South Coast Rail Project Update

Fiscal & Management Control Board
June 27, 2016

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Overview

- The Commonwealth seeks to restore the rail connection between the South Coast and Boston
- 15% design has been completed for corridor from Canton to Fall River and New Bedford
- MassDOT/MBTA are ready to advance the current design to 30%
- Plan to provide:
  - 40 daily trips
  - Projected 77-minute travel-time between Boston and the South Coast
  - Projected 4,570 riders per day

South Coast Rail
Project Background

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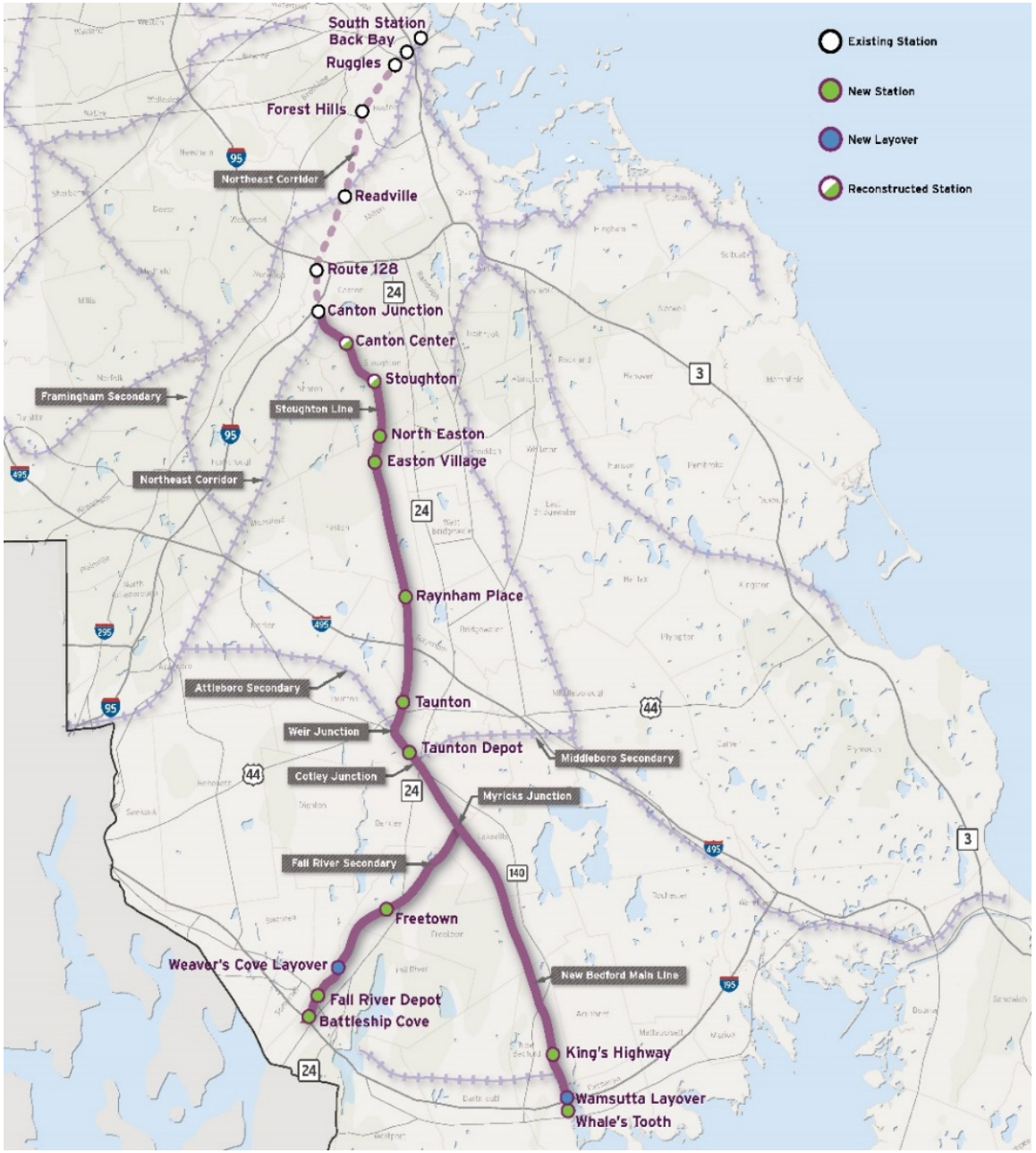
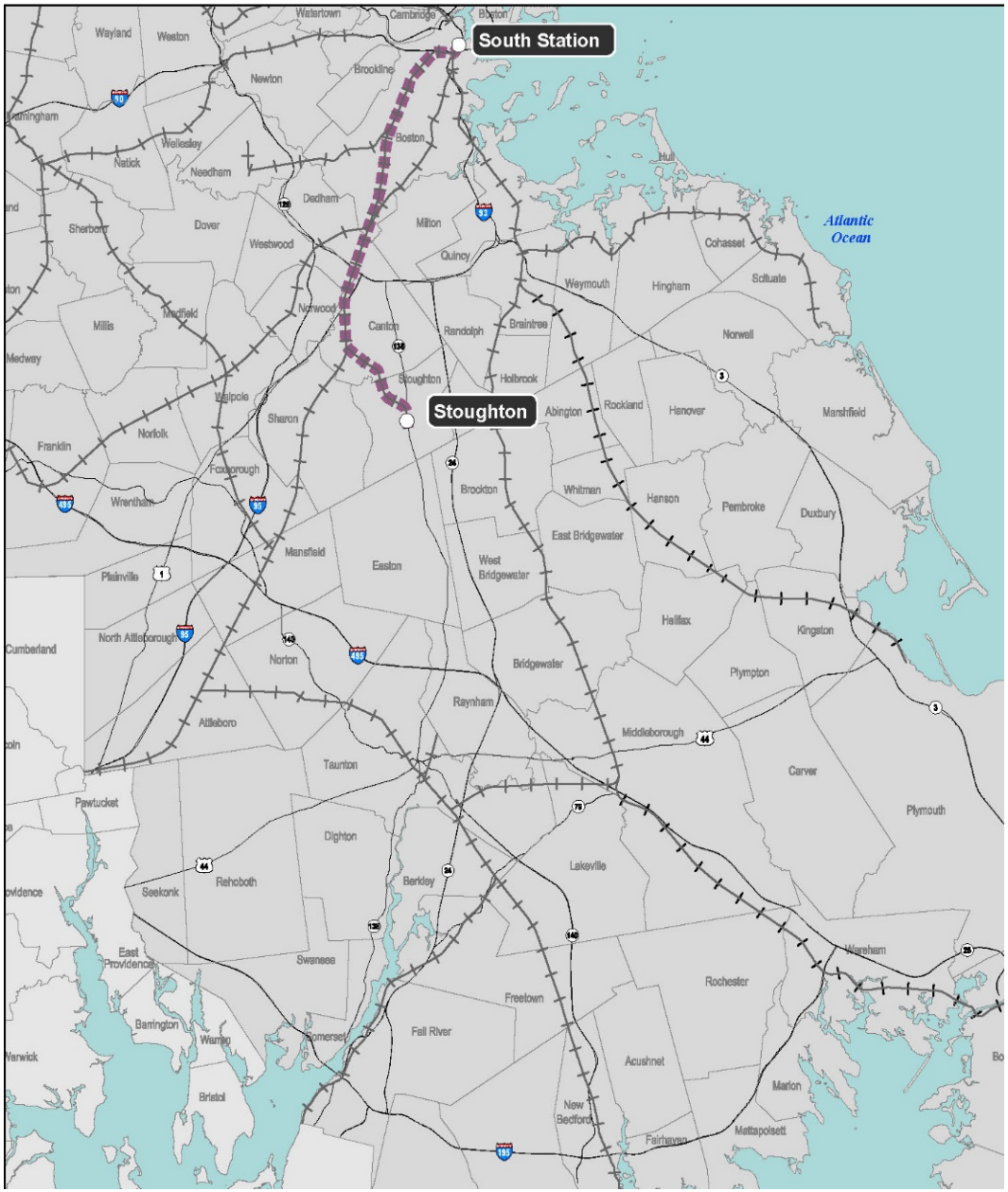
Project Overview



Project Overview

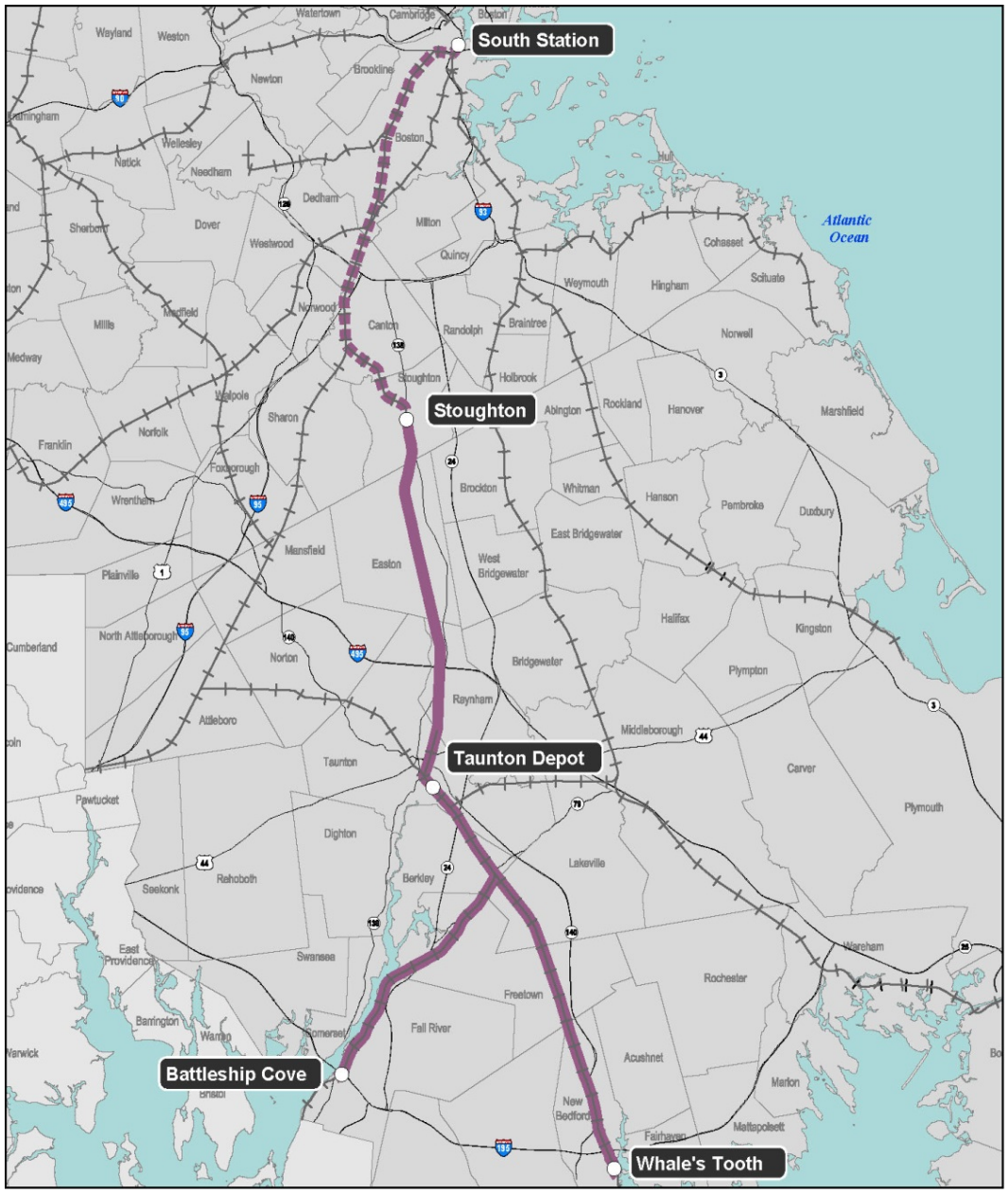
- Existing service to Stoughton



Project Overview

- Extension of existing service
- 10 Communities
  - Canton +
  - Stoughton +
  - Easton
  - Raynham
  - Taunton
  - Berkeley
  - Lakeville
  - Freetown
  - New Bedford
  - Fall River

+ Communities with existing commuter rail service.



Project History

1994 – Started initial Alternatives Analysis and Environmental Impact Review

1999 – Completed construction of four railroad bridges

2001 – Completed construction of three railroad bridges

2002 – Completed initial Final Environmental Impact Review (FEIR)

2007 – Released South Coast Rail Plan for Action

2010 – Purchased right-of-way from CSX (Taunton South)

2010 – Completed South Coast Rail Corridor Plan

2012 – Completed construction of three railroad bridges

2013 – Completed Final Environmental Impact Report/Statement (FEIR/S)

2014 – Awarded Program Management/Construction Management (PM/CM) contract to joint venture of VHB/HNTB
– Initiated Preliminary Engineering phase

2014 – Began construction of four bridges and five grade crossings

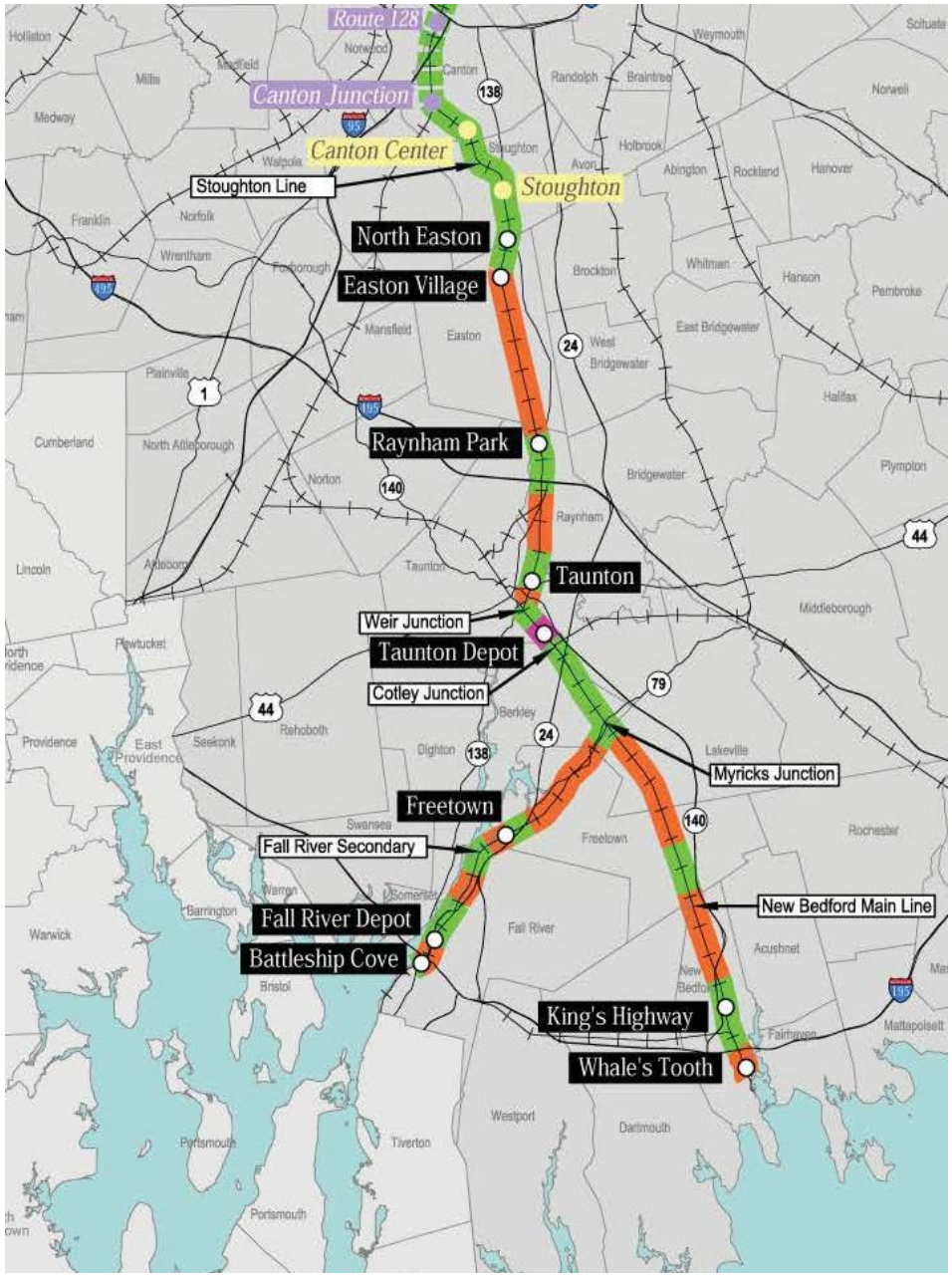
2015 – Awarded Owner's Representative contract to Parsons Brinckerhoff

Design

- Planned 40 Trips Total
  - 20 Trips to New Bedford
  - 20 Trips to Fall River
- Projected Trip Times
  - New Bedford to South Station - 77 Minutes (52.0 Miles)
  - Fall River to South Station - 75 Minutes (52.7 Miles)
- Projected Ridership
  - 4,570 Daily Riders
- Stations
  - Canton Center (Reconstruction)
  - Stoughton (Reconstruction)
  - North Easton
  - Easton Village
  - Raynham Place
  - Taunton
  - Taunton Depot
  - Freetown
  - Fall River Depot
  - Battleship Cove - Fall River
  - King's Highway - New Bedford
  - Whale's Tooth - New Bedford

Project Elements to Be Built

- 75 miles of track
  - Single Track
  - Double Track
  - Triple Track
- 45 grade crossings
- Two overnight layover facilities
  - Fall River at Weaver's Cove
  - New Bedford at Wamsutta/Whale's Tooth Station
- 30 railroad bridges; six highway bridges
- Positive Train Control
- Electrification and new locomotives
  - 10 Electric Locomotives
  - 40 Blind Coaches
  - 10 Control Cars

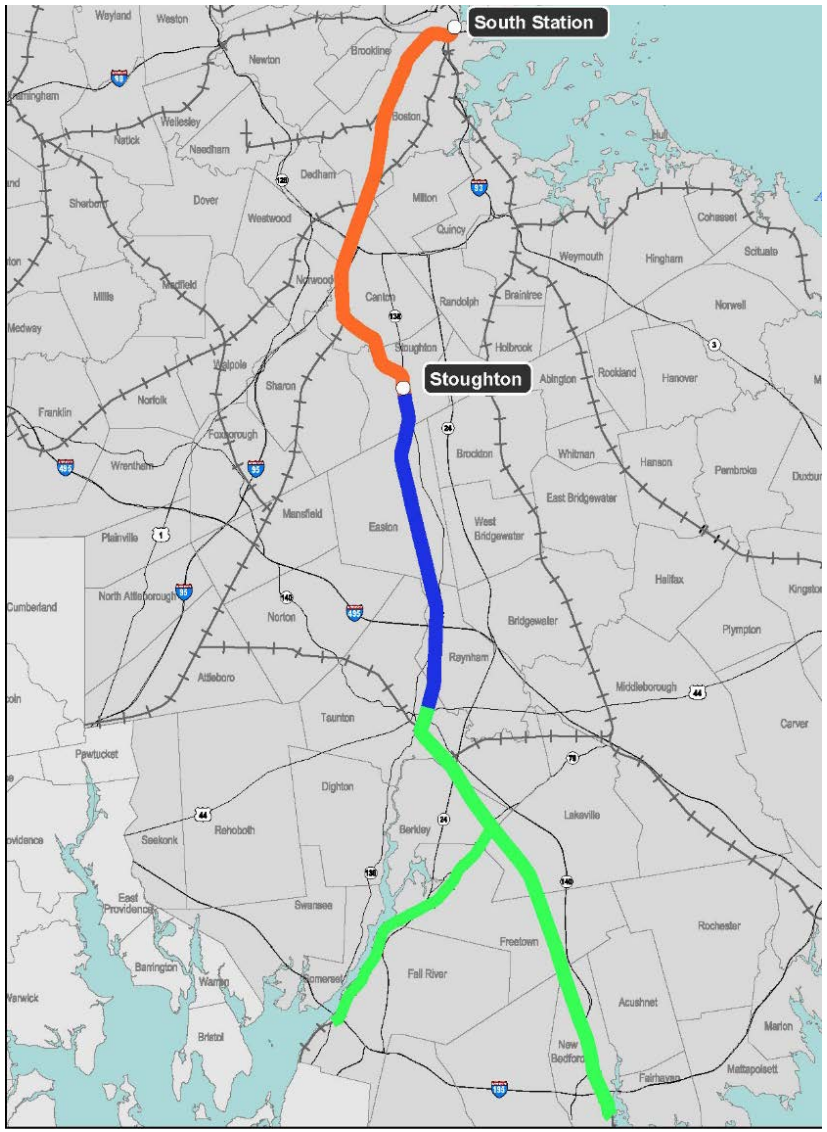


Project Benefits

- Provide time-saving and convenient option for travel between Boston and the South Coast
- Spur development and increase property values along corridor
- Reduce greenhouse gas emissions and improve air quality
  - Approximately 256,000 fewer vehicle-miles travelled per day (61,000 tons CO_2/year)
- Increase freight rail efficiency
  - Increase speeds from current 5-10 mph limits
- Improve auto safety and reduce congestion
- Projected 3,500 new long-term jobs and 6,800 construction jobs

Right of Way Needs

- South Station to Stoughton Station
  - Existing MBTA Commuter Rail
- Stoughton Station to Taunton
  - MassDOT/MBTA-owned
  - Eight private parcels
- Taunton to New Bedford/Fall River
  - MassDOT/MBTA-owned
  - MassCoastal freight operation
- Required Acquisition Actions
  - 141 fee takings
  - Five bridge closures
  - 37 private crossing closures
  - 229 noise mitigation agreements
  - Temporary construction easements
  - Permanent easements



Railroad Infrastructure – Complex Structures

- Main Street Bridge in Easton
- Trestle through the Hockomock Swamp
- Construction needed to separate tracks from the roadway at Route 138 - Raynham

Electrification

- Would be the MBTA's first electrified operation – required for environmental mitigation
- Would require:
  - New electric locomotives
  - 10 traction power substations
  - Overhead catenary systems (OCS)
  - Electric locomotive maintenance (would require an agreement with Amtrak or new MBTA maintenance facility)
  - Traction power/OCS maintenance (new qualified staff or Amtrak agreement)
  - New electrified operations on the NEC (Amtrak agreement and possible system upgrades)

Final Environmental Impact Report/Statement

- Three alternatives for transit to the South Coast were analyzed in the FEIR, as well as a No-Build Alternative
  - Enhanced Bus Alternative
  - Stoughton Alternative (diesel and electric variations)
  - Whittenton Alternative (diesel and electric variations)
- The electrified variant of the Stoughton Alternative was determined to be the 'least environmentally damaging practical alternative' with respect to cost, technology, and logistics in light of the overall project purpose
- The FEIR detailed the bridges and culverts; signals; electrification; rolling stock; stations; layover facilities; needed property acquisition; cost; projected ridership; and the anticipated beneficial and adverse impacts
- The FEIR evaluated 18 types of potential environmental impacts, from air quality to vibration

Program Schedule - As of 2013 FEIR/FEIS

- Unconstrained funding
- Optimal 3-1/2 year environmental permit schedule
- Streamlined processes with third parties
- ‘Fast Track’ agreement with agencies
- No permit appeals or litigation
- Anticipated construction beginning in 2017

Current Project Status

- Program Manager/Construction Manager Contract Award - VHB/HNTB joint venture
  - MassDOT Board of Directors authorized $210 million contract on June 18, 2014
  - MBTA base contract award - July 2014
- Initial PM/CM Task - FY 2015 ($11.8 million)
  - Data collection (survey, geotech)
  - Design criteria
  - 15% design
  - Environmental permitting strategies
  - Special project designation
- Further PM/CM Task - FY 2016 ($12.1 million) - On-going
  - Advance design toward 30% (South of Taunton)
  - Refine Wetland Impact Areas
  - Refine design criteria
  - Agency coordination
  - Initiate environmental permit application process (South of Taunton)

PC/CM = Program Manager/Construction Manager

South Coast Rail Project Update

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Recent Project Reviews

- As required by state law for all projects with expenditures exceeding $50 million, the MBTA has retained an Owner's Representative for the project
- Given recent challenges with the Green Line Extension project:
  - The Program Manager/Construction Manager (PM/CM) reviewed the project, assuming both unconstrained and constrained funding
  - An Independent Cost Estimator (ICE) also reviewed the project
- The Owner's Representative helped to reconcile the cost and schedule estimates of the PM/CM and ICE
- MBTA leadership has closely overseen the review process

Wetlands Permitting Status

- Environmental Review
  - State Review (MEPA) - Completed
  - Federal Approval (NEPA) - Pending
- Meetings initiated with key federal and state permitting agencies
  - U.S. Army Corps of Engineers (USACE)
  - Massachusetts Historical Commission
  - Department of Environmental Protection
  - U.S. Environmental Protection Agency
- Developing plans for wetland permit filings in each municipality
- Wetlands, rare species, and USACE impact analyses are advancing as part of the design process

Permitting Risks and Impacts to Project Timeline

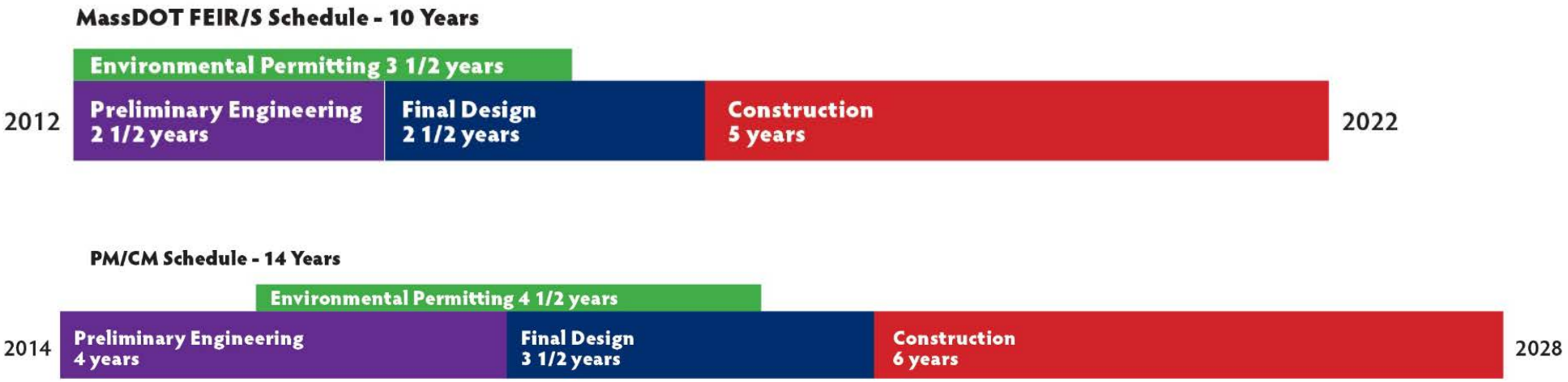
- Variance Process
  - Unprecedented 9+ wetland variances
  - Substantial MBTA staff commitment
  - Required project-wide mitigation not yet defined (30+ acres of wetlands)
- Unpredictable Risks and Timeline
  - Litigation and appeals risk (potential 2-3 year delay)
  - Potential U.S. EPA intervention in USACE Section 404 approval
  - Multi-agency interactive permitting process with no specific regulatory timelines
  - Schedule risk:
    - Greenbush: 3 variances → 3 ½ years
    - South Coast Rail: 9 variances → estimated 4 ½ to 6 ½ years

Schedule Risks and Impacts

- Future Funding Availability
  - Reduced annual cash flows extend overall schedule
- Environmental Permitting Schedule Risk
  - Uncertain timeline for regulators to issue permits
  - Uncertainty of negotiation and execution of Programmatic Agreement with Army Corps and Mass Historic
  - Longer wetland mitigation siting process
  - Likely appeals and litigation risk for both state and federal permits
- Design and construction cost escalation - $4.1 million for every month prior to the start of construction

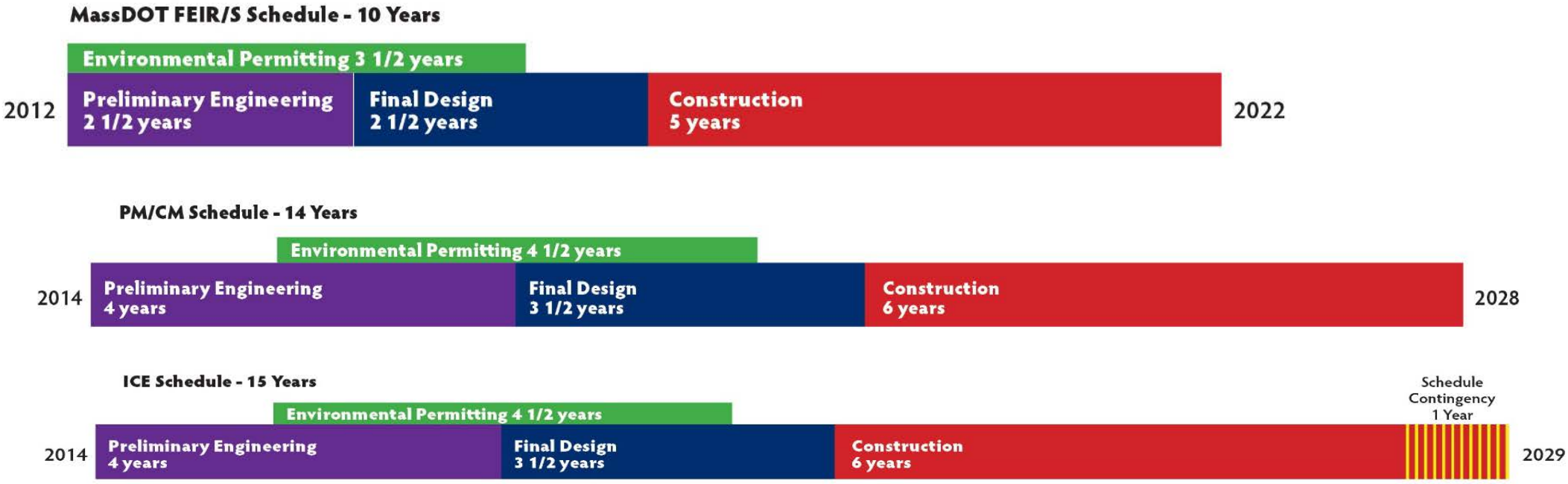
PM/CM Schedule Estimate

- Unconstrained funding
- Uncertain duration for Fast Track Agreement/MOA with agencies
- Longer wetland mitigation consensus process
- Uncertainty with negotiation and execution of the Programmatic Agreement
- Variables in Wetland Variance processes.
- Appeals Risk (1 year)



ICE Schedule Estimate

- Unconstrained funding
- Similar assumptions to the PM/CM 14-year schedule
- Longer schedule risk contingency (+1 year) for design & construction



Schedule and Cost Summary

	Schedule	Cost
MassDOT FEIR/S Schedule & Cost ***unconstrained funding***	10 Years (complete in 2022)	$2.23 Billion
PM/CM Schedule & Cost ***unconstrained funding***	14 Years (complete in 2028)	$3.31 Billion
Independent Cost Estimate (ICE) ***unconstrained funding***	15 Years (complete in 2029)	$3.42 Billion
PM/CM Schedule & Cost ***constrained funding: 5-Year CIP-$124M*** ***unconstrained funding after FY2021***	16 Years (complete in 2030)	$3.40 Billion

The Owner's Representative participated and concurred with the Cost & Schedule Reconciliation process between PM/CM and Independent Cost Estimator (ICE)

South Coast Rail Alternative Concept: Middleborough/Lakeville

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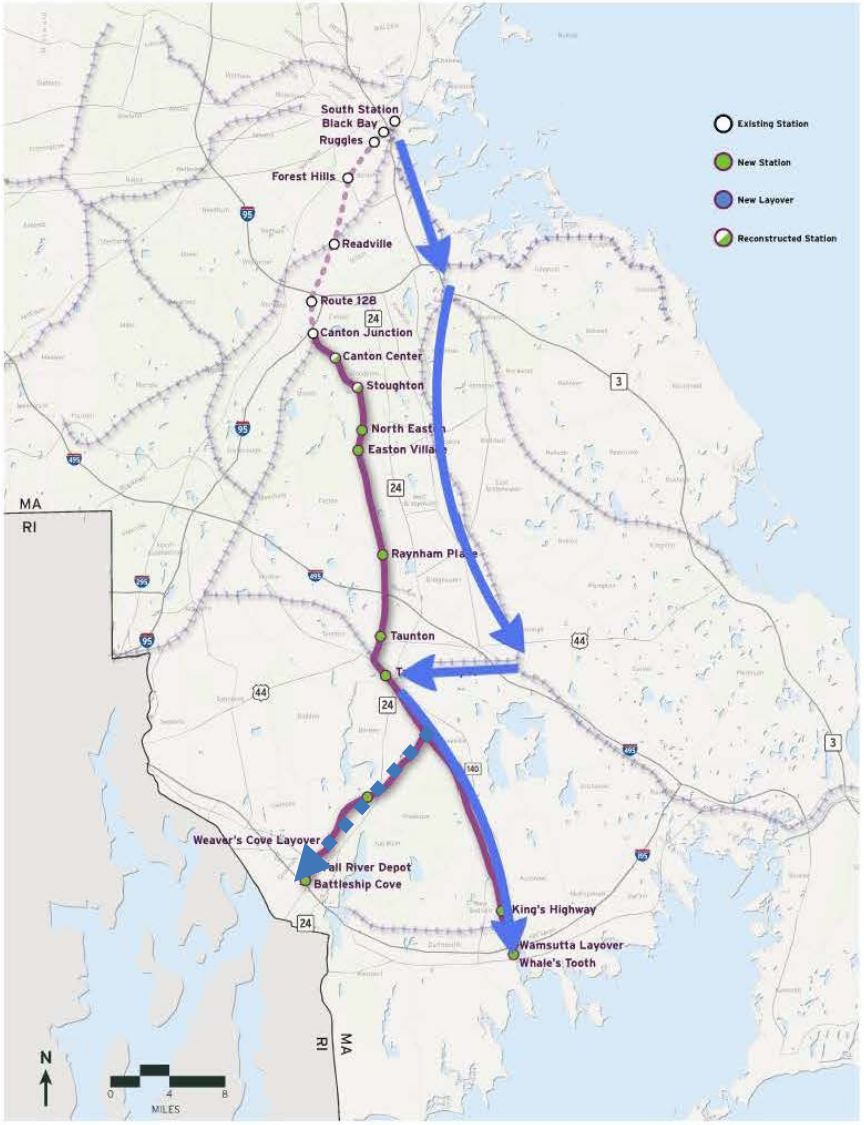
Alternative - Middleborough Concept

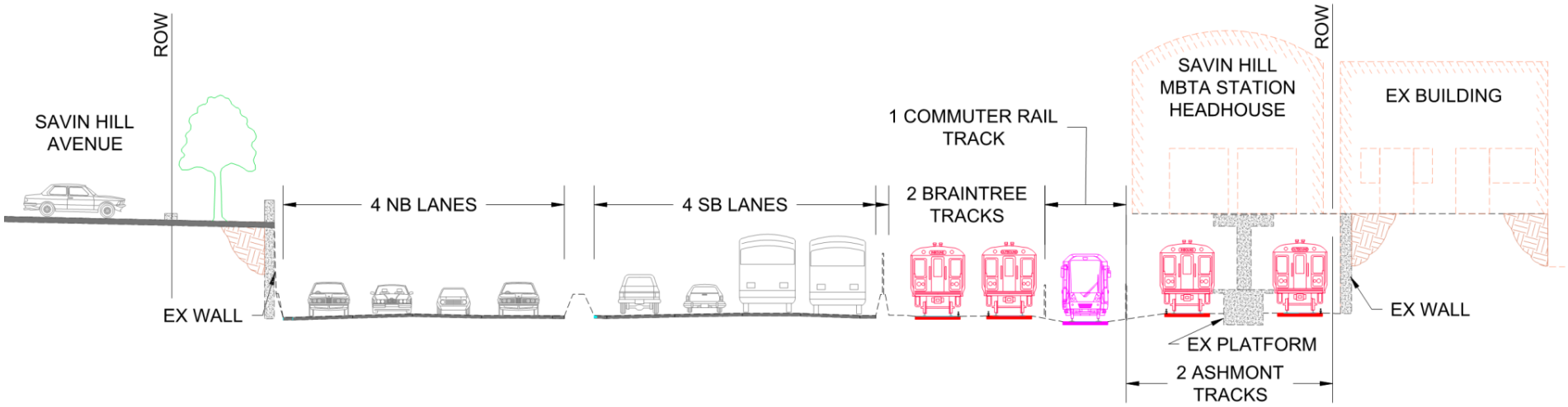
- Previously reviewed in planning studies and environmental documents
- Middleborough trains join the Old Colony Main Line from Braintree to Boston
- Main Line is single-tracked from Boston to Braintree
  - Some areas are wide enough to accommodate double tracks
  - Significant pinch point at Savin Hill/Dorchester that prohibits double-tracking to South Station
- Due to the single track from Braintree to Boston, MBTA could provide only limited service to South Coast cities
- Travel time and ridership of this limited service was far less than levels on Stoughton route
- Middleborough Alternative was eliminated since it provided less service and longer travel times than the Stoughton Alternative
- The cost of improvements to the Main Line necessary to provide equivalent service were prohibitive, so this alternative was dropped in the FEIR/FEIS

Alternative - Middleborough Concept

- Extend service from existing Middleborough/Lakeville Line rather than building a new line further west
  - Two AM peak-period trips to NB
  - Two PM peak-period Trips to FR
- Create seven stations
  - Middleborough (relocation)
  - Taunton Station
  - King's Highway - New Bedford
  - Whales Tooth - New Bedford
  - Freetown
  - Fall River Depot
  - Battleship Cove – Fall River
- Trip Time
  - ~90 minutes New Bedford to South Station



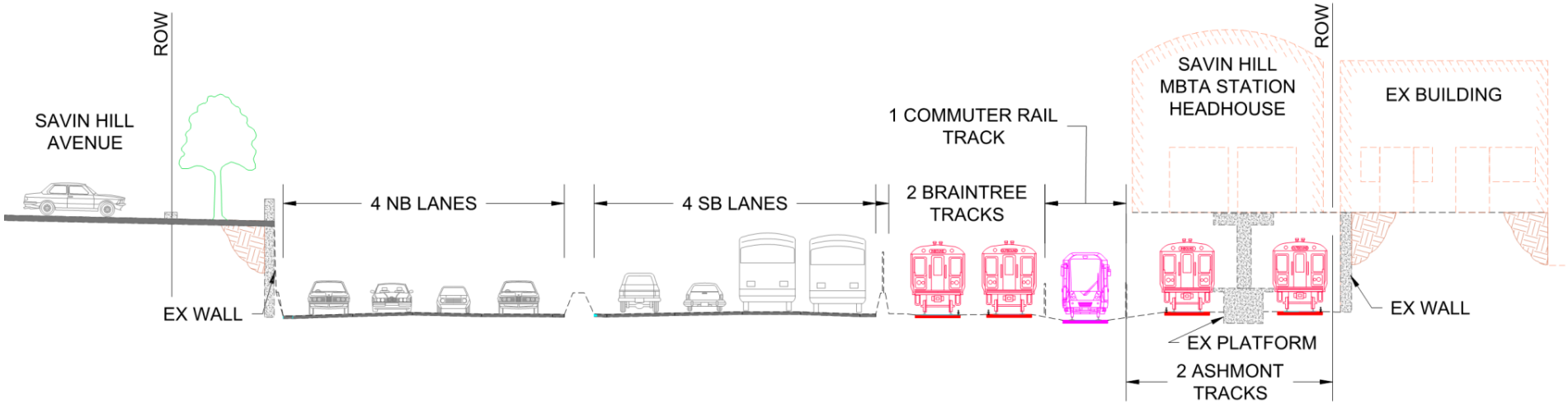
Middleborough Concept – Savin Hill Pinch Point



TYPICAL EXISTING CROSS SECTION NEAR SAVIN HILL STATION

- Key to feasibility is addressing pinch point near Savin Hill
  - Single track on much of Old Colony Line restricts full service
  - Potential to increase SE Expressway capacity with public-private partnership

Middleborough Concept - Savin Hill Pinch Point



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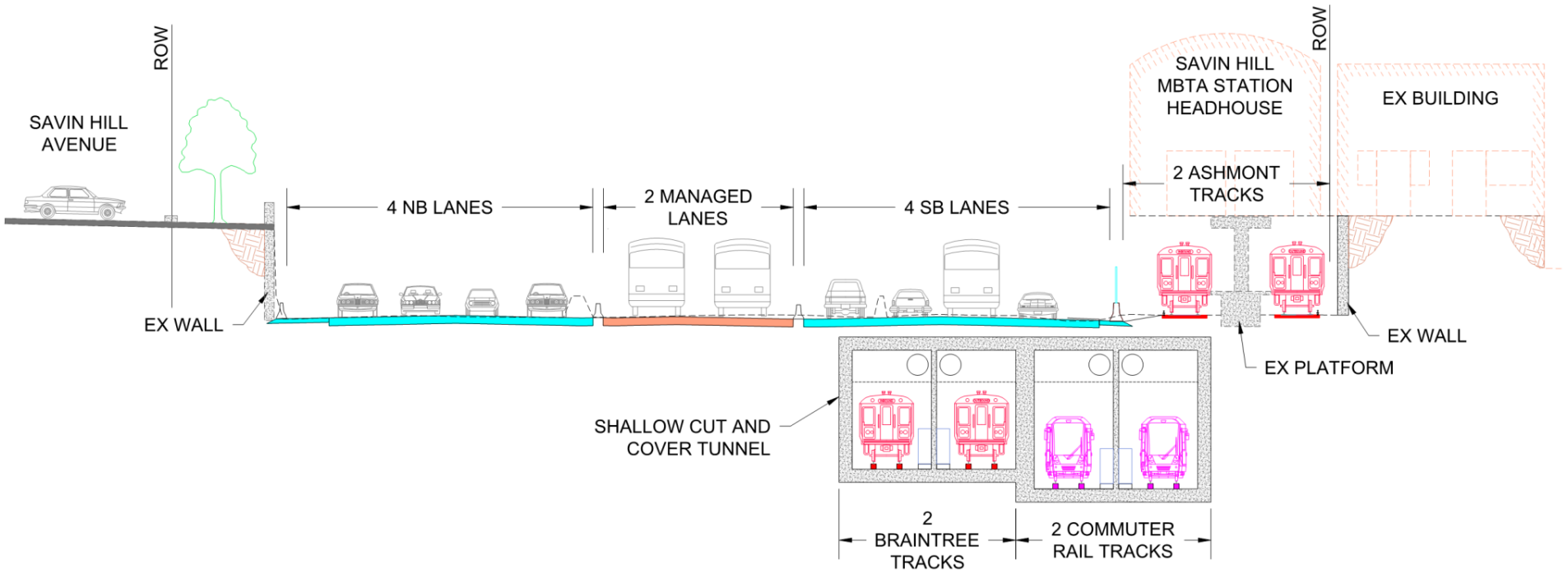

TYPICAL CROSS SECTION WITH NEW RAILROAD TUNNEL AND WIDENED HIGHWAY

Middleborough Concept - Potential Benefits

- Faster time to deliver service
  - Possible that SCR service could be delivered in same timeframe (6-8 years) that would be required just to permit current SCR Preferred Alternative
- Lower construction costs and risks
  - Nearly entire right-of-way already owned/controlled by MBTA and MassDOT
  - Service could begin without South Station expansion (no need for extra tracks since trains would arrive in existing Middleborough/Lakeville “slots”)
- Addressing Savin Hill pinch point also lays groundwork for public-private partnership project to address congestion on Route 3/Southeast Expressway
- Fall River service could be added using additional trains
- Would avoid most environmentally sensitive areas of Stoughton, Easton, and Raynham

Middleborough Concept - Potential Challenges

- Maximum of 4 trains during peak hours
- Travel time from the South Coast to Boston is longer by an estimated 14 minutes
- The MBTA would need to relocate existing Middleborough station, which would have economic impact on an existing transit-oriented development (residential)
- While this concept has fewer and less complex environmental issues than does the Stoughton Alternative, it would still involve a lengthy and complex permitting process
- Electrification of the entire right-of-way to South Station would be difficult, and is a longer distance to electrify than in the Stoughton Alternative
- It would not serve Back Bay Station, which is a major destination point
- It would not serve Route 128 Station, which is a major connection point for Amtrak trains

Next Steps for Board Discussion

Either:

- Advance the Stoughton Alternative from the 15% design level to the 30% design level
  - Funding approved in FY2017-2021 Capital Investment Plan
- Proceed with applications for Wetlands Variances
- Develop finance plan for Preferred Alternative

Or:

- Alternative Option
  - Hold public hearings, as planned, for the 15% design
  - Share Middleborough Concept and receive feedback
  - Determine order-of-magnitude costs and potential ridership by advancing design of Middleborough Concept

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Questions and Discussion

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South Coast Rail Appendix

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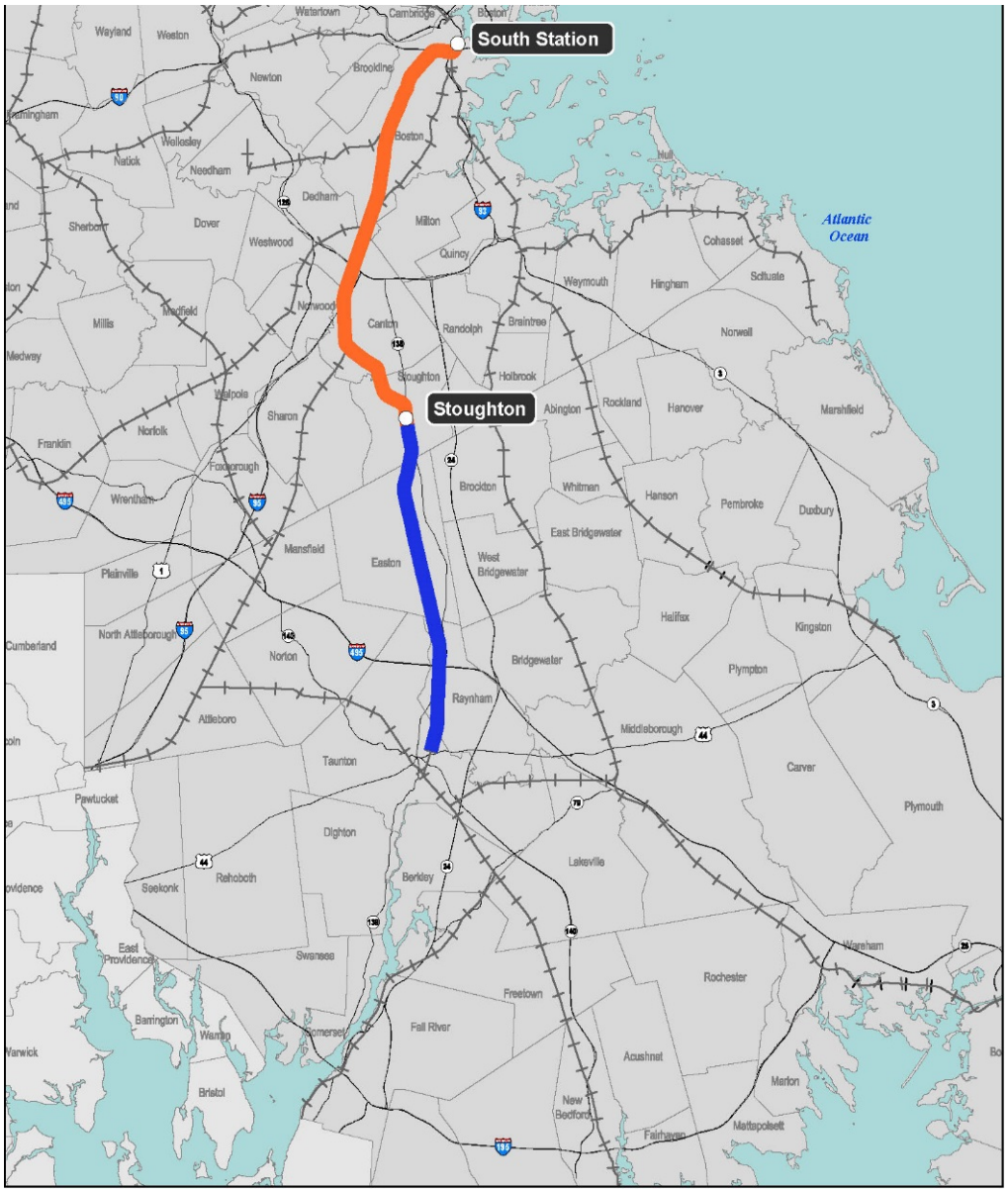
Right-of-Way Summary

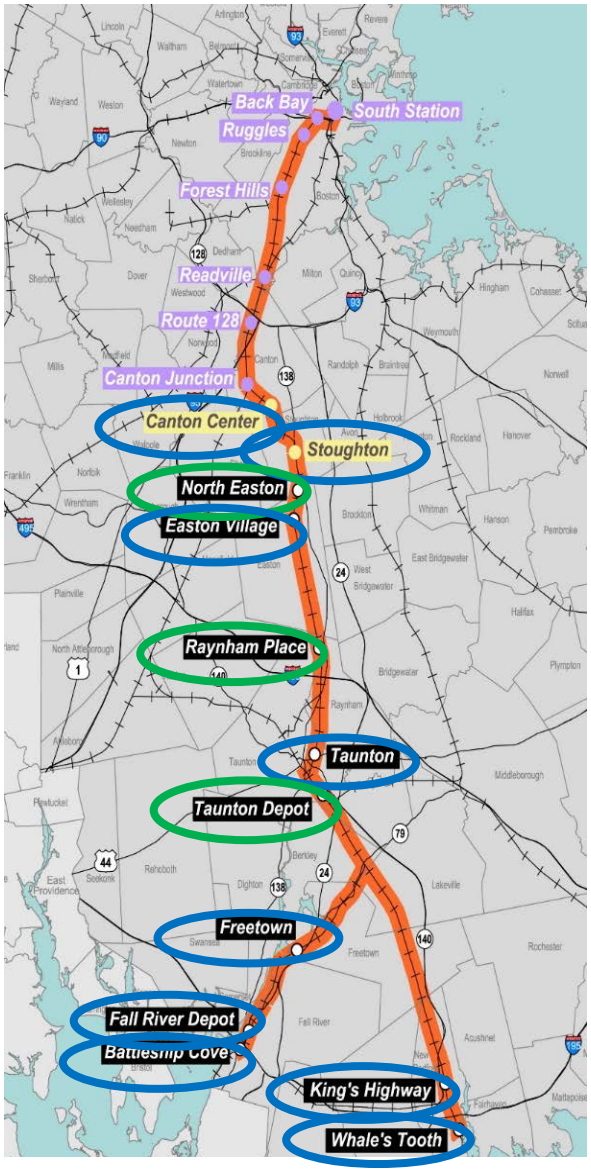
- South Station to Stoughton Station existing MBTA Commuter Rail

- Stoughton Station to Taunton
  - Abandoned Right of Way
  - MassDOT/MBTA Owned
  - 8 Private Property Parcels



Stations

- 12 Stations
  - 2 Station Reconstructions
    - Canton Center – 210 existing spaces
    - Stoughton Station – 636 spaces
  - 10 New Stations (3,340 parking spaces)
    - North Easton – 501 spaces
    - Easton Village – 0 spaces
    - Raynham Place - 432 spaces
    - Taunton – 210 spaces
    - Taunton Depot – 398 spaces
    - Freetown – 173 spaces
    - Fall River Depot – 518 spaces
    - Battleship Cove – 0 spaces
    - King's Highway – 360 spaces
    - Whales Tooth – 748 spaces

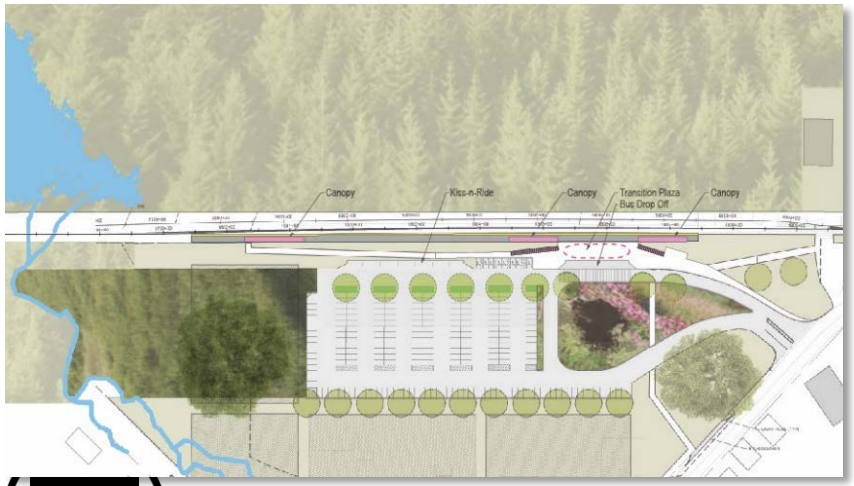


Center Island Platform

Side Platform

Typical “Side” Platform Station (9 of 12 Stations)

- Station
  - 800 Ft. x 12 Ft. High-Level Platform
  - 150 Ft. Canopy
  - Ramps and Stairs
  - Surface Parking
  - Pick-up/Drop-off Areas
  - Platform amenities (benches, system map, variable message board, security, etc.)
  - Platform and parking lot lighting



Typical “Center Island” Platform Station (3 of 12 Stations)

- 800 Ft. x 26 Ft. High-Level Platform
- Canopy
- 2 Pedestrian Bridges
- 1 Ramp System
- 1 Elevator System
- Surface Parking
- Pick-up/Drop-off Areas
- Platform amenities (benches, system map, variable message board, security, etc.)
- Platform and parking lot lighting

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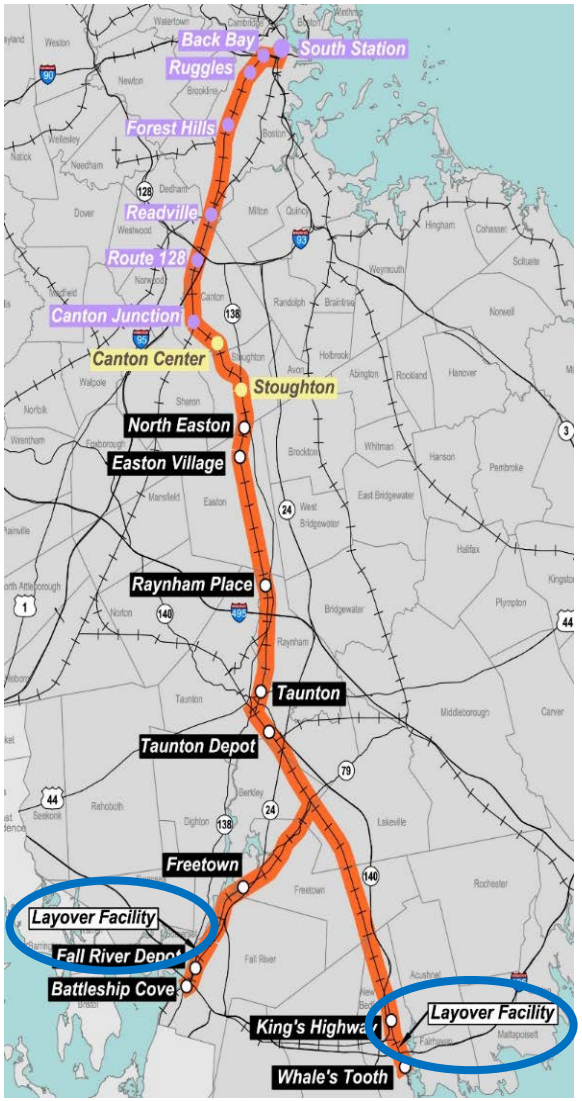
Layover Facilities

- 2 Overnight Layover Facilities
  - Fall River at Weaver's Cove (east)
  - New Bedford at Wamsutta/Whale's Tooth Station



Layover Facilities

- Typical Layover Facility Program Elements
  - 6 Storage Tracks
  - Crew Quarters (1,750 SF)
  - Crew Parking
  - Storage Shed for Light MOW Equipment