Massachusetts Bay Transportation Authority

Bus Network Redesign Demonstration Projects

Fiscal and Management Control Board

December 9, 2019

Caroline Vanasse

Better Bus Project

Bus Network Redesign Demonstration Projects

The FMCB asked the project team to identify Demonstration Projects by the end of 2019.

- Demonstration Projects are intended to be scalable and transferable.
- All Demonstration Projects are additive and will preserve current service levels; no service will be cut.

Demonstration Projects will help test:

- **Network-level metrics:** What does competitive service look like?
- **Service design principles:** What are the building blocks of the network redesign?
- **Implementation logistics:** How do we market and implement new services?
- **Scalability:** Based on the projects, how will we scale these up to the network level?

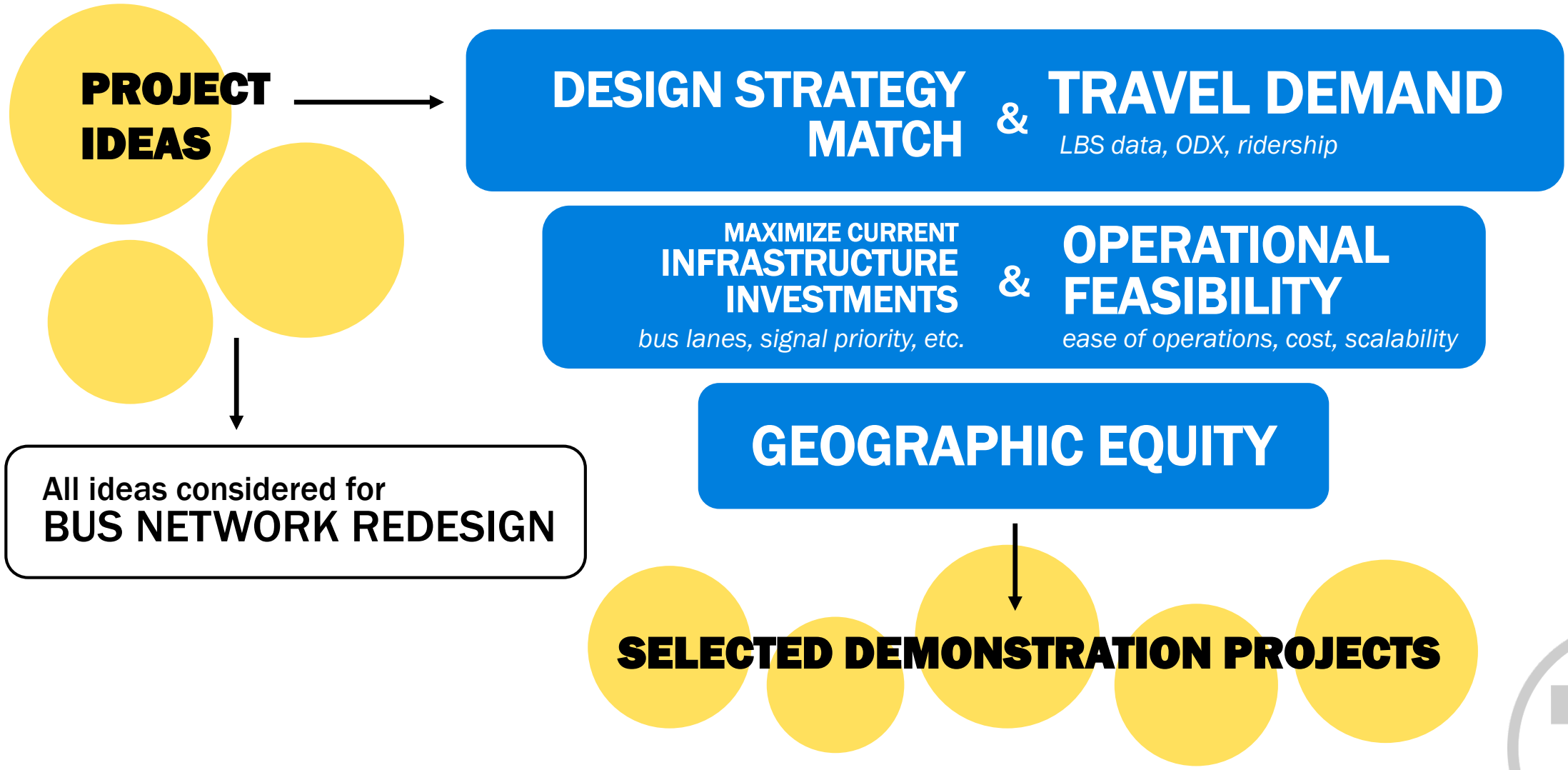
Demonstrating the Network We Want

- Test design strategies that cover a range of concepts
  - **New or improved service** to a high-demand destination
  - **New or improved service** for Environmental Justice communities
  - **Simplify** an *existing* route
  - **All-day frequency** on an *existing* route
  - Explore the **relationship of bus to rail**

Test:

Network-level metrics
Service design principles
Implementation logistics
Scalability

Demonstration Project Selection Criteria



Proposals & Outreach

- **927** proposals received from individuals and organizations via the online submission form
- **118** additional proposals from **20** municipalities
- **1,045** total proposals

Outreach

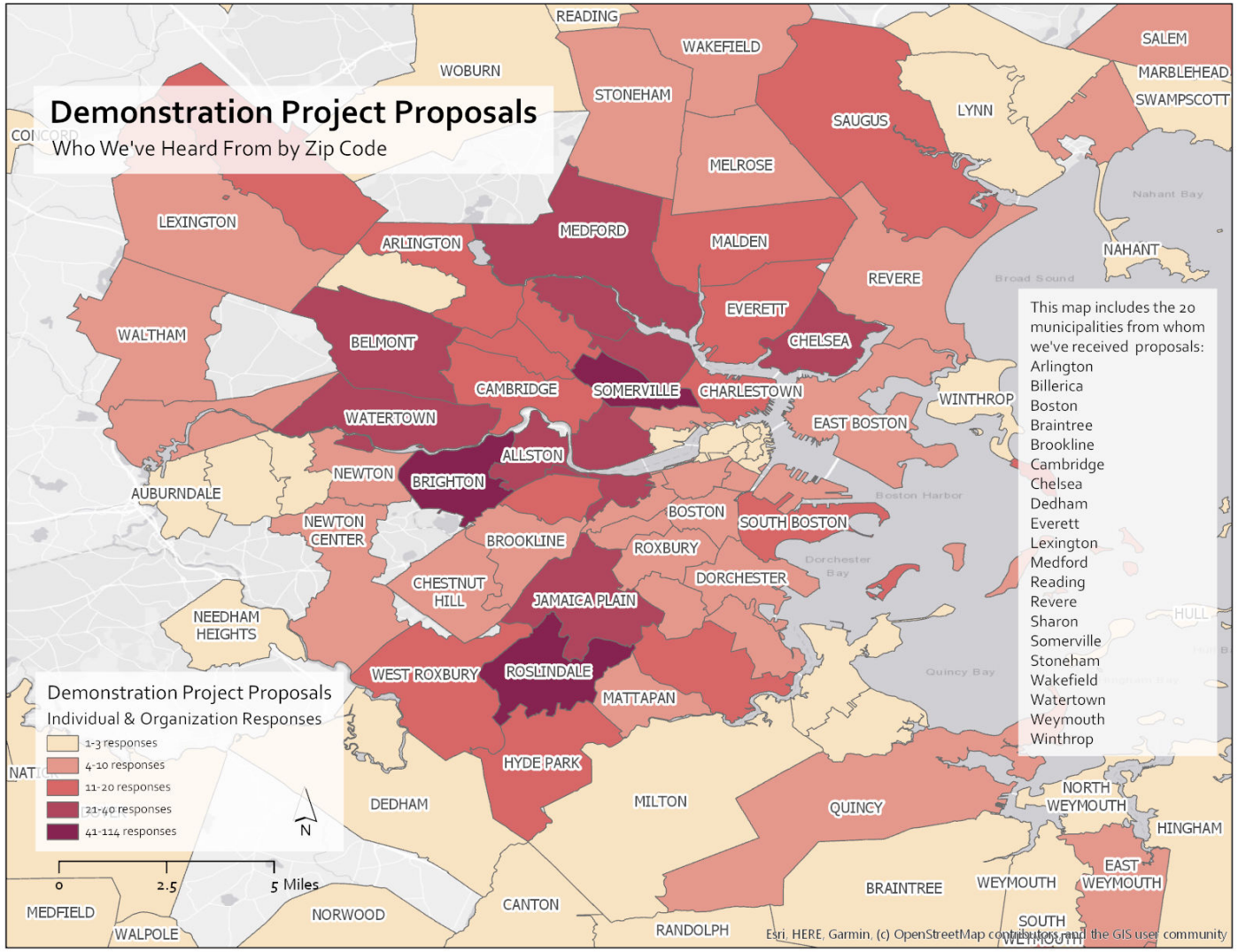
Online
- MBTA Website (Submissions from online intake open from July 23rd – October 4th)
- Twitter
- E-Mail

Municipal
- Planning staff (51 municipalities with bus service)
- City of Boston Neighborhood Liaisons
- Boston City Councilors and other Elected Officials
- Brookline Chamber of Commerce
- Brookline Office of Diversity, Inclusion, and Community Relations

Community Organizations
- Social service organizations
- Youth organizations
- Organizations representing elderly and people with disabilities

BNRD External Task Force
- Advocacy groups
- Business groups
- Housing groups
- Municipalities
- Social service organizations

Who Submitted Demonstration Project Ideas?



Summary of Demonstration Project Proposals

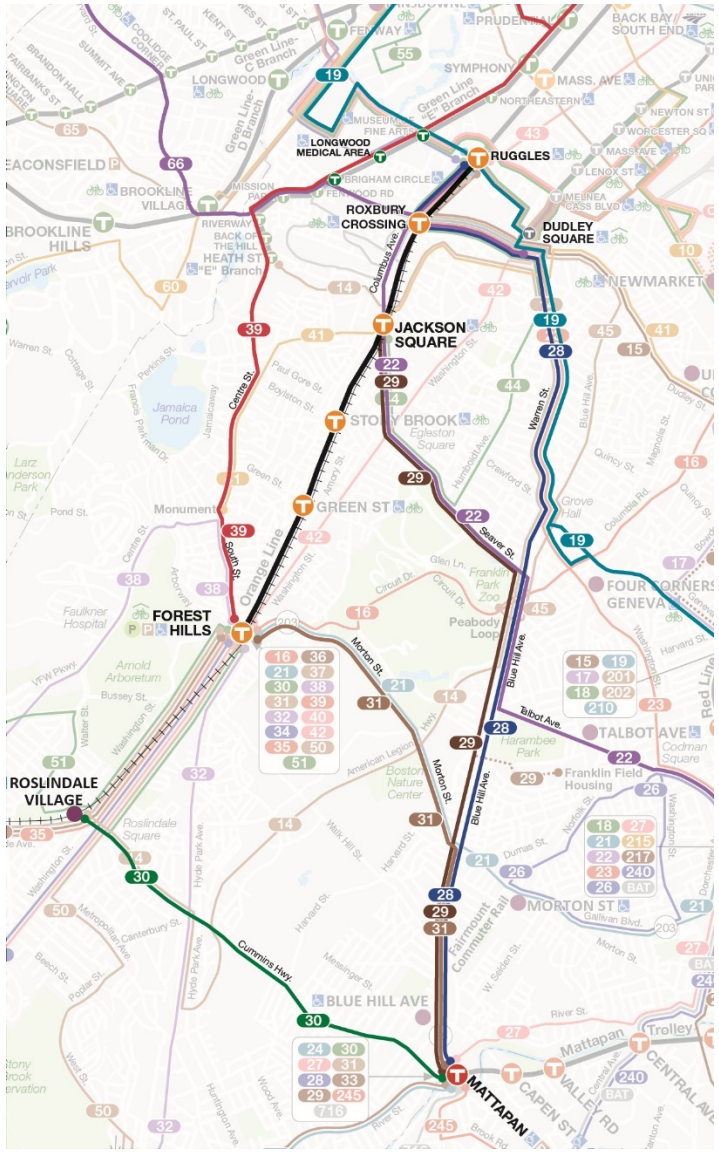
		New or Improved Service to a High-Demand Destination	New or Improved Service for Environmental Justice Communities	Simplify an Existing Route	All-Day Frequency on an Existing Route	Explore the Relationship of Bus to Rail
1	New Route: Mattapan to Longwood Medical Area (LMA)	X	X		X	X
2	Broadway High Frequency Corridors (104/109; 89/101)		X		X	X
3	Route 112 Improvements	X	X	X	X	
	Partnership with City of Boston: Center City Link	X				X

Idea Sources

		Idea Sources
1	**New Route: Mattapan to Longwood Medical Area (LMA)**	• Demonstration Project Feedback Form • City of Boston • Roxbury-Dorchester-Mattapan Study
2	**Broadway High Frequency Corridors (104/109; 89/101)**	• Demonstration Project Feedback Form • City of Somerville • City of Everett
3	**Route 112 Improvements**	• Demonstration Project Feedback Form • Chelsea Task Force (Including City of Chelsea) • City of Everett • Everett Transit Action Plan

PROJECT 1

Demonstration Project Proposal: Mattapan to LMA



Purpose and Need

- Currently, Mattapan residents have no direct connection to the LMA.
- The LMA and Mattapan were both designated as Focus40 Priority Places and Go Boston 2030 identified a Mattapan-LMA connection as a high priority for the City
- A direct connection between Mattapan and the LMA would improve access to job opportunities and medical appointments. This connection also has the potential to attract new transit riders.

PROJECT 1

Demonstration Project Proposal: Mattapan to LMA

travel time

Mattapan Station to LMA
(inbound at AM peak, Brookline Ave @ Longwood)

24–65 min | 33 min | 42–57 min

Note: Transit travel time does not include variability due to traffic. Car travel time takes into account variability due to traffic.

reliability

Note: 75% is the reliability target for non-Key Bus Routes. 80% is the reliability target for Key Bus Routes*.

73% for 28*

50% for 29

as of Nov 19, 2019

frequency

Service to Ruggles and Jackson Square

28
9 min peak
12 min off-peak

29
13 min peak
50 min off-peak

Connecting Service (to Brookline Ave @ Longwood)

15/15/20 min peak
20/25/50 min off-peak
via Routes 8/47/CT2

PROJECT 1

Demonstration Project Proposal: Mattapan to LMA

Project Idea

Extend 29 to LMA (terminating @ Kenmore)

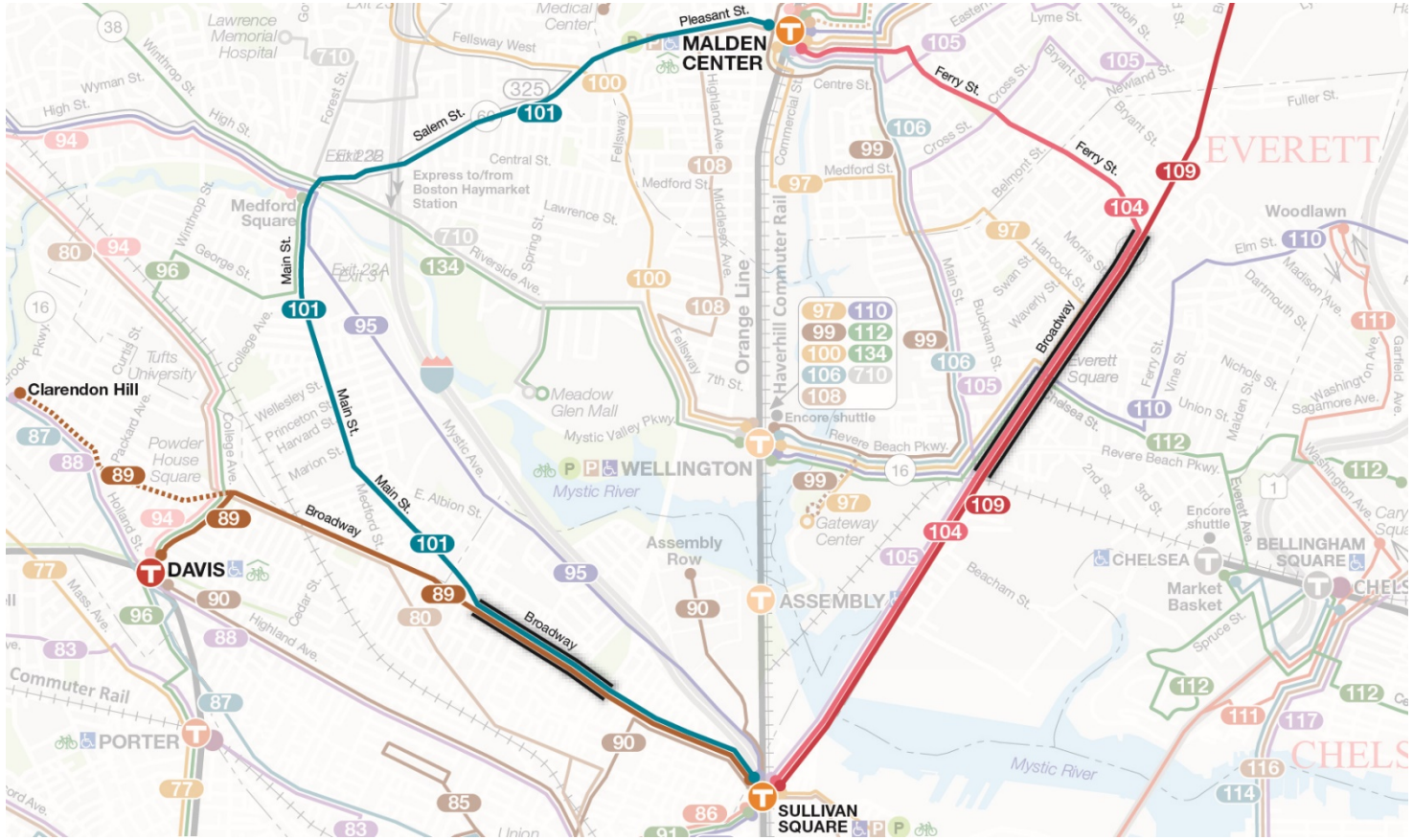
- 30 min peak/30 min off-peak weekdays
- + **New service from Brighton Center through LMA to Ruggles on the 65**
- Improved bus stop amenities

Benefits

- Direct Mattapan-LMA connection with increased frequency
- Direct Brighton Center-LMA connection
- Test impact of improving access to job opportunities
- Test different off-peak frequencies
- Opportunity to work with the City of Boston on bus lanes they are already examining through the route (Blue Hill Ave, Seaver St., Columbus Ave.)

PROJECT 2

Demonstration Project Proposal: Broadway High Frequency Corridors

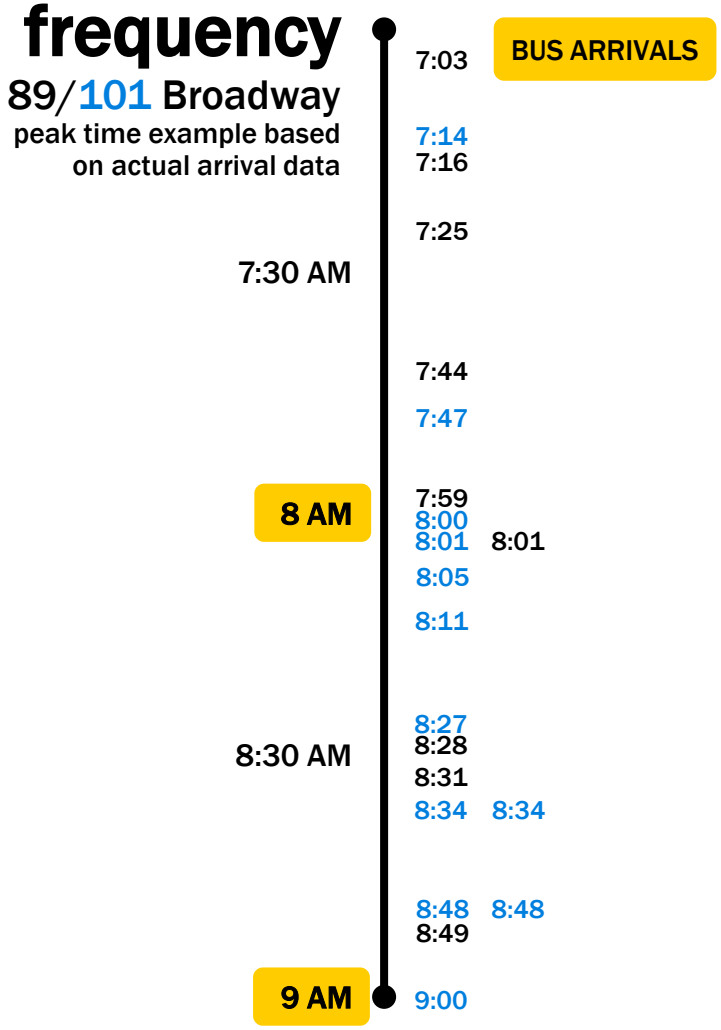


Purpose and Need

- **89/101** and **104/109** both have bus lanes on major sections of Broadway (Somerville and Everett, respectively), which have sped up buses for riders
- Opportunity to create rapid transit-like experience along major corridors by actively regulating headways along trunk section of routes with bus lanes
- These strategies help us test operational feasibility, technical tools (such as the bus dispatch tool), cost, and impacts of strategies which could be scaled up to other parts of the network
- Opportunity to show commitment from the MBTA to improve service where city partners have made transit priority investments

PROJECT 2

Demonstration Project Proposal: Broadway High Frequency Corridors



ridership

7,681 average weekday 89/101 trips

7,075 average weekday 104/109 trips

reliability

61-65% for 89/101

vs. **55-57%** for 104/109

as of Nov 19, 2019

Note: 75% is the reliability target for non-Key Bus Routes. 80% is the reliability target for Key Bus Routes.

PROJECT 2

Demonstration Project Proposal: Broadway High Frequency Corridors

Project Idea

All day frequency on Broadway bus lanes (in Everett and Somerville)

- "KBR" frequency on trunk sections of Broadway in Somerville and Everett where there is a bus lane
- Hire inspectors to manage more even headways and use newly developed dispatching software
- Improve bus stop amenities

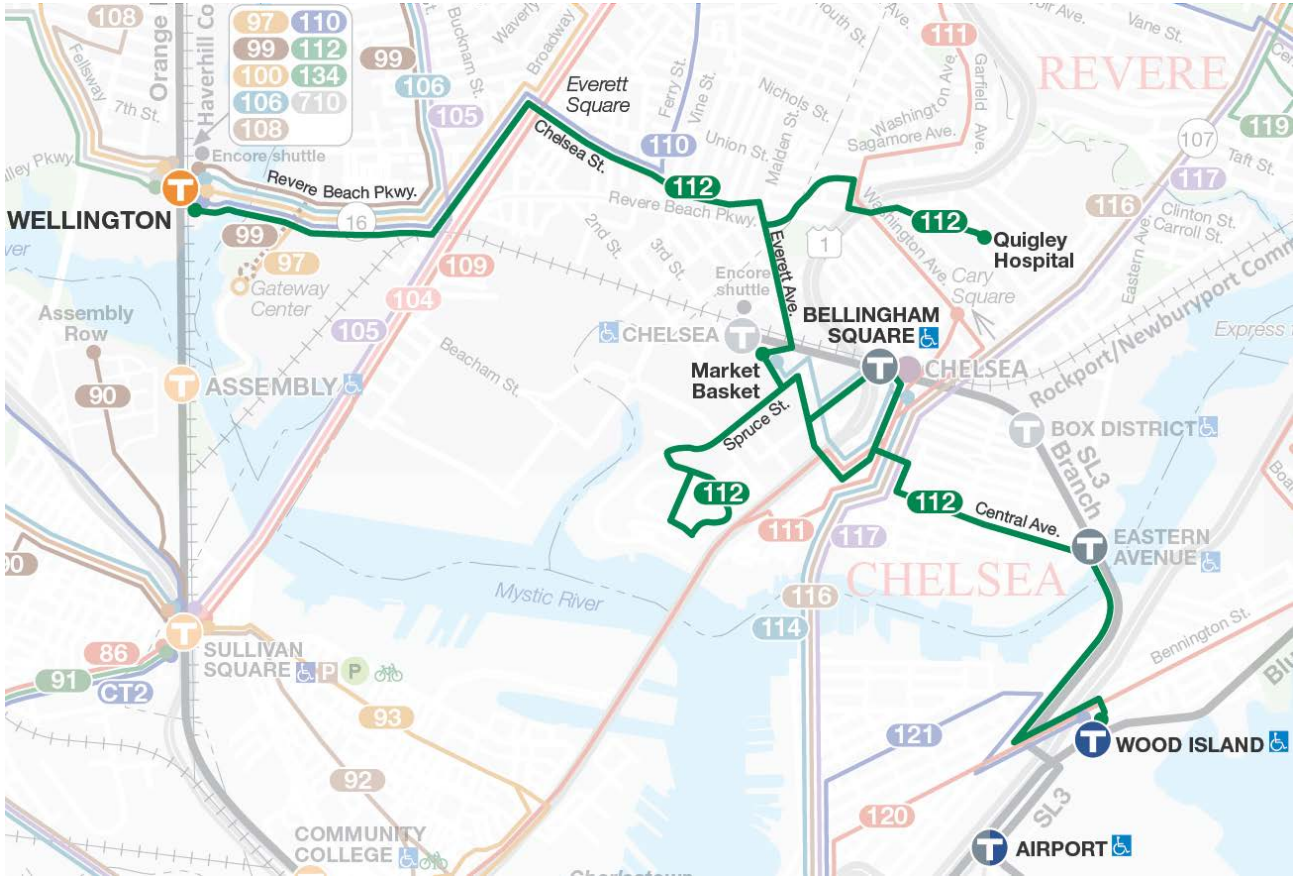
Benefits

- **10 min peak frequency** on Broadway trunks
- **15-20 min off-peak frequency** on Broadway trunks
- Improves trip time, reliability, frequency, and span
- Use new dispatching software and strategies

Question:
Can implementation be phased in from Fall 2020 – Spring 2021?

PROJECT 3

Demonstration Project Proposal: 112 Improvements



Purpose and Need

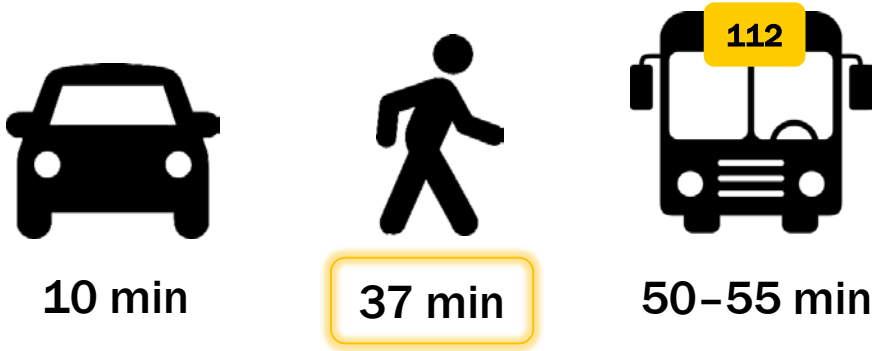
- Two of our highest-demand bus markets (Everett and Chelsea) lie little more than a mile apart, yet have only infrequent and indirect service
- **Route 112 serves multiple purposes:**
  - Only direct connection between downtown Everett and downtown Chelsea
  - Community service to Chelsea Soldiers' Home and Admirals Hill
  - Provides connection to Orange Line and Blue Line

PROJECT 3

Demonstration Project Proposal: 112 Improvements

travel time

Bellingham Square to Everett Square (peak)



Note: Transit travel time is based on the 90th percentile run times.

frequency

45 min **peak**

50–55 min **off-peak**

reliability

54% for 112[2]

vs. **81%** for SL3[2]

Note: 75% is the reliability target for non-Key Bus Routes. 80% is the reliability target for Key Bus Routes.

ridership

1,147 average weekday 112 trips[1]

1 | Average weekday trip number from fall 2018 ridership data via Automated Passenger Counter (APC).

2 | Reliability percentage for November 19, 2019 within the past 30 days from the MBTA Performance Dashboard.

PROJECT 3

Demonstration Project Proposal: 112 Improvements

Project Goals

- Improve service for existing 112 riders
- Provide shorter trip between downtown Chelsea and downtown Everett

Project Ideas

Immediate-term pilot

- Add bus to increase frequency along existing route

Long-term pilot

- Design and pilot improved service plan for the 112 to meet the needs of the community members in the corridor

Next Steps

- Coordinate with City of Chelsea, Chelsea Task Force, and City of Everett to design solutions

Total Estimated Costs for Demonstration Projects

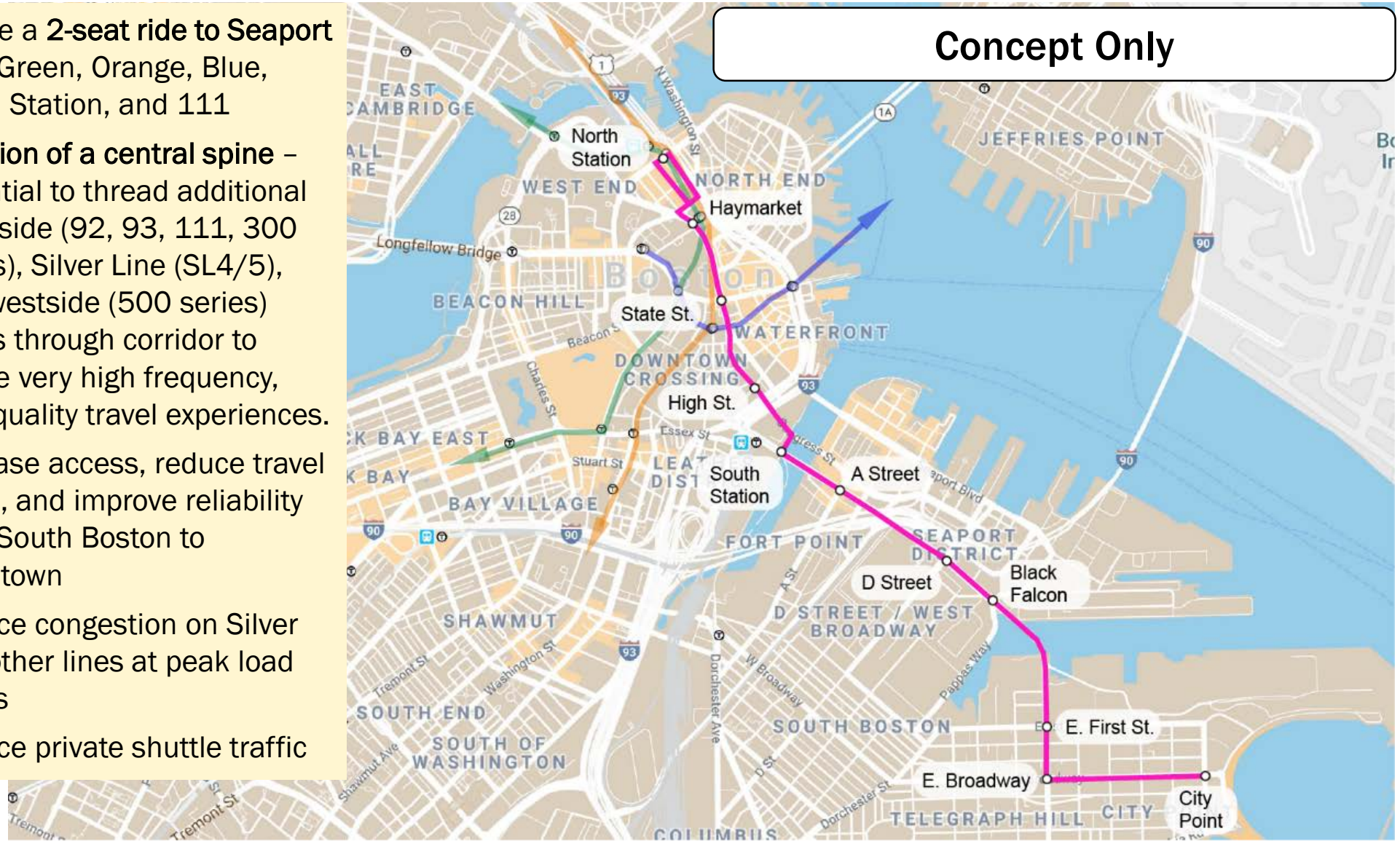
Costs will be refined over the next month

Estimated Costs	Annual Cost
Operating Basic service ops, outreach & marketing, project manager for implementation, snow removal and maintenance at bus stops, real time sign operating costs	$8.5 Million
Capital Bus stop amenity and infrastructure upgrades	$3.5 Million*
TOTAL	**$12 Million**

Notes: *Capital Costs for associated bus shelters and amenities improvements are part of the Bus Shelters and Amenities Program (currently unprogrammed in CIP)
Operating costs may not necessarily fall into a single year; fiscal year is TBD.
Costs for Center City Link not included in estimate.

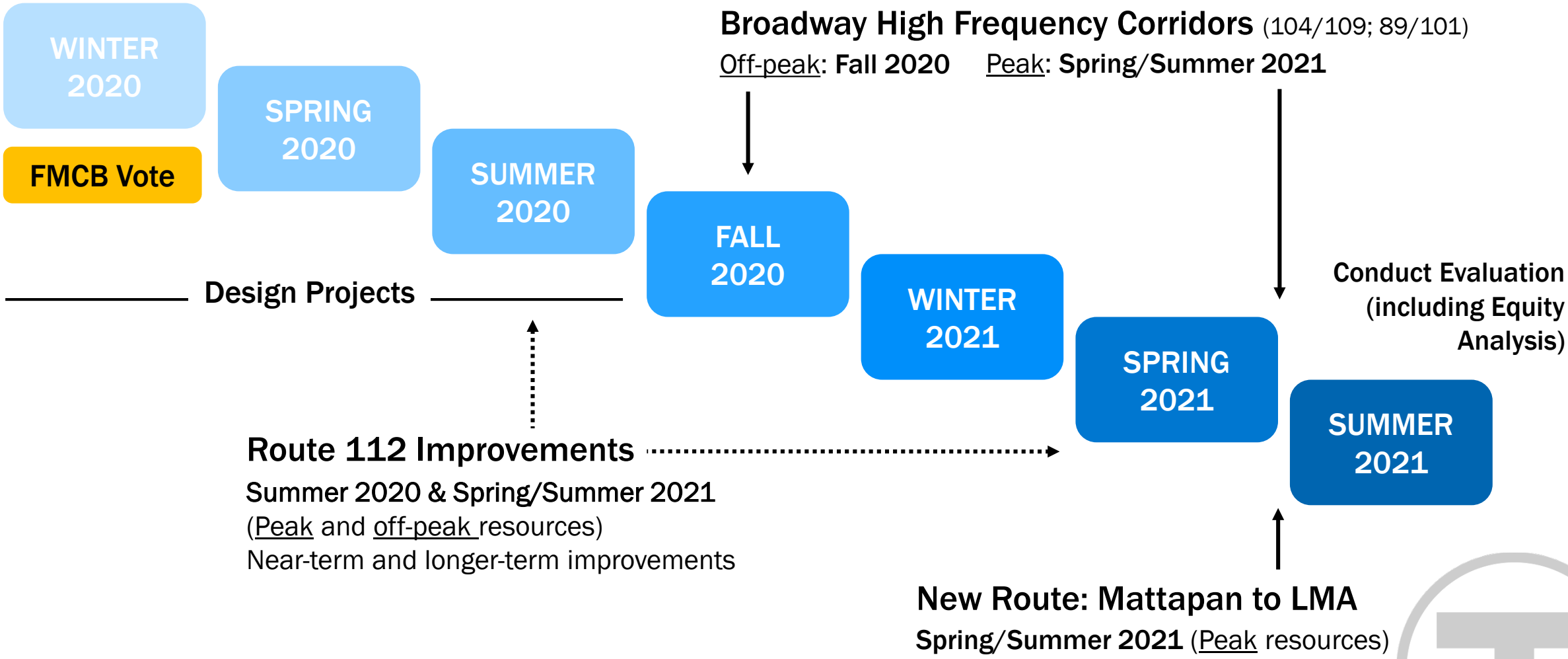
Demonstration Project Partnership with the City of Boston: Center City Link

- Create a **2-seat ride to Seaport** from Green, Orange, Blue, North Station, and 111
- **Creation of a central spine** – potential to thread additional northside (92, 93, 111, 300 series), Silver Line (SL4/5), and westside (500 series) buses through corridor to create very high frequency, high quality travel experiences.
- Increase access, reduce travel times, and improve reliability from South Boston to Downtown
- Reduce congestion on Silver and other lines at peak load points
- Reduce private shuttle traffic



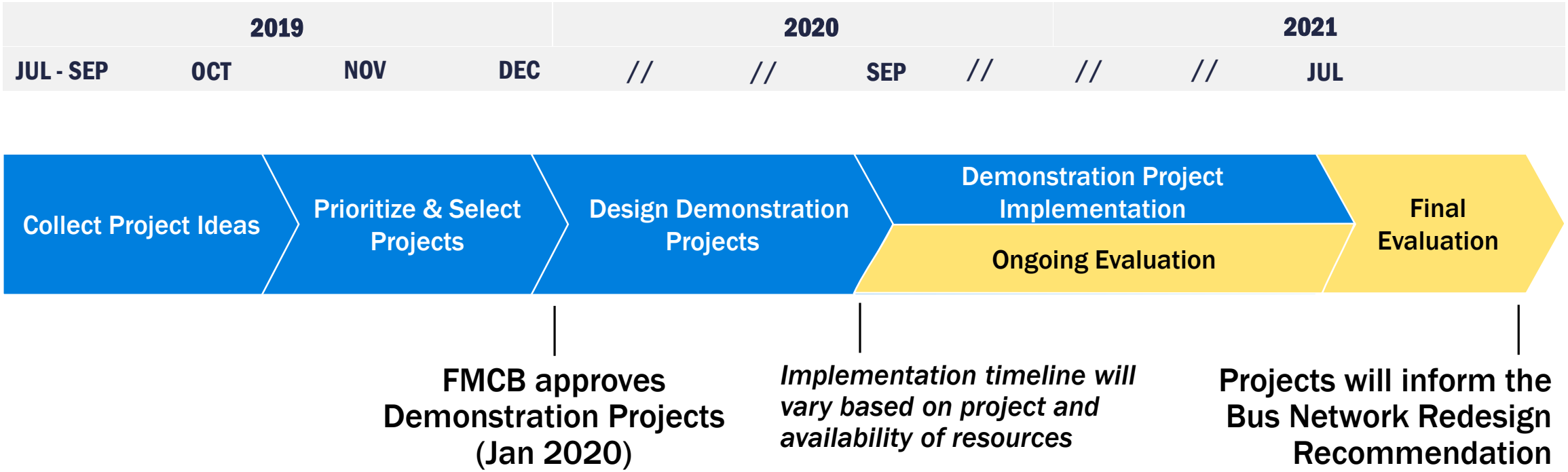
Note:
Timeline and Service Plan are TBD

Implementation Timeline



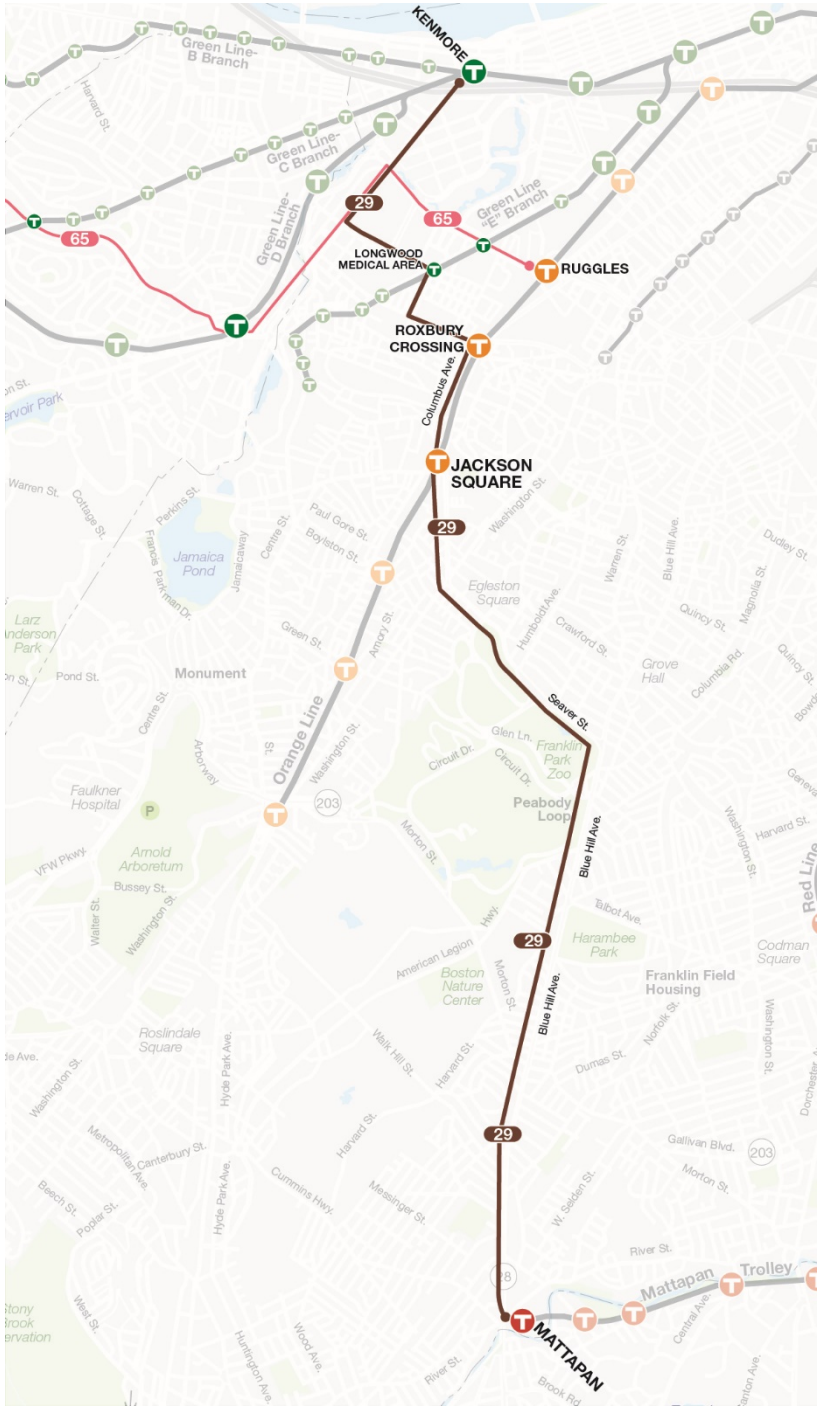
APPENDIX

Demonstration Project Timeline



Mattapan-LMA Proposal Map

Note: Route is subject to change.



Metrics for Evaluating Demonstration Project Success

- Ridership
- Rider Surveys
- Service Delivery Policy Performance Metrics
- Bus Network Redesign Competitiveness Metrics
- 6 month evaluation and 12 month equity analysis evaluation