Summer Street Background & Pilot Performance

Open House Presentation June 11, 2024

STO BIKE LANE ENDS

Agenda

- Introduction & Background
- Data Collection & Analysis
- Future Growth
- Next Steps
- Q&A Discussion





Introduction

What brings us here today?

- Present results of data collection process for the Summer Street Pilot.
- Hear public feedback about the results of the Pilot.
- Describe next steps for the Pilot.





Congress Street Grounds in Fort Point

- Baseball stadium that existed near Thompson Place in the 1890s, primarily for the short-lived Boston Reds baseball team.
- For a short time, it was also the home of Boston's National League baseball team known as the Boston Beaneaters - which later became the Boston Braves and now the Atlanta Braves



Background

Background

- The Route 7 bus experienced significant delays and crowding
- Street was not comfortable for cyclists and pedestrians in many locations
- Traffic speeds reached more than 50 MPH in some segments and 1 in 4 cars were exceeding 40 MPH
- Congestion in key locations delays Port of Boston traffic and transit, creating poor reliability and overcrowding in peak periods



Realdavejshea joined one of the lines for the 7 bus in South Boston this morning:

Background

2017

- **Go Boston 2030** recommends bike lanes on Summer Street
- MassPort convenes a meeting with MassDOT, Mass. Convention Center Authority, City of Boston, and consultants to discuss bus rapid transit options for South Boston with the group determining that a bus/truck lane on Summer Street should be studied.

2018 - 2020

• Design concepts for Summer Street bus/bike/truck lanes explored by MBTA, BPDA, and BTD in collaboration with stakeholders





2021 - 2022

- Pilot explored in Seaport Transit Plan public and stakeholder meetings
- MassDOT awards grant to City of Boston for Summer Street Pilot to implement bus/truck lanes

2023

• **BTD begins public** engagement, including office hours, open houses, flyering, and civic association meetings

Background



Background: Pilot Goals

- Enable Sustainable Mobility with a focus on better conditions for buses and bikes
- Improve Safety for Bikes and Pedestrians with a focus on improved infrastructure
- Accommodate Economic Activity with improved Port/Maritime access and mobility options for people who live and work here.



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Background: Engagement Timeline



Data Collection

Data Collection

What data have we been collecting?

- Traffic
- Transit
- Bikes
- Field Observations
- Feedback Agency, Stakeholder, and Public

In the coming weeks, we will post data reports and readouts to the BTD website.





Data Analysis





Improvements to bike and pedestrian safety

* Slower vehicle speeds * Higher bicycle activity

Some travel time increases for motorists

* Average peak vehicle travel time increase of 40-90 seconds * Key intersections slowing bus trips



Challenges with compliance with bus/truck lane

* Majority of pilot lane traffic volume is unauthorized vehicles * Greater enforcement needed



Inconclusive effect on MBTA bus operations

* Seasonal fluctuations in ridership, runtime, and congestion obscure new patterns *Limited bus service prior to Bus Network Redesign

Data Analysis: Speeding

Data Analysis: Speeding



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By month 5 of the Pilot, the percentage of vehicles traveling over 40 MPH remained lower than before the Pilot.



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Data Analysis: Bikes

Data Analysis: Bikes



Bluebike usage has increased system wide since 2023. Stations near Summer Street had a stronger ridership growth than stations in the rest of the system.

- SB Library and Lawn on D were among the stations near Summer Street that saw the highest increases.
- On an average Wednesday and Thursday in April 2024, all the Bluebikes at SB Library had been checked out by 9AM.

April 2023 to April 2024 Ridership Growth Rate



Data Analysis: Bikes

"Since the change, there is more separation, and I find drivers giving me more space, especially since I have officially designated space."

-Survey respondent, Summer Street commuter

Having a protected bike lane is **crucial to my ability to ride along this route**. I feel much safer.

-Survey respondent, Summer Street commuter Riders report feeling more comfortable and safe





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Data Analysis: Traffic



Before the Pilot

Persistent congestion during rush hours and major events





Off peak, wide lanes encouraged driving at high speeds creating an unsafe and uncomfortable environment for all road users



Total vehicle counts have remained consistent but showed some seasonal variation.

- January 2023: 17,500 vehicles
- October 2023: 20,000 vehicles
- Jan 2024: 17,800 vehicles

Truck volumes have remained consistent though truck traffic has slightly shifted to PM.





Average peak travel times increased by less than two minutes for a trip from East 1st Street to Dorchester Ave near South Station.



AM Peak Traffic before the Pilot

Severe delay was frequently present in key locations during the AM Peak in March 2023.

Reserve Channel Bridge & Drydock Ave



AM Peak Traffic during the Pilot

Delay increased in three locations while maintaining steady at other points.

Drydock Ave to Pumphouse Rd

Most drivers expressed frustration with new roadway configurations

"Bus lane causes high levels of traffic and **makes the commute to our daycare a lot more difficult**. If someone is turning left, they basically hold up the entirety of the now single-lane road."

- Survey respondent, South Boston resident

Accessing and exiting the garage is now a challenge, especially during peak periods, while Cypher St is closed.

-BCEC Employees





Data Analysis: Transit

Data Analysis: Transit

Historically, there was a concentration of transit passenger delay across Summer Street during the AM Peak.

380 buses operate in both directions all day on Summer Street.

"[The 7] is constantly overwhelmed and **puts the bus drivers and patrons in dangerous positions** and we are crammed into the bus.

- South Boston resident commuting to Downtown



Inconclusive bus operations improvement

Riders and bus drivers recognize non-compliance Key congested segments are slowing buses too

Inbound travel times match pre-pilot conditions, with some improvement in the PM Peak. Outbound travel times are faster in midday. Vehicles consistently violating the lane restrictions inhibit the potential for buses to operate without delay. Reliability has overall gotten slightly better for outbound trips and slightly worse for inbound trips. Delay leading to BCEC outbound is worse. Delay inbound near Drydock Ave is worse. Route 7, 9 and 11 ridership fluctuates seasonally over the past 3 years following a big dip during the pandemic.

Seasonal fluctuations have grown larger over time for Route 7 and Route 9.

All four routes saw a decrease in ridership between Winter and Spring 2024.



Data Analysis: Transit

The pilot bus lane has had limited impact on bus trip times.

Typical inbound travel times along the corridor range from 6-8 minutes. Trip times are the least reliable during the AM Peak, and the slowest trips can take up to 16 minutes.

- PM peak trips have improved slightly since Fall 2023 (15-30 seconds)
- The worst 10% of Midday trips were over a minute faster in Winter 2024 compared to Fall 2023 and Spring 2024



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Data Analysis: Challenges

Data Analysis: Challenges

Jan 2024

May 2024



Bus/Truck Lane Violations between W. Service Rd and W. Side Dr



Bus/Truck Lane Violations between Drydock and Butler Freight Corridor

PN

7:30 3:15 00:6 9:45

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"What bus lanes? They'd would work much better if there weren't people blocking them."

- MBTA Bus Operator

Despite a decrease in lane violations with enforcement in May, more than 85% of outbound pilot lane traffic in AM and PM are unauthorized vehicles.



Data Analysis: Challenges

Based on feedback from community stakeholders, the City adjusted some pilot design components in the last few months

- BCEC striping requests
- MassPort striping requests
- Adaptive signals
- Additional signage
- Increased days of enforcement
 - 56 citations and multiple verbal warnings

"Inconsistent signage at Summer & Drydock intersection. **Signage painted** on the road doesn't match up or align with overhead signage."

- Survey respondent, South Boston resident


Future Growth & Implications for Summer Street



By 2030, the South Boston Waterfront will have roughly 31,000 residents and 89,000 jobs, putting pressure on the transportation network. This population is equivalent to Hyde Park and larger than Allston, Roslindale, Back Bay, or Mattapan. The amount of employment is second-only to Downtown and more than the Back Bay.



We only have so much available space on our roads - and transit, biking, and walking use this space more efficiently than cars.

> 50 people traveling on different modes



Bus Network Redesign proposes a high frequency route from Sullivan Square to City Point. The new T7 will require bus priority along much of its route to remain reliable given congestion in Downtown and Seaport.

We are also working on a North Station to Seaport Rapid Bus design in coordination with the MBTA.



Bus lanes are **quicker and cheaper to install** than rail, and can be altered significantly easier.

Bus lane design and installation costs \$1 million per mile for a red paint/sign program and up to \$20 million/mile for center running bus lanes. The 2022 Green Line Extension cost \$500 million per mile.

Between now and 2030, there are limited options for additional infrastructure in the Seaport to accommodate anticipated growth.



Summary

Review: Pilot Goals

- Enable Sustainable Mobility with a focus on better conditions for buses and bikes
- Improve Safety for Bikes and Pedestrians with a focus on improved infrastructure
- Accommodate Economic Activity with improved Port/Maritime access and mobility options for people who live and work here.



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Summary of Findings

Enable Sustainable Mobility

- Bikes
- There was a 71% increase in the number of bicycles on Summer Street from January 2023 to January 2024
- Bluebike stations near Summer Street experienced a higher ridership growth (+39%) compared to the system-wide growth rate (+20%).
- Mixed results on bus trip times and reliability due to the pilot conditions and lack of enforcement.
- Showed potential to support future Bus Network Redesign
- Future population/employment growth require transit enhancements in the Seaport.
- Bus transportation the only feasible option for near-term transit enhancements

Summary of Findings

Improve Safety for Bikes & Pedestrians

- Notable reduction in speeding along Summer Street:
 - Before the pilot, approximately 26% of vehicles were recorded traveling over 40 MPH.
 - Decreased to 7% after five months, indicating a sustained improvement in driving behavior and enhanced safety for all road users.

Summary of Findings

Accommodate Economic Activity

Commuting

Dedicated bus lanes and enhanced biking facilities provided safer, more reliable and efficient transportation options for people to commute to work and navigate the area without relying on cars.

Port Access

 While truck traffic experienced slight travel time increases due to the new infrastructure, it benefited from a safer street environment and improved separation from bikes.

Next Steps

Next Steps

- 1. Hear Public Feedback
 - a. Fort Point Meeting on 6/11
 - b. Virtual Meeting on 6/14
 - c. City Point Meeting on 7/8
 - d. Email -

Transit@Boston.Gov

- 2. Coordinate with Partner Agencies & Stakeholders on Results
- 3. Announce Final Pilot Determination in late Summer



Questions & Discussion





Improvements to bike and pedestrian safety

* Slower vehicle speeds * Higher bicycle activity

Some travel time increases for motorists

* Average peak vehicle travel time increase of 40-90 seconds * Key intersections slowing bus trips



Challenges with compliance with bus/truck lane

* Majority of pilot lane traffic volume is unauthorized vehicles * Greater enforcement needed



Inconclusive effect on MBTA bus operations

* Seasonal fluctuations in ridership, runtime, and congestion obscure new patterns *Limited bus service prior to Bus Network Redesign

THANK YOU

BUS ONLY

COMMERCIAL TRUCKS OK 10,000 LBS GVW MIN.

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Appendix Slides



Appendix: Implementation & Background



Summer Street Pilot: Key Pilot Partners

- BTD-Led
- MassDOT
 - Grant awarded by Shared Streets
 Program
- MBTA Design Review
- Coordination
 - MassPort on design and industry needs
 - BCEC
 - Seaport TMA
- Neighborhood Partners in Fort Point, Seaport, and South Boston Neighborhood



Durable but Easily Changeable Materials for Pilot

- Painted Lanes & Pavement Markings
- Signage
- Flex Posts
- Minor Changes to Traffic Lights









Summer Street Pilot: Roadway Changes for the Pilot









Summer Street Pilot: Other Transportation Planning Efforts

North Station to Seaport Multimodal Corridor

• Concept Planning

South Boston Transportation Action Plan

- Kicked-Off Spring 2022
- Focus on core residential neighborhood

PLAN South Boston Dorchester Avenue (2016)

• August 2021 Completed Transportation Plan



Appendix: Data Collection

Data Collection

What data have we been collecting?

- Traffic
- Transit
- Bikes
- Field Observations
- Feedback Agency, Stakeholder, and Public

In the coming weeks, we will post data reports and readouts to the BTD website.





Data Collection: Traffic

What traffic data did we collect?

- Traffic Intersection Counts during event and non-event days at BCEC
 - o January 2023
 - o October 2023
 - o January 2024
 - o May 2024

• Commercially Available GPS Data

- TomTom
- Streetlight
- Google Maps
- Inrix





Data Collection: Traffic

What does this traffic data tell us?

- Delay at Specific Intersections
- Trip Times by Vehicles
- Vehicle Counts & Speed
- Origin/Destination
- Lane Violations

- Changes over the course of a day

 AM Peak, PM Peak, Mid-Day
- Changes over time weeks, months, and years
- Seasonal variations



Data Collection: Transit

What transit data did we collect?

- MBTA Bus Data
- Korboto commercially available bus performance data

What does this transit data tell us?

- Bus speed, Trip times, Reliability, Ridership
- Changes over time and seasonal variations



Data Collection: Bikes

What bike data did we collect?

- **Bike Counts** during event and non-event days at BCEC
 - o January 2023
 - October 2023
 - o January 2024
 - o May 2024
- City of Boston Bike Counts from 2019 to 2023
- BlueBike Usage



Data Collection: Bikes

What does this bike data tell us?

- Usage bikes on Summer Street
- Usage of bikes on Summer Street compared with other parts of Boston
- Changes in bike usage during specific times of the day
- Changes in bike usage over time
- Changes in bike usage seasonally



What are field observations?

• Visits to Summer Street by City of Boston staff, engineering team staff, and stakeholders.

Why do field observations?

• To assess the overall condition of the Summer Street Pilot or observe a condition in a specific location.

How many of these were done during the Pilot?

• Over 30 field visits were conducted during the Summer Street Pilot including during AM Peak, PM Peak, midday, and during major BCEC events (e.g. PAX).



Data Collection: Feedback

What feedback did we solicit?

- Public survey with nearly 2,800 responses
- Email feedback
- Attended/hosted over 20 stakeholder meetings
- Hosted industry-specific meetings including MassPort, MBTA Operations, MBTA bus drivers, hotels/hospitality groups, and Seaport TMA commuters.
- Attended civic association meetings including Fort Point, Seaport, and City Point.

How do we use this feedback?

- Provides an insight into user experience during the Pilot.
- Enables us to understand general sentiment and specific feedback about specific locations.
- Enables us to make corrections to things that are not working as intended.

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Background: Engagement Timeline



Appendix: Bikes

Despite the Pilot officially launching in December 2023, most new bike infrastructure was substantially complete by September 2023.

Bike counts on Summer Street have shown a modest increase in bike usage since new bike infrastructure was installed. However, biking patterns tend to be seasonal and weather dependent.

Weekday <u>Bicycle Activity</u> on Summer Street, All Day (D Street Intersection)								
	Before Jan 2023 46°, Partly Cloudy	Oct 2023 72°, Partly Cloudy	During Jan 2024 50°, Partly Cloudy	During May 2024 66°, Partly Cloudy				
Inbound	19	139	52	122				
Outbound	69	221	99	223				
Total	88	360	151	345				

Note: January bike volumes tend to be low due to winter weather conditions



"While I appreciate the focus on developing bike lanes further, I **still feel unsafe with the amount of cars driving erratically** due to the bus lanes and the amount of illegally stopped drivers that force bikers back into traffic."

-Survey respondent, South Boston resident "The bike lanes, while not perfect, are **significantly improved**. The bus lane **works well when cars obey the law**."

-Survey respondent, Summer Street commuter Limited increase in overall bike activity, though seasonal effects may damper total volume observed

- The increase in inbound bike volume during both AM and PM peak hours indicates a positive response to the usage of the new bike lane.
 - During BCEC event days, inbound bike volume increased significantly during peak hours, highlighting the importance of providing safe infrastructure for bicyclists to accommodate special event travel.
- The decrease in outbound bike volume during peak hours may suggest a need for further improvements

Weekday <u>Bicycle Activity</u> on Summer Street During AM & PM Peaks

(World Trade Center Ave Intersection)

	Before Jan 2023	During Jan 2024	Percent Change	Before Jan 2023 ^{revent DAy}	During Jan 2024 ^{revent day}	Percent Change 'EVENT DAY
INBOUND						
АМ	9	14	56 %	15	26	73%
РМ	16	11	-31%	23	27	17 %
OUTBOUND						
АМ	25	25	0%	18	15	-17 %
РМ	29	17	- 41 %	27	27	0%

Note: January bike volumes tend to be low due to winter weather conditions
Appendix: Speeding

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Peak hour average vehicle speeds fell slightly, but remain higher than the citywide speed limit

Average Speeds

- Between Fort Point and the BCEC, peak hour NB speeds averaged 34 mph in both directions and fell to 32 mph. On event days, speeds average 31mph.
- The all-day average SB vehicle speed fell from 38 mph OB on the Reserved Channel bridge to 33mph, and from 34 to 32 in the inbound direction. Similar declines are observed in the peak hours on event and non-event days.
- Speeds in non-peak direction see larger average reductions.

Weekday Average Vehicle <u>Speeds</u> on Summer Street During Peak Hours

(Between Drydock Ave and Freight Corridor)

	Before Jan 2023	During Jan 2024	Percent Change	
INBOUND				
АМ	33 mph	32 mph	-4%	
РМ	35 mph	31 mph	-11 %	
OUTBOUND				
АМ	37 mph	32 mph	-13%	
РМ	38 mph	33 mph	-13%	

The slight reduction in speeds during peak hours suggests successful safety measures implemented as part of the pilot.

By month 5 (May 2024), 20% of vehicles on Summer Street obeyed the City's 25 MPH speed limit.





Appendix: No Rights on Red

"Crossing streets is always super **stressful when there are concurrent walk signals**. Those and **right on red need to end, period**."

- Survey respondent, daily commuter to Seaport

NO RIGHT TURN ON RED

"Would be better to have right on red and **tell bikes to yield to cars** or **have a button they press.** "

- Survey respondent, daily commuter to Seaport



Allowing right turns on red makes walking or biking dangerous because...



Allowing right turns on red makes walking or biking dangerous because...

Drivers look left to judge gaps in traffic and do not look for pedestrians or cyclists coming on their right.



Allowing right turns on red makes walking or biking dangerous because...

Drivers look left to judge gaps in traffic and do not look for pedestrians or cyclists coming on their right. Drivers tend to encroach into the crosswalk or bike lane while waiting for opportunity to turn.

Allowing right turns on red makes walking or biking dangerous because...

Drivers look left to judge gaps in traffic and do not look for pedestrians or cyclists coming on their right.

Especially when vehicle traffic is light, drivers turning right on red tend to not come to a full stop. Drivers tend to encroach into the crosswalk or bike lane while waiting for opportunity to turn.

Appendix: Traffic

Drivers report frustration with single vehicle lane

Intersections with more turn activity (D St, Pumphouse Rd, Pappas Way/Drydock Ave) continue to create congestion Modest vehicle travel time increases

As average travel speeds decline, it takes 40-90 more seconds to travel between East 1st St to Dorchester Ave.

Vehicle volumes remain mostly consistent

There are no major dips in traffic volumes that would indicate a substantial number of drivers are taking alternate routes to avoid Summer Street Peak periods show slightly higher traffic counts between 2023 and 2024 traffic counts.

Weekday Average Vehicle <u>Volume</u> on Summer Street During Peak Hours (Pumphouse Road Intersection)				
	Before Jan 2023	During Jan 2024	Percent Change	
CARS				
AM	4,597	4,625	2%	
РМ	4,428	4,630	4%	

Summer Street Pilot: Vehicle Volumes

Total vehicle and truck volumes are largely the same as pre-pilot, though truck traffic has slightly shifted to PM.

Summer St at Pumphouse

Total volumes in Jan 2023 (15,495 cars, 1,556 trucks, 356 buses, 96 bike, 728 peds)

Total volumes in Oct 2023 (17,858 cars, 1,862 trucks, 336 buses, 289 bike, 1,412 peds)

Total volumes in Jan 2024 (15,992 cars, 1,481 trucks, 319 buses, 71 bike, 1,566 peds)

Data Analysis: Traffic

BCEC Event Day Traffic Counts





AM Peak Hour Inbound Traffic Volume (event day)



Between January 2023 and May 2024, limited change in the total volume of vehicle traffic across different segments of the corridor during the AM Peak. Similar proportions of trucks and autos within each block persist.

PM Peak Hour Outbound Traffic Volume (event day)



Similar proportions of trucks and autos within each block persist in the PM before and after the pilot lane was installed. In May 2024, there is a slight rebound in auto and truck volumes compared to immediate post-pilot implementation period, indicating adaptation by drivers.

Appendix: Transit

Summer Street Pilot: Bus Rider Improvements for the Pilot



"While I thought it was already a pretty quick trip from South Station to Powerhouse Street, I feel as though **travel time has become more consistent** with the bus lane."

- Survey respondent, daily Summer Street commuter

"Cars will fill up the bus lane during peak traffic, blocking the 7 bus from moving quickly, but the bus overall has been faster and more convenient to use."

Survey respondent, South Boston resident, Rt.7 commuter

"There is consistently a line of 50-plus people waiting for the bus and not everyone can get on the bus each time."

- South Boston resident commuting to Downtown

"Sometimes the bus is too full... this makes me Uber frequently which is bad for me personally financially and environmentally seems bad too."

- South Boston resident commuting to Financial District "THE BUS IS THE ONLY TRANSPORT IN THE EAST SIDE OF SOUTHIE. We really need this to run better because we are about a 40 minute walk at least to any T (subway) stop."

- South Boston resident commuting to South Boston Waterfront

Seems the 7 bus has a bit of a capacity issue

By adamg on Wed, 03/30/2022 - 9:49am



Realdavejshea joined one of the lines for the 7 bus in South Boston this morning:

Data Analysis: Transit

The pilot lane has improved bus trip times at different times of day but also faces increased congestion delay.

Typical outbound travel times along the corridor ranged from 5-8 minutes, slightly faster than inbound on average. Trip times are least reliable during the PM Peak, and the slowest trips can take up to 14 minutes.

- Late Midday and Evening trips have improved since Fall 2023 (30-45 seconds)
- The worst 10% of trips after 4PM were better in Winter and Spring 2024 than in Fall 2023



Data Analysis: Transit

Reliability is the difference between the typical (median) run time and slowest (90th% run time).

- Reliability has overall gotten slightly better for Outbound trips and slightly worse for Inbound trips
- Biggest improvements are outbound from South Station to Melcher St from Pappas Way to First St
 - South Station to Melcher St: 6% improvement
 - Pappas Way to First St: 14% improvement
- Inbound trips are less reliable from First St to D St
 - Drydock Ave to D St segment saw biggest decrease in reliability (15%)



Route 7 ridership has grown modestly between September/October 2023 through January/February 2024, and grown at larger rate than the peer group average

- Average weekday ridership on Route 7 has grown 6%, from 2,275 to 2,412 daily riders
 - Average ridership across similar routes (4, 7, 9, 10, 11, 92, and 93) stayed almost the same, with a growth of 0.1%
 - Route 9 grew 8% in ridership
- Average Tu Thu ridership is around 10% higher than weekday average as a whole
- MBTA increased Route 7 AM and PM frequency in April due to increased demand.



"Bus is faster than before lane. **Enforcement is needed** for those blocking the lane to continue this progress."

- Survey respondent, daily Summer Street commuter "There's been an improvement in removing other vehicles from the lane, but not enough, it needs enforcement."

- Survey respondent, South Boston resident, Rt. 7 commuter "Cars will fill up the bus lane during peak traffic, blocking the 7 bus from moving quickly, but the bus overall has been faster and more convenient to use."

- Survey respondent, South Boston resident, Rt. 7 commuter

"Nobody stays out of the bus lane. I don't blame them. The bridge is so backed up."

- MBTA Bus Operator

Appendix: Additional Quotes

 Improve signage
Make it bus only during rush hour times (ie. 7-9 am and 4-6 pm)
Improve and fix the bike lane protections running alongside the bus lane

- Survey respondent, regular driving commuter

"Bus lane should be in effect on a **limited basis, i.e., during morning and evening commute** when bus actually runs."

- Survey respondent, South Boston resident "If the buses aren't running, the **lanes should be available for regular traffic**. If the busses are running, the **bus lanes should be enforced**."

- Survey respondent, South Boston resident The problem that the bus lane intends to solve **does not address the real problem**. South Boston needs **better public transport** (I.e. more frequent buses and more routes).

- Survey respondent, regular driving commuter

"Make it like Columbus Ave."

Center running lanes are better, lead to less violations, faster service, and don't need as much enforcement.

- MBTA Bus Operator

Let non-buses use the lane **during off hours**, perhaps 7pm to 5am or so.

- Survey respondent, regular driving commuter