Burncoat Street
Reconstruction and Safety Improvements

May 9, 2024

The City of WORCESTER

Department of Transportation & Mobility

Department of Public Works & Parks

BURNCOAT STREET
Project Overview

1. **Street Resurfacing**
2. **Sidewalk Reconstruction and Missing Sections**
3. **Pedestrian Safety & Access Improvements**
   - Eliminate gaps in the sidewalk network
   - Provide additional crosswalks across Burncoat St and sidestreets
   - Improve ADA compliance
   - Install Rectangular Rapid Flashing Beacons (RRFBs) and improved signage
4. **Pavement Marking Plan**
   - “Right size” travel lanes
   - Define and clarify curbside arrival/dismissal at schools
   - Establish bicycle accommodations
   - Identify bus stops & improve transit service

BURNCOAT STREET
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BURNCOAT STREET
Existing Conditions

Photo: Google Streetview

BURNCOAT STREET
Roadway Characteristics

- **Right-of-way**
  - Generally, 50 ft wide
  - 30 to 38 ft “curb to curb”
  - Two 15 to 19 ft travel lanes.
    - Generally, too narrow for on-street parking
  - 4 to 6 ft Sidewalks on both sides
    - Condition varies
    - Lacks ADA compliance
    - Gaps in sidewalk network
  - Few crosswalks across Burncoat
  - No bike accommodations

Burncoat High School, 1963
Photo: Worcester Telegram & Gazette Collection

BURNCOAT STREET
WRTA Bus Service

- Bus route 14
- Closely spaced bus stops
- Lack of crosswalks
- Stop locations are not ADA compliant

Photo: Google Streetview

BURNCOAT STREET
Roadway Characteristics

- Minor Urban Arterial
- Statutory (unposted) Speed limit is 30 mph
  - 20 mph School Zone Speed limit at Burncoat St Prep, Burncoat Middle, Burncoat High when school is in session

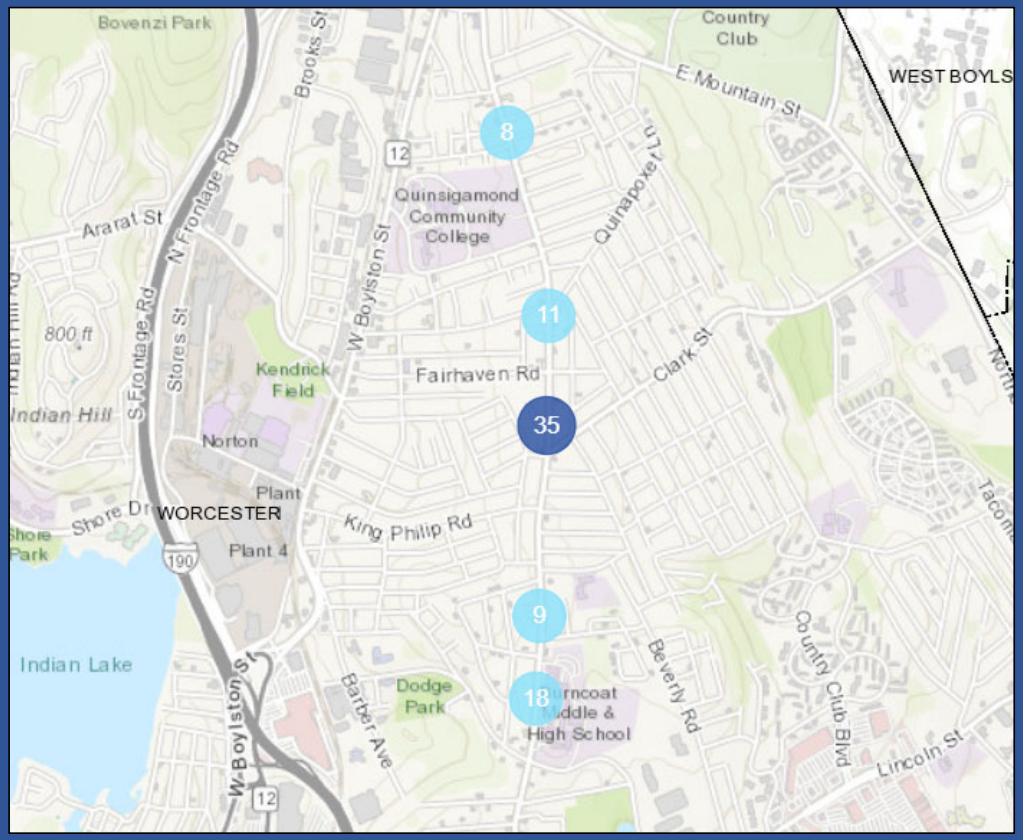
	Avg Daily Traffic	Avg Speed	85th Percentile*	95th Percentile**
North Pkwy to Rexhame	8953	32	39	42
Rexhame to Clark	8262	30	36	40
Clark to Rollinson	5067	30	37	40
Rollinson to E Mountain	4227	30	37	40

**Speed at which 15% of traffic is traveling at or above*
***Speed at which the fastest 5% is traveling at or above*

BURNCOAT STREET
Crash Locations

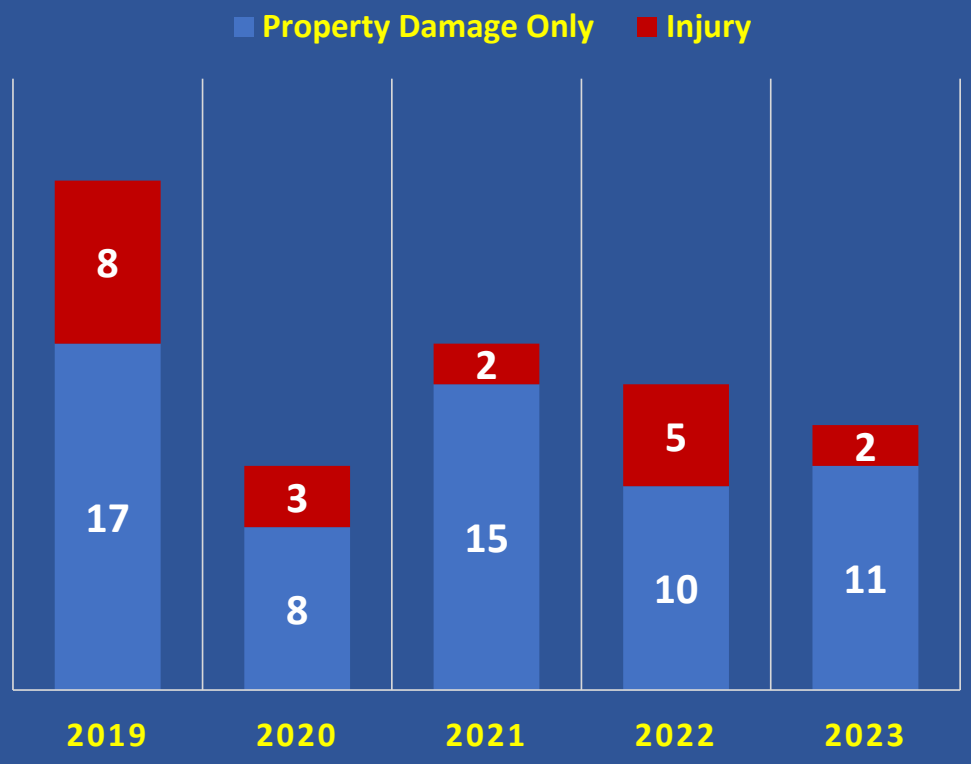
➢ **2019-2023 5-year crash history**

- 81 crashes 2019-2023
  - 32% angle crashes
  - 26% rear-end crashes
  - 11% roadside object
  - 6% head-on
  - 6% parked car
- Lighting conditions
  - 22% at night or during twilight
- Roadway condition
  - 10% wet
  - 6% snow/ice
- Location
  - 49% at intersections
  - 48% not at junction
  - 3% at driveways



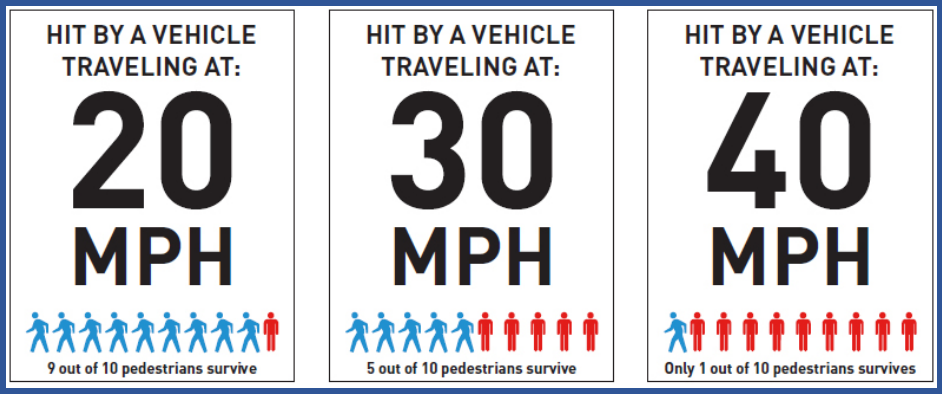
BURNCOAT STREET
Crash Locations

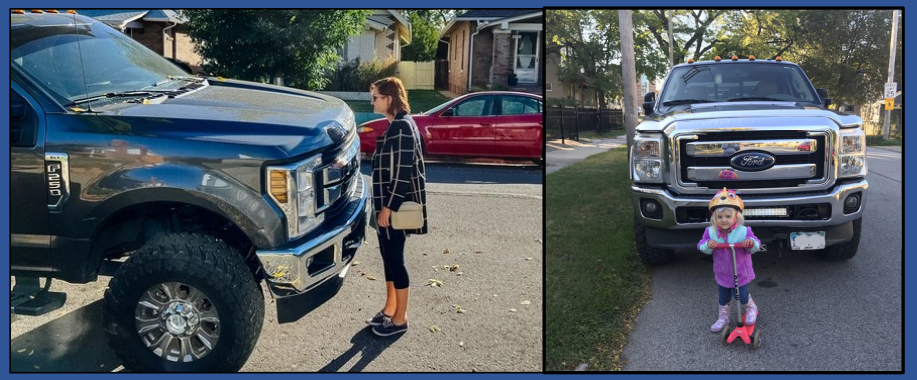
- **2019-2023 5-year crash history**
  - MassDOT Crash Portal
  - 81 crashes
    - Majority angle or rear-end
  - 2.87 crashes per million vehicle-miles (CPMVM)
  - Similar to statewide average for Urban Minor Arterials (2.98 CPMVM)
  - 25% of crashes resulted in injury
  - 6 crashes involving pedestrians (50% resulting in injury)



BURNCOAT STREET
Existing conditions and deficiencies

- **Safety Concerns (*'Dangerous by Design'*)**
  - Roadway width contributes to high motor vehicle speeds and crash rate
  - Crosswalks lack ADA compliant ramps
  - Lack of safe crosswalks, including at public transit stops
  - Gaps in sidewalk network and some sidewalk segments in poor condition
  - No dedicated space for cyclists





BURNCOAT STREET
How do we improve safety?

- Reduce traffic speeds
  - Define travel lanes & proper width with pavement markings
  - Tighten curb-radii at intersections
- Create dedicated curbside Arrival/Dismissal space for Burncoat Middle/High Schools
- Provide dedicated space for all modes
- Improve Pedestrian Facilities
  - ADA compliant sidewalks & ramps
  - Improved Crosswalk Signage
  - Rectangular Rapid Flashing Beacons at high demand crosswalks

Photo: Google Streetview

BURNCOAT STREET
How do we improve operations?

- **Proper travel lane widths**
- **Improved Lane management at intersections**
- **Dedicated curbside space for arrival/dismissal at schools**
- **Define dedicated space for all modes**
  - Carry bike lane through intersection with high visibility green markings
- **WRTA Bus Service**
  - Define stop locations with signage

Photo: Google Streetview

LOCAL 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 3: Connectivity: Make connected networks an explicit goal of City of Worcester transportation planning. Maximize connectivity to move people – not just vehicles – between destinations.
- ACTION ITEM 12: Complete Streets Policy: Implement the policy by developing a priority plan for designing roadway space for all users.
- ACTION ITEM 13: Micromobility Plan: Develop and Implement a Pedestrian, Bicycle, and Micromobility Plan.
  - Identify and implement bicycle networks to support non-commuter short trips under 3 miles to central and neighborhood commercial areas, parks, and other neighborhood destinations.
  - Use safety data to identify and prioritize for improvements to the most hazardous routes and intersections that discourage routine travel by bicyclists and pedestrians, and include education for motorists.

VISION ZERO PLAN (2024)

DESIGN GUIDANCE

- **Federal Highway Administration**
  - Manual on Uniform Traffic Control Devices (MUTCD), Safe System Approach Guidance, Guide for the Planning, Design, and Operation of Pedestrian Facilities, other policies and directives
- **United States & Massachusetts Architectural Access Boards**
  - Americans with Disabilities Act (ADA) Accessibility Standards, Public Rights-of-Way Accessibility Guidelines (PROWAG)
- **National Association of City Transportation Officials (NACTO)**
  - Transit Street Design Guide, Urban Street Design Guide, Urban Bikeway Design Guide
- **American Association of State Highway and Transportation Officials (AASHTO)**
  - Guide for the Planning, Design, and Operation of Pedestrian Facilities, A Policy on Geometric Design of Highways and Streets
- **Massachusetts Department of Transportation (MassDOT)**
  - Procedures for Speed Zoning on State Highways and Municipal Roads, Safe Speeds Technical Toolkit, Separated Bike Lane Planning & Design Guide, other guidance policies and directives
- **Industry Best Practices**
  - Institute of Transportation Engineers (ITE), AARP Livable Communities, Arbor Day Foundation, WHO Age-friendly Cities Framework

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BURNCOAT STREET
Pedestrian Safety & Access

- **Eliminate gaps in the sidewalk network**
  - Extend sidewalks along Quinsigamond Community College

Photo: Google Streetview

BURNCOAT STREET
Pedestrian Access & Safety

- **Crosswalks and ADA ramps**
  - Crosswalk painted for all side streets
  - New Burncoat St crosswalks spaced throughout the corridor
  - ADA compliant ramps at all intersections and crosswalks
  - MUTCDSignage to increase visibility at crosswalk locations

BURNCOAT STREET
Pedestrian Access & Safety

- **Rapid Flashing Beacons (RRFBs)**
  - Studies indicate 98% increased yield rate by motor vehicles and 47% reduction in pedestrian crashes.
    - RRFBs at Hastings, Quinapoxet, Thorndike, mid-block at Burncoat High, mid-block at Burncoat Middle

image: TAPCO

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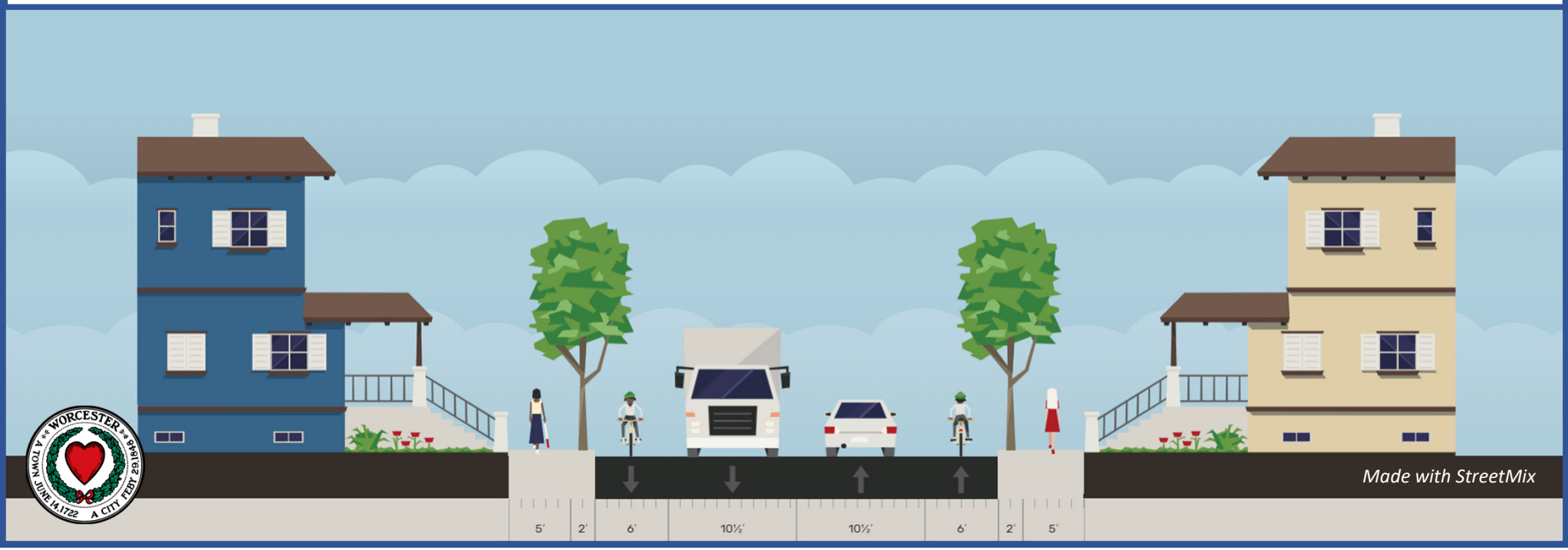
BURNCOAT STREET
Lane Markings

- **"Right Size" Travel Lane width**
  - Current best practice is to use 10 to 11 ft wide lanes on urban streets.
  - Current lanes are 15 to 18 ft wide.

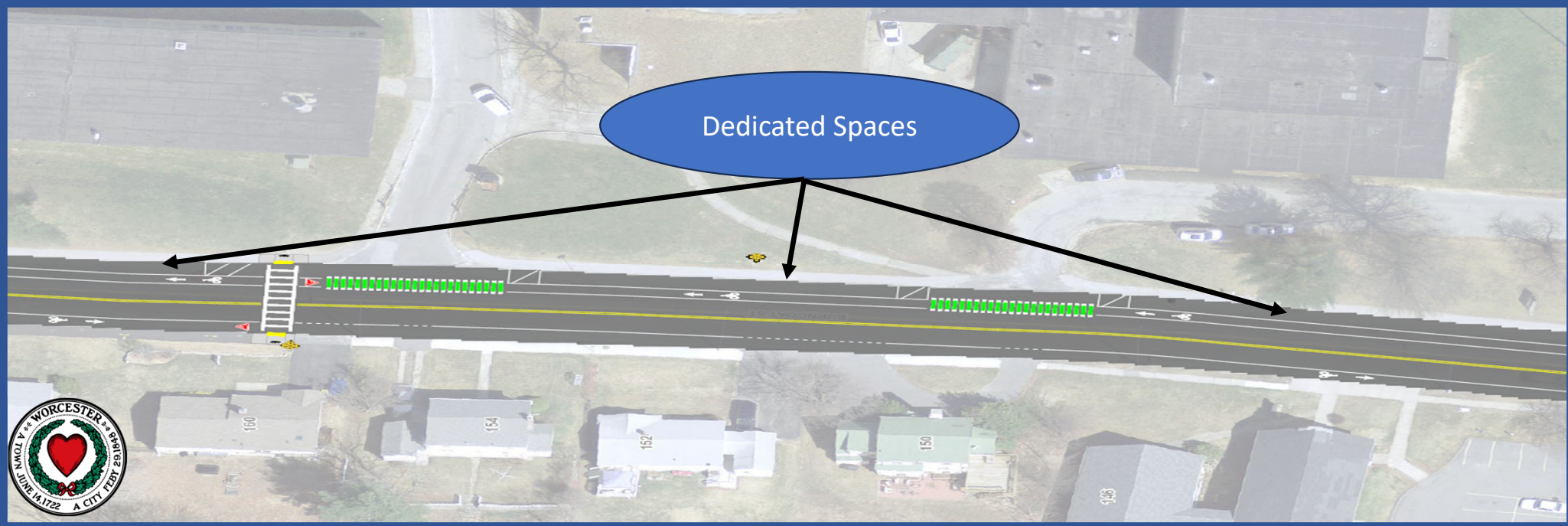
BURNCOAT STREET
Lane Markings

- **"Right Size" Travel Lane width**
  - Proposed design utilizes lanes at 10 ft or 10 1/2 ft depending on available width use of adjacent space.



BURNCOAT STREET
Lane Markings

- **Arrival/Dismissal at Middle & High Schools**
  - Provide on school side for improved safety
  - Marked designated locations with signage



BURNCOAT STREET
Lane Markings

- **Bike & Micro-Mobility Accommodations**
  - 4 Types of People as it relates to biking:
    - Strong and Fearless (<1%), Enthused and Confident (7%), Interested but Concerned (60%), No Way, No How (33%)
  - The degree of separation (distance) and physical protection (barriers) between cyclists and moving vehicles directly relates to the safety and comfort of cyclists
  - Not a one size fits all, they are context sensitive

Conventional Bike Lanes
Photo: Planetizen

Buffered Bike Lanes
Photo: Boston Magazine

Separated or Protected Bike Lanes
Photos: Kansas City Star (left), Unknown (right)

Safer and more comfortable

BURNCOAT STREET
Lane Markings

- **Bicycle Accommodations**
  - Where space permits, buffered bicycle lanes with green pavement markings at intersections where space .
    - 5 ft. with 3.5 ft. Buffers 3.5
  - Conventional 6 ft. bike lanes where space does not allow for buffer.

Photo: Boston Magazine

Photo: Little Rock, AR

BURNCOAT STREET

Typical Cross-section

Existing

BURNCOAT STREET

Typical Cross-section

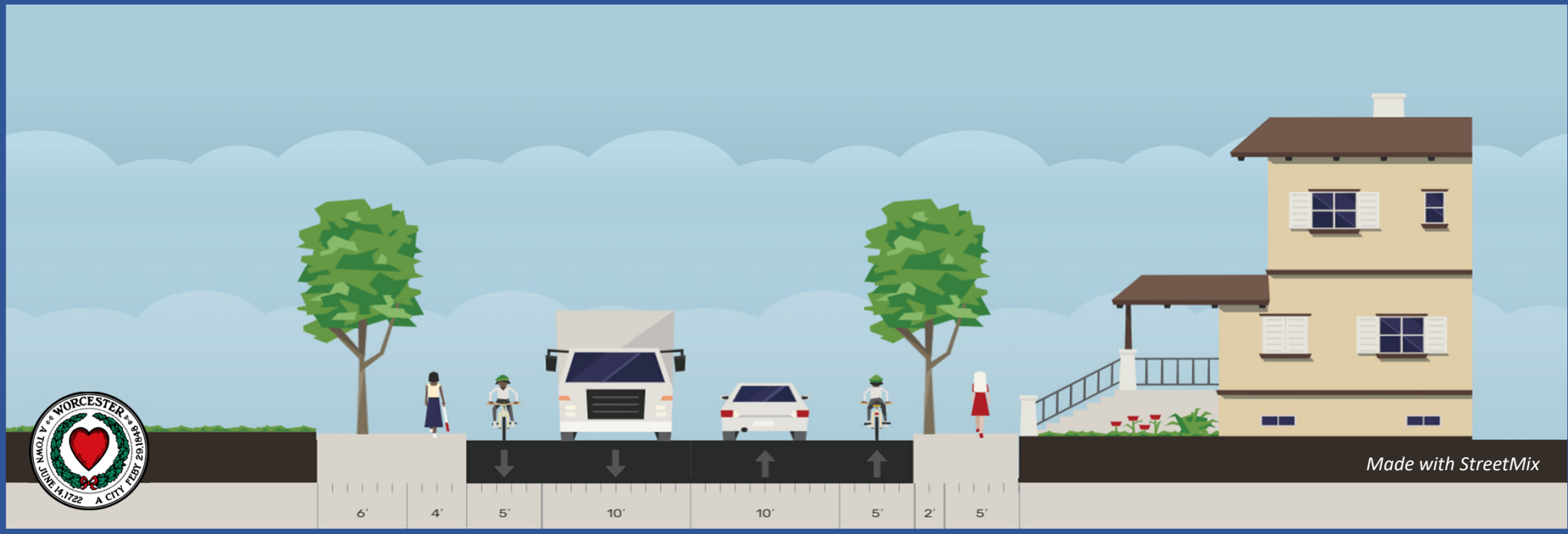
Proposed

BURNCOAT STREET

Typical Cross-section

Quinsigamond Community College

Proposed – Constrained Sections



BURNCOAT STREET

Typical Cross-section

Proposed – Wider Sections

Burncoat Street
Reconstruction and Safety Improvements

Q & A

www.worcesterma.gov/mobility

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