



GREEN LINE EXTENSION PROJECT



massDOT
Massachusetts Department of Transportation



Agenda

Welcome & Outreach Update

- Terry McCarthy, GLX – MBTA

Construction Update

- Terry McCarthy, GLX – MBTA

MBTA Better Bus Project

- Melissa Dullea



GLX Outreach Update

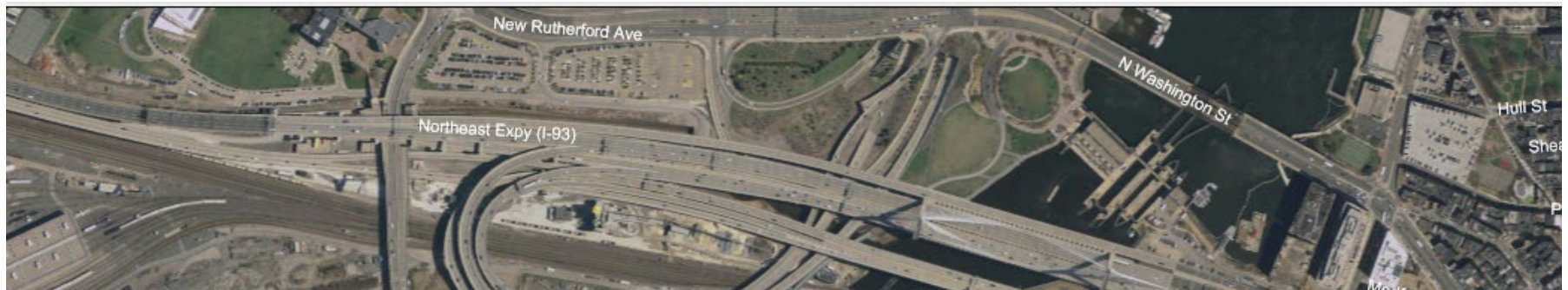
- Continued Web-site Update – Approximately Every Two Weeks
- MassDOT GovDelivery Email Blast (Close to 8,000 Subscribers) Campaign Subscribership Growing
- Public Meeting on Project Progress – November 2019

Recent Meetings

- Museum of Science
- EF
- DCR
- DCAMM
- BTB



GLX-Commuter & Regional Traffic



Outreach



Outreach

TOD /City of Boston / MBTA



Outreach

Richdale Outreach – Noise Wall Construction (August)

- *Went door-to-door to homes along Richdale speaking to property owners about noise wall work along their fence line.*
- *Discussed construction impacts including the removal of their fences, installation of construction fence, moving property and protecting property while drilling nearby.*



Outreach

Cross St., Auburn Ave., Avon Place Outreach – Retaining Wall Construction (August)

- *Went door-to-door to 8 homes speaking to property owners about retaining wall work in front of the existing green wall in the area.*
- *Discussed construction impacts including the removal of fences, possible shrub damage and relocation of at least one shed.*



Outreach

Gilman St. Outreach – Steel Sheeting Removal (Aug. 16)

- *Went door to door affected property owners speaking to them about additional work to remove steel sheeting in right-of-way and temporary impacts on their property.*



Outreach

Night Work at Washington Street (starting Aug. 24)

- *Sent out email blast to 7,100 plus stakeholders in database*
- *Went door to door to 50 homes in vicinity of overpass*



Outreach

GLX Hotline and Response to Comments/Requests

- 806 Inquiries thru Hotline, e-mail or direct contact with outreach staff (as of Aug. 29)



Outreach

Tentative – Construction Timeline



Outreach

Tentative – Stations Construction Timeline

| Stations Construction | 2019 | | | | 2020 | | | | 2021 | | | |
|-----------------------|--------|--------|--------|------|--------|--------|--------|------|--------|--------|--------|------|
| | WINTER | SPRING | SUMMER | FALL | WINTER | SPRING | SUMMER | FALL | WINTER | SPRING | SUMMER | FALL |
| Lechmere | | | | | | | | | | | | |
| Union Square | | | | | | | | | | | | |
| E. Somerville | | | | | | | | | | | | |
| Gilman Square | | | | | | | | | | | | |
| Magoun Square | | | | | | | | | | | | |
| Ball Square | | | | | | | | | | | | |
| College Avenue | | | | | | | | | | | | |

Subject to Change

Subject to Change





GLX-C Construction Update



Construction Update



Key Construction Activities through end of 2019

- Relocate Commuter Rail Track to its final position on eastern side of alignment (late December)
 - 2 phases: North of College Ave. (Oct. 2019)/Washington St. to Broadway (Dec. 2019)
- Prior to track relocation we must:
 - Complete drainage work including north of Broadway Bridge at Granville (Dec. 2019)
 - Complete noise wall and retaining wall panel placement (Dec. 2019 or nights following track shift)
- Vehicle Maintenance Facility
 - Steel framing underway
- Lechmere area/Boston Engine Terminal
 - Steel in place throughout & deck placement underway
 - Work started on Lechmere station



Construction Update

Broadway Bridge

- A lot of work happening in a small footprint including: drainage, wall construction and bridge construction
- Frequent weekend and night work will coincide with track shutdowns



Construction Update

Washington St. Bridge

- First steel placement on Aug. 24
- Night work currently underway as crews install steel deck
- Will continue construction through winter and NOT reopen in November 2019. Change allows us to complete work and reopen road by April 2020.
- Outreach campaign to start in late September



Construction Update

Medford St. Bridge

- Work start on west abutment pushed back from August. Now set to start mid to late September.
- Tremendous amount of work underway between Medford St & School St.



Construction Update

School St. Bridge Closure

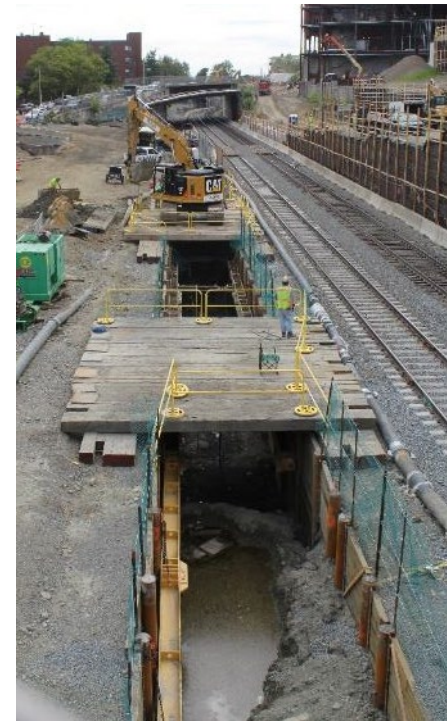
- School St. Bridge to close in early spring 2020
- This will likely overlap several months with Medford St. Bridge closure
- Working to minimize impact on pedestrian traffic
- Outreach campaign will begin 2 months prior to closure



Construction Update

School St. to Rogers Foam – Drainage

- Placing 60" reinforced concrete pipe between School St. and Central St.
- Micropiles used to create re-enforced duct bank below future commuter track alignment
- Crews working at night to install lagging



Construction Update

Preparing for Track Shift

- Railroad tie delivery continues. 20,000 ties to support track shift.



Construction Update

Vehicle Maintenance Facility

- 276 piles planned for VMF foundation. Pile driving and saw cutting continues.
- Building out sub-grade for foundation
- Retaining wall work started



Construction Update

Work near Union Square Station

- Wall behind Target - MSE wall (UN-2) construction underway
- Work makes room for expanded track bed



Construction Update

Lechmere Area

- Both drilling crews working between BET area and Water St.
- Crews actively pouring concrete columns and pier caps for viaduct



Construction Update

Boston Engine Terminal (BET) Area

- *Viaduct work continues with frequent night and weekend work*
- *First steel placement on August 17*
- *Arial structures will quickly start to take shape*



Construction Update

Brickbottom Area

- Work along this part of the Fitchburg line includes viaduct construction, utility relocations and wall construction (N-3A/N-3B)



July 2019



August 2019

Construction Update

Noise & Retaining Walls

Between McGrath Hwy – Walnut St.

- Noise Wall (N-6) awaiting panel installation later this year
- Remaining steel sheeting in process of being removed



Construction Update

Noise & Retaining Walls

Between Schools St. – Sycamore

- Noise Wall (N-7A & B) work continues
- Built up embankment to support drill rig for wall foundations
- Coordinating this work and 60" storm drain placement closer to School St.



Project Status

Noise & Retaining Walls

Between Lowell – Cedar St.

- Drainage installation and post installation for Noise Wall (N-10, ME-2, ME-2A & N-11) continues
- Noise wall H-piles to be attached to retaining wall piles
- Current activity focused behind Department of Public Works building



Construction Update

Noise & Retaining Walls – Drainage Between Cedar St. - Broadway

- ME-2.1/ Noise Wall N-12 – posts in place
- Removing earthen ramp
- Major drainage work underway near Wilson St.



Construction Update

Noise & Retaining Walls - Drainage Between Broadway – Harvard St.

- ME-2.4/Noise Wall N-14A & N-14B wall work giving way to manhole installations near Newbern and Granville Ave.



Construction Update

Noise & Retaining Walls

Between College Ave. – Winthrop St.

- Wall work on east side of alignment ready for next steps
- Starting to build up earthen ramp on west side of alignment for upcoming retaining wall construction.




Outreach

Community Connection Team – Medford Family Network School Supply Drive

- More than \$1,000 worth of school supplies provided to Medford Elementary School Students





Better **Bus** Project

Making transit
better together



About the MBTA Bus Service Network

- More than a third of all MBTA trips are taken on buses.
- The MBTA's bus network consists of 180 routes.
- Over 400,000 trips are taken on MBTA buses every single weekday.
- Serving 50 communities, the bus network provides critical connections where our rail system does not go.





Better Bus Project Components

Near-Term Changes

Multi-year
Investment Strategy

Bus Network
Redesign

Proposed Near-term Changes: Principles for Change

| | |
|--|---|
| <p>Keep Proposals Cost Neutral</p> <p>Consider route changes that improve bus service, without requiring additional resources to implement the proposal.</p> | <p>\$ = \$</p> |
| <p>Combine Similar Services</p> <p>Combine routes that serve the same areas in slightly different ways to create a more reliable and frequent service that's easier for our customers to use.</p> |  <p>The diagram shows two points connected by two separate paths. The left path is a straight line labeled 'Better'. The right path is a curved line labeled 'Worse'.</p> |
| <p>Minimize Route Variations</p> <p>Reduce route variations that create customer confusion, serve few people, and do not impact vulnerable populations who do not have other alternatives. This creates faster and more reliable service for customers that's easier to understand.</p> |  <p>The diagram shows two points connected by a straight line labeled 'Better'. The right point is also connected to two other points labeled 'A' and 'B' by dashed lines. A curved line labeled 'Worse' connects the left point to point 'C'.</p> |
| <p>Shorten Unproductive Sections</p> <p>Many routes are very long with sections that have little to no <u>ridership</u>, or have other service options. By shortening routes, we provide customers on the remaining service with increased frequency and reliability.</p> |  <p>The diagram shows a route between two points. A section of the route is being cut out, indicated by a pair of scissors icon. The remaining route is labeled 'Better'.</p> |
| <p>Straighten Routes</p> <p>The less a bus needs to turn or deviate from a straight path, the faster it will travel. This makes bus routes easier to understand while also provide faster and more reliable service for our customers.</p> |  <p>The diagram shows two points connected by a straight line labeled 'Better'. The right point is also connected to two other points by a curved line labeled 'Worse'.</p> |

September 1
29 routes will change

December 22
19 or more will change

Detailed information on each change available online:
mbta.com/betterbus-sept1

SEPTEMBER 1 CHANGES

CT1

4

5

16

34E

44

59

89

90

92

95

106

111

120

134

411

424

428

435

441

442

448

449

455

459

501

502

503

504

How we are telling the public

- ~800 Bus stop sign updates
- 700+ Redesigned service notices at bus stops
- 500 Bus advertisements
- Digital ads at targeted rail and bus stations
- On-bus announcements
- Block-by-Block prepared with BBP info
- Call Center prepared with BBP info
- Online maps with stop-by-stop changes
- Updated paper schedules and maps
- Email lists (Corporate customers, BBP email list, state and local elected officials and staff)
- T-Alerts (multiple times)
- Upcoming press release
- Targeted newspaper ads

TOGETHER, WE'RE MAKING BUSES BETTER.

On September 1, 2019 the routes listed to the right will be changing. To find details on these changes, call 617-222-3200 or visit mbta.com/betterbus.

By listening to thousands of bus riders like you, we're now making changes and improvements to many bus routes as part of the Better Bus Project.

| SEPTEMBER 1 CHANGES | | | | | |
|---------------------|-----|-----|-----|-----|-----|
| CT1 | 4 | 5 | 16 | 34E | 44 |
| 59 | 89 | 90 | 92 | 95 | 106 |
| 111 | 120 | 134 | 411 | 424 | 428 |
| 435 | 441 | 442 | 448 | 449 | 455 |
| 459 | 501 | 502 | 503 | 504 | |

Habrá cambios al servicio de autobuses el 1º de septiembre. Para más información visite el sitio web o llame al número que se muestra arriba.

巴士服務將於9月1日開始變更。有關更多消息，請參閱網站或致電號碼上圖列出的電話號碼。

巴士服務將於9月1日開始變更。有關更多消息，請參閱網站或致電號碼上圖列出的電話號碼。

Service will be changing on Sept. 1st. Please see the website or call the number shown above for more information.

Le service d'autobus change le 1er septembre. Pour obtenir plus d'informations, rendez-vous sur le site Web ou téléphonez au numéro indiqué ci-dessus.

O serviço de ônibus será alterado em 1 de setembro. Para mais informações, visite o site ou ligue para o número acima.

Dịch vụ xe buýt thay đổi vào ngày 1 tháng Chín. Để biết thêm thông tin, xin vào mạng lưới hoặc gọi số điện thoại ghi ở đây bên trên.

Bus Ad Sample

441

442

448

449

Service Changes

Effective September 1, 2019

448 and 449 service will be replaced by additional service on Routes 441 and 442

WHAT THIS MEANS FOR YOU

Routes 448 and 449 are being eliminated. The 441 and 442 stop at most 448 and 449 stops, and provide service Wonderland for connections to Boston (service to Seaport available via SL3 at Airport). Both routes charge a Local Bus fare (monthly LinkPass valid for fare).

KEY CHANGES

| Service to and from | Inbound (toward Boston) | Outbound (to Marblehead) |
|---|---|---|
| Point of Pines @ Lynway | Some 441/442 buses will provide AM peak service at this stop. Visit mbta.com for a full schedule. | Some 441/442 buses will stop here during PM peak service. Visit mbta.com for full schedule. |
| Swampscott, from New Ocean St to Salem St @ Humphrey St | Take the 441 or 442 inbound. Outbound service will no longer make a loop. | Take the 441 or 442. |

See more details about this change at mbta.com/betterbus-440s. If you have questions or need translation assistance, call 617-222-3200.

Autobús cambio de servicio. Habrá cambios al servicio de autobuses el 1º de septiembre. Para más información visite el sitio web o llame al número que se muestra arriba.

Alteração do serviço ônibus. O serviço de ônibus será alterado em 1 de setembro. Para mais informações, visite o site ou ligue para o número acima.

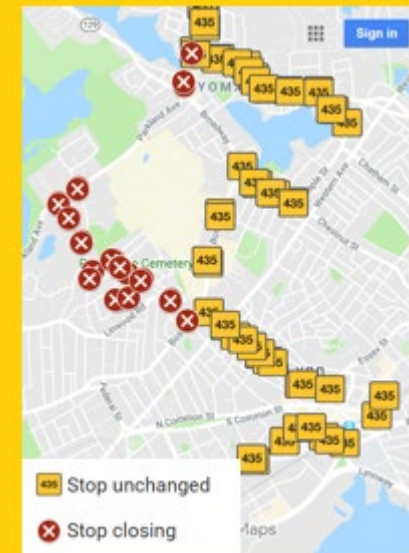
Bus service change. Service to bus will change on Sept. 1st. See mbta.com/betterbus-440s for more information.

Autobus changement du service. Le service d'autobus change le 1er septembre. Pour obtenir plus d'informations, rendez-vous sur le site Web ou téléphonez au numéro indiqué ci-dessus.

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服務更改。服務更改將於9月1日開始。有關更多消息，請參閱網站或致電號碼上圖列出的電話號碼。

New Service Notice



Online Stops Map

Route 89

How This Route is Changing

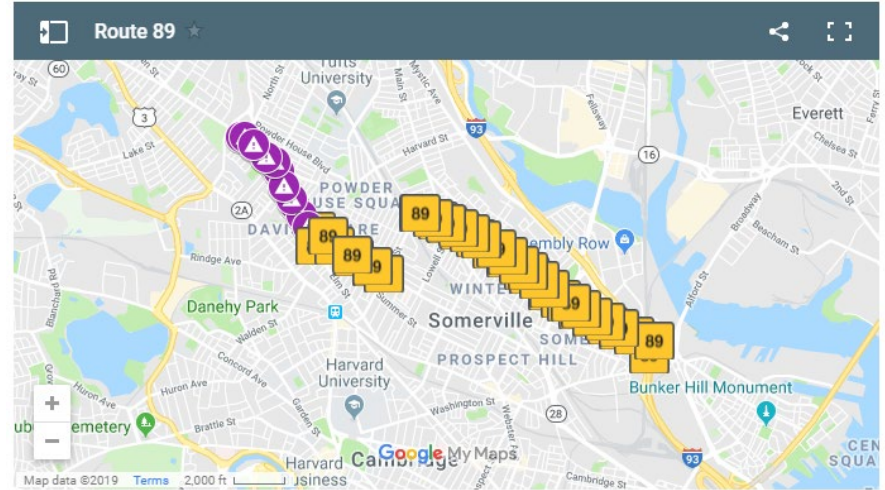
- [Route 89](#) will only stop between Clarendon Hill and Davis on weekdays before 9 AM, and from 1 PM – 7 PM.

What You Can Expect

- If you take the 89 between Clarendon Hill and Davis:
- On weekdays, from 9 AM – 1 PM and after 7 PM, or on weekends, take Route [87](#) or [88](#) from your current stop to Davis, where you can transfer to the [89](#) for service to Sullivan Square
- On weekdays before 9 AM and from 1 PM – 7 PM, the regular schedule has been adjusted to meet demand

Why We're Making This Change

- By shortening the route at certain times, we can provide more frequent bus service between Davis, Broadway/Winter Hill, and Sullivan Square.



Route 90

How This Route is Changing

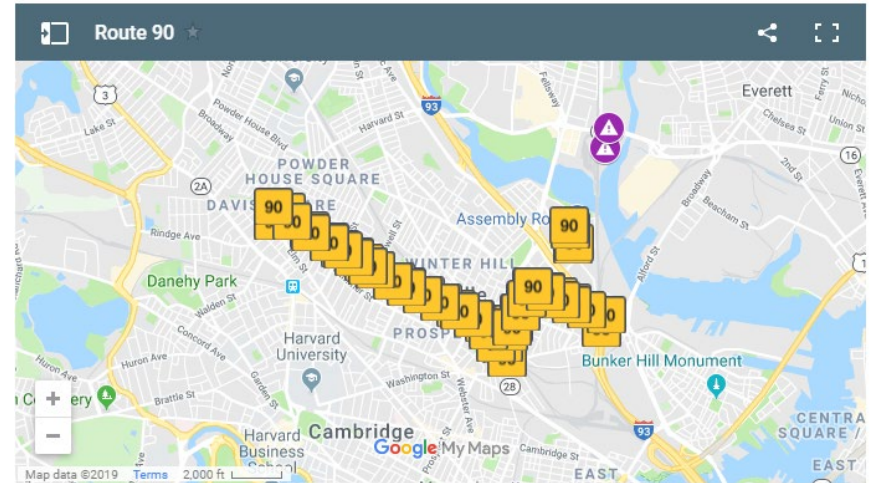
- [Route 90](#) service will no longer provide service beyond Assembly Row to Wellington Station.

What You Can Expect

- If you take Route 90 to or from Wellington or Corporation Way after Bridge, transfer between the 90 and Orange Line at Assembly or Sullivan Square
- To or from any other stop, your service is more frequent

Why We're Making This Change

- By shortening this route, we can provide more frequent and reliable service between Davis and Assembly Row.



Route 95

How This Route is Changing

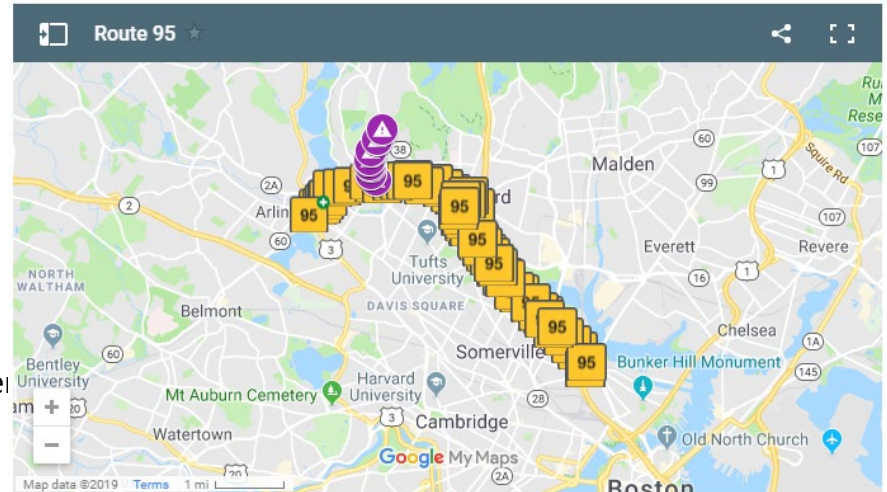
- We're extending service on [Route 95](#), with new stops on High St and Medford St, between Arlington Center and Medford. Buses will alternate between trips to West Medford and trips to Arlington.

What You Can Expect

- To/from stops on Playstead Rd in Medford: Only every other bus will provide service through West Medford via Playstead Rd. The electronic signs on the front of buses stopping on Playstead Rd will say "95 W Medford". Walk to High St for Route 95 service. All outbound 95 trips will stop at High St @ Warren St, and all inbound 95 trips will stop at High St @ Canal St.
- To/from Any other stop on the route, your stop will not change, but check the schedule.
- **If you travel between Arlington Center and Medford, you have a new service option.** The electronic signs on the front of buses traveling to Arlington Center will say "95 Arlington Ctr"

Why We're Making This Change

- By adding service between Arlington Center and Medford, we can provide more transit connections in the area.



Multi-year Investments

- More operators

| What do we get for: | ~\$9-12M |
|----------------------------------|--|
| Additional operators | ~45 FTEs (off peak only) |
| Deployed to which routes | All Top 40 routes / corridors |
| Predicted impact (off peak only) | 90% OTP (trip start) SDP frequency SDP span of service |

Recommended

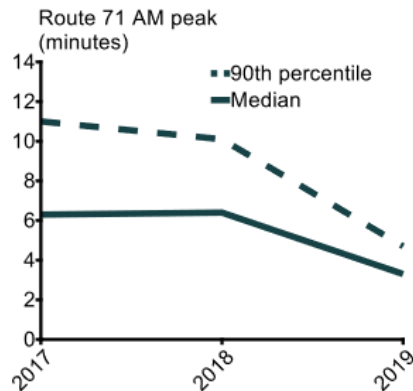
| Highest Ridership Routes / Corridors Definition: >3,200 daily weekday riders | | | | | | |
|--|-----|-----------|---------|---------|--------------|----------|
| Key Bus Routes (14) | 1 | 28 | 66 | 111 | | |
| | 15 | 32 | 71 | 116/117 | | |
| | 22 | 39 | 73 | * | | |
| | 23 | 57/57A* | 77 | | | |
| Silver Line (5) | SL1 | SL3 | SL5 | | | |
| | SL2 | SL4 | | | | |
| Local Routes w/ highest ridership (21) | 7 | 31 | 47 | 88 | 104 | 441/442* |
| | 9 | 34/34E* | 70/70A* | 89 | 109 | |
| | 16 | 35/36/37* | 86 | 93 | 110 | |
| | 21 | 44 | 87 | 101 | 220/221/222* | |

Multi-year Investments

- Bus priority (bus lanes, TSP, etc.)

Mt. Auburn (Cambridge)

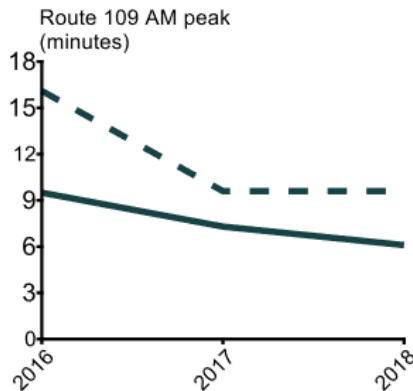
Routes 71 & 73



- Up to **5 minutes saved per trip** versus 2017
- **50% reduction** in variability versus 2017

Broadway (Everett)

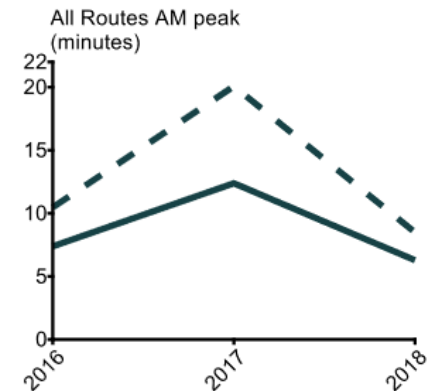
Routes 97, 104, 109, 110 & 112



- Up to **7 minutes saved per trip** versus 2016
- **40% reduction** in variability versus 2016

Washington St. (Boston)

Routes 30, 34, 34E, 35, 36, 37, 40, 50, & 51



- Up to **2-3 minutes saved per trip** versus 2016
- **10% reduction** in variability versus 2016

Multi-year Investments

Pre-2019 Bus Lane Investments Include (minutes saved at 90th percentile):

- ❶ Boston: Essex/Washington St (Silver Line)* (N/A)
- ❷ Boston: Washington St. (Roslindale)* (2-3 min)
- ❸ Cambridge: South Mass Ave (under review)
- ❹ Cambridge: Mt. Auburn St. (5 min)
- ❺ Everett: Broadway (7 min)
- ❻ Somerville: Prospect St. (6-10 min)

Completed since Jan. 1, 2019:

- ❷ Boston/MBTA: Sullivan Sq.*
- ❸ Boston: Brighton Ave.*

Planned in 2019:

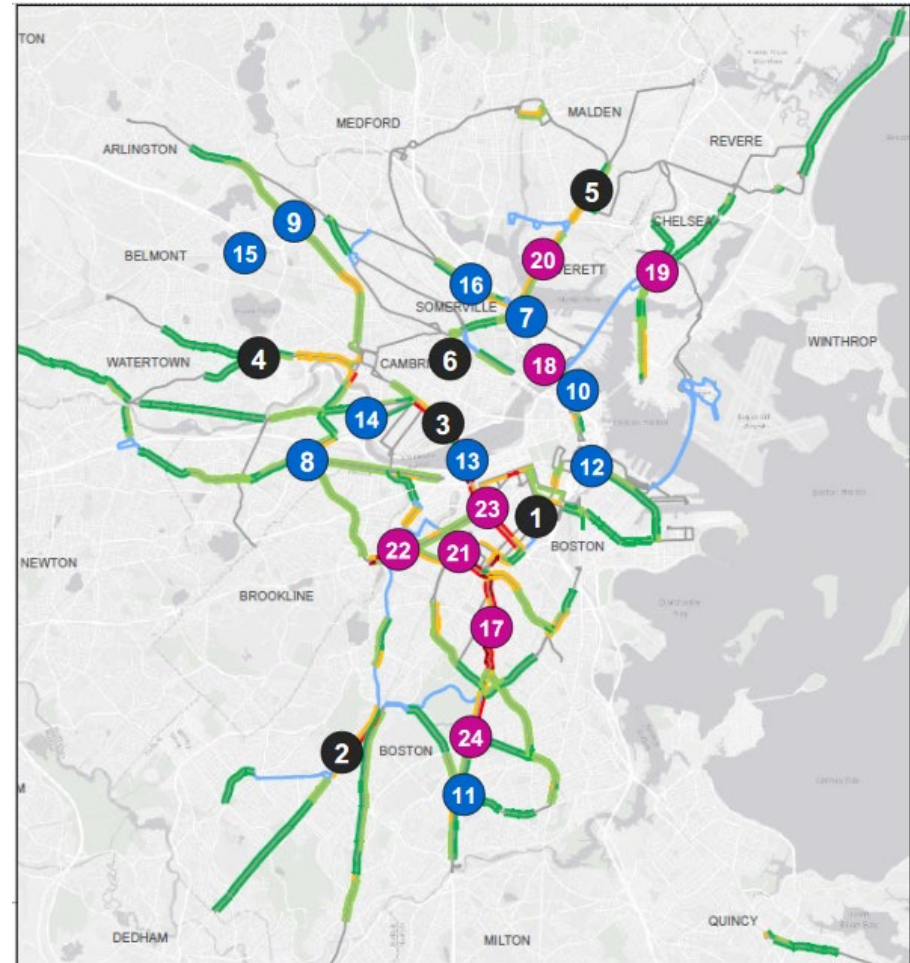
- ❹ Arlington: Mass Ave.*
- ❺ Boston: N. Washington St.*
- ❻ Boston/MassDOT: Morton St.*
- ❼ Boston: Summer St.*
- ❽ Boston/Cambridge/MassDOT/DCR: Mass Ave Bridge*
- ❾ Boston/MassDOT/DCR: Soldiers Field Rd.*
- ❿ Cambridge/MassDOT: Alewife access ramp*
- ⓫ Somerville: Broadway

In Planning for 2020+:

- ⓫ Boston: Warren St.
- ⓫ Boston: N. Washington Bridge
- ⓫ Chelsea: Broadway
- ⓫ Everett: Broadway (cont.)

Other MBTA High Priority Corridors:

- ⓫ Boston: Tremont St.
- ⓫ Boston: Huntington Ave.
- ⓫ Boston: Mass Ave.
- ⓫ Boston: Blue Hill Ave.

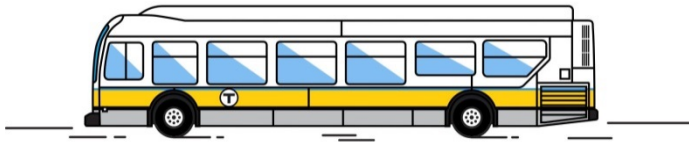


Multi-year Investments

- Replace and expand our fleet

| Facility | Year Built | Bus Count | Maint. Capacity* | % of Maint. Capacity | Storage Capacity | % Storage Capacity | Condition Rating |
|---------------------------|------------|-----------|------------------|----------------------|------------------|--------------------|------------------|
| Albany Street | 1941 | 116 | 35 | 333% | 116 | 100% | 2.7 |
| Arborway | 2004 | 118 | 52 | 226% | 118 | 100% | 3.1 |
| Cabot | 1975 | 180 | 104 | 172% | 160 | 111% | 2.8 |
| Charlestown | 1975 | 254 | 157 | 162% | 310 | 82% | 2.5 |
| Everett Heavy Maintenance | 1947 | - | - | - | - | - | 2.6 |
| Fellsway | 1925 | 76 | 52 | 146% | 74 | 102% | 2.4 |
| Lynn | 1936 | 89 | 87 | 102% | 99 | 90% | 2.7 |
| North Cambridge | 1979 | 28 | 35 | 80% | 32 | 88% | 3.2 |
| Quincy | 1930 | 86 | 70 | 124% | 90 | 95% | 2.4 |
| Southampton | 2002 | 104 | 76 | 137% | 101 | 103% | 3.6 |

Bus Network Redesign



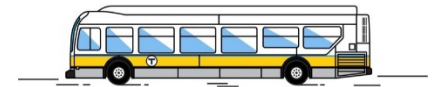
- A complete reassessment of the MBTA's bus network to respond to changing travel patterns in the region
- Using location based data to redesign the bus system
- New network implemented beginning in mid-2022

Why are we Doing This?

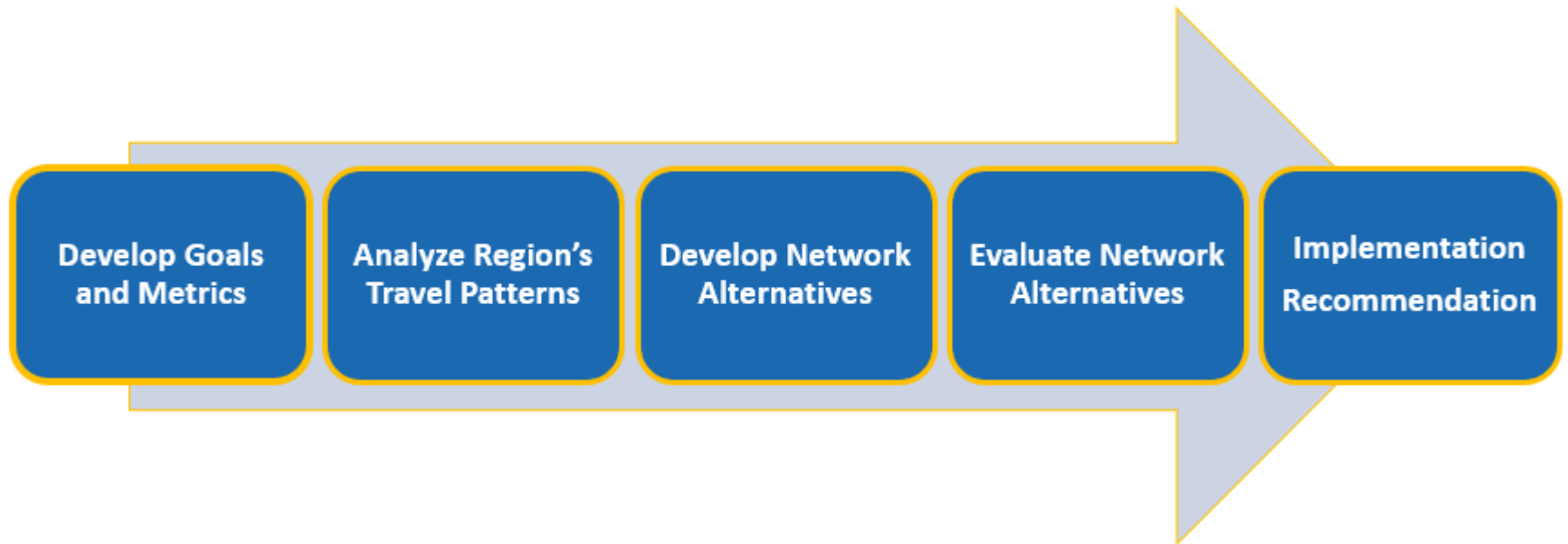
The MBTA bus network carries 1/3 of our customers, but has not changed drastically since the mid-20th century.

Since that time:

- Demographics have shifted
- New destinations have emerged and many communities have transformed
- Travel patterns have changed alongside new mobility options such as ridesharing and bike share
- Traffic congestion has increased
- Ridership has declined



Bus Network Redesign Process



Approach to Developing Metrics: Understanding Priorities for Different People

Through the last three years of engaging with stakeholders, we have identified the following factors of making transit a viable option:

- Trip time
- Frequency
- Cost
- Span of service
- Reliability
- Comfort
- Simplicity of Network
- Transfers
- First/Last Mile Connections; Coverage
- Communications

Connectivity for whom and to what:

Existing riders

- Riders that previously used the system but no longer do today
- Low income populations
- People with limited mobility

Potential riders

- People who do not use the system but could given proximity to MBTA
- People whose tripmaking patterns are not served by MBTA

Using Location-Based Data To Reimagine The Bus System

- To understand how people are moving across the region (approximately 20 million trips daily)
- Data are anonymized and cannot be linked to cell phone numbers or individuals
- Data come from a range of applications (multi-language, lifestyle, travel, news, etc.) where people have opted in for location-tracking and is representative of different demographic groups
- Data captures seasonal travel (12 months of travel data)
- Data are representative of different demographics (with some exceptions)

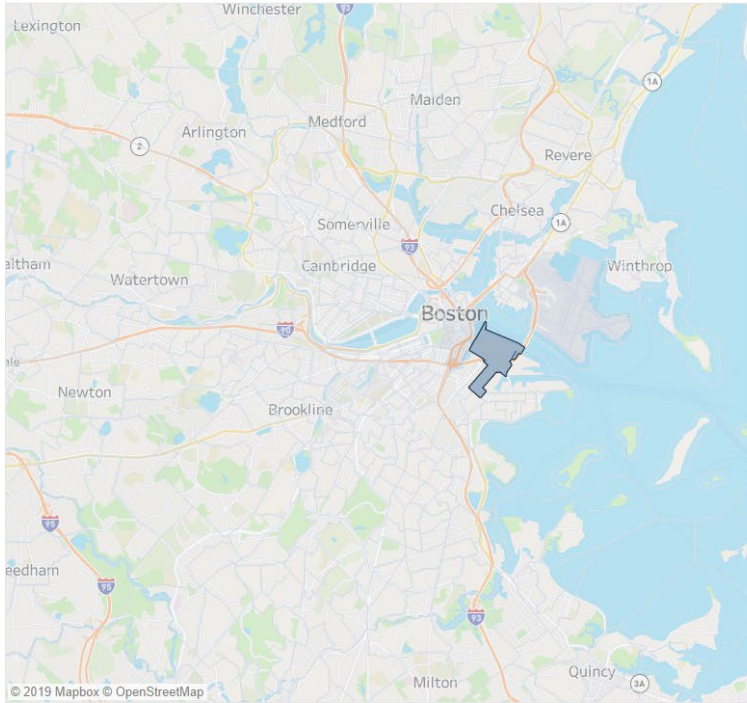
Demographic Representation of Smartphone Users

| | Smartphone (% of adults) |
|--------------------|--------------------------|
| Total | 81% |
| Men | 84% |
| Women | 79% |
| Ages 18-29 | 96% |
| 30-49 | 92% |
| 50-64 | 79% |
| 65+ | 53% |
| White | 82% |
| Black | 80% |
| Hispanic | 79% |
| Less than \$30,000 | 71% |
| \$30,000-\$49,999 | 78% |
| \$50,000-\$74,999 | 90% |
| \$75,000+ | 95% |

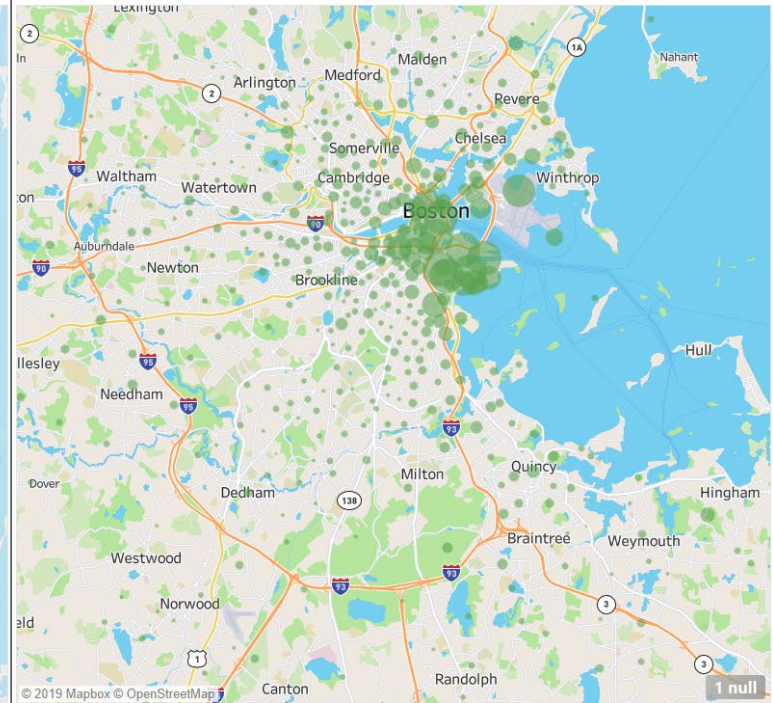
Source: Pew Research Center, 2019

Example of Tripmaking from the Seaport

origins

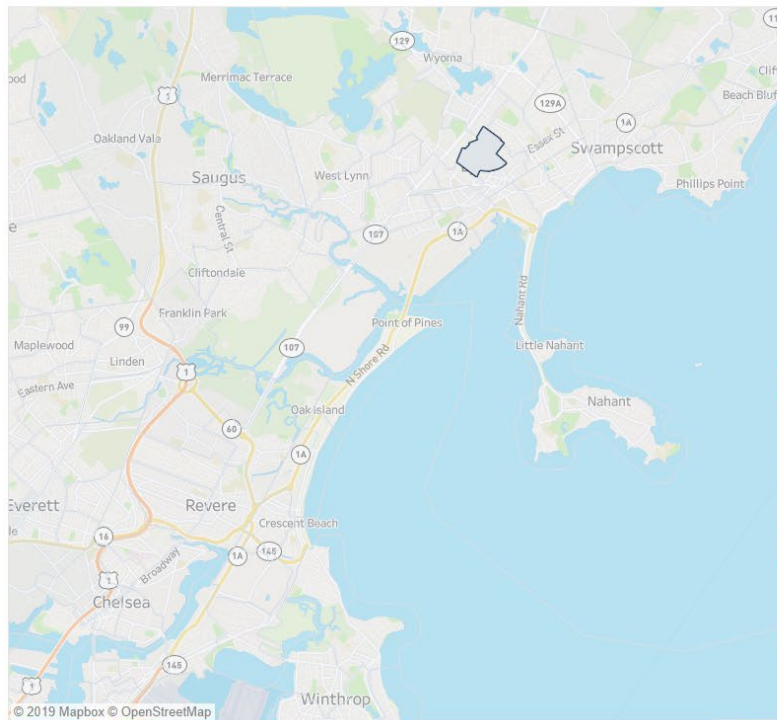


destinations

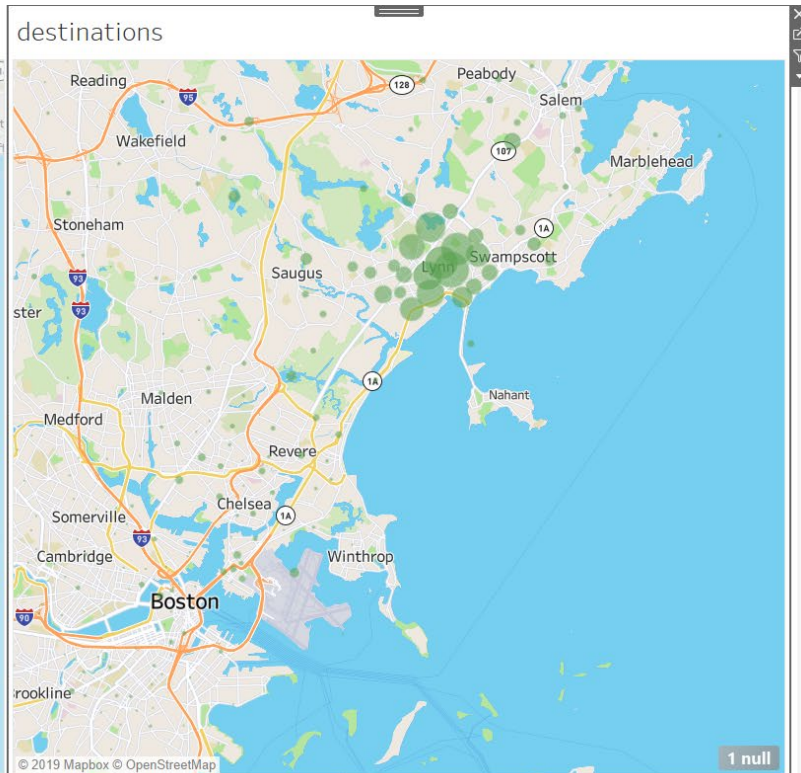


Example of Tripmaking from Lynn

origins



destinations



Demonstration Projects

The FMCB asked project team to identify demonstration projects by end of 2019

Demonstration Projects will be identified in the following ways:

- Better Bus Project
- Origin-Destination dataset
- Submissions from online intake form **due September 6/October 4** (available on <https://www.mbta.com/policies/service-pilot-process>)

Timeline: Demonstration projects agreed to by FMCB in late 2019 would be on street in Summer 2020 rating. (Note: Some concepts may need to go into a design process before being implemented.)

Next Steps

Winter Service Change

- 19 or more routes

Multi-year Investments

- More operators
- Bus priority (bus lanes, TSP, etc.)
- Replace and expand our fleet

Network Redesign

- Demonstration project applications
- Continue Network Redesign analysis



Discussion

Q & A

