### FOCUS40

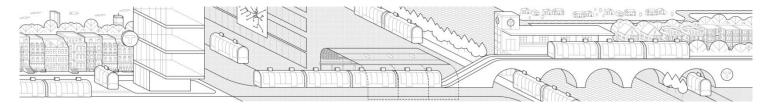
Focus40 Draft Plan Overview
Cambridge Transit Advisory Committee
September 5, 2018
www.mbtafocus40.com



### Focus40 Overview

#### A long-range plan for how the MBTA can meet the needs of the region in 2040:

- A 20-year plan as required by MBTA enabling legislation
- A roadmap of investments to feed future MBTA Capital Investment Plans

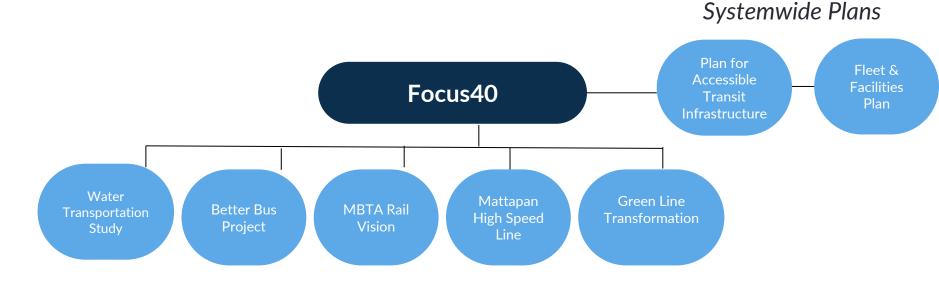


#### **Key Components of Focus 40 Plan:**

- **Programs**: Highlight potential investments that could enable the MBTA system to best serve the region over the long term, divided into three categories (We're Doing, We're Planning, We're Imagining)
- **Priority Places**: Identify priority areas for new or improved service based on where investments have the greatest likelihood to deliver ridership and other benefits to the region



### Focus40 Planning Umbrella



Modal and Project Plans



### Focus40 Process

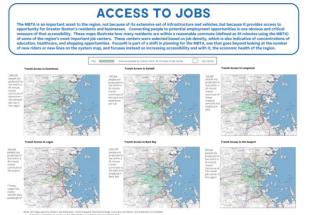


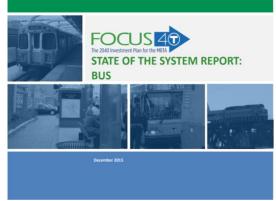


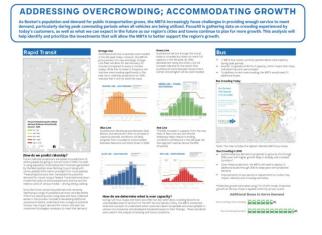


### **Data Collection**

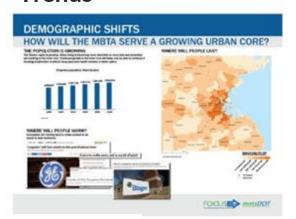
#### **Existing and Future Conditions**

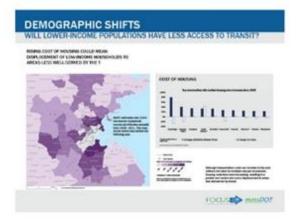


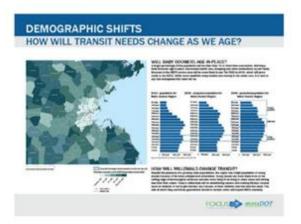




#### **Trends**









### Engagement

#### EXTERNAL ENGAGEMENT

WE ASKED THE
QUESTION: WHAT IS
A CHALLENGE THE
MBTA NEEDS TO
ADDRESS IN THE
FUTURE?





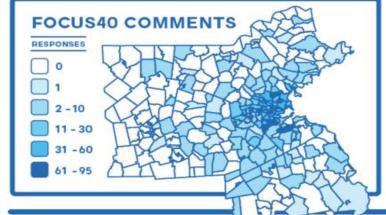






WE COLLECTED IDEAS FROM MORE THAN 2,000 PEOPLE





#### STREET TEAM HOURS

THE FOCUS40 STREET TEAM OUTREACH WAS DESIGNED TO CORRESPOND WITH OVERALL MBTA RIDERSHIP BY MODE.



60 HOURS AT RAPID TRANSIT STATIONS



30 HOURS AT BUS STATIONS



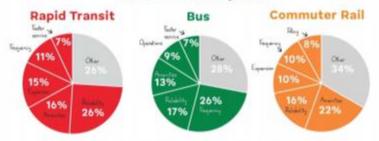
10 HOURS AT COMMUTER RAIL STATIONS



### WHAT WE HEARD FROM YOU

We collected more than 3,000 ideas from the public about how they want the MBTA to better serve the Greater Boston region over the next 25 years. These ideas ranged from expansion projects to ideas that would improve the capacity, reliability, and accessibility of the system.

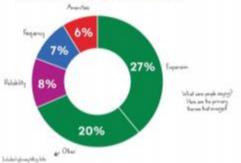
#### What we heard by mode



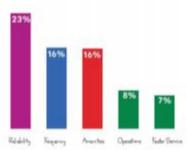
Other relative connects related to ansatum reduction, from it provides proving copies it is the

While MBTA civic engagement efforts will always be met with ideas for major system expansions, the majority of input was about improvements in the core system. What we heard also appeared to change based on the type of outreach.

Top 5 Comments from our website and stakeholders



Top 5 Comments from the Street Team

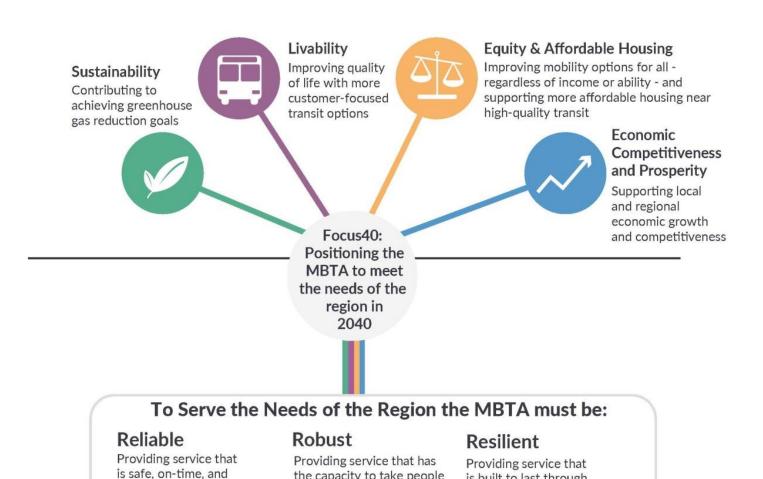






who all the basel de-

### Goals



the capacity to take people

demand for transit increases

where they want to go as

high quality for

and abilities

customers of all ages

is built to last through

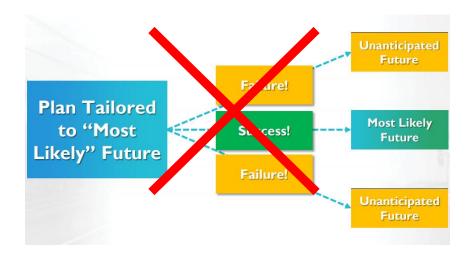
extreme weather and

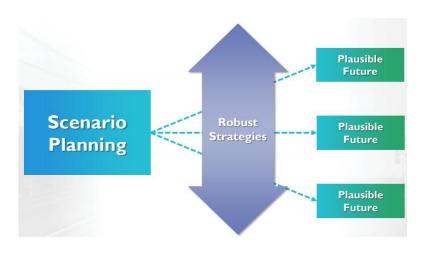
other disruptions



### **Scenario Planning**

- Focus 40 uses scenario planning to better understand what the MBTA's region might be like in 2040.
- Instead of planning for one specific future, Focus 40 developed four plausible futures for the region.







### FOCUS40 PLACES



### **Priority Places Overview**

#### Focus 40 is trying to shift the conversation...

Instead of starting with expansion project ideas, Focus40 is about identifying places that need and can support higher quality transit – Priority Places – and then developing projects to serve those places.

Focus 40 identifies Priority Places for new or improved service based on where investments have the **greatest likelihood to deliver ridership** and other real **benefits to the region**, where:

- Improved service could address a clear transportation need and help support broader goals for the region
- Many elements indicate that the place can support higher quality transit
- There is a demonstrated transportation need today that is likely to grow

#### Three types of priority places:

- Major Employment / Destination Districts
- Inner Core Communities Lacking Rapid Transit
- Urban Gateways



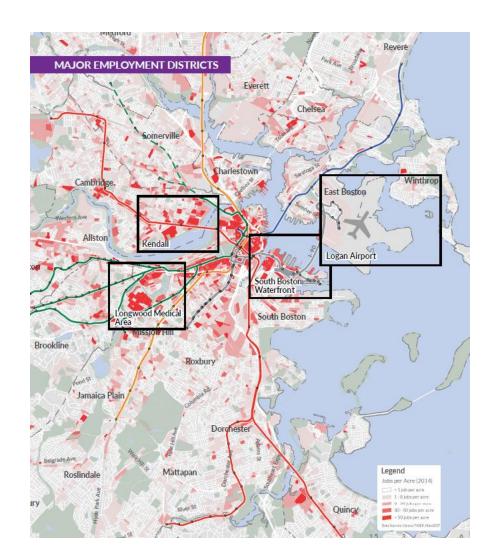
### Major Employment/Destination Centers

#### **Characteristics:**

- Growing business districts just beyond the densest part of the rapid transit network
- Longer than average transit commute times, often requiring one or more transfers
- The overloading of existing road networks and MBTA services
- The presence of multiple shuttle providers to compensate for insufficient MBTA service

#### **Examples:**

- South Boston Waterfront
- Kendall Square
- Longwood Medical Area
- Logan Airport





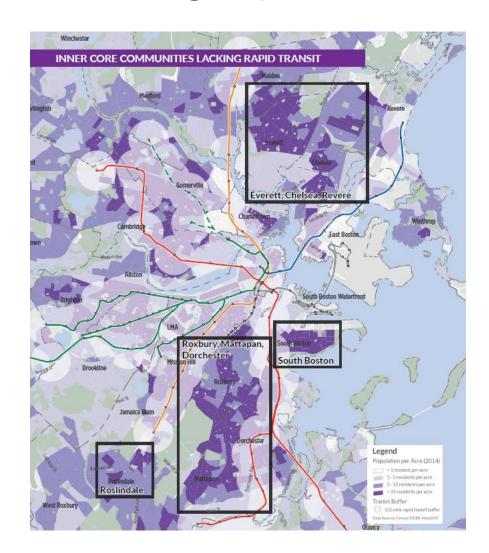
### Inner Core Communities Lacking Rapid Transit

#### **Characteristics:**

- Residential areas between the rapid transit network that are only served by bus or commuter rail
- Commuter rail access that does not fully serve the needs of the community given how our commuter rail system currently works at the inner ends of the system
- Many are lower-income communities and/or transit dependent

#### **Examples:**

- Chelsea
- Everett
- Blue Hill Avenue (Boston)
- Roslindale (Boston)





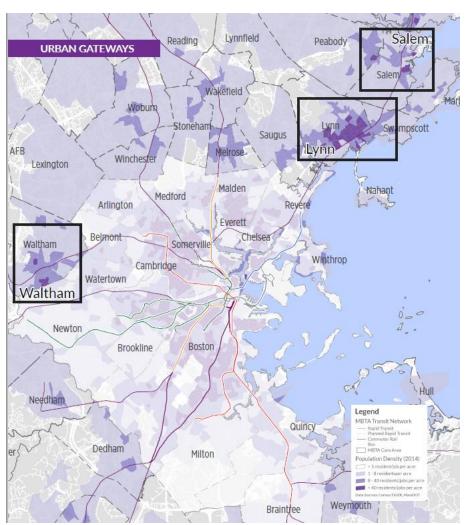
### **Urban Gateways**

#### **Characteristics:**

- Located beyond the rapid transit network and served by commuter rail that often functions as a hub for local MBTA or regional transit authority bus service
- A large population of low-income residents and/or transit dependent residents
- A moderate-intensity balance of residential and commercial development either built or permitted

#### **Examples:**

- Lynn
- Salem
- Waltham

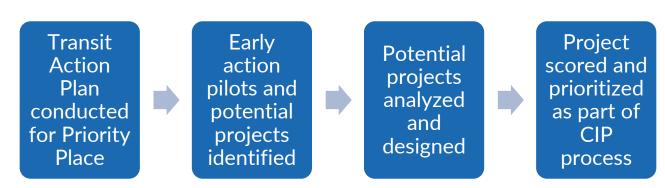




### From Priority Places to Programs to Projects

Focus 40 is built on programs, each with a stated objective, following the pattern set by the Capital Investment Plan and Strategic Plan processes.

- Eight programs focus on existing MBTA modes and services (Red Line, Bus, Commuter Rail, etc.)
- Three programs focus on systemwide needs (customer experience, resiliency, and accessibility/paratransit).
- One program focuses on possible future expansion projects and services, with an emphasis on Priority Places.





### FOCUS40 PROGRAMS



### Programs Framework

Focus 40 lays out studies, project concepts and specific investments within each program, divided into the following categories:

Category	Timeline	Description
We're Doing	Commitments through 2023	Investments already underway or in the five-year Capital Investment Plan.
We're Planning	Next priorities	Important investments that meet the needs of the region in 2040, to be planned and phased over time.
We're Imagining	TBD	Potentially transformative investment ideas, the feasibility, benefits, and costs of which must be better understood before the MBTA can make a decision about how to move forward with them.



# Program Objectives

Program	Objective
PARATRANSIT & ACCESSIBILITY	Ensure that the vast majority of customers can use the MBTA's increasingly accessible fixed-route system, while those who still need The RIDE have more and better service options.
CUSTOMER EXPERIENCE	Provide regular and occasional riders alike with high-quality services that are easy to navigate and pay for and a pleasure to use.
RESILIENCY	Retrofit priority MBTA assets to withstand severe weather and sea level rise and ensure all new construction meets strict resiliency standards.
BLUE LINE 2040	Accommodate growth at Logan Airport and development sites in East Boston and Revere and ensure resiliency to severe weather and sea level rise.
GREEN LINE 2040	Increase capacity by at least 50% on the nation's busiest light rail line with redesigned, larger vehicles and modernized infrastructure.
RED LINE 2040	Enable a modernized line with peak trains every three minutes to connect residents of transit-oriented housing to growing job centers—all connected to a reimagined Mattapan Line.
ORANGE LINE 2040	Increase peak-hour service to every 4.5 minutes (three minutes if development warrants) to meet the needs of homes and businesses throughout the growing corridor, serving additional riders from the Lower Mystic region.
SILVER LINE 2040	Add capacity and connectivity with an expanded and cleaner fleet that serves not only the Seaport but also an expanded Silver Line network extending beyond Chelsea.
BUS 2040	Achieve a better, faster, lower-emissions service, supported by off-board fare collection and exclusive busways, that is more aligned with where riders live, work, and travel.
COMMUTER RAIL 2040	Serve more riders and non-commuting trips by providing better connections to more destinations and potentially by implementing one or more new service models (urban rail/regional rail), pending results of the <i>Rail Vision</i> study.
WATER TRANSPORTATION 2040	Support a robust, multi-operator Boston Harbor water transportation system, serving more passengers and destinations with excellent connections to landside MBTA service.
PLACE-BASED SERVICE ADDITIONS	Focus new services and expansion projects on providing high frequency, reliable service to better meet the needs of those who live and work in and travel to Priority Places that can support high-quality transit service

and travel to Priority Places that can support high-quality transit service.





**Program Objective**: Provide regular and occasional riders alike with high quality services that are easy to navigate and pay for and a pleasure to use.

#### We're Doing: Commitments through 2023

- Automated Fare Collection (AFC 2.0)
  - All-new fare collection system to be completed by May 2020, with new fare gates Spring 2021
  - Single application on fare card, smartphone, or contactless credit card for boarding all modes of transit, including commuter rail
  - Reduces boarding time, speeds up service on Green Line and buses
  - Potential for seamless integration with Regional Transit Authorities, Lyft/Uber, and other micro-transit systems
- Station Improvements
  - Signage, wayfinding, and lighting improvements systemwide
- Digital MBTA
  - Real-time information for travel planning and performance enhancements

#### We're Planning: Next Priorities through 2040

- Station Modernization, including Exploration of Platform Barriers and Doors
  - Platform doors can speed boarding, improve safety, and reduce delays
- Partnerships for Improved First-Mile/Last-Mile
   Connections
  - · Support mobility hubs
- System Access Improvements (parking and other)
  - · Where is more parking needed?
  - What are better uses for underutilized parking areas?
  - Where should increased bicycle parking be added?
  - Will drop-off access grow as a customer preference?

**We're Imagining:** A "Digital MBTA" that is at the cutting edge of using technology to enhance the transit experience and encourage transit use.



# PARATRANSIT & ACCESSIBILITY



**Program Objective**: Ensure that the vast majority of customers can use the MBTA's increasingly accessible fixed-route system, while those who still need The RIDE have more and better service options.

#### We're Doing: Commitments through 2023

- RIDE Vehicle Replacement Program
  - Replacing 84.5% of The RIDE's fleet by mid-2022 with new, loweremissions vehicles
- Dispatch Process Redesign to Provide RIDE Customers with Additional Options
  - · Offer customers Lyft, Uber, and taxi options
- Plan for Accessible Transit Infrastructure (PATI) Phase 1:
   Plan Completion and Early Actions
- Priority Rail Station and Bus Accessibility Improvements
  - · Wollaston, Red Line
  - · Oak Grove, Orange Line
  - Hynes, Symphony, Green Line
  - BU West/St. Paul, Babcock/Pleasant Street, Green Line B branch
  - Newton Highlands, Green Line D branch

#### We're Planning: Next Priorities through 2040

- Implementation of (PATI) Mid-Term Recommendations
  - Includes Green Line surface stop accessibility
- RIDE Service Reimagining
  - Based on new data and technology and a more accessible fixed route system

**We're Imagining:** Ridership growth from development around bus and commuter rail stops that supports investment to make them fully accessible.





**Program Objective**: Retrofit priority T assets to withstand severe weather and sea-level rise and ensure all new construction meets strict resiliency standards.

#### We're Doing: Commitments through 2023

- Systemwide Climate Change Vulnerability Assessments
  - Using long-term projections, identifies and prioritizes vulnerabilities
- Blue Line Resiliency and Adaptation
- · Green Line Portal Protection
- Adaptation Strategies for Priority Infrastructure in Collaboration with Municipalities
  - Partnering with MassDOT, MAPC, EEA and municipal partners on data collection, vulnerability assessment, and solution development

#### We're Planning: Next Priorities through 2040

- Resilient Power Supply
  - Prevent potential disruptions to power supply for Rapid Transit
- Incremental Implementation of System-Wide Climate Change Vulnerability Assessments
  - · Identify strategies to address vulnerabilities
  - · Incorporate resiliency upgrades into ongoing work

**We're Imagining:** An MBTA fully resilient in even the most dire climate scenarios and providing essential mobility for the Boston region amid severe weather and sea-level rise



# PLACE-BASED SERVICE ADDITIONS



**Program Objective**: Focus new services and expansion projects on providing high frequency, reliable service to better meet the needs of those who live and work in and travel to Priority Places that can support high quality transit service.

#### We're Doing: Commitments through 2023

- Transit Action Plans for Priority Places (Lynn, Allston, Seaport)
- Service Pilots
- Green Line Extension to Somerville/Medford
- South Coast Rail Phase 1

#### We're Planning: Next Priorities through 2040

- Placed-based Service Expansions Based on Pilots and Action Plans
  - · Bus Rapid Transit
  - Infill Stations
- Better Bus Project Phase 3: Network Redesign Implementation
- Early Actions from MBTA Rail Vision
- Regional Multimodal West Station
- South Coast Rail Phase 2

We're Imagining: Rail extensions and new bus rapid transit routes better connecting Priority Places.





**Program Objective**: Achieve a better, faster, lower-emissions service, supported by off-board fare collection and exclusive busways, aligning with where riders live, work, and travel.

#### We're Doing: Commitments through 2023

- Better Bus Project Phase 1 to revamp routes, frequencies, and stops with implementation planned in 2019
  - Partnerships with cities and towns to implement bus lanes, traffic signal priority, "queue jumps" and other service enhancements
- Better Bus Project Phase 2: Network Redesign Process and Initial Implementation to begin implementation and look at better ways to serve bus riders through a network redesign
- Municipal Collaboration to Improve High Priority Bus Facilities and Stops
  - Improved access and safety features at over 200 high-priority bus stops for accessibility improvements
- Bus Fleet Replacement and Expansion
  - 460 40-foot buses scheduled for delivery 2021-25
  - Option order procurement of 194 hybrid buses
- Zero- Emissions Bus In-Service Testing to inform future fleet procurement

#### We're Planning: Next Priorities through 2040

- Fleet Expansion to Serve Bus and Bus Rapid Transit Network
- Better Bus Project Phase 3: Implementation of Network Redesign
- Phased Conversion to Zero-Emissions Fleet
  - · Pending findings from testing
- New Bus Rapid Transit (BRT) corridors with more frequent, comfortable, accessible service and exclusive bus lanes

**We're Imagining:** Autonomous bus shuttles that can serve new routes and deliver first-mile/last-mile connections for passengers to commuter rail and rapid transit





**Program Objective**: Enable a modernized line with peak trains every 3 minutes to connect residents of transit-oriented housing to growing job centers - all connected to a reimagined Mattapan Line.

#### We're Doing: Commitments through 2023

- Fleet Replacement and Maintenance Facility Upgrades
  - Replacing all 218 Red Line cars
- Capacity and Reliability Improvements:
  - Modernizing signals, traction power
  - · Improving Alewife bottleneck
  - Peak service increased from every 4.5 minutes to 3 minutes
- Red Line South Improvements (Wollaston, TOD, Parking Garages)
- Mattapan High Speed Line Reimagining and Short-Term Improvements
  - Vehicles are over 70 years old and replacement parts and components are no longer available
  - Rehabilitate fleet to allow antique trolleys to continue operating until new technology becomes available

#### We're Planning: Next Priorities through 2040

- Downtown Pedestrian Connection between the Red and Blue Lines
- Strategic Track Reconfiguration to Address Bottlenecks
  - Improve travel times and reduce delays by reconfiguring current track/signal bottlenecks at Park Street and Columbia Junction at JFK/UMass
- Reimagine Mattapan Line
  - Based on reimagining study and outreach

**We're Imagining:** A connection to the Blue Line and a downtown superstation to improve the customer experience and reduce travel times.



# COMMMUTER RAIL 2040





**Program Objective**: Serve more riders and non-commuting trips, by providing better connections to more destinations and potentially by implementing one or more new service models (urban rail/regional rail), pending results of *Commuter Rail Vision* Study.

#### We're Doing: Commitments through 2023

- · Commuter Rail Vision
- North Station Drawbridge
  - Faster and more reliable service out of North Station
- South Coast Rail Phase 1
- Bi-Level Coach Procurement and Locomotive Upgrades
  - · Added capacity and more reliable vehicles
- Ruggles Station Upgrades
  - More stops with better connections to Orange Line
- Positive Train Control and Automatic Train Control

#### We're Planning: Next Priorities through 2040

- Station Investments (Infill, Rapid Transit Connections)
  - · Infill targeted for Priority Places
- Regional Multimodal West Station and Midday Layover
- Double and Triple Tracking to Add Capacity
  - Worcester Line and other congested areas
- South Coast Rail Phase 2

As part of the MBTA Rail Vision process now underway, MassDOT/MBTA is examining various possible service models for rail transportation in the Commonwealth. Topics include the benefits and costs of urban rail and regional rail, of service focused on reverse-commute needs and the needs of Gateway Cities, and of system electrification. Different service models will require different near, medium, and long-term capital investments.

**We're Imagining:** Electrification of some or all of the rail network with major capital projects supporting a system that is more than "commuter" rail



### Implementation - Planning Studies

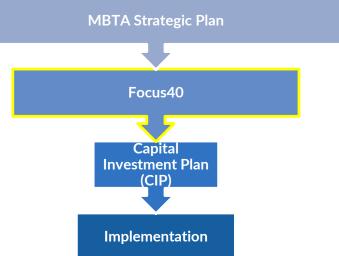
- Immediate follow-on studies include:
  - Bus Network Redesign
  - MBTA Rail Vision
  - Planning studies in partnership with Priority Places
- Framework for follow-on studies and investments:
  - Focus on 'priority places'
  - Incorporating resiliency, accessibility, customer experience, and sustainability into all of our investments
  - New concepts to feed into annual Focus40 updates



### Implementation - Capital Investment Plan

- Annual, pre-CIP review to track status, incorporate new information and set upcoming programmatic priorities
- Next Priorities to be initiated into design to be costed and prioritized
- State of good repair projects to be reviewed for alignment/inclusion of Focus40 priorities

 Incorporation of Focus40 long-term policy priorities into project scoring (Economic Impact, Policy Support)





### Feedback

- Does anything in "We're Planning Next Priorities" not belong there?
- Are there any "We're Imagining Big Ideas" that should be a Next Priority?
- Are there other "We're Imagining Big Ideas" that we should be considering?
- Other feedback on goals, places, future scenarios, and implementation



### Next Steps

- Refine process for CIP/Implementation
- Develop implementation tools
- Continue stakeholder outreach
- Update plan with feedback and updated information





### Appendix





**Program Objective**: Add capacity and connectivity with an expanded and cleaner fleet that serves not only the Seaport, but an expanded Silver Line network extending beyond Chelsea.

#### We're Doing: Commitments through 2023

- Silver Line Fleet Planning and Procurement
  - Trial beginning late 2018 of vehicles that can operate in Transitway Tunnel
  - Determining Silver Line vehicle capacity needs
- SL2 and SL4 On-Street Improvements
  - Partner with City of Boston to improve bus lane delineation and prioritize enforcement of designated bus lanes on Essex and Washington Streets
- Transit Signal Priority Infrastructure in the Seaport
  - Reduce conflict, delays at D Street with buses emerging from Transitway Tunnel

#### We're Planning: Next Priorities through 2040

- Silver Line Next Gen Fleet and Facility
  - Expanding fleet would improve rush-hour capacity and performance, will require an expanded Southampton Garage/other storage space
- Bus Rapid Transit to Everett
  - For Revere, Malden, Everett, reduce crowding on bus routes and add near-rapid-transit service for residents beyond reach of Blue and Orange Lines
- Infrastructure Upgrades in Tunnel
  - Fix leakage and drainage issues, roadway surface

We're Imagining: More exclusive right-of-way by eliminating the Transitway's at-grade crossing of D Street.



# GREEN LINE 2040

**Program Objective**: Increase capacity with redesigned, larger vehicles and modernized infrastructure on the nation's busiest light rail line by at least 50%.

#### We're Doing: Commitments through 2023

- Green Line Transformation Phase 1: SGR Projects
  - Track, signal and power upgrades to improve reliability
  - Planning for Phase 2
- Green Line Extension
  - 4.5-mile extension to College Avenue in Medford and Union Square in Somerville
  - Puts 80% of all Somerville residents within walking distance of rapid transit
- Surface Green Line Stop Consolidation
  - 4 stops on B branch
  - Exploring other opportunities
- Surface Green Line Transit Signal Priority Infrastructure
  - For trains at B, C, and E line street crossings
  - \$30m improvement plan for 60 grade crossings
- Green Line Train Protection: Collision-avoidance automaticbraking systems
- Accessibility Upgrades at Hynes, Symphony Stations

#### We're Planning: Next Priorities through 2040

- Green Line Transformation Phases 2 & 3
  - All-new "Type 10" longer cars
  - 116 feet long, compared to 74 now
  - · Fully accessible, low-floors throughout car
  - · Five entry-exit doors per car
  - Requires upgraded maintenance facilities
  - 15% more capacity by increasing peak weekday trains from 73 to 94
  - 50% more capacity by adding 2-car trains to D and E branches
- Explore Reservation and Right-of-Way Expansion for Surface Green Line
  - Dedicated Right of Way on E-branch
  - Prevent turning conflicts on B & C branch

**We're Imagining:** Extensions to Mystic Valley Parkway in Somerville/Medford, Hyde Square in Jamaica Plain. Park Street-Downtown Crossing "superstation." Reconfiguring 27 B and C branch stops to allow trains of two Type 10 cars, doubling capacity.





**Program Objective**: Accommodate growth at Logan International Airport and development sites in East Boston and Revere and ensure resiliency to severe weather and sea-level rise.

#### We're Doing: Commitments through 2023

- Resiliency Phase 1: Planning and Early Actions
  - · Long Wharf to Maverick water infiltration
  - Analysis of power, signals, track to identify and prioritize strategies
- · Reliability Centered Vehicle Maintenance Program

#### We're Planning: Next Priorities through 2040

- Potential Downtown Pedestrian Connection between the Red and Blue Lines
  - Downtown Crossing and State Street Stations are only 600 feet apart
  - Alternative to Red-Blue Connector at Charles/MGH
  - Relieves congestion on Green and Orange Lines for Red-Blue connections
  - Step towards a Downtown Crossing-Park Street-State "downtown superstation"
- Blue Line Capacity and Reliability Improvements
  - Can add capacity with operational improvements and expanding train-sets
  - Signal system upgrades
- Resiliency Phase 2: Further Implementation
  - Portal to protect Aguarium-Maverick tunnel
  - Orient Heights maintenance yard resiliency

**We're Imagining:** Connecting the Blue Line to the Red Line, creating a downtown superstation, and extending Blue Line beyond to Back Bay and Longwood, and also north to downtown Lynn, to support transformational development





**Program Objective**: Increase peak-hour service to every 4.5 minutes (3 minutes if development warrants) to serve homes and businesses throughout the growing corridor, serving additional riders from the Lower Mystic region.

#### We're Doing: Commitments through 2023

- Fleet Replacement and Maintenance Facility Upgrades
  - All 120 Orange Line cars are being replaced and 32 more are being added to expand the fleet
  - · Roomier cars, larger doors for faster boarding
  - Wellington Car House to be rebuilt and expanded by 2021, with upgraded test track
- Capacity and Reliability Improvements
  - Signal, power upgrades to support more frequent service
  - Peak service increased from every 6 minutes to 4.5 minutes

#### We're Planning: Next Priorities through 2040

- Additional Capacity Improvements (3-Minute Headways)
  - Depending on pace of development evaluated by the Lower Mystic Regional Working Group
  - Potential to utilize Wellington test track between Wellington and Sullivan

**We're Imagining:** Extensions to Roslindale and downtown Everett via spur from Sullivan Square to serve high travel demand. Buildout of a Sullivan Square Superstation, and Downtown Crossing/Park Street/State "Downtown Superstation."



## WATER TRANSPORTATION 2040



**Program Objective**: Support a robust, multi-operator Boston Harbor water transportation system, serving more passengers and destinations with excellent connections to landside T service.

#### We're Doing: Commitments through 2023

- Landside Infrastructure Improvements
  - Awarded FTA grant to upgrade Hingham dock, ramps, and floats
  - Accommodate persons with disabilities at all tide levels
  - · Ease boarding and disembarking for all passengers
- Fleet Expansion to Four Ferries
  - Two new T-owned vessels accepted, doubling T fleet to four vessels

#### We're Planning: Next Priorities through 2040

- Expanded and Better Integrated Multi-Operator Water Transportation Network
  - Potential new routes
  - Better options for connections between ferry routes
  - Better options to transfer to other modes

**We're Imagining:** A built-out, comprehensive, resilient, multi-operator network with purpose-built ferries serving thousands more commuters and travelers every day.



#### **Focus40 Scenarios**

#### **DRIVING TRENDS**

