



Welcome!

Route 1 Viaduct Rehabilitation Project

Chelsea | Project File No. 605287



25% Design Public Hearing

Chelsea City Hall

January 24, 2018 | 6:30 p.m.

Introduction

- **Welcome & Introductions by MassDOT PM**
- **Design Public Hearing Process**

Agenda

- **Project Overview**
 - Context
 - Need
 - Goals
 - Schedule
- **Anticipated Project Impacts**
- **Environmental Review and Public Outreach**
- **Discussion**

Project Team

MassDOT's Highway Division

Project Proponent

Federal Highway Administration

Responsible for Oversight and NEPA compliance

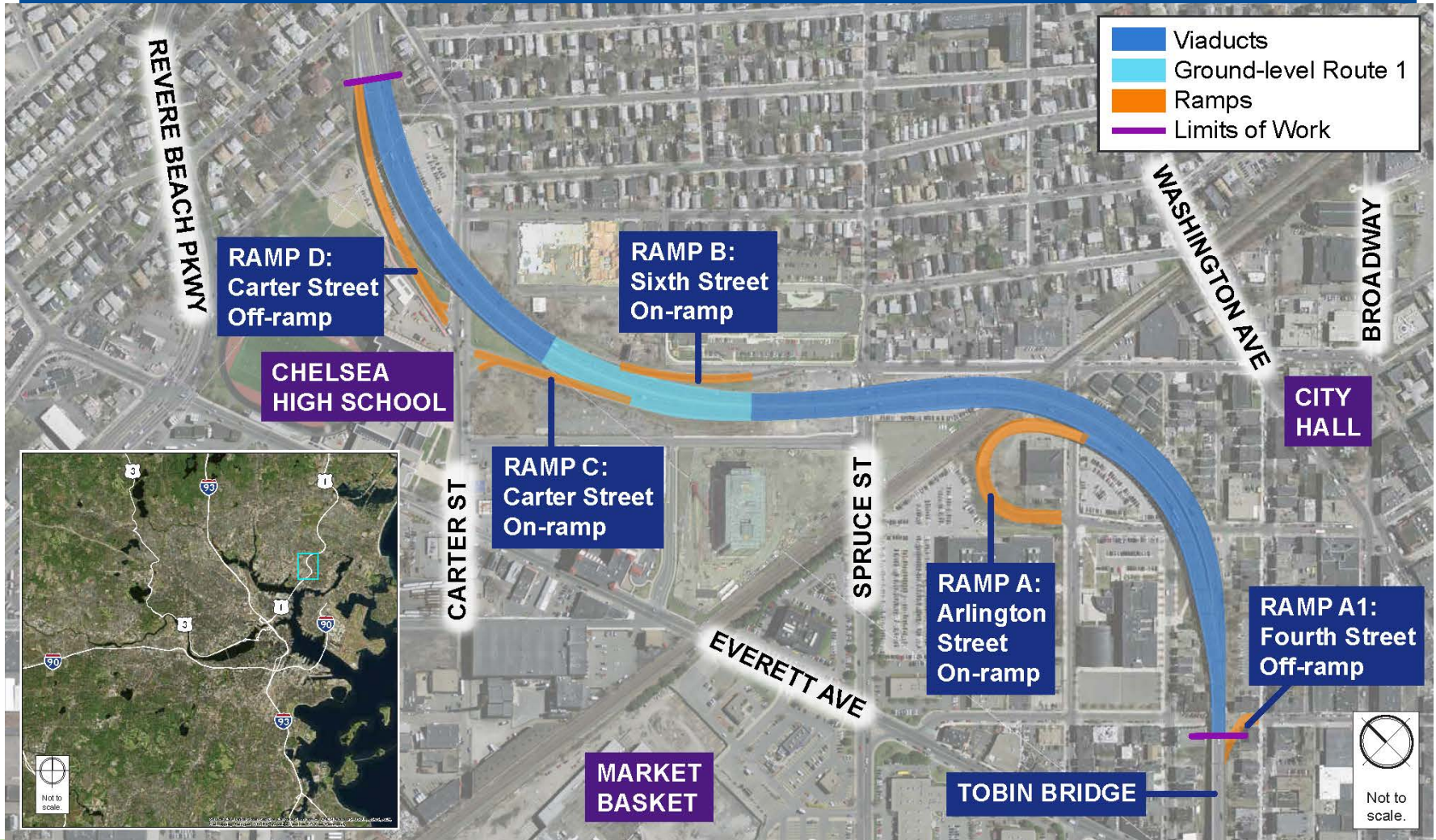
HNTB

Lead Consultant for team including Howard Stein Hudson, CME, VHB, Green International

City of Chelsea, MBTA

Coordination

Project Limits of Work



Project Limits of Work II



Chelsea Viaduct

- Carries US Route 1 through Chelsea from the County Road Overpass to the Tobin Bridge
- Designated evacuation route
- Constructed 1956 and 1957
- Southern Viaduct – 2,000 ft long
- Northern Viaduct – 1,000 ft long
- 75 spans
- Carries 63,000 vehicles per day
- Carries MBTA Bus 111 from Chelsea to Haymarket Station via Ramp A, and MBTA 426 and 428 from North Shore

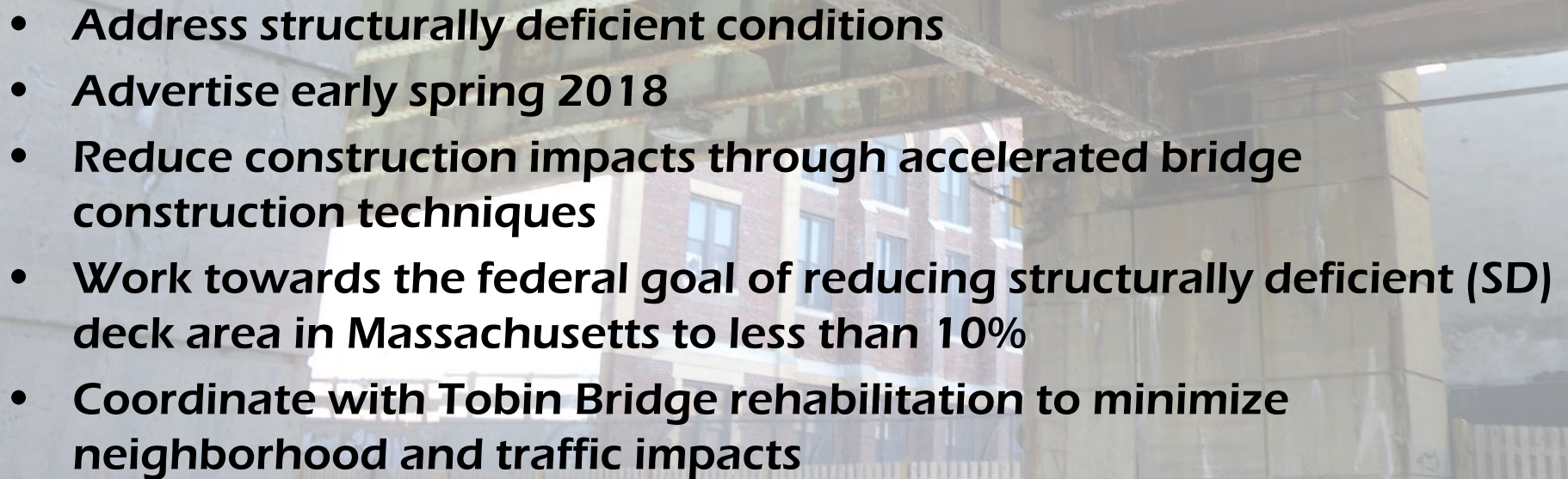


Existing Conditions

- Viaduct structurally deficient
- Substructure: poor condition
- Deck at bridge joints: poor to severe condition
- Superstructure/Beams: poor to severe condition
- Does not meet statutory load ratings for all legal vehicles



Project Goals

- 
- Address structurally deficient conditions
 - Advertise early spring 2018
 - Reduce construction impacts through accelerated bridge construction techniques
 - Work towards the federal goal of reducing structurally deficient (SD) deck area in Massachusetts to less than 10%
 - Coordinate with Tobin Bridge rehabilitation to minimize neighborhood and traffic impacts

Project Status

- Preliminary Structures Report completed
- Functional Design Report completed
- Subsurface exploration completed
- Survey complete
- 25% Design complete
- Value Engineering study complete
- Approximate cost: \$110M



Design Schedule

Preliminary Design
October 2017

Final Design
February 2018

Advertisement
March 2018

Design Public Hearing
January 2018

PS&E
March 2018

Design & TMP Development

Public Outreach

Public Outreach To Date

- Public Information Meeting- 11/8/17
- Project Open House – 12/5/17
- Chelsea Collaborative – 12/7/17
- GreenRoots Chelsea – 12/14/17
- GreenRoots Chelsea Follow-up – 1/18/18
- All-Spanish Public Information Meeting – 1/22/18
- Pop-ups – November, December, and ongoing
- Door-to-door abutter project notification – 1/16/18-1/21/18
- Business Community Meeting – TBD
- City of Chelsea – Ongoing coordination
- General, Businesses, and Non-Occupant Owners Notification Letters – November, December, and pre-DPH

Scope of Work

- **Repair and Retrofit Substructure to support regulatory weight requirements and the new superstructure**
- **ABC Methods for Superstructure Rehabilitation:**
 - Pre-Fabricated Bridge Units (PBUs) throughout majority of project
 - Use conventional repair methods at 6 isolated spans
- **Provide new crash tested bridge barriers**
- **Provide new snow fence where safe**
- **Replace Roadway Lighting and Bridge Drainage**
- **Rebuild existing parking lots under viaduct, and add new Carter Street lot**

Scope – Substructure



Scope – Substructure I



Scope – Substructure II



Scope – Substructure III





Scope - Superstructure

PREFABRICATED BRIDGE UNITS (PBUs)



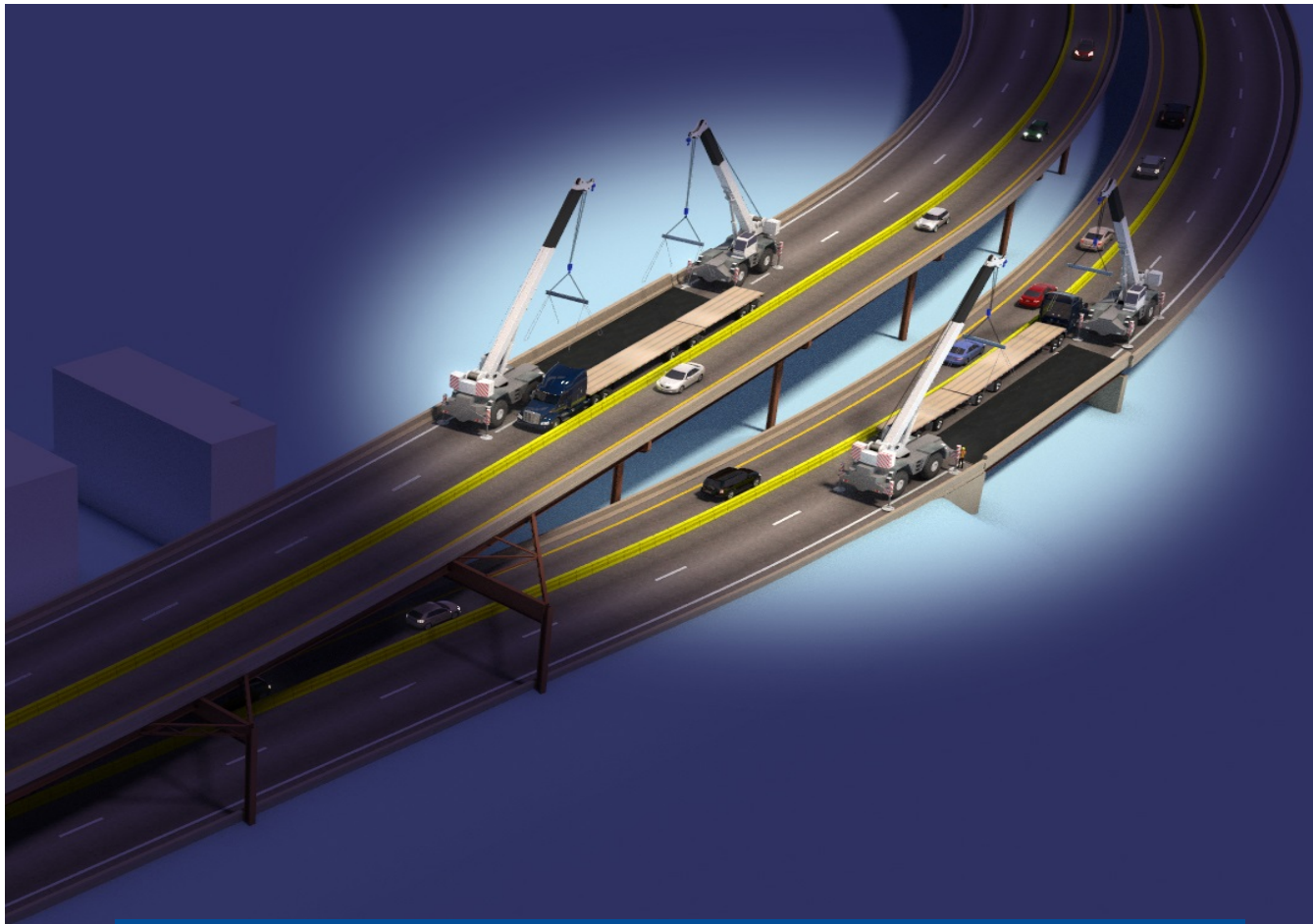
Scope – Superstructure I

PREFABRICATED BRIDGE UNITS (PBUs)



Scope – Superstructure II

PREFABRICATED BRIDGE UNITS (PBUs)



Scope – Superstructure III

PREFABRICATED BRIDGE UNITS (PBUs)



Scope – Superstructure IV

PREFABRICATED BRIDGE UNITS (PBUs)



Scope – Superstructure V

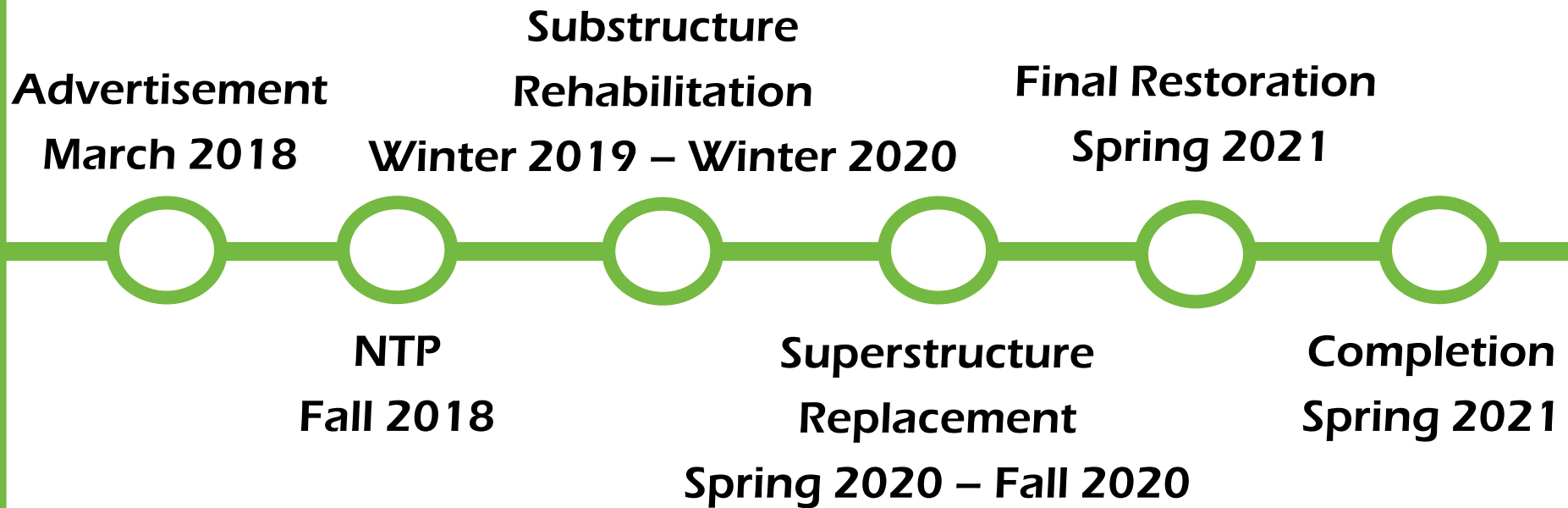
PREFABRICATED BRIDGE UNITS (PBUs)

Scope – Superstructure VI

- **Isolated Spans will require conventional repair:**
 - Rte 1 SB over Rte 1 NB (at Southern limits of work near 4th Street)
 - Span over Railroad
 - Work includes the removal of the existing deck, cleaning, strengthening and painting of the existing steel, and utilizing steel grid deck elements.



Construction Schedule



Coordination with
Tobin Deck Rehabilitation
2018 - 2020

Construction Impacts - Traffic

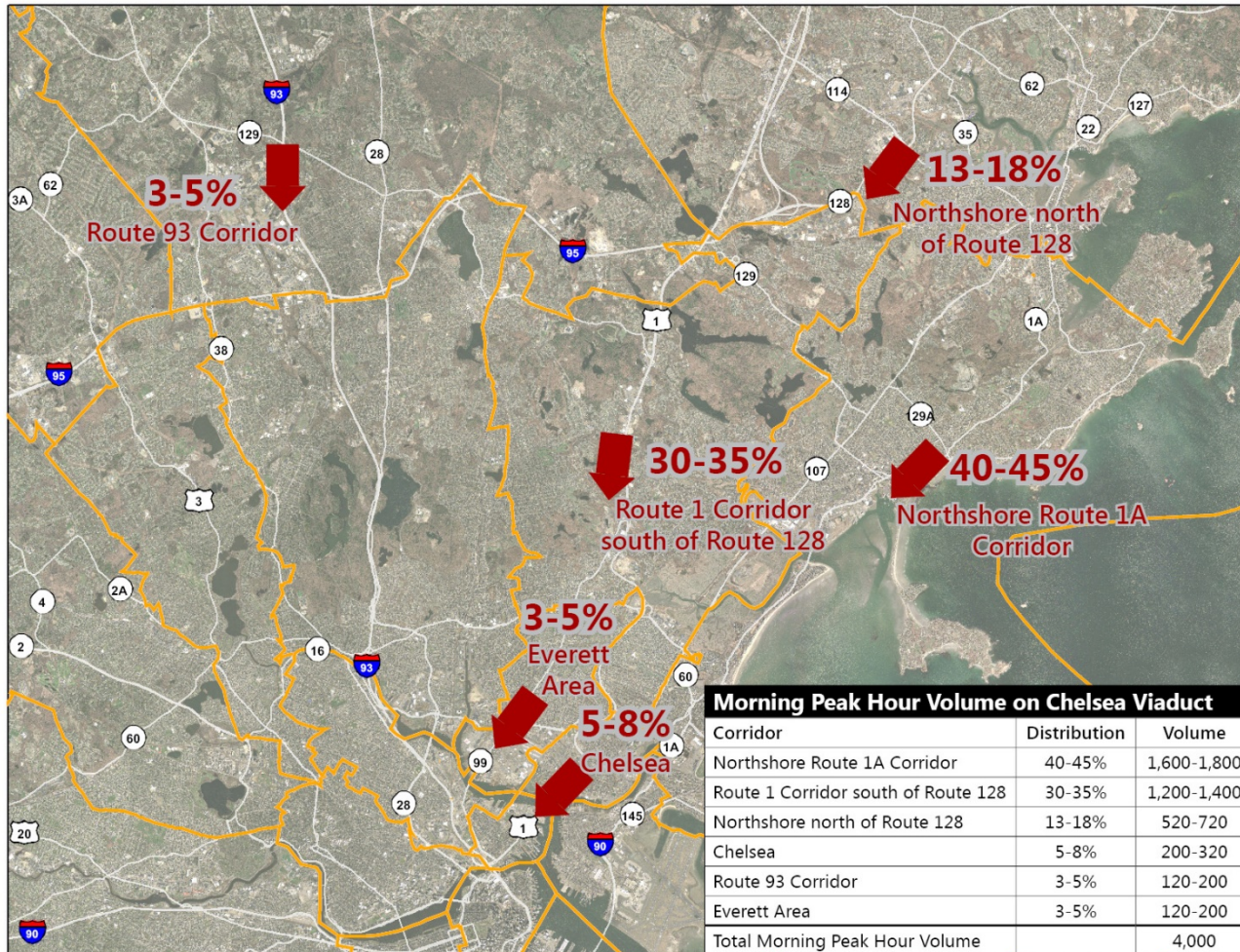
- Winter 2019 - Winter 2020: Substructure rehabilitation - *no traffic impacts on Route 1 during peak travel times*
- Spring to Fall 2020: NB/SB superstructure replacement
 - SB reduced from 3 lanes to 2 lanes
 - NB – Tobin work zone of 2 lanes to be extended within project limits
 - NB/SB reduced to 1 lane overnight for ABC construction
 - Interim ramp closures with local detours
 - Interim parking impacts
- Weekend lane reductions on Route 1 (12 weekends) for conventional construction
- Extensive public outreach to ensure motorists and residents understand traffic impacts

Weekend Construction

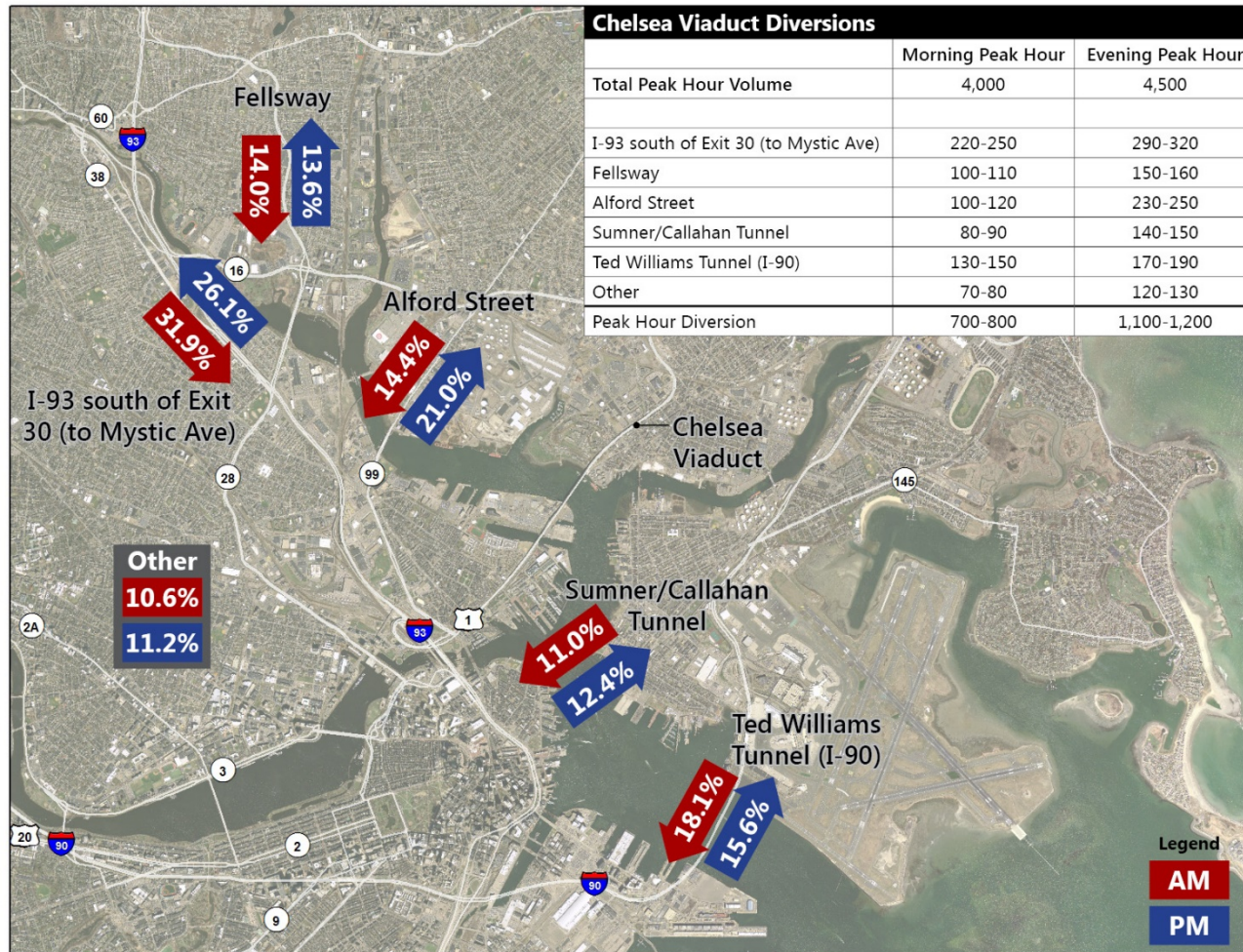
- Route 1 will be reduced to 1 lane NB/SB for **12 weekends** in 2020
- Lane reductions Friday 10pm through Monday 5am
- Allows for expedited construction in areas where PBUs cannot be used
- Proposed weekend dates include
 - 6 weekends in Spring (excluding Easter)
 - 6 weekends in Summer (excluding July 4th)
- Efforts will reduce duration of impacts to abutters (from 9 months of night work)
- Extensive public outreach will ensure motorists and residents are aware of weekend work.



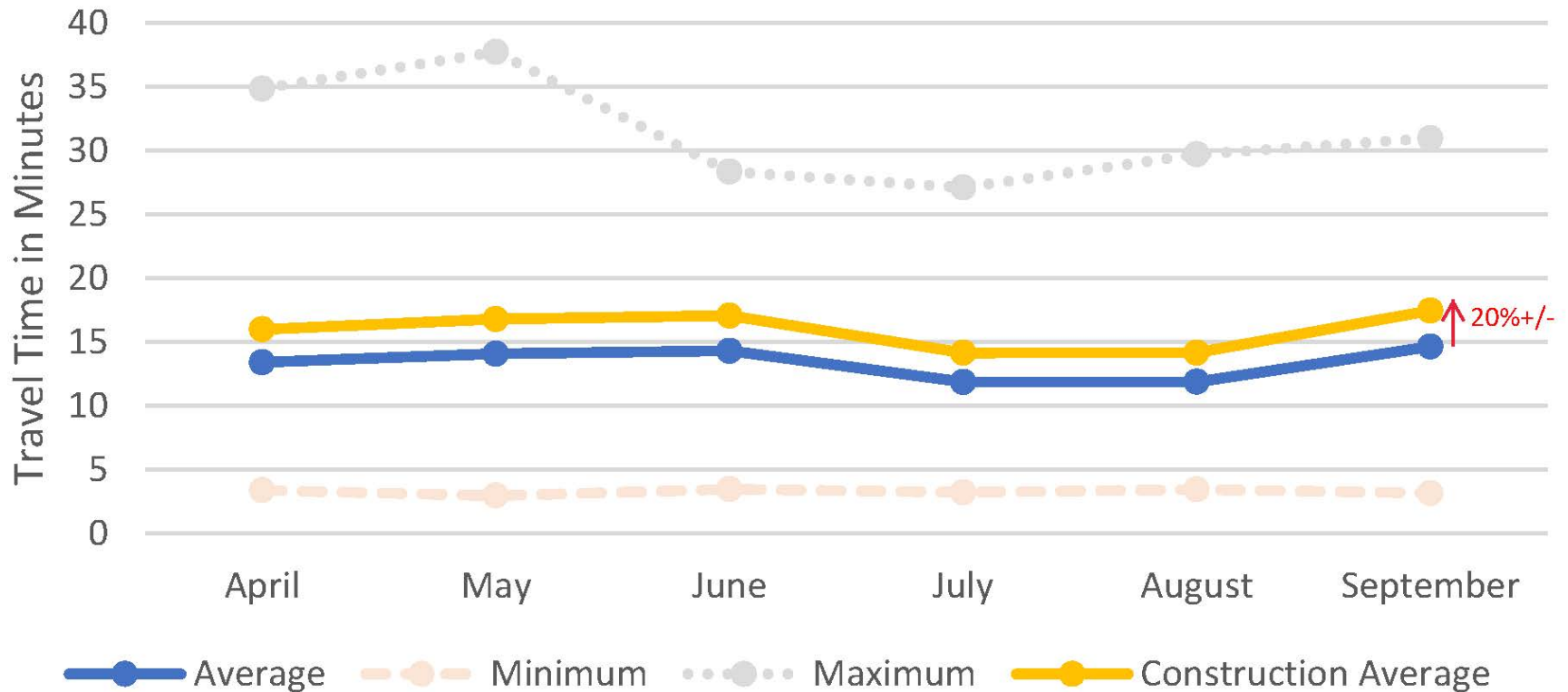
Distribution of Existing Traffic



Traffic Diversion During Construction



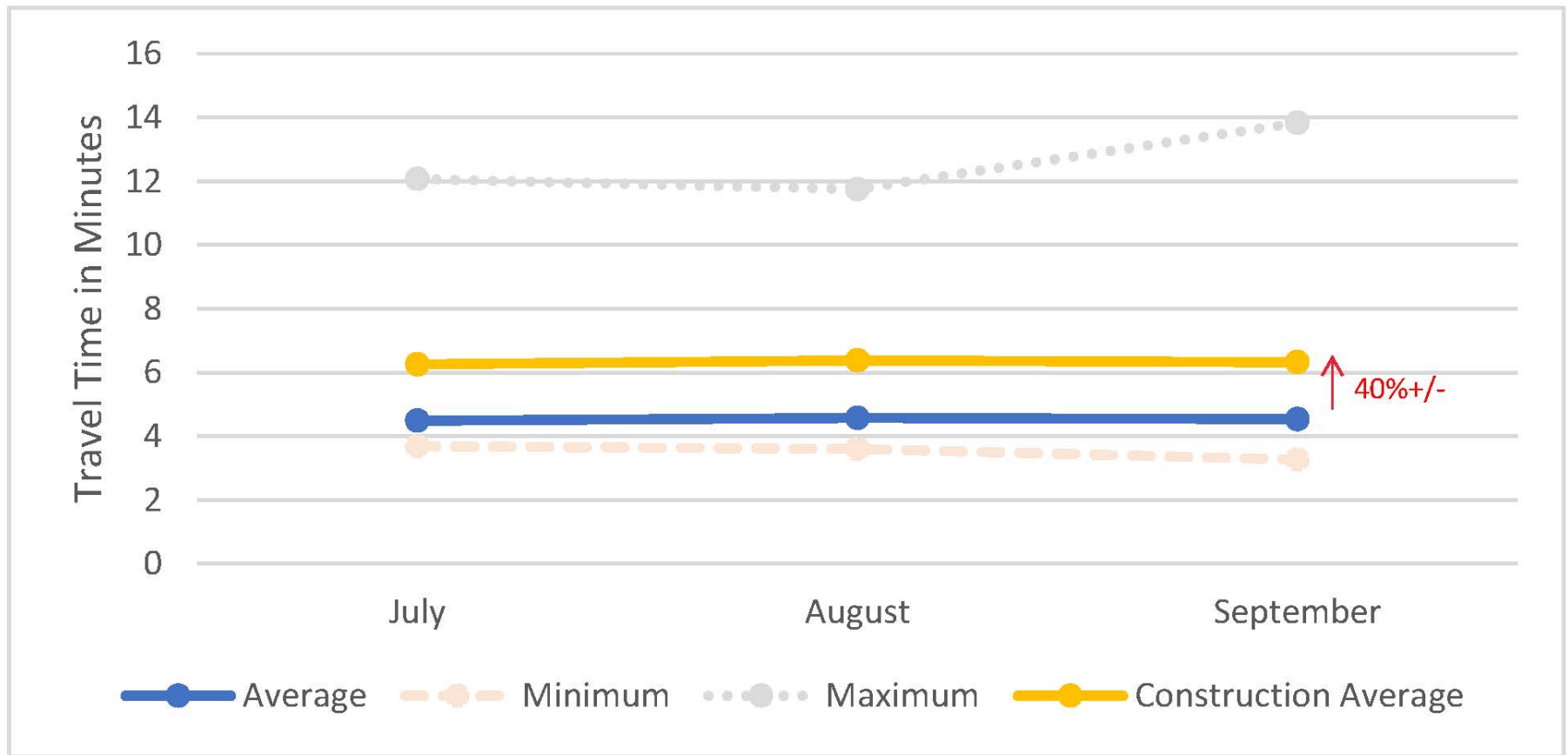
SB Morning Peak Period Travel Times



Travel Time is between Route 16 and Charlestown Ramps

Overall Average - 14.6 Minutes
Construction Average - 17.5 Minutes

NB Evening Peak Period Travel Times



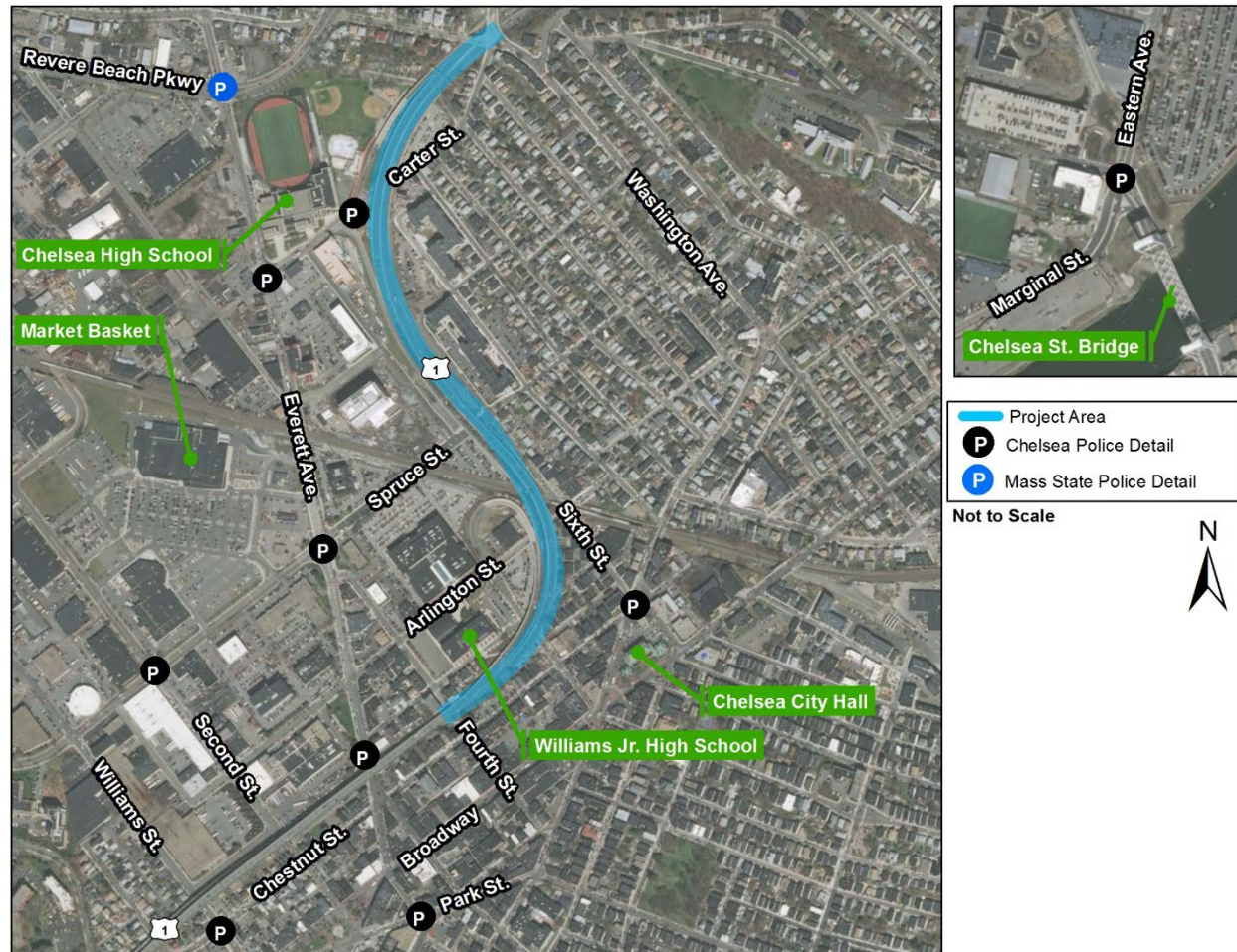
Travel Time is between Charlestown Ramps and Route 16

Overall Average - 4.5 Minutes
Construction Average - 6.3 Minutes

Regional Traffic Mitigation

- Robust Public Outreach Program
- Comprehensive Police Detail Program
- Field Monitoring and Adjustment – starting day 1
- Real Time Traffic Management (RTTM) System
- Advance Warning Signage
- Local Detour Plans
- Signal & Corridor Optimization
- Incident Response Operation (IRO)
- Coordination with adjacent projects

Police Detail Deployment

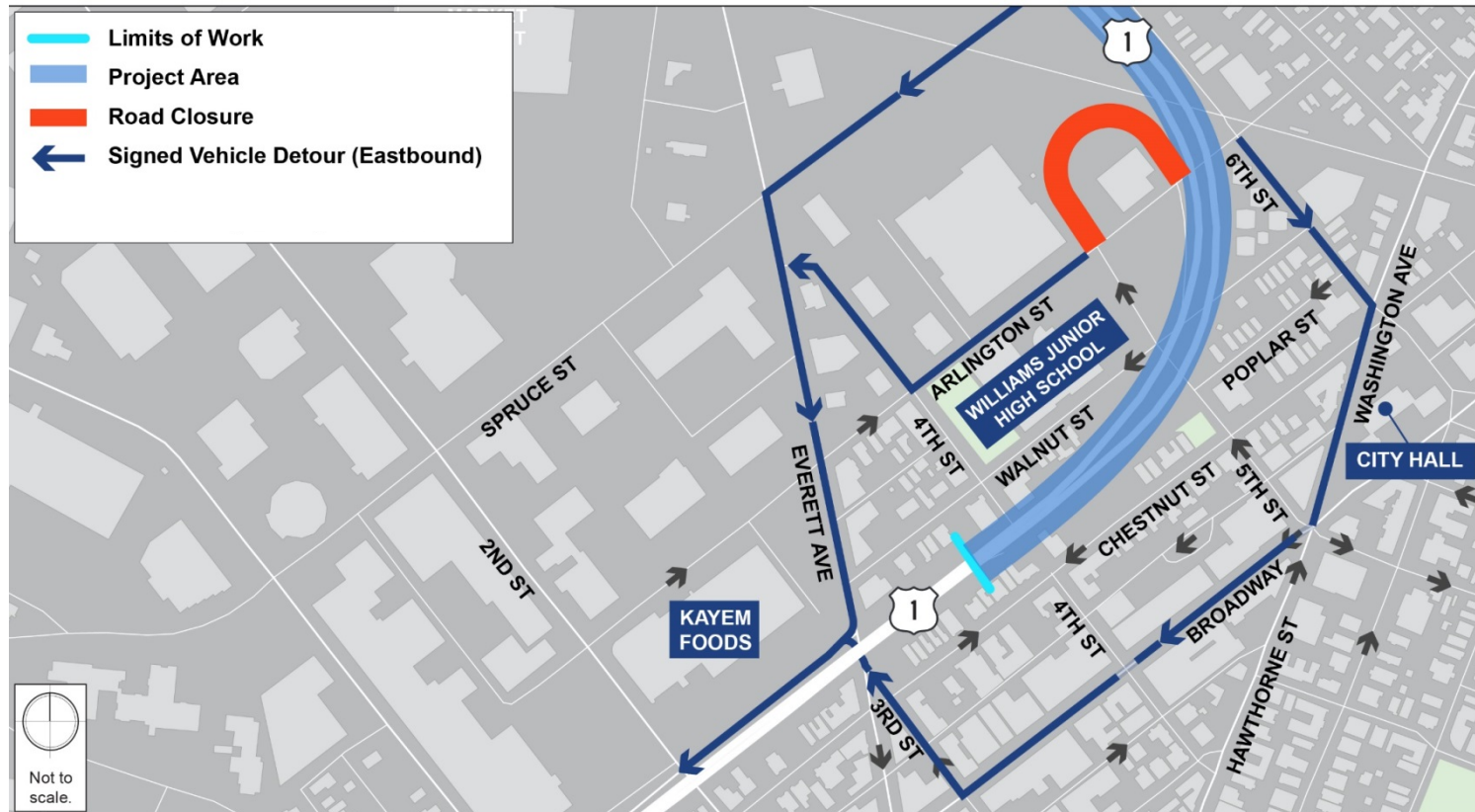


Local Traffic Detours

- **Local nighttime road closures intermittently throughout each construction stage (7pm-6am)**
- **Weekend closures for Carter Street Off-ramp**
- **Arlington Street On-ramp and Fourth Street Off-ramp closed during all construction stages**
- **Nightly closures for Carter Street On-ramp and Sixth Street On-ramp during the first construction stage**

Arlington Street Ramp Detour

ARLINGTON STREET RAMP DETOUR



4th Street Detour

FOURTH STREET DETOUR



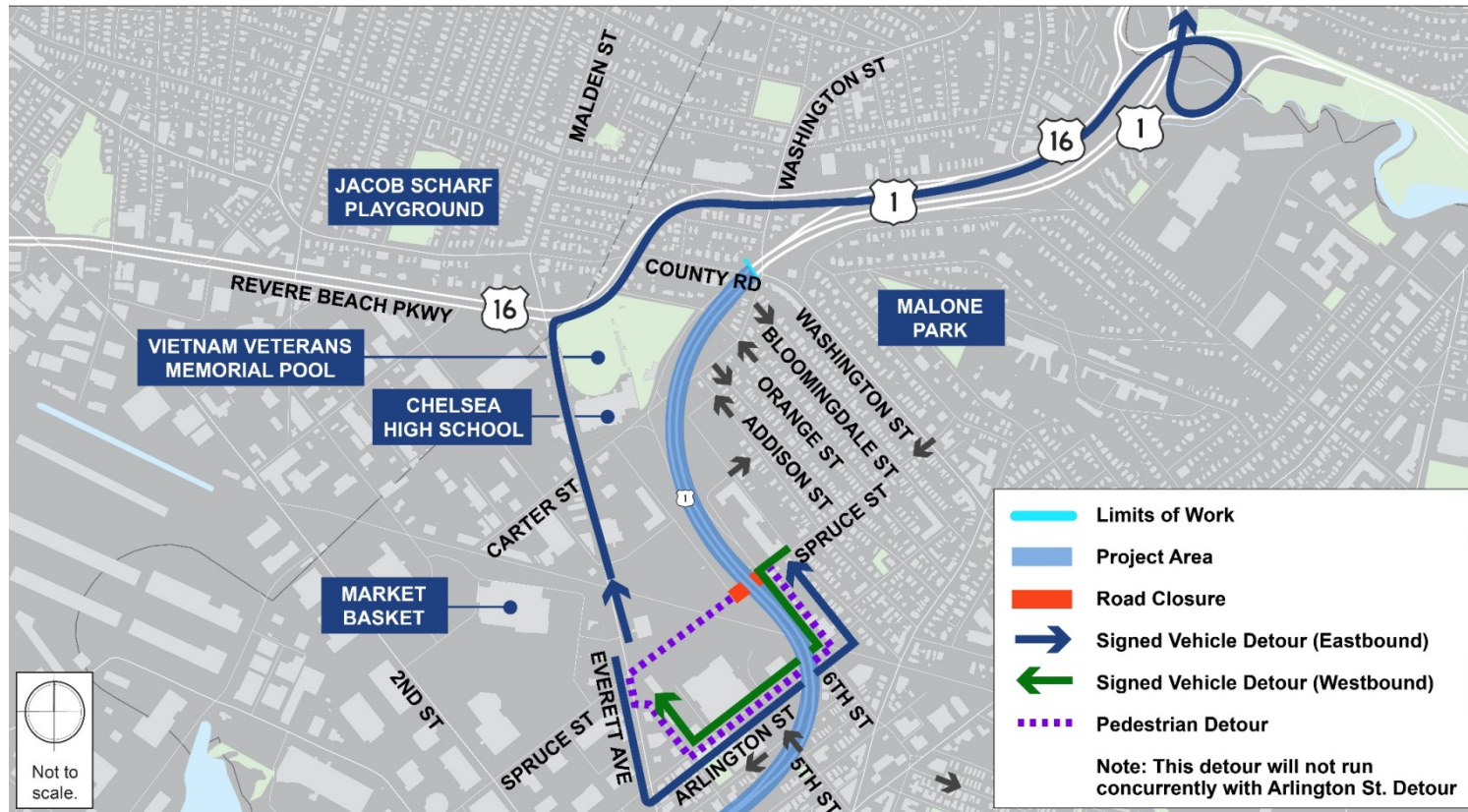
5th Street Detour

5TH STREET DETOUR



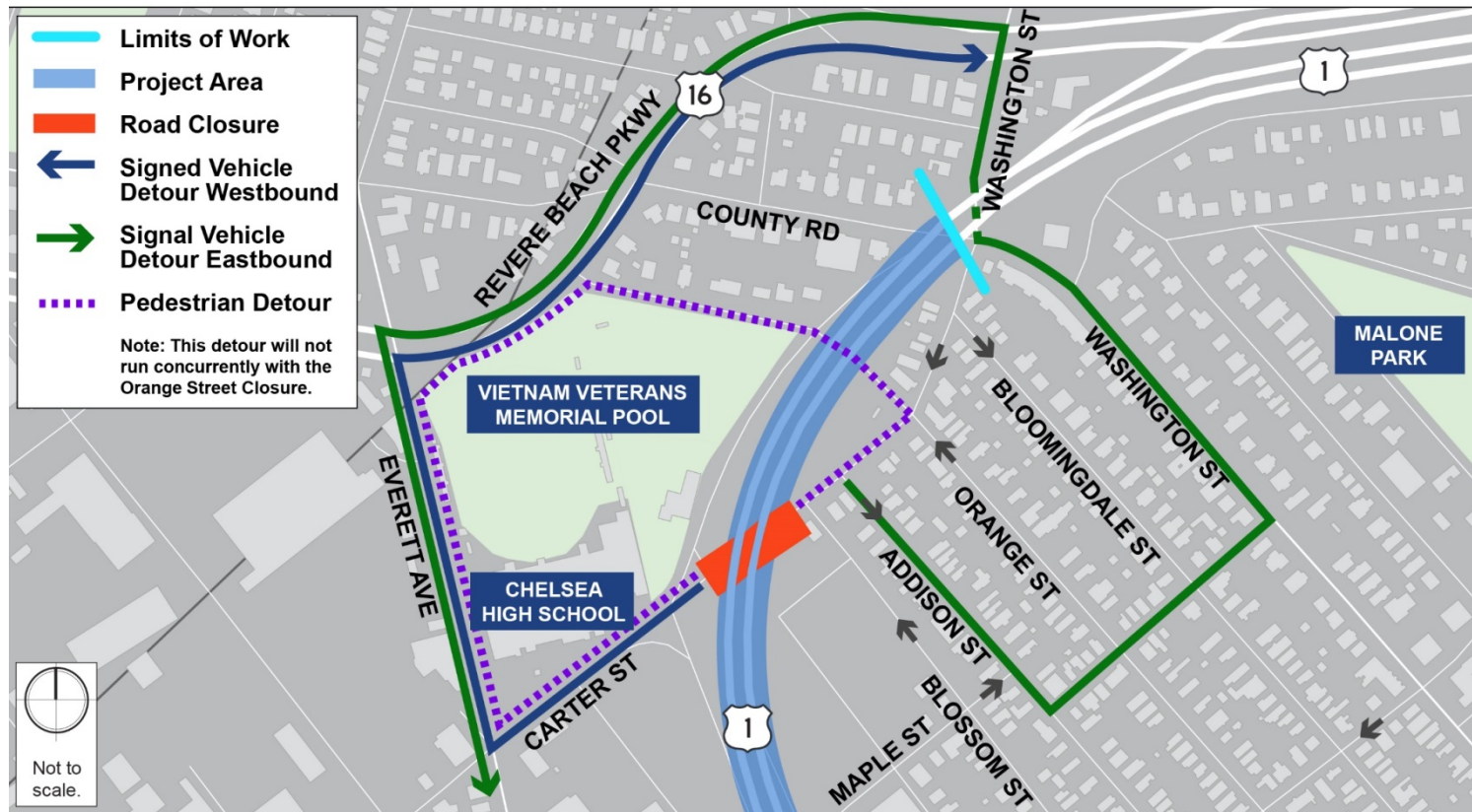
Spruce Street Detour

SPRUCE STREET DETOUR



Carter Street Detour

CARTER STREET DETOUR



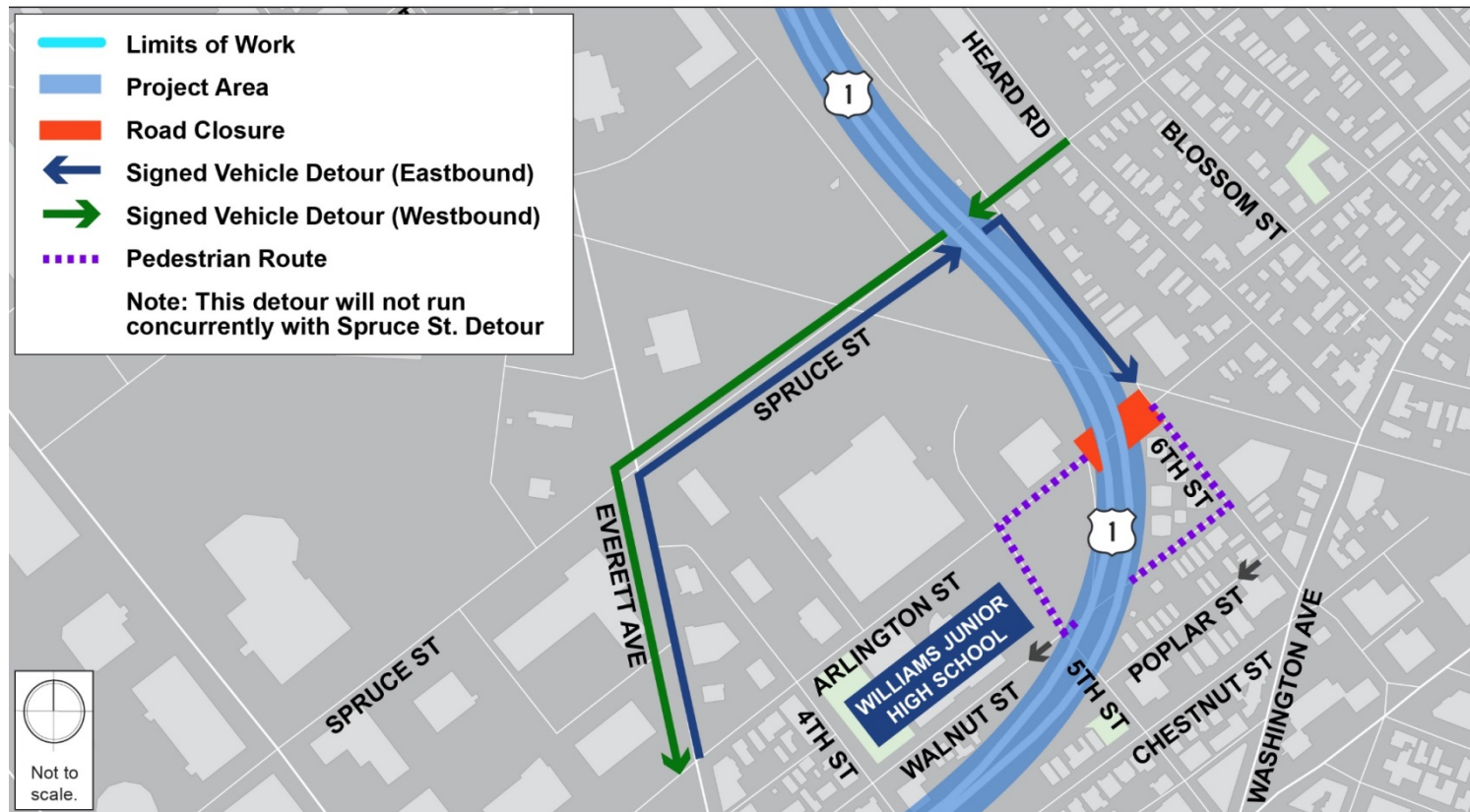
Orange Street Detour

ORANGE STREET DETOUR



Arlington Street Detour

ARLINGTON STREET DETOUR



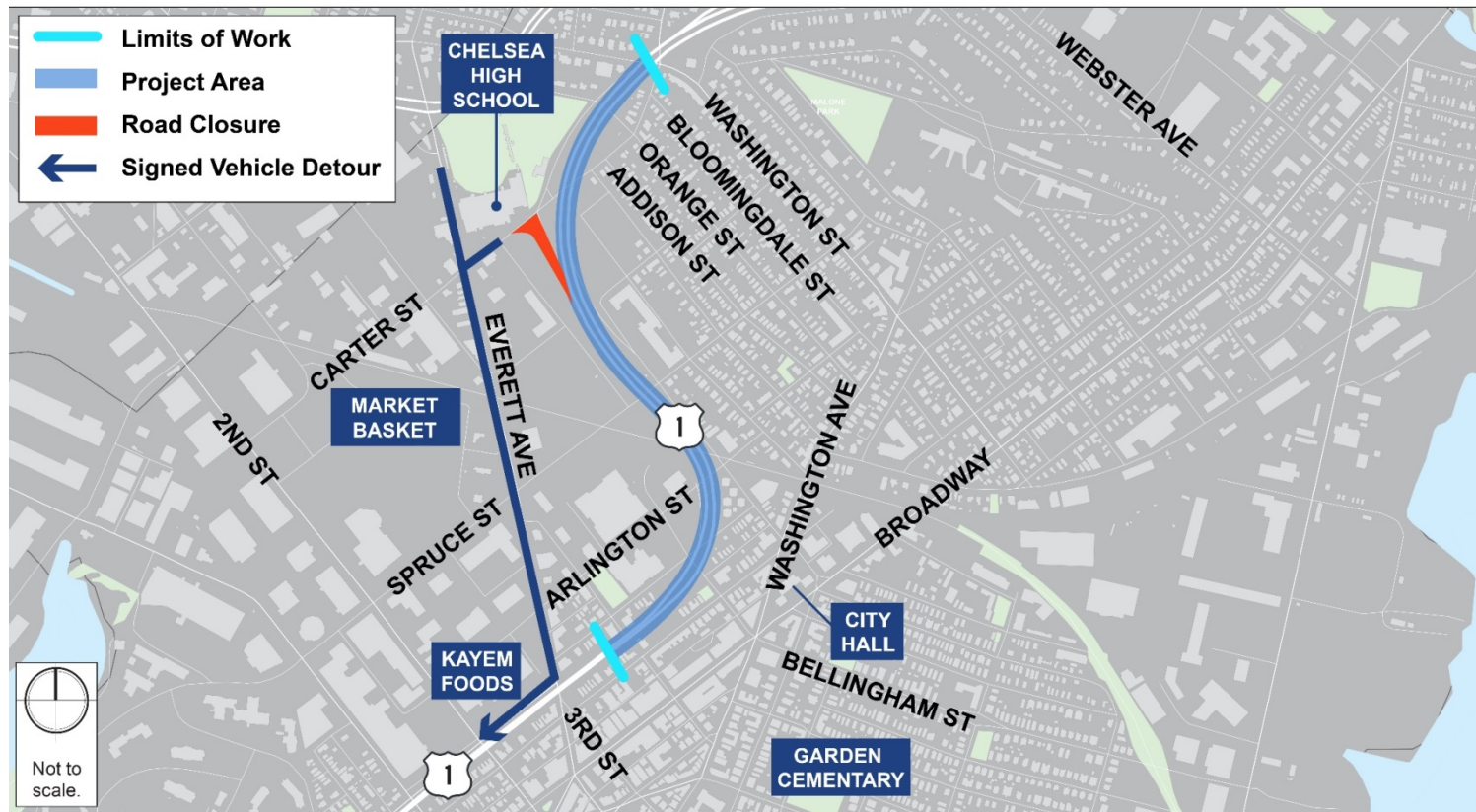
6th Ramp Street Detour

SIXTH STREET RAMP DETOUR



Carter Street On-Ramp Detour

CARTER STREET ON-RAMP DETOUR



Carter Street Off-Ramp Detour

CARTER STREET OFF-RAMP DETOUR



Arlington Street On-Ramp Closure

- **Volumes on Arlington Street on-ramp are low**
 - Approx. 1,400 vehicles per day
 - Approx. 100 vehicles per hour during AM peak & 110 vehicles per hour during PM peak
- **Adjacent Carter Street and Everett Ave. on-ramps are located approx. ¼ to ½ mile north and south of this ramp, respectively (AASHTO recommends 1 mile spacing between ramps)**
- **Comparatively, Carter Street on-ramp carries 2,086 vehicles per day and Everett Avenue on-ramp carries 5,812 vehicles per day**
- **Traffic analysis was completed using projected future volumes**
- **Insufficient sight distance at Route 1 SB merge**
- **Substandard radii for ramp design speed**
- **MBTA Bus 111 rerouted to Everett Avenue on-ramp, reducing overall travel time**

Construction Impacts - Abutters

- Noise
- Dust and pollutant containment system will be used for mitigation
- Lead Paint Abatement Plan for Hazardous Materials Mitigation
- Reallocation of temporary loss of parking
- Public outreach will help keep abutters and users informed of construction impacts



Construction Impacts - Noise

- Contractor will be required to have an approved Noise Control Plan
- Baseline noise monitoring will occur under normal, everyday conditions
- Certain activities and hours of operations will be limited
- Different noise limits for different times of day
- Noise mitigation will be required if allowable noise levels are exceeded
 - Shielding
 - Limit machinery types and use
- Installation of PBUs



Construction Impacts - Parking

- **Winter 2019 - Winter 2020:**
Parking Lots Impacted during
Substructure Rehabilitation
- **Spring 2020 – Fall 2020:** Parking
Lots Impacted During
Demolition and Erection of
Bridge Superstructure
- **Potential Loss of Parking Spaces**
due to Retrofit of Existing
support foundations and
proposed drainage structures
- **Introduction of new Carter Street**
lot for temporary relocation



Dust and Lead Paint Control

Dust:

- During demolition activities, water will be used to minimize dust emissions per MassDOT and OSHA regulations.
- Dust monitoring will be conducted during ALL concrete demolition activities.
- Contractor Health and Safety Plan will address dust control on-site

Lead Paint:

- All Federal, State, Local and OSHA regulations will be followed
- Contractor to contain all areas where paint is removed
- Removed steel is recycled off-site

Mitigation Commitments

MassDOT has been coordinating with the City of Chelsea and community groups to identify possible mitigation measures. These measures may include:

- Allowance for additional crossing guards during construction
- Geometric improvements to Everett Street on-ramp (Arlington Street ramp closure mitigation)
- Funding for design of Carter Street/ramp intersection improvements (Arlington Street ramp closure mitigation)
- Architectural improvements to columns
 - Opportunity for local artist displays
- Funding for Route 1 corridor enhancement program to be implemented by the City of Chelsea

Mitigation Commitments Cont.

- Weekend construction to reduce duration of impacts to abutters
- Improved lighting under structures
- Upgraded drainage
- Installation of new fire suppression system on viaduct
- Parking lot paving and restriping
- Incentives & disincentives to ensure project delivery

**We're still listening and want to hear
your concerns prior to finalizing
mitigation measures**



Environmental Review

- Project requires NEPA review and approval by FHWA
 - Anticipated Categorical Exclusion (CE)
- Community engagement is integral to the NEPA Process – your input in this design process will be documented
- FHWA is a participant in project development and will determine adequacy of the public process
- Other environmental approvals:
 - Section 106 of the Historic Preservation Act
 - Section 4(f) of the DOT Act



Public Participation/Outreach Plan



- Project website
- Digital blast notification to North Shore E-Z pass holders
- Informational materials to be distributed
 - In community facilities – libraries, City Hall
 - On MBTA buses – Rtes. 111, 112, 114, 116, 117
- Door-to-door flyer distribution on immediately adjacent streets
- Pop-ups at community gathering places – libraries, supermarkets, community centers, etc.
- Briefings upon request to local community organizations – Chelsea Green Roots, Chamber of Commerce, etc.
- Coordination with MassPort at Logan Airport satellite parking facilities in Chelsea

Next Steps

- Finalize design based on public feedback
- Continued outreach - look for us in your neighborhood!

Final Design
February 2018

Advertisement
March 2018

PS&E

March 2018

NTP

Fall 2018



Design & TMP Development

Discussion



www.massdot.state.ma.us/highway/HighlightedProjects/ChelseaRoute1ViaductRehabilitationProject.aspx

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Fact sheets and mail-in comment sheets available



Thank You

Route 1 Viaduct Rehabilitation Project

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