SCR
SOUTH COAST RAIL

Capital Programming Committee
South Coast Rail Phase 1 Service

Project Briefing
February 6, 2018

massDOT
Massachusetts Department of Transportation

Massachusetts Bay
Transportation Authority

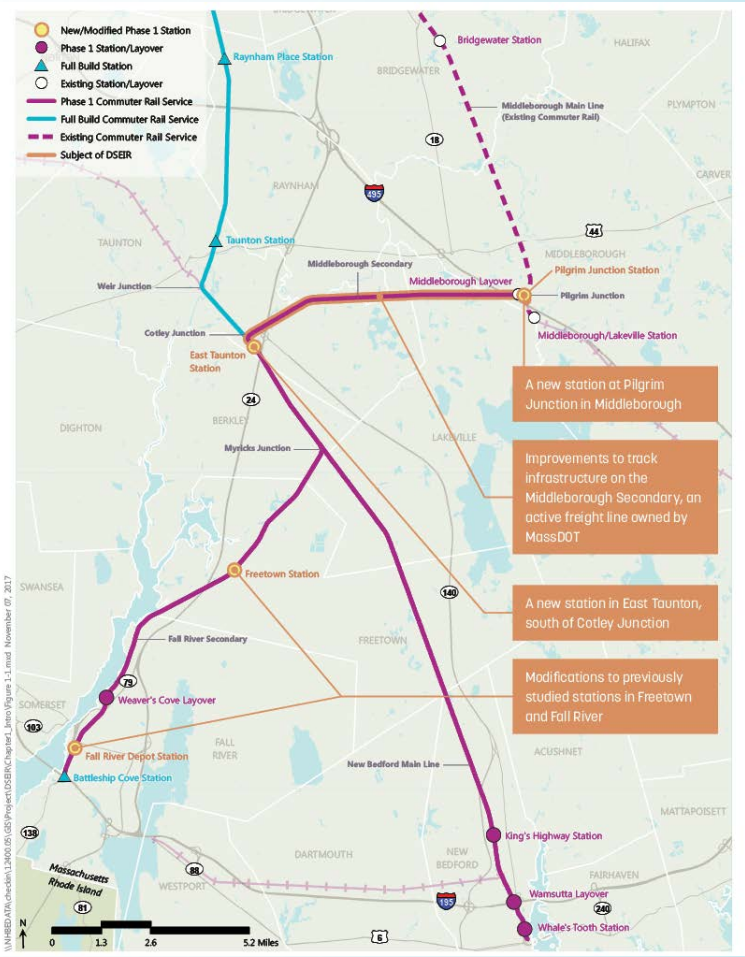
The Phased Approach

MIDDLEBOROUGH-Phase 1

- Construct the Southern Triangle (Cotley South to New Bedford and Fall River)
- Upgrade the Middleborough Secondary (currently used by freight trains)
- New station in Middleborough
- Extend Middleborough/Lakeville diesel service to New Bedford and Fall River
- Anticipated service to start in Late 2022

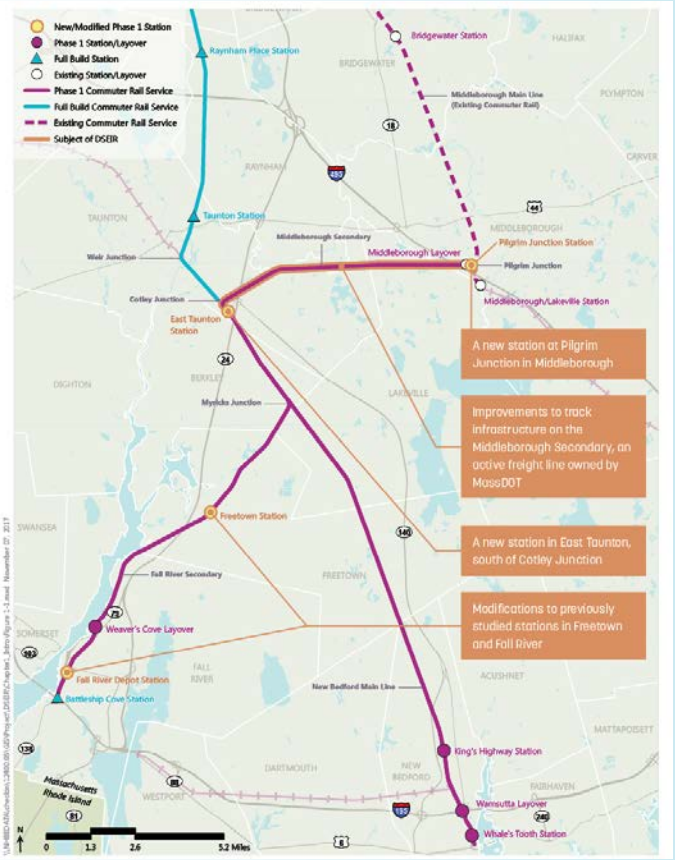
STOUGHTON ELECTRIC-Full Build

- Advancing preliminary design



Why is MassDOT Proposing to Build Phase 1 Now?

- Provides commuter rail to the region in 2022
- One-seat ride from New Bedford and Fall River to Boston
- Cost of the Stoughton Full Build has increased to $3.2B while design and construction timeline lengthened
- *No wetland variances required for Phase 1*

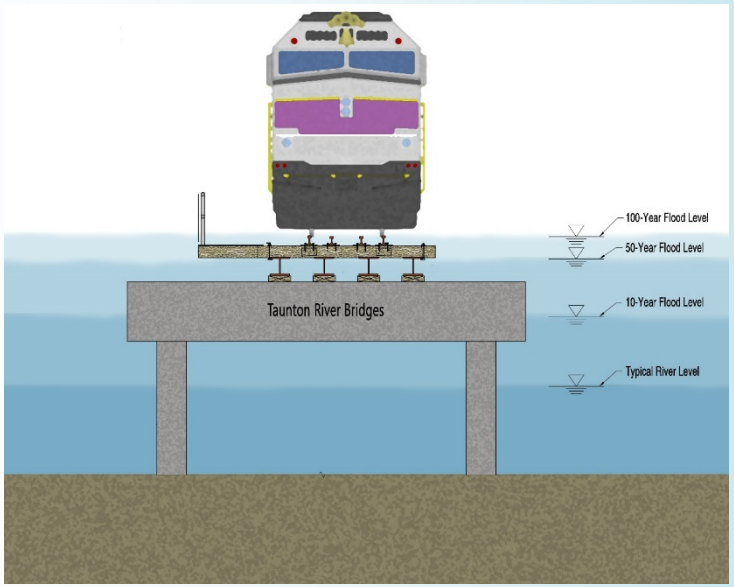


What are the Benefits of Phase 1 Construction?

- Provides earlier service for the South Coast region
- Catalyzes air quality, economic and smart growth benefits much sooner as detailed in the DSEIR
- Uses active rail lines owned by MassDOT
- Phase 1 will build 56% of the rail miles needed for the Full Build
- Avoids major wetlands impacts
- Foundation for Stoughton Electric Service and provides service while Full Build complexities are addressed

What are the Benefits of Construction Phase 1?

- Safety upgrades include PTC, signal and grade crossing improvements
- Accomplishes MassDOT/MBTA goals for State of Good Repair
- Upgrades to be used by existing freight services
- Provides resiliency for Taunton River Bridges during 100-year storms for Full Build
- New station in Middleborough provides opportunity for year-round Cape Service



How Did MassDOT Arrive at the Phase 1 Alternative?

Through a thorough analysis detailed in the DSEIR Ch.2, MassDOT screened *seven* service alternatives on the following factors:

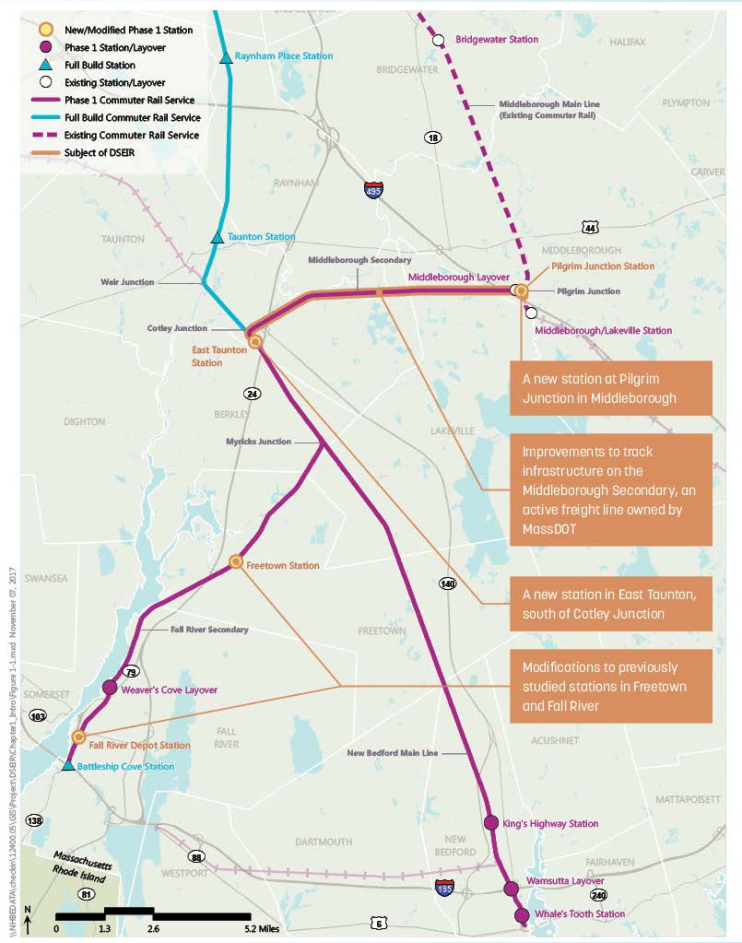
- One-seat ride from New Bedford/Fall River to Boston
- Minimal environmental impacts
- Efficient train operations
- Stage for future Cape Service
- Passenger service in 2022

What Elements are Included in Phase 1?

- Extend existing Middleborough/Lakeville service using diesel-powered trains to New Bedford and Fall River
- Reconstruct 17.3 miles of New Bedford Main Line and 11.7 miles of Fall River Secondary (common to both Phase 1 and Full Build
- Upgrade existing Middleborough Secondary track from Pilgrim Jct to Cotley Junction (7.1 miles)
- Construct 2 new layover facilities
- Construct 6 new stations

Phase 1 DSEIR Elements Not Previously Studied

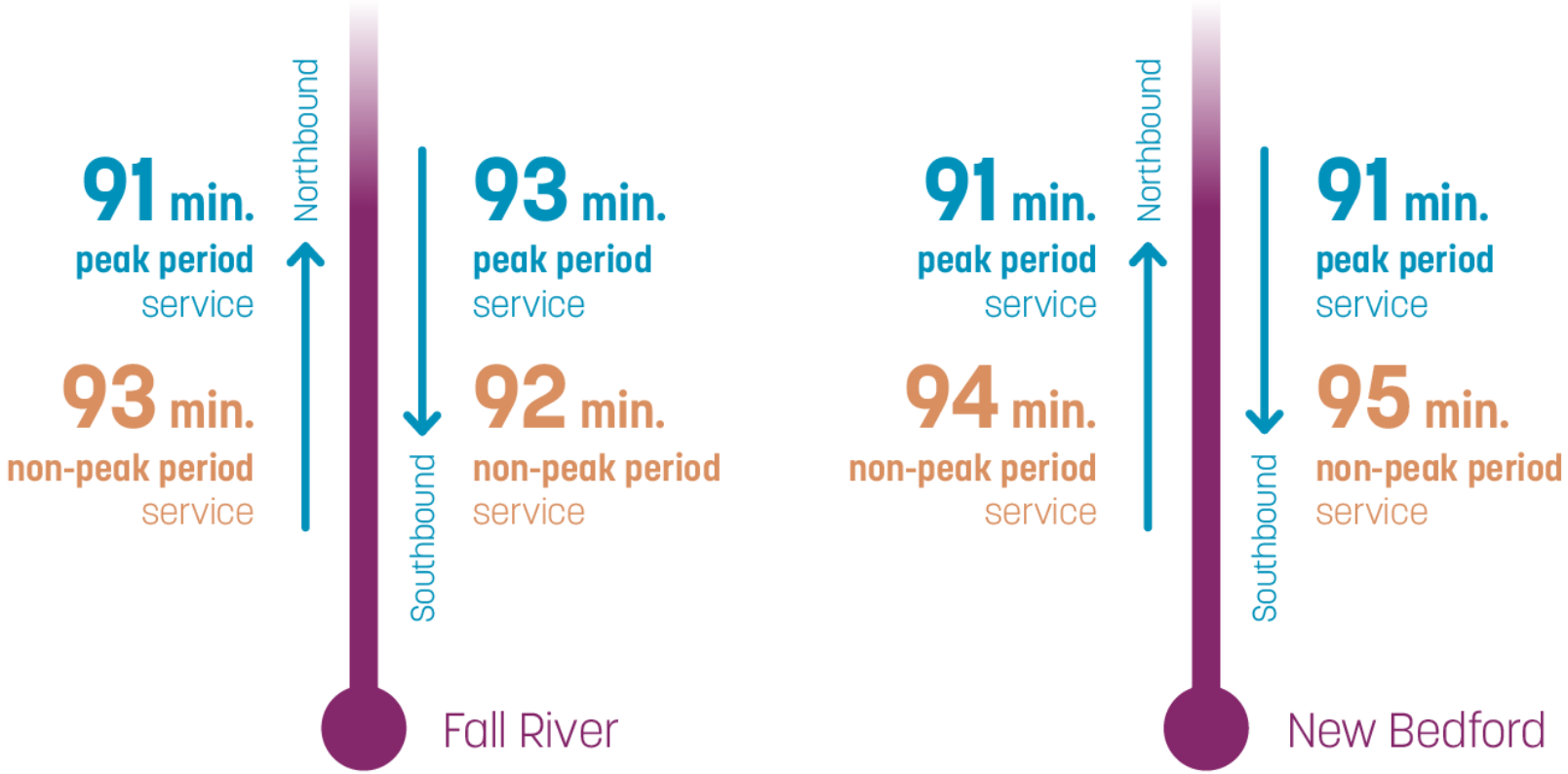
- New station at Pilgrim Junction
- Improvements to track infrastructure on Middleborough Secondary
- New station in East Taunton, South of Cotley Junction
- Station modifications to previously studied stations in Freetown and Fall River



How Often Will the Trains Operate?

- 13 round trips per day to the South Coast (26 total trips)
- 3 peak period trips to/from the terminal stations of Fall River and New Bedford
- 3 to 4 off-peak period trains to Fall River and New Bedford

What are the Average Trip Times?



Overall travel times were developed using Berkeley's Rail Traffic Controller® simulation software. Assumptions were made based on track and signal layout.

Phase 1 Travel Time Savings*

To/From South Station:

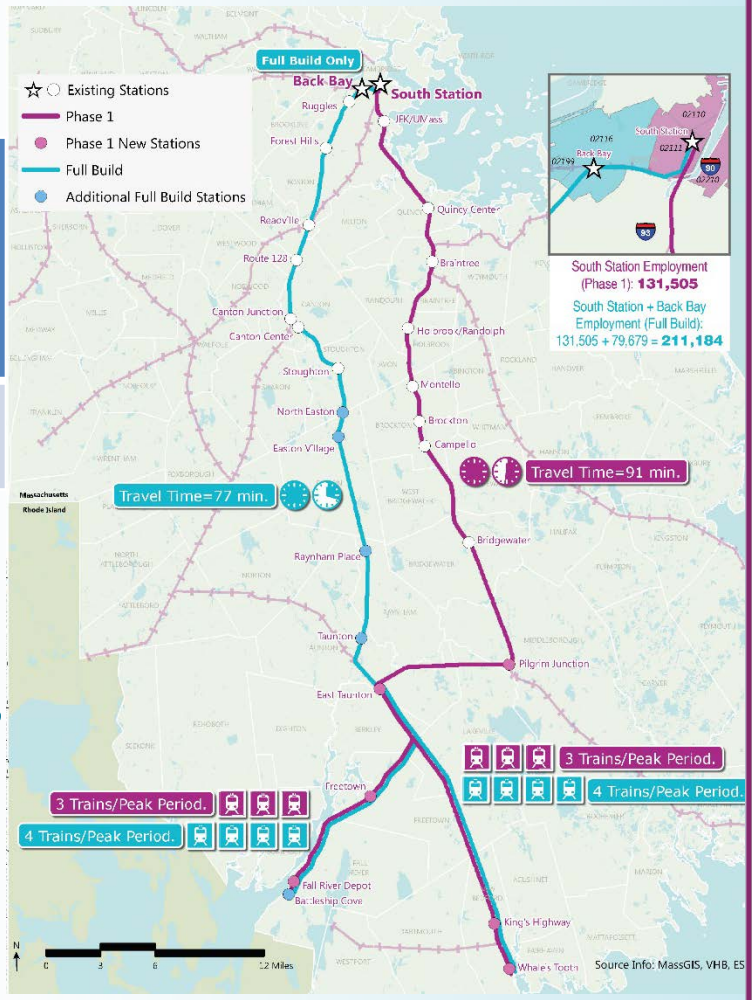
Taunton:	62 minutes
Fall River:	51 minutes
New Bedford:	63 minutes

* as compared to vehicular travel

Ridership Projections

	Full Build 2035 (2011 CTPS Analysis for FEIS/FEIR)	Full Build 2040 (2017 CTPS Analysis)	Phase 1 2030 (2017 CTPS Analysis)
Boardings at New Stations*	4,570	3,960	1,610

* Boardings at new stations are a combination of both new riders and those diverted from existing MBTA commuter rail stations.



- Changes from 2011 to 2017 Analysis included:
  - Updated CTPS baseline commuter rail counts to reflect current use of MBTA system
  - Population growth changes (previously 17 percent for the region, now 6-7 percent)

Ridership Details

Inbound Boardings	Full Build – 2035 (2011 CTPS Analysis)	Full Build – 2040 (2017 CTPS Analysis)	Phase 1 – 2030 (2017 CTPS Analysis)
North Easton	460	370	-
Easton Village	150	140	-
Raynham	430	250	-
Taunton	670	710	-
East Taunton	400	350	420
Freetown	180	140	60
Fall River Depot	840	550	390*
Battleship Cove	240	250	-
King's Highway	520	410	260
Whale's Tooth	680	790	480

*Fall River Depot is projected to have less than 60% of riders park at the station.

Ridership for Phase 1

- Daily one-way trips – 3,220
- One-way trips per year – 837,200
- Ridership at new stations in Phase 1 will be 41% of Full Build ridership for 1/3 the cost.
- Reduction in Vehicle Miles Traveled – 66,400
- One-way trips before Full Build completed – about 7 million

How Were the Number of Riders Estimated?

- CTPS performed ridership analysis using the FTA approved ridership model
- Ridership model was refined specifically for the South Coast study area using MPO travel model and statewide model

Air Quality

- Phase 1 will use diesel locomotives for system compatibility
- Current fleet 40 Tier 3 locomotives (200 Series, HSP46)
- Continue procurement of Tier 3 and Tier 4 diesel locomotives

Environmental Justice

- Phase 1 serves 72% of the EJ population served by Full Build
- Train service is important to this region because
  - 21% of Fall River residents do not have cars
  - 22% of New Bedford residents do not have cars
- EJ Population within 1/2 mile of stations:
  - 86% of population served by New Bedford Whale's Tooth station is EJ
  - >50% of population served by Fall River Depot is EJ

What will MassDOT do to Mitigate Impacts?

- Traffic intersection upgrades, modifications
- At-grade crossing improvements
- Increase resiliency and climate adaptation through design
- Wetland mitigation
- Comply with water quality standards
- Noise mitigation
- Technical assistance grants to municipalities

How will MassDOT Help Communities Plan?

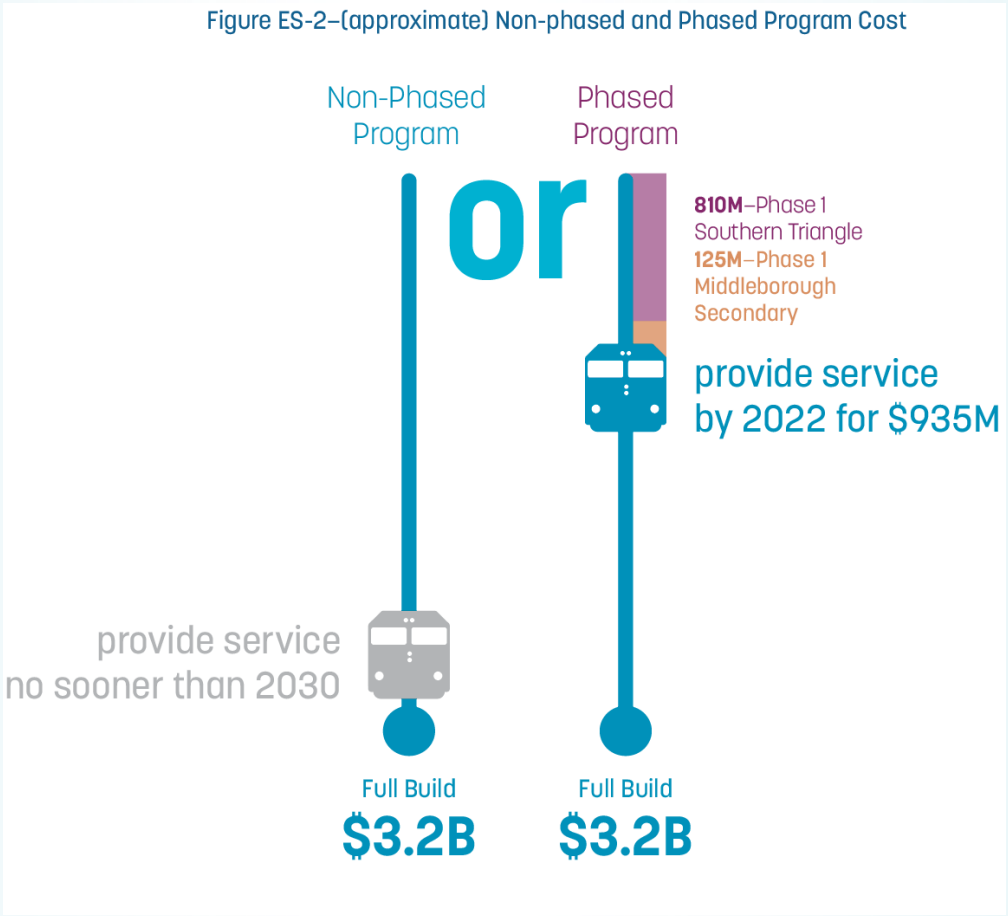
- Technical Assistance previously completed
  - More than 125 projects
  - Projects involving over twenty (20) communities
  - Coordinated with the local regional planning agencies
  - Studies included supporting:
    - Updated zoning maps
    - Transit Oriented Development concepts at proposed stations
    - New sections of the Smart Growth /Smart Energy Toolkit
    - Bike/Ped path projects
    - Housing production plans
- $200,000/year for design in the next several years

How Much will Phase 1 Cost?

- Capital Cost – Phase 1: $935M (service in late 2022)
  - **85%** of cost is for the Southern Triangle
  - More than $800M will go toward $3.2B Full Build
  - Escalation savings offset cost for Middleborough Secondary improvements
  - Saves $153M in escalation costs by building Southern Triangle sooner
- Capital Cost – Full Build: $3.2B (service no sooner than 2030)

Non-Phased and Phased Program Costs

Figure ES-2–(approximate) Non-phased and Phased Program Cost



Same cost for earlier start of service

Phase 1 Schedule