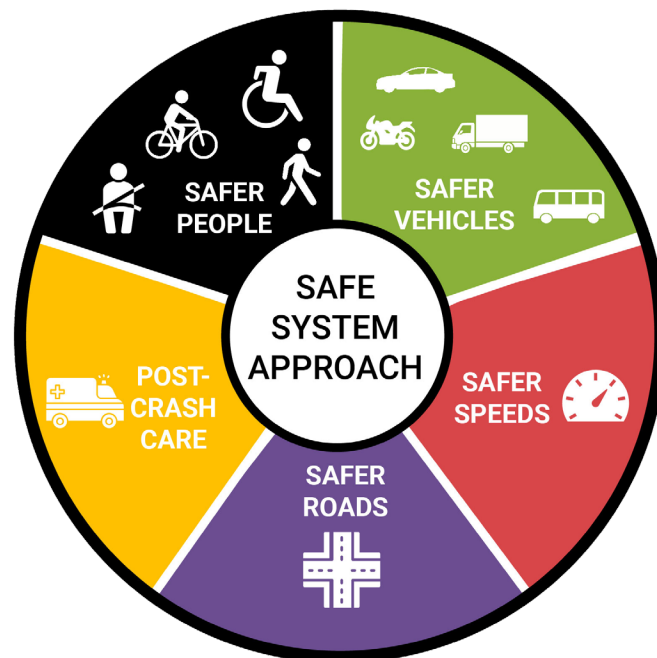
The Safe System Approach begins with a set of powerful statements that offer a common starting point for tackling safety challenges (see facing page). In these statements, the Safe System Approach calls us to acknowledge that people make mistakes, and that those mistakes should not result in fatalities or severe injuries.



The Safe System Approach offers five holistic objectives to work toward:

The Safe System Approach makes safety the highest priority and is driven by the recognition that even **one fatality on our roads is too many.**

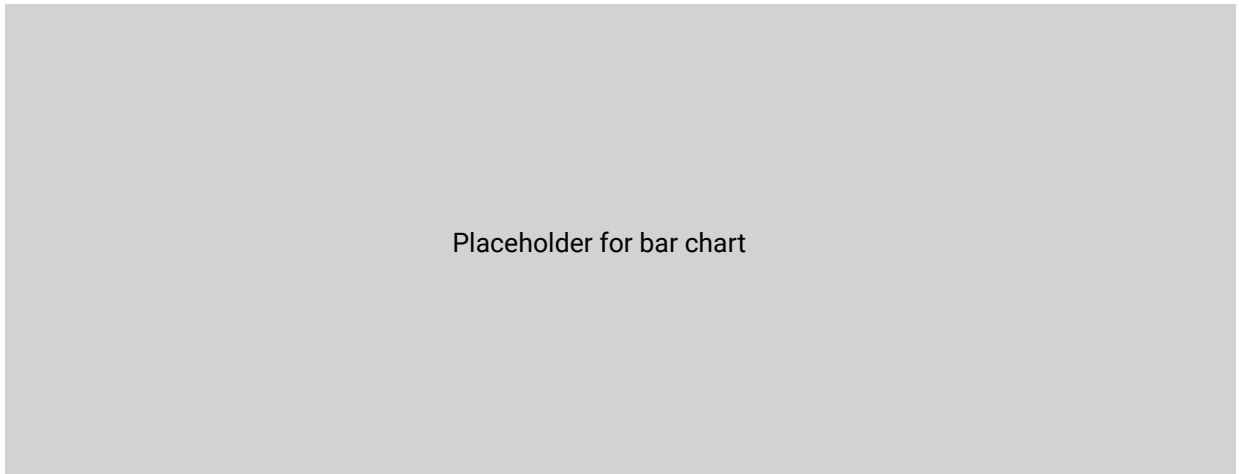
Multifaceted solutions aim to improve all aspects of risk in the transportation system, from how people travel, to their speeds, to post-crash care.



LATEST CRASH STATISTICS

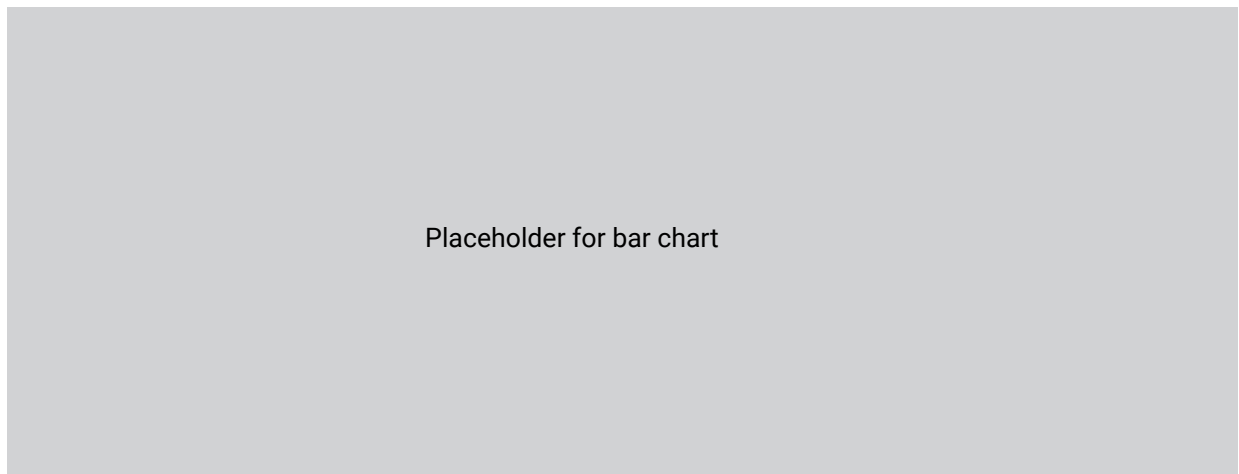
With each year's Annual Report, the Vision Zero program takes stock of how crash data trends are shifting in Worcester. Data analysis is a core element of Vision Zero. It directs program priorities and development of new Traffic Death Serious Injury High Injury Network initiatives. The High Injury Network (HIN) is a key example of this work. The HIN accounts for ##% of fatal and serious injury crashes on just ##% of Worcester's streets.

Crashes by Type - 202#



Brief summary of chart

Crashes Trends (202#-202#)



Brief summary of chart

The Worcester High Injury Network: 2025

Placeholder for map

Callout areas or other
map highlights

With the Top Priorities determined, the next step is action. The map on the following page breaks down the Top Priorities into the following four categories:

| | |
|-----------------------------|---|
| Progress Is Underway | These corridors on the High Priority Network already have design or construction projects underway. |
|-----------------------------|---|

- 1. Describe updates

| | |
|---------------------------------|--|
| Improvements Implemented | Improvements along these corridors were recently reconstructed and have seen promising crash reductions. However, due to the timing of the reconstruction, the improved crash data is not shown in the Vision Zero data time period. |
|---------------------------------|--|

- 1. Describe updates

| | |
|----------------------------------|--|
| Near-Term Focus Corridors | These corridors represent the highest priority for action. Most of these corridors were the subject of public Walk Audits conducted by the City the week of September 9th, 2024. |
|----------------------------------|--|

- 1. Describe updates

| | |
|------------------------------|--|
| Future Priority Areas | These corridors represent the next round(s) of priorities where the City will focus their efforts in future years. |
|------------------------------|--|

- 1. Describe updates

The Worcester Priority Network: **Action Status**

Placeholder for map

Callout areas or other
map highlights

PROGRESS BY THE NUMBERS!



speed limit reductions



intersections daylighted



linear feet of upgraded sidewalk



new or upgraded crosswalks



intersections with added safety treatments



Leading Pedestrian Intervals (LPIs) and No Turn on Red restrictions



linear feet of new bike lanes



walk audits completed

OTHER MILESTONES!

Text summary

Text summary

Text summary

Placeholder for images of improvements, relevant news article screenshots, updated document excerpts, meeting or engagement photos, etc.







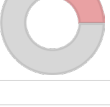


RECOMMENDATION STATUS UPDATE

There are 29 recommendations identified in the 2025 Vision Zero Action Plan. The following summarizes the general status of each recommendation as of ____, 202#. Note: Donut charts in this template are for demonstrative purposes only and will be represented accurately when the report is produced.

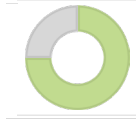
Design Recommendations

| | | Completed | Planned Next Steps |
|---|---|-------------|--------------------|
|  | Park Avenue Road Diet | Description | Description |
|  | Cambridge/Canterbury/ Richards Streets Intersection Diets | Description | Description |
|  | Belmont Street Road Diet | Description | Description |
|  | Belmont Street + Shrewsbury Street Intersection Diet | Description | Description |
|  | Shrewsbury Street + E. Central Street Intersection Diet | Description | Description |
|  | Lincoln Street + Country Club Boulevard | Description | Description |
|  | Main Street | Description | Description |

Systemic Recommendations

| | | Completed | Planned Next Steps |
|---|--|-------------|--------------------|
|  | Implement pedestrian safety improvements around uncontrolled crosswalks | Description | Description |
|  | Implement pedestrian and bicycle improvements around schools | Description | Description |
|  | Implement multimodal improvements around housing shelters and resource centers | Description | Description |
|  | In partnership with WRTA, audit and implement safety improvements at bus stops | Description | Description |
|  | Audit posted speeds on corridors where the statutory speed limit does not apply | Description | Description |
|  | From the Priority Network scoring, identify the next priorities on the next round of focus | Description | Description |
|  | Develop a road diet program to address the 4+ lane arterials | Description | Description |
|  | Develop an intersection diet program, focusing on slip lane elimination | Description | Description |
|  | Develop a traffic calming toolkit and Neighborways program | Description | Description |

Policy Coordination & Strategy Recommendations



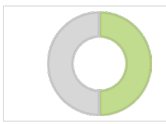
Develop an interagency agreement between DTM and Fire Department, building upon a strong, pre-existing relationship

Completed

Description

Planned Next Steps

Description



Amend zoning ordinance to incorporate TDM and promote walkable, transit-oriented development

Description

Description



Include safety updates as part of planned improvements and maintenance

Description

Description



Make roadway safety a top priority of the Worcester Police Department

Description

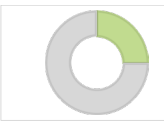
Description



Elevate street safety as a matter of public health

Description

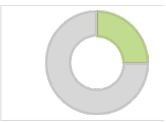
Description



Get an early start on safer streets by integrating Vizion Zero into Worcester's Public Schools

Description

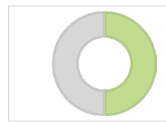
Description



Enhance the DPW&P's capacity to prioritize safe streets through its construction, maintenance, and operations programs

Description

Description










Formally become a Vision Zero city with a resolution by Worcester City Council

Description

Description

Ongoing Engagement Recommendations

| | | Completed | Planned Next Steps |
|---|---|-------------|--------------------|
|  | Enlist the Transportation Advisory Group (TAG) to lead Vision Zero implementation and oversight | Description | Description |
|  | Establish a dedicated Rapid Response program | Description | Description |
|  | In the annual City budget, clearly highlight funds allocated to street safety improvements | Description | Description |
|  | Plan or participate in at least one tactical urbanism event each year | Description | Description |
|  | Conduct an annual education and awareness campaign to support Vision Zero | Description | Description |
|  | Every spring, release an annual report tracking the previous year's Vision Zero progress | Description | Description |
|  | Periodic public qualitative and quantitative data collection | Description | Description |



**HELP BE THE CHANGE.
FOLLOW THE PROGRESS!**

www.worcesterma.gov/mobility/vision-zero