

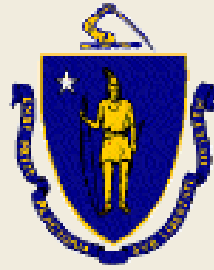


Mount Auburn Street Corridor Study



November 14, 2016
Shady Hill School





Commonwealth of Massachusetts

Governor
Charles D. Baker

Lieutenant Governor
Karyn E. Polito

Energy and Environmental Secretary
Matthew A. Beaton

Department of Conservation and Recreation Commissioner
Leo P. Roy





DCR Mission Statement

To protect, promote and enhance our
common wealth of natural, cultural
and recreational resources
for the well-being of all.



Agenda

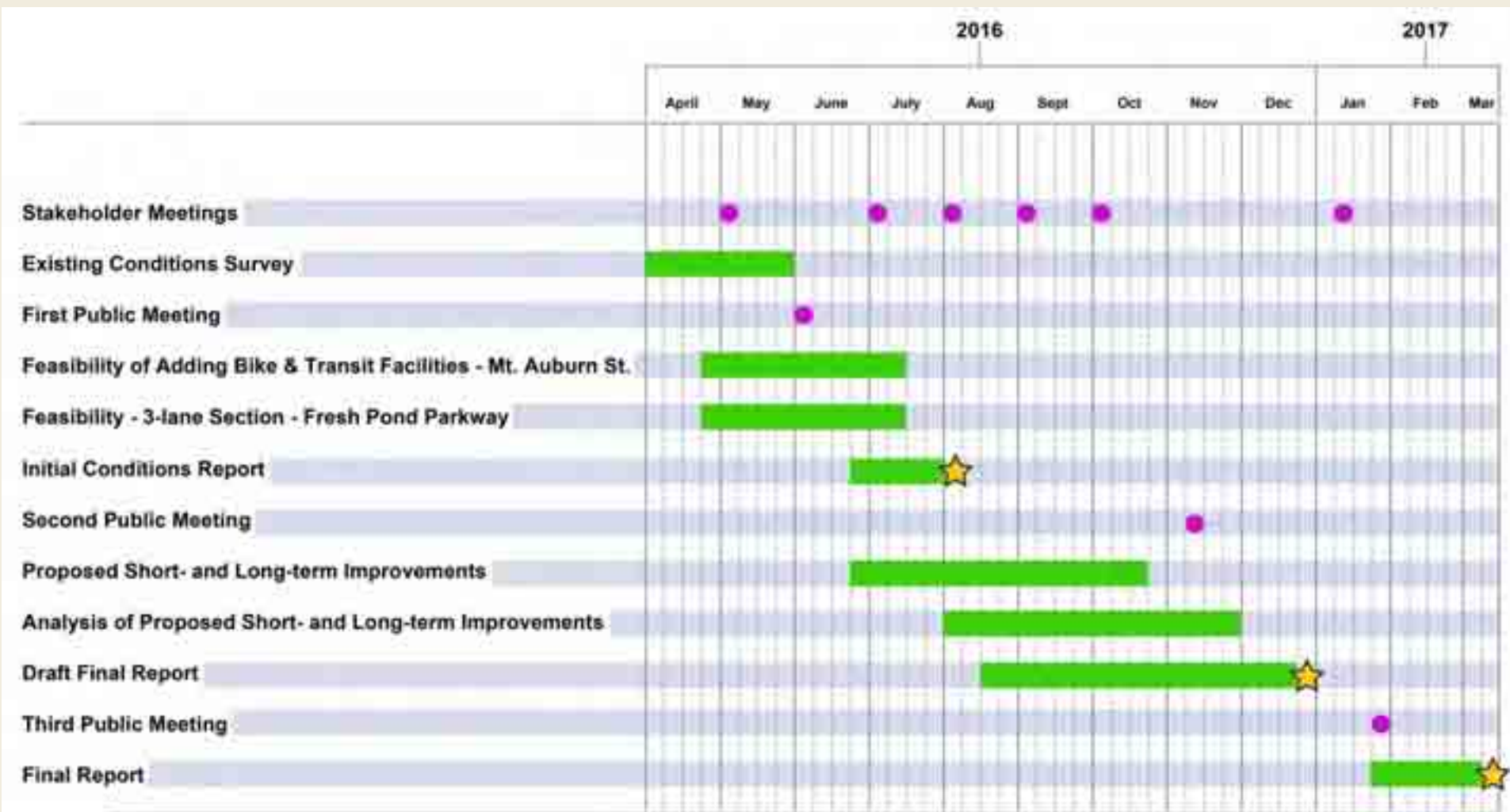
- Welcome
- History
 - Shared Goals
- Short-term Concept
- Long-term Concepts



Project Area



Schedule

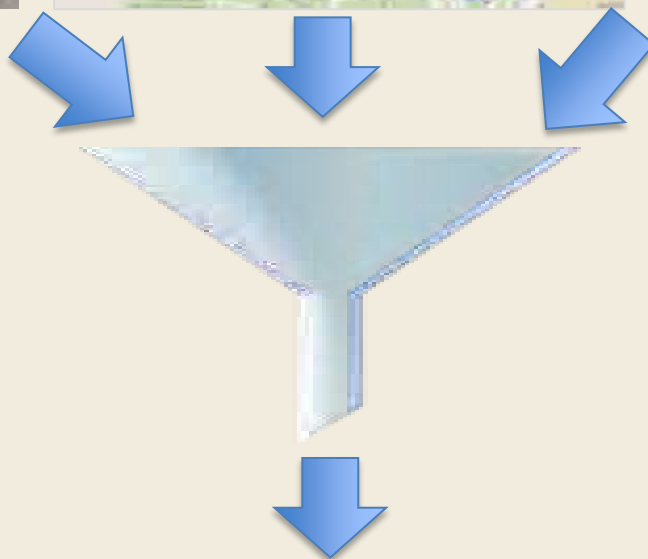




Project Overview



Spring 2016: Gathering Public Input and Setting Goals



- April – Site Walk
- 5/5 Stakeholder meeting
- 6/1 Public Meeting
- Wikimap: May to June
- Targeted briefings

Shared Goals Adopted: June 23, 2016



Shared Goals

1. Calm traffic, provide clarity, reduce crashes and severity of crashes
2. Improve connectivity, air quality and expand mobility choices by:
 - a. Measuring people, not cars
 - b. Reducing transit delays
 - c. Improving safety, access, parking and comfort for bicycles.
 - d. Maintaining mobility for motor vehicles
 - e. Improving safety, attractiveness, noise, and comfort for pedestrians and residents
3. Address cut-through traffic in the Larchwood, Huron Village, and Coolidge Hill Neighborhoods
4. Offer short-term and long-term solutions
5. Acknowledge enforcement and special uses by BB&N, Mt. Auburn Cemetery, Mt. Auburn, Shady Hill, and Tufts Health Plan



Summer 2016: Developing Concepts

- July 21 – Major intersections
 - Mt. Auburn at Fresh Pond
 - Mt. Auburn at Brattle



- August 18 – Major intersections
 - Gerry's Landing Interchanges
 - Fresh Pond at Huron and Brattle
 - Explored Alternative Approaches
 - Fresh Pond at Mt. Auburn
Underpass, Roundabout, or Rotary



Summer 2016: Developing Concepts

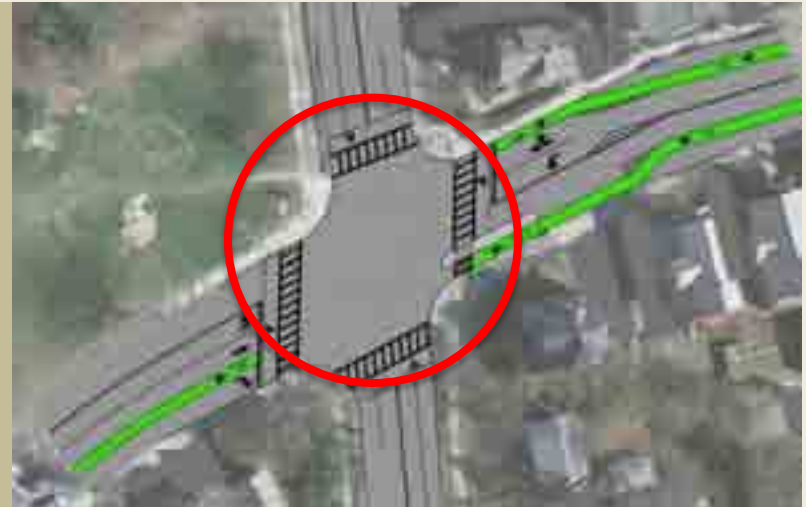


2
1
8

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9

Fall 2016: Refining and Advancing Concepts

- September 15
 - Introduction to transit priority
 - Mt. Auburn at Belmont
 - Refinements to:
 - Gerry's Landing 2-T
 - Fresh Pond at Huron and Brattle
 - Plaza Charrette
 - Short-term Improvements



- November 11
 - Parkway Road Diet Feasibility
 - Transit Priority in Depth
 - Landscape Improvements
 - Project-wide Design Concepts:
 - Option A and Option B
 - VISSIM Proof of Concepts
 - Road Safety Audit (RSA) Results



RSA Results Supportive of Concepts



Some Overall Recommendations:

- Reduce Pavement Area Where Excessive
- Clarify Signage, Signals, and Pavement Markings
- Tighten Turns to Reduce Speed and Pedestrian/Vehicle Conflicts
- Improve Pedestrian and Bicycle Conditions

PLEASE NOTE:

The following concepts are drafts;
works in progress shown only for the purpose
of collecting public feedback for their improvement





Short-term Concept



Mt. Auburn Street at Fresh Pond Parkway



Additional Short-term Improvements:

- Signal Improvements
- Dedicated Bus Lane



Long-term Concept





North of Mount Auburn Street



Fresh Pond Parkway: North of Mount Auburn Street

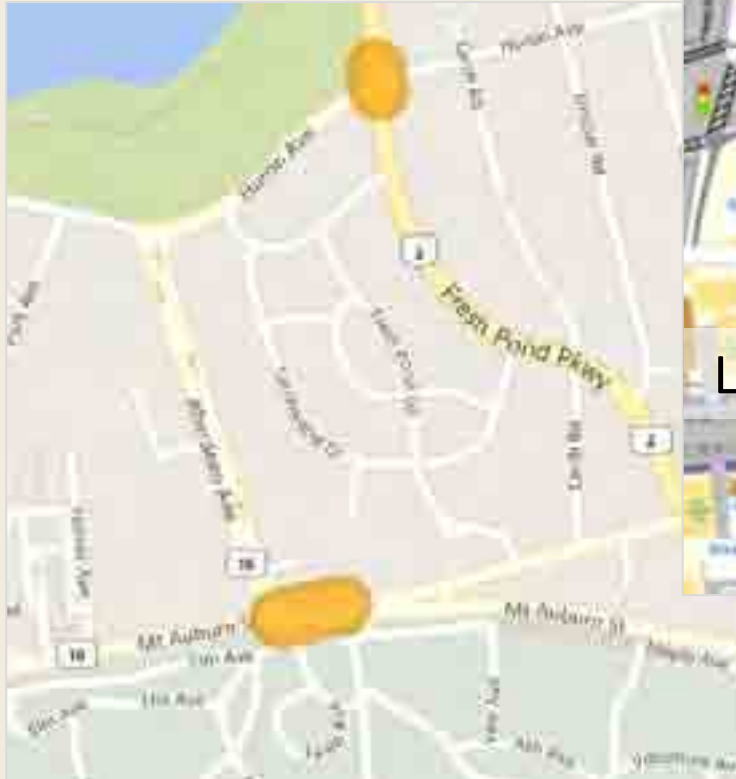


Tactics Used to Reach Shared Goals

- Narrow Lanes
- Enhance Neighborhood Feel



Relevant Plans



Highway Safety Imp. Program
Crash Clusters (2011-13)



Huron Ave Reconstruction (2013-16)

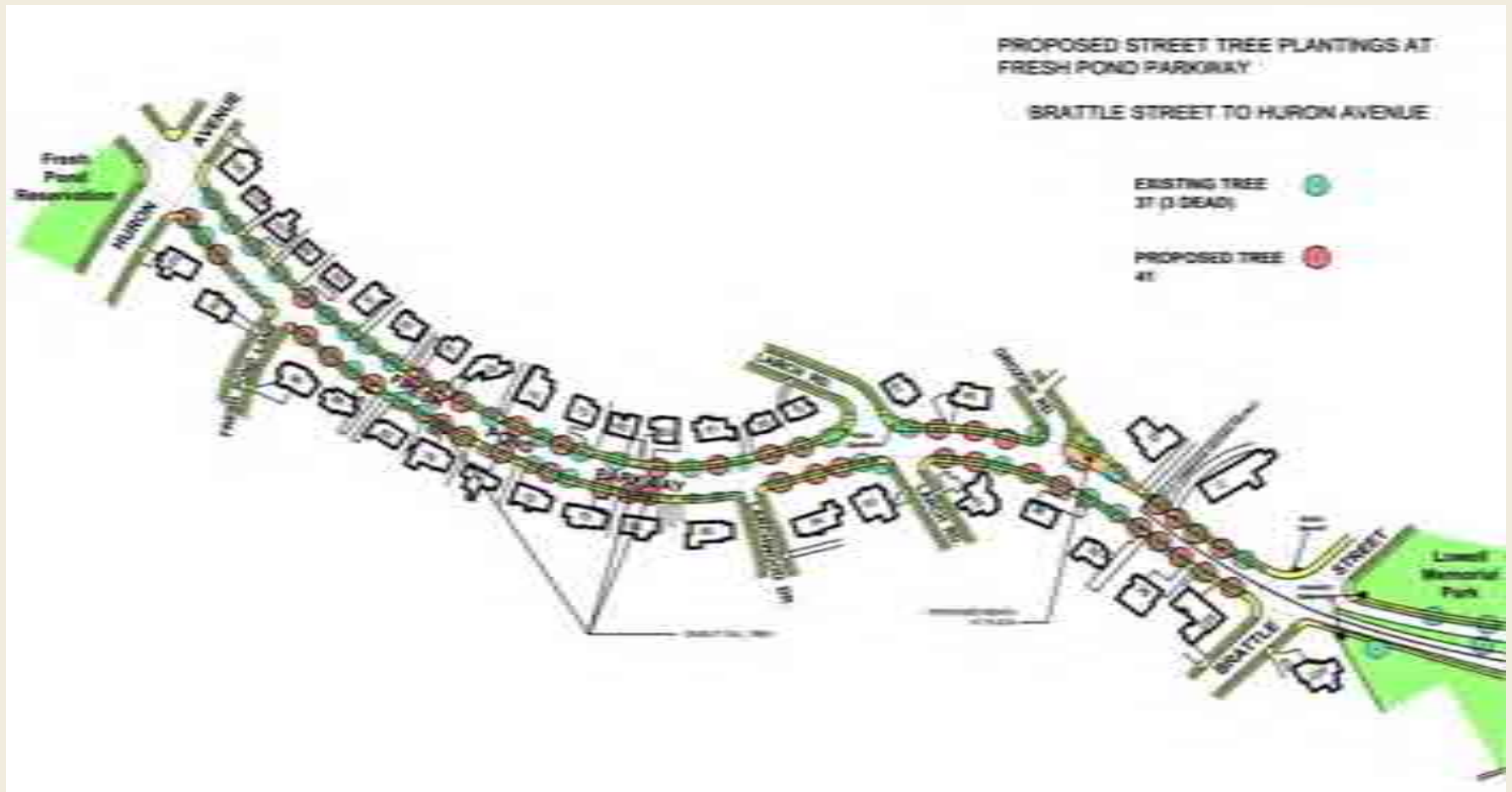
Lowell Park Cultural Landscape Report (2014)



Road Diet for Traffic Calming



Tree Replacements for Traffic Calming



FIRST PLANTINGS LIKELY SPRING 2018

Gateway Treatment Opportunity?



Raised Intersection, Stamped Asphalt, or Both?



Huron Avenue at Fresh Pond Parkway



Calming Neighborhood Cut-throughs in Larchwood

- Speed Tables
- Raised Crossings
- Speed Humps



Option A: Maintain Existing Geometry



DRAFT CONCEPT

Other Things We Tried: Circulation Change, Mid-Block Crossing

- Concerns About:
 - Circulation
 - Sight lines
 - RRFB Visibility and Recognition
 - Speeds
 - Noise
 - Lack of Desire Line



Brattle Street at Fresh Pond Parkway



Other Things We Tried: 4:3 Road Diet

A.M. QUEUES

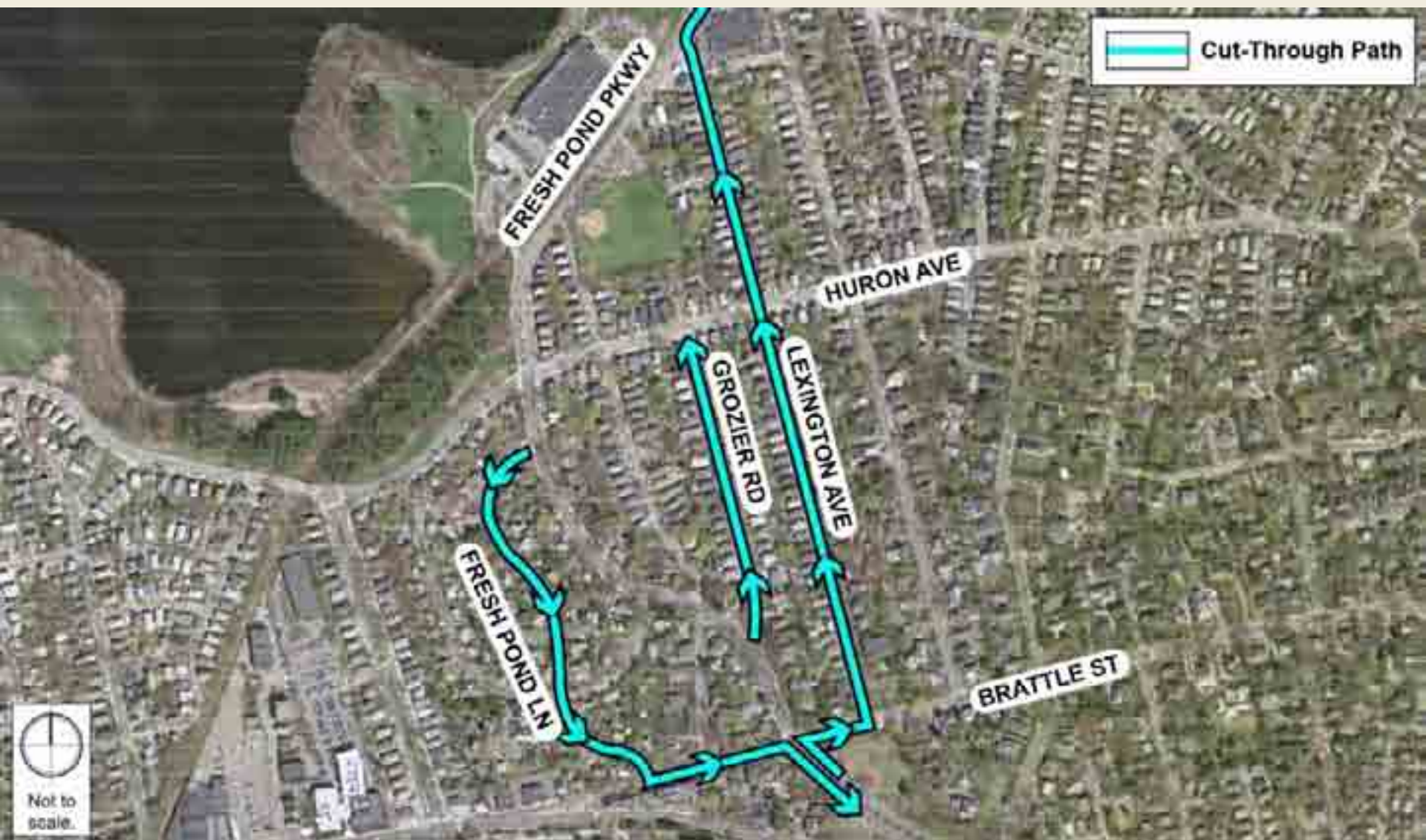


Other Things We Tried: 4:3 Road Diet

P.M. QUEUES



Other Things We Tried: 4:3 Road Diet – Impacts





South of Mount Auburn Street



Gerry's Landing: Option A



Gerry's Landing: Option B



Gerry's Landing: Tactics Used

- Increase Parkland
- Road Diet
- Lane Narrowing
- Protected Bike Lane
- Shorten Pedestrian Crossings
- T-up Intersections
- Organize School and Boathouse Curb Use



Gerry's Landing: Relevant Plans

Cambridge Riverfront Plan (2011)



Charles River Connectivity Study (2014)



Greenough Boulevard Road Diet



Gerry's Landing: Main Flow of Traffic



Road Diet and Lane Narrowing

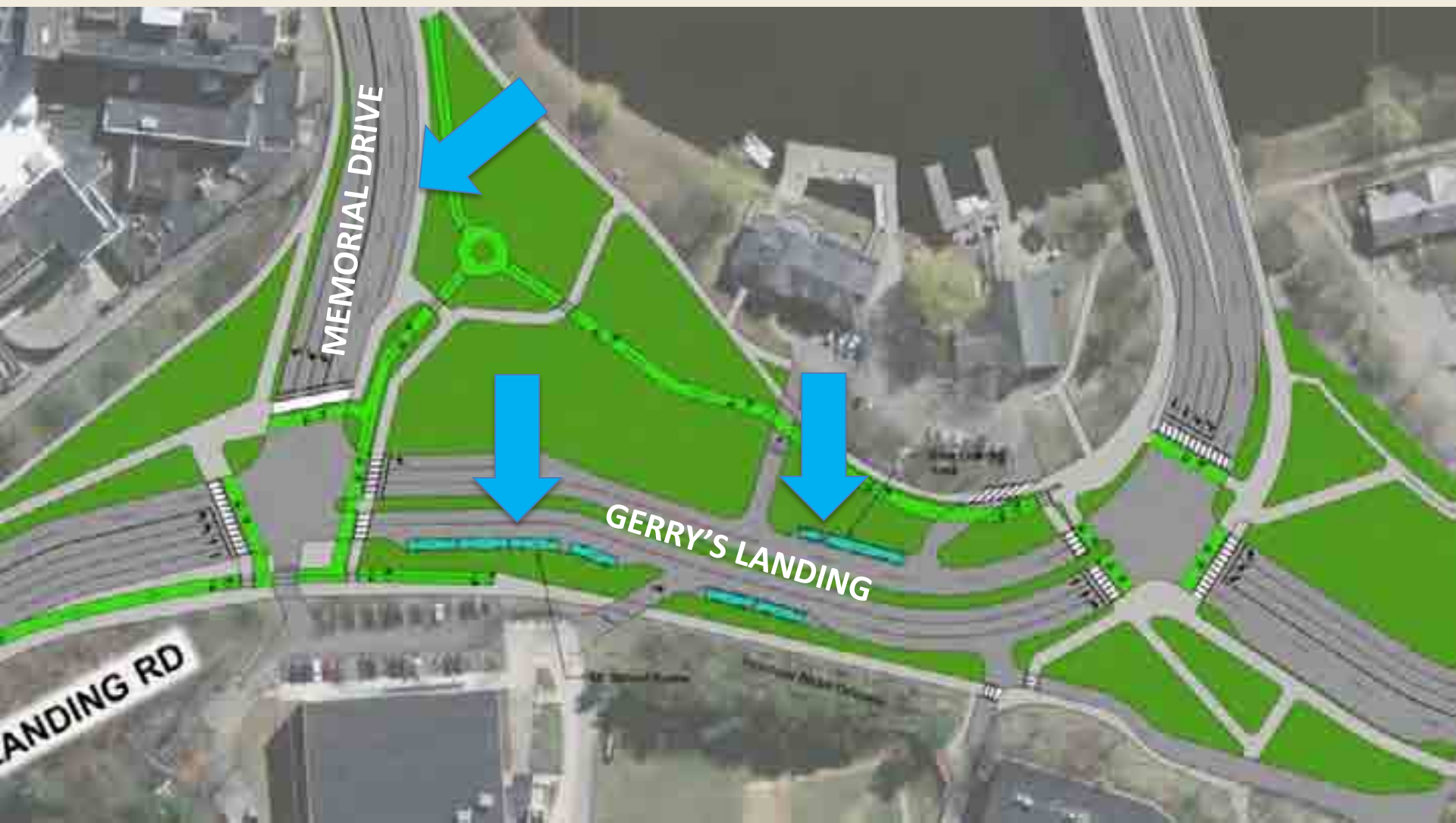


Pedestrian Crossings Improved

One-Stage Crossings



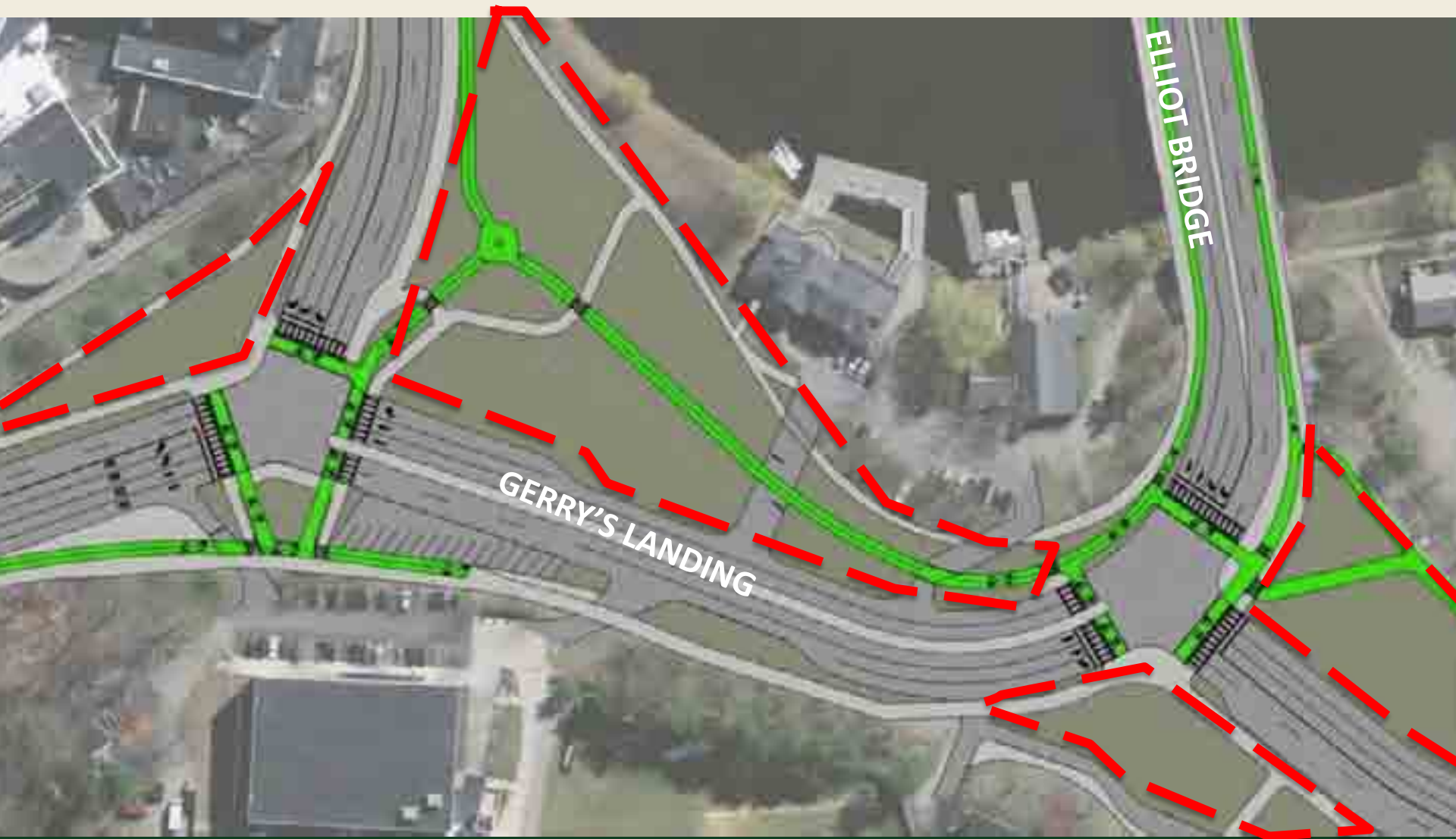
Organize Curb Use: Option A



Organize Curb Use: Option B



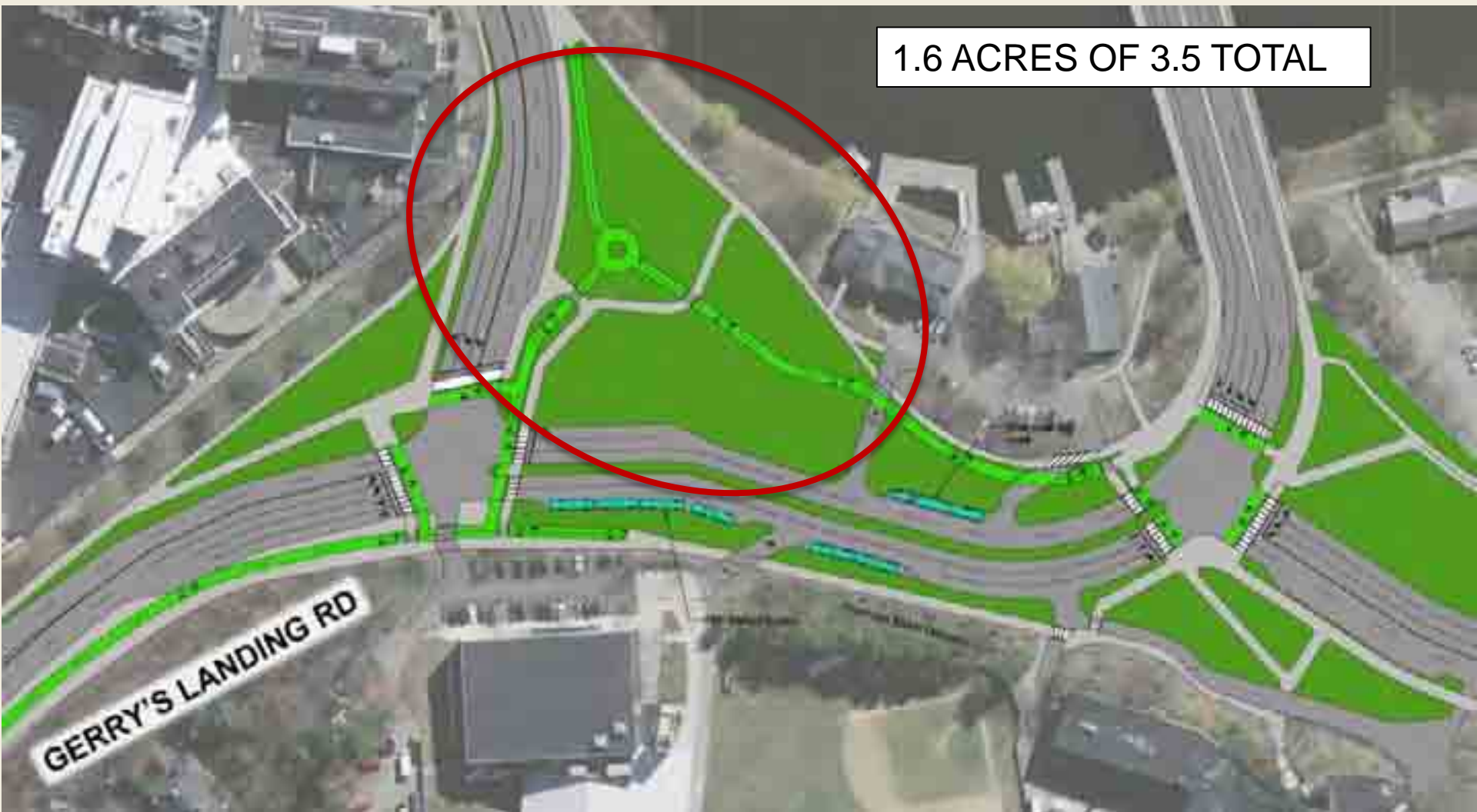
Additional Benefit: 4+ Acres of New Accessible Open Space



Greenough Side: New Parkland



Park Programming Exercise



What Can This Look Like?



THE LAWN ON D



What Can This Look Like?



HARVARD UNDERPASS PARK

How Would You Like to Use This Space?



Eliot Bridge Intersection



Other Things We Tried

- Double Roundabout
- Crossover Diamond





Mount Auburn Street



Mount Auburn Street: Option A



Mount Auburn Street: Option B

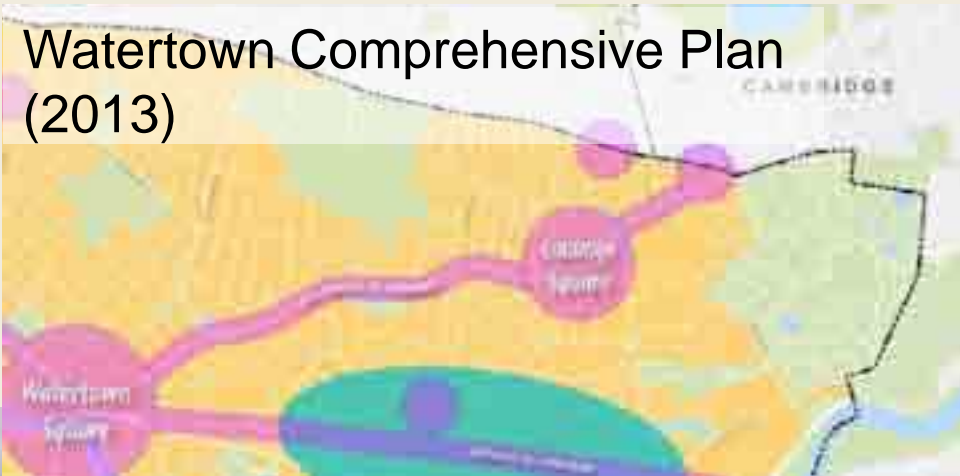


Tactics Used

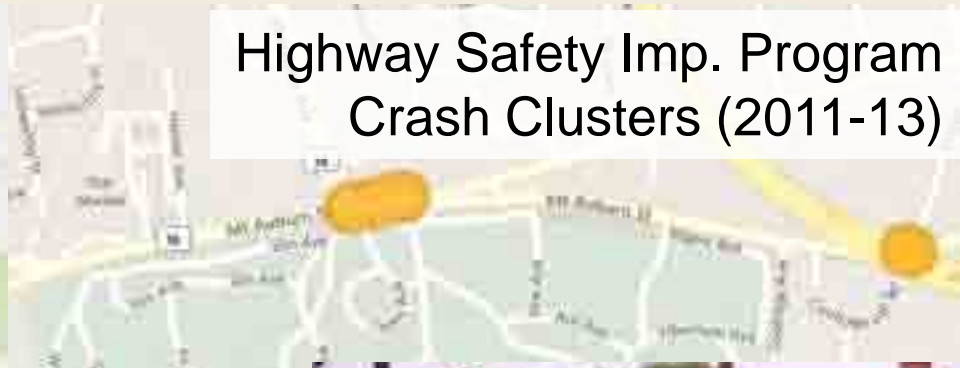
- Road Diet
- Bus-only Lanes
- Bus Signal Queue Jump
- Eliminate Merge
- T-up Intersection
- Protected Two-stage Turn Queue
- Bicycle-only Slip Lanes



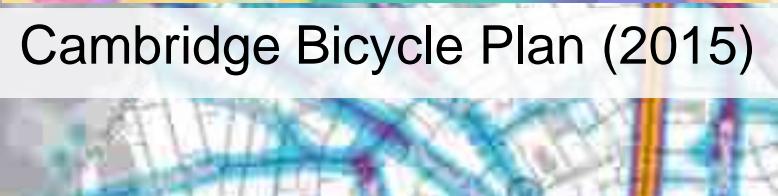
Relevant Plans



Watertown Comprehensive Plan (2013)



Highway Safety Imp. Program Crash Clusters (2011-13)



Cambridge Bicycle Plan (2015)



Cambridge Transit Strategic Plan (2014)



MBTA Key Bus Route Improvement Program (2013)



Watertown Bicycle Transportation Plan (2003)



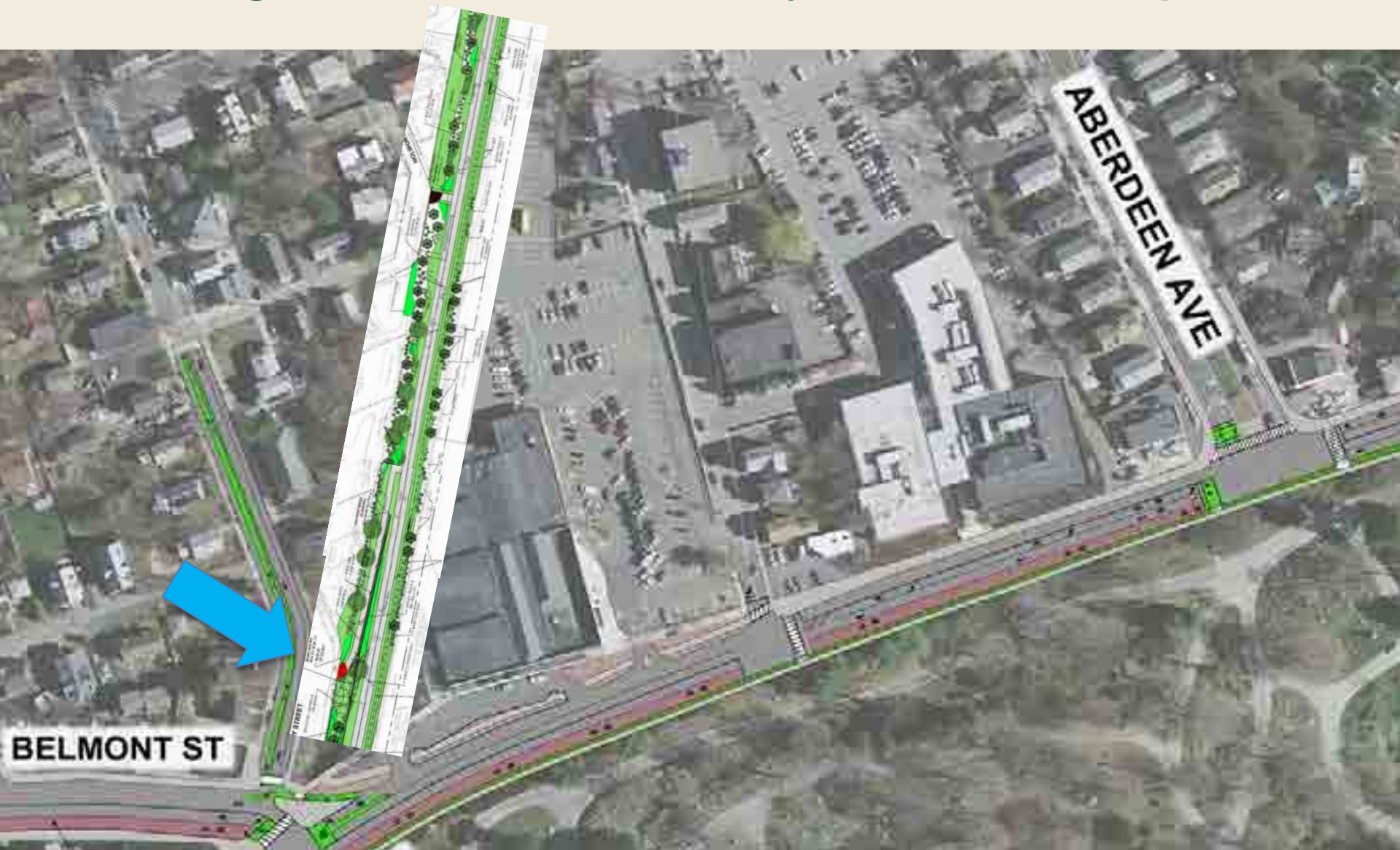
Strawberry Hill Neighborhood Plan (2003)



Belmont Street at Mount Auburn Street: Option A



Cambridge - Watertown Greenway Connection: Option A



Bicycle Slip Lane



Star Market Driveway



Eliminate Lefts into Star Market Driveway: Option A



Eliminate Lefts into Star Market Driveway: Option B



Homer Street Entrance into Star Market



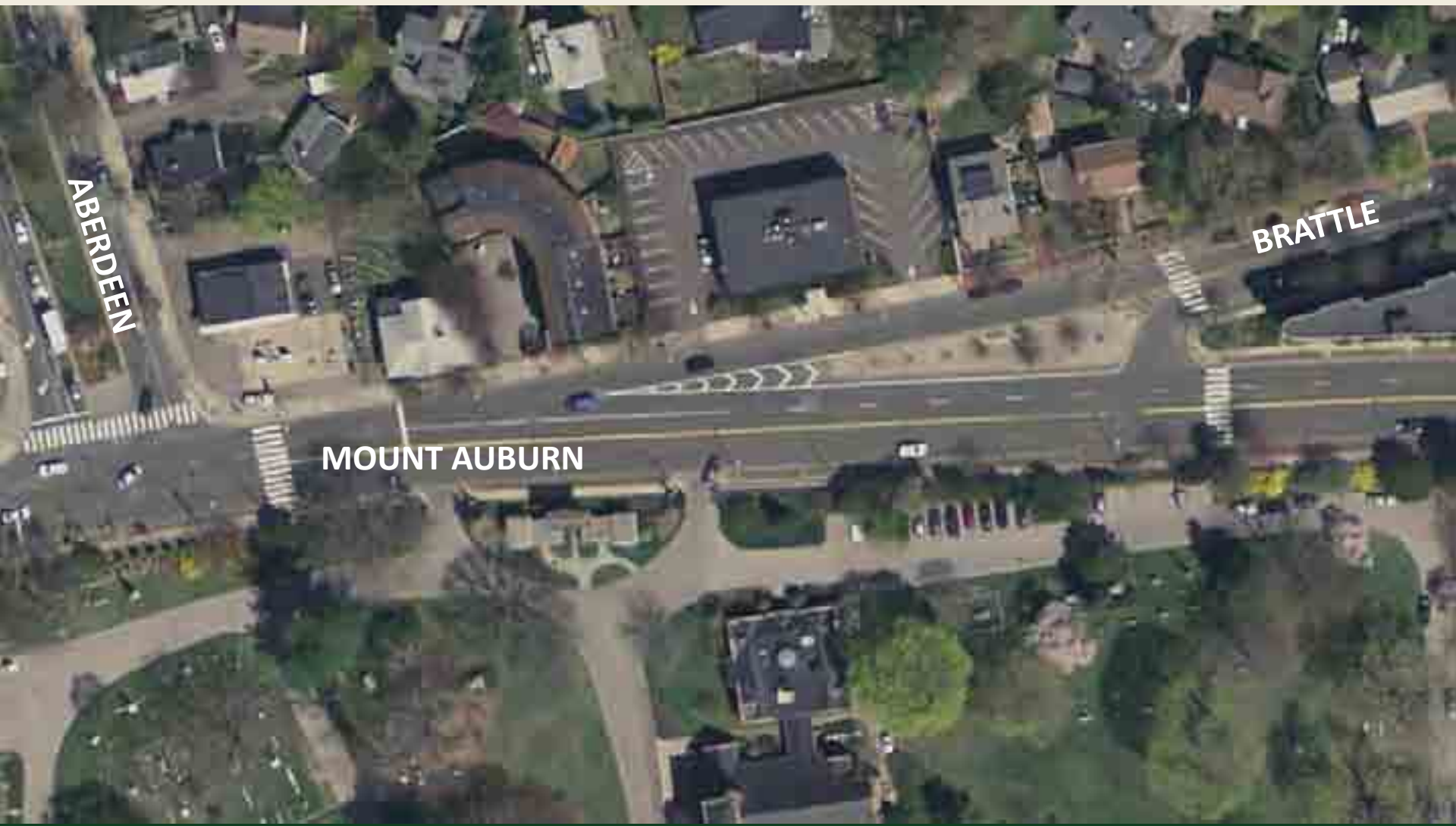
Star Market Plaza Concepts – Please Leave Your Comments



Star Market Plaza Concepts – Please Leave Your Comments



At Brattle Street



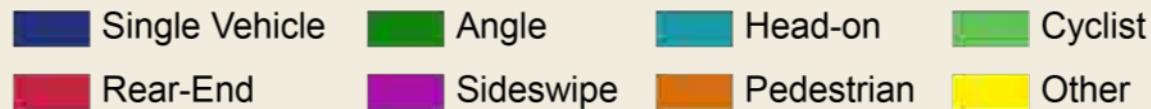
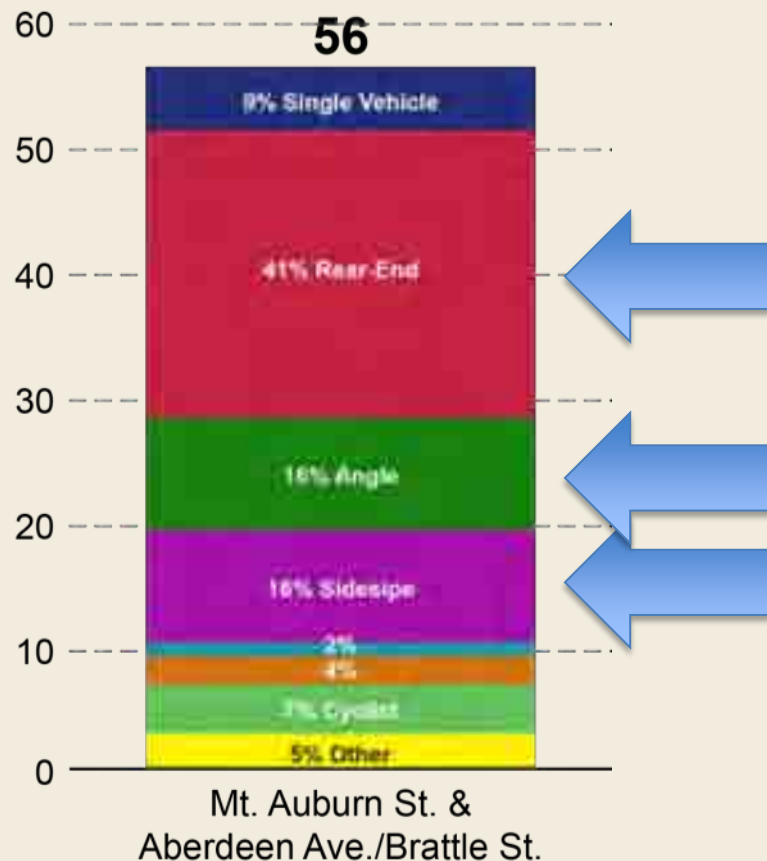
At Brattle Street: Option A



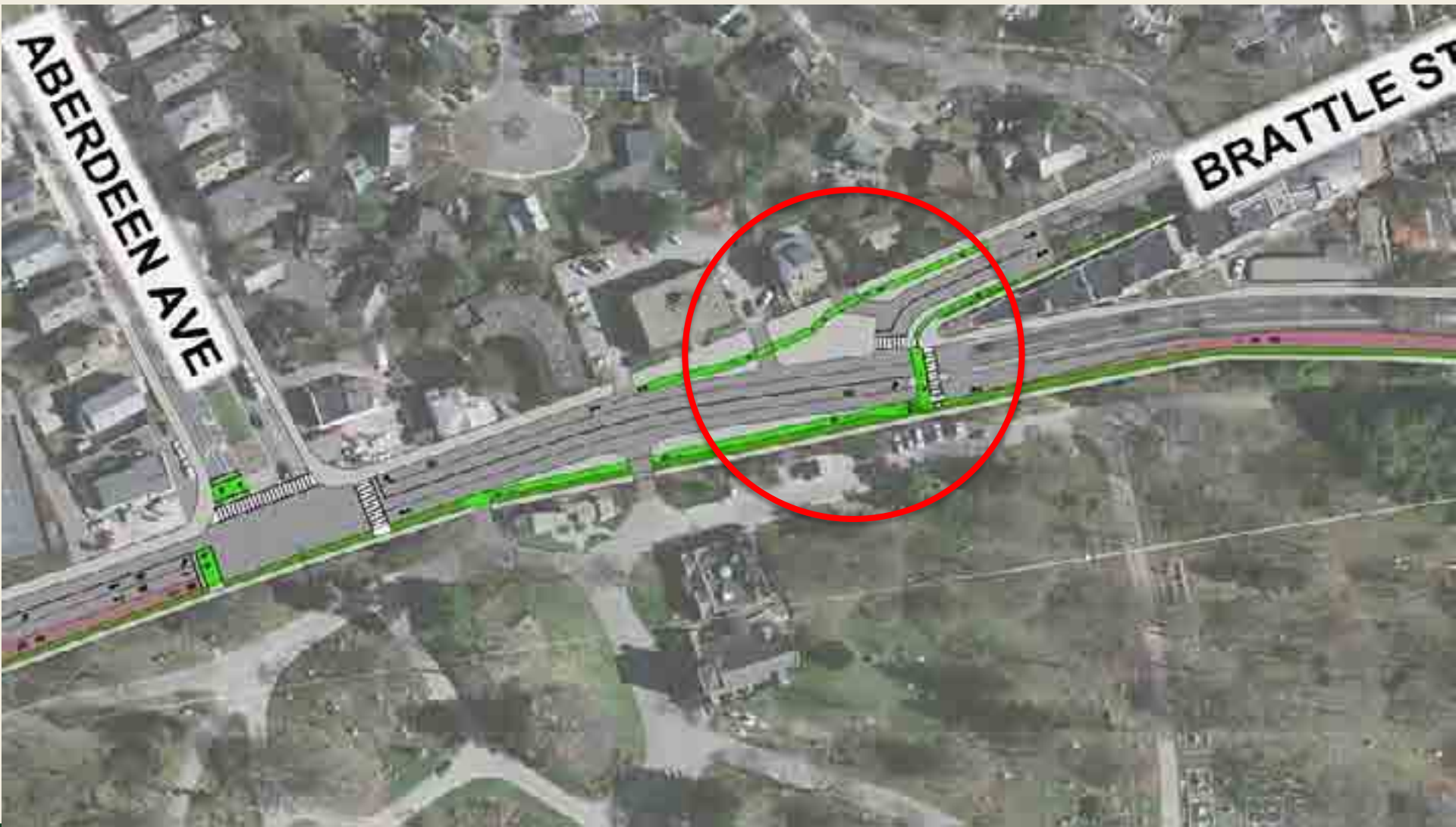
At Brattle Street: Option B



At Brattle Street: RSA Recommends T-up of Intersection



At Brattle Street: T-up Intersection (Option A)



Signal Warranted

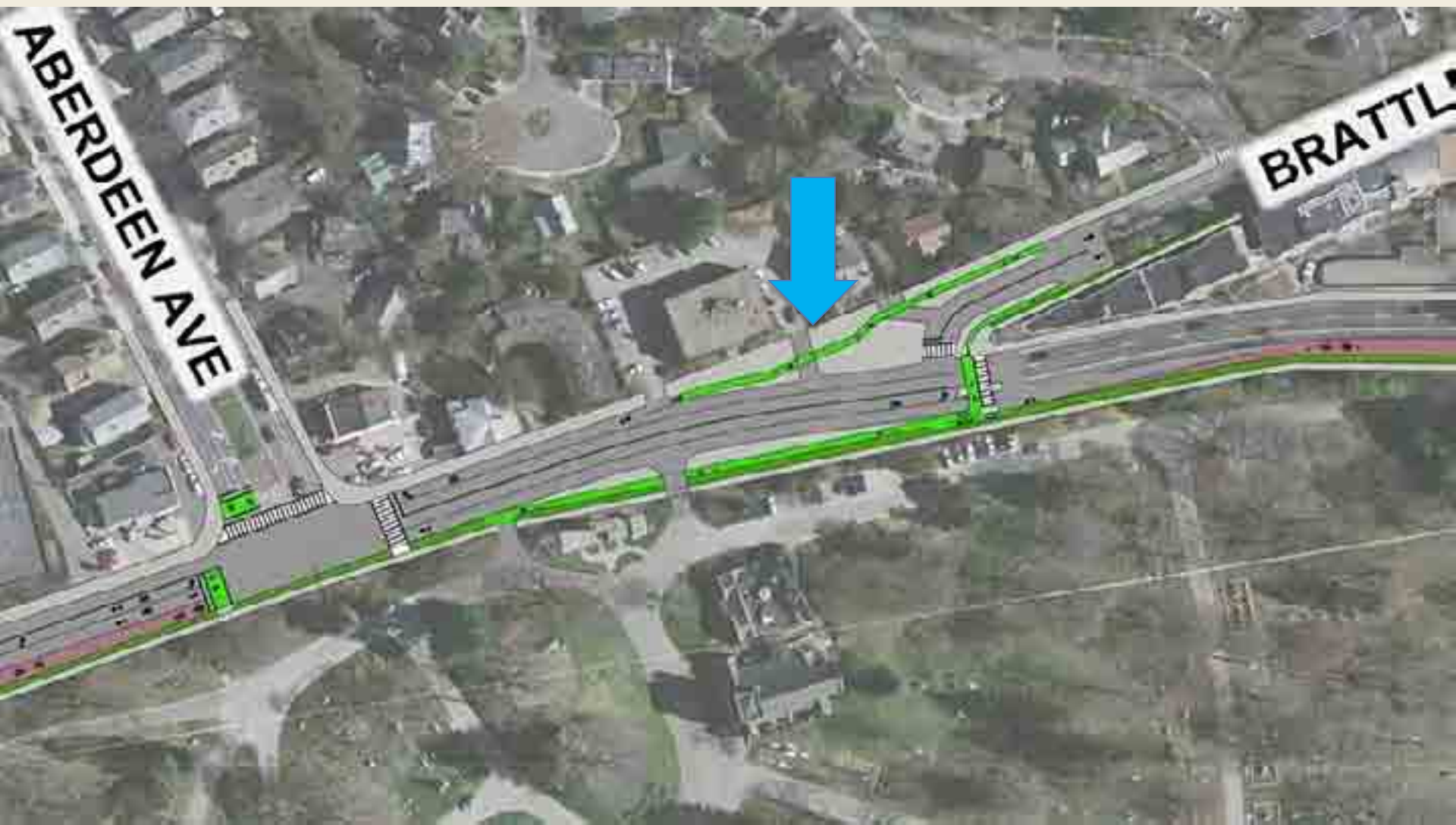
- Peak-hour, Four-hour Volumes Warrant a Traffic Signal, Estimates for Eight-hour Volumes also Warrant a Signal (MUTCD 2009)



At Brattle Street: Bike Desire Line Study



Bicycle-only Slip Lane



SCHEME 1

SIDEWALK CARRIES THROUGH PLAZA

DRIVEWAY

NOTE THAT SNOWPLOWERS HAVE TRADITIONALLY USED THE ISLAND FOR SNOW STORAGE

DRIVEWAY

LIGHT FIXTURE

PLUMBING

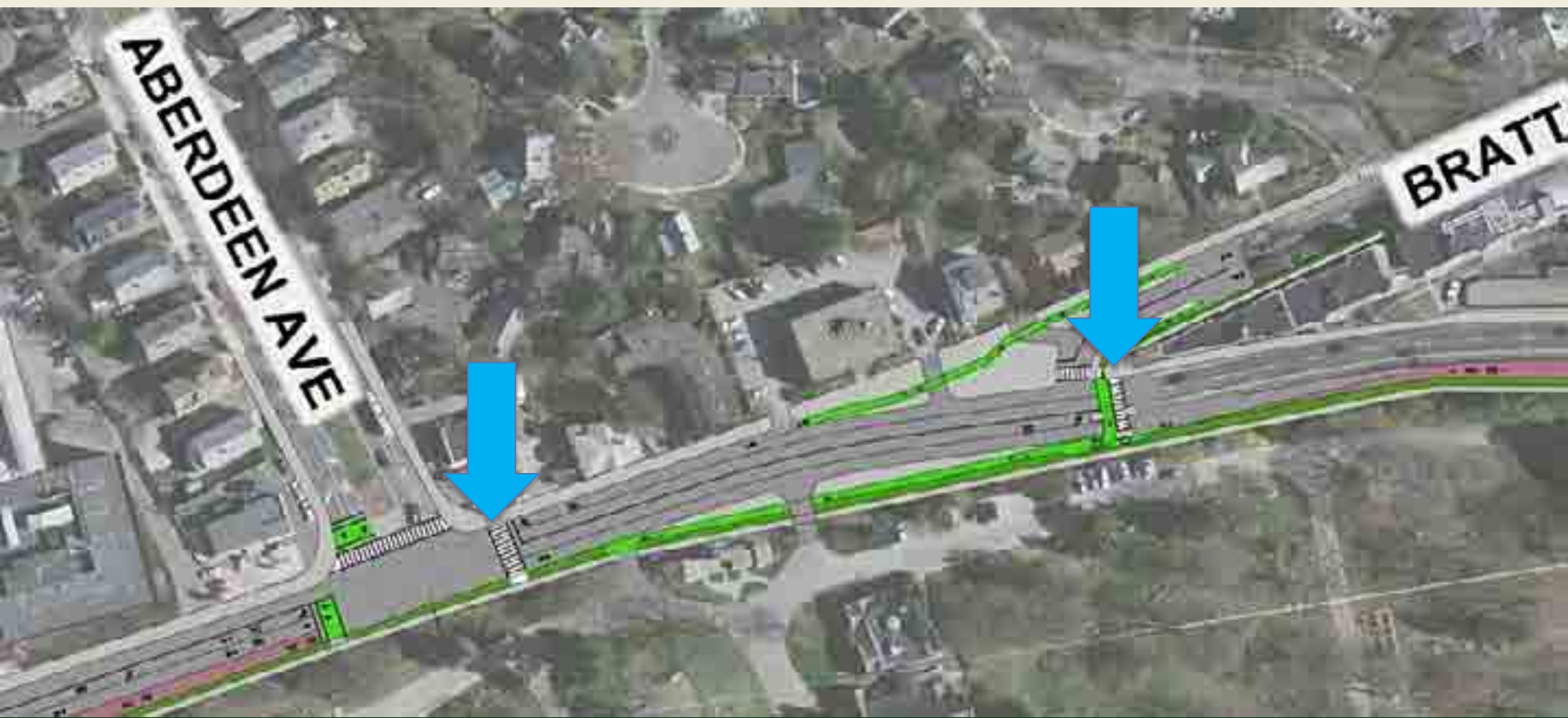
PRUNE TREE

FLOWERING TREE

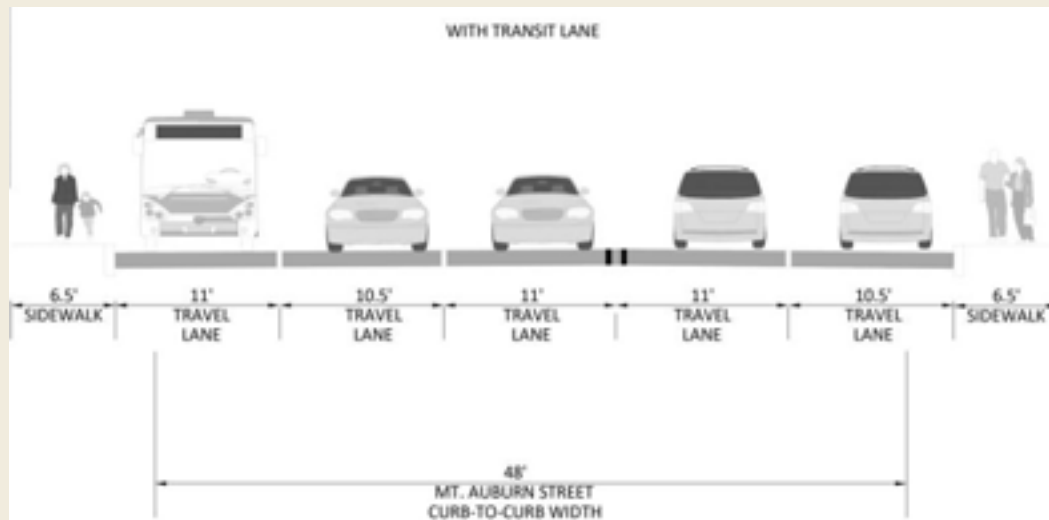
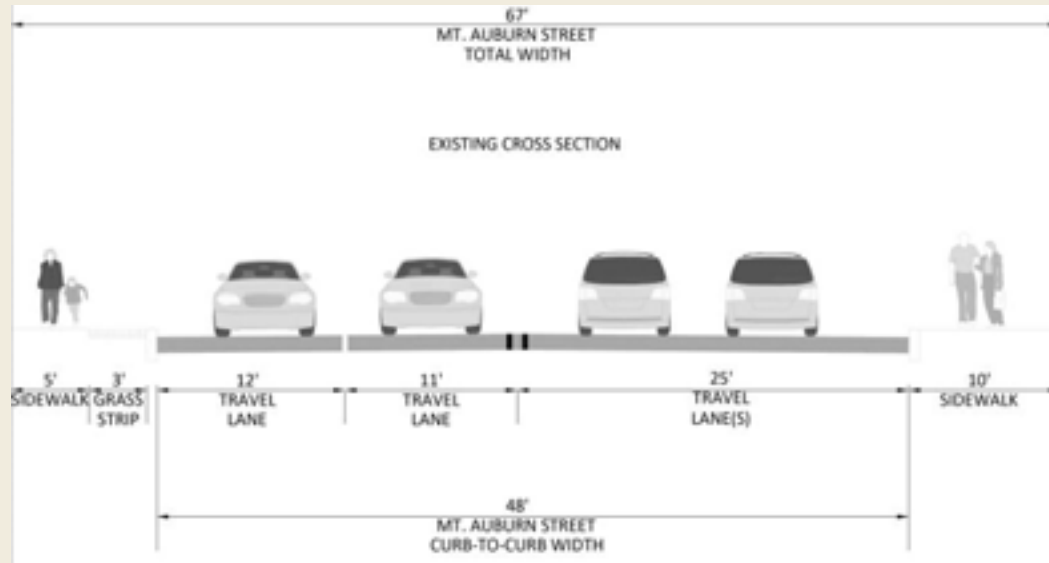


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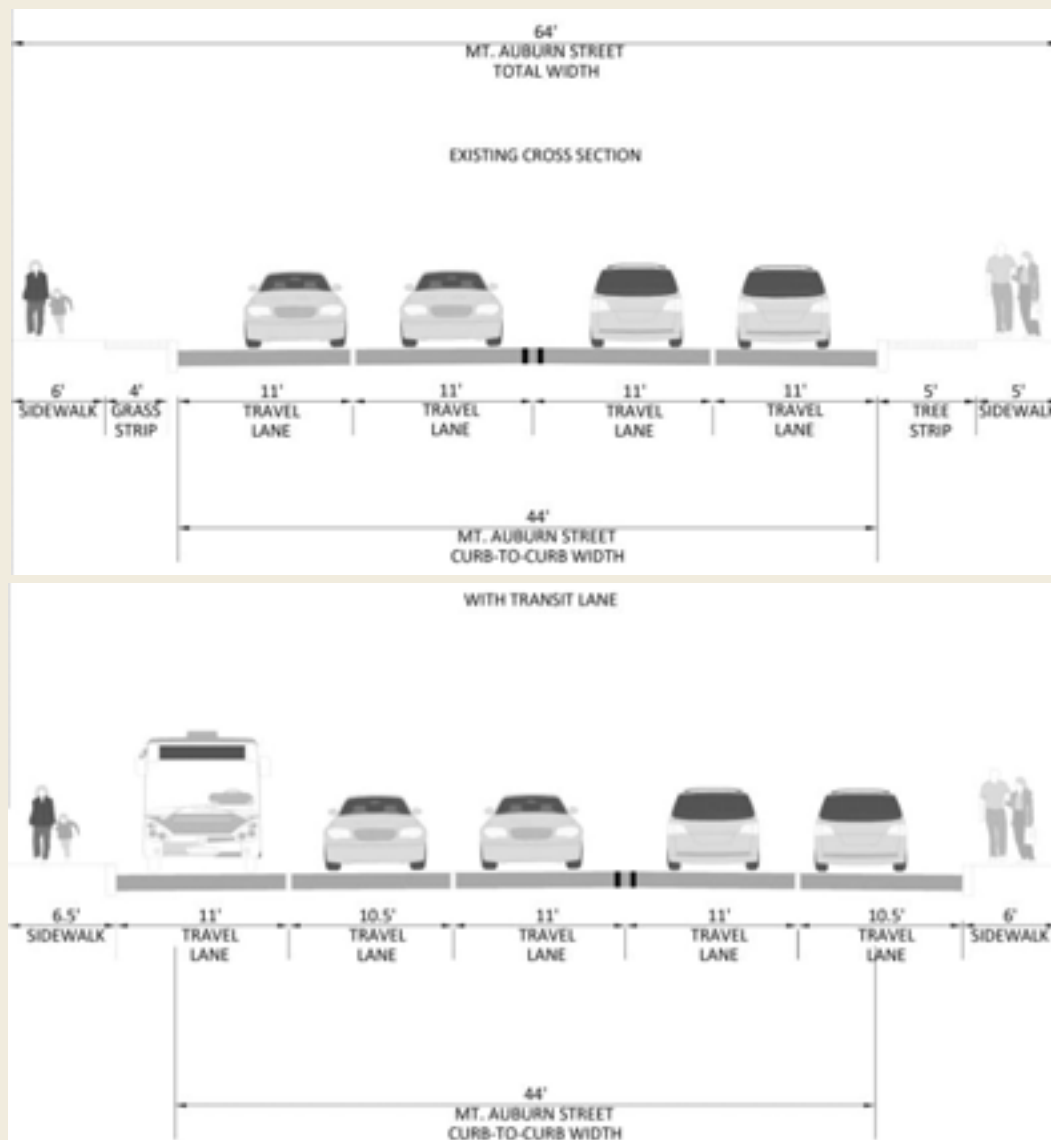
Other Things We Tried: Fifth Lane



Other Things We Tried: Fifth Lane (at Aberdeen)



Other Things We Tried: Fifth Lane (at Brattle)



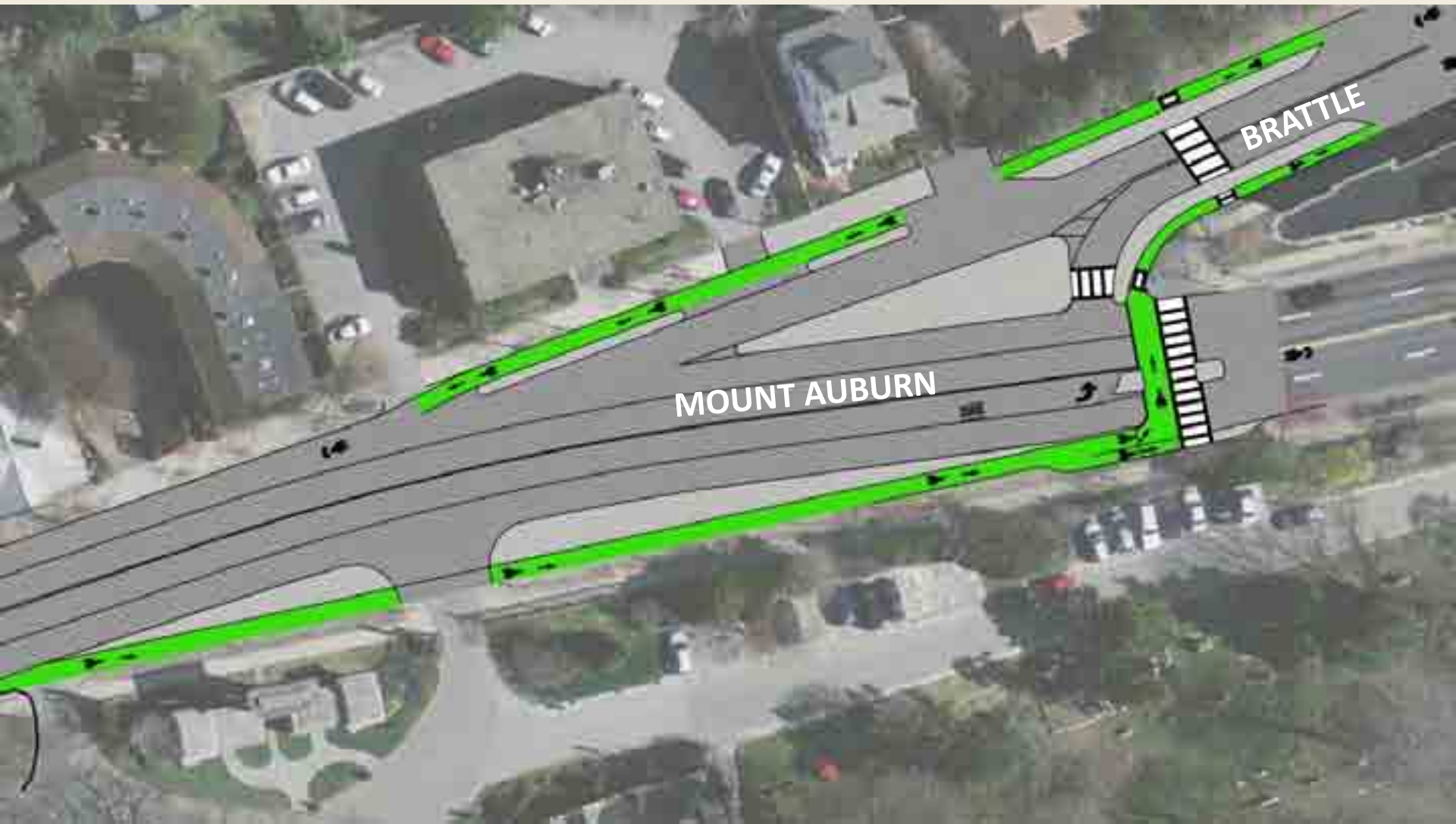
Other Things We Tried: Westbound Bike Lane



Other Things We Tried: Westbound Bike Lane



Other Things We Tried: Maintain Merge (Option B)





Fresh Pond Parkway at Mount Auburn



Fresh Pond Parkway and Mt Auburn Street: Tactics Used

- Road Diet
- Reduce Pavement
- Raised Pedestrian Crossing
- Reduce Pedestrian Crossing Time
- Bicycle Crossing
- Two-way Protected Bike Lane



Fresh Pond Parkway at Mount Auburn Street



Reduce Pavement



Reduce Pavement



Single to Two-stage Crossing



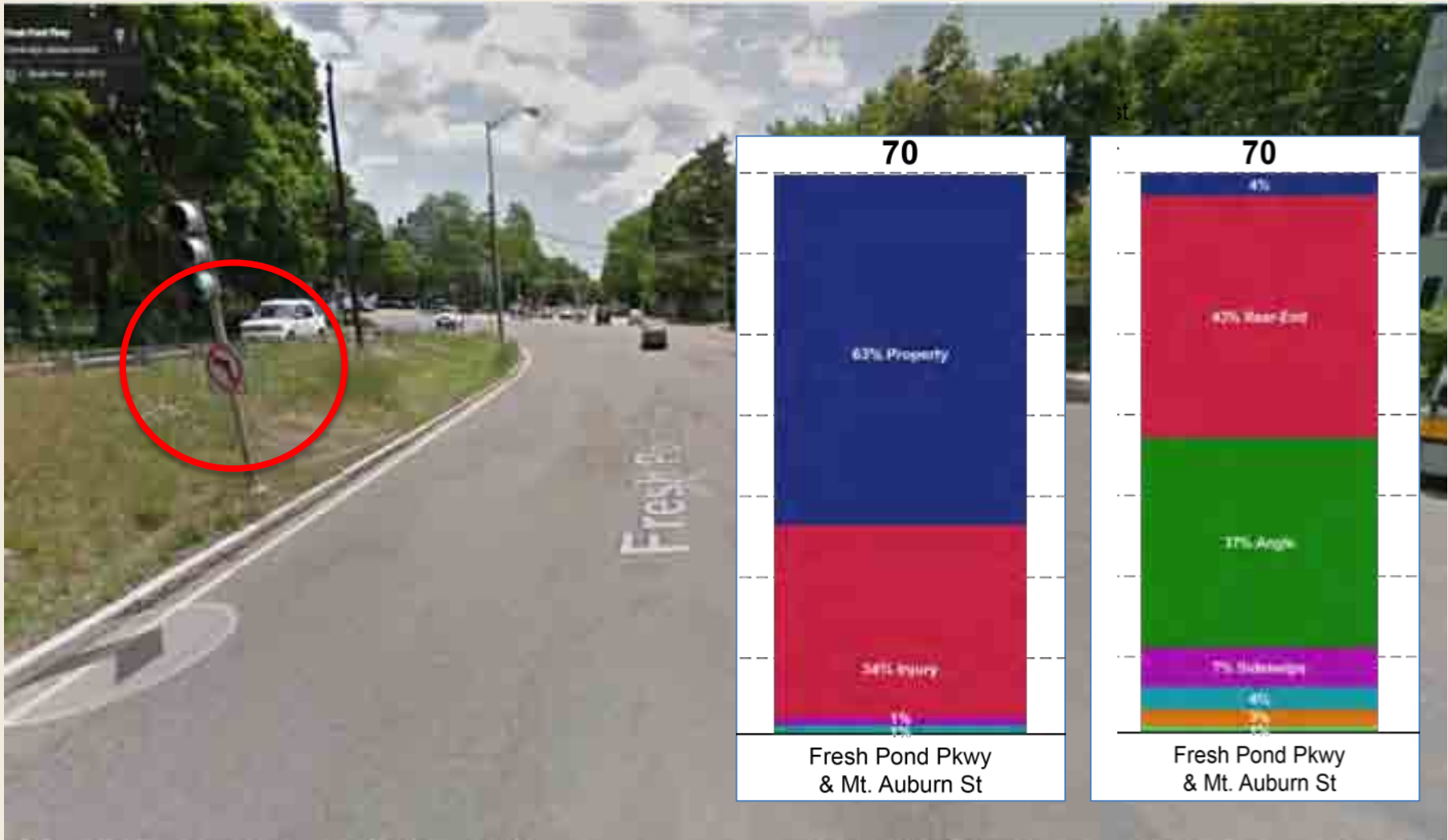
New Bike Crossing



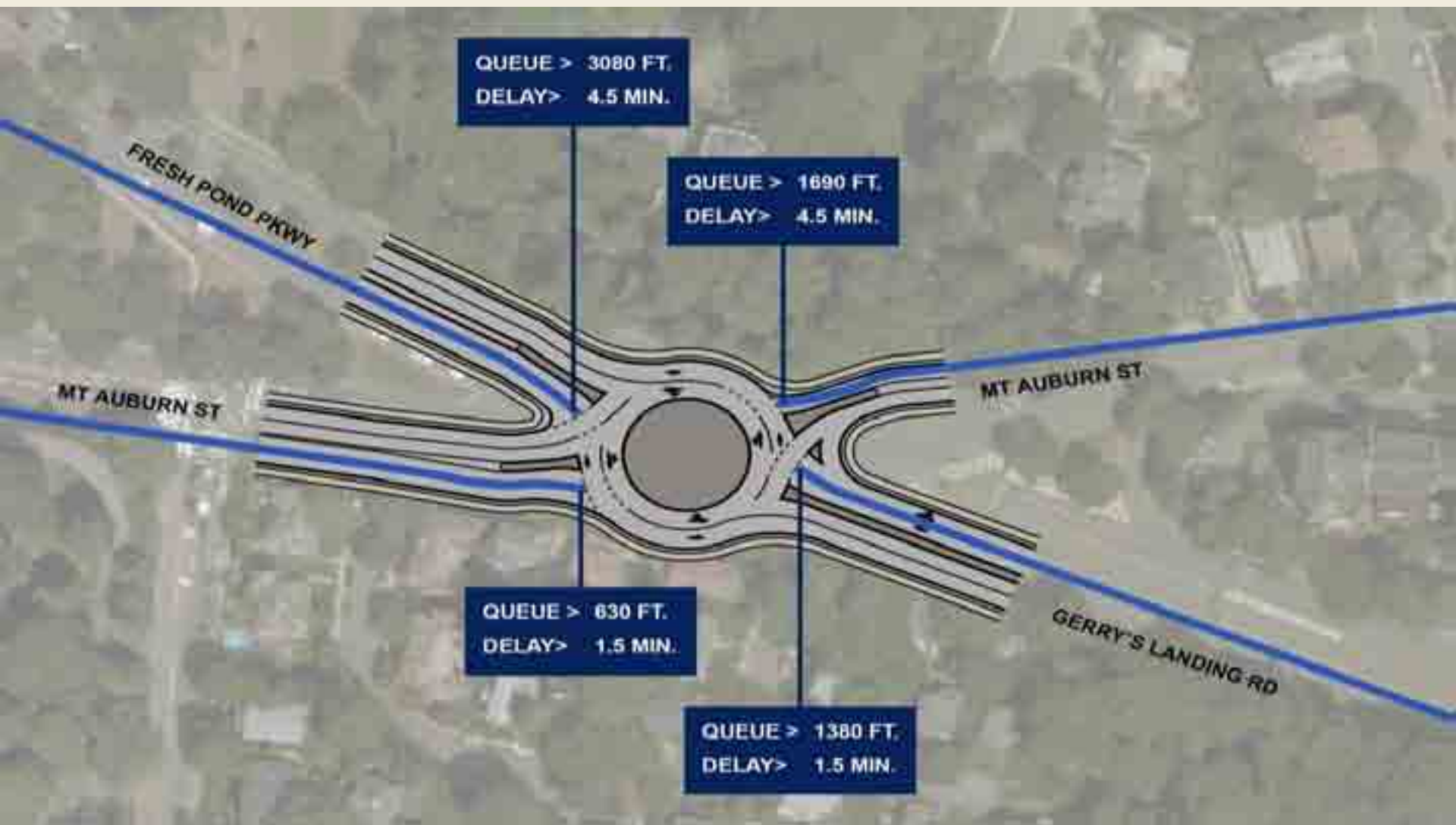
Pedestrian Crossing Operations



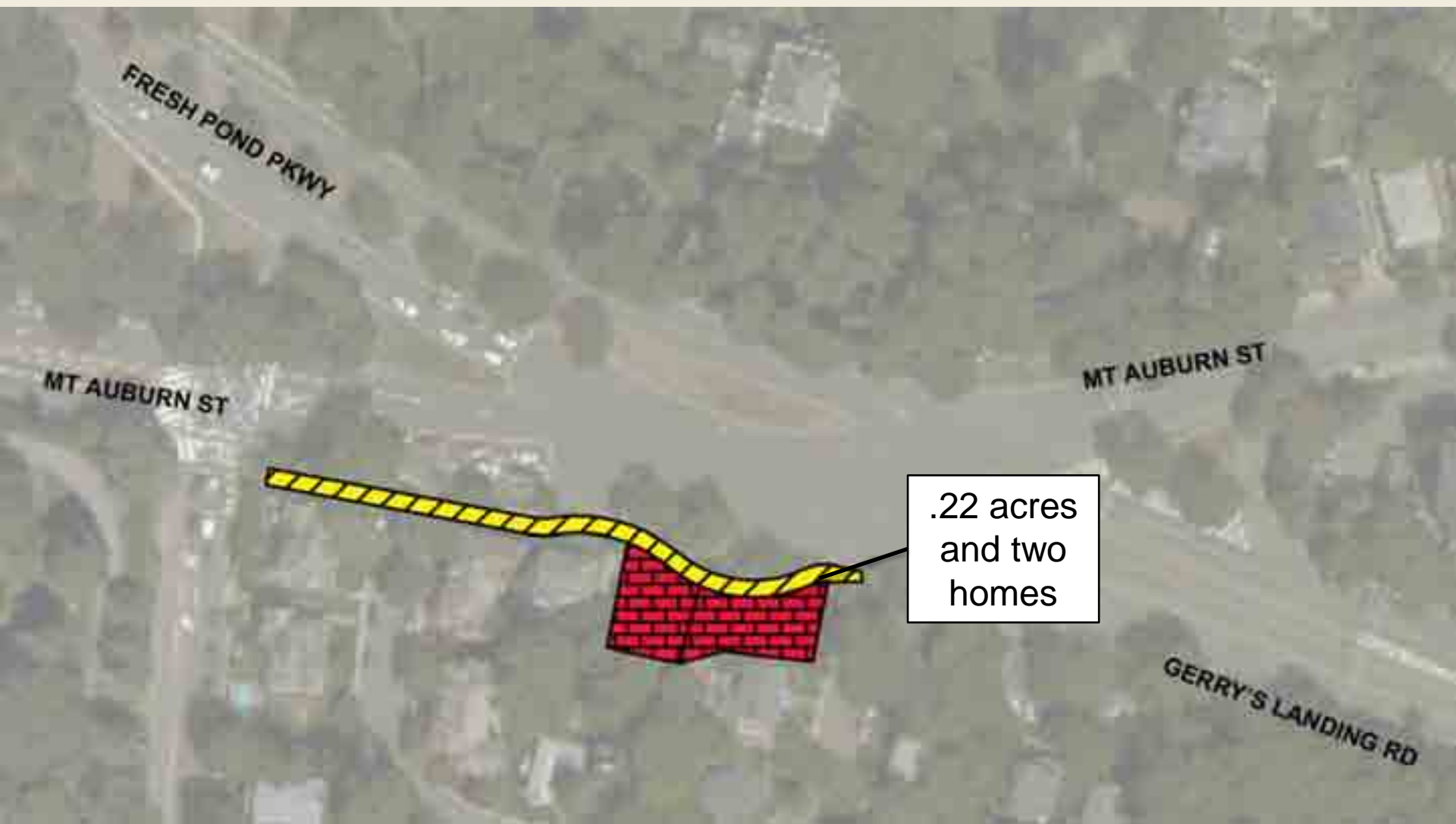
Road Safety Audit Finding: Reduce Left-turn Violations



Other Things We Tried: Roundabout



Roundabout Feasibility: Residential Impacts



Roundabout Feasibility: Avoiding Residential Impacts



Roundabout Feasibility: Parkland Impacts



Roundabout Feasibility: La Rotonda Size Comparison



Other Things We Tried: Underpass



Other Things We Tried: Two Different Double T's





Introduction to Transit Priority



Bus-only Lane and Transit Signal Priority





VISSIM Traffic Analysis



VISSIM Animations

- *Existing Conditions*
- *Long Term Option A*



Person Throughput Analysis (AM Peak)



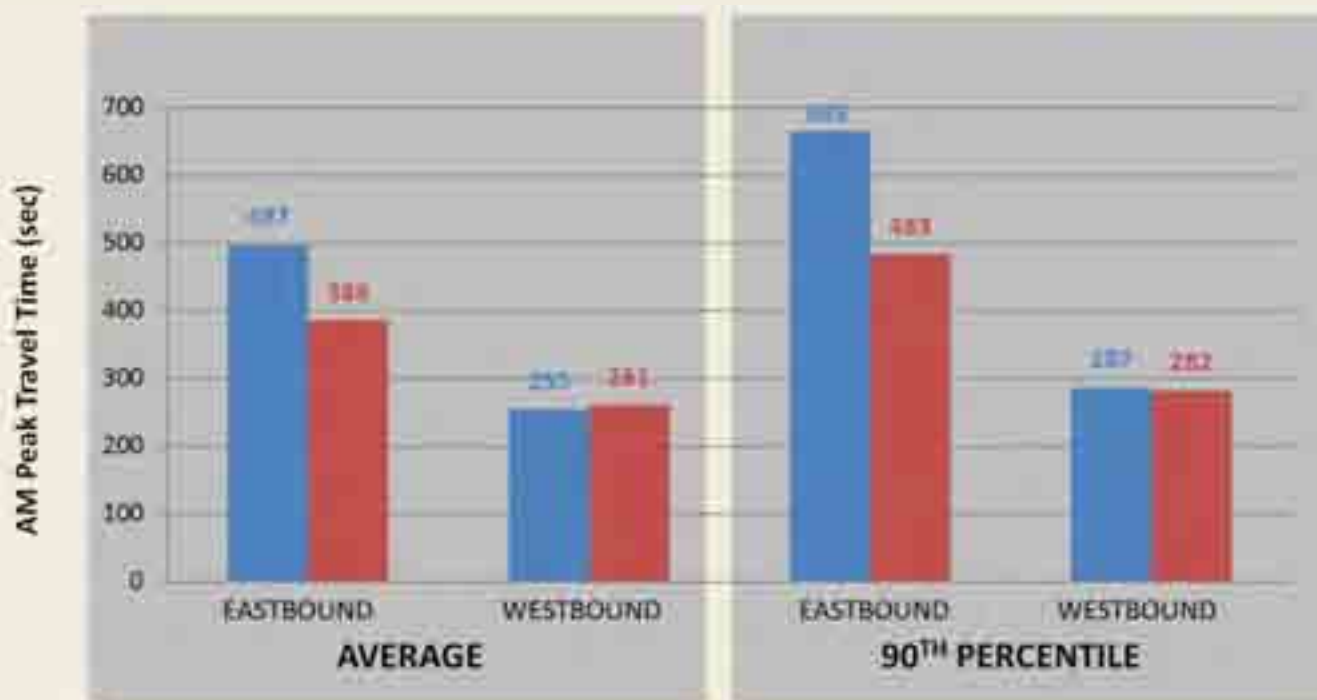
Percent Bus Vehicles = 2%
Percent Bus Person Throughput = 43%
Bus Throughput = 925 persons/hour
Vehicle Throughput = 1,200 persons/hour



Percent Bus Vehicles = 3%
Percent Bus Person Throughput = 56%
Bus Throughput = 985 persons/hour
Vehicle Throughput = 765 persons/hour



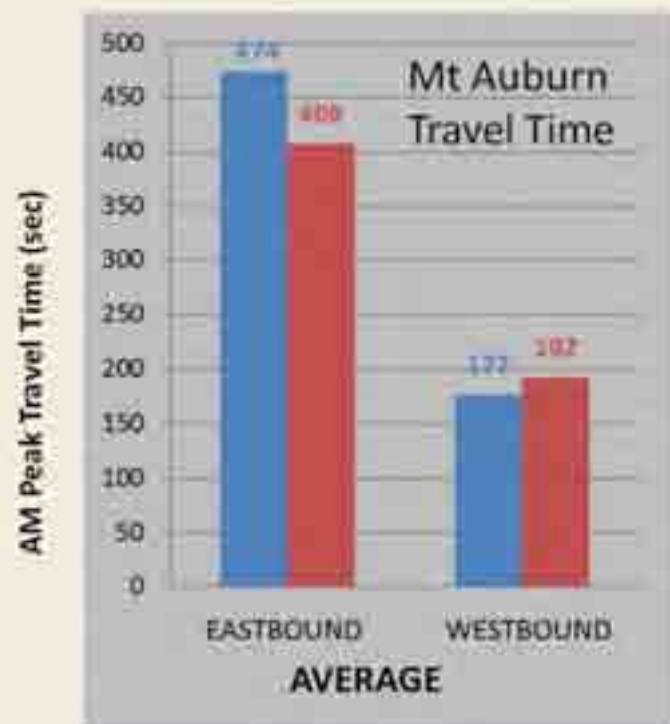
Bus Travel Time Option B (AM Peak)



- About 2 minutes bus travel time savings with bus lanes
- About 3.5 minutes reduction in 90th percentile travel time

- Existing
- With Partial Bus Lanes and Queue Jump

Auto Travel Time Option B (AM Peak)

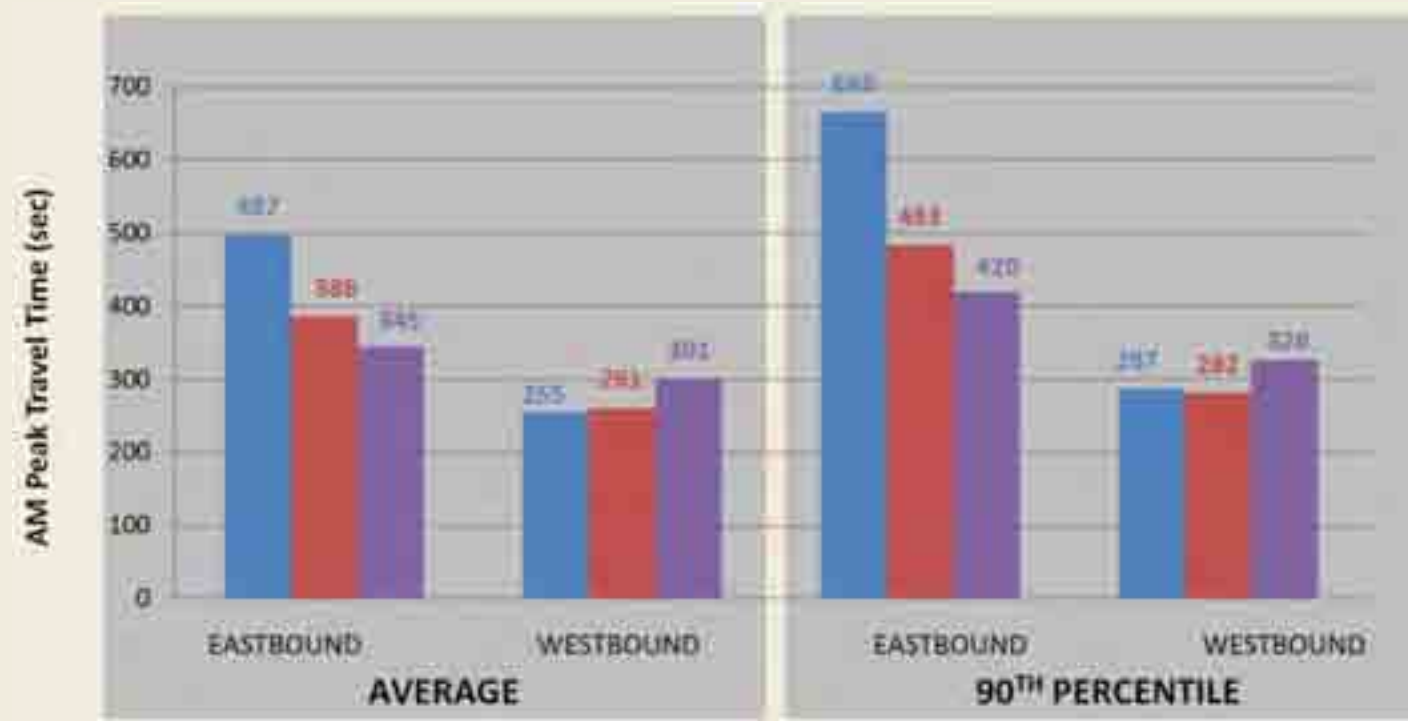


- Vehicle operations improve on Mt Auburn due to signal timing changes at Fresh Pond Parkway

- Existing
- With Partial Bus Lanes and Queue Jump



Bus Travel Time Option A (AM Peak)

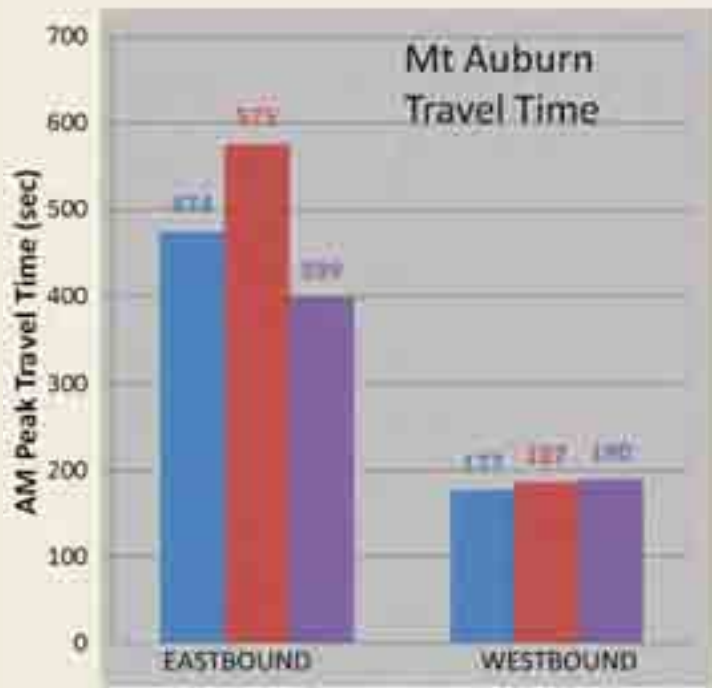


- Additional bus lane provides over 2.5 minutes travel time savings

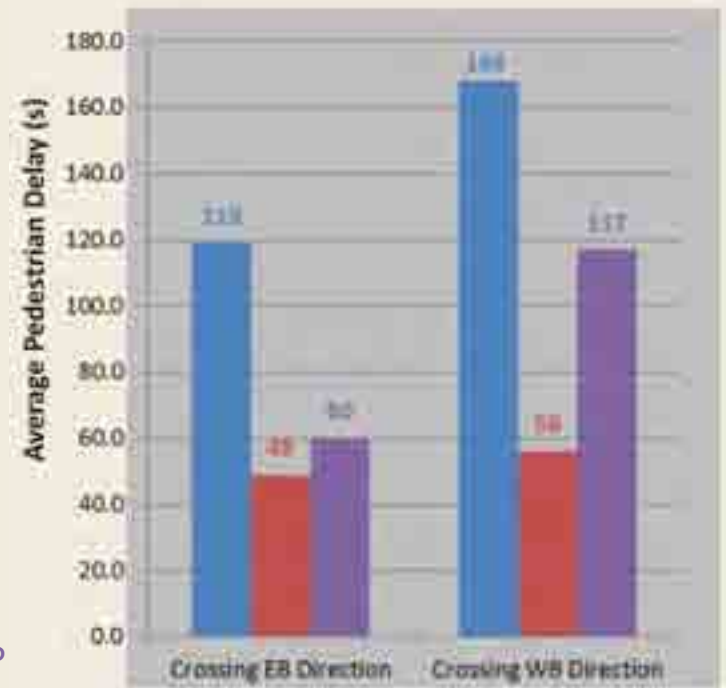
- Existing
- With partial bus lane and queue jump
- Additional bus lane between Homer and Aberdeen



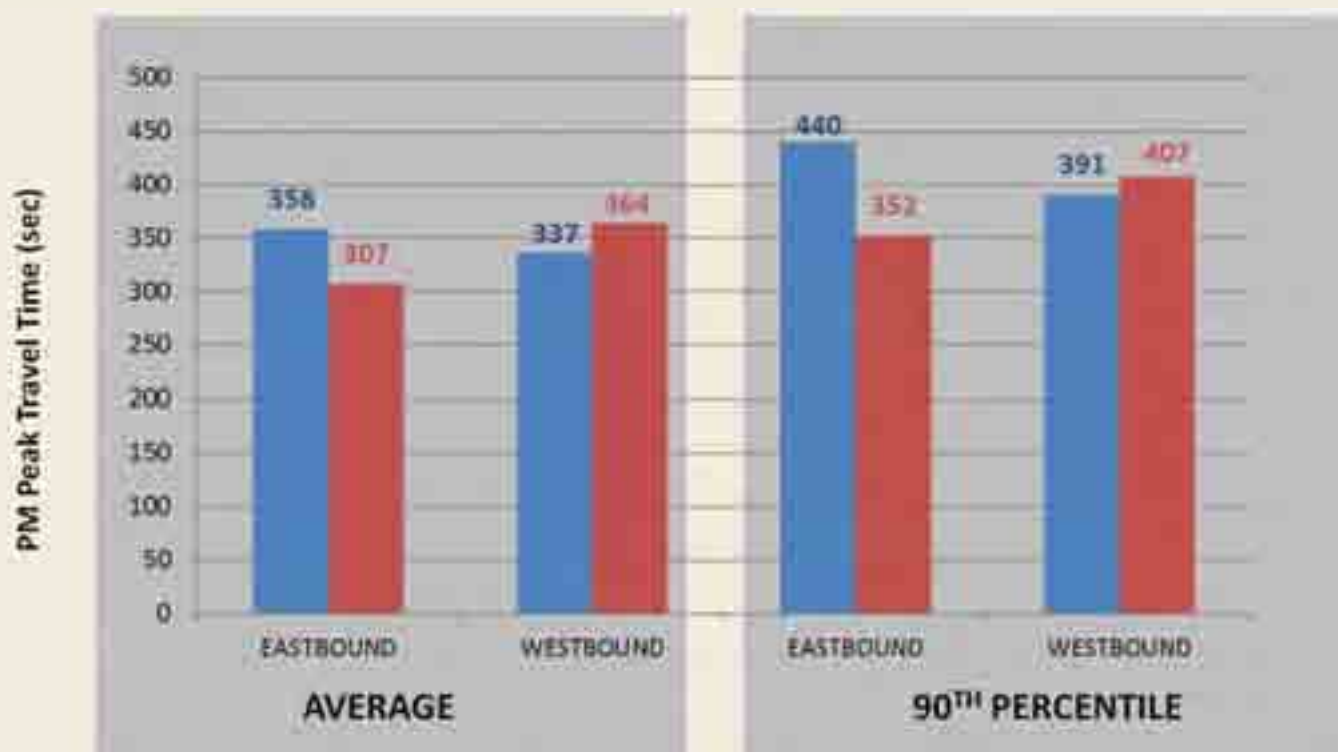
Auto Travel Time and Pedestrian Delay Option A (AM Peak)



- Existing
- With single-stage crossing at FP
- Two-stage crossing at FP



Bus Travel Time Option A (PM Peak)

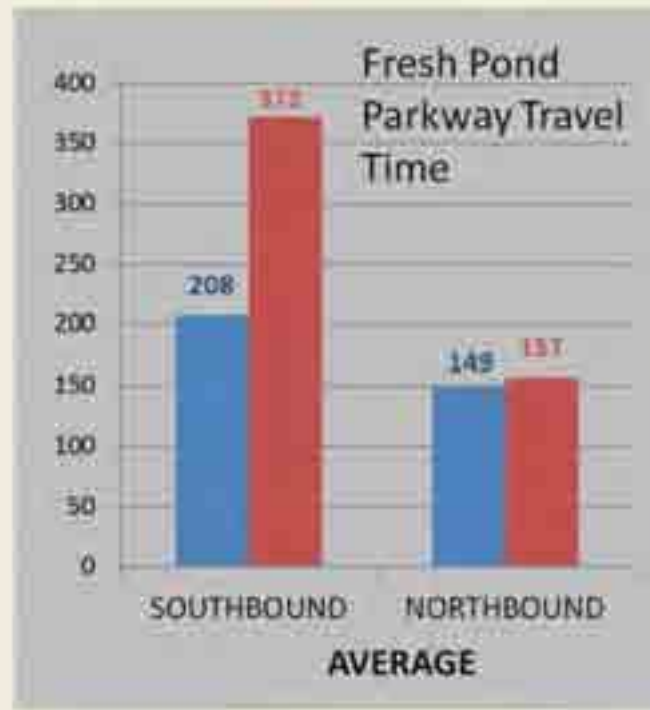
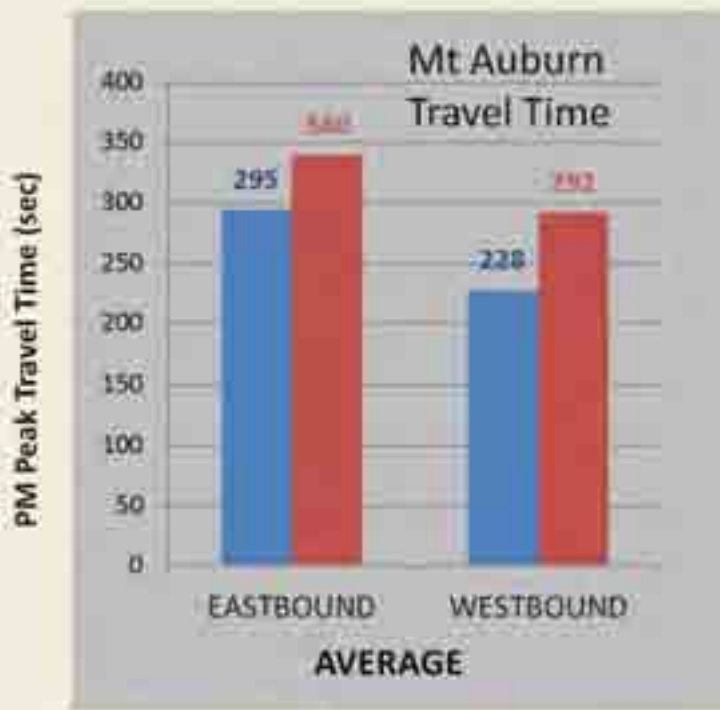
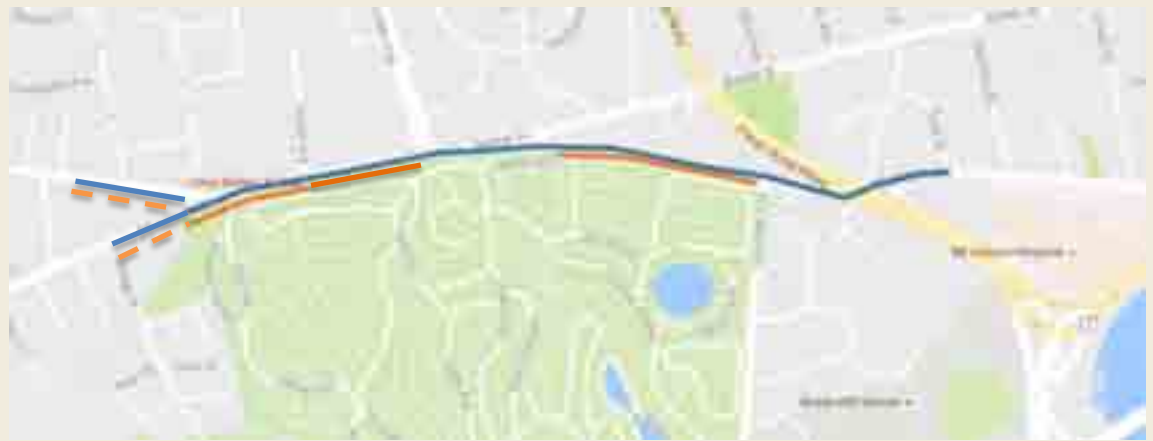


- About 1 minutes bus travel time savings with bus lanes in the eastbound direction
- Westbound bus travel time increases slightly (less than 0.5 minutes) as a result of lane repurposing

- Existing
- With Two-Stage Crossing and 4-Lane Section



Auto Travel Time Option A (PM Peak)



- Existing
- With Two-Stage Crossing and 4-Lane Section



Operations at Elliot Bridge and Memorial Drive (PM Peak)

Intersection	Existing Intersection Delay (s/veh)	Option B Intersection Delay (s/veh)
Gerry's Landing Road at Memorial Drive	32	39
Gerry's Landing Road at Elliot Bridge	31	52

Elliot Bridge Approach Delay and Queue (PM Peak)

Intersection	Existing Approach Delay (s/veh)	Option B Approach Delay (s/veh)	Existing Maximum Queue (ft)	Option B Maximum Queue (ft)
Gerry's Landing Road at Elliot Bridge	24	91	1,300	2,650



We Want Your Feedback

Please leave your comments on the roll plans around the room, and leave your park exercise on the sign in table when you leave.



Next Steps

- Final Stakeholder Group Meeting and Public Meeting: January 2017



For More Information:

- **Project Website:** www.mass.gov/dcr/mt-auburn-corridor-study
- **If You Have Comments or Suggestions on This Project:**
 - *Submit online at:* <http://www.mass.gov/eea/agencies/dcr/public-outreach/submit-public-comments/>
 - *Write:* Department of Conservation and Recreation, Office of Public Outreach, 251 Causeway Street, Suite 600, Boston, MA 02114
 - *Comment Period (pertaining to this meeting):*
Monday, November 14 – December 28, 2016
 - *Note: Public comments submitted to DCR may be posted on the DCR website in their entirety.*
- **If You Have Questions, Please E-mail:**
MaryCatherine.McLean@massmail.state.ma.us

