

Washington Street Pilot

Public Facilities Meeting



May 15, 2024




HOWARD STEIN HUDSON
Engineers + Planners



HALVORSON
Tighe&Bond STUDIO

Agenda

- **Welcome**
- **Project Overview**
- **Similar Project Examples**
- **Your FAQs and Concerns**
- **Pilot Evaluation**
- **Next Steps**
- **Questions & Discussion**



Introduction: Project Team

■ City of Newton

- **Planning and Development:** Barney Heath, Jennifer Martin, Jennifer Caira, Olivia James, John Sisson
- **Mayor's Office:** Jonathan Yeo
- **Public Works:** Ned Codd, Nina Wang, David Koses, Isaac Prizant, Lou Taverna, Adrian Ayala
- **Parks, Recreation, and Culture:** Luis Perez Demorizi, Ahron Lerman, Marc Welch, Derek Mannion
- **ADA Coordinator:** Jini Fairley
- **Advisory Group:** Councilor Susan Albright, Councilor Pam Wright, Mike Halle, John Pelletier

■ Consultant Team Leadership

- **Howard Stein Hudson:** Jessica Lizza, Valerie Chia, Emma Enteadó
- **Neighborways Design:** Jessica Mortell
- **Halvorson Tighe & Bond Studio:** Bryan Jereb



Washington Street Pilot Project Update

Winter -
Spring
2023

- Reviewed past work (Washington Vision Plan)
- Began coordination with ongoing and future area projects (Newton Crossing/Dunstan E. and Dog Park)
- Conducted existing conditions analysis: parking and traffic
- Initial public and business engagement survey
- Developed concept alternatives

Fall
2023

- Hosted Public Meeting #1 – Reviewed Existing Conditions + Pilot Concept Alternatives
- Collected Concept Alternatives Public Survey
- Reviewed feedback and selected preferred concept design

Winter
2024

- Presented at Public Facilities Meeting Jan. 2024 – received approval to advance the preferred concept
- Washington St business flyering
- Developed DRAFT 75% Design Plans

Spring
2024

- Public Meeting #2 April 11, 2024
- **Public Facilities Meeting tonight**



Project Area



Washington Street Pilot: Goals and Design Objectives

Create a safer, more attractive, friendly, and welcoming Washington Street for everyone: neighbors, visitors, and businesses.

- Reduce fatalities and serious injuries
- Reduce speeds and conflicts
- Provide two to three vehicle lanes
- Provide separated bicycle lanes
- Provide shared use path to address pedestrian gap on south side of road
- Improve pedestrian crossings, connectivity, and comfort
- Provide ample parking
- Increase greenery and landscaping
- Engage the community throughout the process



Washington Street Vision Plan

Engineers + Planners

- Year-long engagement process in 2018-2019
- Strong support for road redesign
- Concept of “test before the City invests”
- Make room for people-powered transportation
- Expand access to open green spaces and recreation

WASHINGTON STREET VISION PLAN

Adopted 12.16.2019



Pilot Tools

■ Temporary materials that we can change

- Pavement markings and signs
- Temporary curbing/bus stop platforms/curb separators
- Landscaping/planters

■ Not major construction

- Major streetscape redesign
- Repaving or reconstructing the roadway
- Moving curb-line or significant sidewalk reconstruction
- Significant intersection or traffic signal reconstruction
- Significant drainage or utility changes
- Property takings

Sample Temporary Floating Bus Stop with Bike Lane, Portland OR



75% Design based on City Council Endorsed Concept

- Aligns the most with project goals
- Provides continuous separated bicycle connection with minimal conflict
 - 11 side street crossings and 28 commercial/private driveway crossings on north side
 - 10 commercial driveway crossings on south side
- Addresses pedestrian “gaps”
- Improves parking accessibility on south side
- Preserves most on-street parking
- Allows for landscaping elements



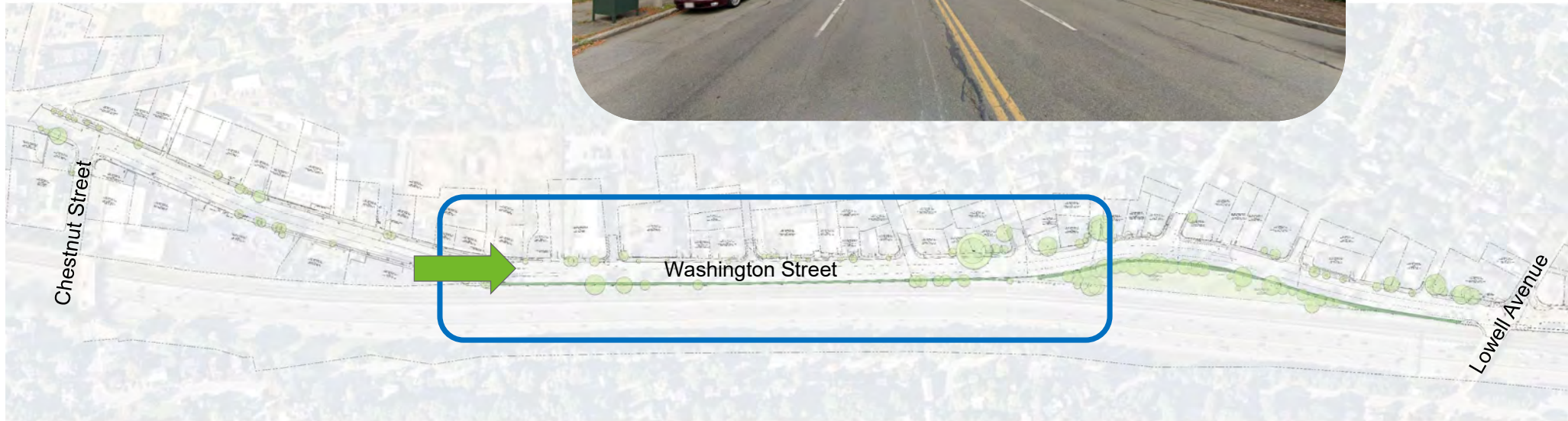
Comparison of Number of Driveways/Intersections across Path: North vs. South Side



See Roll Plans

Landscape – Existing Condition

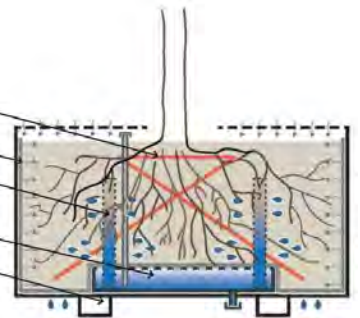
Engineers + Planners



Landscape – Proposed Condition



TREE STABILIZATION INTEGRAL WITH PLANTERS
THERMAL INSULATION
BIODEGRADABLE CAPILLARY TUBES
(IMPROVED AIR CIRCULATION AND SIGNIFICANTLY
REDUCES THE FREQUENCY OF WATERING)
WATER RESERVOIR
FORKLIFT OPENINGS FOR EASE OF TRANSPORT



Proposed Trees and Shrubs

70 New Trees
160 new shrubs

Landscape – Proposed Condition

Engineers + Planners



Eastern Redbud



Sweetbay Magnolia



Sweet Pepperbush



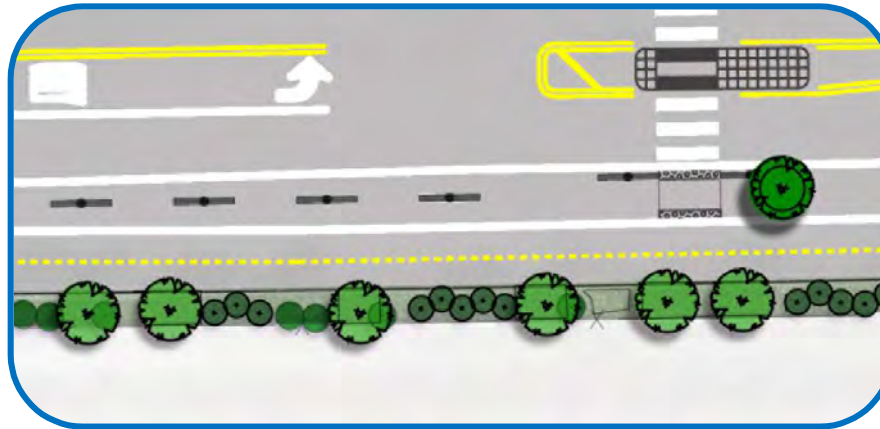
Eastern Red Cedar



Inkberry



Gray Birch



Bayberry

Landscape – Proposed Condition



Slower speeds improve driver reaction time

- Number of feet required to stop at the Amory St crosswalk on dry pavement at different speeds



Source: [Brake Roadway Safety Charity](#)

***Washington St Max Speeds Recorded 50-55 mph**

Speed and Safety

● If a pedestrian is hit by a vehicle driving at:

● Pedestrian Survives the Collision without Serious Injury
● Results in Pedestrian Fatality or Serious Injury

20 MPH



13%
likelihood of fatality or serious injury



30 MPH



40%
likelihood of fatality or serious injury



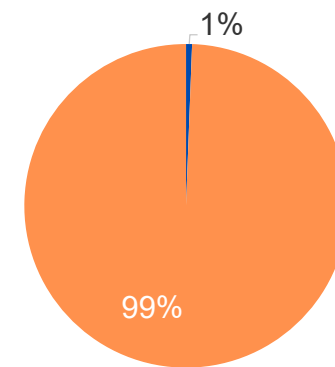
40 MPH



73%
likelihood of fatality or serious injury



99% of vehicles on Washington Street are traveling faster than 20 mph



■ <20 mph ■ >20 mph

Source: NHSTA

***Washington St Speed Limit = 35 mph**

*Data collected Tuesday, January 31, 2023 on Washington Street



Speed and Safety

● If a pedestrian is hit by a vehicle driving at:

● Pedestrian Survives the Collision without Serious Injury
● Results in Pedestrian Fatality or Serious Injury

20 MPH



13%
likelihood of fatality or serious injury



30 MPH



40%
likelihood of fatality or serious injury



40 MPH

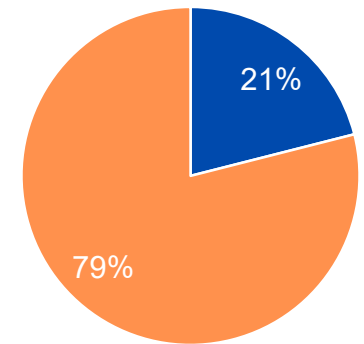


73%
likelihood of fatality or serious injury



Source: NHSTA

79% of vehicles on Washington Street are traveling faster than 30 mph



■ <30 mph ■ >30 mph

***Washington St Speed Limit = 35 mph**

*Data collected Tuesday, January 31, 2023 on Washington Street



HOWARD STEIN HUDSON

Speed and Safety

● If a pedestrian is hit by a vehicle driving at:

● Pedestrian Survives the Collision without Serious Injury
● Results in Pedestrian Fatality or Serious Injury

20 MPH



13%
likelihood of fatality or serious injury



30 MPH



40%
likelihood of fatality or serious injury



40 MPH

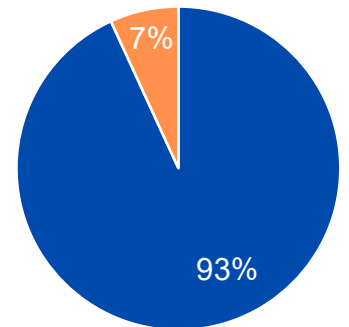


73%
likelihood of fatality or serious injury



Source: NHSTA

7% of vehicles on Washington Street are traveling **faster than 40 mph**



■ <40 mph ■ >40 mph

***Washington St Speed Limit = 35 mph**

*Data collected Tuesday, January 31, 2023 on Washington Street

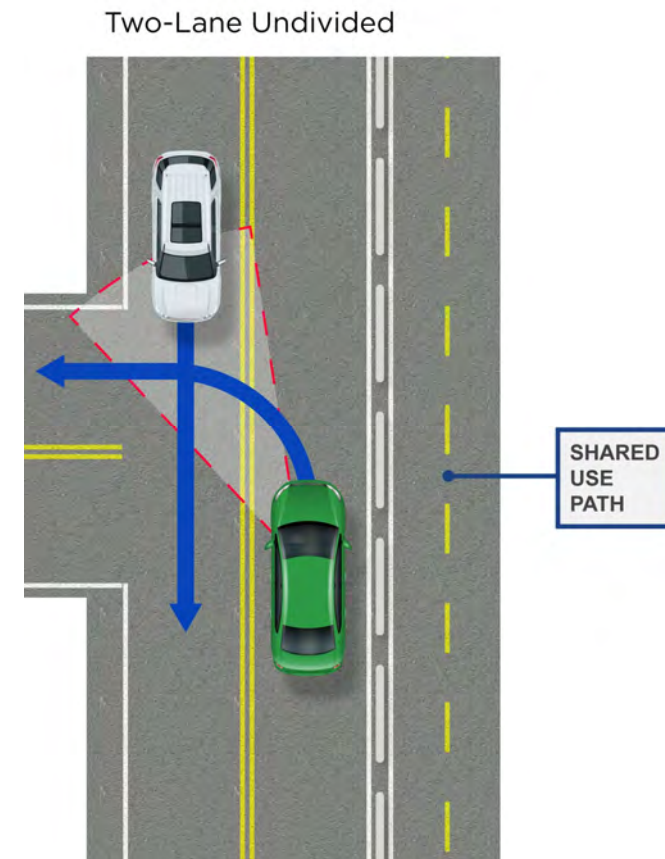
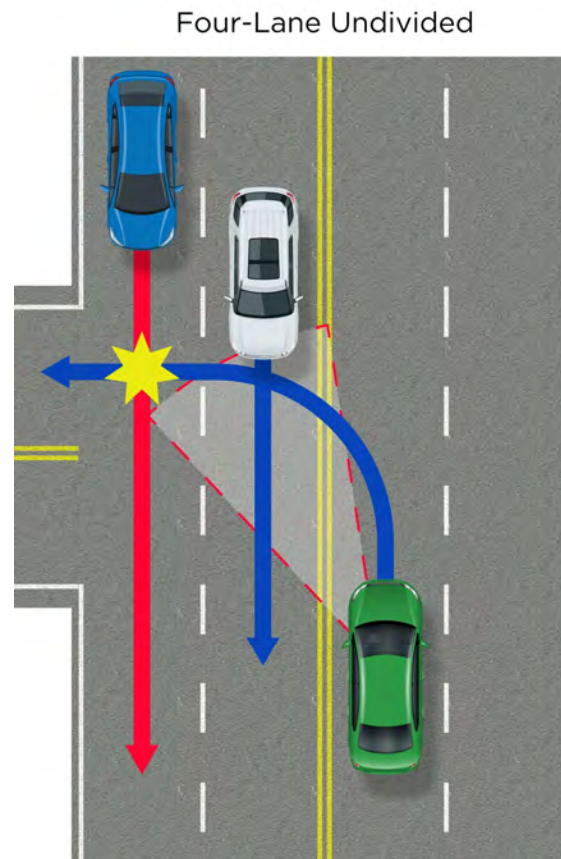


HOWARD STEIN HUDSON

Better Visibility with Lane Reduction

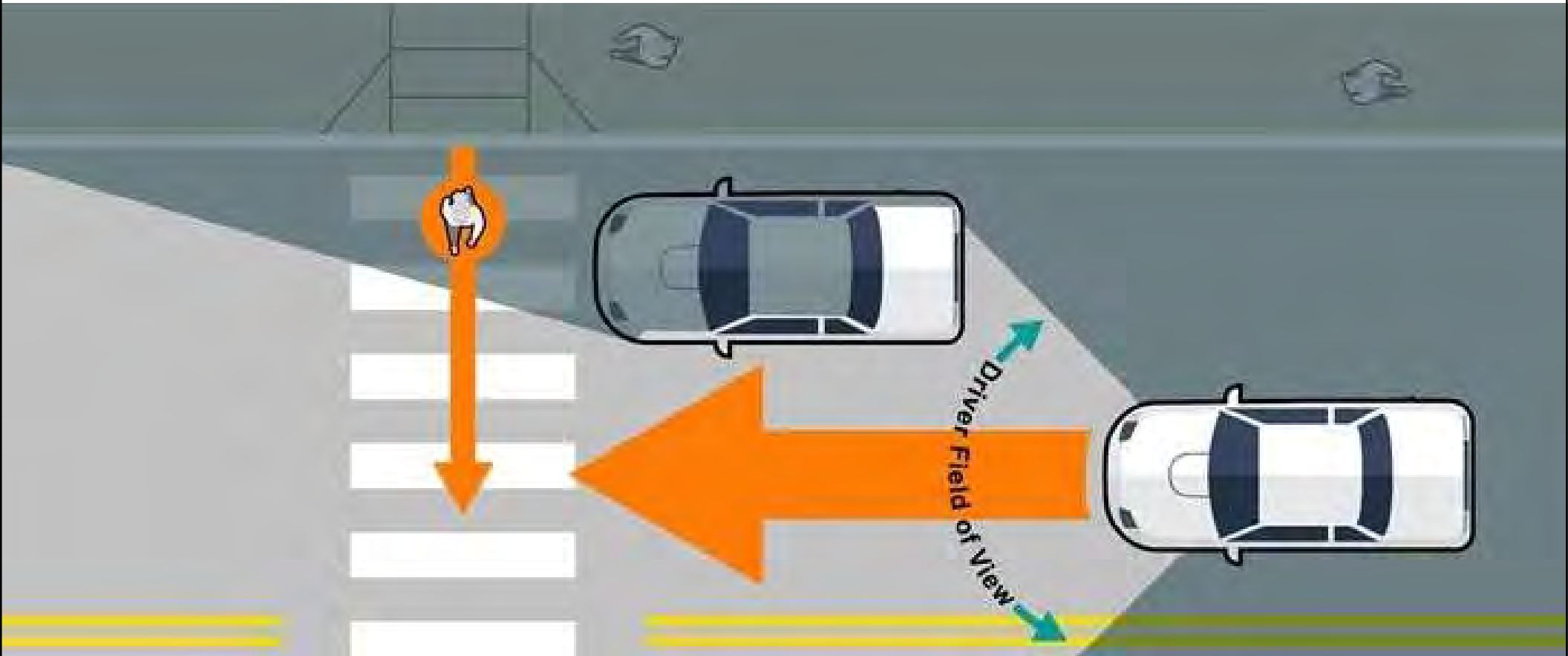
■ Easier to Turn Left

- Turns across a single lane of traffic
- Opposing traffic will be traveling at a slower speed making gaps in on-coming traffic easier to judge
- Slower speeds = less time needed to brake and react
- Improved visibility of vehicles turning from side streets



Better Visibility with Lane Reduction

- **Safer Accommodations for Non-Motorized User**
 - Reduce pedestrian crash risk



Road Diets which Reduced Speeds and/or Crashes

Summer St Road Diet Pilot

Hingham, MA

- Speeds decreased as much as 5 mph
- Little to no travel time increase or traffic diversions
- Daily volume – 14,822

Rte 135

Wellesley, MA

- 69% fewer severe injury occurrences
- 8 -11 mph speed reduction in 85th percentile
- Daily volume – 11,271

Nonantum Rd

Boston/Newton/Watertown, MA

- 32% fewer severe injury occurrences
- Daily volume – 29,036



Photo credit: Jacob Wessel

***Washington St Daily Volume ~12,000**



Road Diet Example with Floating Parking and Bus Stop Platforms

Tremont Street Road Diet | Boston, MA

- Daily volume ~ 14,000
- Construction cost ~ \$8-9M (Project Length: 0.83 mile) (Washington St Pilot Project Length: 0.76 mile)



Key Takeaways from Examples

- Example projects in Massachusetts have proven with data that road diets can:

Reduce severe injury collision occurrences



Reduce vehicle speeds



Have little to no travel time increase or traffic diversions



What We've Heard: Summary of Feedback










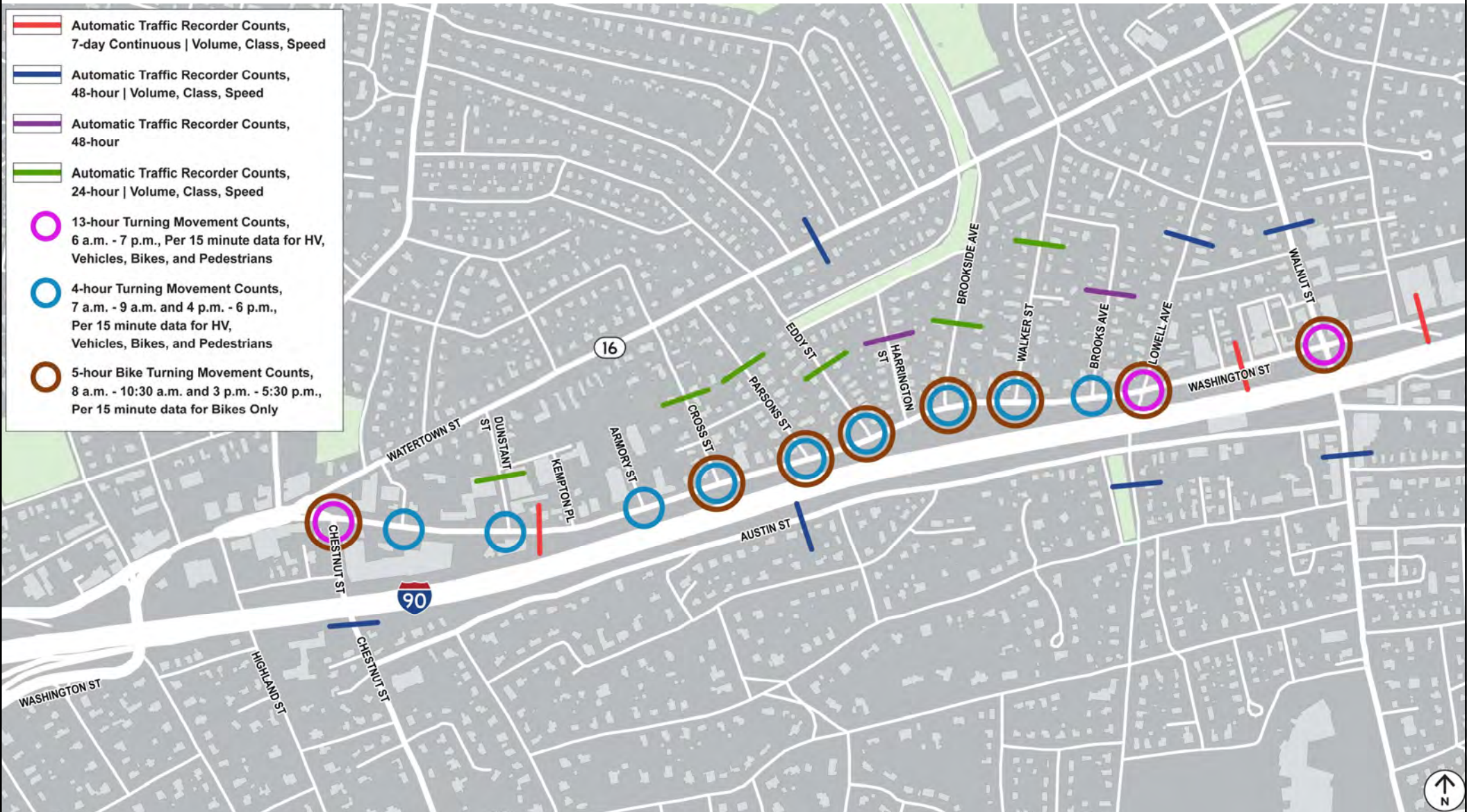
■ We've heard concerns about:

- Data collection pre & post construction
- Noise, air pollution from Mass Pike, and heat island
- Washington Street at Lowell Avenue signal
- Left-turn movements from Washington St onto side streets
- Parking for dog park
- Evaluation metrics for success



Concern: Data Collection

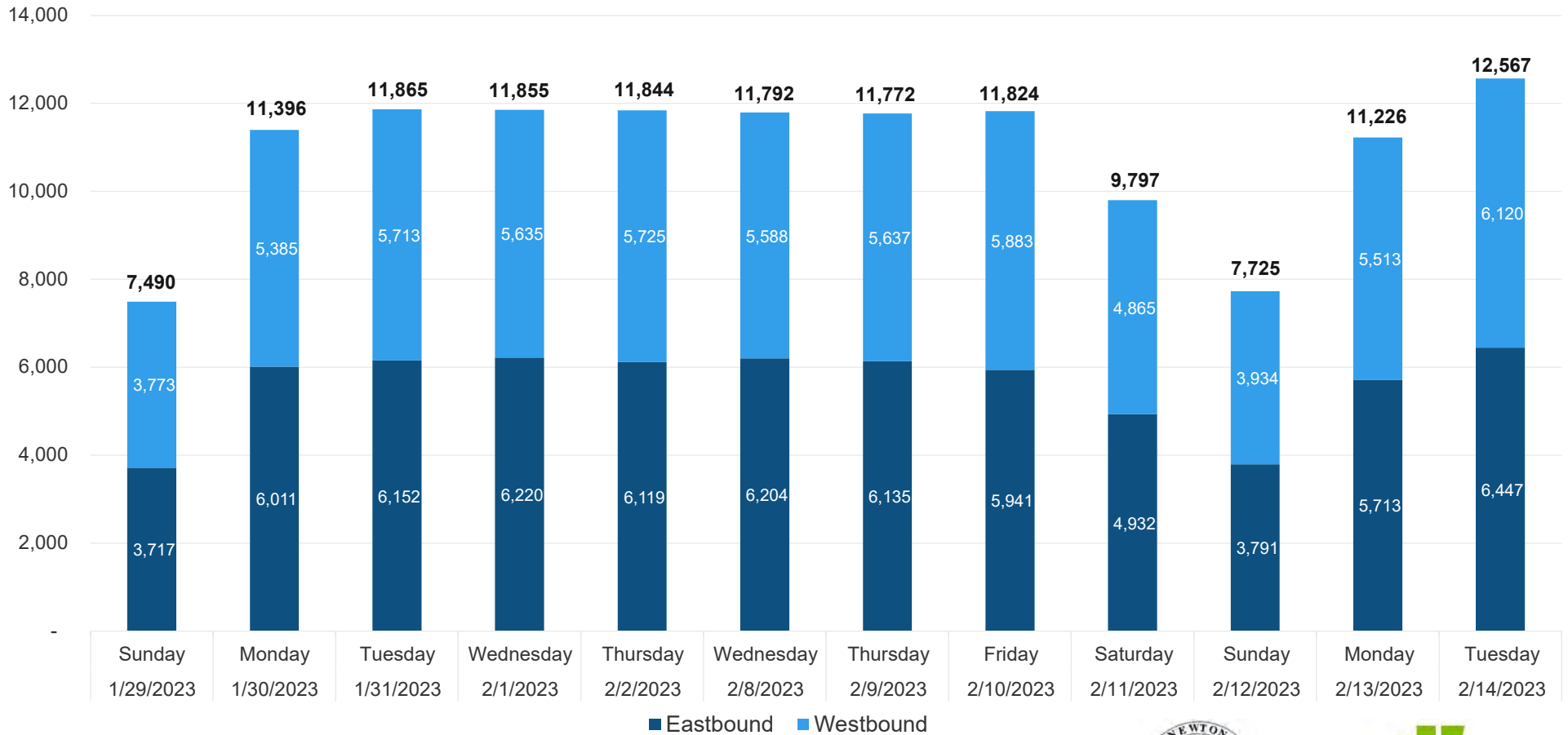
-  Automatic Traffic Recorder Counts, 7-day Continuous | Volume, Class, Speed
-  Automatic Traffic Recorder Counts, 48-hour | Volume, Class, Speed
-  Automatic Traffic Recorder Counts, 48-hour
-  Automatic Traffic Recorder Counts, 24-hour | Volume, Class, Speed
-  13-hour Turning Movement Counts, 6 a.m. - 7 p.m., Per 15 minute data for HV, Vehicles, Bikes, and Pedestrians
-  4-hour Turning Movement Counts, 7 a.m. - 9 a.m. and 4 p.m. - 6 p.m., Per 15 minute data for HV, Vehicles, Bikes, and Pedestrians
-  5-hour Bike Turning Movement Counts, 8 a.m. - 10:30 a.m. and 3 p.m. - 5:30 p.m., Per 15 minute data for Bikes Only



Concern: Data Collection



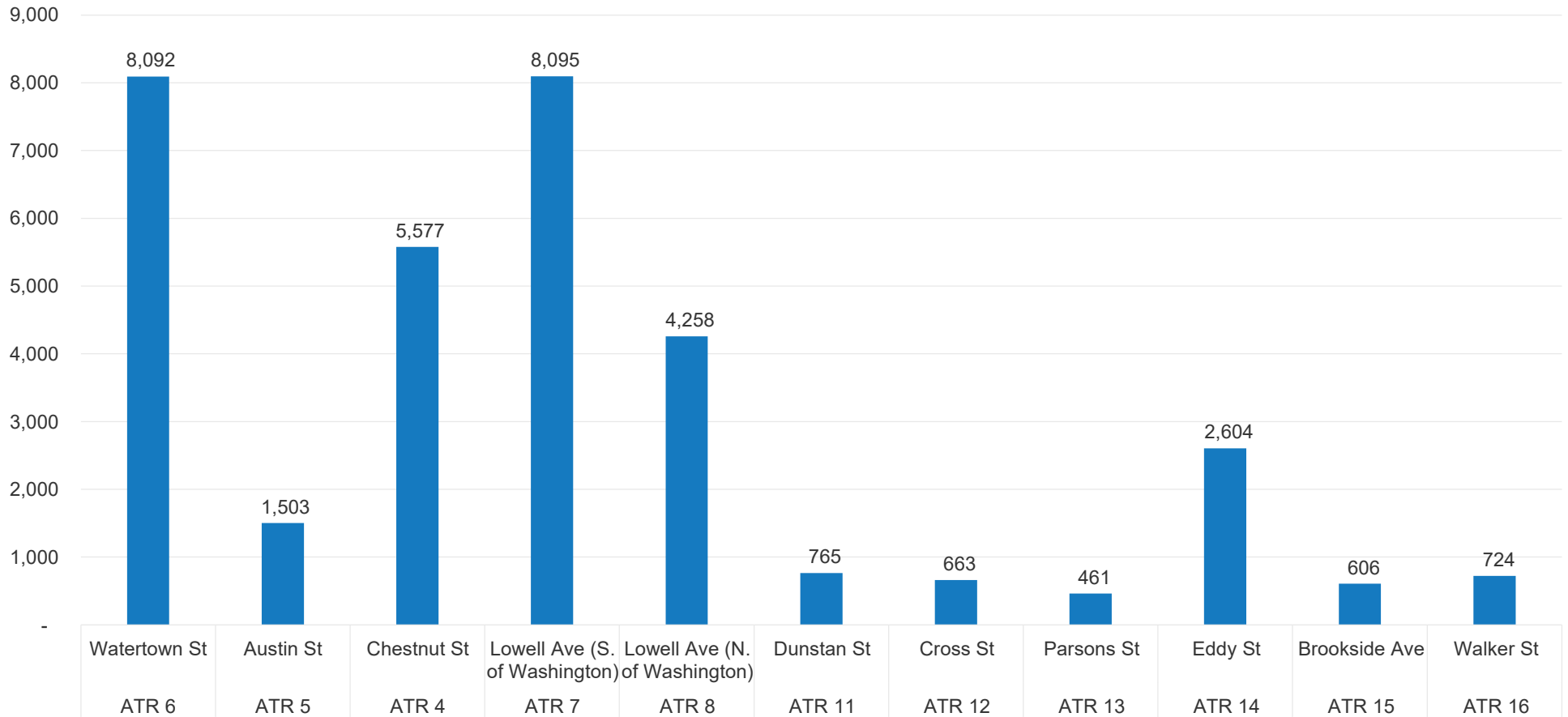
Washington Street, East of Dunstan Street Daily Traffic Volumes



Concern: Data Collection

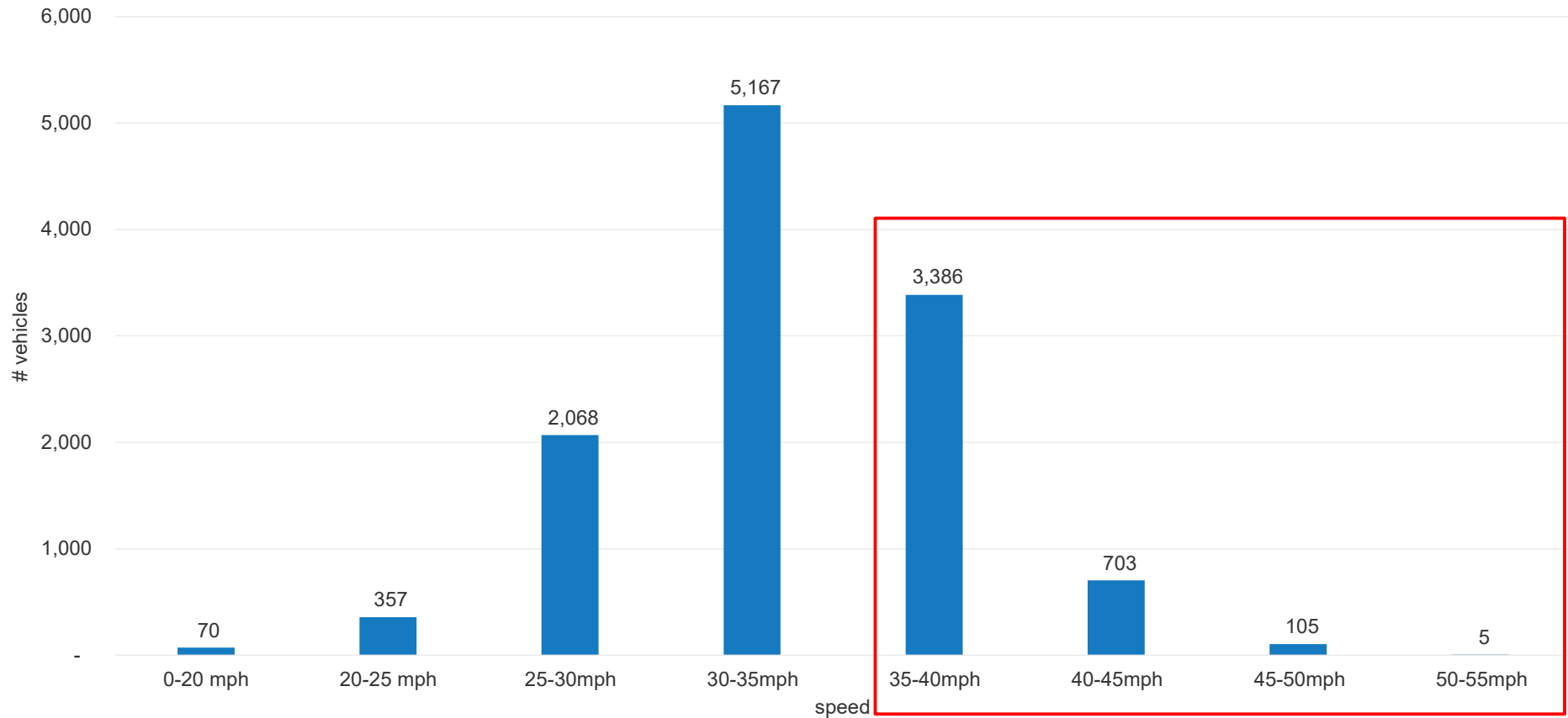


Daily Traffic Volumes - Tuesday, January 31, 2023



Concern: Data Collection

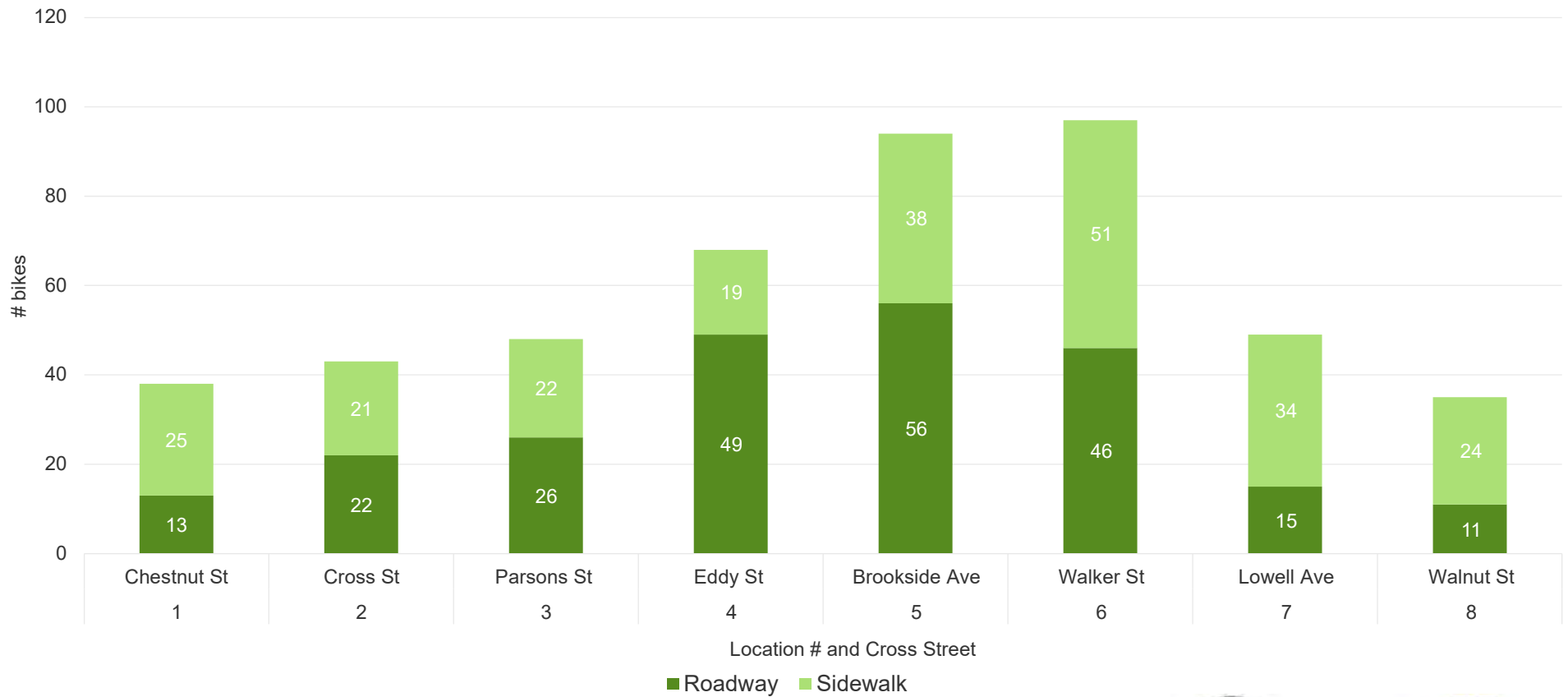
Washington Street, East of Dunstan St, Vehicle Speeds
Tuesday 1/31/2023



Concern: Data Collection



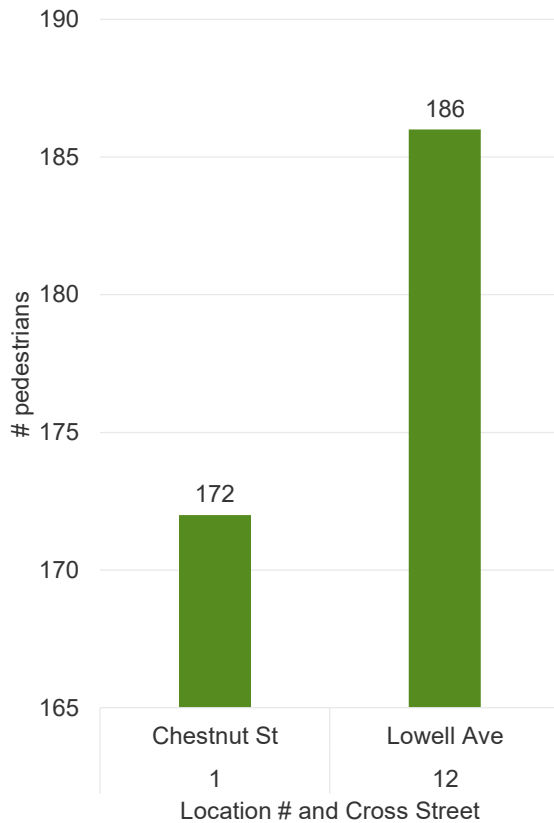
Washington Street 5-Hour Bike Volumes Thursday, 10/26/2023 8:00 - 10:30 AM and 3:00 - 5:30 PM



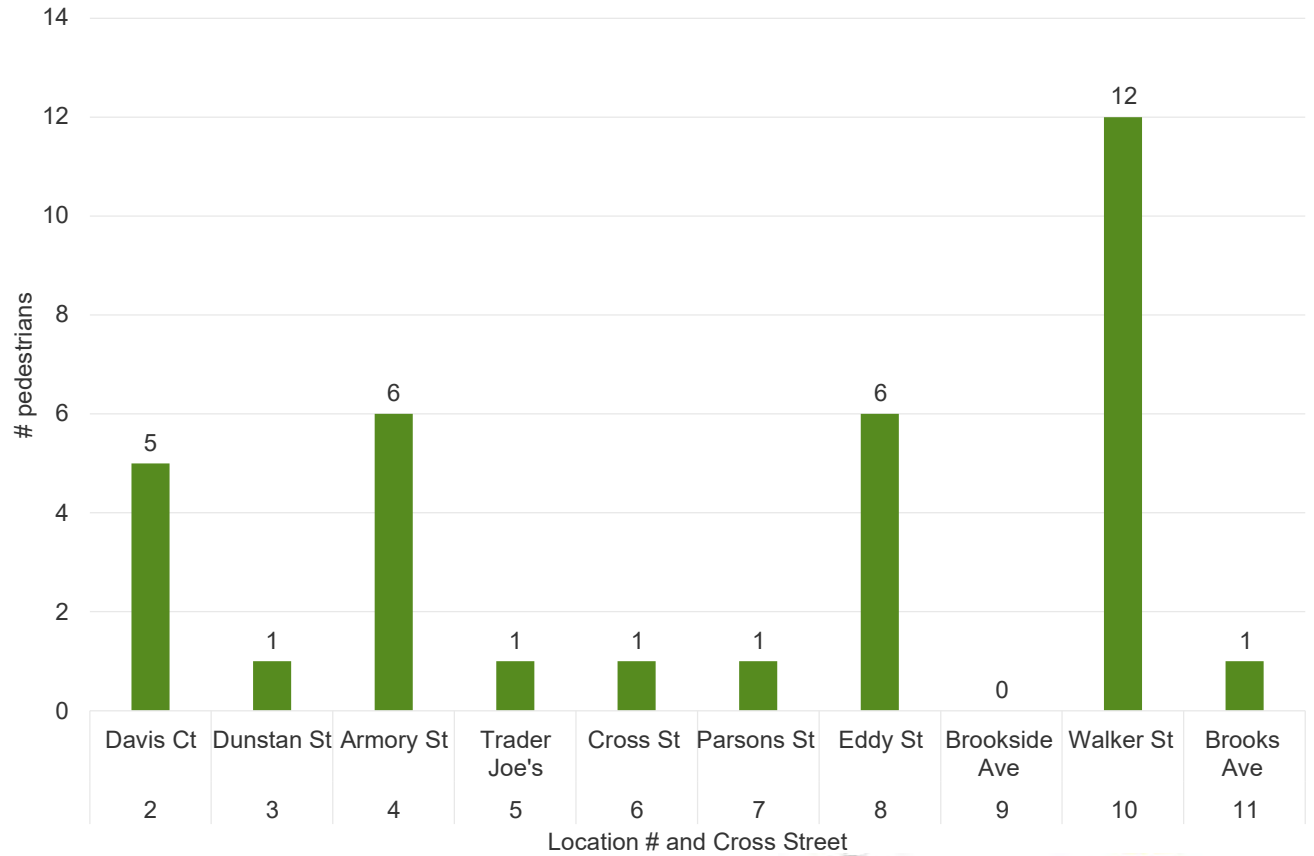
Concern: Data Collection



Washington Street Pedestrian Counts (13-hour)
Wednesday, 2/1/2023 6:00 AM - 7:00 PM



Washington Street Pedestrian Counts (4 hour)
Wednesday, 2/1/2023
7:00 AM - 9:00 AM & 4:00 PM - 6:00 PM



Concern: Noise, Air Pollution, and Heat Island

■ Concerns

- Noise and air pollution from adjacent Mass Pike
- Heat island impacts

■ Challenges

- Pilot will help visually screen to extent feasible with landscaping
- City does not own existing fence along rail
 - *Fence impacts require access permit through state and can't impact wind or structural loading*
- Pilot project not scoped to remove existing pavement to impact heat island

■ Potential Solutions

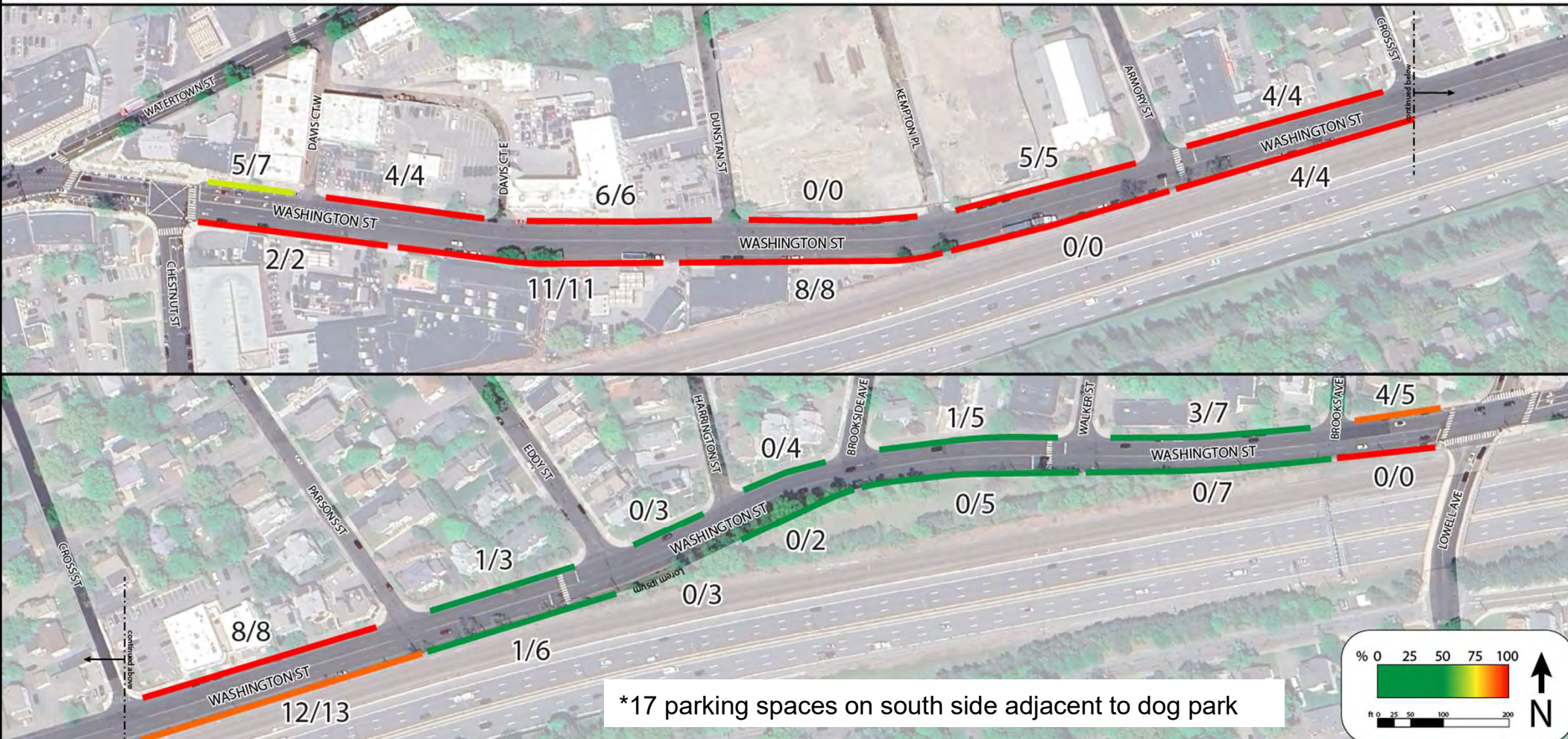
- Pilot to set stage that reduced cross-section can be successful for future reconstruction project
- Future project with two/three lane cross-section can better address noise, air pollution, and heat island impacts

122 Total Parking Spaces Proposed (61 Spaces on each side)

Engineers + Planners

Proposed Design
Peak Parking Demand Redistributed

Total Parking Demand: 79/122
(64%)



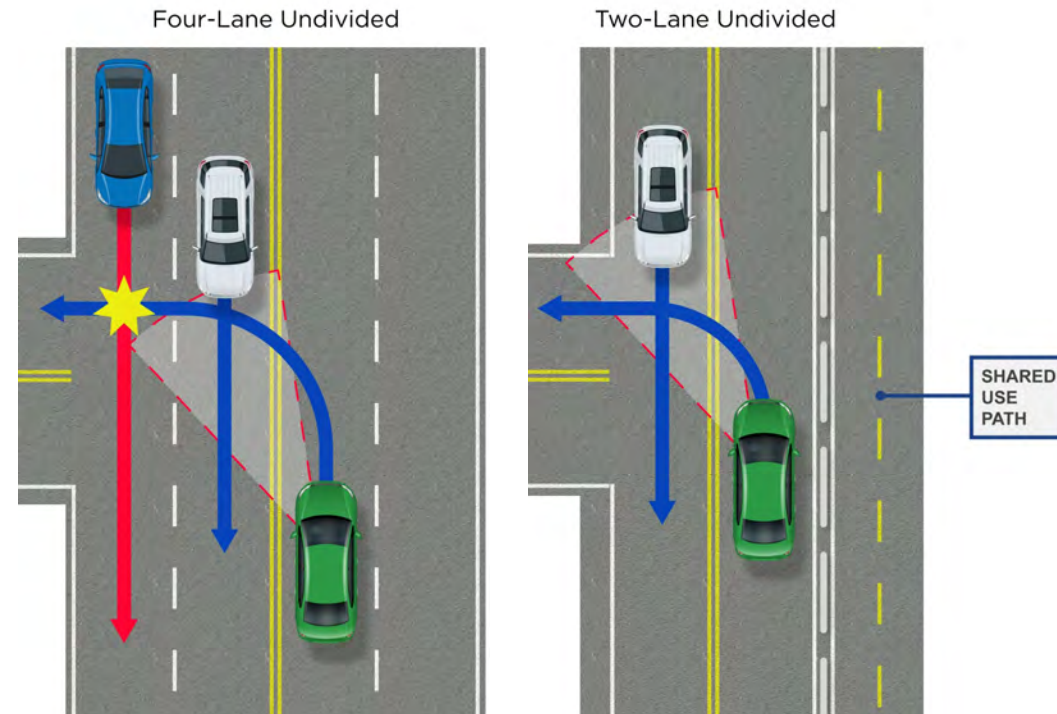
Concern: Left-turn Movements

■ Left-turn lanes proposed at:

- Davis Court
- Armory Street
- Cross Street
- Eddy Street
- Brookside Avenue
- Walker Street
- Brooks Street

■ Left-turns will still be allowed at intersections without dedicated left-turn lanes

- Left-turns at Parsons St and Harrington St without dedicated left-turn lanes had low peak hourly left-turn volumes of <16 vehicles



Concern: Washington Street at Lowell Avenue

■ Concerns

- Lack of left-turn signals from Washington Street onto Lowell Avenue

■ Challenges

- Left-turn signals require adding new signal heads to existing mast arm
- Loading would need to be checked on existing mast arm or new mast arm required
- For new mast arm – Geotechnical boring and additional underground survey required creating schedule impacts

■ Potential Solutions

- City evaluating potential solutions separate from pilot to provide left-turn signal phasing and signal equipment changes
- Future TIP project along Washington Street to incorporate redesign of Washington St/Lowell Avenue signal to more fully address concerns



Pilot Evaluation – 3-Year Post-Implementation Targets

- Targets will be monitored and reported at 1, 2, and 3 years

Metric	Monitoring	Measure of Success (Post Pilot)
Average Speed	Are people driving at slower speeds?	Average speeds closer to 25 mph target speed (currently 32-33 mph)
85 th Percentile Speed	Are people driving at slower speeds?	85 th percentile speeds closer to 30 mph (currently 37 mph)
Maximum Speed	Are people driving at slower speeds at all times of the day?	Maximum speed under 45 mph (currently as high as 55 mph on Washington Street).
Collision Severity	Are crashes decreasing in frequency or severity?	Reduction in collisions resulting in injury (currently avg 5 per year)
Diversion Route and Side Street Volumes	Has there been an effect on side streets/alternate routes?	Average daily traffic on potential diversion routes has not increased by more than 20%.
Pedestrian and Bicycle Volumes	Do people walking and biking feel safer and more comfortable?	20% increase in pedestrian/bicycle volumes at peak times.

*All metrics taken pre- and post-pilot.



Pilot Evaluation – 3-Year Post-Implementation Targets

- Targets will be monitored and reported at 1, 2, and 3 years

Metric	Monitoring	Measure of Success (Post Pilot)
Parking Utilization	Is parking supply and demand balanced?	Average weekday parking utilization remains under 90%.
Travel Time between Chestnut St-Lowell Ave	Travel time stays within 35% of existing measured travel times.	No more than 35% of additional travel time (under 1 minute) (Currently 2-3 minutes projected to be 2-4 minutes with future traffic growth).
Feedback from Emergency Response	Is the design accommodating emergency response needs appropriately?	Feedback from Emergency Response does not yield any significant concerns. If concerns are yielded pilot adjustments will be developed.
Queueing at Intersections	Is the pilot appropriately accommodating traffic at the intersections?	Average queues do not spillback into any adjacent intersections (that do not happen today).

*All metrics taken pre- and post-pilot.



Pilot Evaluation

- **Serious crashes will be responded to within one month to evaluate potential causes and changes to pilot design**
- **If queues are of concern, signal timings at Washington Street/Chestnut Street and Washington Street/Lowell Avenue can be revisited**
- **Pavement markings and signage able to be tweaked or adjusted as necessary following initial implementation**



Where we go from here

Spring –
Summer 2024

- Public Facilities Meeting Tonight
- City Council
- Refine design with City departments

Fall 2024

- Bid documents
- Hire contractor by 12/31/24

2025- 2028

- Implementation and evaluation

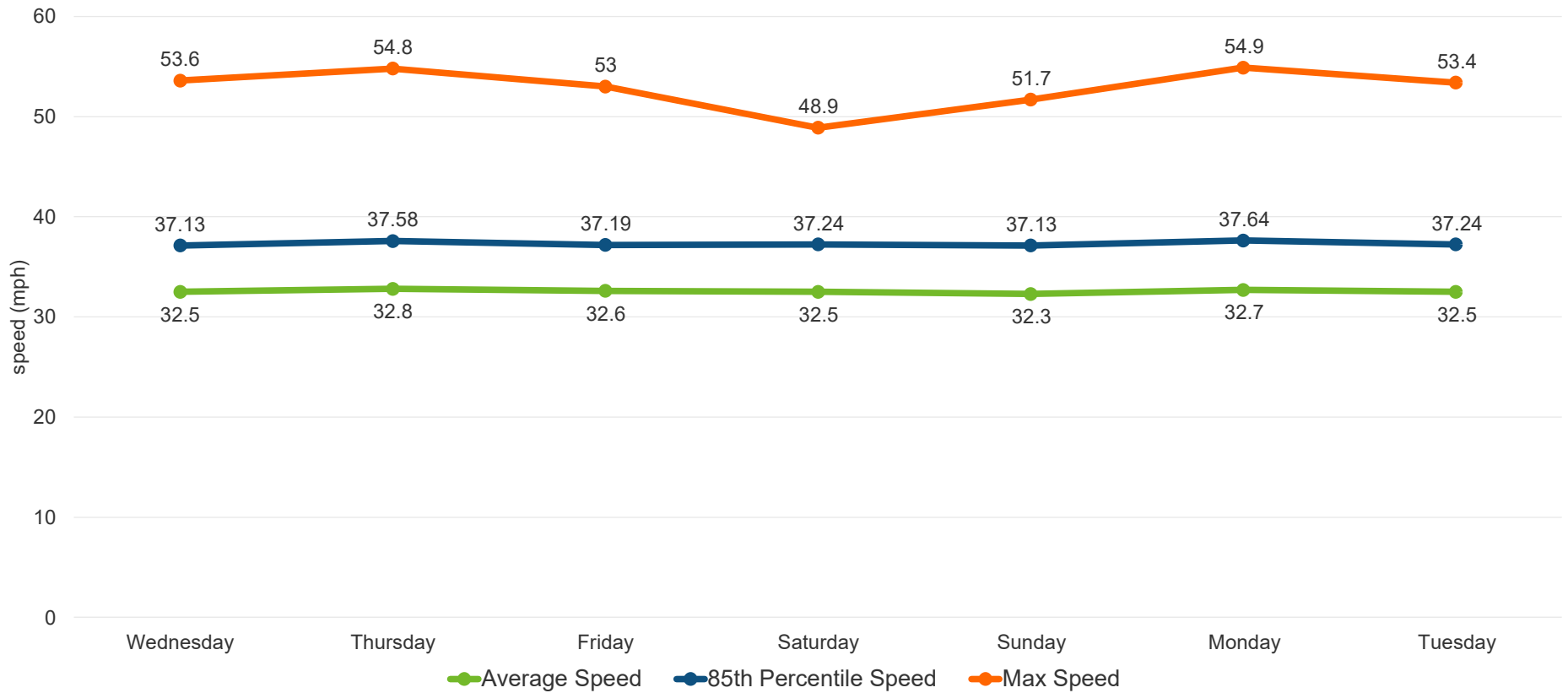


Questions & Discussion



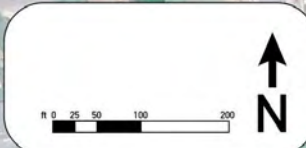
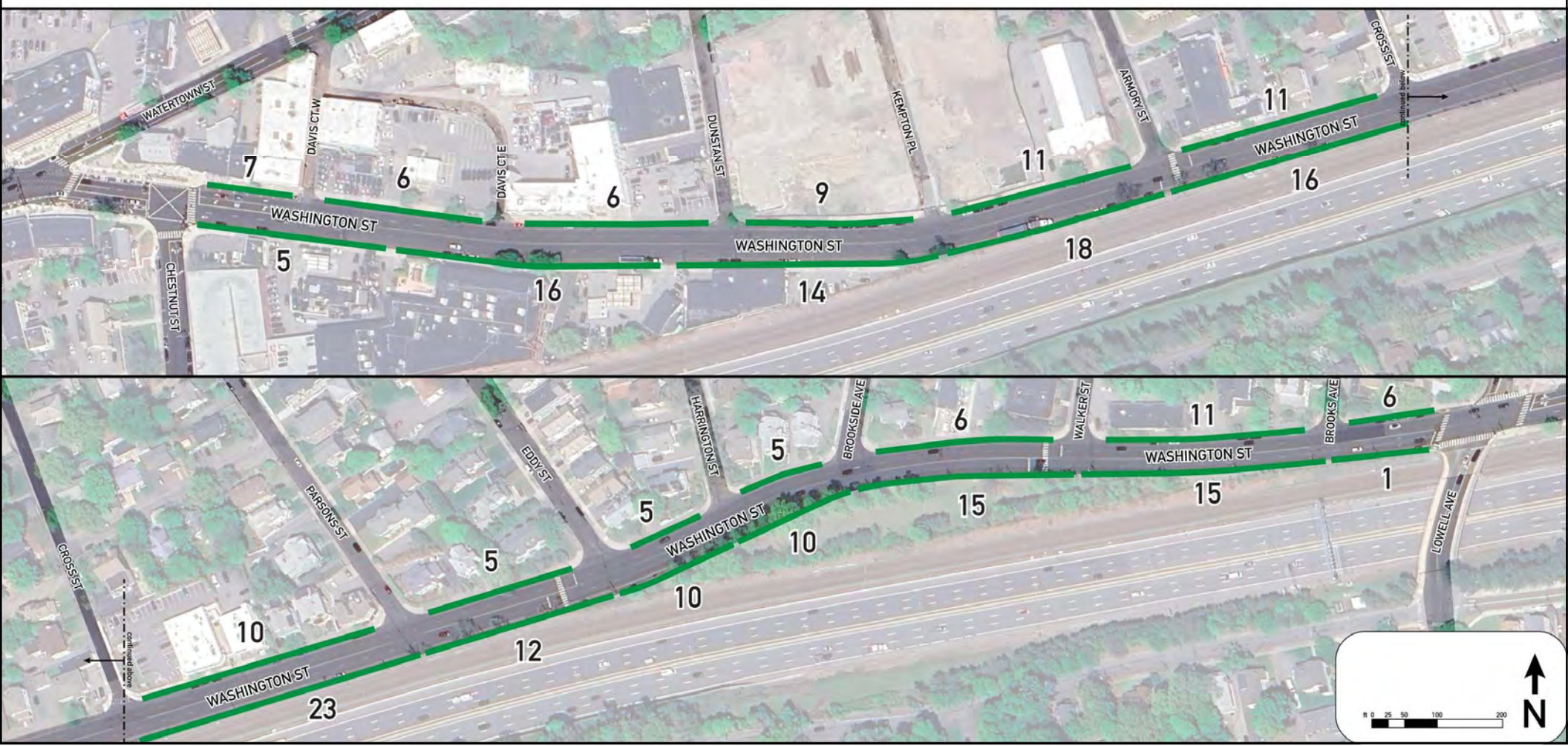
Concern: Data Collection

Washington Street, East of Dunstan St Vehicle Speed 2/8/23 - 2/14/23



Washington Street Current Parking Capacity

Total Parking Spaces: 253



Washington Street Current Parking Peak Use

Total Parking Demand: 79/253
(31%)

