



Massachusetts Bay Transportation Authority

BBP: Bus Network Redesign Update (Part 2)

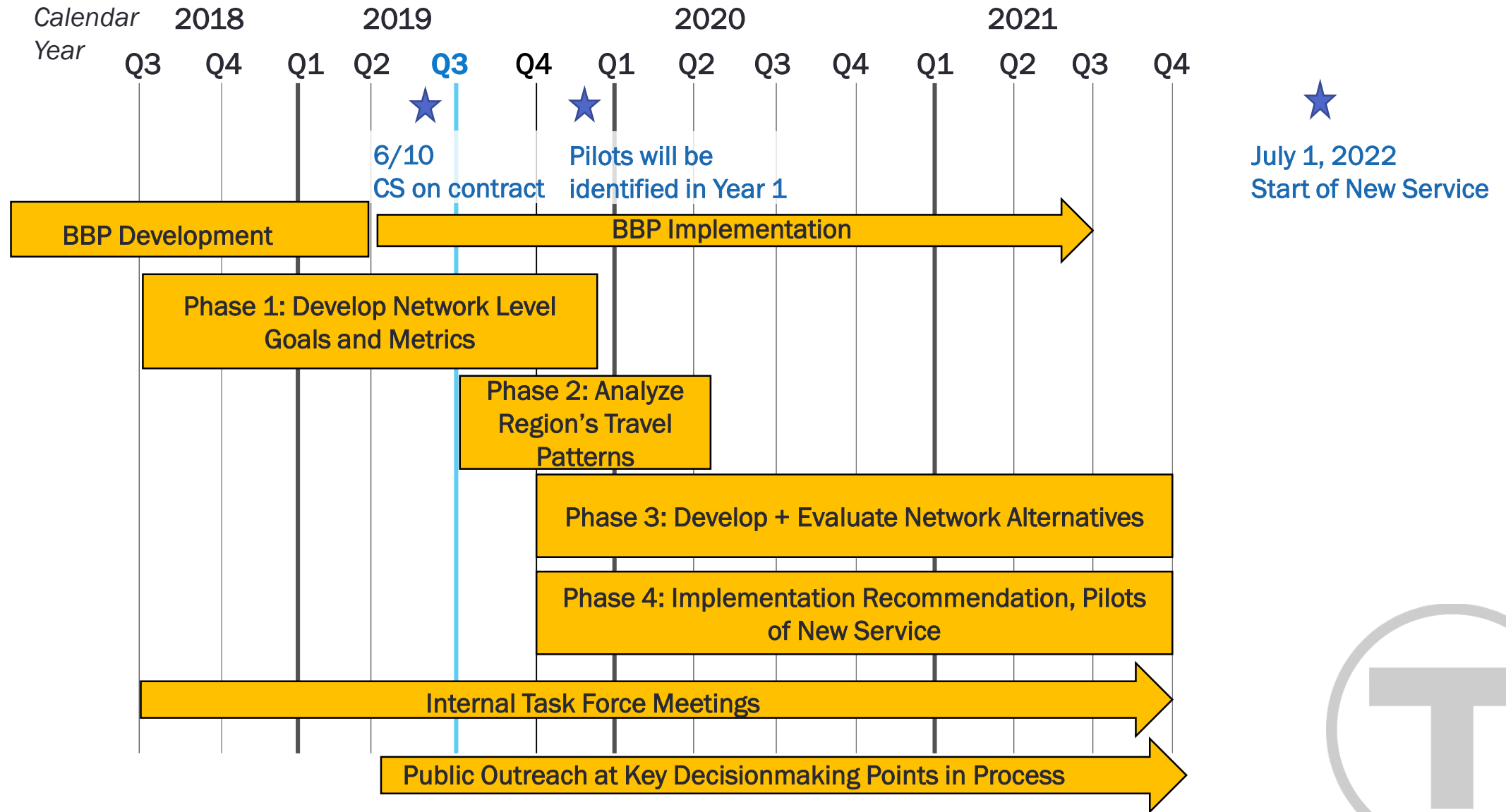
Fiscal and Management Control Board

September 23, 2019

Caroline Vanasse

Better Bus Project.

Timeline



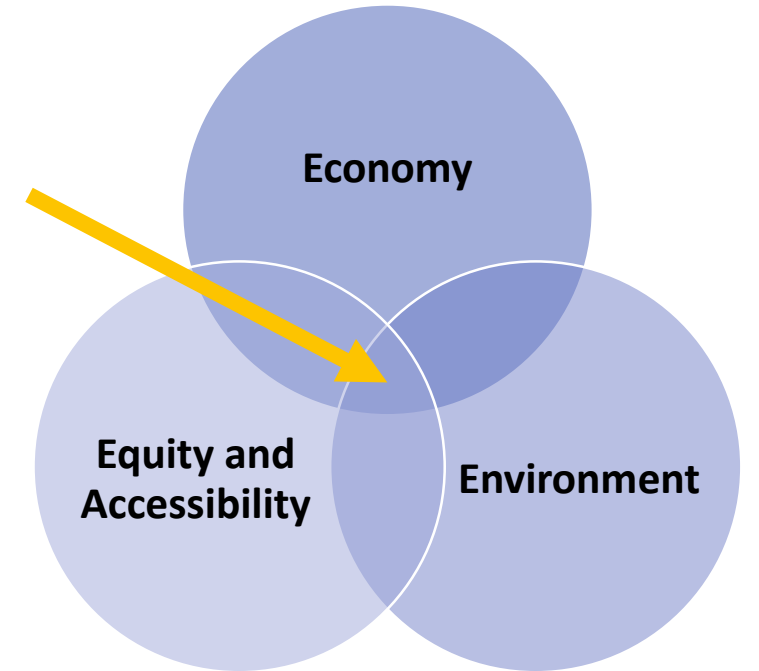
Data for Metric Development

- **Tripmaking**
 - Regional tripmaking data from location-based services (2018)
 - Qualitative data to supplement for underrepresented groups
- **Demographics**
 - 2013-17 American Community Survey 5-Year Estimates
- **Validation and Expansion**
 - National Household Travel Surveys (NHTS)
 - Metropolitan Area Planning Council (MAPC) MASSBUILDS
 - 2016 National Center for Education Statistics (NCES)
 - Regionally adopted 2030 land use projections
 - Accessibility Observatory (UMN)
 - RITIS Congestion Data (UMD)
- **Market Share**
 - MBTA Rider Census
 - MBTA's Origin-Destination-Transfer Model (ODX)



Bus Network Redesign Goals

- **Environment:** Reduce transportation emissions by supporting the ability to travel without a car and attracting ridership from cars
- **Economy:** Deliver a high-capacity transportation network that provides service where needed to support the continued economic development of the metropolitan region
- **Equity and Accessibility:** Provide competitive service and improve access for low-income people, minorities, and people with disabilities



What Type of Service Maximizes our Goals?

There are two fundamental questions for our network redesign:

1

Is the MBTA connecting people to where they need to go?



ACCESS

To address changing travel patterns

2

Is transit a viable option to make the trip?



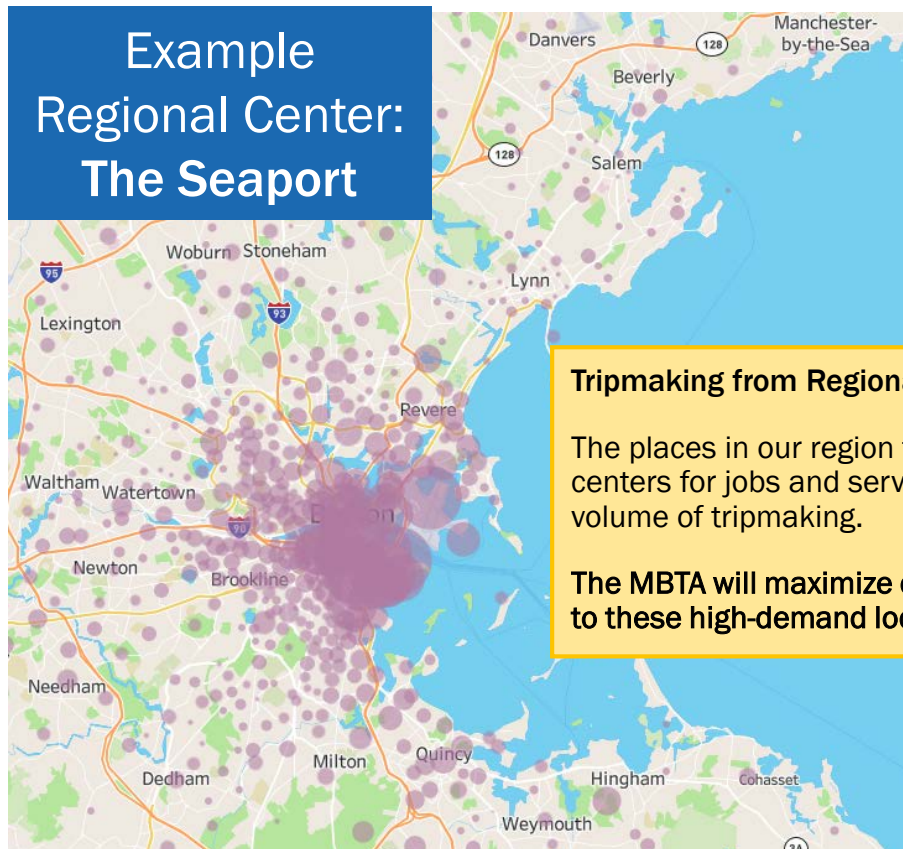
COMPETITIVENESS

To address changing mobility contexts



How Do We Define Access?

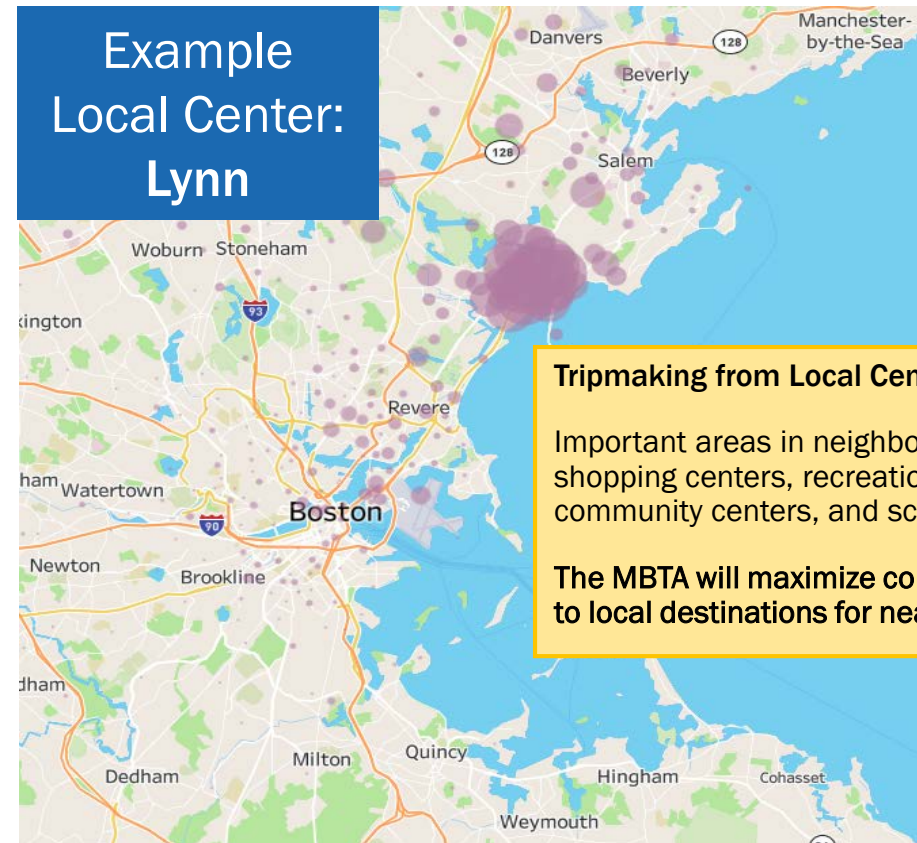
Transit is not just about moving you, but about getting you to destinations.
We want to make sure our network redesign prioritizes getting people to the places they care about.



Tripmaking from Regional Centers

The places in our region that are important centers for jobs and services, with high volume of tripmaking.

The MBTA will maximize competitive access to these high-demand locations.



Tripmaking from Local Centers

Important areas in neighborhoods, including shopping centers, recreational and community centers, and schools.

The MBTA will maximize competitive access to local destinations for nearby residents.



How Do We Define Competitiveness?

Competitiveness means making transit a viable option for any trip we choose to serve.

Factors of Competitiveness for the Rider

Through the last 3 years of engaging with stakeholders, we've identified the following factors that make transit a viable option:

- Service availability (coverage + span)
- Trip time
- Frequency
- Transfers
- Simplicity of network
- Cost
- Reliability
- Comfort

Competitiveness changes based on...

The unique needs of riders

- All current and potential riders
- Low-income populations
- Seniors
- People with disabilities

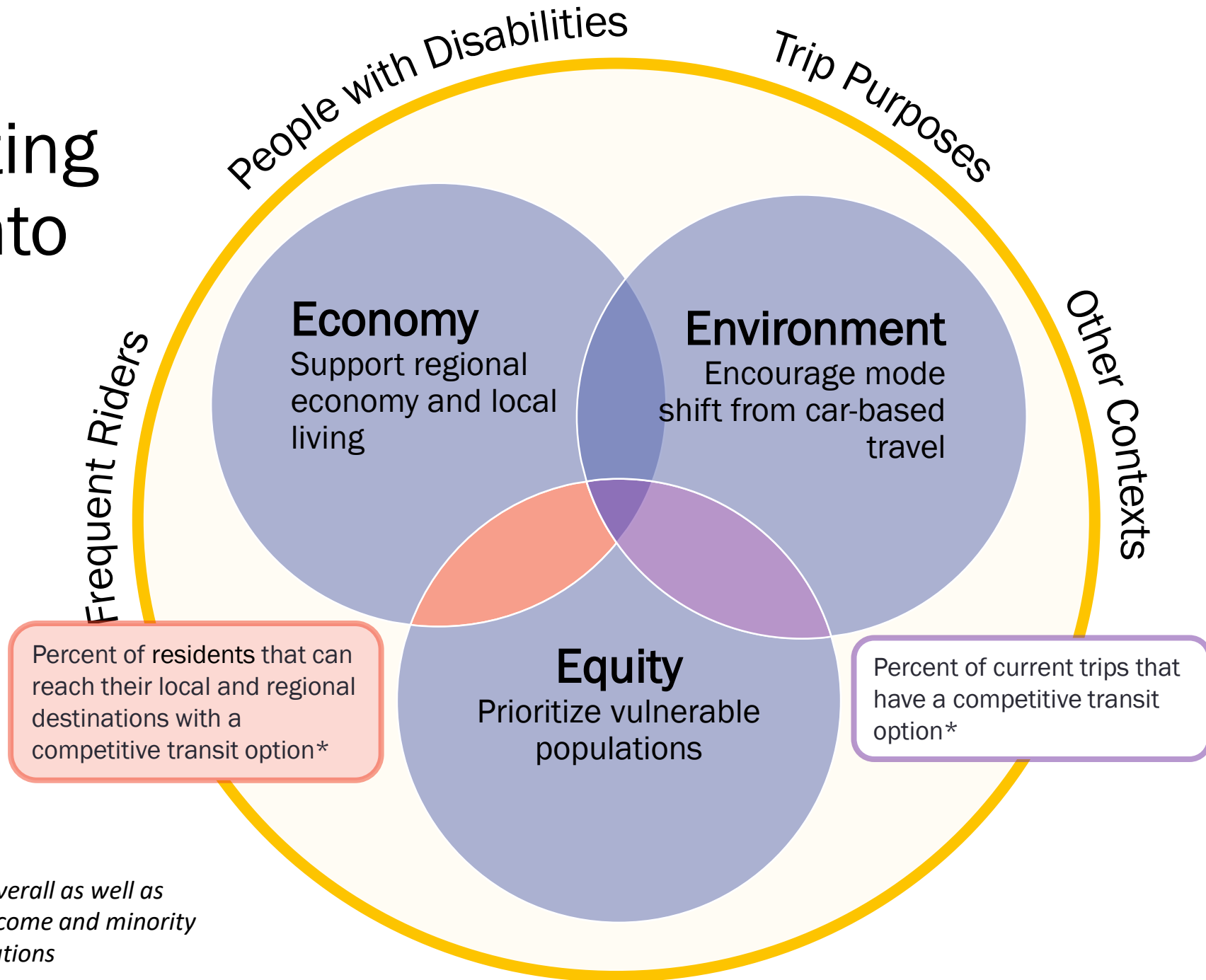
Trip type

- Peak commutes
- Off-peak commutes
- Local trips within communities

Note: We have not yet quantified the factors of competitiveness for the measures. They will be set using outreach and survey data, and the definition of competitive will be iterative throughout this process.



Translating Goals into Metrics



**For overall as well as low-income and minority populations*



Additional Evaluation Considerations



Cost



Operational Feasibility



Public Input



Transit Propensity



Next Steps

- 1 Continue metric development
- 2 Analyze tripmaking data
- 3 Continue to meet with External Task Force and conduct broader public outreach for metrics
- 4 Present Demonstration Project approach to FMCB



Appendix



Why Are We Using LBS Data?

- To understand how people are moving across the region (approximately 20 million trips daily)
- Data capture seasonal travel (12 months of travel data)
- Data are representative of different demographics (with some exceptions)
- 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 are representative of different demographic groups



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%



Purpose of Bus Network Redesign Metrics

Evaluate whether the network alternatives help us achieve our goals.

The metrics will help us understand:

1

Is this network better than the existing network?

+

2

Which network best helps us achieve our goals?



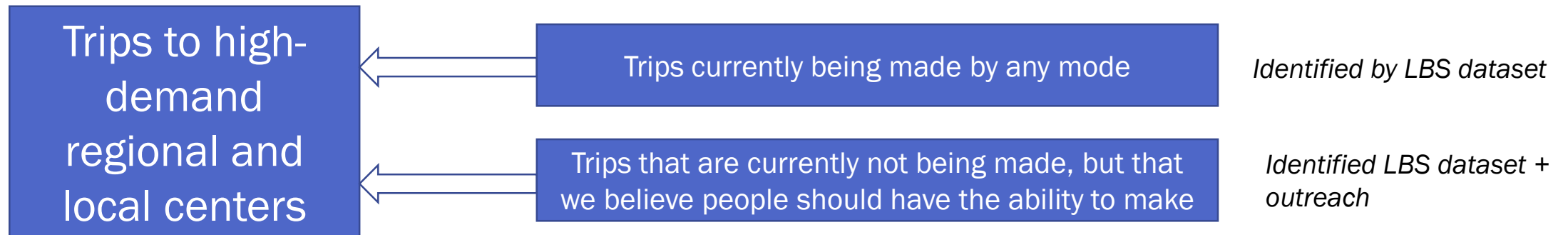
Integrating Equity into Metrics

- **Equity and Accessibility Goal:** Provide competitive service and improve access for low-income people, minorities, and people with disabilities.
- Title VI definition for vulnerable populations; MBTA DI/DB Policy
 - Minority and low-income riders or communities (less than 60% of AMI ~ \$45,000)
- For accessibility, we are assuming people are equally distributed across the system
- **Any network alternative created as part of BNRD should improve “competitive access” for low-income and minority populations in the MBTA bus service area, as well as for people with disabilities**



Defining Destinations

Transit is not just about moving you, but about getting you to destinations.
We want to make sure our network redesign prioritizes getting people to the places they care about.



Utilizing the Service Delivery Policy

- The Service Delivery Policy provides route-level metrics and specifically addresses:
 - Cost-efficiency
 - Base Coverage
 - Reliability
 - Comfort
 - Safety
 - Communication
 - Minimum Frequency
 - Minimum Span of Service
 - Accessibility (ADA)

