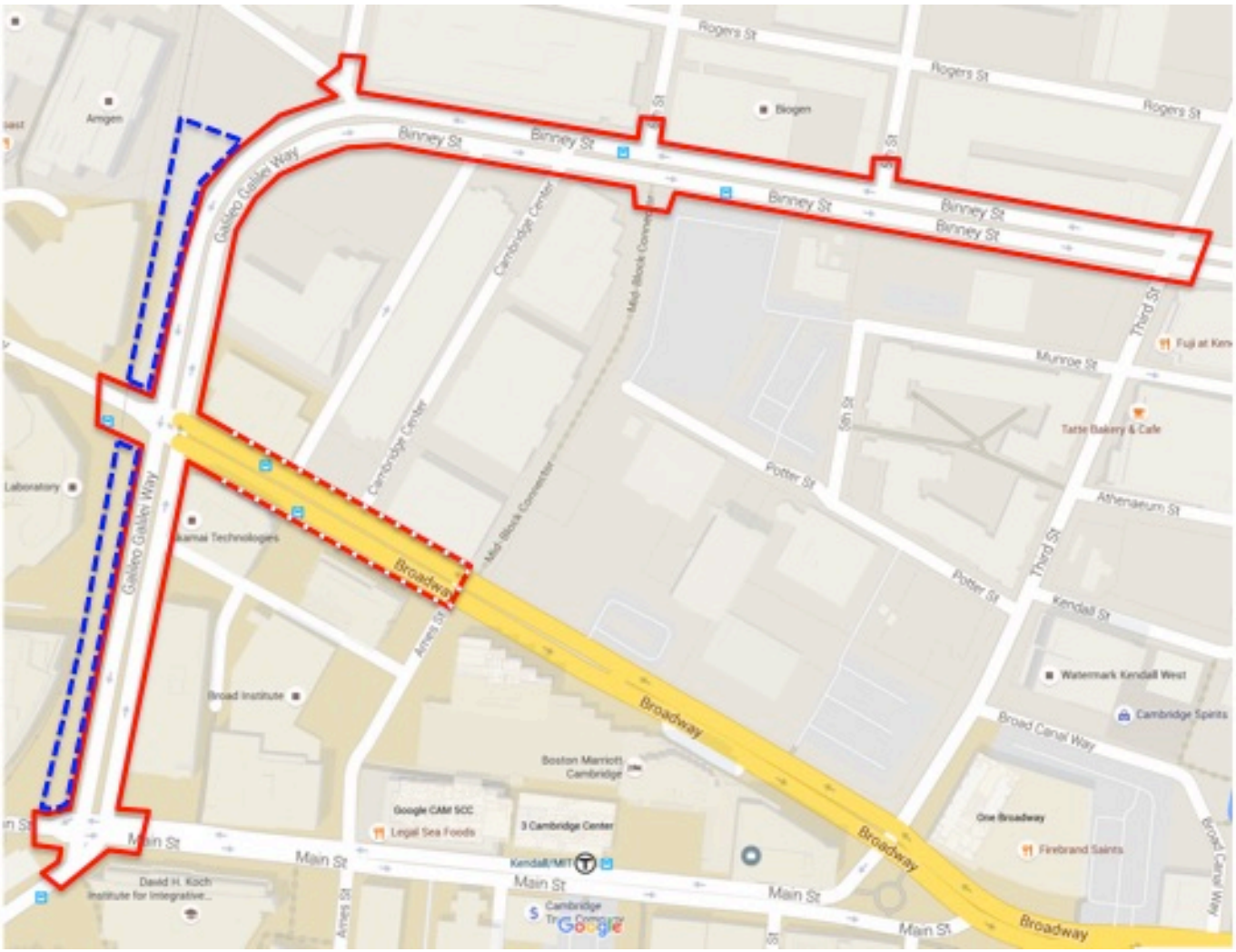

CAMBRIDGE
REDEVELOPMENT
AUTHORITY
NO STOPPING
Kendall Square
Streetscape Redesign
alta
PLANNING + DESIGN
McMAHON
TRANSPORTATION ENGINEERS & PLANNERS
HDR

Scope Map



Project Scope Area

Add / Alt #1

CRA and City property for possible integration of bicycle and pedestrian facilities (Grand Junction Path, sidewalk, Binney/ Galileo cycle track)

Project Team

- Alta Planning + Design
  - Prime Consultant
  - Bicycle and Pedestrian Facility Design
  - Landscape Architecture
- HDR Engineering, Inc.
  - Civil Engineering
- McMahon and Associates
  - Traffic Engineering

Project Goals and Objectives

- Enhance connectivity of existing bike facilities
- Facilitate bus travel
- Improve pedestrian and bicycle facilities at intersections
- Integrated streetscapes and proposed pedestrian/bike facilities
- Preserve street trees
- Accommodate new development
- Manage traffic access and cut-through traffic
- Integrate designs with railroad crossing at Broadway
- Reflect environmental sustainability goals
- Accommodate universal design principles

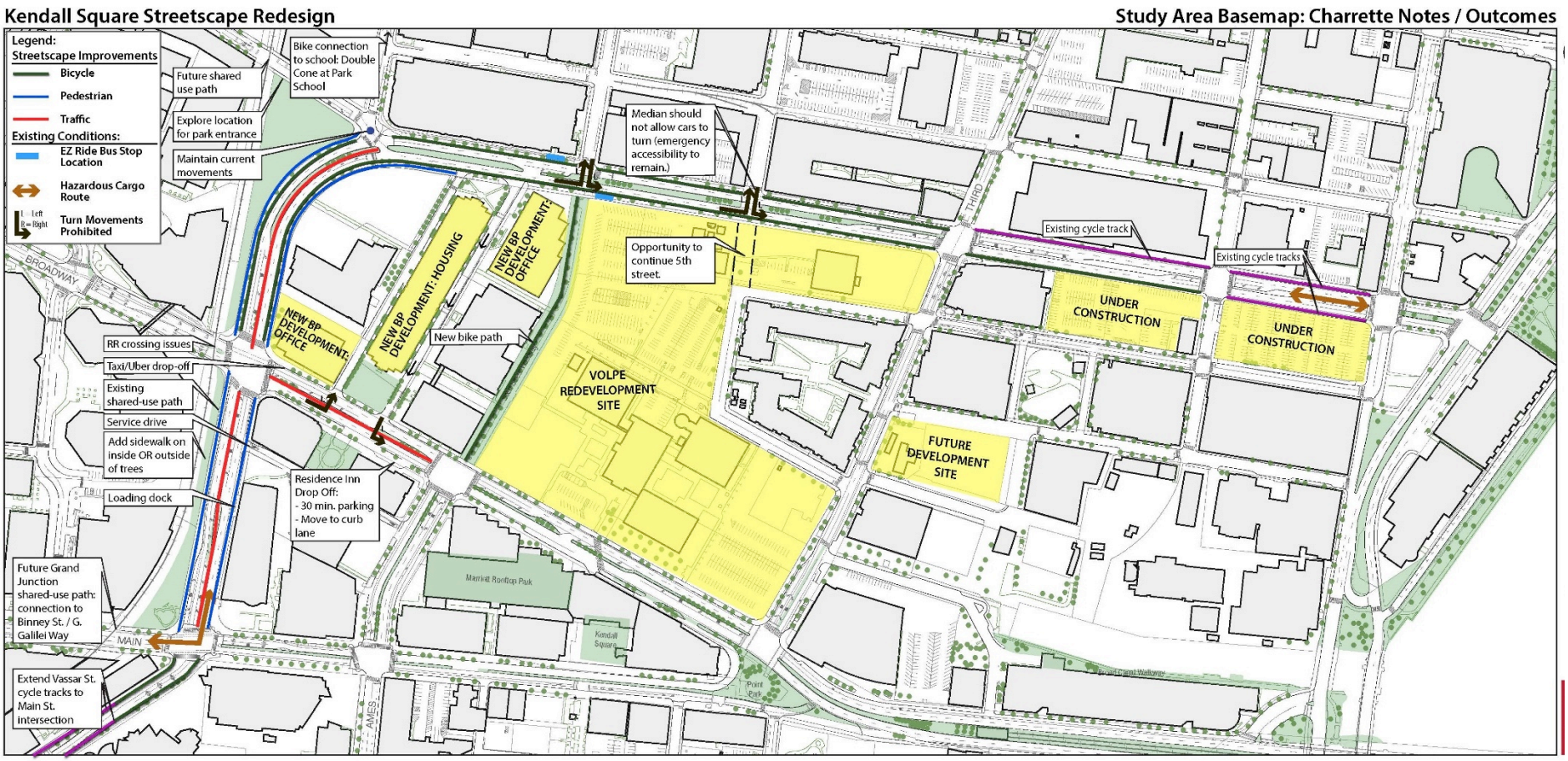
Project Timeline

- 10% Design: Fall - Winter 2016
  - Conduct traffic analysis
  - Prepare preliminary design concepts
  - Select 3 alternatives
  - Prepare evaluation criteria
  - Select preferred alternative
  - Advance to 10% design level
- 25% Design: Winter – Spring 2017
  - Prepare 25% level design documents
  - Prepare cost estimate
  - Prepare project phasing recommendations

Work Completed To Date

- Advanced traffic analysis for “existing” conditions, baseline analysis
- Initiated cross section studies of streets to understand options for configurations
- Initiated studies of protected intersections
- Developed potential evaluation criteria
- Held meetings with:
  - Binney Street Park designers (Stoss)
  - EZ Ride management
  - Boston Properties
  - Cambridge Bicycle Committee
  - BioMed Realty

Site Analysis

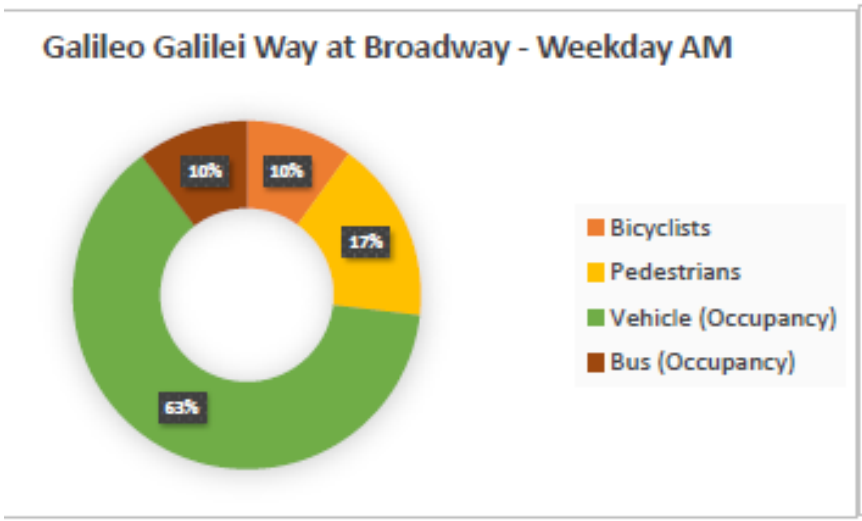


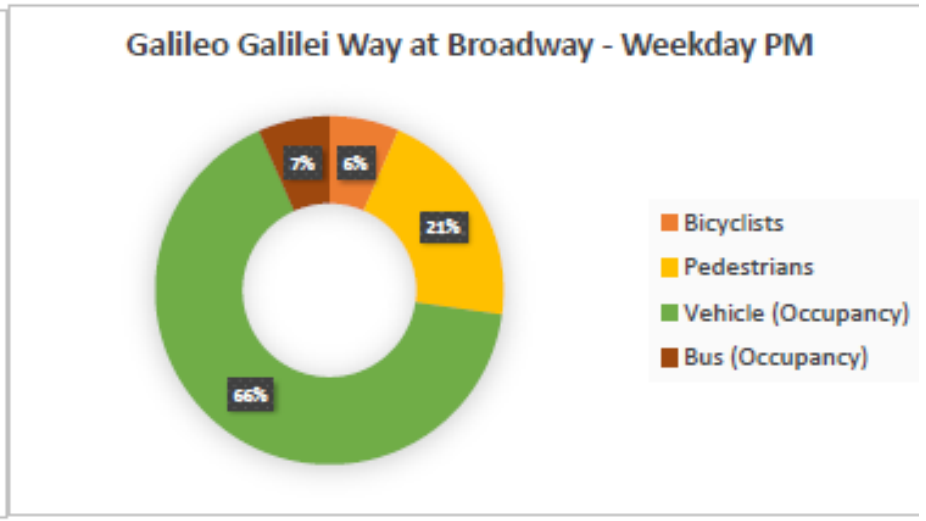
Transportation Analysis Completed

- Synchro capacity analysis
  - 2016 Theoretical "Existing" Volumes (Longfellow open)
  - 2026 No Build
    - Planned projects
    - 0.5% annual background growth
- Pedestrian and Bicycle Delay
- Summary of corridor/intersections by mode
- Analysis of bus frequency and passenger loads

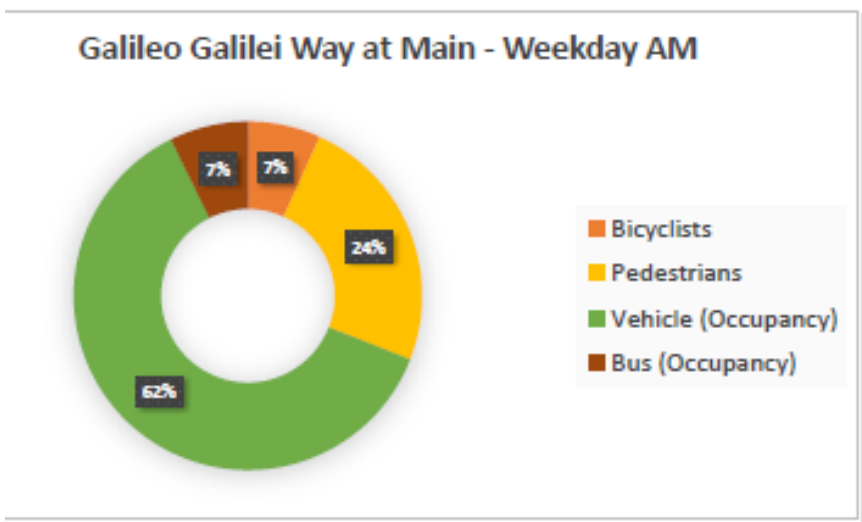
Volumes Charts

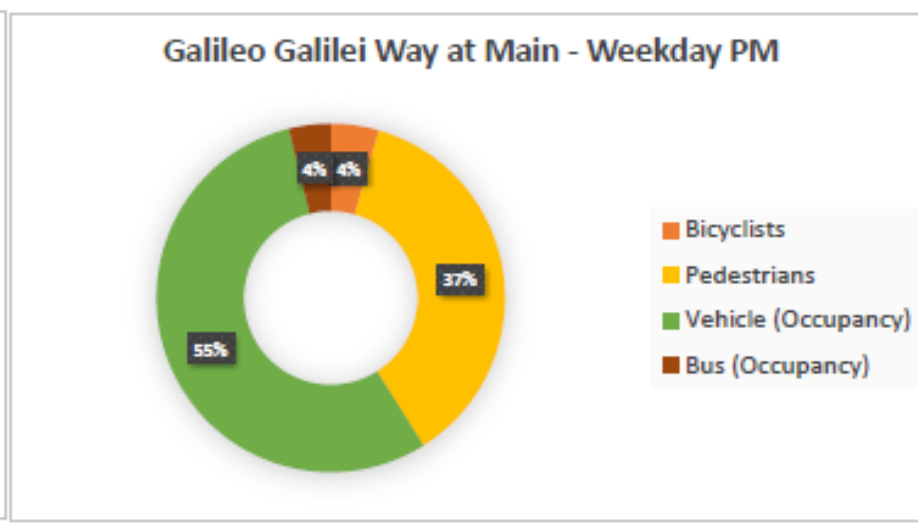
Broadway & Galileo: The Transit Intersection





Main Street & Galileo & Vassar: The Pedestrian Intersection





Preliminary Intersection Options

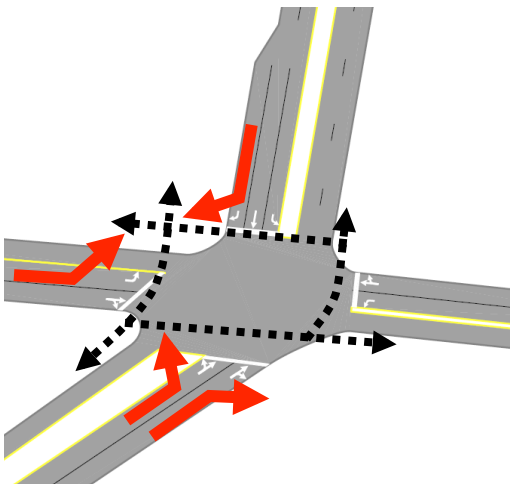
Assumptions:

- 2016 Theoretical Existing Volumes
  - Longfellow Bridge open
- Stay within existing right-of-way for vehicle lanes
- Maintain existing vehicle-pedestrian time separation at Broadway
- Determine ideal intersection configurations individually and tie them together during future evaluation

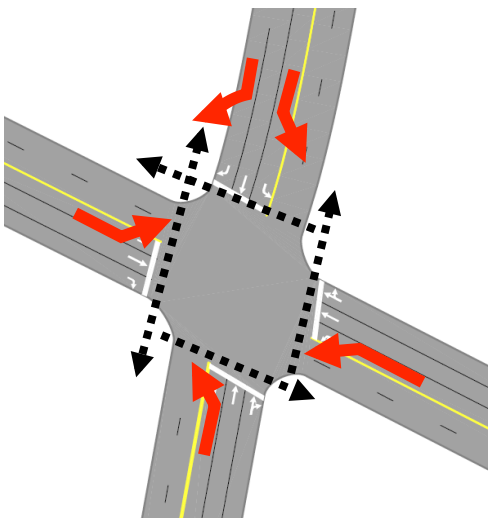
MassDOT Recommended Time-Separated Bicycle Movements

2016 Theoretical Volumes

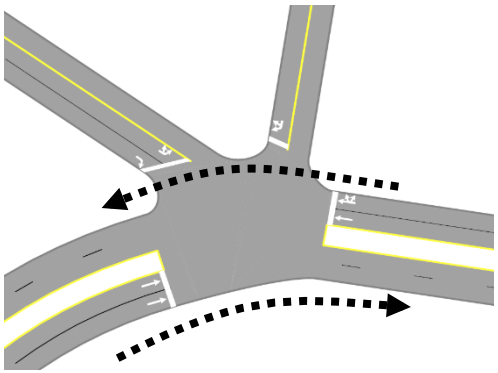
GG Way at Main/Vassar



GG Way at Broadway



GG Way at Fulkerson



LEGEND

Time Separated Movement

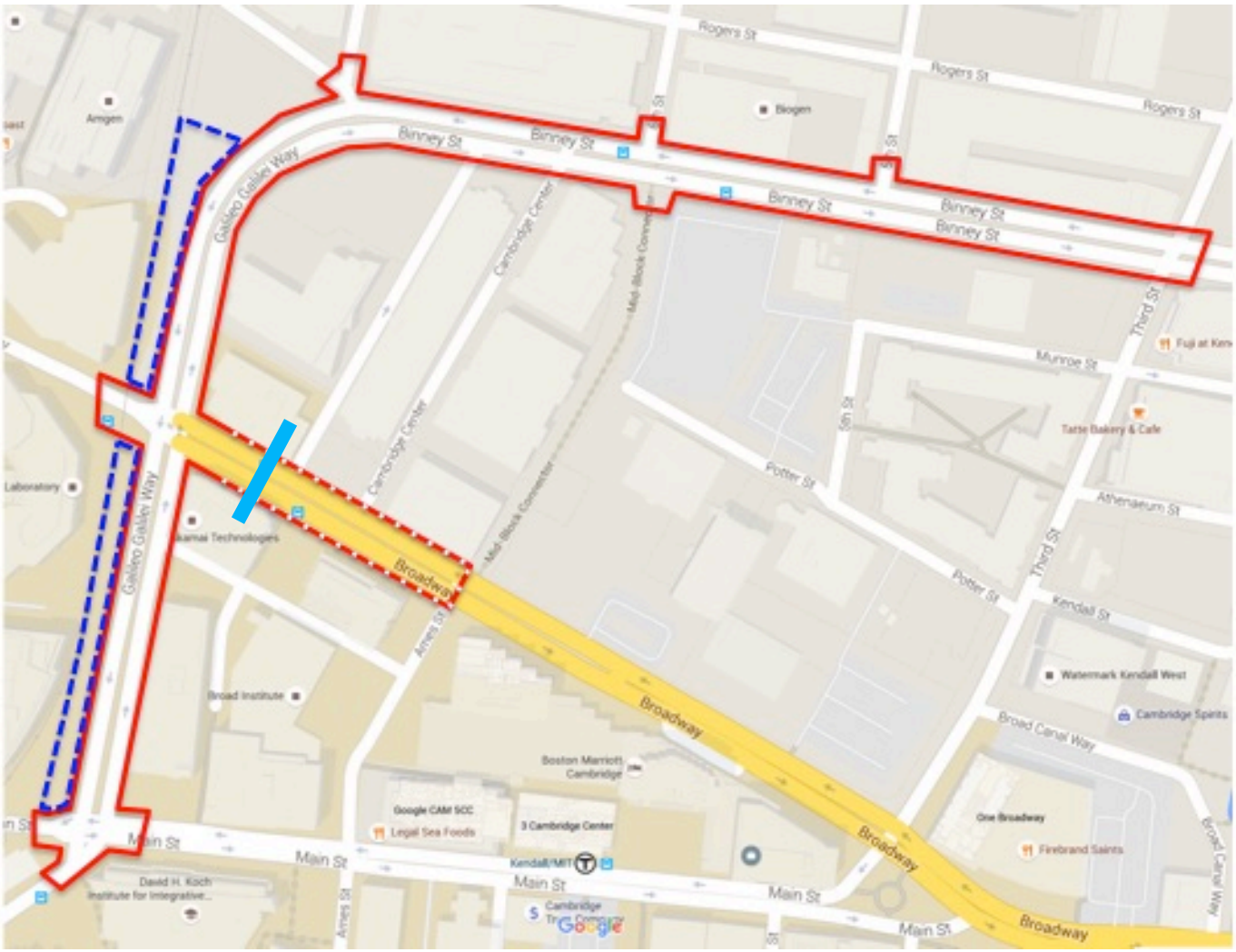
Bicycle Facility

Separated Bike Lane Operation	Motor Vehicles per Hour Turning across SBL		
	Right Turn	Left Turn across One Lane	Left Turn across Two Lanes
One-way	150	100	50
Two-way	100	50	0

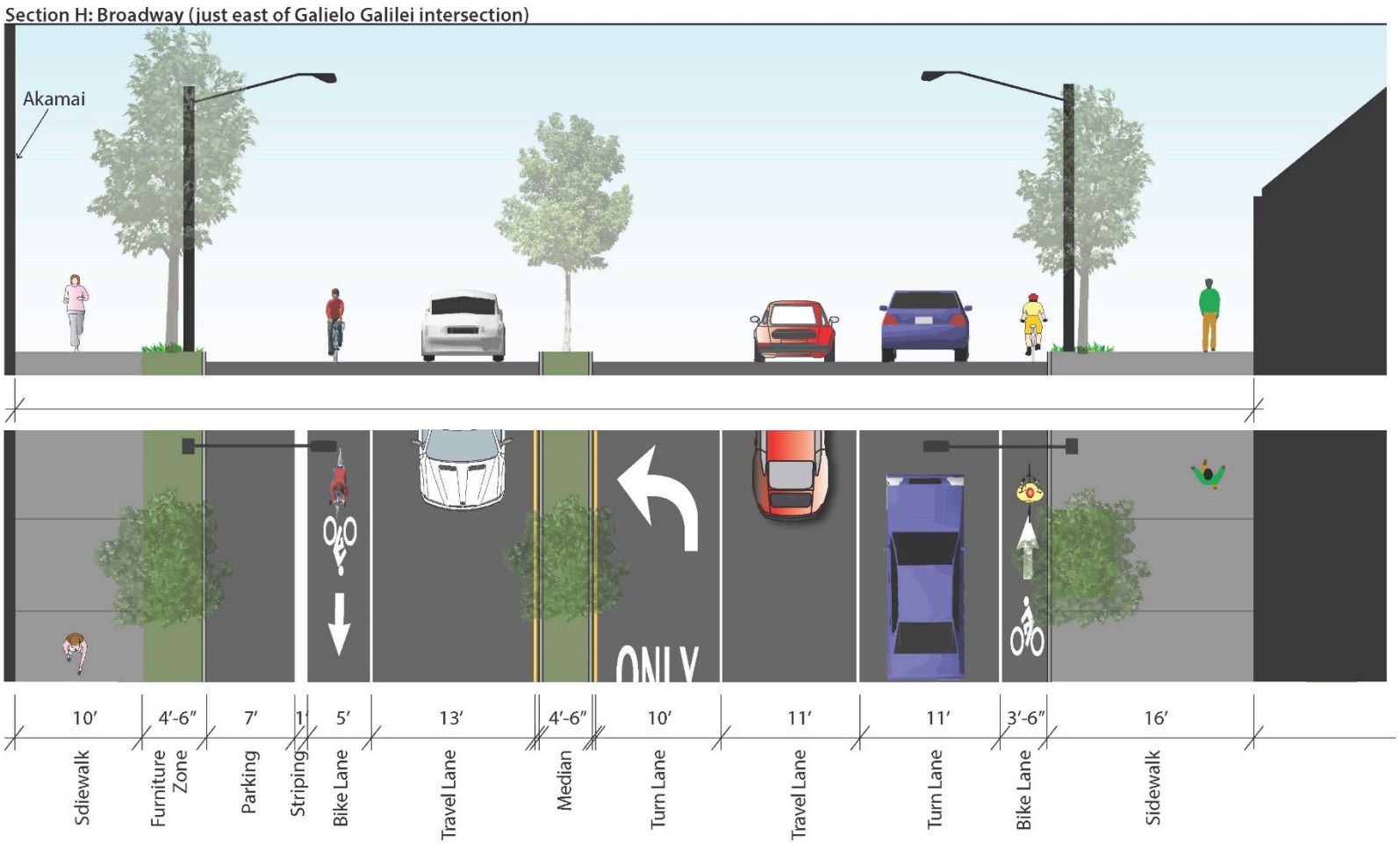
EXHIBIT 6A: Considerations for Time-separated Bicycle Movements

Source: MassDOT Separated Bike Lane Planning & Design Guide

Scope Map


Rogers St
Binney St
Galileo Galilei Way
Cambridge Center
Mid-Block Connector
Third St
Munroe St
Potter St
Athenaeum St
Kendall St
Broad Canal Way
Broadway
Ames St
Main St
Broad Institute
Boston Marriott Cambridge
3 Cambridge Center
Kendall/MIT
Google
Project Scope Area
Add / Alt #1
CRA and City property for possible integration of bicycle and pedestrian facilities (Grand Junction Path, sidewalk, Binney/ Galileo cycle track)

Existing Section – Broadway



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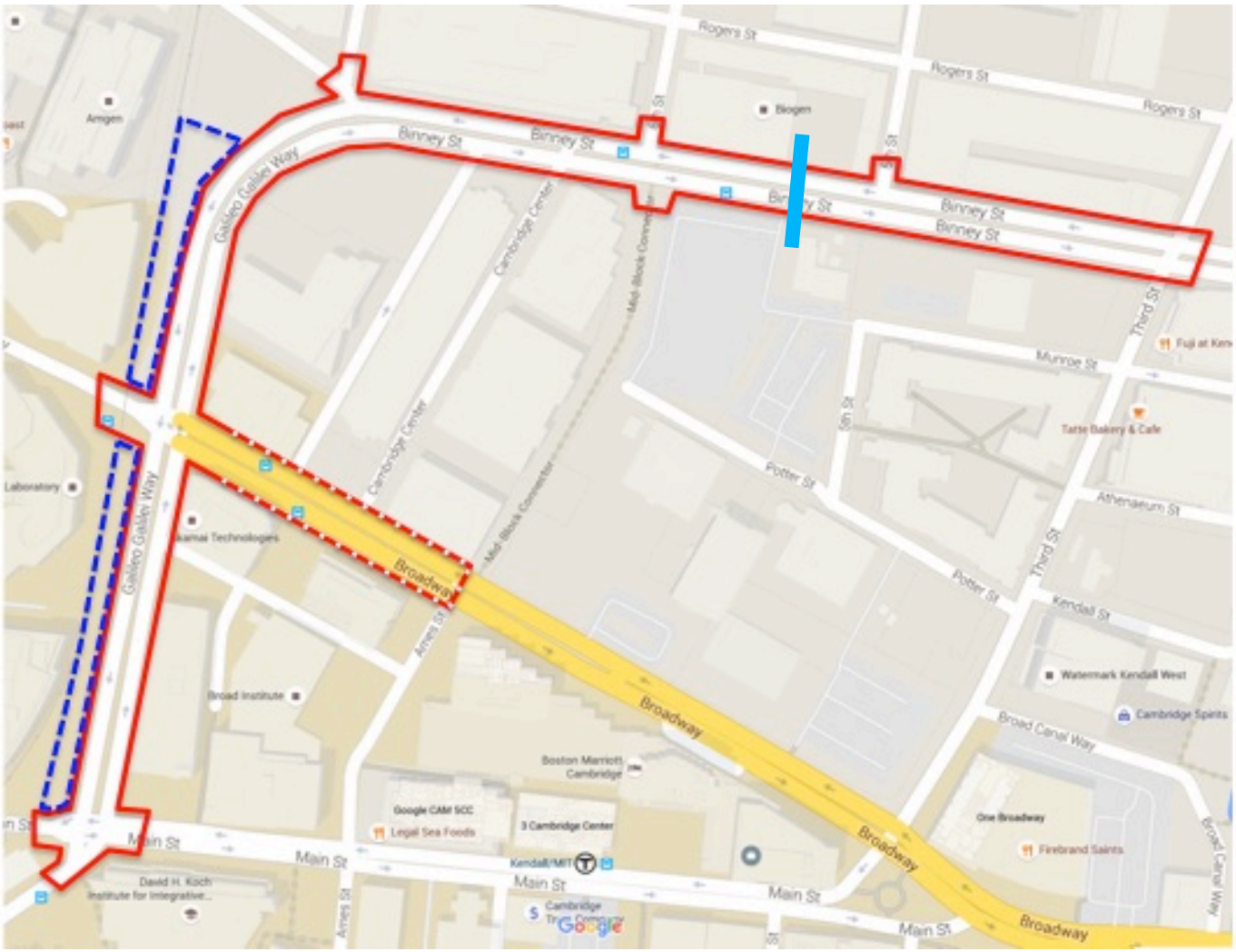

Project Scope Area

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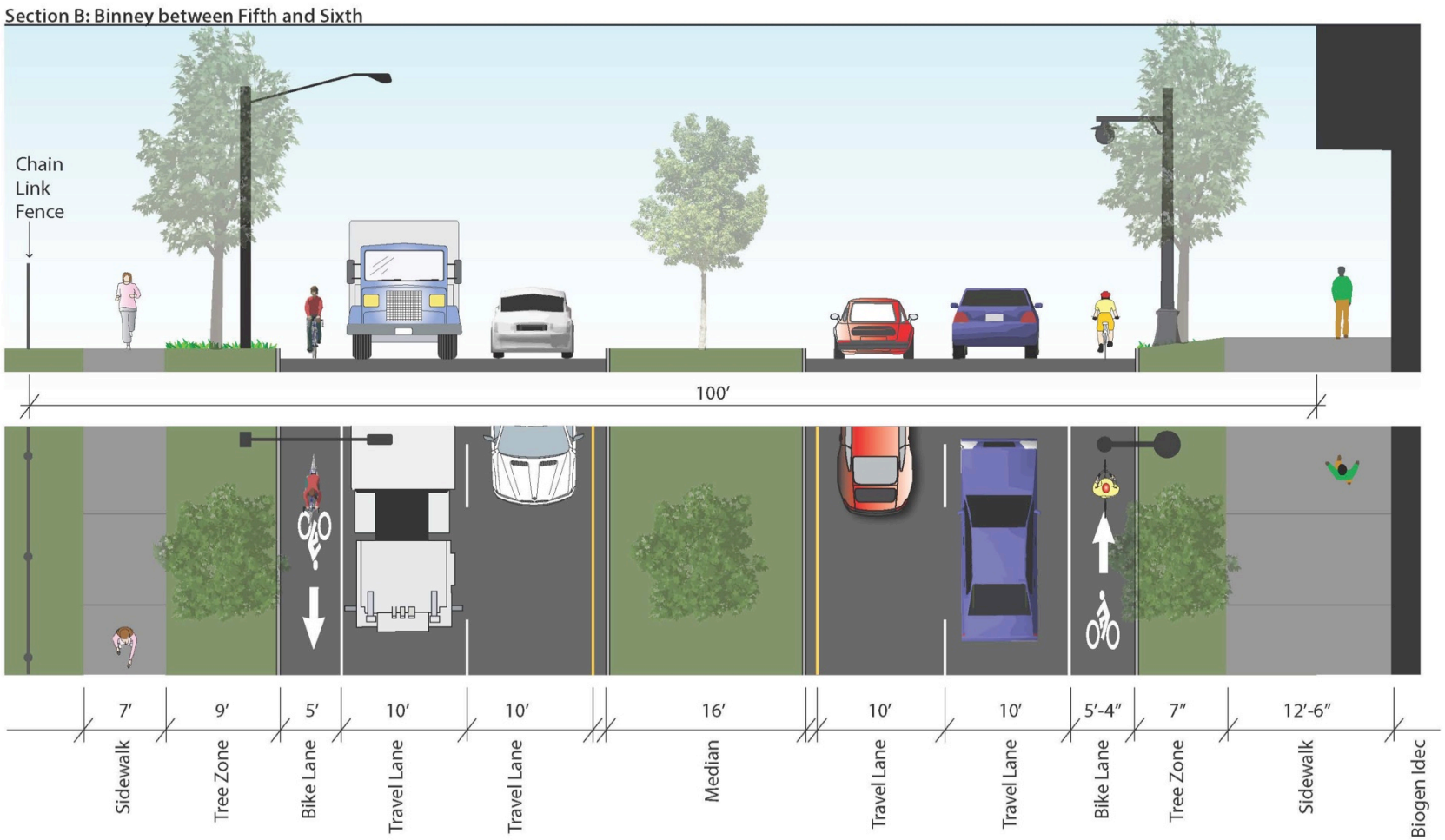
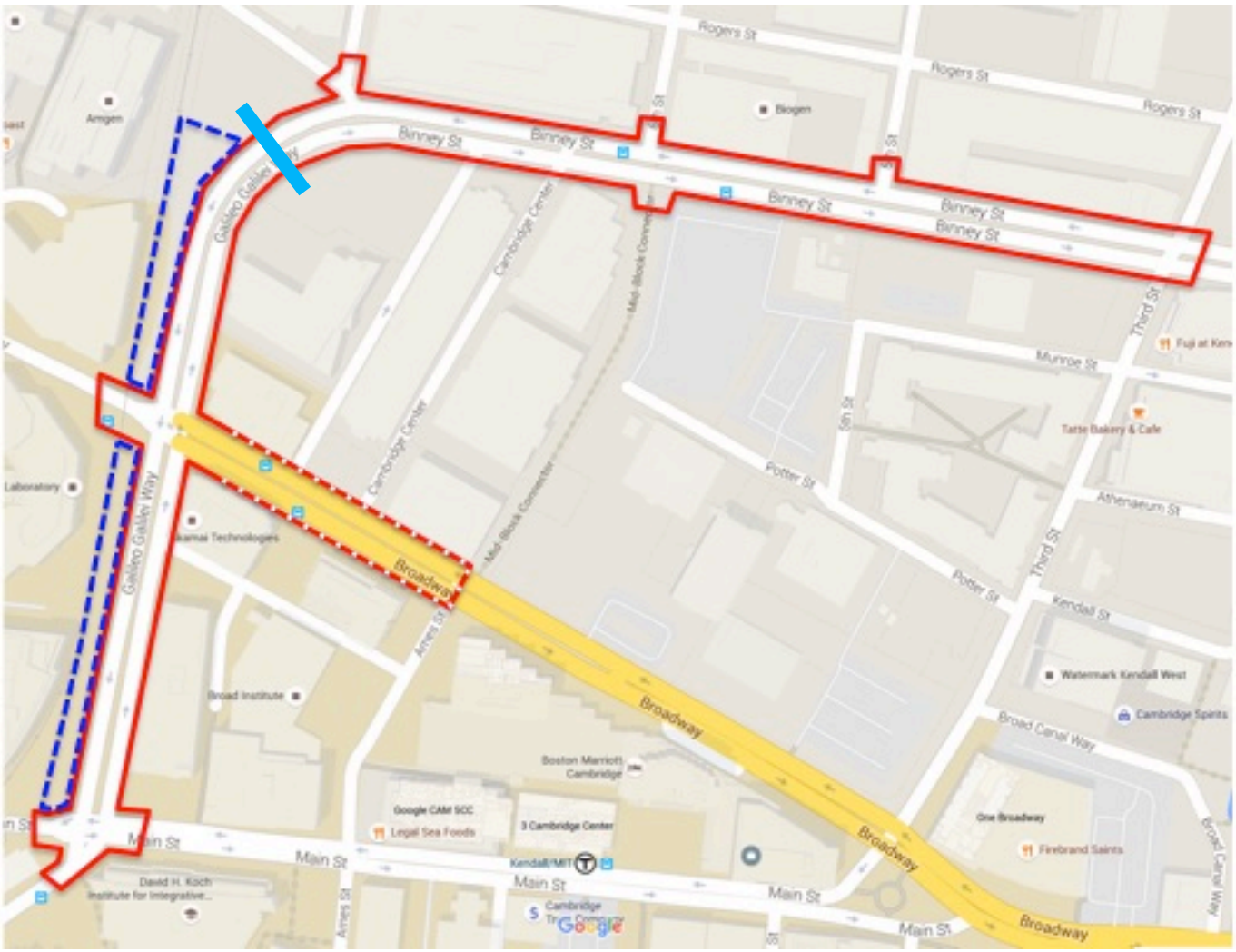
Existing Sections – Binney Street



Scope Map

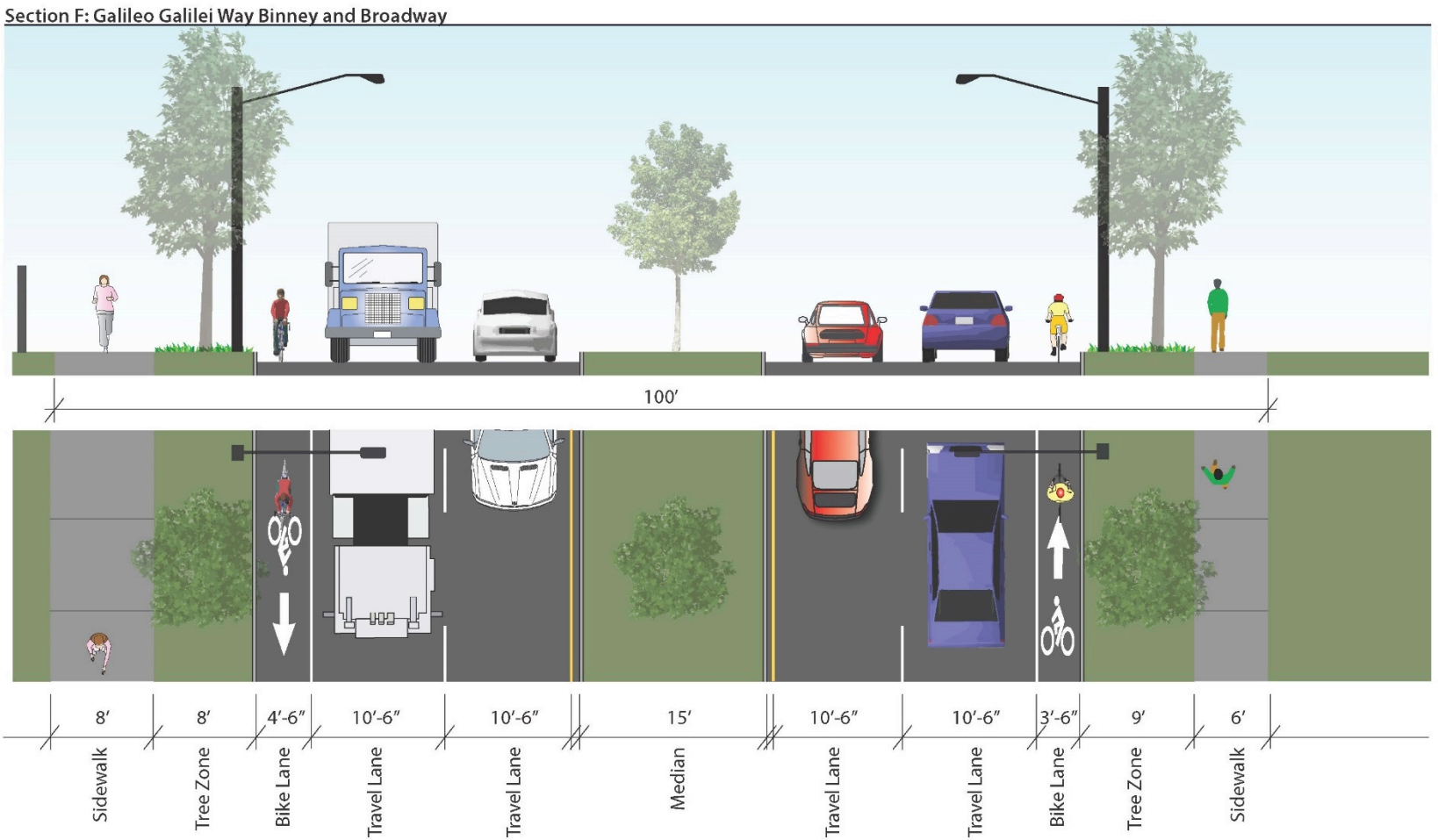


Project Scope Area

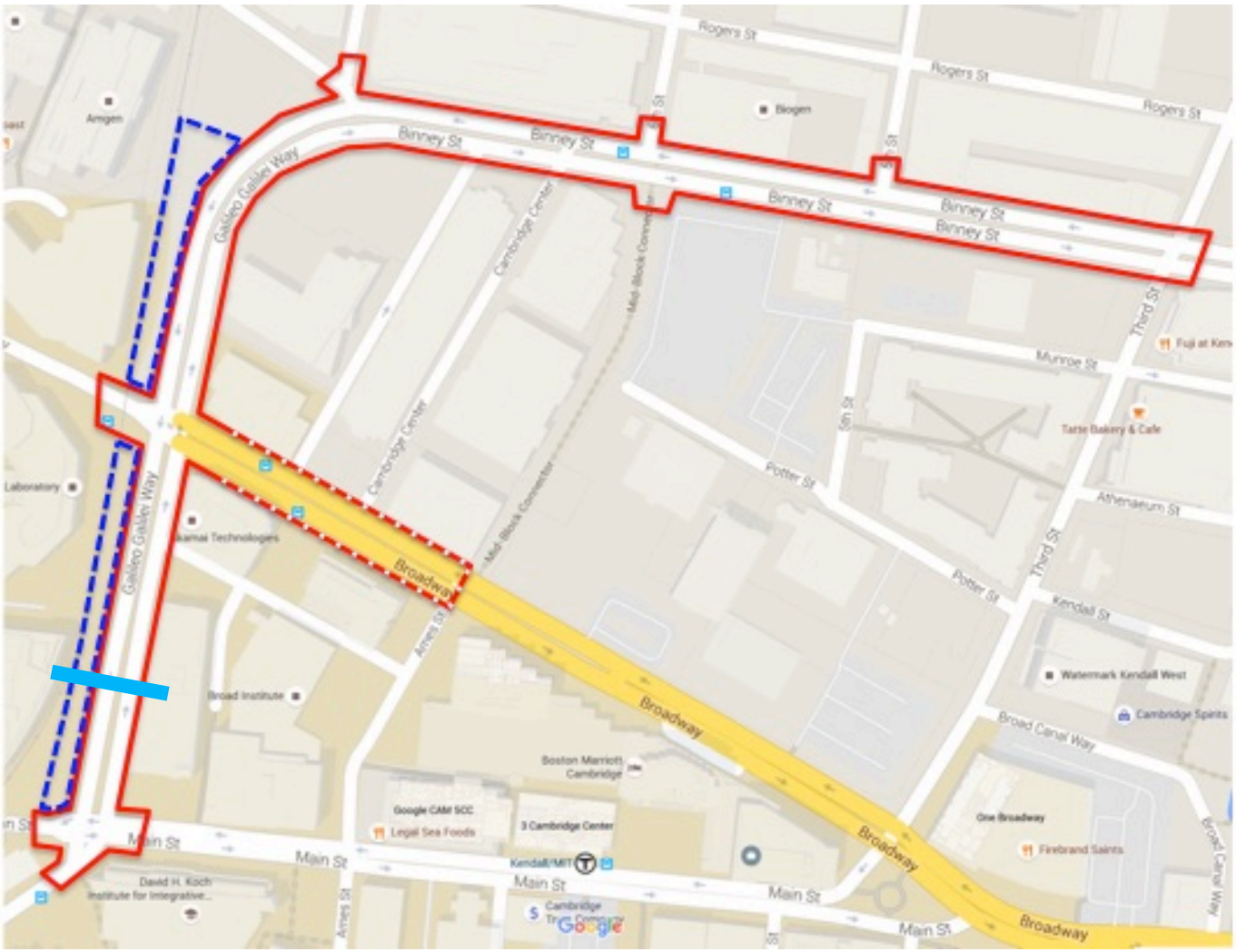
Add / Alt #1

CRA and City property for possible integration of bicycle and pedestrian facilities (Grand Junction Path, sidewalk, Binney/ Galileo cycle track)

Existing Sections – Galileo Galilei Way



Scope Map


Rogers St
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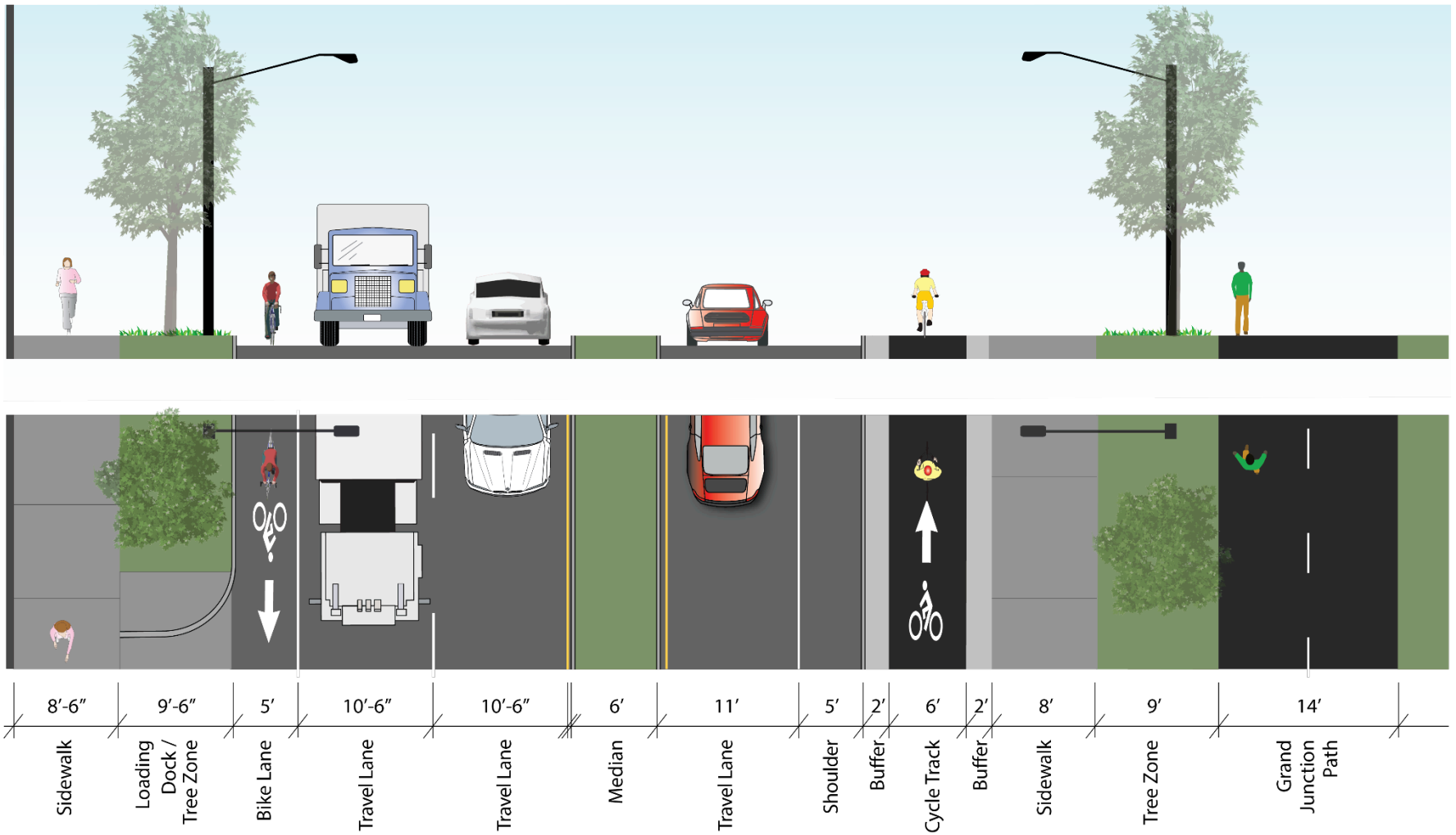
CRA and City property for possible integration of bicycle and pedestrian facilities (Grand Junction Path, sidewalk, Binney/ Galileo cycle track)

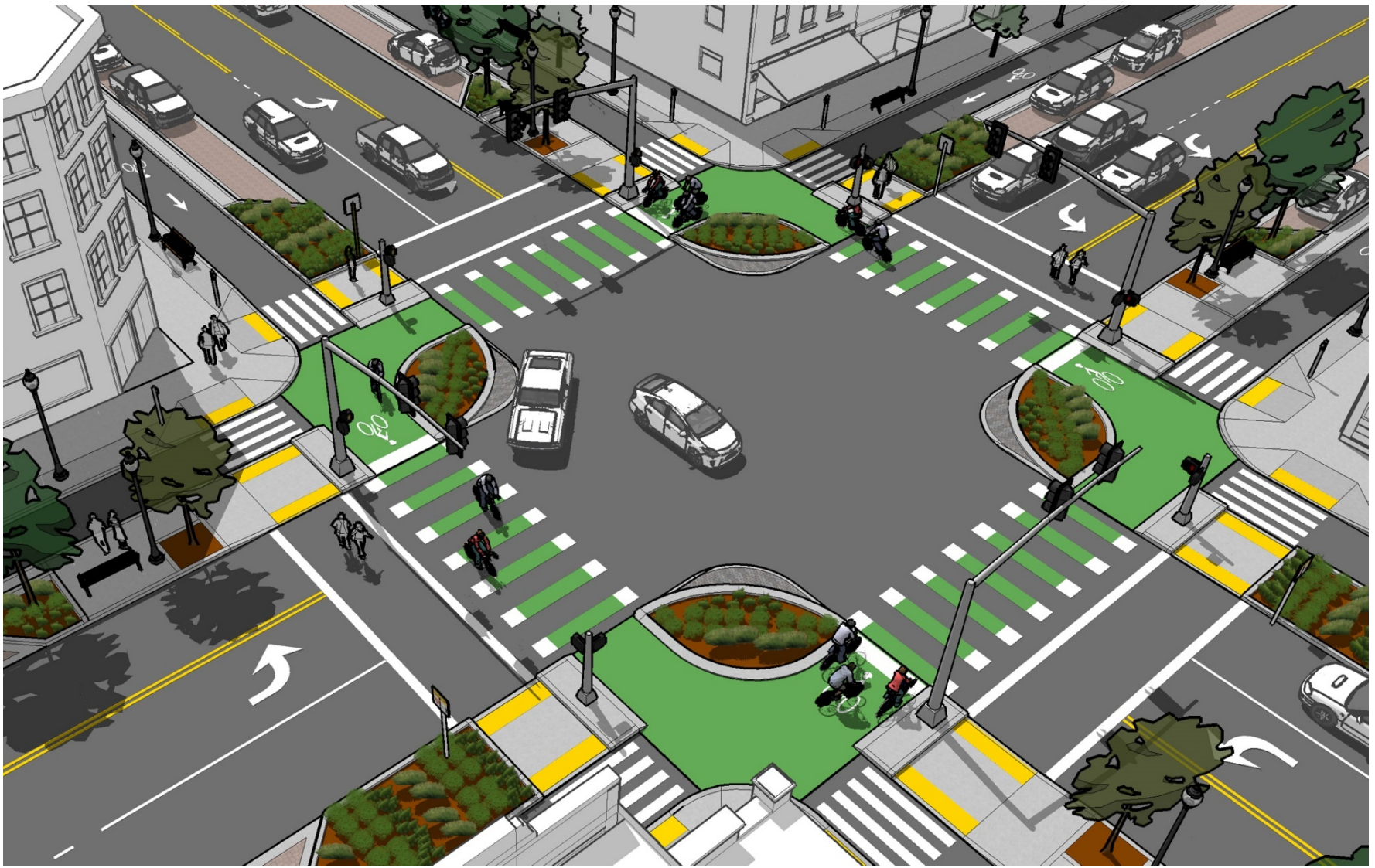
Galileo Galilei Way – Possible Alternative: Separate SB Cycle Track, Sidewalk



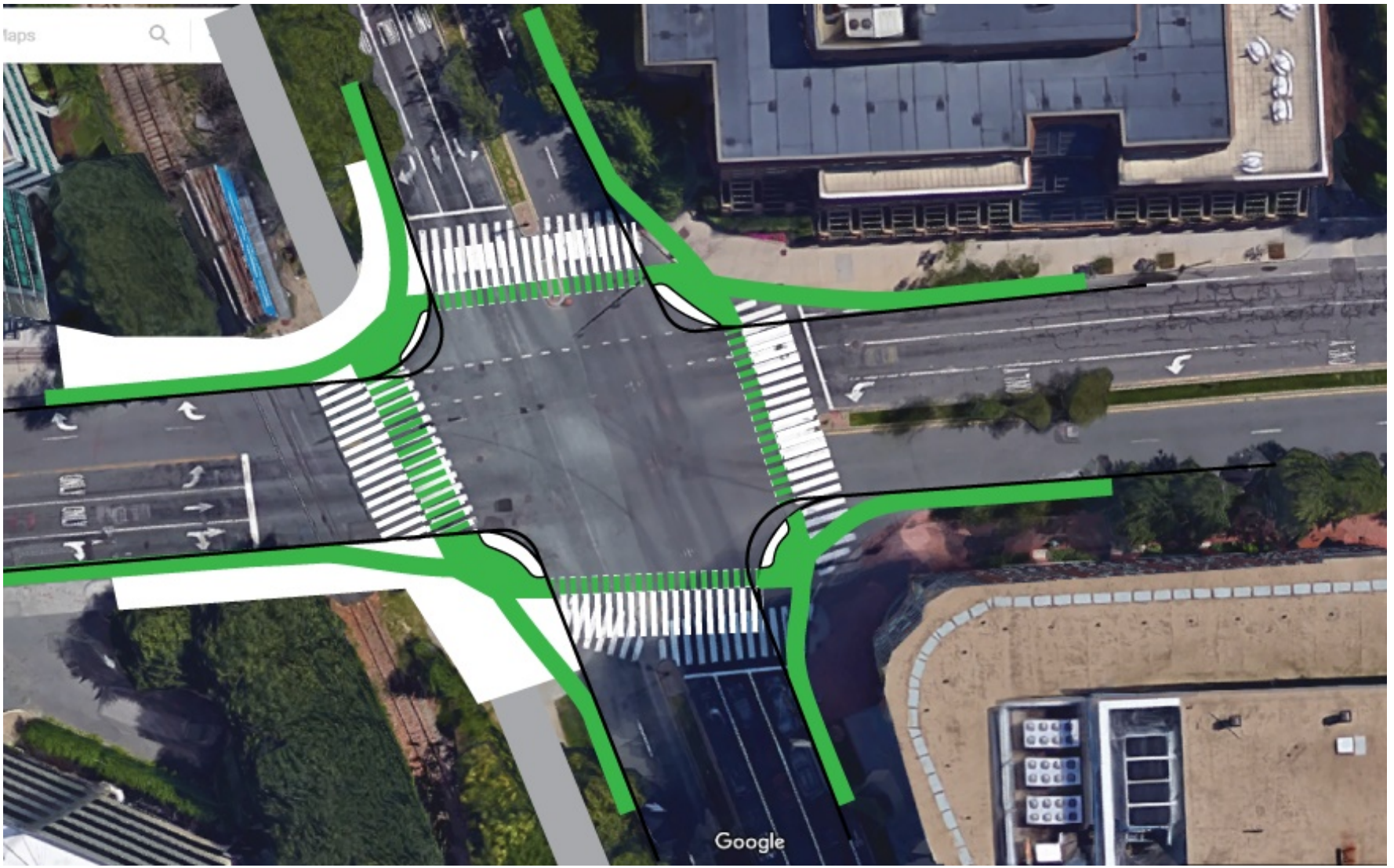
Note: this image is drawn incorrectly with a bike lane in the northbound direction, it should be a raised cycle track in the northbound direction (left side of the image)

Protected Intersections

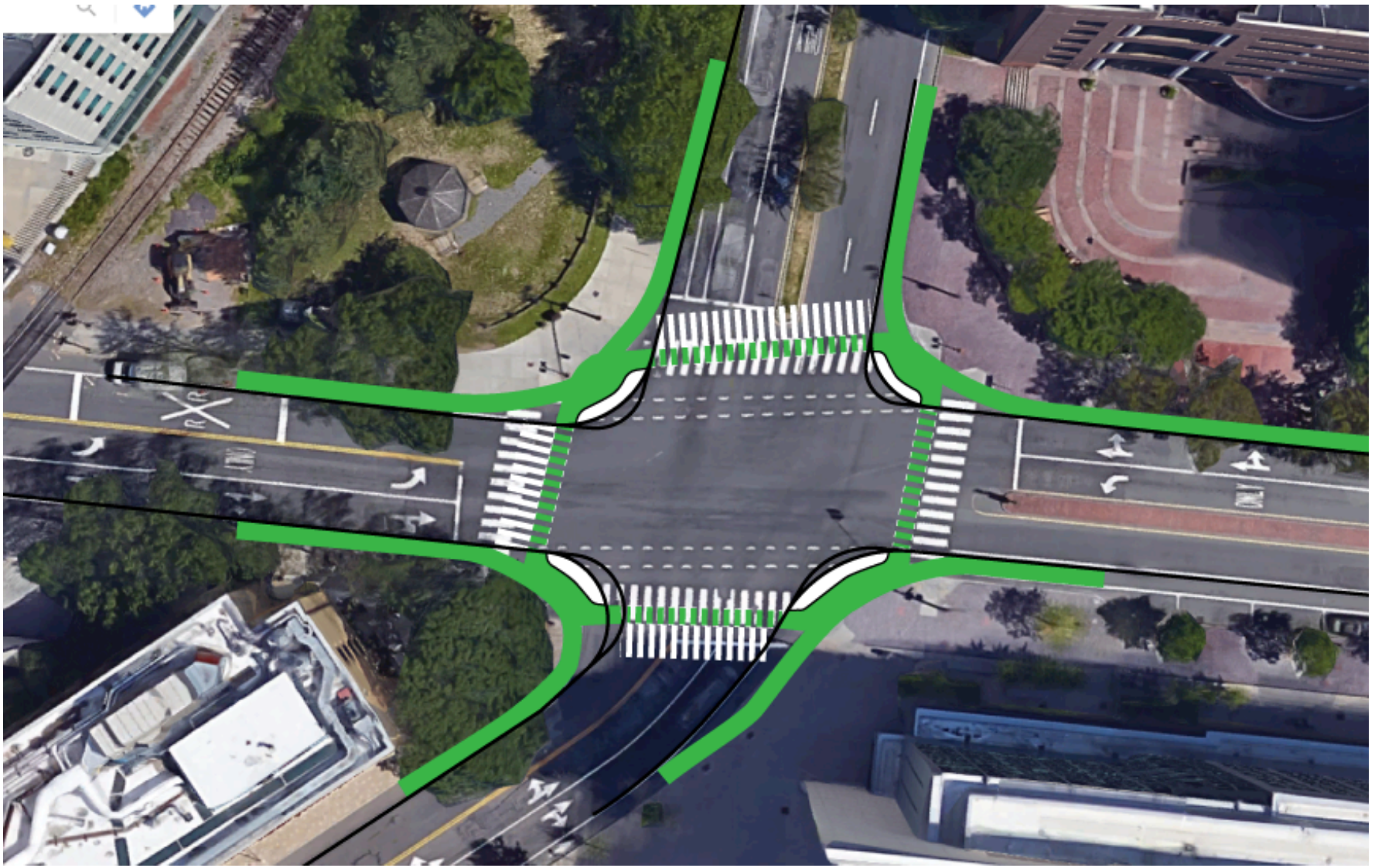
Protected Intersections



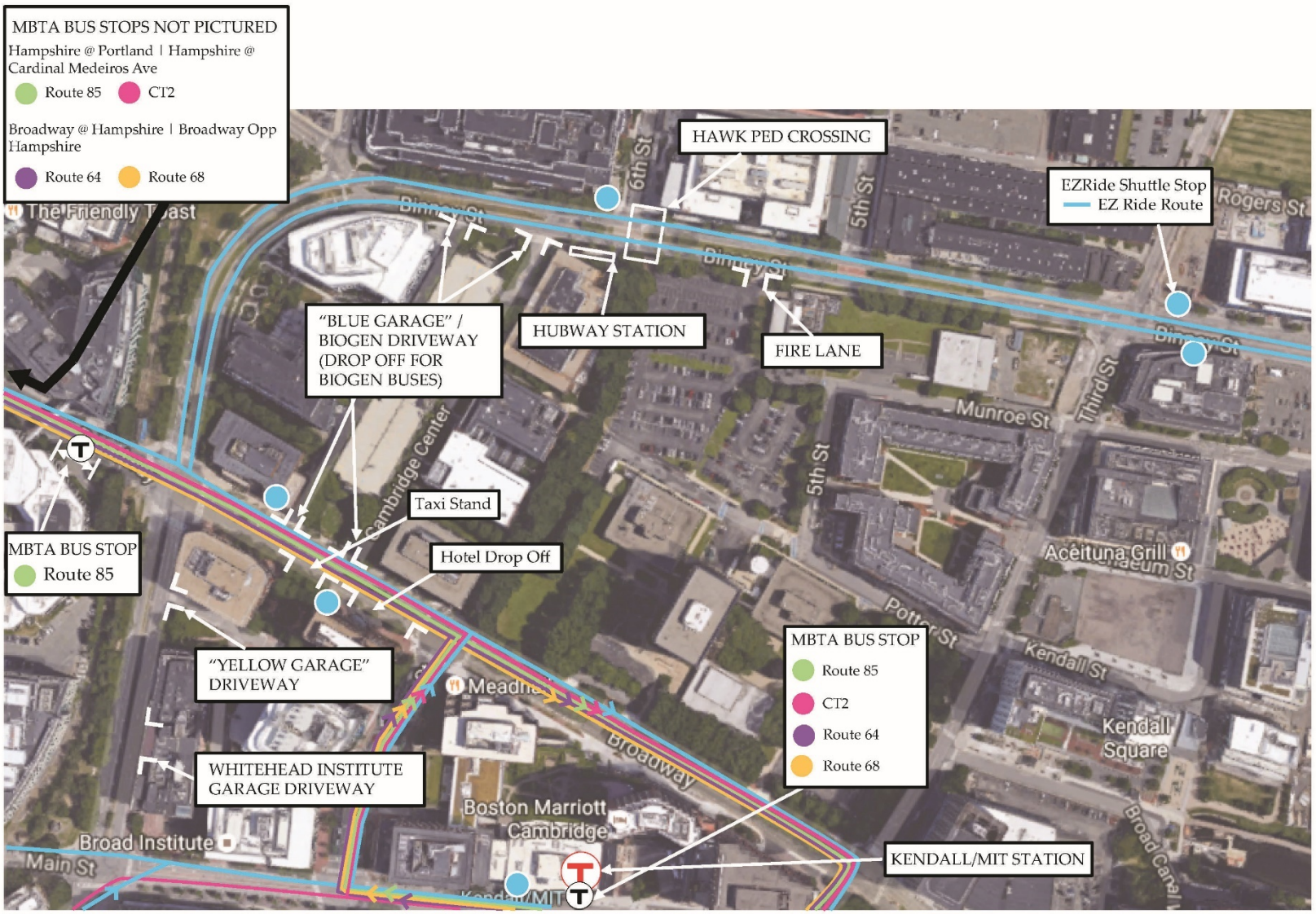
Protected Intersection Concept – Broadway and Galileo Galilei Way



Protected Intersection Concept – Main Street and Galileo Galilei Way



Existing Transit and Curb Uses



Bus Passengers and Frequencies

Broadway & Galileo

Location: Galileo Galilei @ Broadway	AM Peak [8:15 - 9:15 AM]			PM Peak [5:00 - 6:00 PM]		
	Eastbound on Broadway*	Westbound on Broadway	Total	Eastbound on Broadway*	Westbound on Broadway	Total
Number of passengers*	361	81	**441**	67	267	**334**
Number of buses	19	20	**39**	15	14	**29**
Frequency by Route						
85	2	2	**4**	1	2	3
CT2	3	4	**7**	3	2	5
64	3	3	**6**	2	1	3
68	2	2	**4**	2	1	3
EZRide	9	9	**18**	7	8	15

Main Street & Galileo & Vassar

Location: Main St @ Vassar	AM Peak [8:15 - 9:15 AM]			PM Peak [5:00 - 6:00 PM]		
	Westbound on Main	Northbound on Vassar	Total	Westbound on Main	Northbound on Vassar*	Total
Number of passengers	137	153	**291**	57	88	**144**
Number of buses	11	13	**24**	3	10	**13**
Frequency by Route						
CT2	3	4	**7**	3	2	**5**
EZRide	8	9	**17**	0	8	**8**

Data Source: MBTA Composite Data (Fall 2015); Charles River TMA EZRide Shuttle Ridership Data (Fall 2014)

- **Morning Peak:** More buses carrying more passengers travel through both intersections
- **Intersection bus volumes:** The Broadway at Galileo intersection has more bus activity than the Main Street at Vassar Street intersection.

Bus Stop Design with Bicycle Lanes

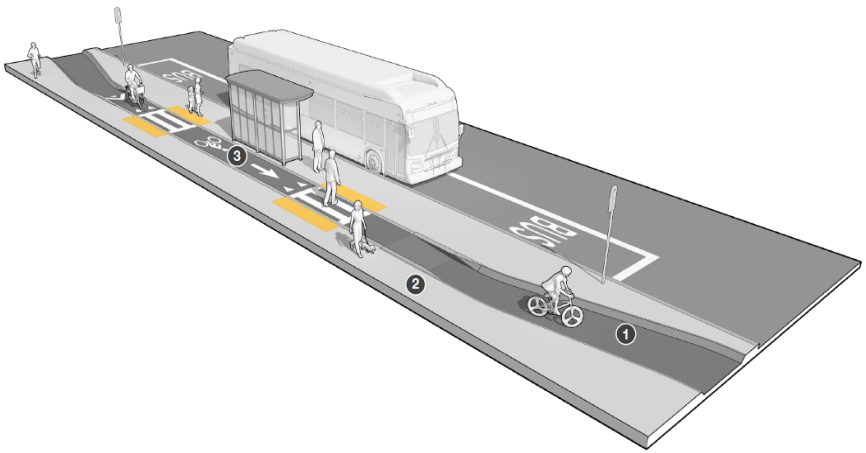


Figure 1: Unconstrained Bus Stop with adjacent Separated Bike Lane (MassDOT)

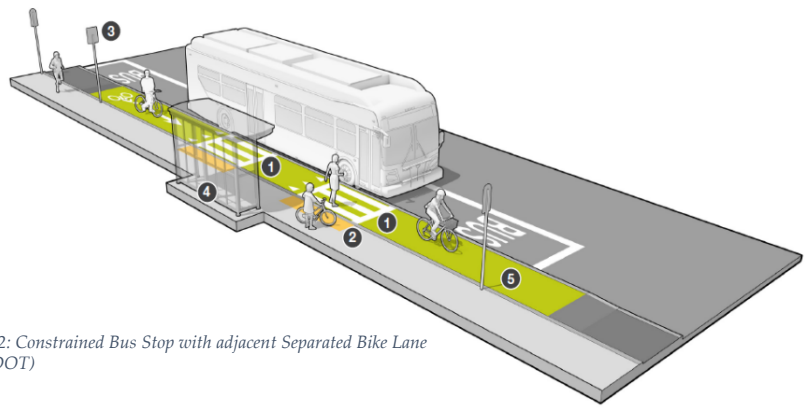


Figure 2: Constrained Bus Stop with adjacent Separated Bike Lane (MassDOT)

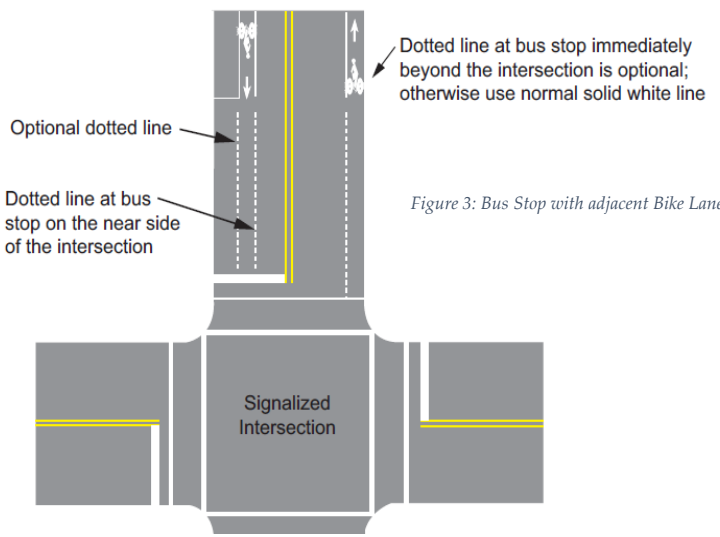
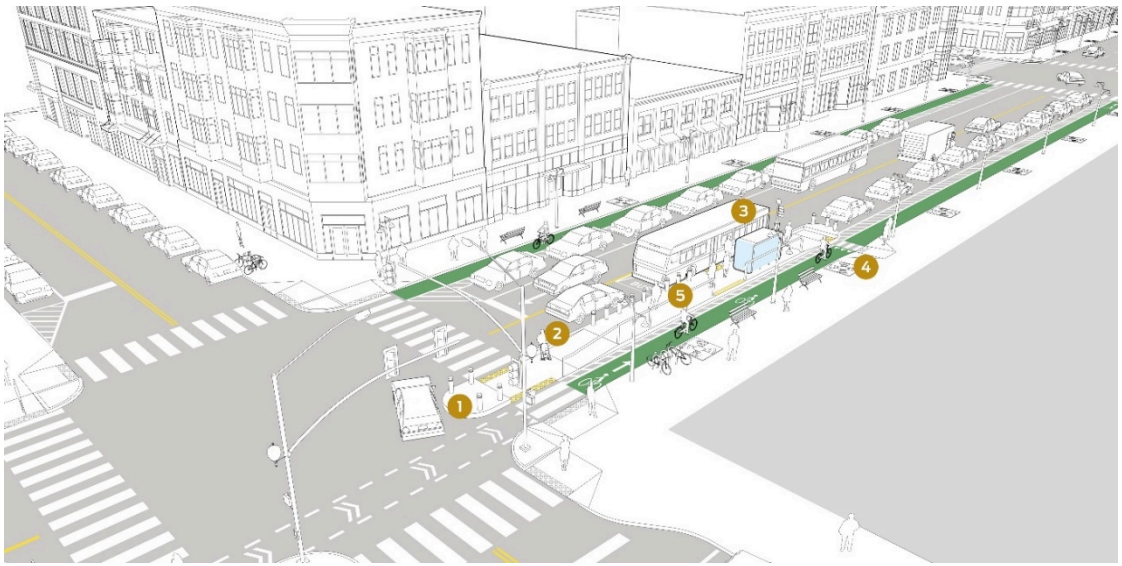
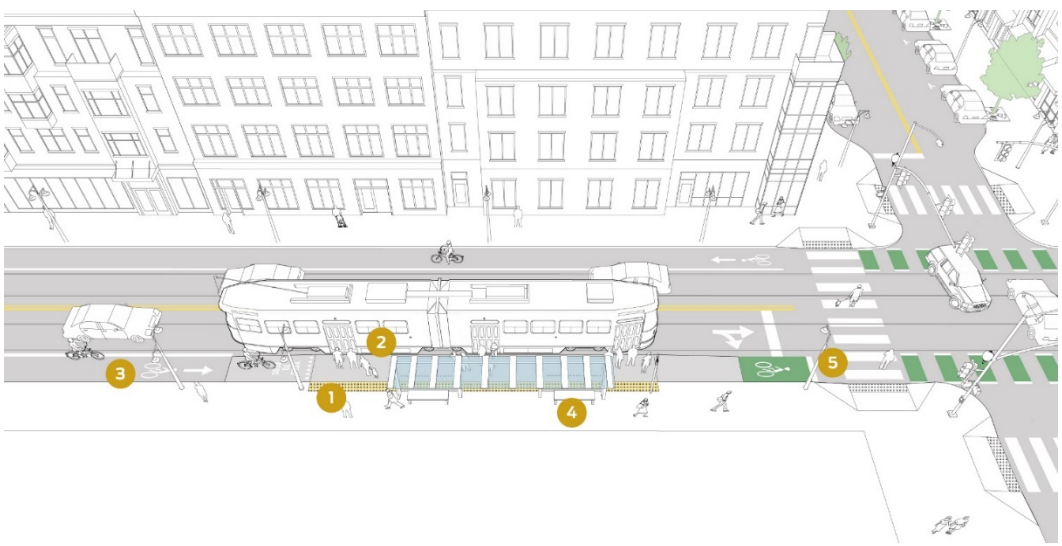


Figure 3: Bus Stop with adjacent Bike Lane (AASHTO)

Transit – Floating Bus Stops

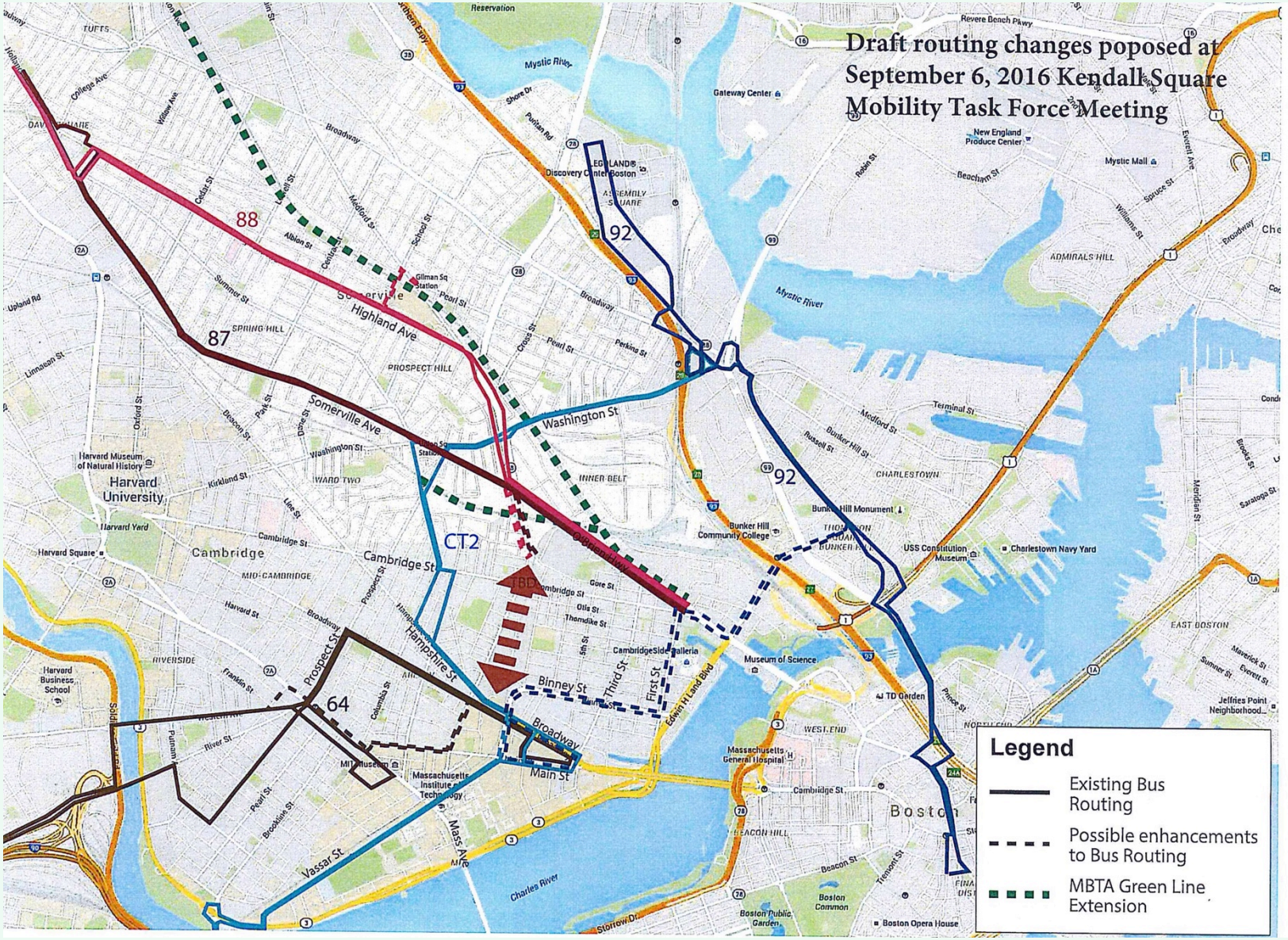




Source: NACTO Transit Street Design Guide

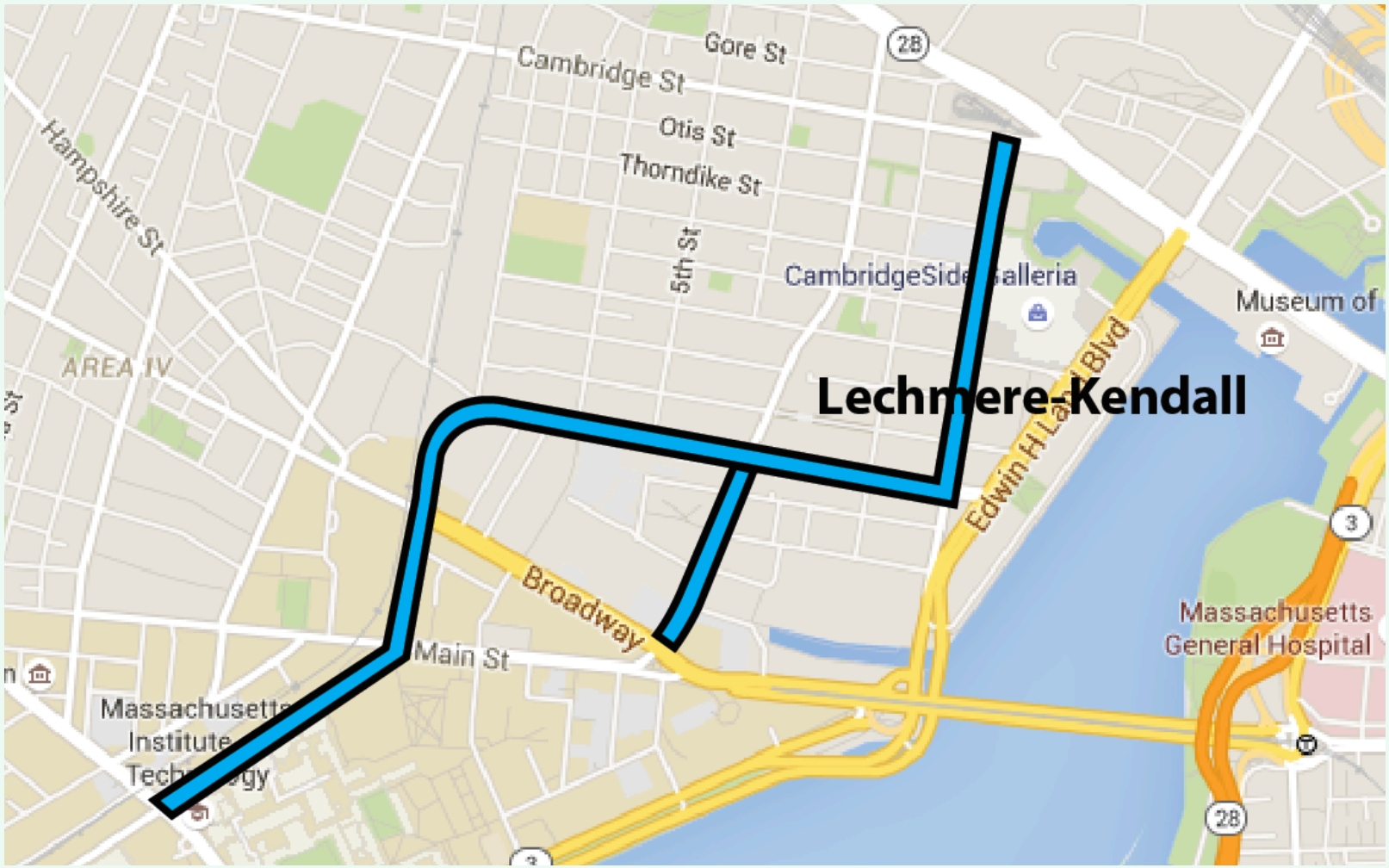
KENDALL SQUARE MOBILITY TASK FORCE

KSMTF: Recommended Bus Route Changes



KENDALL SQUARE MOBILITY TASK FORCE

KSMTF: Priority Corridors to be Evaluated



KENDALL SQUARE MOBILITY TASK FORCE

KSMTF: Binney between First & Broadway

Will work to ensure that the final design will not preclude a potential future scenario of converting a travel lane to bus lane with cycle tracks plus mixed travel lanes/turn lanes in both directions.