

A photograph of a street intersection at dusk or dawn. The sky is dark with some light clouds. In the foreground, a road with white lane markings curves to the right. On the right side of the road, there is a white pickup truck. In the background, there are trees and a road sign that says "16 WEST" with an arrow pointing right. The overall scene is dimly lit, suggesting the time is either early morning or late evening.

Mt Auburn St at Aberdeen Ave Intersection Safety Improvement Project

August 23, 2023 | 6 p.m. | Zoom

Mt. Auburn St at Aberdeen Ave Intersection Safety Improvement Project

Community Meeting

August 23, 2023 | City of Cambridge

Project Website:

Cambridgema.gov/MtAuburn-Aberdeen

We are Recording

- We will post the recording of tonight's meeting on the project page

Cameras + Microphones

- Your camera is off
- We will enable your microphone only when you are speaking

Question and Answer

- We will take questions and answers after the presentation

Meeting Purpose, Outcomes and Process

- Purpose: We are making changes to the street design on Mt Auburn Street between Brattle Street and Belmont Street.
- Outcomes: Attendees learn about the proposed project design and give feedback.
- Process: We will present slides on project background, goals, and key features. You can write a comment or question using the Zoom Q&A panel or make a verbal comment after the slideshow.

www.cambridgema.gov/MtAuburn-Aberdeen

Contact Information

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Street Design Project Manager

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Agenda

- Planning Background
- Project Background
- Existing Conditions
- Project Design: Key Features
- Project Design: Block-by-block
- Next steps

Planning Background

What guides our street design

We design for people of all ages and abilities.

People who may not have access to a car

- ▶ May not be able to drive
- ▶ May not want to drive
- ▶ May not be able to afford to drive

People who use different kinds of mobility devices

- ▶ Mobility scooters
- ▶ Adult tricycles
- ▶ Child trailers
- ▶ Adaptive bicycles
- ▶ and more!



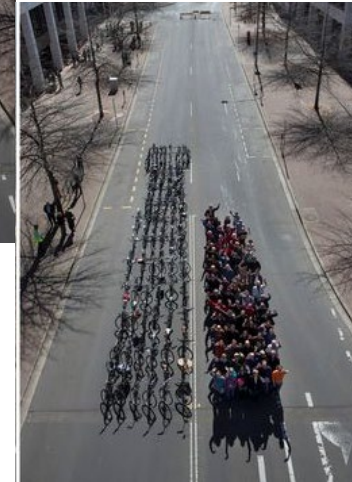
What guides our street design?– Continued

How we think about vehicle congestion and delay:

- Moving people slowly is moving people safely.
- We do not prioritize eliminating delay for people driving over the safety of others.

Focus is on moving people and goods, not their vehicles.

- Biking and riding transit is a more efficient use of limited street space.
- Safe and accessible facilities, including bike lanes, that can be used by a wide range of people, young and old.
- Need to safely allow access for trucks and local deliveries.
- Public space on streets can also be used for other purposes, such as outdoor dining or public gathering.



Images: Amount of street space occupied by the same number of people on a bus, on bicycles, and in single-occupant vehicles

Sustainable Transportation

Sustainable transportation options allow people to get around in ways that reduce emissions and congestion, such as walking, biking, and public transit.

The City supports this through many policies, plans, and ordinances, including:

- ▶ Vehicle Trip Reduction Ordinance
- ▶ Parking & Transportation Demand Ordinance
- ▶ Climate Protection Plan
- ▶ School Wellness Policy
- ▶ Envision Cambridge

▶ Complete Streets



▶ Vision Zero



▶ Cycling Safety Ordinance



How Crash Data Informs Design & Enforcement

Street Design

- We design streets to keep vulnerable users safe
- People walking and biking are more likely to be injured than someone driving when a collision occurs

User Behavior

- On streets with safe facilities, we see better behavior from all users
- Speeding is the number one factor in the severity of crash
- Narrower streets reduce speeding

Enforcement and Education

- Where we see a crash pattern occur, we work with our partners to conduct enforcement and raise awareness.
- We recommend enforcement based on the types of behaviors that were a factor in a crash.
- Not all behaviors create the same type of risk. We look for the most common behaviors that cause injury.

Design Example:

When we install separated bike lanes, parking in the bike lane is reduced.

This creates a predictable place for people to ride without having to weave through traffic or ride on the sidewalk.

Crash Data

At Aberdeen Avenue/Mt. Auburn Street:

November 2018 to November 2022

- 8 total crashes. None involving a person walking or biking

Most common crash factors were:

- Red light running
- Unsafe lane changes

At Aberdeen Avenue/Homer Avenue:

August 2019 to August 2023

- 8 total crashes. 1 involving serious injury to a person walking.

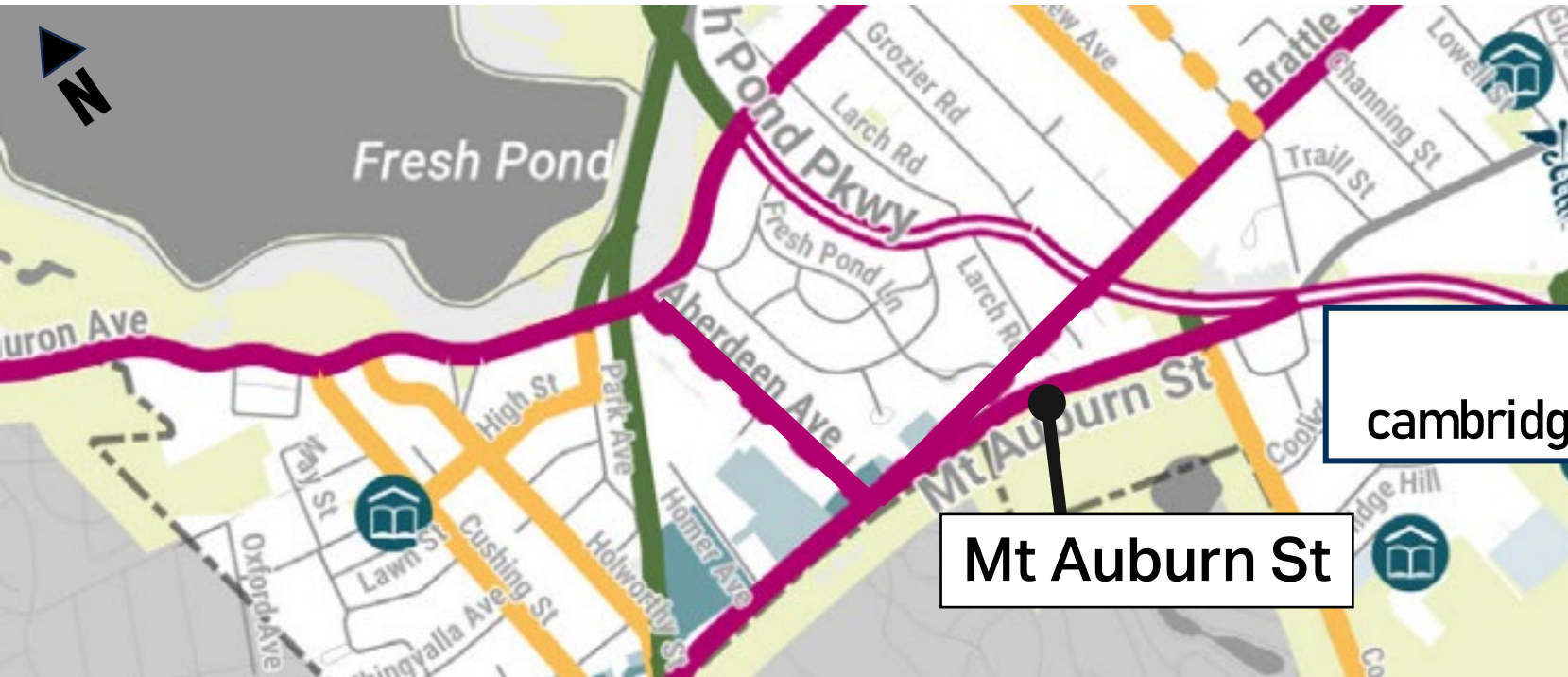
Most common crash factors were:

- Speeding
- Red light running

Crash data provides valuable insight into the types of behavior that contribute to crashes.

Cambridge Bicycle Plan

- Mt Auburn Street is designated for “Greater Separation” in the Cambridge Bicycle Plan



Learn more at
cambridgema.gov/2020bikeplanupdate

Benefits of Bike Lanes

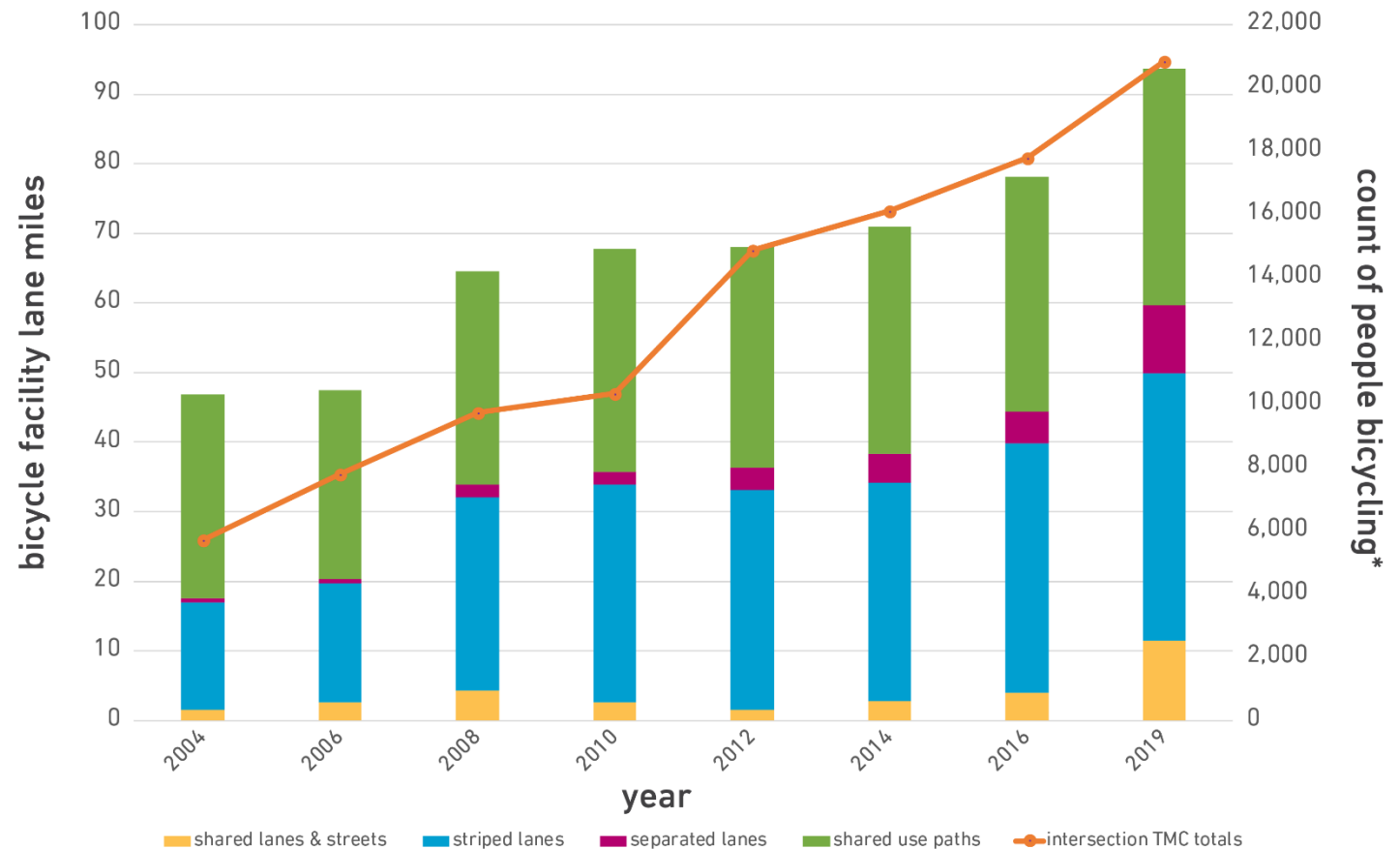
More people ride bicycles when we build more bicycle infrastructure.

A lack of safe and accessible routes and facilities for people of all ages and abilities prevents many people from biking.

As we've built more, we've enabled a wider variety of people to bike.



BICYCLE FACILITY LANE MILES AND NUMBER OF PEOPLE BICYCLING (2004-2019)



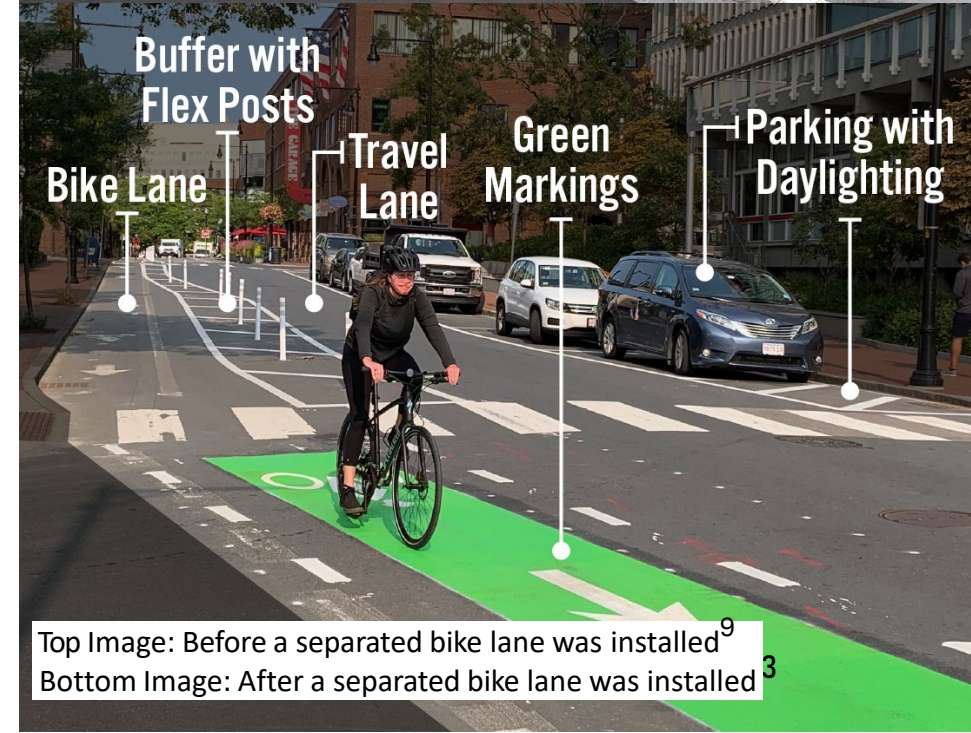
Separated Bike Lanes

What are separated bike lanes?

- People biking and driving are each provided dedicated travel space
- The bike lane has physical separation from the vehicle lane (i.e., curb, flex post)

Benefits for people biking:

- Increases comfort and access for people of all ages and abilities
- Reduces crash and injury risk
- Eliminates threat of "dooring" from parked vehicles
- Reduces potential conflicts between vehicles and people biking
- Encourages slower traffic speeds by visually narrowing the roadway width



One block of this project (Homer Ave to Aberdeen Ave) will include separated bike lanes that meet the standards of the Cycling Safety Ordinance.

The Ordinance requires that the City install or begin construction on about 25 miles of separated bike lanes by about 2027, including:

- All of Massachusetts Ave;
- Garden St, eastbound from Huron Ave to Berkeley St, and westbound from Mason St to Huron Ave;
- Broadway from Quincy St to Hampshire St;
- Cambridge St from Oak St to Second St;
- Hampshire St from Amory St to Broadway; and
- **11.6 miles of separated bike lanes in other locations within the Bicycle Network Vision**

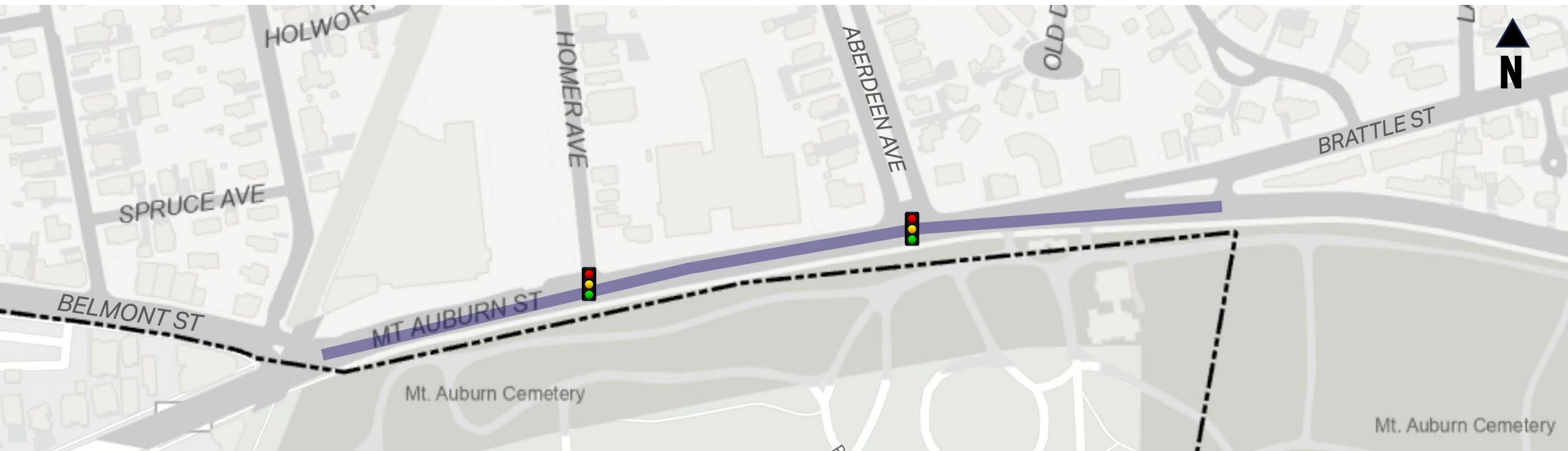


Learn more at
cambridgema.gov/cycling-safety-ordinance

Project Background

Project Area

- Mt Auburn Street – Belmont Street to Brattle Street



Project Goals

- Improve safety and mobility for people riding buses, walking, biking, and driving
- Replace and upgrade traffic signal equipment at the Mt. Auburn/Aberdeen intersection
- Meet City requirements and ordinances, including the Cycling Safety Ordinance and Vision Zero Action Plan

May Open House

May 24, 2023

- We hosted an open house at the Collins Branch Library and presented initial draft designs.
- Community members spoke about their experiences with the current street design and offered ideas.
- People asked for a design that extends the two-way separated bike lane from Brattle Street onto Mt. Auburn Street.
- With initial feedback from the open house, we revised designs.



Nearby Projects

Brattle Street

- We added a two-way separated bike lane to Brattle Street between Harvard Square and Aberdeen Avenue
- We will soon finish installing concrete curbing

www.cambridgema.gov/BrattleStSafety

Huron Ave

The City is adding two-way bike lane on Huron Avenue between Cushing Street and Fresh Pond Parkway

- Construction is ongoing

[www.cambridgema.gov/HuronAve`](http://www.cambridgema.gov/HuronAve)



Separated bike lane on Brattle Street

Existing Conditions

Existing Layout

For people riding the bus:

- Eastbound bus lane ends after Belmont Street intersection

For people on bikes:

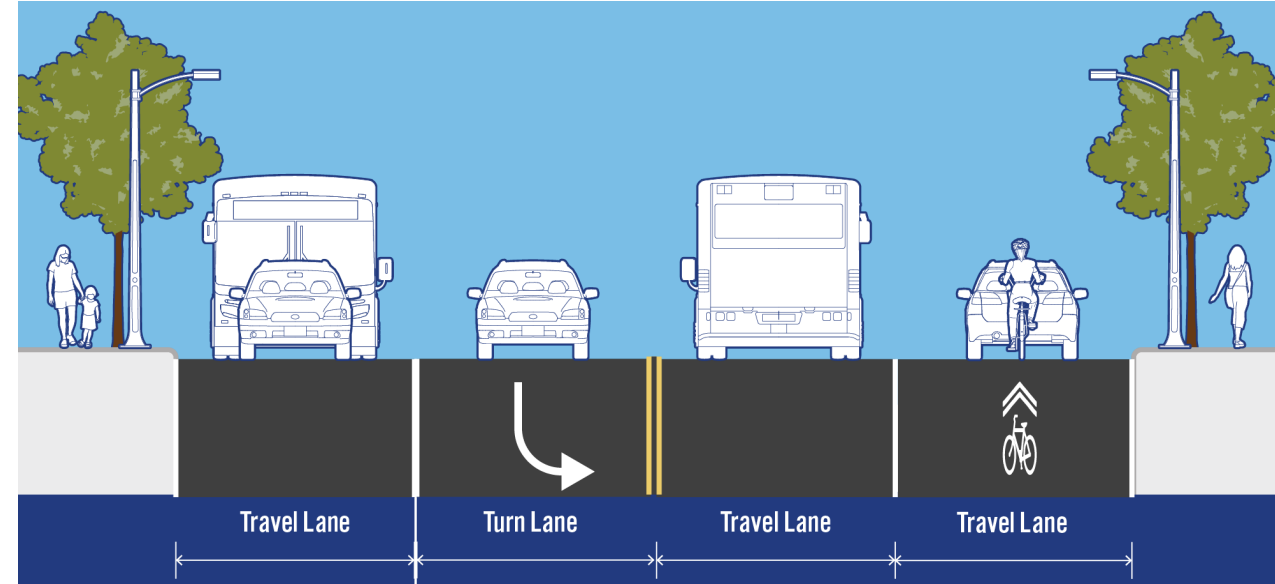
- No vertical separation (flex posts, curbs) between people biking and people driving
- Sharrows/no bike lanes on some sections
- Two-way separated bike lane on Brattle Street ends at Aberdeen Avenue

For people walking:

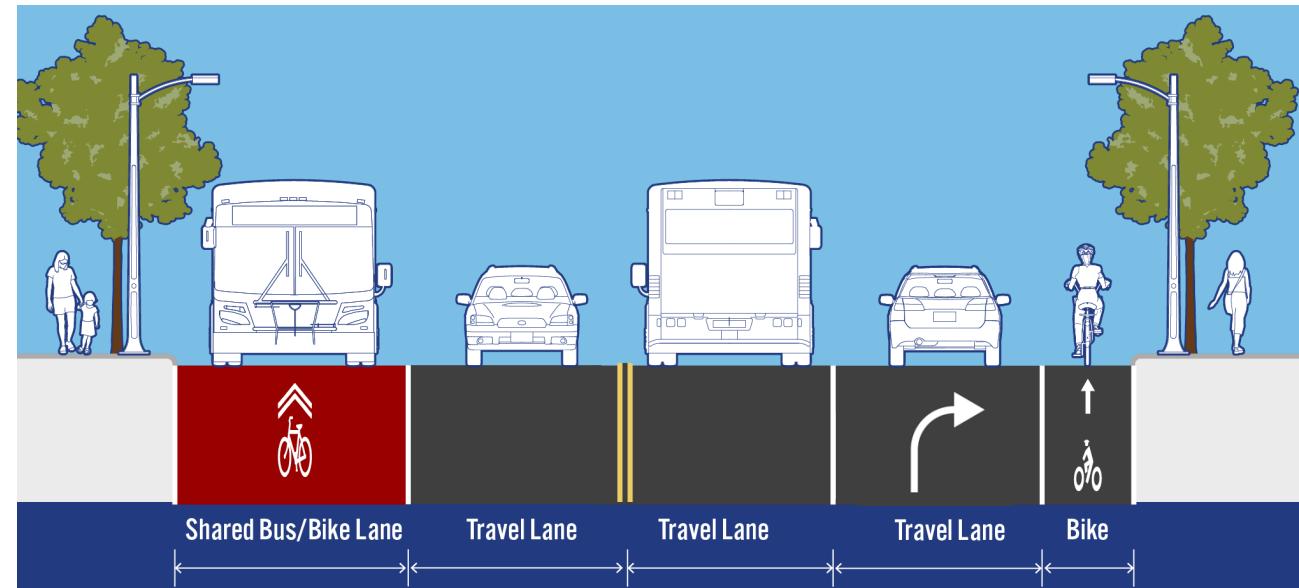
- Traffic speeds and wide crossing distances are uncomfortable for people walking

For people driving:

- Two lanes in each direction for most of the area
- Drivers heading east on Mt Auburn St must shift lanes to continue straight (before Aberdeen)



Mt. Auburn Street at Aberdeen Avenue - West of intersection



Mt. Auburn Street at Belmont Street - East of intersection

Existing Bike Facilities

Watertown-Cambridge Greenway
Off-street path

Belmont St to Homer Ave

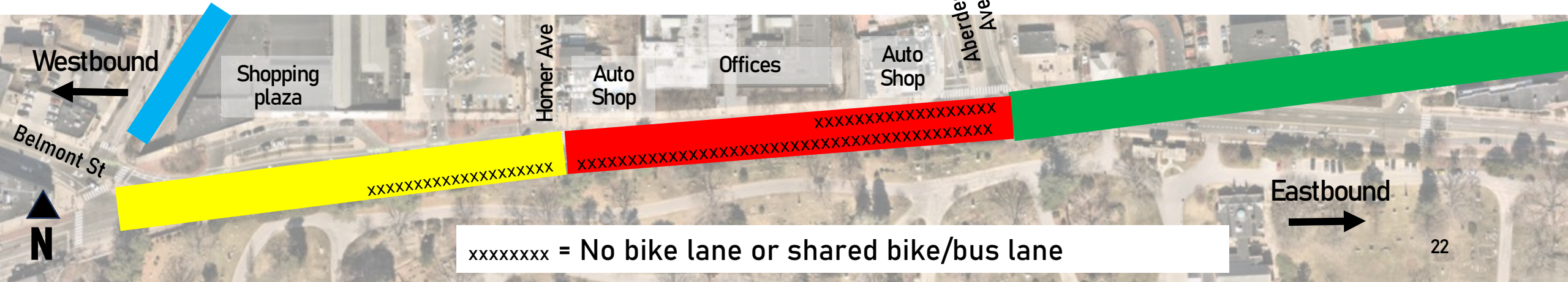
Westbound: standard bike lane
Eastbound: shared bus/bike lane ends mid-block

Aberdeen Ave to Homer Ave

Westbound: standard bike lane begins mid-block
Eastbound: no dedicated bike lane

Brattle St to Aberdeen Ave

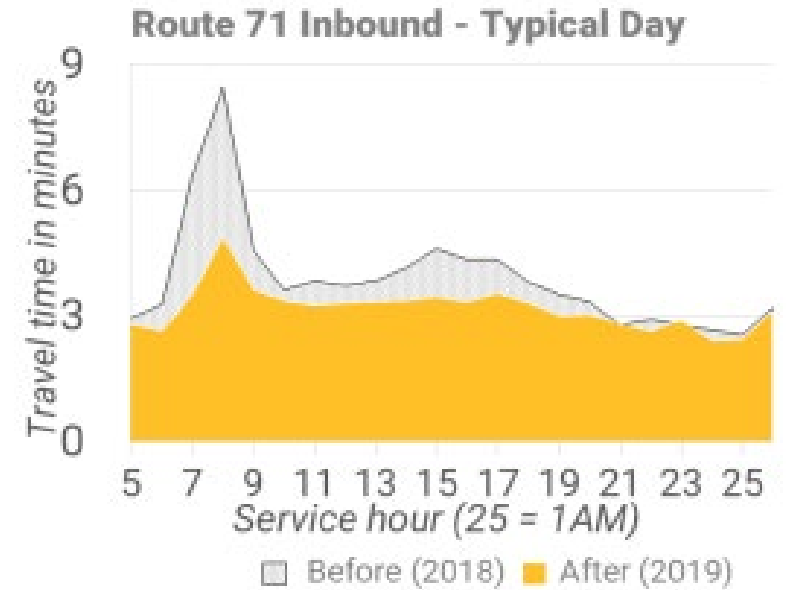
Separated bike lane installed earlier this year



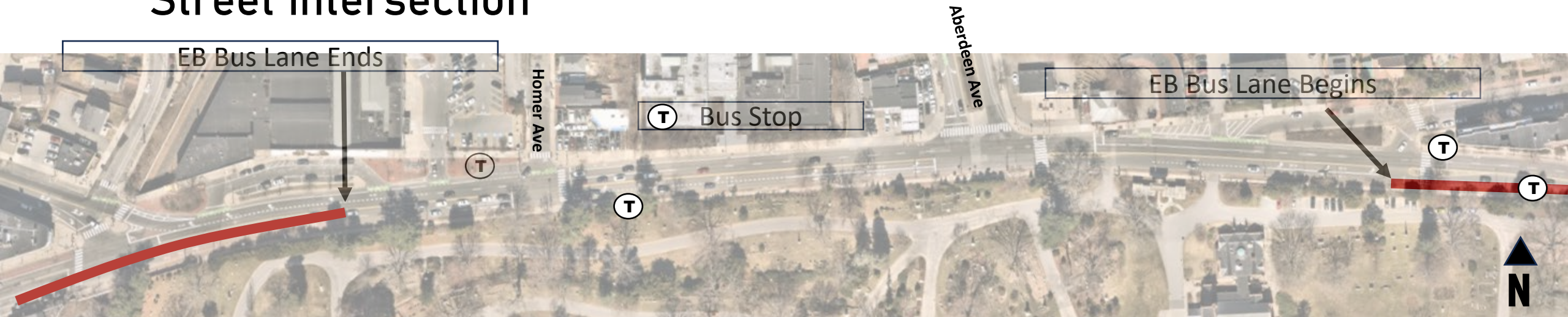
xxxxxxx = No bike lane or shared bike/bus lane

Existing Bus Lane

- Existing bus lane installed in 2018
- Bus riders saved significant amounts of time, with minimal impacts to people driving
- Bus lane ends right after Belmont Street intersection



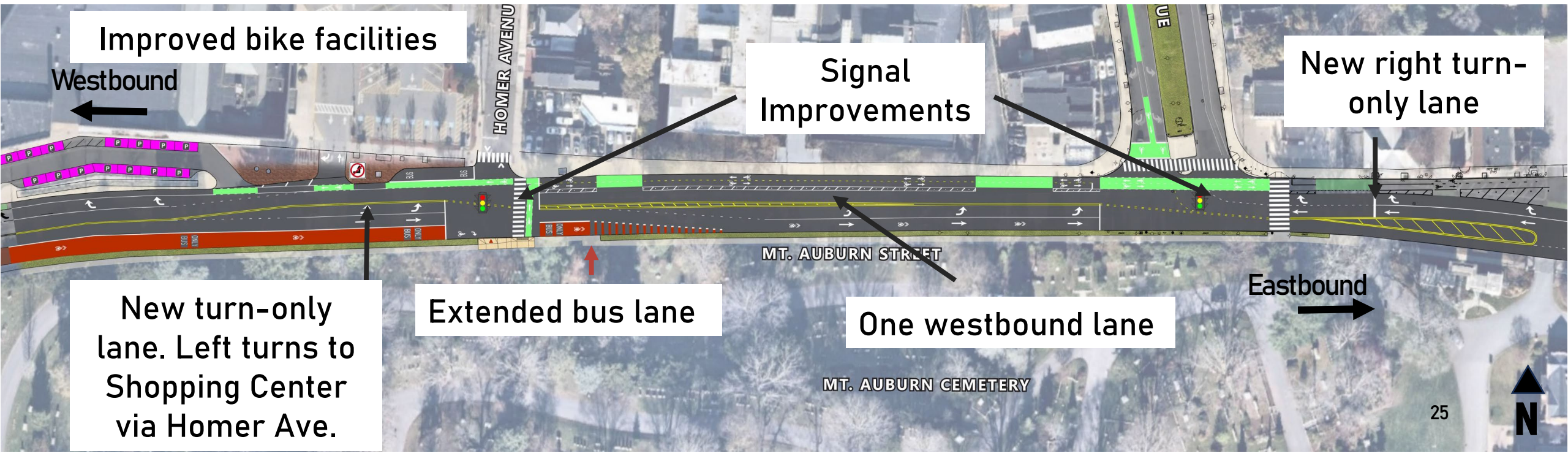
Previous improvements saved bus riders about 3-5 minutes each morning



Previous project did not include bus priority at Homer Ave and Aberdeen Ave

Project Design: Key Changes

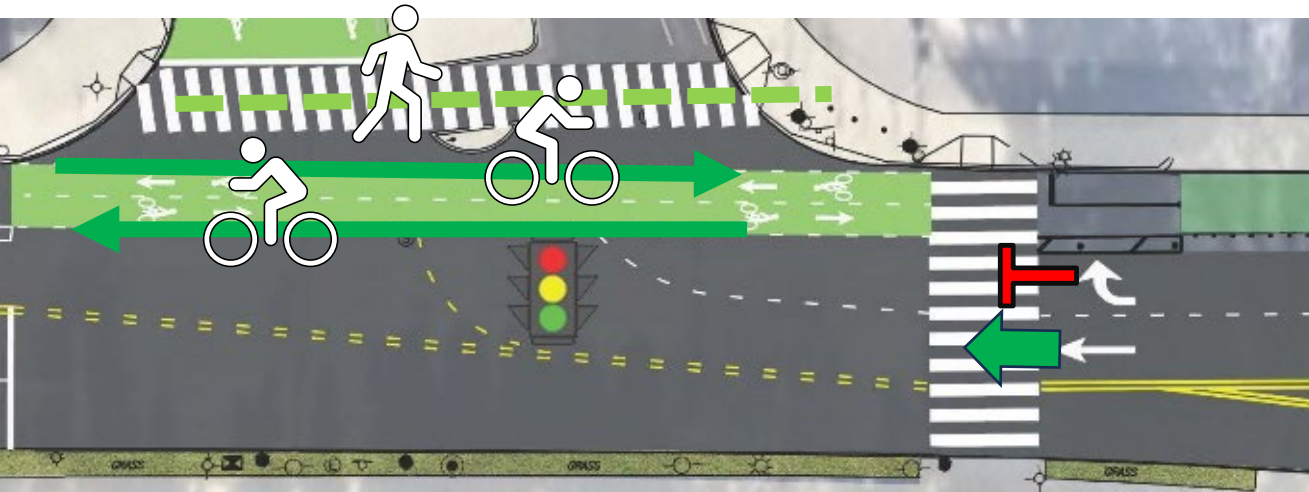
Key Changes Summary



Signal Improvements for People Walking and Biking

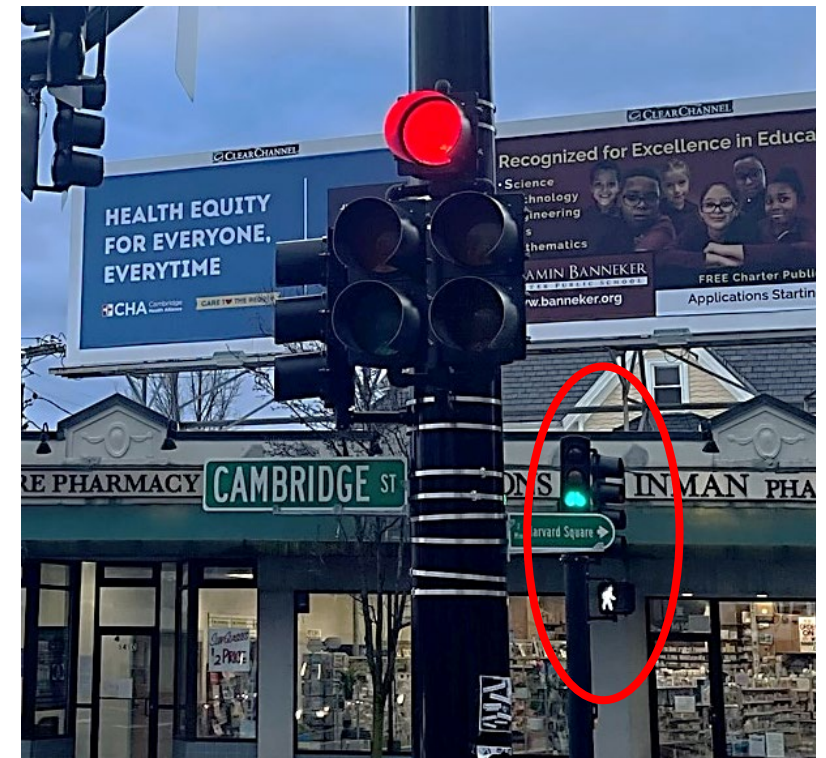
Protected Phasing

Turning traffic gets a green signal at a different time than people walking or biking straight.



Leading Pedestrian and Bike Intervals

People walking and biking have a three to five second head start to cross before adjacent traffic gets a green light.



Example of a leading pedestrian and bicycle interval in Inman Square

Bus Lane Extension

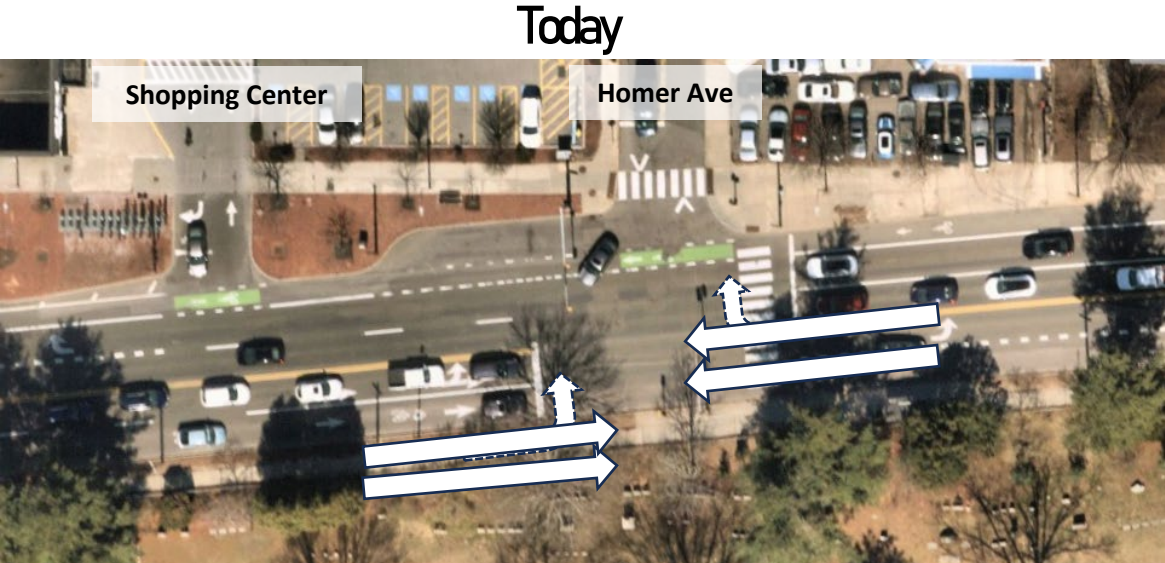
Mt. Auburn Street at Homer Avenue

- Extends bus lane to Homer Avenue bus stop
- Improves bus travel in the eastbound direction, toward Harvard Square

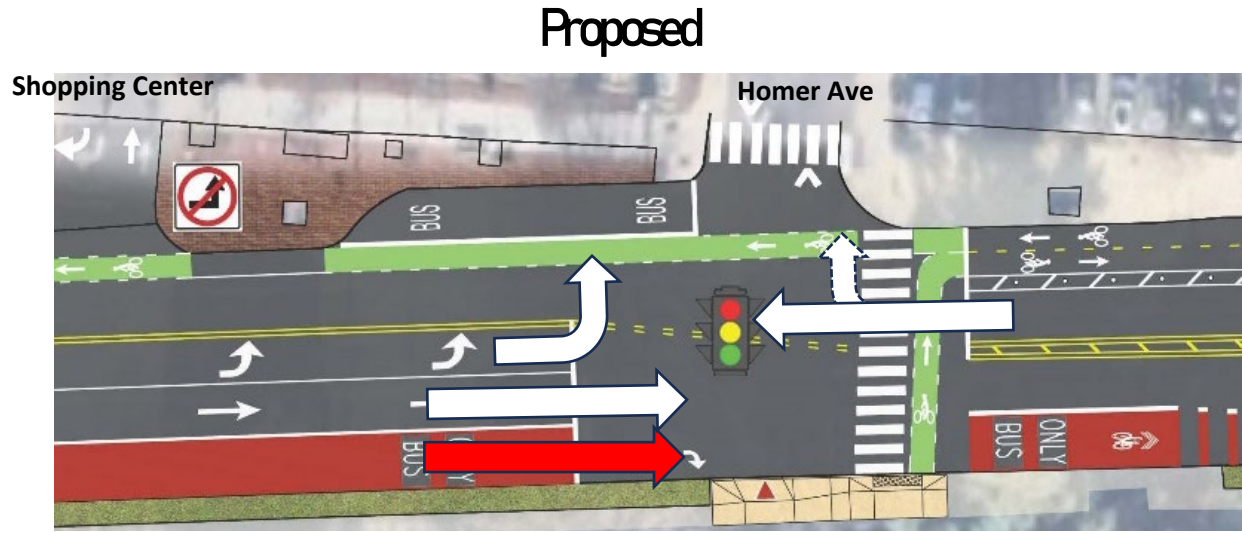


Bus Lane Extension – Additional Benefits

- Creates space for a dedicated left turn to Homer Avenue
 - Eastbound drivers will access shopping center via Homer Avenue
- Allows drivers to continue straight without having to change lanes
- Buses will stop to pick up and drop off riders in dedicated lane
- Buses and general traffic will merge after the bus stop



Current street configuration with two lanes in each direction

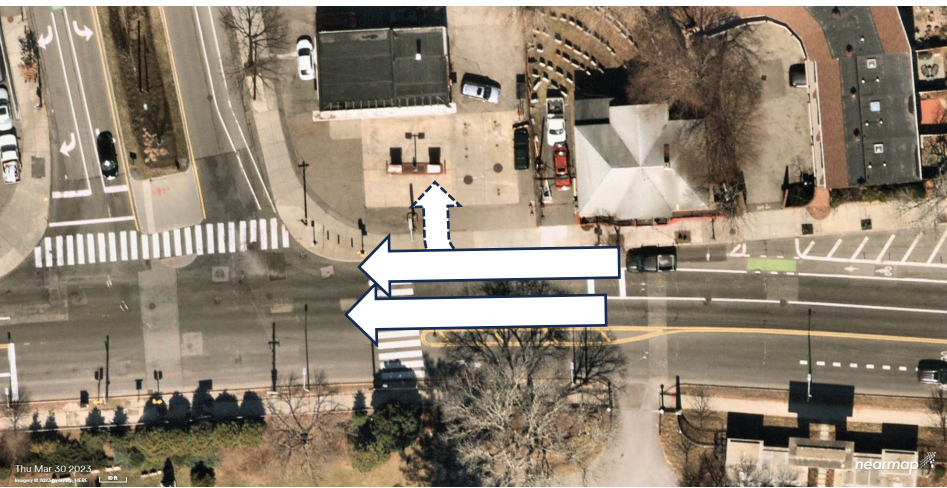


New street configuration with dedicated bus lane, turn lane to Homer Ave and one westbound lane

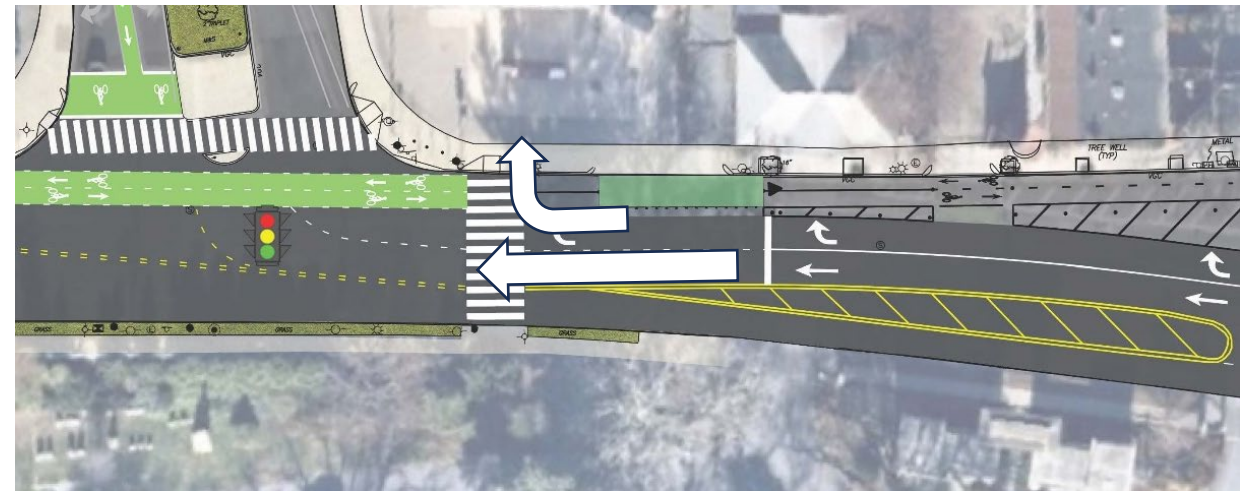
Dedicated Turn Lanes at Aberdeen Avenue

- Turning drivers will wait for a dedicated arrow to turn
- Improves the flow of through traffic by preventing turning drivers from blocking other traffic
- Improves safety for all users by helping turning drivers better negotiate conflicts with vulnerable users

Aberdeen Avenue Intersection Today



Aberdeen Avenue Intersection Proposed



Improvements to Bike Facilities

- **Aberdeen Avenue to Homer Avenue:** We'll add two-way separated bike lanes (separated from vehicle lanes with white flex posts). This is an upgrade from no bike facilities today.
 - This is an update from previous designs we presented, which had one-way separated bike lanes on both sides of the street.
- **Homer Avenue to Belmont Street (westbound, toward Belmont/Watertown):** Standard bike lane (the same as today).
- **Belmont Street to Homer Avenue (eastbound, toward Harvard):** Shared bus/bike lane. This is an upgrade from having no bike accommodation today.

Future changes are needed to align with the Bicycle Network Vision.

- The design west of Homer Avenue does not yet include separated bike lanes.



We're able to improve existing bike facilities with a combination of separated bike lanes, standard bike lanes, shared bus/bike lanes and bicycle ramps and signals

New Signal Infrastructure

Mt. Auburn Street at Aberdeen Avenue

New signal infrastructure will make it easier to understand different directions/movements.

- Turns onto Aberdeen Avenue will have dedicated arrows
- We'll update pedestrian signals to the latest standards
- Signal heads will be overhead, rather than to the side.
- We will install bike signals in both directions
- Improved signal timing will better coordinate bus operations at both Aberdeen Ave and Homer Ave



The existing signal equipment is side mounted rather than overhead and relies on supplemental signage for left turns

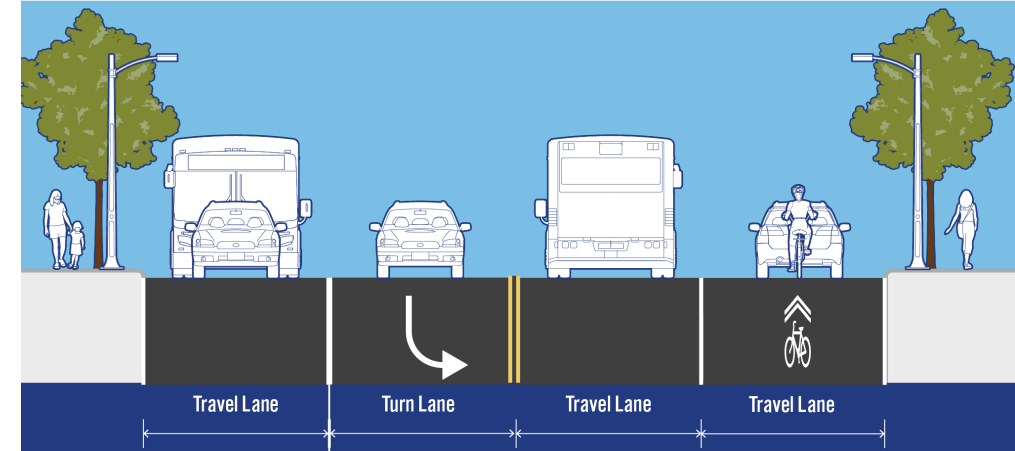
Westbound Lane Reduction

There will be one westbound travel lane on Mt. Auburn Street

By reducing the lanes from two to one, we can:

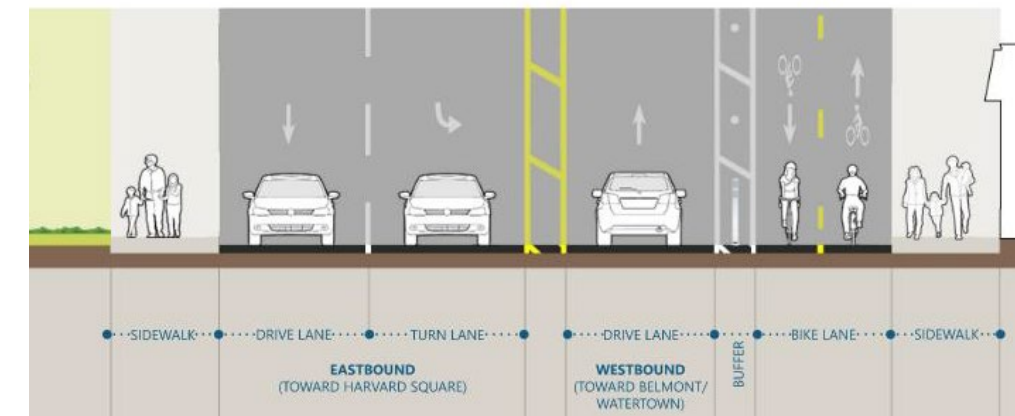
- Add turn lanes at Homer Avenue and Aberdeen Avenue
- Improve the eastbound bus lane
- Improve bike facilities
- Reduce the crossing distance for people walking

With changes to signal timing and adding turn lanes, we're able to have minimal changes to travel times



Existing Street Layout

MOUNT AUBURN STREET - BETWEEN HOMER AVE. AND ABERDEEN AVE.



Proposed Street Layout

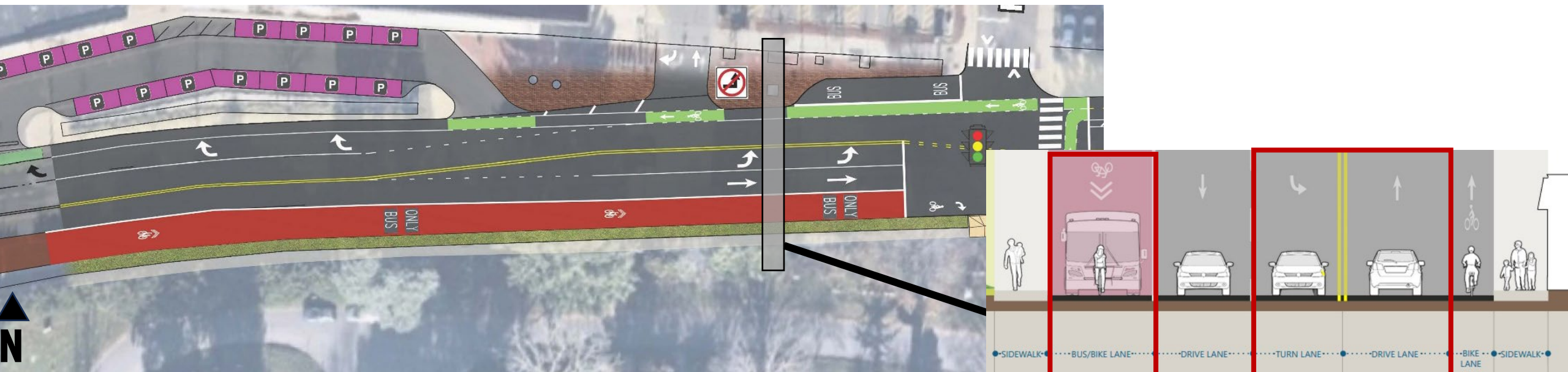
Project Design: Block-by-Block

Mt Auburn Street

Belmont Street to Homer Avenue

- Bus/bike only lane heading toward Harvard Square (eastbound)
- Existing standard bike lane headed toward Watertown/Belmont (westbound) remains
- Dedicated turn lane from Mt Auburn Street onto Homer Avenue
- Single westbound travel lane

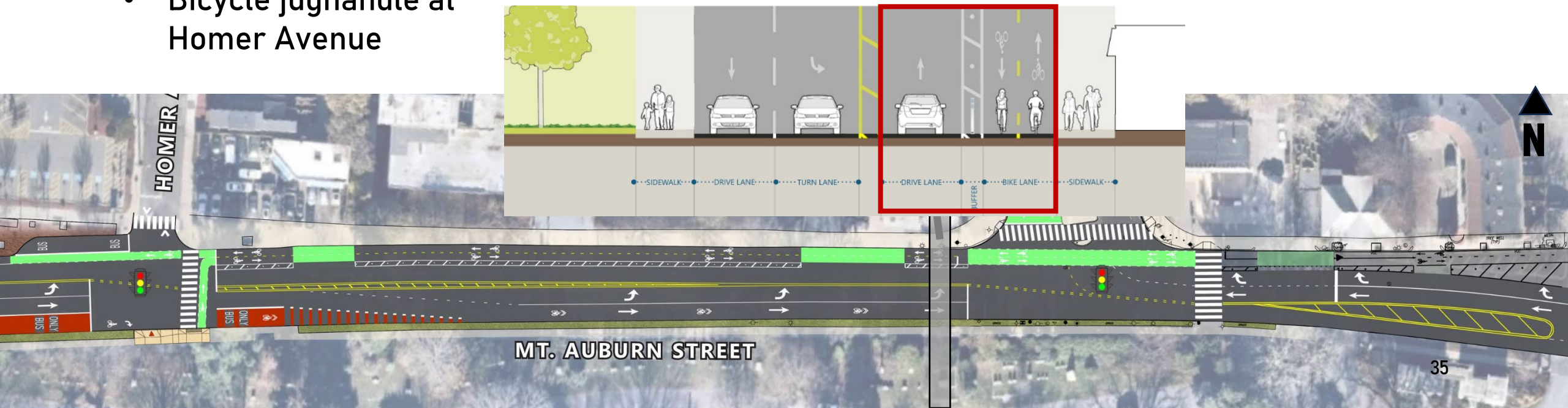
Eastbound drivers access shopping center from Homer Ave



Mt Auburn Street

Homer Avenue to Aberdeen Avenue

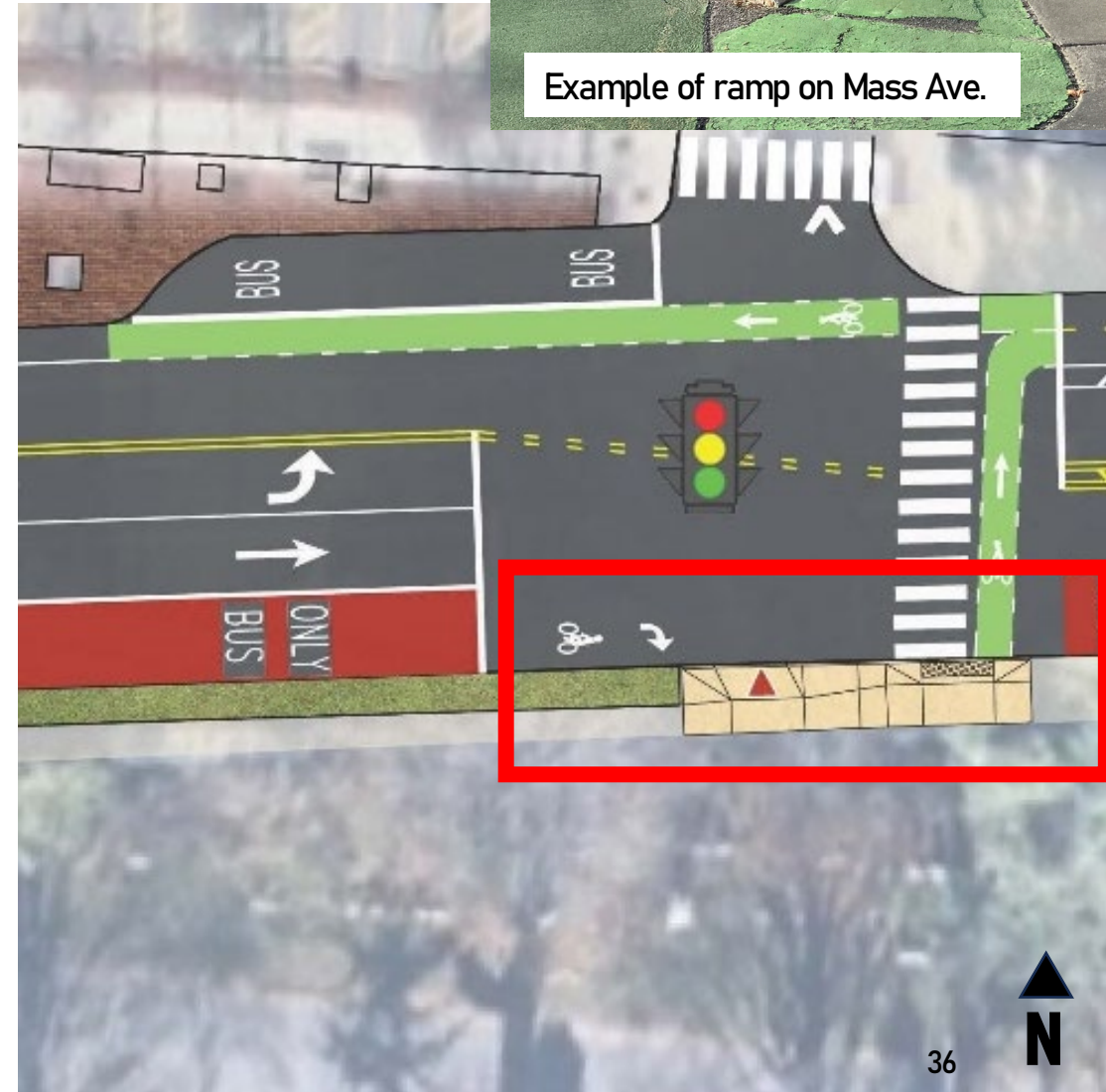
- Two-way separated bike lane on north side of the street (separated from general travel lane with white flex posts)
 - The original design presented in May included one-way separated bike lanes on each side of the street. We've updated the design to respond to feedback we heard then.
- Single westbound travel lane
- Bicycle jughandle at Homer Avenue



Bicycle Jughandle

Mt Auburn Street at Homer Avenue

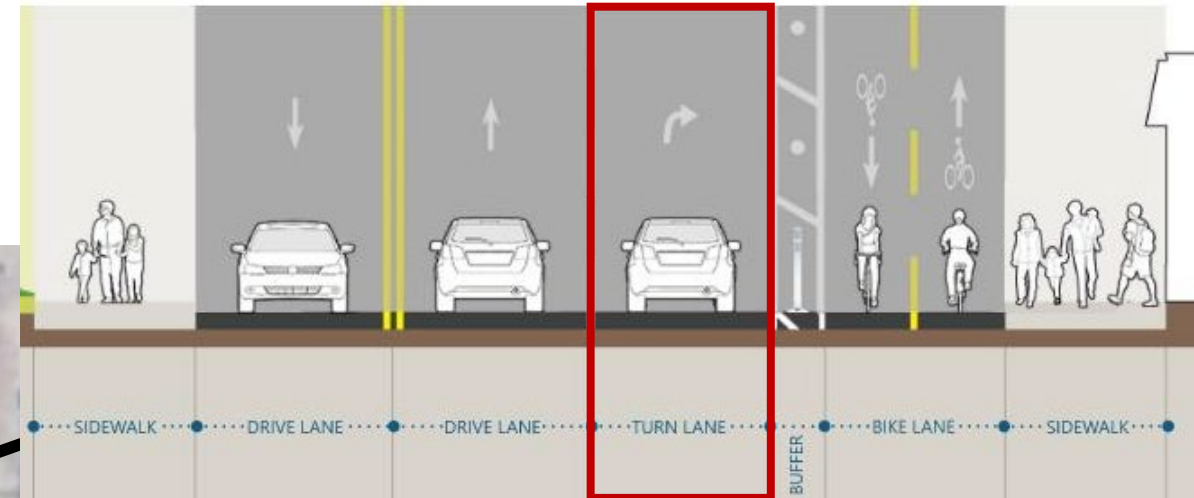
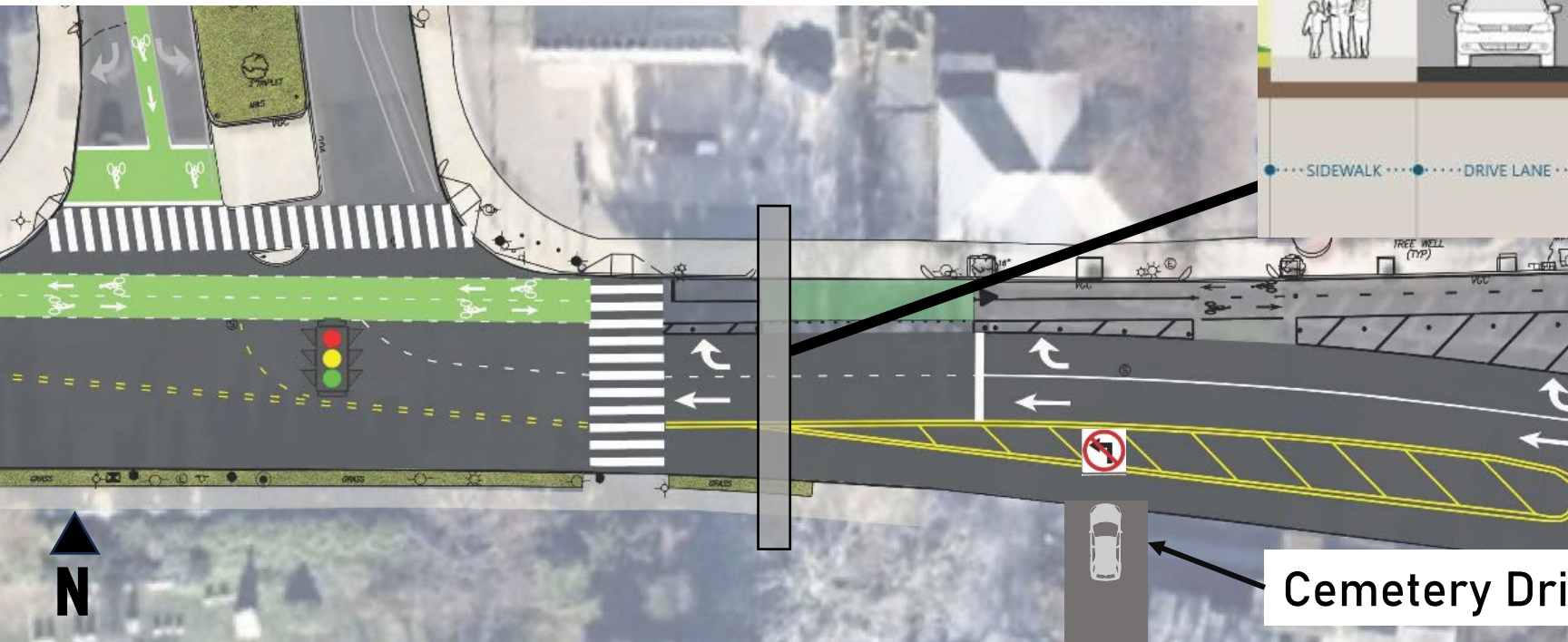
- We'll install a new ramp to give people biking a safer way to cross Mt. Auburn Street into the two-way bike lane
- People biking who want to stay on Mt. Auburn Street may continue straight
- This includes:
 - Installing a ramp up to the sidewalk for people biking.
 - Widening the existing ramp to accommodate both people walking and biking.
- Previous project design included a jughandle at Aberdeen Ave



Mt Auburn Street

Aberdeen Avenue to Brattle Street

- New dedicated right turn lane onto Aberdeen Avenue
- Installed earlier this year:
- Two-way bike lane coming from Brattle Street
 - No left turn from cemetery's west driveway

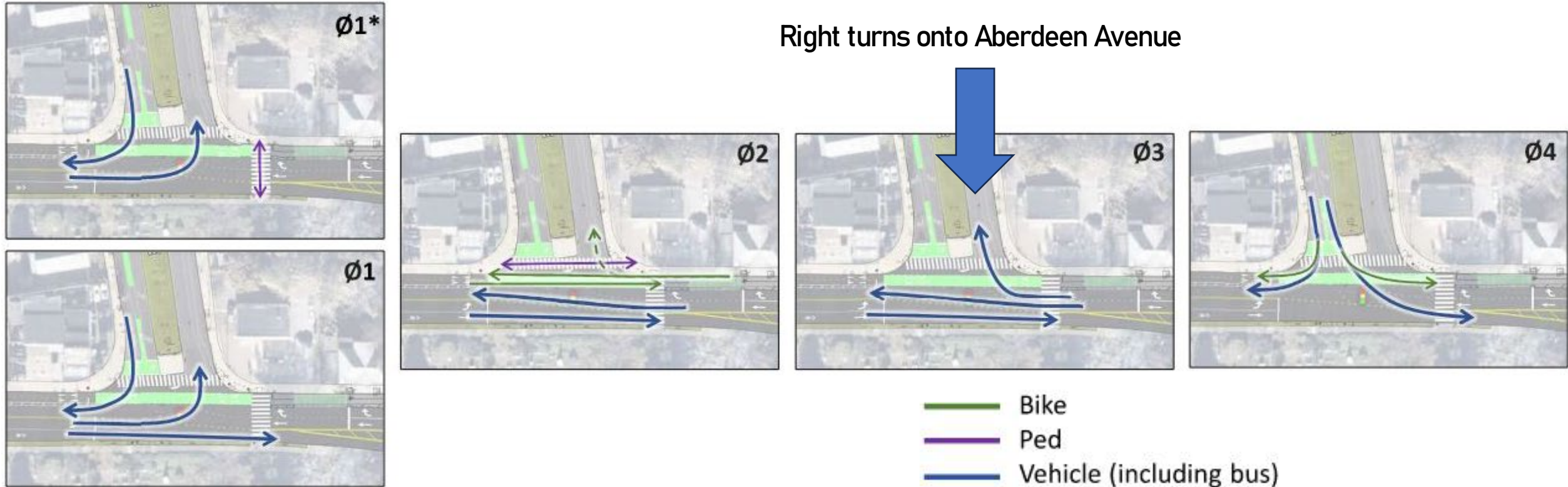


Cemetery Driveway

Project Design: Signal Timing and Traffic Impacts

Signal Timing Diagram

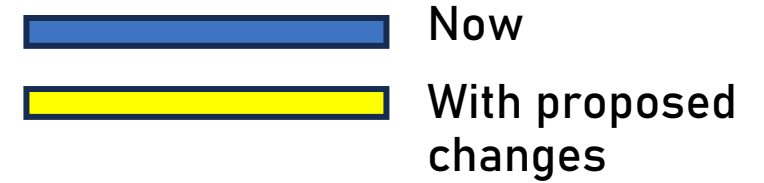
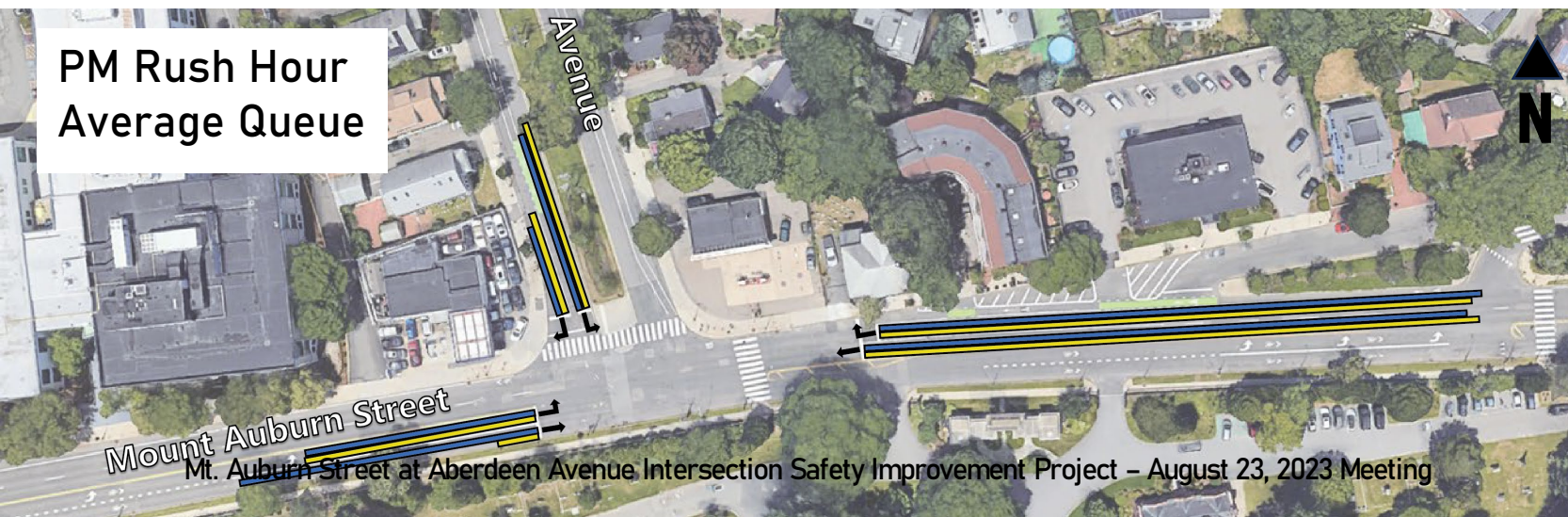
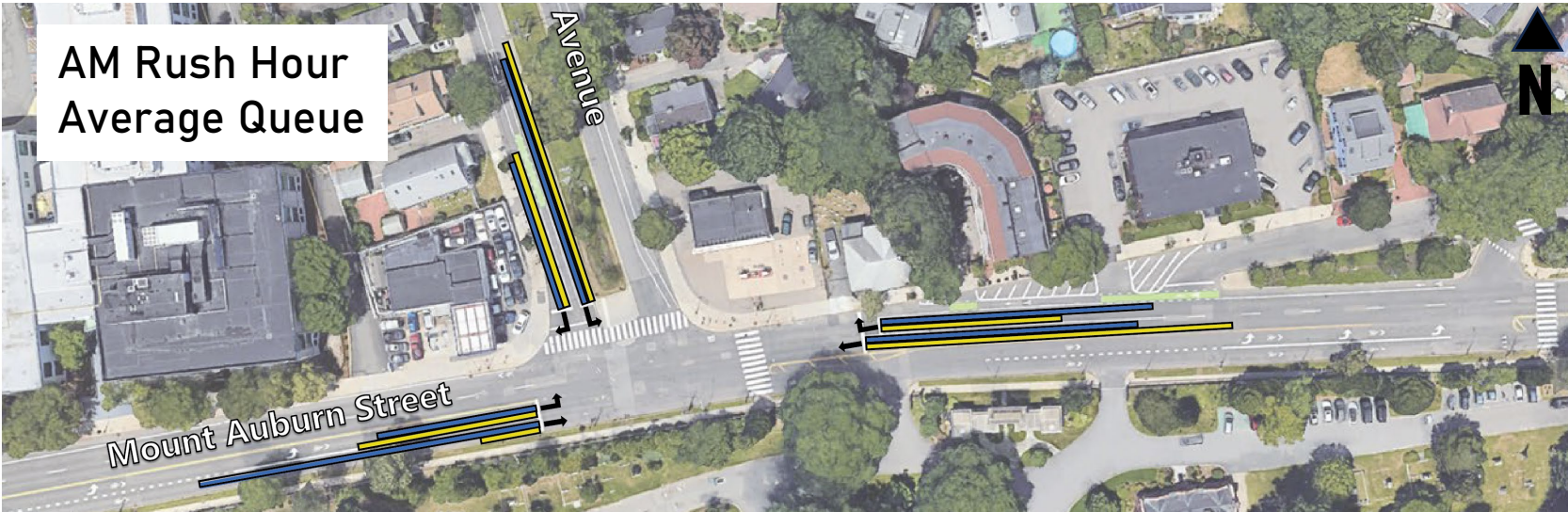
Mt Auburn St at Aberdeen Ave



*Crosswalk comes on when button is pressed

Changes to Traffic Queues

Mt. Auburn/Aberdeen Intersection



Analysis shows that average traffic queues will:

- Get shorter in some lanes
- Increase by one to four vehicles in others

Changes to Travel Times for Drivers

Mt. Auburn/Aberdeen Intersection

Drivers turning from Mt. Auburn Street onto Aberdeen Avenue:

- Wait for a green arrow
- 1-2 minutes of extra time waiting at the signal

Drivers staying on Mt. Auburn Street:

- Improved travel time overall
- Travel more efficiently by separating turning traffic and through traffic
- Changes to signal timing offset the removal of the second westbound travel lane

Drivers approaching Mt. Auburn Street from Aberdeen Avenue:

- Minor increase in travel time (Up to a minute during the evening rush hour)
- Few impacts during other hours

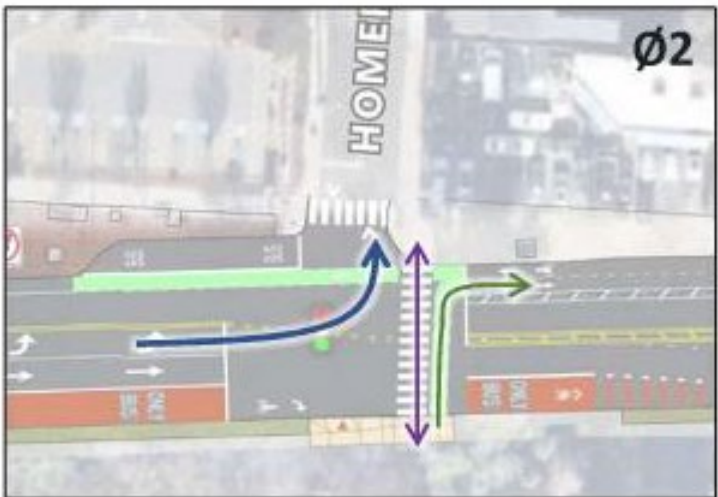
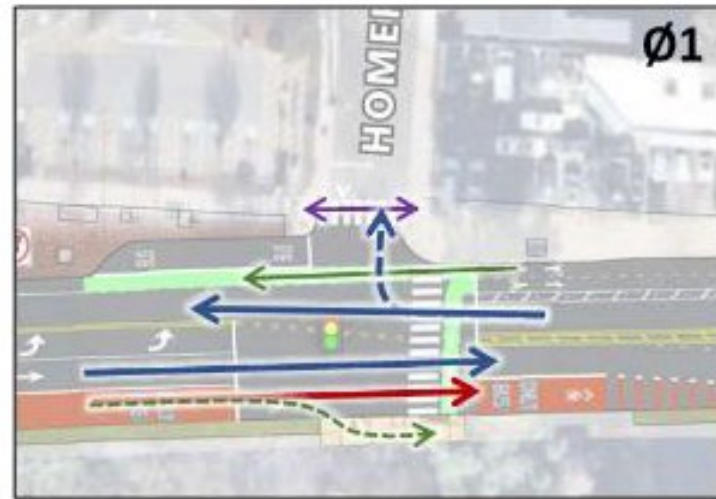
Improvements to Travel Times for Bus Riders





Mt. Auburn St from Belmont Street to Brattle Street

- Eastbound bus travel times on Mt Auburn Street will improve:
 - 30 seconds faster in the morning
 - About 1 minute faster in the evening
- Most time savings come from providing a dedicated lane for buses at Homer Avenue
- Buses and general traffic on Mt Auburn Street will gain small amounts of time with more efficient signal timing at Aberdeen Avenue
- No changes in trip times for westbound bus riders

Signal Timing Diagram

Mt. Auburn Street at Homer Avenue



-  Bike
-  Ped
-  Vehicle (including bus WB)
-  Bus

LPI: Leading Pedestrian (and bike) Interval

Next Steps

Project Schedule

Tonight: Community Meeting

- Give us your thoughts and feedback on the design

September 12, 2023: Project Open House

- Additional design feedback opportunity
- We'll provide a more detailed installation schedule

Fall 2023: Implementation

- Installation of signal foundations
- Installation of bicycle jughandle across from Homer Ave
- Installation of new pavement markings and flex-posts

Questions + Comments

- We will take comments in the order hands are raised
 - If calling in, dial *9 to raise your hand / *6 to unmute
- Additional questions can be asked using the Q+A function
- Approximately every 15 minutes, we will provide answers to questions
- The meeting is scheduled to end at 8:00 p.m.

www.cambridgema.gov/MtAuburn-Aberdeen

Contact Information

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