



Massachusetts Avenue Bus Priority Pilot

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VHB

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Pursuing Bus Rapid Transit in Arlington

- Tied pursuit to desire to address local sustainability goals while also striving to catch up with demand from regional growth
- Emphasized transit ridership in Arlington and along entire route (current and future) and potential to reduce traffic congestion
- **Emphasized how bus service suffers from significant delays and reliability challenges**



Arlington Pilot Goals

1. Improve Traffic Flow
2. Reduce Travel Time
3. Increase Reliability



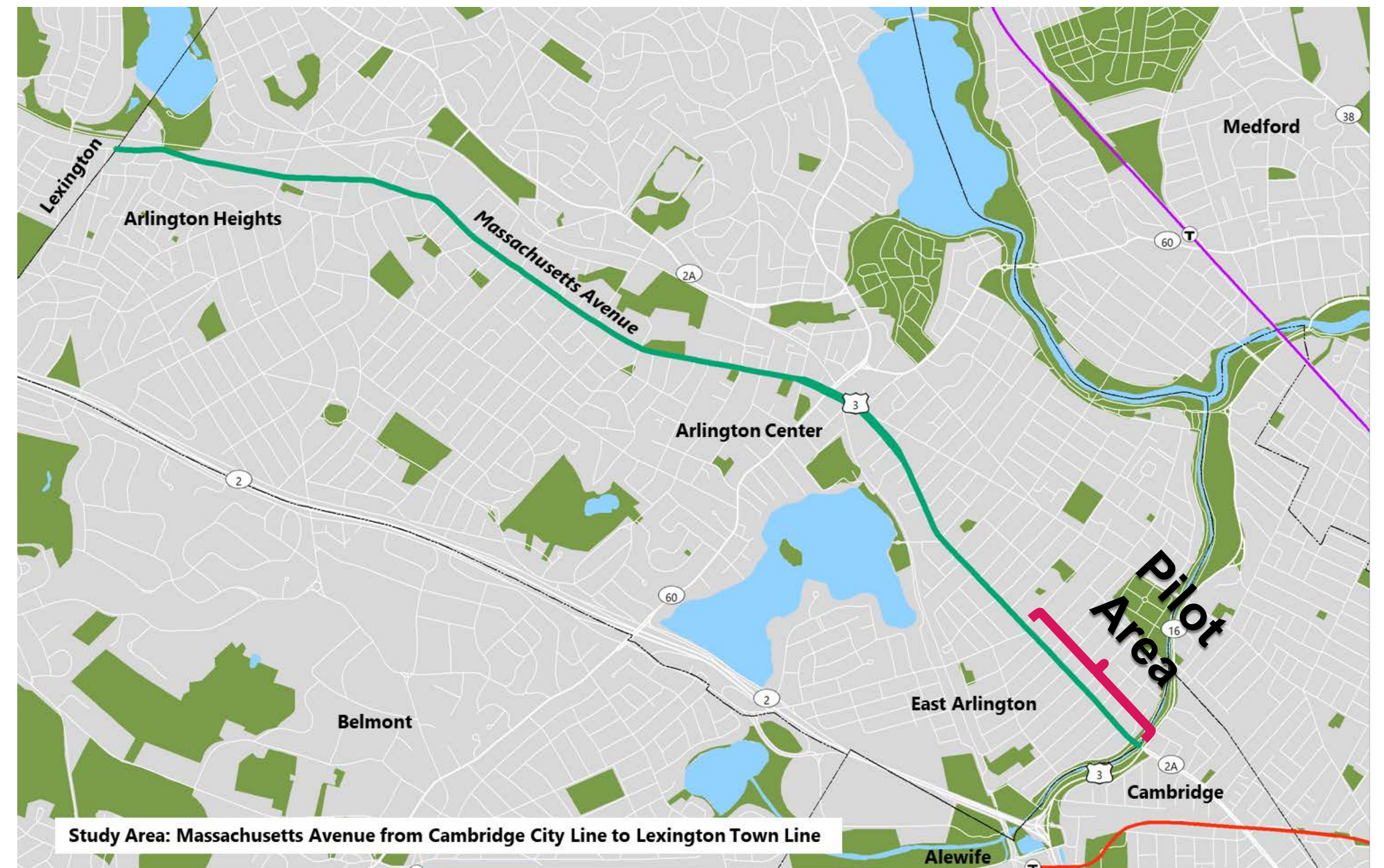
Arlington BRT Project Timeline

April-June:	Field Work and Data Collection/Neighborhood Meetings
May 16:	BRT Educational Forum
June-August:	Corridor Scenario Development
May-October:	East Arlington Neighborhood Meetings
August 15:	Alternatives Scenarios Forum
August-September:	Implementation
October 9-November 9:	Bus Priority Pilot
November:	Final Forum
November-January:	Pilot Evaluation
January-February:	Final Recommendations/ Select Board approval
May-June:	Permanent Bus Lane



Process and Methodology

- ✓ Review of entire Mass Ave corridor
 - Data Collection
 - Observations
 - Field Assessment
- ✓ Conceptual Design
 - Potential Alternatives
 - Range of opportunities
- ✓ Public Review and Input Throughout Process
- ✓ One-Month Pilot Program
- ✓ Pre-, During, and Post-Pilot Assessment

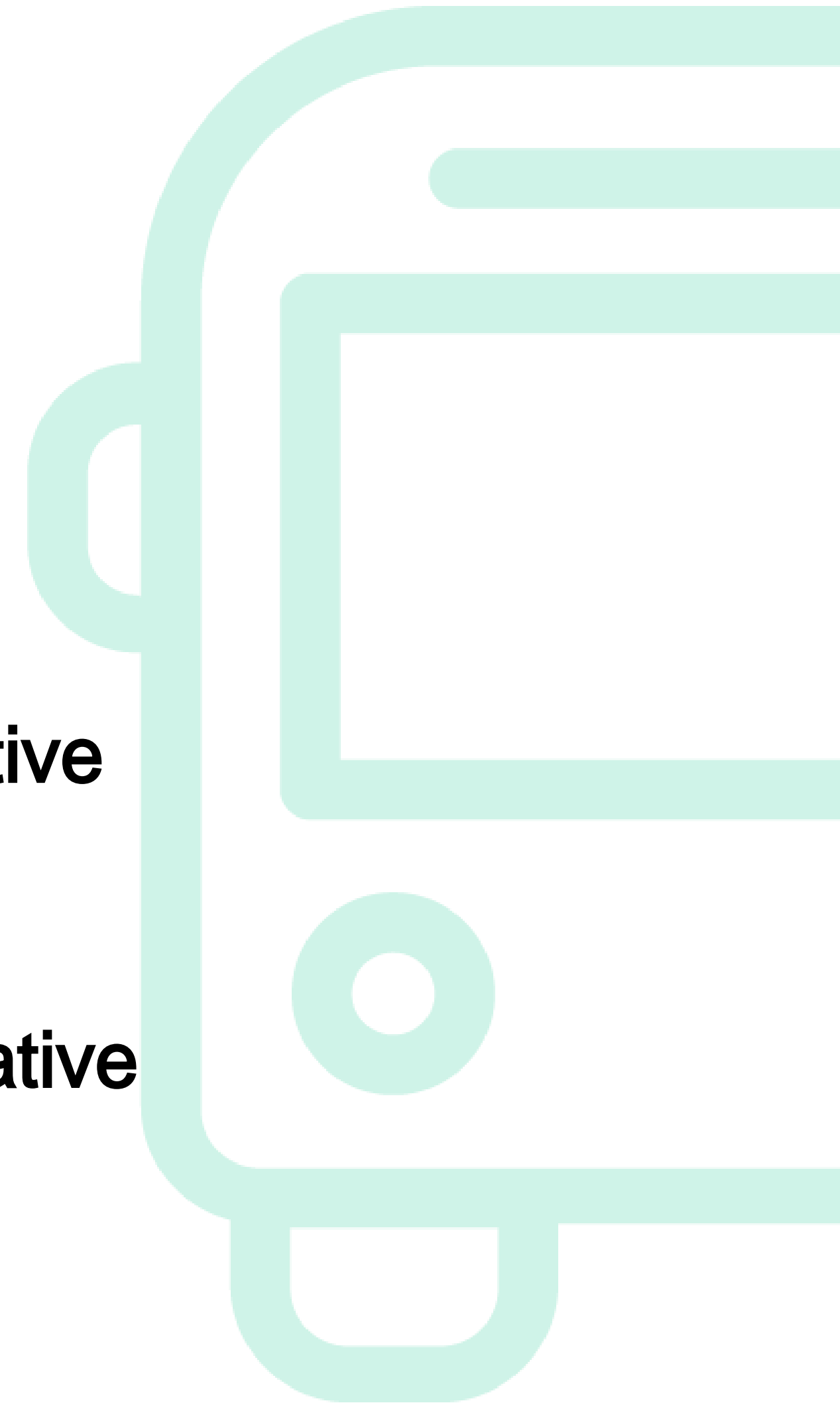


Evaluation of Concepts

Bus Travel Time
Bus Reliability
Vehicular Traffic
Intersection Queues
Pedestrian Accommodation
Bicycle Accommodation
On-Street Parking Displacement
Feasibility

Impact Designation

-  Positive
-  Slightly Positive
-  Neutral
-  Slightly Negative
-  Negative



ArlBRT Kickoff Oct. 16



Mass Ave at Lake Street



Mass Ave between Varnum Street and Alewife Brook Parkway



Mass Ave between Varnum Street and Alewife Brook Parkway



Mass Ave at Alewife Brook Parkway



Bus Shelter Artwork



Getting to BRT

Challenges

- Making the original pitch for a pilot
- Business community and public concern about on -street parking impacts (real & perceived)
- Coordination of and consistent communication among multiple parties/ stakeholders
- Ensuring continued success through permanent implementation



Bus Priority Pilot

Study Area

Pilot Scope

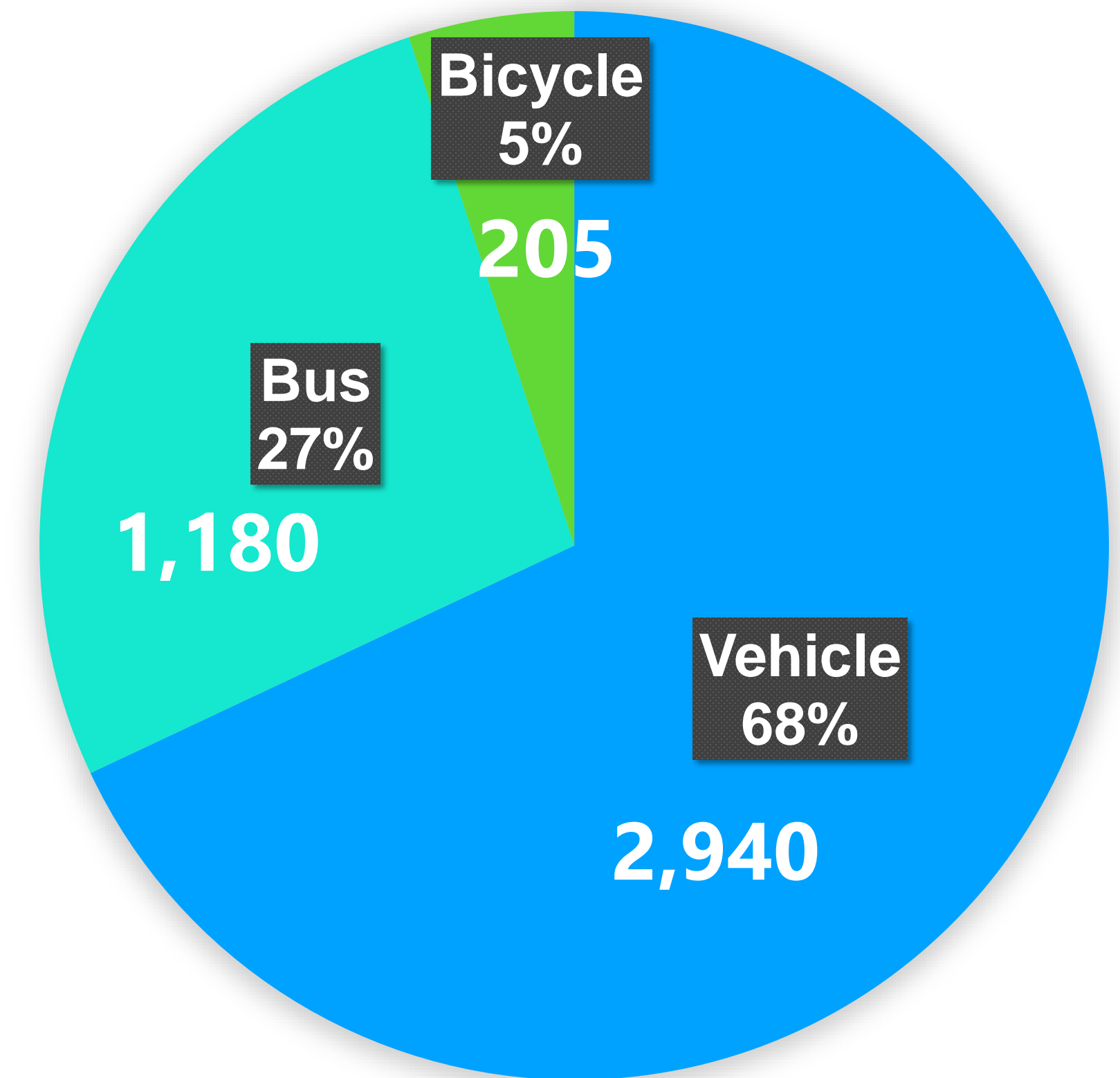
- One month duration
- Only during morning commute
- Eastbound direction only
- No permanent construction



Design Challenges

- Operational
 - On-Street Parking Needs
 - Traffic Flow
 - Queuing
 - Temporary Nature of Solutions
- Physical
 - Available Curb-to-Curb Width
 - Curb Extensions
 - Bicycle Accommodations

**East Arlington Massachusetts Avenue
Roadway Users by Mode**



**Roadway Users on Mass Ave Eastbound (East of Milton Street)
During the Weekday Morning Peak Period (6-10 AM)**

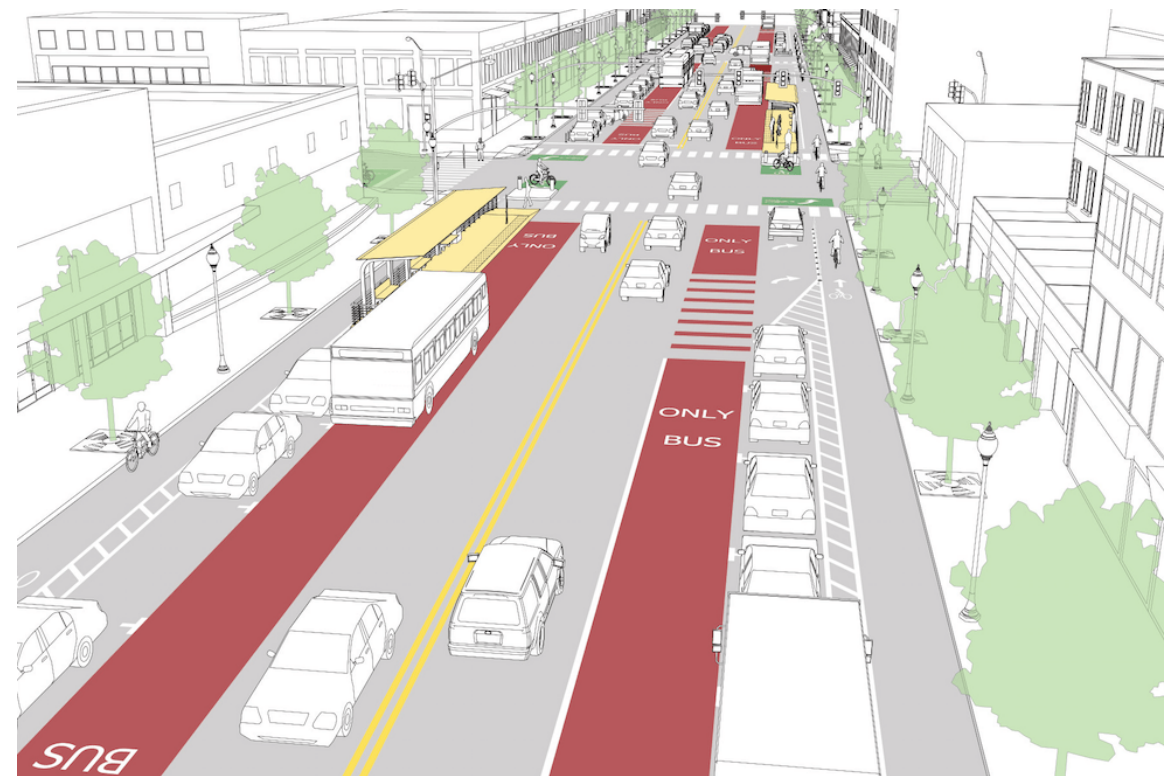
Design Approach

Break Study Area Into Three Manageable Areas

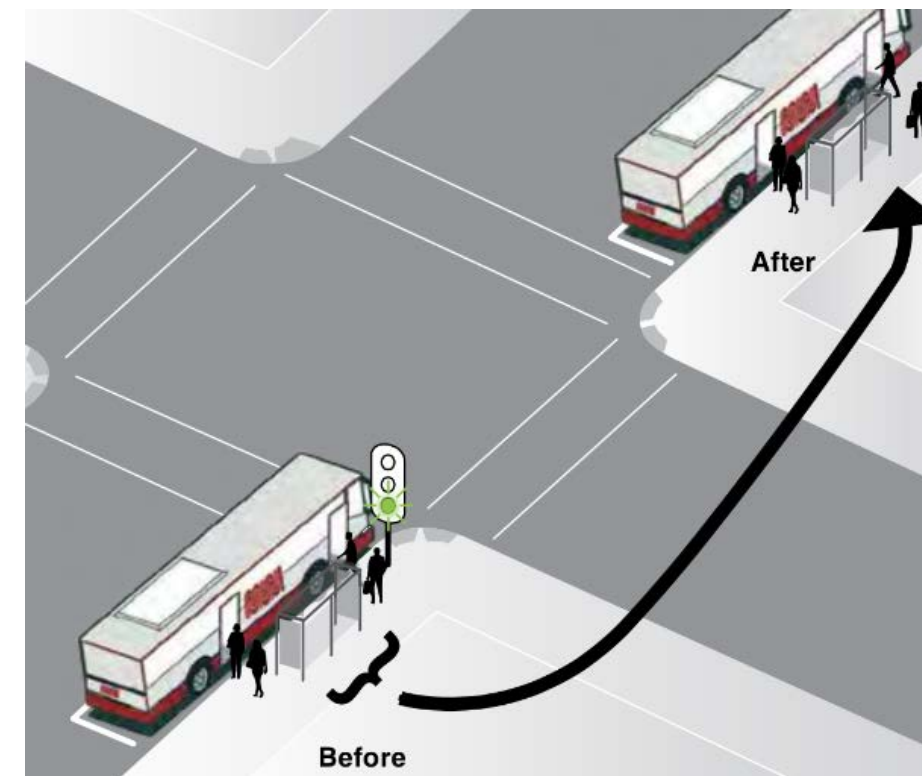


Design Elements

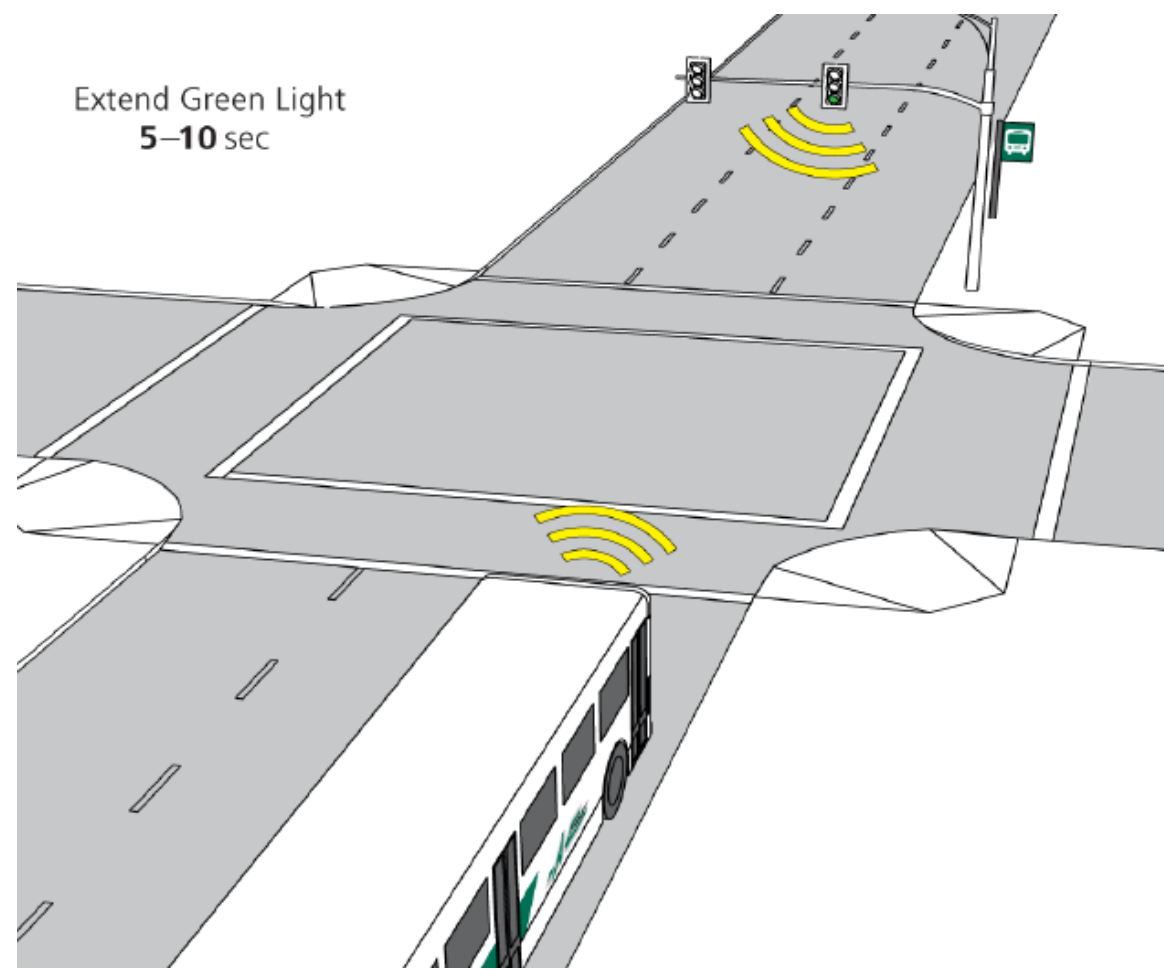
Focus on Four Design Elements



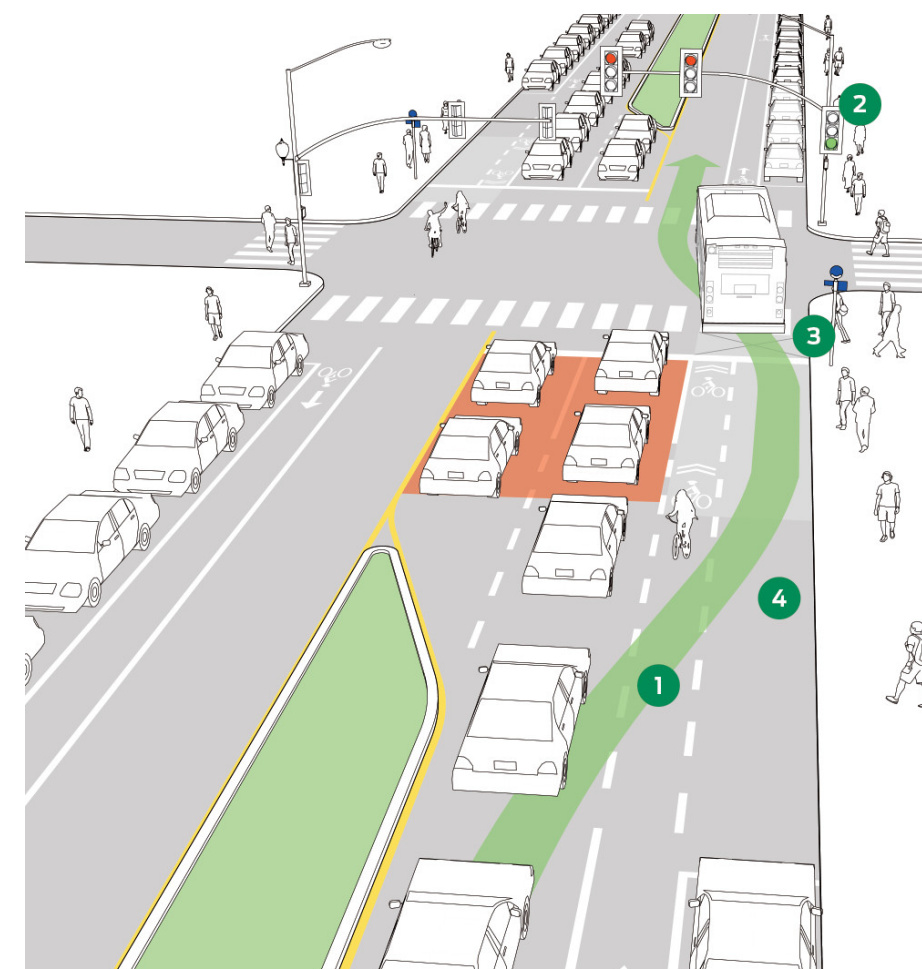
Exclusive
Bus
Lane



Bus
Stop
Relocation



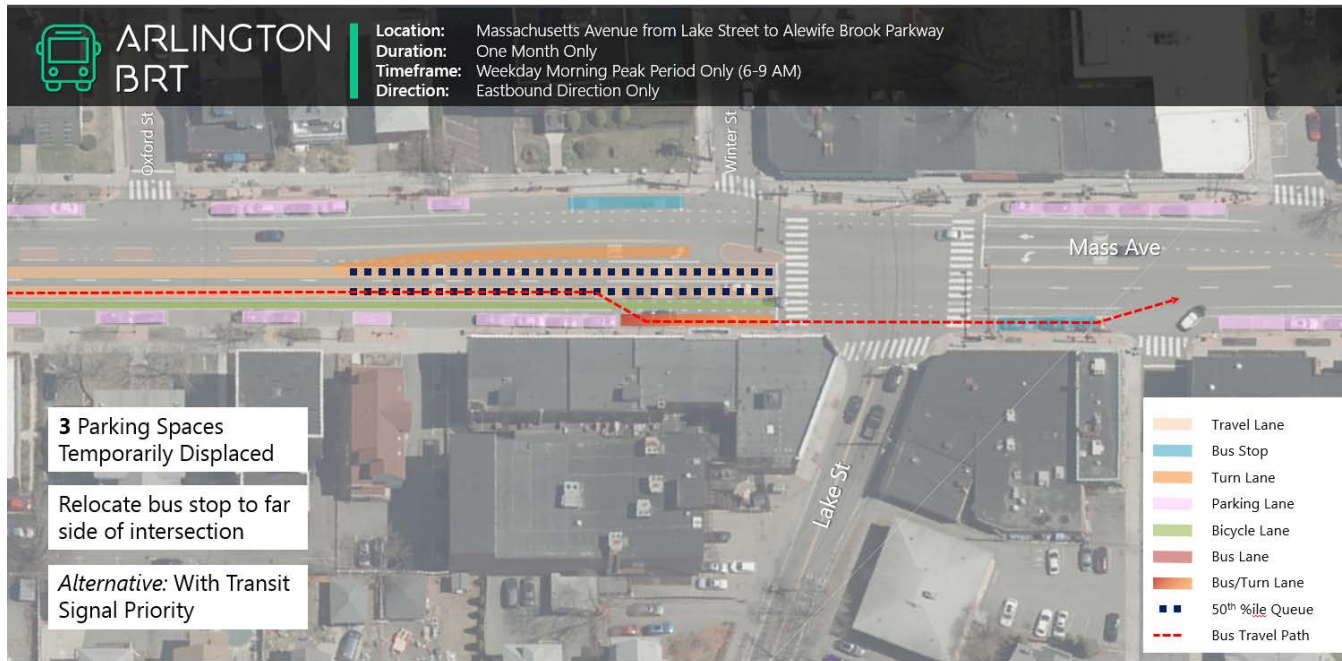
Transit
Signal
Priority



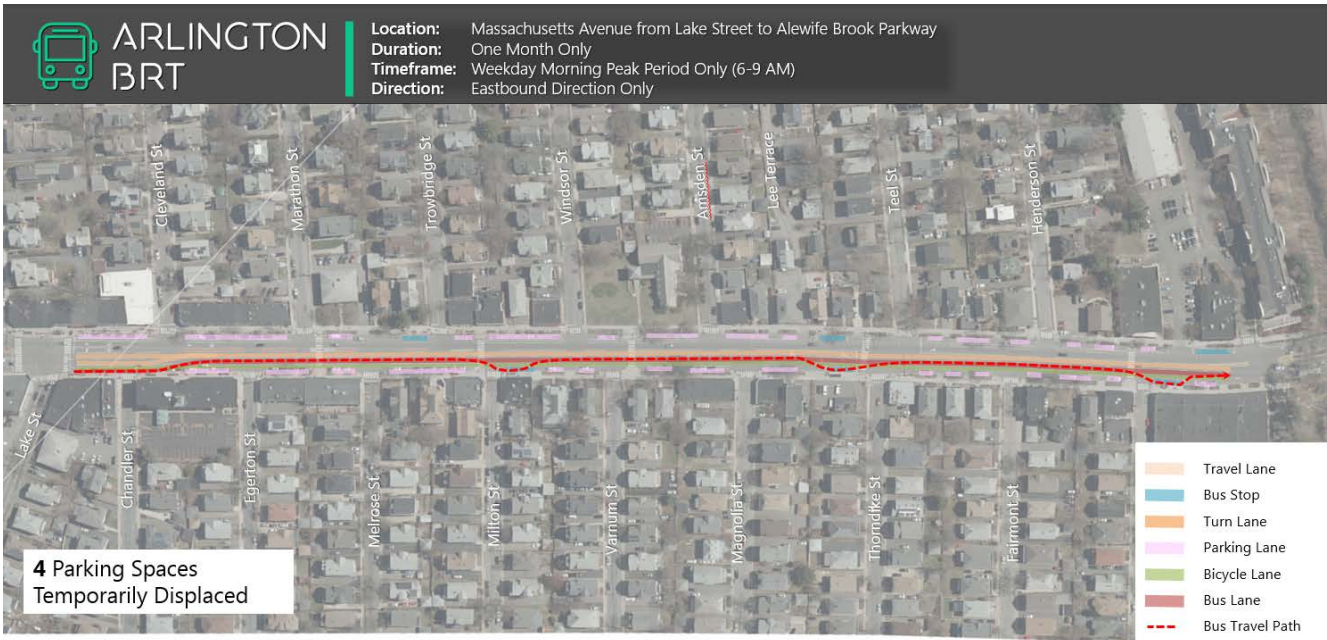
Queue
Jump
Lanes

Design Options

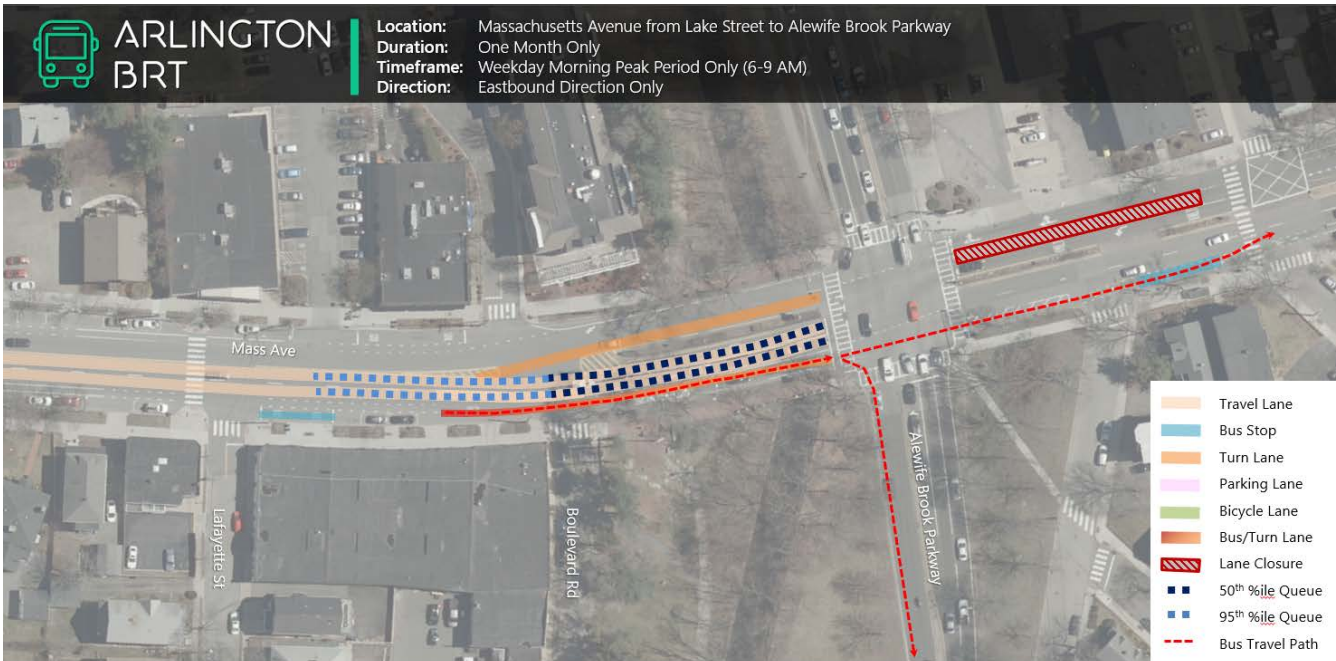
Provide Multiple Options for Each Sub-Area



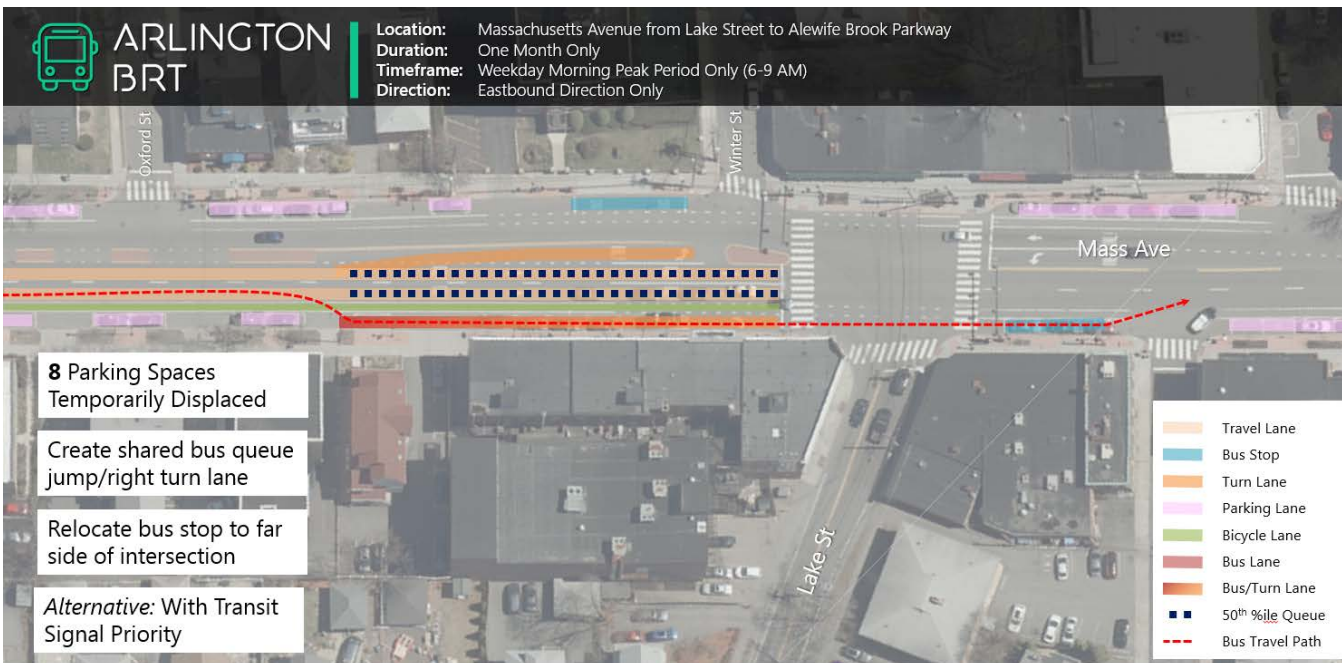
Option 1 – Relocate Bus Stop to Far Side
Massachusetts Avenue at Lake Street | Arlington BRT Pilot Project



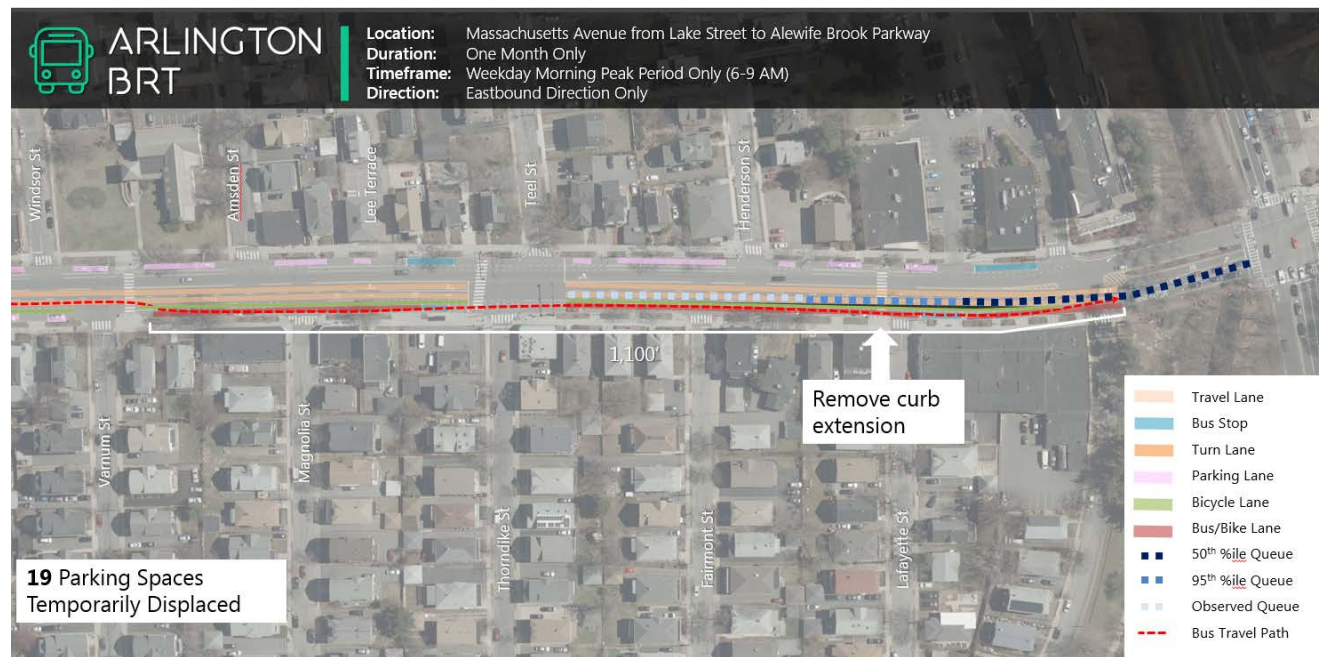
Option 1 – Convert Travel Lane to Exclusive Bus Lane
Massachusetts Avenue from Lake Street to Alewife Brook Parkway | Arlington BRT Pilot Project



Option 3 – Move Left Turn Lane North of Median
Massachusetts Avenue at Alewife Brook Parkway | Arlington BRT Pilot Project



Option 2 – Queue Jump with Far Side Bus Stop Relocation
Massachusetts Avenue at Lake Street | Arlington BRT Pilot Project



Option 2 – Provide Curbside Bus Lane from Varnum to Alewife Brook Parkway
Massachusetts Avenue from Lake Street to Alewife Brook Parkway | Arlington BRT Pilot Project



Option 1 A – Prohibit Left Turns on EB Approach
Massachusetts Avenue at Alewife Brook Parkway | Arlington BRT Pilot Project

Final Design

Mass Ave at Lake Street



Relocate Bus Stop to Far Side of Intersection/Add TSP



Final Design

Mass Ave Running Way



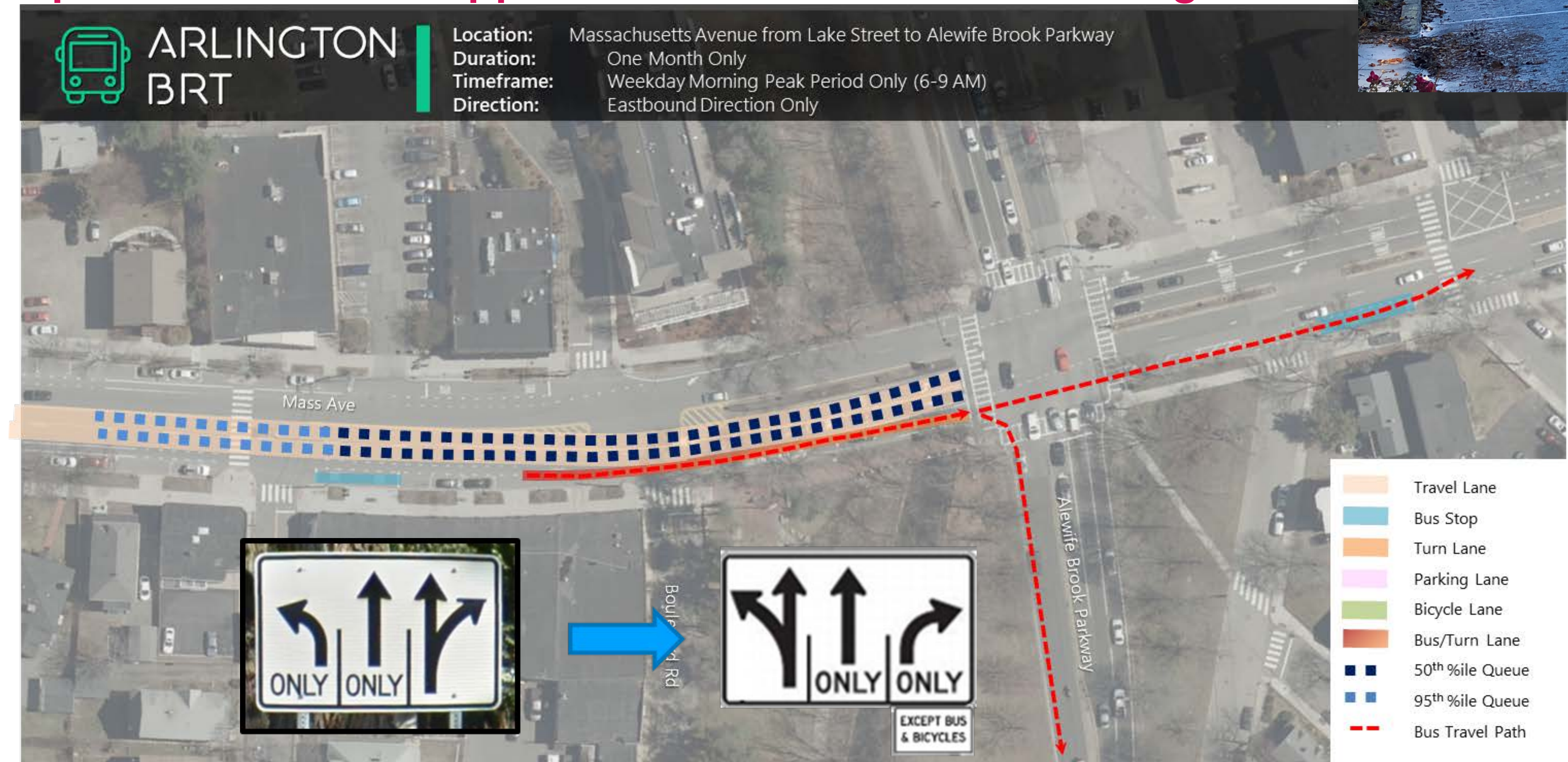
Provide Curbside Bus Lane from Varnum to Alewife Brook Parkway



Final Design

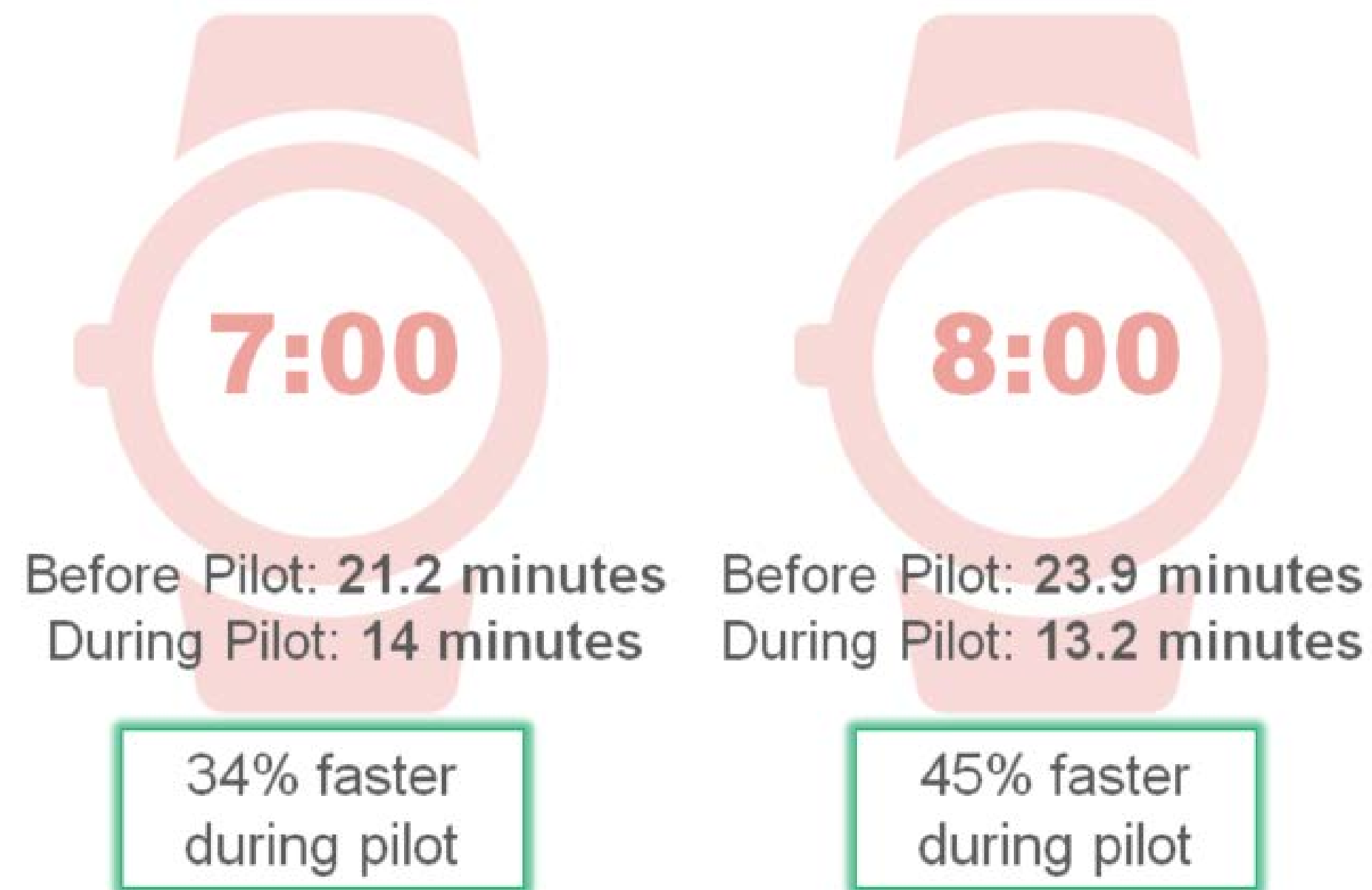
Mass Ave at Alewife Brook Parkway

Split Phase on EB Approach with Shared Left-Through

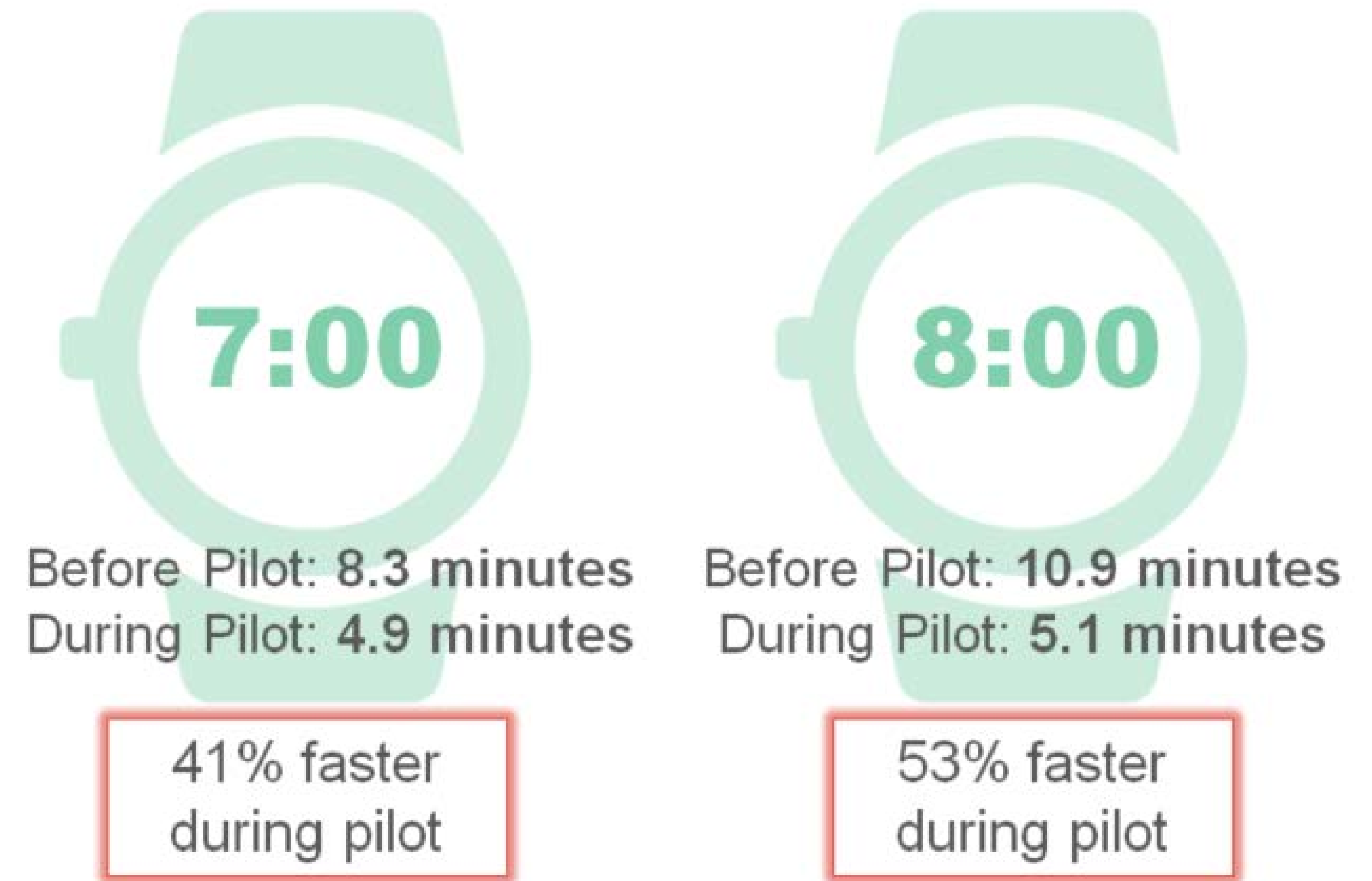


Pilot Outcomes: MBTA Data

- Buses ran **5 minutes faster on average** through the pilot corridor especially during 7:00-8:00 a.m. and 8:00-9:00 a.m.



Route 79/350 Median Travel Time, Inbound

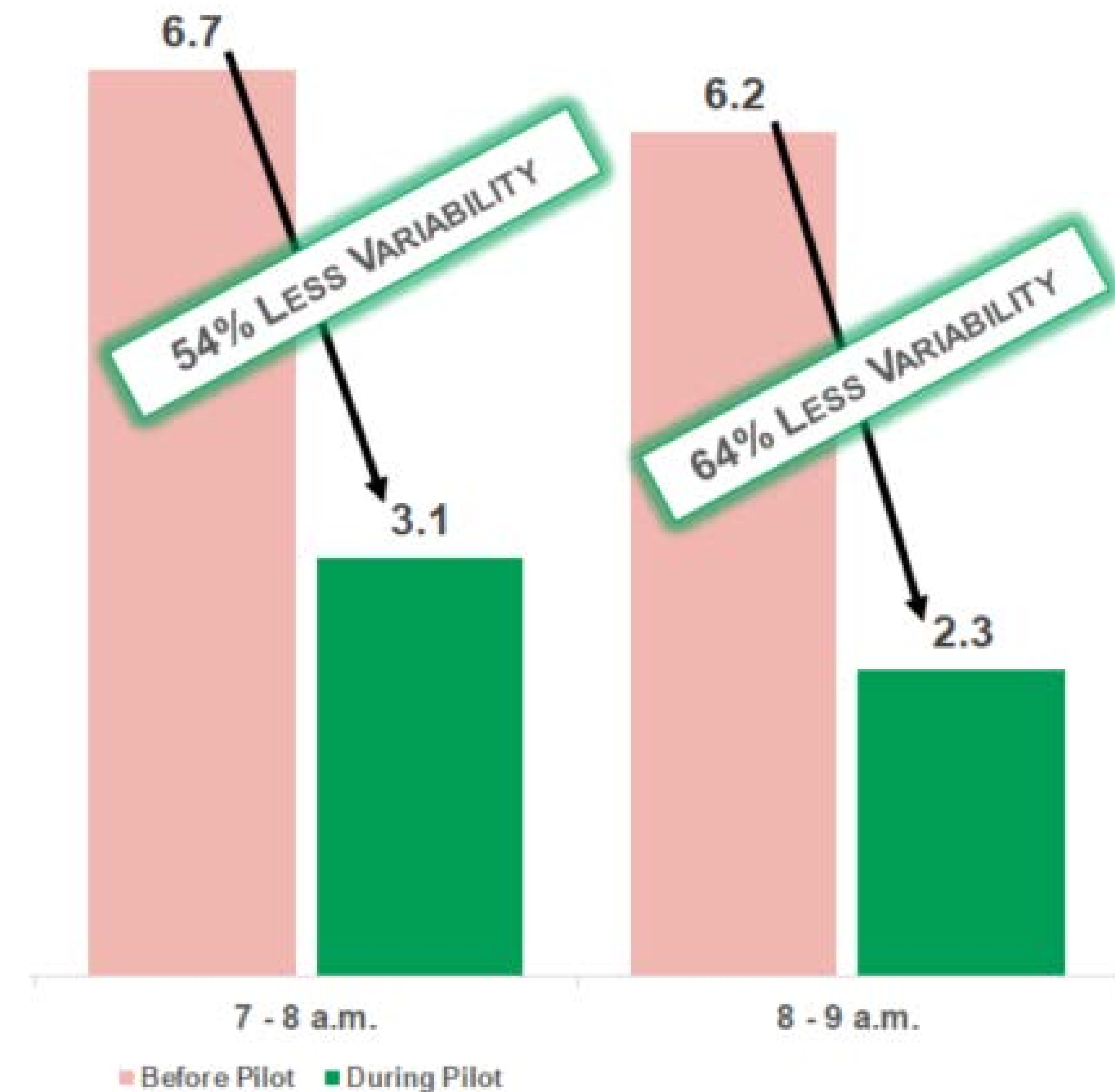


Route 77 Median Travel Time, Inbound

Source: Massachusetts Bay Transportation Authority, APC Data—MBTA Route 77, September 9– November 9, 2018

Pilot Outcomes: MBTA Data

- MBTA Buses ran consistently **faster and reliability increased** – variability fell below 5 minutes for all routes
- Travel time in pilot corridor 8:00-9:00 a.m. for Route 77 before pilot: 11-17 minutes; **during pilot: 5-7 minutes**



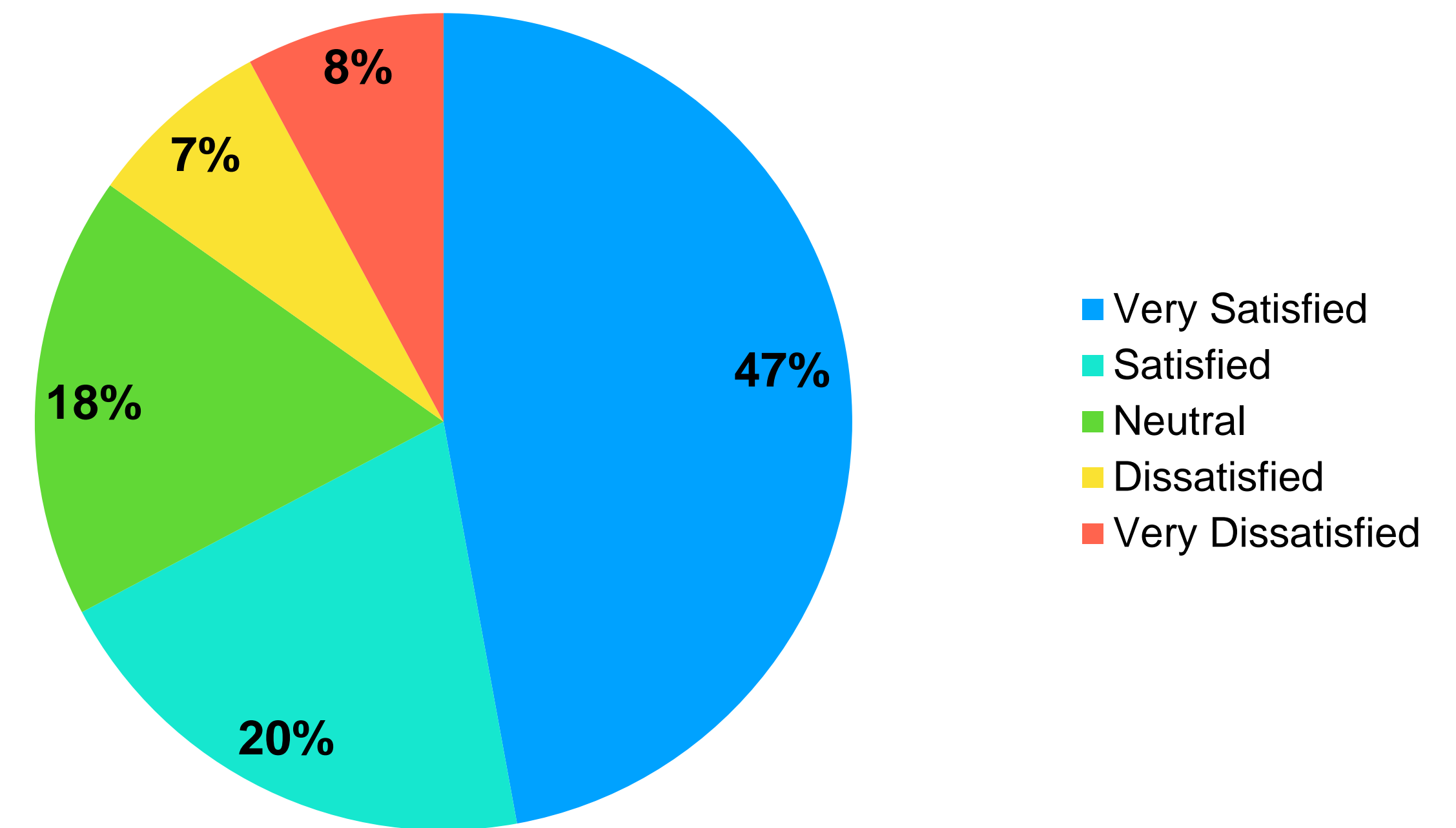
Route 77 Difference Between Median and 90th Percentile

Source: Massachusetts Bay Transportation Authority, APC Data—MBTA Route 77, September 9– November 9, 2018

Pilot Outcomes: Survey Results

- 3 surveys totaling 970 responses; post-pilot survey received 382 responses
- Respondents: drivers (43%), bus riders (36%), cyclists (14%), walkers (4%)
- 73% said the dedicated bus lane should **remain**; 58% said dedicated lane should be extended to Lake Street

Post-pilot survey: Based on your experience in your most common mode of travel, how satisfied are you with the BRT Pilot on Mass Ave?



Challenges & Surprises

Challenges

- Coordination of and communication among multiple parties/ stakeholders
- Business community and public concern about on -street parking impacts (real & perceived)
- Bus stop relocation (messaging about move and amenities at new stop)

Surprises

- Minimal conflict between buses and bicyclists
- Significant bus time savings from short pilot duration
- Reported increased bus utilization even for short time
- Dedicated bus lane may need to be extended to increase overall benefit



Thank You



Town of Arlington

Adam Chapdelaine

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Michael Rademacher

Wayne Chouinard

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