

Establishing Safer Speed Limits to Prevent Serious Injuries and Fatalities in Worcester



The City of
WORCESTER

City Council
Traffic & Parking Committee

Department of
Transportation & Mobility

Discussion Topics

- Laws governing speed limits.
- Role of speed limits in traffic safety.
- Benefits and impacts of reducing speed limits.
- Proposal 1: Reduce statutory speed limit from 30 mph to 25 mph in Thickly Settled and Business Districts.
- Proposal 2: Enable establishment of 20 mph Safety Zones.



Laws Governing Speed Limits in Massachusetts

➤ Speed Limits are set in accordance with State Law and Federal Standards

➤ Regulatory (“Posted”) Speed Limits

- Requires detailed Engineering Study & permission from MassDOT
- 85th Percentile Speed



➤ Statutory Speed Limits (unposted)

- Applies to all unposted streets
- 30 mph for a distance of one-eighth of a mile in all ‘Thickly Settled & Business Districts’
- Statutory Speed Limit signage CANNOT be posted



Laws Governing Speed Limits in Massachusetts

➤ Special Speed Regulations

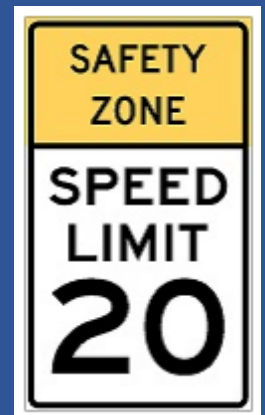
➤ School Zone Speed Limits

- 20 mph in designated zones when school is in session
- Vote by City Council to create and sign zone
- Special signage is posted to designate the zone and hours in effect
- Does **NOT** include Headstart, Pre-schools, Daycares, or Higher Education



➤ Safety Zone Speed Limits

- 20 mph in designated zones
- Vote by City Council to create and sign zone
- Special signage is posted to designate the zone
- Not strictly limited to K-12 educational facilities



Speed Reduction

Why It Matters: Safety

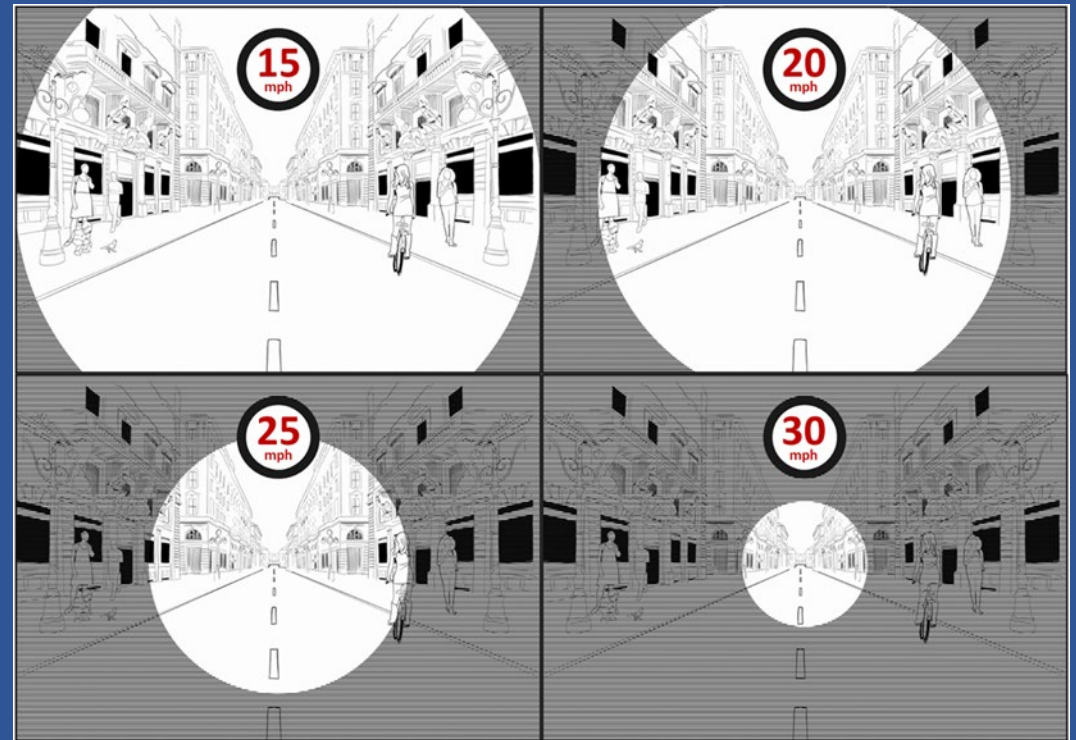
“if on a road the driven speeds become higher, the crash rate will also increase.”

(FHWA Institute for Road Safety Research)

➤ Nationwide

- Speeding related crashes resulted in **328,946 injuries** and **12,330 fatalities** in 2021.
- Disproportionally affects lower income, minorities, youth and older populations.

Driver Cone of Vision of objects in and around the street



Speed Reduction

Why It Matters: Safety

“The crash rate is also higher for an individual vehicle that drives at higher speed than the other traffic on that road.”

(FHWA Institute for Road Safety Research)

Typical Motor Vehicle Stopping Distance

Studies have shown that it takes the average driver from one-half to three-quarters of a second to perceive a need to hit the brakes, and *another* three-quarters of a second to move your foot from the gas to the brake pedal.

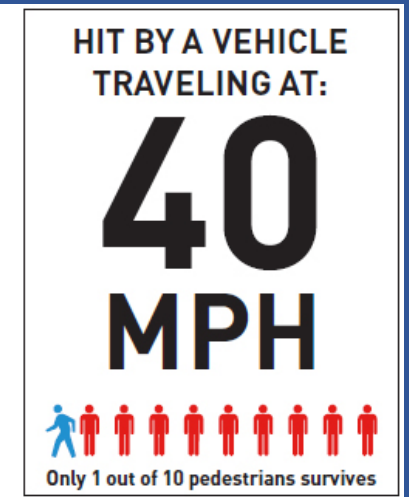
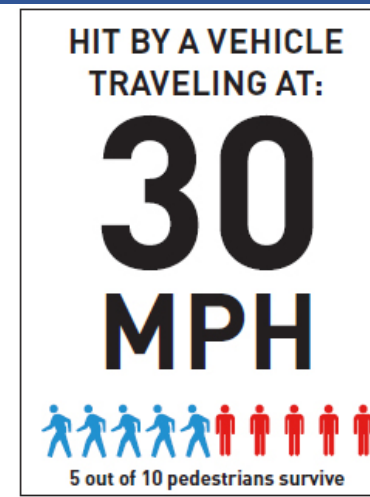
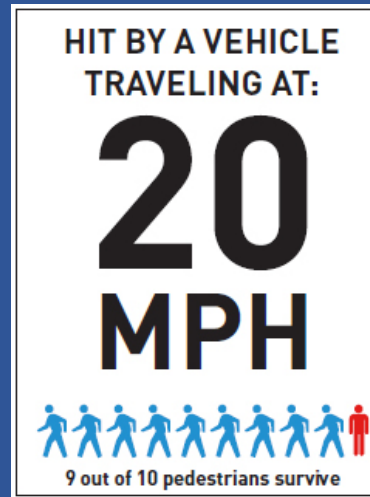
Speed	Perception & Reaction Distance	Braking Distance	TOTAL Stopping Distance
20 mph	44 ft	19 ft	63 ft
25 mph	55 ft	30 ft	85 ft
30 mph	66 ft	43 ft	109 ft
35 mph	77 ft	59 ft	136 ft
40 mph	88 ft	76 ft	164 ft



Speed Reduction Why It Matters: Safety

“The injury severity of the vehicle occupants in a crash, for example, is not only determined by the collision speed...In a crash between a light vehicle and a heavier one, the occupants of the lighter vehicle generally are considerably worse off than the occupants of the heavier vehicle. Even more so this is the case for pedestrians, cyclists and moped riders in crashes with (much) heavier motor vehicles.”

(FHWA Institute for Road Safety Research)



Speed Reduction Why It Matters: Safety

Worcester 10-year crash history

51,296 Total Crashes

Fatal Injury Crashes

* **91**

Serious Injury Crashes

872

Minor Injury Crashes

4,427

Possible Injury Crashes

5,975

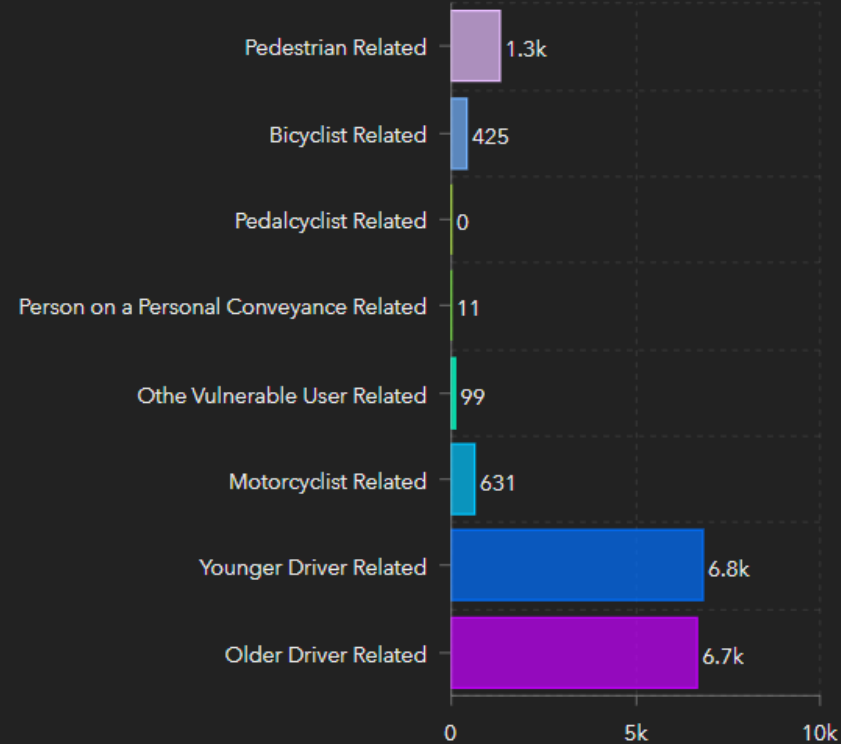
No Injury Crashes

32,091

Other Crashes (unknown, not reported, etc.)

7,840

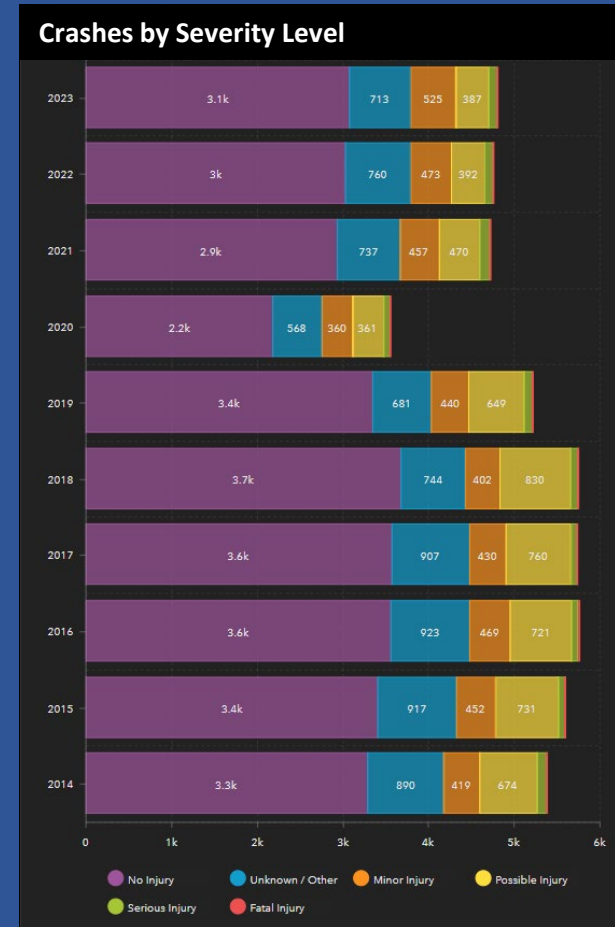
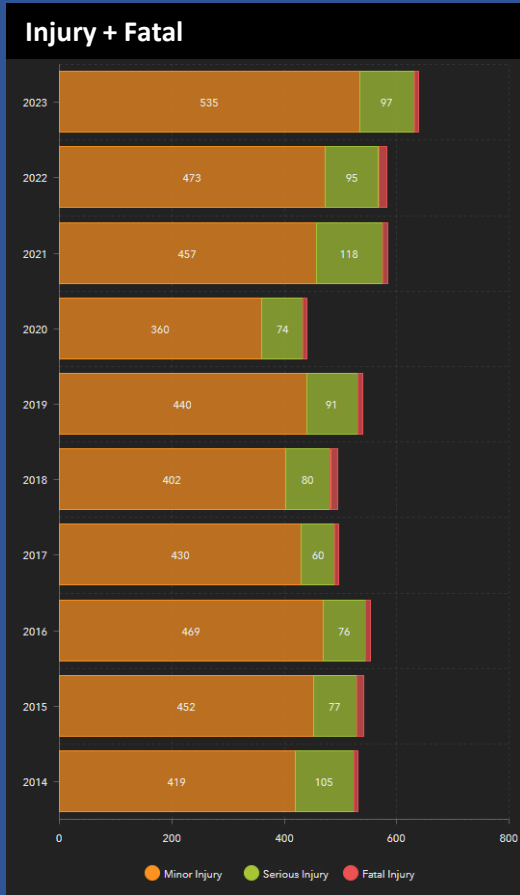
Crash Type Summary



Source: City of Worcester Crash Data.
MassDOT Crash Portal 2014 to 2023

Speed Reduction Why It Matters: Safety

Worcester 10-year crash history



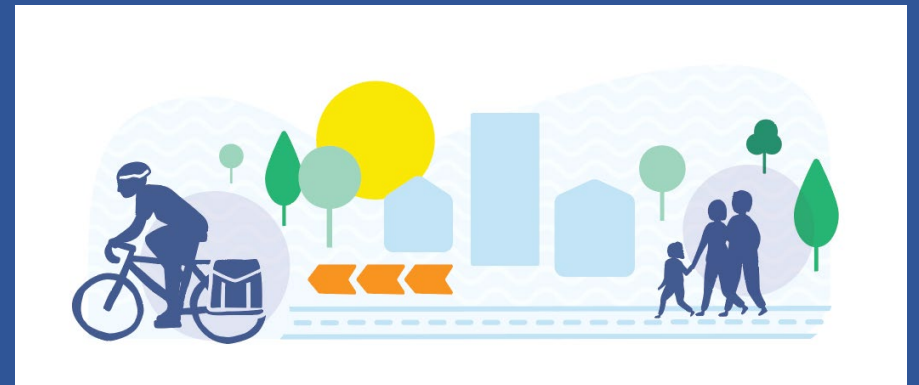
Source: City of Worcester Crash Data.
MassDOT Crash Portal 2014 to 2023



Speed Reduction

Why It Matters: Community Health

- Reducing crashes and severity of crashes is a key aspect of improving the public health of the community.
- Active Transportation (walking, biking, etc.) for commuting, recreational, and commercial reasons increases as safety on roadways increase.
- Safer Streets results in lower levels of obesity, diabetes, hypertension, and asthma. (Centers for Disease Control and Prevention Healthy Places)



Speed Reduction

Why It Matters: Economics

➤ Costs associated with crashes

- Crashes cost the United States over \$340 billion in total costs in 2019 annually. (National Highway Traffic Safety Administration)

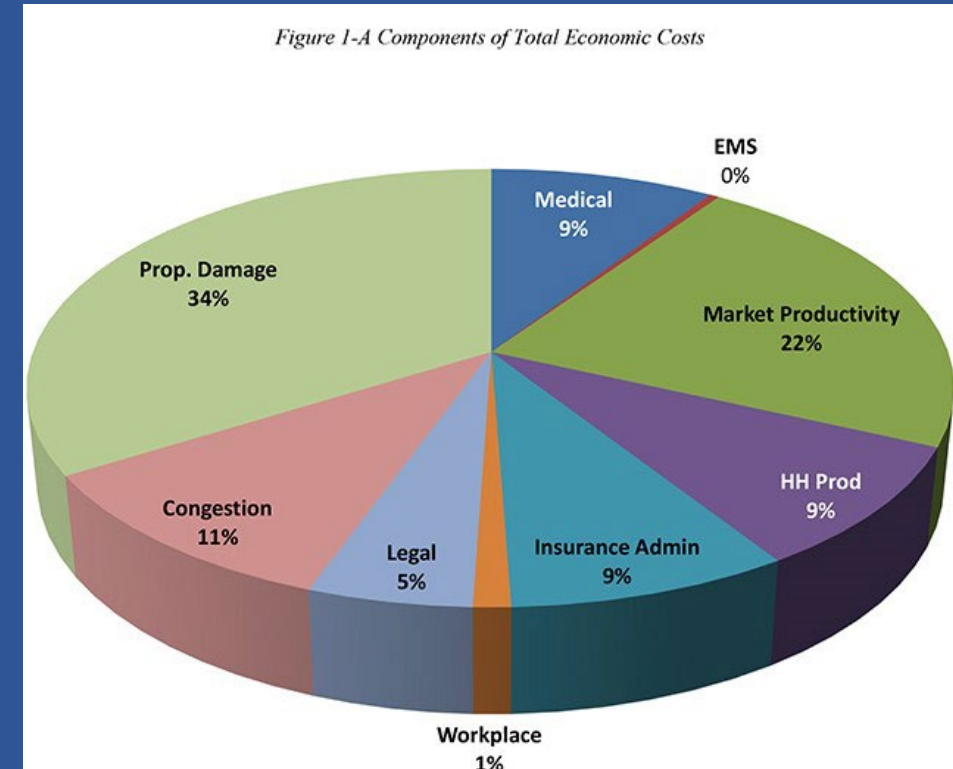
➤ Fuel efficiency

- Speeding, rapid acceleration and braking can lower gas mileage by 10-40% in stop-and-go traffic (US Dept of Energy).

➤ Complete Streets

- Provide cost-effective mobility options.
- Increased employment, businesses, land values and private investment (Smart Growth America)

Figure 1-A Components of Total Economic Costs



Does Reducing the Speed Limit Work?

➤ Boston, MA:

- Reductions of 2.9%, 8.5%, and 29.3% in vehicles exceeding 25 mph, 30 mph, and 35 mph, respectively

➤ Manhattan, NY:

- Traffic fatalities fell by more than 22% & pedestrian fatalities fell by more than 25%

➤ Portland, OR:

- Number of cars driving 30-35mph dropped 26% and the number of cars driving over 35mph dropped 47%

➤ Seattle, WA:

- Reported crashes reduced by 27%
- Median speed reduced by 10% and driving over 40 mph dropped by 54%



Does Reducing the Speed Limit increase Congestion & Air Pollution?

- **Lower speed limits do not increase congestion.**
 - Less abrupt stop and go traffic and vehicles are able to travel safely with less spacing.
- **Lower speed limits only slightly increase travel times (if at all).**
 - Research shows that a reduction in average travel speed brought about by reducing urban speed limits, is only likely to have a marginal impact on travel time (20 to 40 seconds)
 - Most trips in Worcester would experience little to no change in travel times.



Does Reducing the Speed Limit increase Congestion & Air Pollution?

- Lower speed limits do not increase fuel use or emissions.
 - Recognized secondary benefits of speed reductions include reduced fuel and vehicle operating costs, and significant reductions in vehicle emissions and noise. (*Monash University Accident Research Centre*)



Lowering the Speed Limit is a Tool, Not the entire ToolBox

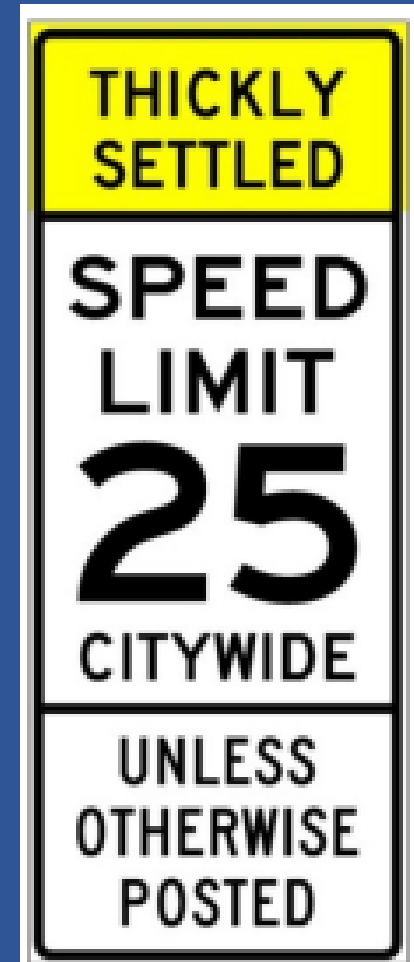
- Speed Reduction is an important part of improving safety, access, and sustainability in Worcester – but it is just one necessary tool.
- Federal Highway's Safe Systems Approach
 - Education
 - Engineering
 - Enforcement



PROPOSAL # 1

Adopt a 25mph Citywide Statutory Speed Limit

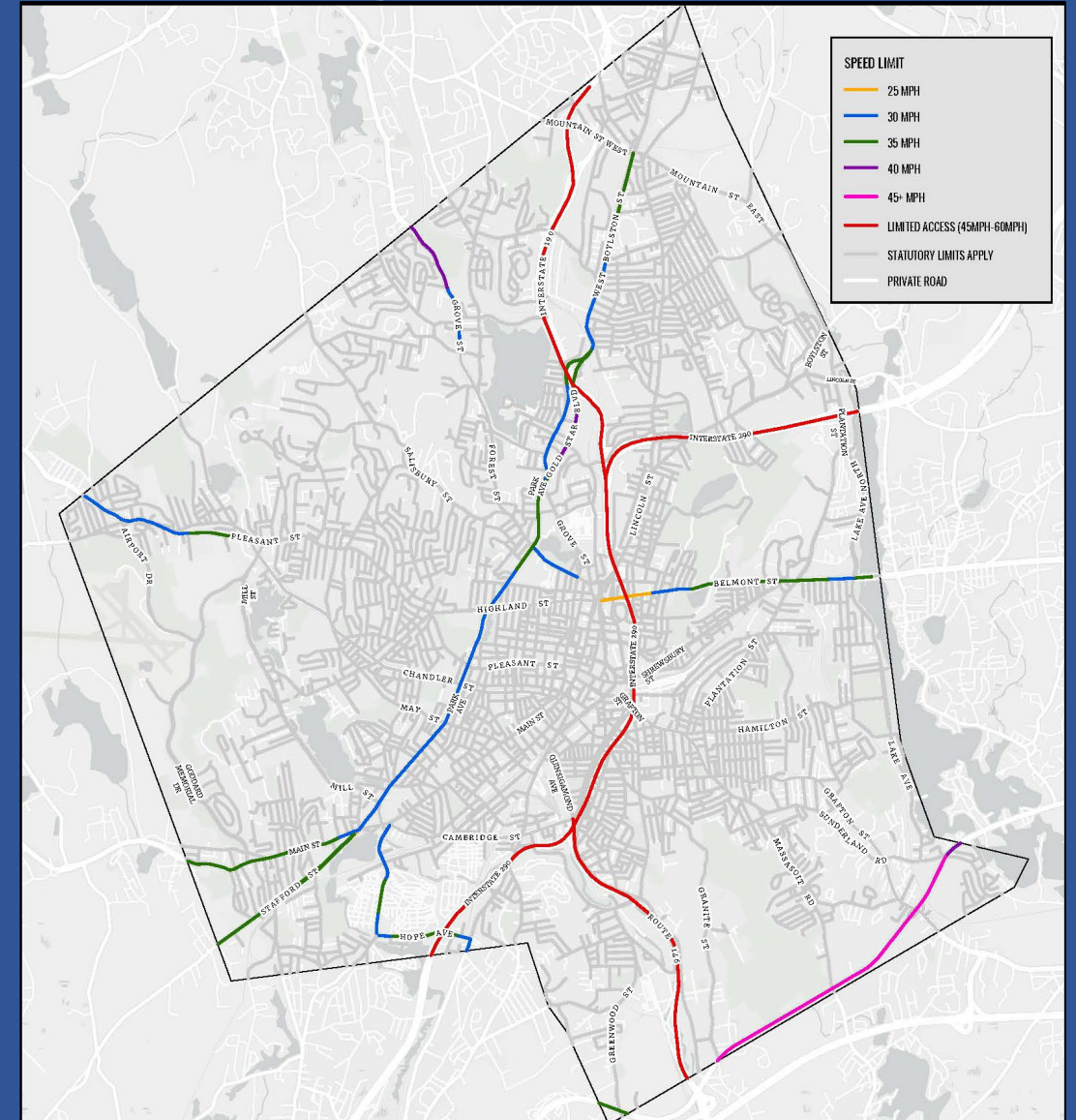
- Implement a citywide Statutory Speed Limit of 25mph on all public streets in Thickly Settled and Business Districts.
 - Will not affect private ways and those owned/operated by MassDOT or other state entities.
 - Will require the posting of the approved signage at all entry points to the City.



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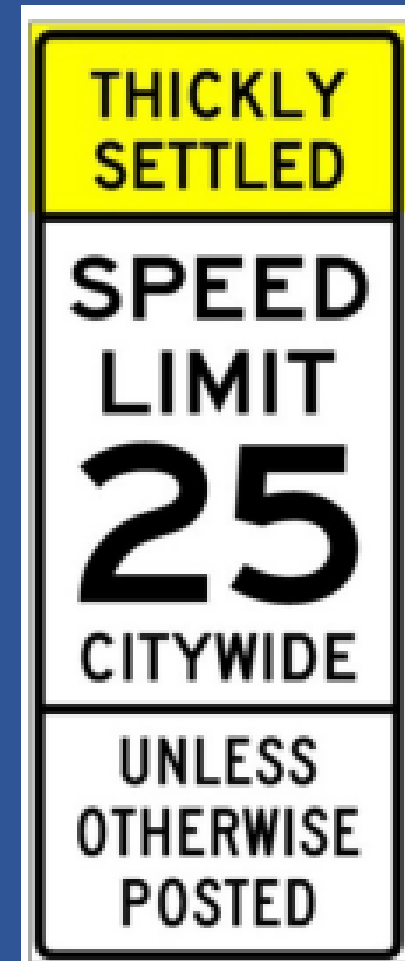
- Will not apply to streets with posted Regulatory speed limits
 - Interstates 190 & 290
 - State Rtes 12, 20, & 146
 - Belmont St
 - Gold Star Blvd
 - Grove St (NW of Nelson Pl)
 - Main St (west of Park Ave)
 - Park Ave
 - Pleasant St (west of Tatnuck Sq.)
 - Salisbury (Park to Lancaster)
 - Stafford St
 - West Boylston St



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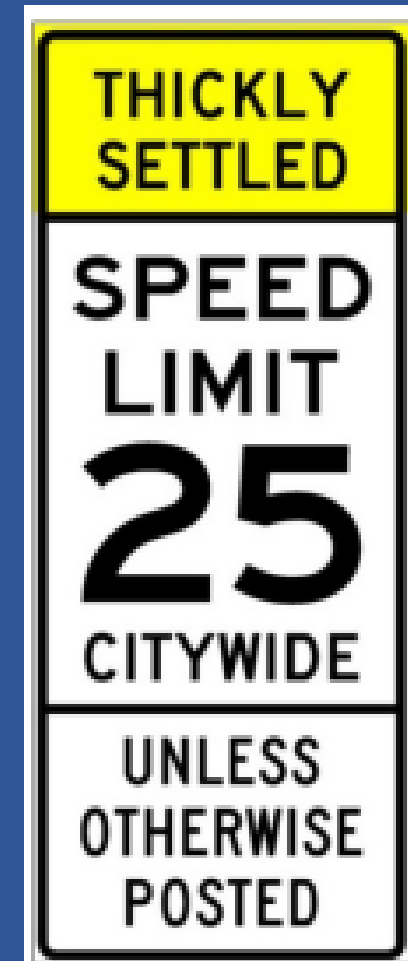
- 77 communities in Massachusetts have taken similar action since 2016
 - Boston, Cambridge, Chicopee, Framingham, Greenfield, Holyoke, Newton, Pittsfield, Salem, Somerville, Springfield, and Westfield (all citywide)
 - 66 communities have implemented citywide
 - 11 communities have implemented on individual streets only
 - 11 out of 19 other largest communities in Massachusetts



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Adopt a 25mph Citywide Statutory Speed Limit

- Burlington, VT: established a 25mph Statutory default speed limit in 2011
- Connecticut: statewide 25 mph Statutory default speed limit on Urban Arterials and in Business Districts
- Maine: statewide 25 mph Statutory default speed limit in a business or residential district
- Rhode Island: statewide 25 mph Statutory default speed limit on all residential roads

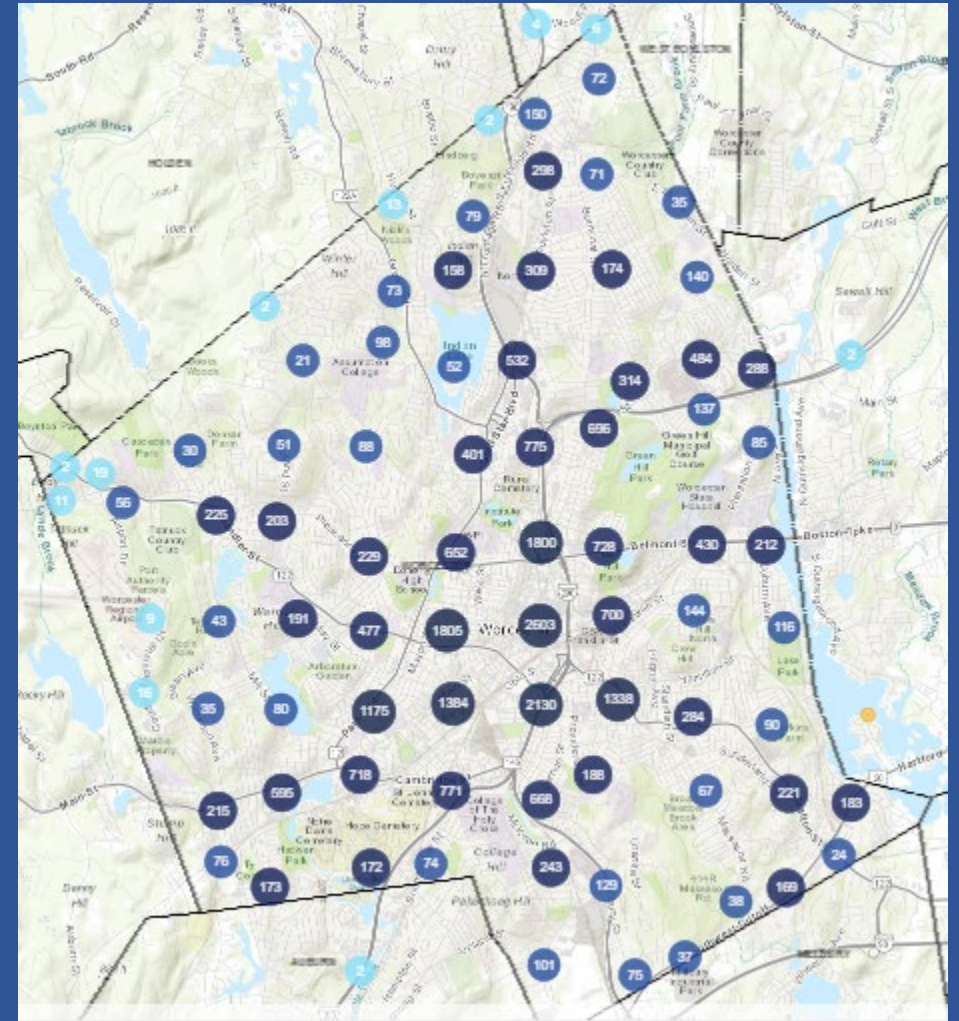


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➤ Why Citywide and not Street by Street?

- Crashes are taking place throughout the entire city (*MassDOT Crash Portal 2018 - 2023*)
- Worcester had the second highest number of pedestrian fatality crashes statewide in 2022 (7 crashes)
 - All 7 took place in Environmental Justice population census tracts



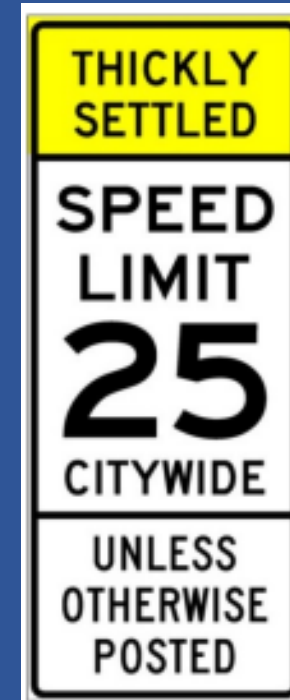
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➤ Why Citywide and not Street by Street?

- MassDOT recommends citywide to avoid driver confusion.
- Inability to effectively and clearly sign statutory speed limits on a street-by-street basis.
 - *If not implemented citywide, Thickly Settled signs required on every street to denote applicable speed limit.*
 - *Cannot use special boundary signs unless implemented citywide.*

For use only
with citywide
implementation



For use citywide
and
street-by-street



PROPOSAL # 1

Adopt a 25mph Citywide Statutory Speed Limit

➤ Ease of enforcement:

- Current Statutory Speed Limit requires cruiser to follow vehicle and speedometer track over 1/8th mile to determine consistent speed in excess of 30 mph
- Proposed Statutory Speed Limit allows for use of LIDAR and modern enforcement techniques to capture speed of vehicle (traditional enforcement method)

For use only
with citywide
implementation



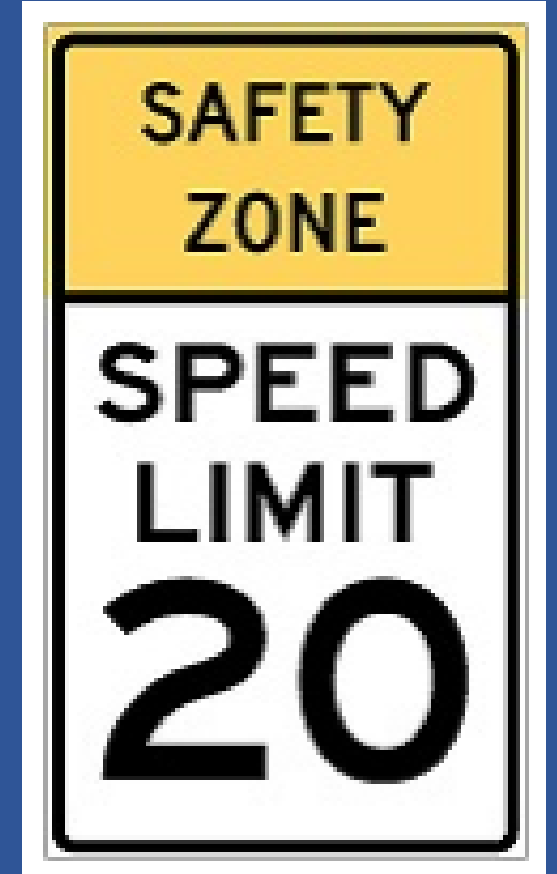
For use citywide
and
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PROPOSAL # 2

Adopt 20 mph Safety Zones

- Gives authority to City Council to establish 20 mph Safety Zones around sensitive land uses that attract vulnerable roadway users.
 - MassDOT guidance recommends parks and playgrounds, senior citizen housing and centers, hospitals or other medical facilities, higher education centers, headstart and daycare facilities as candidate locations.
 - In New York City's Neighborhood Slow Zones, lowering speeds to 20 mph led to a 14 percent reduction in injury crashes and a 31 percent reduction in injuries for drivers and passengers.



POLICY GUIDELINES

COMPLETE STREETS POLICY (2017)

- Incorporates Complete Streets principles into the planning, design, construction, maintenance, and operation of its streets, transportation infrastructure, and transportation services
- Applies to all street and transportation projects requiring funding or approval by the City, and to the extent allowed by law, those projects funded by state and federal government sources.
- Requires the accommodation of all travel modes, including but not limited to walking, cycling, motor vehicles, etc.
- Provides for the safe and convenient use by people of all ages, economic status and abilities.
- Implemented through a combination of coordinated actions, ranging from incremental changes to major capital improvements.

MOBILITY ACTION PLAN (2024)

GREEN WORCESTER PLAN (2021)

- ACTION ITEM 12: Complete Streets Policy: Implement the policy by developing a priority plan for designing roadway space for all users.

NOW/NEXT DRAFT PLAN (2024)

- 1.1. ROADWAY DESIGN: Identify and prioritize design strategies to make safe streets for all users (e.g. intersection improvements, traffic calming, corridor safety upgrades).
- 1.2. ACTIVE TRANSPORTATION: Identify and prioritize active transportation strategies (e.g. additional bike & micro-mobility infrastructure, pedestrian infrastructure).
- Goal 3. Redesign streets and policies to reprioritize safety, accessibility, comfort, and sustainability for all users.

VISION ZERO SAFE STREETS PLAN (2024)



Thank You

Learn more at

<http://www.worcesterma.gov/mobility>

