



I-90 Allston Multimodal Project/ Boston, MA

National Environmental Policy Act Review
Scoping Report

November 6, 2019



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LIST OF ACRONYMS

Acronym	Meaning
AAB	Massachusetts Architectural Access Board
AASHTO	American Association of State Highway and Transportation Officials
ADA	American with Disabilities Act
APE	Area of Potential Effect
BPDA	Boston Planning and Development Agency
BMP	Best Management Practice
BPY	Beacon Park Yard
BTD	Boston Transportation Department
BU	Boston University
BWSC	Boston Water and Sewer Commission
CO	carbon monoxide
CTPS	Central Transportation Planning Staff
DCR	Massachusetts Department of Conservation and Recreation
DEIR	Draft Environmental Impact Report
EIR	Environmental Impact Report
ENF	Environmental Notification Form
EOEEA	Executive Office of Energy and Environmental Affairs
FEIR	Final Environmental Impact Report
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GHG	greenhouse gas
GJR	Grand Junction Railroad
HA	Highway Agency
IMPs	Institutional Master Plans
LOS	Level of Service
LRTP	Long-Range Transportation Plan
MassDEP	Massachusetts Department of Environmental Protection
MassDOT	Massachusetts Department of Transportation
MassGIS	Massachusetts Geographical Information Systems
MBTA	Massachusetts Bay Transportation Authority
MEPA	Massachusetts Environmental Policy Act
MHC	Massachusetts Historical Commission
MPO	Boston Region Metropolitan Planning Organization

Acronym	Meaning
MWRA	Massachusetts Water Resources Authority
MVMT	million vehicles miles traveled
NAC	MassDOT Noise Abatement Criteria
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NRHP NR-Eligible NR-Listed	National Register of Historic Places
OHM	oil and hazardous materials
PDW Path	Dr. Paul Dudley White Bike Path
PM ₁₀	coarse particulate matter
PM _{2.5}	fine particulate matter
REC	recognized environmental condition
SFR	Soldiers Field Road
SHPO	State Historic Preservation Officer
SO ₂	sulfur dioxide
TDM	Transportation Demand Management
TMDL	Total Maximum Daily Load
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USCG	United States Coast Guard
USDOT	United States Department of Transportation
USGS	United State Geological Survey
vpd	Vehicles per day

1.0 Introduction

The scoping process is the public's first opportunity to comment on the Project during the National Environmental Policy Act (NEPA) review process. This scoping document describes the Project's purpose and need (Section 2), alternatives and alternative screening analysis (Section 3), methodology to be used when evaluating each alternative during the NEPA environmental review process (Section 4), as well as opportunities for agency coordination and public involvement (Section 5). As described in Section 5, a variety of outreach methods will be used to engage with state and federal agencies as well as the public throughout the NEPA process.

1. What is the I-90 Allston Multimodal Project and where is it located?
2. What is the National Environmental Policy Act and why does it apply to this project?
3. What is the purpose of this Scoping Report?
4. How can the public provide comments on this document?

1.1 Project Background

The Interstate 90 (I-90) Allston Multimodal Project (the Project) is located in Boston, Massachusetts, specifically in the Allston neighborhood and bordering on the Charles River. The Massachusetts Department of Transportation (MassDOT), as the Project sponsor, and the Federal Highway Administration (FHWA), as the lead federal agency, propose to address the deficiencies within the existing highway interchange at the I-90 exits 18, 19 and 20.

The government agencies guiding the Project are those with transportation infrastructure located within the Project Area. That transportation infrastructure includes I-90, the Massachusetts Bay Transportation Authority (MBTA) Worcester Main Line commuter rail, the Grand Junction rail line, the Department of Conservation and Recreation's (DCR) Soldiers Field Road, and City of Boston streets. FHWA is the lead federal agency and the MassDOT Highway Division and MBTA are leading the Project. The Federal Transit Administration (FTA) will review the rail operations of the Project alternatives as a cooperating agency in the NEPA process (See Section 5). The Federal Rail Administration (FRA) will also participate in review of alternatives that include effects to Grand Junction Railroad and intracity rail movements. DCR, as a land owner within the Project Area, is providing assistance for the design of Project elements within DCR property.

MassDOT makes decisions on prioritizing transportation infrastructure investments based on efficiently attaining a State of Good Repair, while focusing on maintaining and improving conditions of existing assets to provide functional, reliable and safe operation while managing life-cycle costs. The Project will contribute to MassDOT's goal to improve the reliability of the Commonwealth of Massachusetts' transportation infrastructure and achieve a system-wide State of Good Repair.

MassDOT is committed to advance the entire project and funding for construction will be provided through several sources. Details regarding phasing and construction logistics will be presented in the Draft Environmental Impact Statement as MassDOT is no longer relying on the phasing plan described in the Massachusetts Environmental Policy Act Draft Environmental Impact Report. MassDOT has formed a finance plan working group that is considering a range of options including, but not limited to, Federal-Aid, Metropolitan Highway System toll revenues, Non-Federal-Aid state obligation bonds, public/private partnerships and value sharing. MassDOT has provided reasonable assurance to FHWA that funding will be available to advance construction prior to a Record of Decision being issued.

1.1.1 Project Area and Elements

The Project Area (Figure 1) is located within the Allston neighborhood of the City of Boston and includes the area encompassed by the former Beacon Park Yard (BPY) rail yard. The Project Area is bounded by Ashford Street to the south, the Commonwealth Avenue bridge and the Charles River to the east, Cambridge Street to the north, and Cambridge Street and the Franklin Street pedestrian bridge over I-90 to the west.

The Project Area also includes Soldiers Field Road (SFR), a parkway, and the adjacent Dr. Paul Dudley White (PDW) Path, a shared-use path along the banks of the Charles River. Both SFR and the PDW Path are part of the Charles River Reservation under the care, custody and control of the DCR, and within the bounds of the Charles River Basin Historic District, which is listed in the National Register of Historic Places. SFR is a major crosstown street and is an important element of regional transportation within the area. SFR also has a 10' height limit, restricting most commercial and oversized vehicles from using the parkway. Most of the remainder of the land within the Project Area is presently owned by Harvard University, with the existing I-90 interchange and railroad facilities operated by MassDOT via land easements.



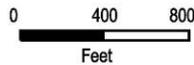
Aerial view of Project Area looking east

The I-90 Interchange is a significant part of the regional and local infrastructure, carrying over 140,000 vehicles per day, and connecting Logan Airport, I-93 and downtown Boston with areas to the west with connections to I-95 and I-495.

The Worcester Main Line (WML) tracks and Grand Junction Railroad (GJR) run through the Project Area and serve as critical infrastructure for Amtrak and the MBTA commuter rail operations. The two-track WML runs through the southern part of the Project Area. From west to east, the WML is located south of I-90, passes under the Cambridge Street

Bridge, continues straight between the rail yard and developed land to the south, and curves south to continue underneath the I-90 viaduct at the eastern extent of the Project Area. The WML serves MBTA commuter rail, Amtrak and CSXT Freight Service. The Boston to Springfield rail line is also used by Amtrak intercity rail passenger service and was designated by Congress as a High-Speed Intercity Rail Corridor. The Federal Railroad Administration (FRA) is currently working with all involved parties to increase intercity rail passenger service over this route. Additionally, the GJR line runs beneath the I-90 viaduct, over SFR on a two-span bridge, and over the Charles River on a multi-span bridge that passes beneath the Boston University Bridge over the Charles River.

The Project will connect logical termini, have independent utility or independent significance, and will not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.



I-90 Allston Multimodal Project
Allston, Massachusetts

**Project Area
Figure 1**

1.1.2 Project History

In accordance with the Massachusetts Environmental Policy Act (MEPA), an Environmental Notification Form (ENF) for the Project was filed on October 31, 2014, and a Notice of Availability for the ENF was published in the Environmental Monitor on November 5, 2014 (Executive Office of Energy and Environmental Affairs (EOEEA) File Number 15278). On December 24, 2014, the Secretary of the EOEEA issued a Certificate on the ENF (the Secretary's Certificate) requiring MassDOT to prepare an Environmental Impact Report (EIR). Notice of Availability for the Draft Environmental Impact Report (DEIR) was published in December 2017.



MassDOT's public outreach has helped inform the community

Since publication of the ENF, MassDOT has collaborated with a broad range of stakeholders to work through many details associated with the Project. These stakeholders have included the Project Task Force; the Cities of Boston and Cambridge; Harvard University (Harvard), an abutter and the owner of the land underlying much of the Project Area; Boston University (BU), an abutter; and other abutters and public groups. The Project Task Force is comprised of state and local elected officials, representatives of key institutional stakeholders such as Harvard and BU, members of the Allston business community, and local residents and activists. This

collaborative effort is ongoing and will continue throughout the MEPA/NEPA processes. In addition to regular Task Force meetings, the Project team has also held site walks and public information meetings throughout the environmental review process. More than 50 Task Force and public information meetings have been held to date, and the Project team received over 575 comment letters on the DEIR alone.

1.2 Regulatory Framework

1.2.1 Overview of the NEPA Process

Approvals or actions by federal agencies are subject to environmental review under the National Environmental Policy Act (NEPA). Anticipated federal approval or action for this Project includes funding from FHWA and FTA as well as FHWA approval of an interchange modification report. NEPA and its implementing regulations (CFR §§ 1500-1508) require federal agencies to consider the environmental impacts of a proposed action, including direct, indirect and cumulative effects. The purpose of NEPA is to promote well-informed decision making supported by “(a)ccurate scientific analysis, expert agency comments, and public scrutiny (which) are essential to implementing NEPA.”¹

¹ 40 CF.R. § 1500.1(b)

In addition to NEPA and its implementing regulations, Executive Order (EO) 13807: Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects was issued on August 15, 2017.² This EO requires major infrastructure projects to be processed under One Federal Decision (OFD) with the goal of reducing the time to complete an environmental review to two years. To achieve this accelerated timeframe, the OFD Memorandum of Understanding for Major Infrastructure Projects establishes agency coordination points and concurrence points during the environmental review process.³

To initiate the NEPA process, the lead agency determines the need for a proposed action and determines the level of documentation required. FHWA has determined that an Environmental Impact Statement (EIS) is the appropriate level of documentation for the I-90 Allston Multimodal Project and issued a Notice of Intent to Prepare a Draft Environmental Impact Statement (DEIS) on October 18, 2019. Following the scoping period, a DEIS will be prepared for the Project and will be published for public review and comment. The DEIS will describe potential impacts of the alternatives carried forward, mitigation strategies for unavoidable impacts, and will identify the preferred alternative under NEPA. The Notice of Availability of the DEIS will be published in the Federal Register to solicit public comment. FHWA and MassDOT will then review and provide responses to substantive comments received on the DEIS. A Final Environmental Impact Statement (FEIS) will then be published with a combined Record of Decision (ROD) for the Project. A Notice of Availability for the FEIS/ROD document will be published in the Federal Register. The FEIS/ROD will declare the selected alternative, explain the decision, and expand upon FHWA and MassDOT's plans for mitigation, if necessary.

1.2.2 Purpose of the Scoping Report

The scoping process for the I-90 Allston Multimodal Project is being conducted pursuant to 40 C.F.R. § 1501.7. The scoping process determines the scope of issues to be addressed in the EIS. This process is meant to be open for public review and should take place early in the environmental review process. The scoping process begins with publication of the Notice of Intent in the Federal Register which lets the public know of the lead agency's intent to prepare an EIS for a proposed project and also outlines how the public can be involved in the process. A Notice of Intent was published for the Project on October 18, 2019, and can be found at: <https://www.federalregister.gov/documents/2019/10/18/2019-22796/notice-of-intent-to-prepare-an-environmental-impact-statement-for-a-multimodal-project-in-allston>.

During scoping, FHWA and MassDOT will collaborate with the public to determine the scope of analysis and range of alternatives to be analyzed in the EIS. This report outlines the proposed purpose and need, alternatives, environmental analyses, and public coordination proposed for the Project.

² Exec. Order No. 13807, 82 Fed. Reg. 40463 (2017)

³ Memorandum of Understanding Implementing One Federal Decision Under Executive Order 13807 (2018)
<https://www.whitehouse.gov/wp-content/uploads/2018/04/MOU-One-Federal-Decision-m-18-13-Part-2-1.pdf>



1.3 Opportunity for Public Comment

MassDOT is seeking input and comments on the information provided in this document including: the purpose and need, alternatives, analyses and methods to be included in the environmental review process, and potential environmental impacts of the Project. Materials will be provided on the Project website at <https://www.mass.gov/allston-multimodal-project>. Written comments can be submitted via hard copy to:

Jeffrey McEwen
Division Administrator
Federal Highway Administration
55 Broadway, 10th Floor
Cambridge, Massachusetts 02142

OR

Michael O'Dowd
Acting Director of Bridge Project Management
Massachusetts Department of Transportation
10 Park Plaza, Suite 6340
Boston, Massachusetts 02116

Written comments may also be submitted via email to the following address: I-90Allston@dot.state.ma.us. The public will have 37 days to review and comment on this Scoping Report before the close of the scoping comment period on December 12. Upon completion of the scoping comment period, a Scoping Summary Report will be prepared which will summarize substantive comments made during the scoping process. Notification of availability of this Scoping Summary Report will be provided on the Project website as well as via email blasts using MassDOT's Gov-Delivery system. The Scoping Summary Report will be made available to the public at the following local repositories throughout the Project Area:

Boston Public Library System at Copley Square
700 Boylston Street
Boston, MA 02116

Brookline Public Library System in Brookline Village
361 Washington Street
Brookline, MA 02445

Honan Branch of the Boston Public Library System in Allston
300 N. Harvard Street
Allston, MA 02134

Central Square Branch of the Cambridge Public Library
45 Pearl Street
Cambridge, MA 02139

Massachusetts Department of Conservation and Recreation
251 Causeway Street
Boston, MA 02114

Framingham Public Library
49 Lexington St.
Framingham, MA 01702

Worcester Public Library
3 Salem St.
Worcester, MA 01608

2.0 Purpose and Need

1. Why is the I-90 Allston Multimodal Project needed?
2. What is the purpose of this Project?

2.1 Introduction

The purpose and need of the Project will be used to develop and evaluate a range of reasonable alternatives and assist with the identification and eventual selection of a preferred alternative. Alternative development and analysis will provide opportunities for public and agency input in accordance with Council on Environmental Quality (CEQ) regulations (40 CFR §§ 1500-1508). To date, MassDOT has conducted an extensive public participation program involving a robust series of workshops and meetings with the Project Task Force. Public involvement and interagency participation will continue throughout the NEPA process.

2.2 Project Need

The Project needs are the multimodal deficiencies within the transportation system that MassDOT is proposing to address. The Project need was initially driven by the structural deficiency of the I-90 viaduct, this multi-modal project is also now designed to address transportation deficiencies across modes within the Project Area that affect connections between the Project Area and the greater Boston region, the nearby neighborhoods and the Charles River Reservation. The most critical Project needs are summarized below and discussed in more detail in the following sections.

A. Roadway Deficiencies

- *A.1, I-90 Viaduct Condition:* Bridge inspections show that the I-90 viaduct is structurally deficient and nearing the end of its useful life, requiring replacement due, in part, to increasing frequency and cost of maintenance.
- *A.2, Substandard Highway Layout and Geometry:* Certain layout and geometric elements within the I-90 mainline and interchange are obsolete and not in conformance with current MassDOT and American Association of State Highway and Transportation Officials (AASHTO) design guidelines and require upgrading.

B. Safety

- *B.1, Crash Rates, I-90 Mainline and Viaduct:* Crash rates on I-90 within the Project Area are higher than statewide average for urban interstates, which are likely due in part to substandard layout and geometry.
- *B.2, Crash Rates, I-90 Interchange:* The intersection of Cambridge Street and SFR is in the top 5% of crash locations in the City of Boston.

C. Rail Limitations

- *C.1, Commuter Rail Operations:* Existing functionally obsolete infrastructure within the Project Area constrains movements of commuter rail operations and GJR operations.
- *C.2, Transit Demand and New Connections:* There is a lack of multimodal connections on the WML and other existing transit modes in the area, while short- and long-term ridership is increasing.

- *C.3, Commuter Rail Layover:* Existing mid-day layover capacity on the MBTA's South Side rail system is currently deficient. Layover within project area only reflects a portion of the MBTA layover needs.

D. Mobility Limitations and Transportation Access within the Project Area

- *D.1, Interchange Ramps:* Deficient level of service (LOS F) and delay/queuing at ramp terminus intersections currently exist, resulting in substantial delays and severe congestion during the morning and afternoon peak periods.
- *D.2, Substandard Width:* The PDW Path has sections that are substandard width to accommodate two-way mixed bicycle and pedestrian use.
- *D.3, Access to Charles River Reservation:* The height and position of the existing I-90 viaduct impede opportunities for the public in neighborhoods in Allston, Brighton, Brookline and Boston University to access the Charles River Reservation via walking and cycling.
- *D.4, Multimodal Transportation Access:* Existing infrastructure limits multimodal access to land within the Project Area. With growth and development expected in the Allston area, multimodal access should be improved..

2.2.A. Roadway Deficiencies

A.1. I-90 Viaduct Condition

Based upon the findings of the 2014 Structure Assessment Report, the condition of the I-90 viaduct must be addressed. As outlined in detail in this Structure Assessment Report, the bridge requires major rehabilitation or replacement based on a number of factors including:

- age of the structure (50+ years);
- continued deterioration of the structure;
- material testing results; and
- significant traffic volume (73,000 vpd in each direction) on the structure.

National Bridge Inspection Standards (NBIS) bridge inspections conducted after the 2014 Structure Assessment Report document the continued deterioration of the structure and reduction in structural capacity. The following is a summary of the overall condition of the I-90 viaduct based on the resulting report and field observations.

Deck: The exposed concrete deck is in poor condition with extensive areas of cracking, potholes and patched areas. Many of the patched areas are failing, with an uneven surface and depressions. The concrete joint headers, located at the bridge deck joints at the piers, have significant concrete spalling with exposed steel reinforcement. Also visible are scattered spalls and deterioration (corrosion) of the metal stay-in-place forms on the underside of the deck. The deck under the median is hidden by timber shielding due to the spalling of the concrete along this area. Spalled concrete is amassing on this timber shielding.

Superstructure: The longitudinal steel stringers (beams) that support the concrete deck have a failing paint system that is faded and chalky, with areas of peeling paint. There are also areas of light to moderate rusting along the bottom of most beams. The outermost beams, and the beams under the viaduct median, have areas of localized corrosion. The bottom portions of these beams have some steel section loss, and steel is flaking off or delaminating (hollow areas) due to rusting and corrosion. The loss

of steel section reduces the structural capacity of these beams to support applied loads. The steel cross girders transfer the loads from the longitudinal beams to the concrete column pier foundations. These members are considered “fracture critical” members because they are steel members with no redundancy. Two cross girders comprise the pier cap at each pier/foundation location. Many of the cross girders have rusting, corrosion and steel section loss. This deterioration is primarily located on the side of each cross girder that is exposed to the open deck joint above, where water (and salt) run off the roadway. Many cross girders have been reinforced with new steel plates but continue to deteriorate with new corrosion and loss of steel section.

Substructure: Most of the piers are comprised of individual concrete columns that support the steel cross girder pier caps, as previously described. The majority of the columns show widespread deterioration. This deterioration consists of areas of map cracking (intersecting cracks), concrete delamination (hollow areas), rust and water staining, and concrete spalling with areas of exposed reinforcement. Many of the columns have also been previously repaired (patched). Many of these repaired areas are failing with map cracking. There are also several columns that have spalling at the top of the column. In some cases, these spalls extend to the bearings of the steel cross girders and have caused partial undermining of the bearing base plate. The line of columns along the south edge of the viaduct is in the worst condition. The concrete abutments at each end of the bridge are generally in satisfactory condition. The abutments have some minor cracking with localized hollow areas. There are also scattered spalled areas just below the armored deck joints.



Deteriorated concrete column supporting the I-90 viaduct

Maintenance: Frequent maintenance of the existing I-90 viaduct has been required due to the deteriorating condition of the structure (as described above). This maintenance includes more frequent and required bridge inspections due to the condition, as well as immediate repairs that typically result from these inspections, including deck joint patching, concrete deck patching and structural steel repairs. Currently, it costs approximately \$800,000 annually to maintain the viaduct. Continued maintenance of the existing I-90 viaduct will be increasingly expensive, and the lifecycle costs associated with operating the structure will soon outweigh the lifecycle costs of replacement.

Visual: The existing viaduct contributes to visual impacts to the neighborhood viewed.

A.2. Substandard Highway Layout and Geometry

This segment of I-90 was constructed in the mid-1960s and the highway geometry is constrained by the former BPY rail layover facility, SFR which was constructed in the early 1930s, other rail infrastructure that long predates construction of I-90, and accommodation of a traditional toll plaza. As a result, the existing interchange has elements that are not in conformance with current MassDOT and AASHTO interstate design guidelines.

The highway within the Project Area has the following deficient design criteria:

Horizontal Curves: There are several curves on I-90 with radii, length, and super elevation rates that are not compliant with current AASHTO interstate guidelines for their respective design speed.

Shoulder Width: Left and right shoulder widths and lateral offsets between the shoulders and adjacent features at certain locations within the Project Area are not compliant with current AASHTO interstate

guidelines. Narrow shoulders do not provide breakdown refuge and access for first responders, or area for stormwater collection to prevent ponding water and ice hazards that encroach into adjacent travel lanes.

Stopping Sight Distance: Horizontal stopping sight distance is substandard at locations where ramp overpass piers do not allow for recommended shoulder widths that would provide adequate sight distance to obstruction.

Left-hand Exit: The eastbound exit 18 ramp is a left-hand exit ramp, which differs from the westbound exit ramp and other exit ramps along the I-90 corridor that are traditional right-hand exit ramps. This design is substandard and not recommended by AASHTO because the exit is made from the high-speed travel lane, which introduces a potential safety hazard due to the differential in vehicular travel speeds in that lane.

2.2.B. Safety

B.1. Crash Rates, I-90 Mainline and Viaduct

Crash data for the I-90 mainline within the Project Area (between the Everett Street Bridge and the Commonwealth Avenue overpass – approximately 1.3 miles) indicates that this section of I-90 has a crash history that is above the statewide average for urban interstate highways. For the three-year period from 2015-2017, a total of 183 crashes occurred on this segment of I-90, an average of 61 per year. The crash rate for this segment of I-90 was 0.86 crashes per million vehicle miles traveled (MVMT), which exceeds the statewide average rate for urban interstates of 0.62 crashes per MVMT by 39%. Both the eastbound and westbound travel directions on I-90 exceed the statewide crash rate for urban interstate highways; however, the crash rate in the eastbound direction was notably higher: 0.98 crashes per MVMT. This is 58% above the statewide interstate rate. The substandard layout and geometric elements previously identified in the Roadway Deficiencies section may be contributing factors to the high frequency of crashes within the Project Area. It is also important to note that the former mainline toll plaza and former on and off ramp configurations were in place during most of the 2015-2017 analysis period and may have an influence on the crash rate.

East of the Allston interchange, I-90 is an elevated viaduct spanning over several rail lines that is approximately 0.5 miles in length. Crash data for the three-year period of 2015-2017, on the viaduct section of I-90 only, reveals that a total of 90 crashes occurred (including one crash that resulted in a fatality). This translates to an average of approximately 30 crashes per year and a crash rate of 1.13 crashes per MVMT, which is 82% higher than the statewide interstate average rate of 0.62 crashes per MVMT. Both directions of I-90 exceed the average statewide crash rate for urban interstate highways; however, in the westbound direction, the crash rate was notably higher (1.49 crashes per MVMT), which exceeds the statewide interstate rate by 140%. The viaduct section of I-90 also has roadway deficiencies that do not comply with current AASHTO guidelines for interstate highways, as described above in the Roadway Deficiencies section. These elements, along with the presence of the former mainline toll plaza, may contribute to the high crash rate on the viaduct.

B.2. Crash Rates, I-90 Interchange

The intersection of Cambridge Street and SFR with the terminus of the I-90 eastbound and westbound ramps is an HSIP (Highway Safety Improvement Program) high-crash intersection, as it is in the top 5% of crash locations within the City of Boston. During the period from 2014-2016, 44 crashes occurred at this location. High traffic volumes, five entry legs, complicated signal phasing, and extensive queuing on many of the intersection approaches may all be contributing factors to the high number of crashes at this location.

2.2.C Rail Limitations

C.1. Commuter Rail Operations

Improvement to operations of the WML is needed to accommodate increases in ridership and to help decrease travel time. The GJR is the only link within the Boston Metropolitan Area between the MBTA's South Side and North Side systems. Currently, turns are made by pulling South Side trains over WML tracks westerly past the Project Area to turn on a tail track by the new Boston Landing Station before returning through the Project Area to reach the GJR and the MBTA's Commuter Rail Maintenance Facility/Boston Engine Terminal (BET) across the river. CP3 currently aligns to meet the needs of existing operations but is a limiting factor in future growth along the Worcester Line. Retaining the existing crossover infrastructure as is would hinder improved operations over time.

C.2. Transit Demand and New Connections

The MBTA's WML ridership ranks among the highest of its commuter rail. The Worcester Line experienced the largest absolute growth in ridership on a representative weekday (increase of 2,902 inbound riders and 2,948 outbound riders) between 2012 and 2018, among all MBTA commuter rail lines. Ridership on the WML increased 45.7% between 2012 and 2018.

This growing demand in Allston and along the WML highlights the need for new transit connections via a new transit station, such as a West Station on the WML built to accommodate robust bus connections and future Grand Junction service.. A majority (75%) of Allston residents work in Boston, Cambridge, or Brookline and many (40%) commute via transit. Ridership analysis conducted during project development also indicates a high demand for bus use, including service that provides a north to south connection through the Project Area⁴ as well as for options that do not preclude future intercity rail service and transit service on the GJR line. The existing transit demand is projected to increase based on population growth in Allston, which grew 17% from 2000 to 2017⁵ and is expected to continue to grow.

C.3. Commuter Rail Layover

Layover facilities serve essential functions. They are used to store trains off active tracks and as service areas to perform essential running repairs and light maintenance. The MBTA has determined that the layover capacity is insufficient to store trains and conduct midday servicing activities. The MBTA currently moves and stores layover trains at three locations accessed over a single track (Fairmount branch) to and from South Station. The MBTA own and can store up to 12 trains on its own storage tracks at Readville. It also utilizes two tracks at Amtrak's Front yard, and four stub-ended tracks at Amtrak's Southampton facility. While there is the possibility of increasing layover capacity at other facilities, the MBTA currently identified BPY as the best layover location to address current and future layover deficiencies from South Station to points west⁶, which includes the WML due to its proximity to South Station.

2.2.D. Mobility Limitations and Transportation Access within the Project Area

As described in MassDOT's Separated Bike Lane Planning & Design Guide (2015), MassDOT is dedicated "to providing Massachusetts residents and visitors with a variety of safe and convenient transportation choices." This commitment includes facilities, such as the PDW Path, which encourage pedestrian and bicycle trips. Additionally, MassDOT has committed to providing its customers with access

⁴ MassDOT I-90 Allston Interchange Improvement Project DEIR

⁵ MassDOT, Allston Early Action Transit Study, Nov 2018 with Data from Boston Planning and Development Agency

⁶ MassDOT South Station Expansion DEIR

to safe and comfortable healthy transportation options, such as walking and bicycling, at MassDOT facilities ⁷.

D.1. Interchange Ramps



Cambridge Street

The intersection of the I-90 ramps with Cambridge Street and SFR is severely congested throughout the morning and the afternoon peak periods. The LOS at the intersection of Cambridge Street and SFR is currently rated LOS F. Substandard geometry, five entry legs, complicated signal phasing and high vehicular demands are all contributing factors to the operations deficiencies at this location.

D.2. Substandard Width

Non-motorized use of the Charles River Reservation is significant and the PDW Path is heavily used by pedestrians and bicyclists, including approximately 1,000+ pedestrian and bicycle trips per day⁸. Many of these users are using the path to commute to and from work. Sections of the PDW Path lack adequate width for shared pedestrian/bicycle use. Multi-use paths, such as the PDW Path, place people walking on the same paths as those cycling. The existing PDW Path is 8 ft. wide within the Project Area. The FHWA recommends a two-directional multi-use path be at least 10 ft. wide, and in certain conditions, such as paths that are heavily used by pedestrians and bicyclists, it is more appropriate for them to be 12 ft. to 14 ft. wide⁹.

D.3. Access to Charles River Reservation

Access to usable parkland within the Charles River Reservation is limited. The I-90 highway/railroad transportation corridor and the former BPY facilities are a barrier between neighborhoods in Allston,



PDW Path

Brookline, Brighton and Boston University to the Charles River Reservation and the PDW Path. The height and position of the existing I-90 viaduct impede connectivity from existing residential neighborhoods to the Charles River Reservation. Pedestrians and bicyclists wishing to access the PDW Path from these areas must use a circuitous route on local roadways that can double their trip lengths and expose them to potential conflicts with motor vehicles. Providing more direct north-south pedestrian and bicycle connections to

⁷ MassDOT's Healthy Transportation Policy Directive (2013) https://nacto.org/wp-content/uploads/2015/06/MassDOT_Healthy-Transportation-Policy-Directive_09.09.13.pdf

⁸ Charles River Basin Pedestrian and Bicycle Study: Non-Motorized Bridge & Pathway User Counts, January 2015.

⁹ FHWA The Walking Environment: Shared Use Paths <https://safety.fhwa.dot.gov/saferjourney1/Library/countermeasures/08.htm>

the PDW Path will enhance safety and encourage greater use of these sustainable modes of transportation in the future.

In addition, neighborhoods in Allston/Brighton, Brookline and Cambridge each lie within one-half mile of the Project Area. The City of Boston Open Space and Recreation Plan 2015-2021 identifies the Allston/Brighton neighborhood as containing fewer acres of protected open space per 1,000 residents compared to city averages. The Open Space Plan identifies Allston as lacking in usable open space and anticipates an increasing need for such open space as the neighborhood develops further.

D.4. Multimodal Transportation Access

The I-90 interchange serves the economy of a much larger area, which is defined here as the three-county region of Norfolk, Suffolk and Middlesex Counties. This three-county area contains between 83% and 100% of all trip ends served by the interchange. The region encompasses almost 2.5 million jobs, which have grown by 12% over the period between 2001 and 2015. The Project Area is situated at a pivotal location surrounded by growing neighborhoods, including North Allston and portions of Allston and Brighton, and universities.

Several regional and local planning documents have been prepared which outline projected development within this area. Examples include the following:

- Placemaking Report, I-90 Allston Interchange Improvement Project, Boston Planning and Redevelopment Agency, October 2016;
- Harvard University Institutional Master Plan for Harvard University's Campus in Allston, July 2013, revised October 2013;
- Boston University Charles River Campus 2013-2023 Institutional Master Plan, January 17, 2013;
- North Allston-Brighton Community-Wide Plan (CWP), Boston Redevelopment Authority, 2008-2009, and others.

These planning documents illustrate the potential for a large, new mixed-use district in North Allston facilitated by a multimodal network of streets, paths, bus, rail and transit facilities providing improved connectivity for pedestrians, bicyclists and transit users. The existing layout of the interchange consists of recently vacated sprawling railyards and I-90 aligned to accommodate toll booths which no longer exist. These elements impede multimodal access within the Project Area to adjacent neighborhoods, institutions, and businesses. In addition, the Project would not preclude potential future development within the Project Area.

2.3 Project Purpose

The purpose of the Project is to address roadway deficiencies and address safety issues of I-90 mainline and I-90 interchange 18, 19, and 20 in Allston, Massachusetts ("I-90 Interchange"). The Project would also provide improved rail infrastructure and improve mobility and multimodal transportation access within the Project Area. Specifically, the purpose of the Project will:

- A. Address Roadway Deficiencies: Replace the I-90 viaduct and reconfigure the I-90 Interchange.*
The I-90 viaduct needs to be replaced due to structural deficiencies and increasing maintenance frequency and cost. Layout and geometric elements within the I-90 mainline and interchange require upgrading due to non-conforming geometry and obsolete design. Addressing the deficiencies of the viaduct should include an improvement to the visual quality of the neighborhood.

- B. *Address Safety Issues: Reconfigure the I-90 Interchange, including the viaduct.* Roadway design issues and the current configuration likely contribute to higher-than-average crash rates on both the I-90 viaduct and mainline, and the I-90 Interchange.

- C. *Provide Rail Improvements: Reconfigure transit and commuter rail facilities, including the construction of a new West Station and infrastructure supporting mid-day commuter rail operations.* Obsolete infrastructure contributes to transit and rail operation issues. Projected increases in ridership demonstrate the need for a new West Station. The Project would not preclude future intercity rail service and transit service on the GJR line.

- D. *Improve Mobility and Transportation Access within the Project Area.* Level of Service issues contribute to substantial delays in the I-90 Interchange area. The Project would provide or allow for connections from the Allston, Brighton, Brookline, and Boston University neighborhoods to the Charles River Reservation, and upgrade the PDW Path to provide a two-way pedestrian and bicycle facility. Land use planning efforts in the area illustrate the potential for a large, new mixed-use district in North Allston facilitated by a multimodal network of streets, paths, rail and transit facilities within the Project Area. The Project would not preclude multimodal transportation access within the Project Area.

3.0 Alternatives

1. What alternatives are currently being considered?
2. What alternatives are proposed for dismissal from further evaluation?

3.1 Introduction

The alternatives analysis is an integral part of the NEPA process. A description of the NEPA preliminary alternatives can be found in Section 3.2, and discussion of screening of the preliminary alternatives can be found in Section 3.3. The alternatives analysis process began in 2014 with the development of the Environmental Notification Form (ENF) during the MEPA review process for the Project. MassDOT worked with the Project Task Force and the public at large to develop conceptual alternatives. Eight Task Force meetings and two public information meetings were held throughout 2014 to present information to the Task Force and the public regarding the Project and potential conceptual alternatives. Evaluation criteria were developed to aid in the evaluation of each conceptual alternative. This iterative process tested a variety of interchange components and alignments. Notice of Availability for the ENF was published in November 2014 for public review.

The MEPA Draft Environmental Impact Report (DEIR) further refined and modified concepts for the layout and design of the interchange, rail layover and West Station, as well as the “Throat Area” of the Project, the relatively narrow existing multi-modal section where the I-90 viaduct is situated between the Charles River and BU (see Figure 2). MEPA published the Notice of Availability for the DEIR on December 6, 2017, providing a 45-day comment period for the public which concluded on January 19, 2018. The public submitted over 575 comment letters on the DEIR. While this document does not intend to fully summarize all public comments received on the DEIR, several overarching themes were identified. These themes include the following common public sentiments:

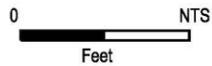
- Support for a pedestrian and bicycle bridge extending northward from Harry Agganis Way adjacent to Nickerson Field.
- Lack of support for the Highway Viaduct variation within the Throat Area as it fails to address concerns that the height and position of the existing I-90 viaduct is a barrier between the Allston community and the Charles River.
- Lack of support for an elevated rail variation within the Throat Area as it will result in inferior open space and less flexibility within this already constrained portion of the interchange.

After publication of the DEIR, the Secretary of Transportation convened an Independent Review Team (IRT) to further evaluate the design variations for the Throat Area. The IRT evaluated and modified each Throat Area variation described in the DEIR and documented their findings in an October 2018 technical report¹⁰. The preliminary alternatives described below (Section 3.2) are advanced into the NEPA public scoping process for evaluation. Any new/modified alternatives identified during scoping will be evaluated against the purpose and need for the Project as well as the criteria described below (see Section 3.3). At the conclusion of the scoping process, a Scoping Summary Report will be prepared to respond to public comments received on this Scoping Report and identify alternatives that will be considered in the DEIS. The public and agencies are invited to provide comment on the Project alternatives and screening process presented in this report as part of the scoping process.

¹⁰ Independent Review Team. (2018). I-90 Allston Intermodal Project Technical Report. Prepared for Massachusetts Department of Transportation. https://www.mass.gov/files/documents/2018/10/15/I-90-IRT-Executive-Summary-20181012_0.pdf



I-90 Allston Multimodal Project
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**Throat Area
Figure 2**

3.2 Preliminary Alternatives

3.2.1 No Build

The No Build alternative consists of frequent and continuous preservation activities, such as safety and maintenance improvements, to maintain continuing operation of the existing interchange. Under the No Build alternative, there would be no significant changes to the existing rail yard or WML operations.

MassDOT would continue to use the existing tracks, as of by right, for layover of commuter trains within the MBTA easement, needing only minor modifications to the yard leads. Existing tracks within the easement would support the layover of up to eight train sets (locomotive and up to nine passenger coaches) on four tracks per the easement agreement which deeded area within BPY to the MBTA during a series of transactions that transferred the underlying land to Harvard. Electric plug-ins for locomotives would be installed to limit engine idling in conformance with regulatory agreements.

The No Build would not include West Station and would not provide a multimodal West Station connection, or any of the station's associated bicycle, pedestrian, and transit connections. This alternative would not address safety concerns within the interchange, would not improve mobility including multimodal mobility, and would not provide improved transportation access to the Charles River Reservation as outlined in the Project's purpose and need (see Section 2). While the No Build alternative does not meet the purpose and need of the Project, it is an important element of the environmental review process. Review of the No Build alternative is required in the NEPA review process and serves as a baseline against which the impacts of other alternatives can be compared.

3.2.2 Major Rehabilitation and Replacement

The Major Rehabilitation and Replacement alternative includes major rehabilitation of the existing I-90 viaduct. This alternative would upgrade the viaduct's original limited design load capacity to current structural capacity requirements. The scope of work under this alternative would include a superstructure replacement with rehabilitation of the substructure. The bridge deck and steel stringers would be replaced, the steel cross girder pier caps will be repaired, and the concrete columns and foundations would be repaired. Rehabilitation of the viaduct superstructure would result in similar lane and shoulder widths as the existing condition. A slight increase in the travel way width would be achieved with new bridge railing and median barrier, and elimination of the existing safety walks.

The Major Rehabilitation and Replacement alternative, like the No Build, would not realign the highway, would not realign SFR, would not reconfigure the interchange, and would not support full multimodal access through a future West Station. As in the DEIR rail concepts (see Section 3.2.3), West Station would be located along the existing WML tracks on the southern edge of the site roughly between Malvern Street and Babcock Street, with the layover located in the yard area to the north of West Station. Under this arrangement, there would be two WML tracks maintaining an alignment that supports existing 79 mile per hour maximum design speeds through BPY, two GJR tracks, three platforms, and walk-up access for pedestrians to access station platforms on the south side. The layover yard would include four tracks for eight layover train sets and access via a lead track from the GJR. Such an arrangement would favor maintaining and expanding service along the WML, and universal flexibility among the WML, layover yard, and GJR tracks for rail operations. As in the DEIR concept, there would not be direct roadway access to air rights development south of I-90, with access presumed to originate north of the highway via elevated structures above the highway. The I-90 viaduct, remaining north of the layover yard, would continue to impede multimodal access and connectivity. West Station would be built with walk-up

access for pedestrians to access station platforms from the south only. There would be bus connections to the south with a concourse transitway connecting to Malvern Street. Bus connectivity to the north and with Harvard, Central and Kendall Squares would not be provided. There would be limited connections to the existing interchange and street network. (See Figures 3-4)

3.2.3 3L Re-Alignment with Options

The 3L Re-alignment alternative (See Figure 5) is a modification of the 3K alternative described in the MEPA DEIR.

Within the interchange area, the noteworthy changes that have been proposed since the development of the 3K alternative include the following:

- Enhancing the proposed bicycle/pedestrian connection from West Station to Commonwealth Avenue via Malvern Street by enlarging the proposed structure to accommodate transit bus use.
- Restoring the SFR westbound off-ramp to Cambridge Street/River Street to provide a single lane ramp that will primarily serve the right turn movement to Cambridge (left turns will be prohibited).
- Removing the North Connector Road (SFR to Stadium Way), which will shift traffic destined for the I-90 ramps from the development area north of Cambridge Street to Cambridge Street and a new roadway within the BPY to be constructed by MassDOT (Hotel Way) that is closer to the I-90 ramps.
- Removing the West Connector, reducing the number of signalized intersections on Cambridge Street to six and maintaining the number of signalized intersections on the northerly collector-distributor ramp to two.
- Grade separating Cambridge Street South and Stadium Way Connector (Stadium Way Connector will pass under Cambridge Street South). Grade separation will improve bicycle/pedestrian connectivity and safety between the community and the Charles River Reservation (elimination of traffic signal delays and vehicular conflicts) and improve traffic flow along the Cambridge Street South corridor (elimination of potential congestion associated with “short blocks”).

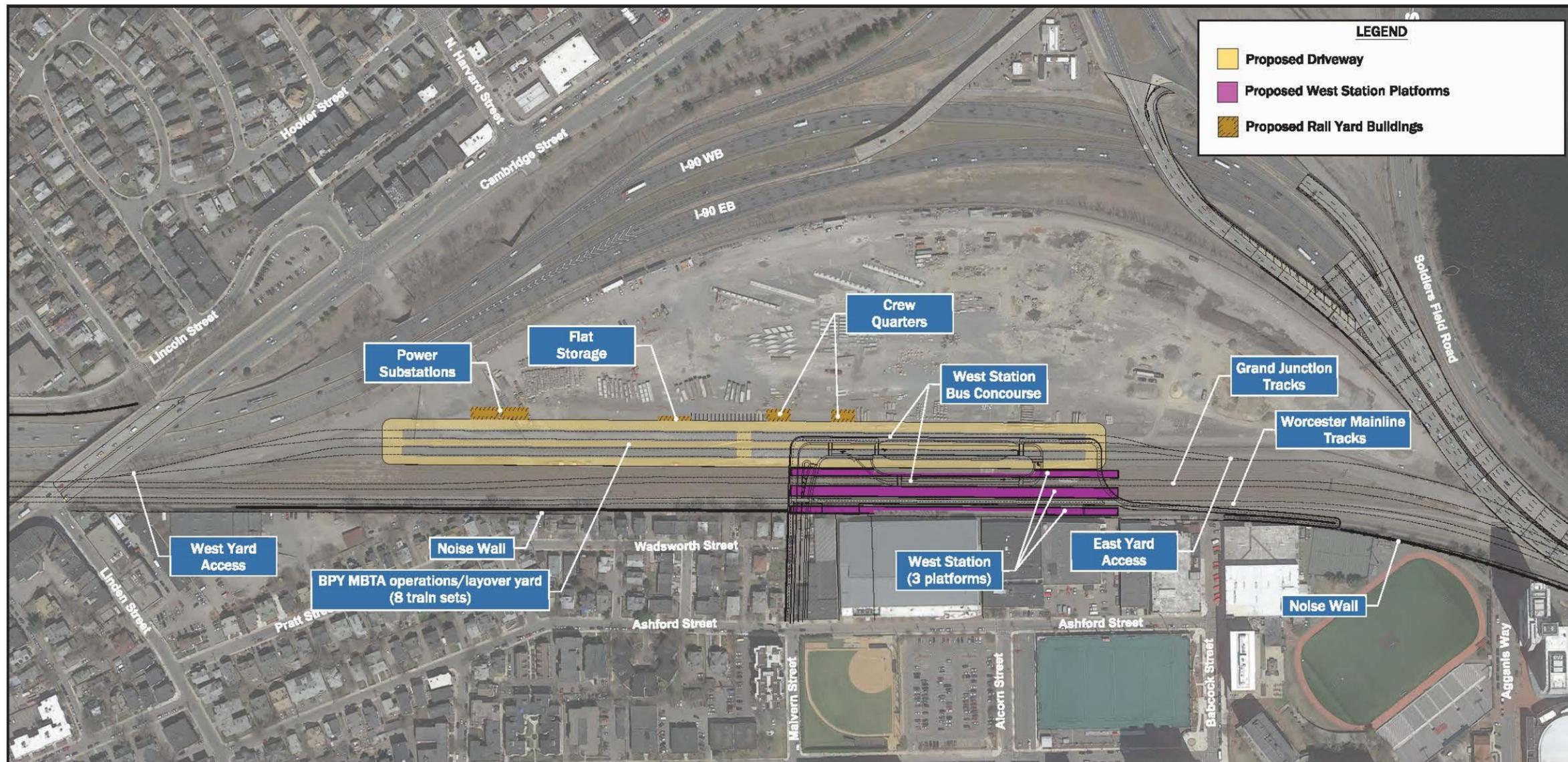
Within the proposed interchange, the I-90 mainline would consist of three travel lanes and shoulders in each direction and widen to four travel lanes and shoulders outside of the interchange. A split diamond, urban style interchange would be constructed. The major elements of this alternative include the following:

- I-90 Urban Interchange
- Dedicated Pedestrian and Bicycle Infrastructure
- SFR Realignment
- Rail Operations and West Station
- Options: The 3L Re-alignment alternative includes options for the following features of the Project Area
 - Throat Area Options
 - West Station and Railroad Alignment Options



Allston Multimodal Project
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Major Rehabilitation and Replacement Alternative
Figure 3



I-90 Urban Interchange. The section of the I-90 Interchange west of the Charles River would be realigned to the south of its existing location. The removal of grade-separated ramps at Cambridge Street and replacement with an urban street grid will allow for the reconstruction of Cambridge Street as a “Complete Street”¹¹.

Dedicated Pedestrian and Bicycle Infrastructure. The Project would provide extensive bicycle and pedestrian infrastructure improvements including the creation of new connections to SFR and the replacement of the existing Franklin Street bridge over I-90 with a new pedestrian and bicycle bridge. The new pedestrian and bicycle bridge would meet Americans with Disabilities Act/Massachusetts Architectural Access Board (ADA/AAB) requirements and maintain connections from the Franklin Street/Lincoln Street area to Cambridge Street.



Extensive pedestrian and bicycle improvements are an important component of this Project

SFR Realignment. A major component of this alternative would be realigning SFR to provide more open space along the river and the PDW Path. This would allow for separate bicycle and pedestrian paths along the river, a new bicycle and pedestrian connection to the river from Cambridge Street South that spans SFR over a depressed structural “boat section,” and new on- and off- ramps to and from the proposed urban street grid.

Rail Operations and West Station. The rail layover yard would be reconfigured to help meet existing and future MBTA commuter rail layover needs west of South Station. The facility would be located within the MBTA Easement

Area within BPY deeded to the MBTA during the series of transactions that transferred the underlying land to Harvard. The 3L Re-alignment alternative maintains the MBTA’s perpetual deeded rights to use and maintain layover tracks that accommodate eight train sets in the final Build condition with West Station in place. In addition, a new multi-modal transit station is proposed for construction within BPY in a location less than 1 mile east of the new Boston Landing Station, 1.3 miles west of the Lansdowne Station, and south of the realigned I-90. A description of geometric layout options for West Station, including rail operations along the WML, is provided below.

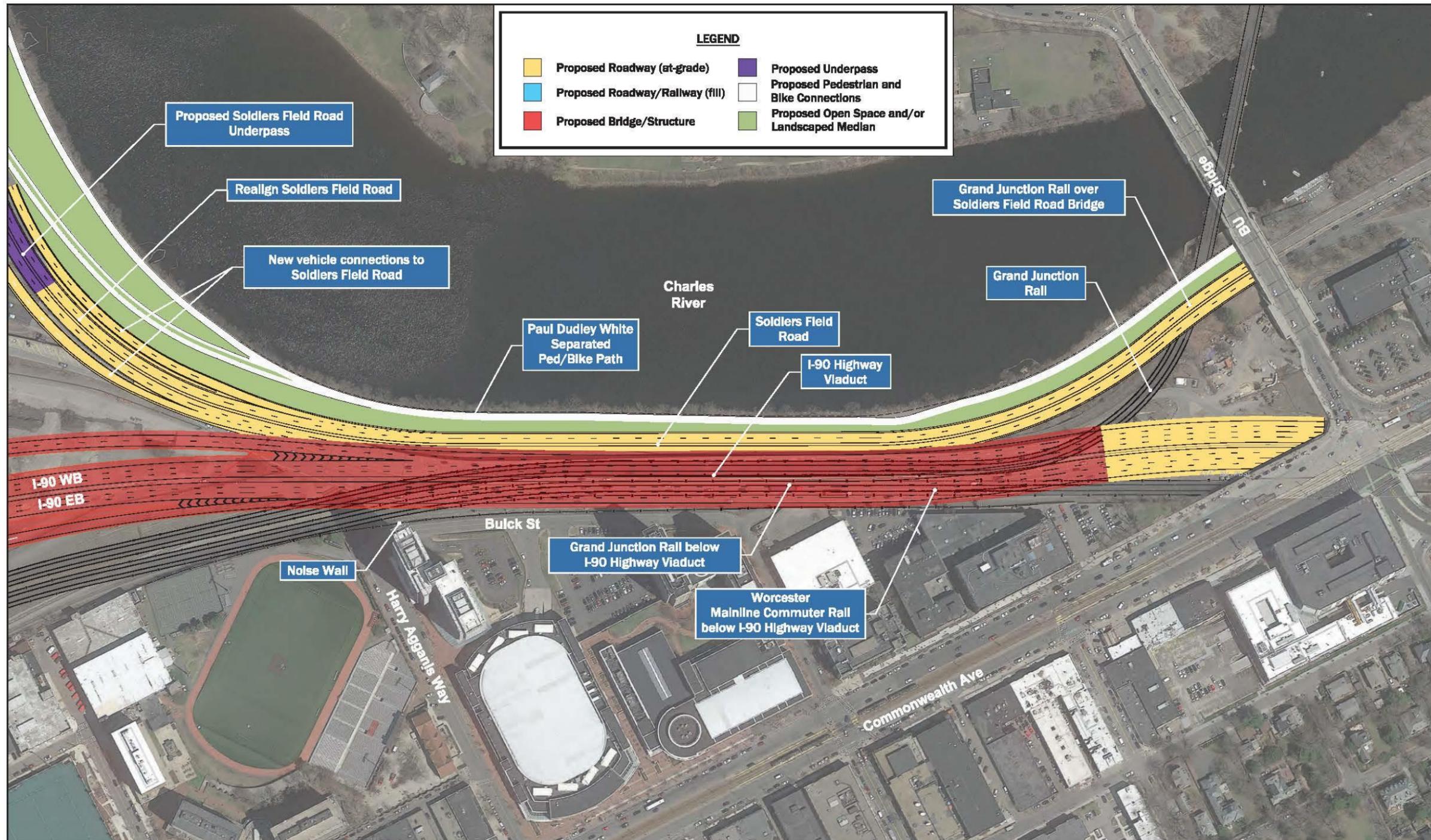
Options. The 3L Re-alignment alternative includes two infrastructure elements with proposed design and layout options. These elements include the Throat Area, which consists of the existing I-90 viaduct, and West Station, a proposed commuter rail station hub to be built south of the former BPY.

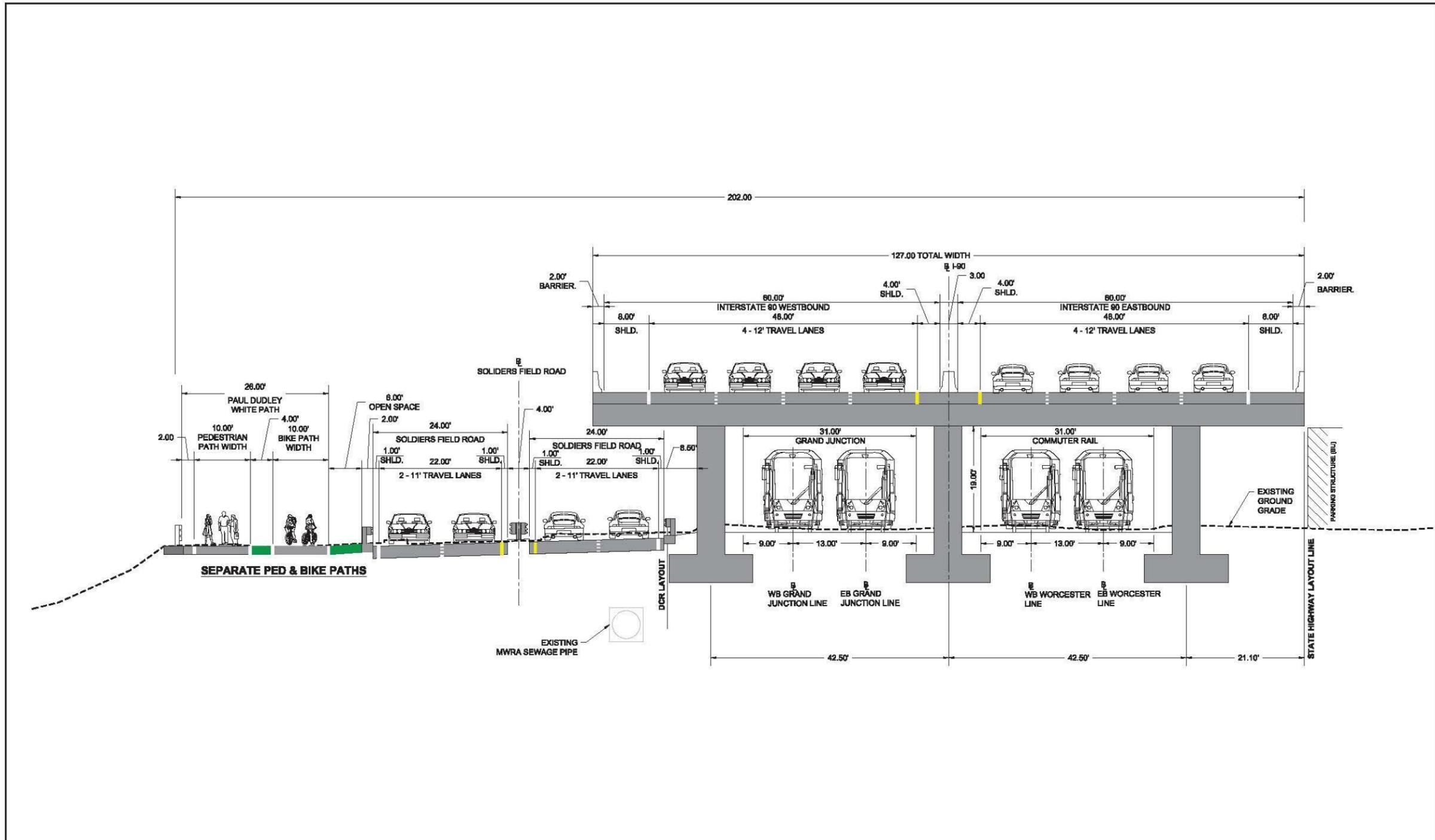
¹¹ “Complete Streets are streets designed and operated to enable safe use and support mobility for all users. Those include people of all ages and abilities, regardless of whether they are travelling as drivers, pedestrians, bicyclists, or public transportation riders.” U.S. Department of Transportation <https://www.transportation.gov/mission/health/complete-streets>

1. The Throat Area. The area southeast of the interchange along the Charles River - known as the Throat Area - would be reconstructed in the 3L Re-alignment alternative. Three Throat Area options are currently being considered. The options are differentiated by how I-90, the WML and GJR tracks, and SFR are structurally accommodated horizontally and vertically – by retained fill sections, depressed sections with retaining walls, or elevated viaduct. These options include:

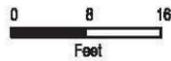
- **The Highway Viaduct (HV) Option.** The highway viaduct option of the Throat includes a new I-90 elevated structure to replace the existing structure and all other transportation infrastructure remains at-grade (See Figures 6-7).
 - **Geometry.** The WML and GJR tracks remain at-grade close to their existing horizontal alignments. The existing Grand Junction bridge over SFR remains unimpacted. The MBTA commuter rail lines remain at-grade located closely adjacent to the existing right of way line with Boston University to the south. Switch connections between the commuter rail tracks and GJR tracks remain at-grade and provide the maximum cross-over flexibility to access the proposed rail yard and West Station platforms from the east.

The shoulder width of I-90 is improved, but not to standard width. SFR is reconstructed to its existing lane and shoulder width dimensions on an alignment shifted towards the viaduct to increase open space adjacent to the Charles River. The PDW Path is widened to a 12-foot section.
 - **Utilities.** The HV option retains the existing pump station at the viaduct's easterly abutment and does not require relocation of any major utilities.
 - **Construction Staging.** Temporary widening of the permanent elevated structure may be required to facilitate construction of the permanent I-90 elevated structure in stages while maintaining three travel lanes in both directions. SFR traffic and PDW Path are maintained at all times, shifting in location while the permanent infrastructure is constructed. Two track MBTA commuter rail service will be reduced to single track during some construction stages and intermittent closures of the Grand Junction service would be required to allow for minor track horizontal and vertical realignments.





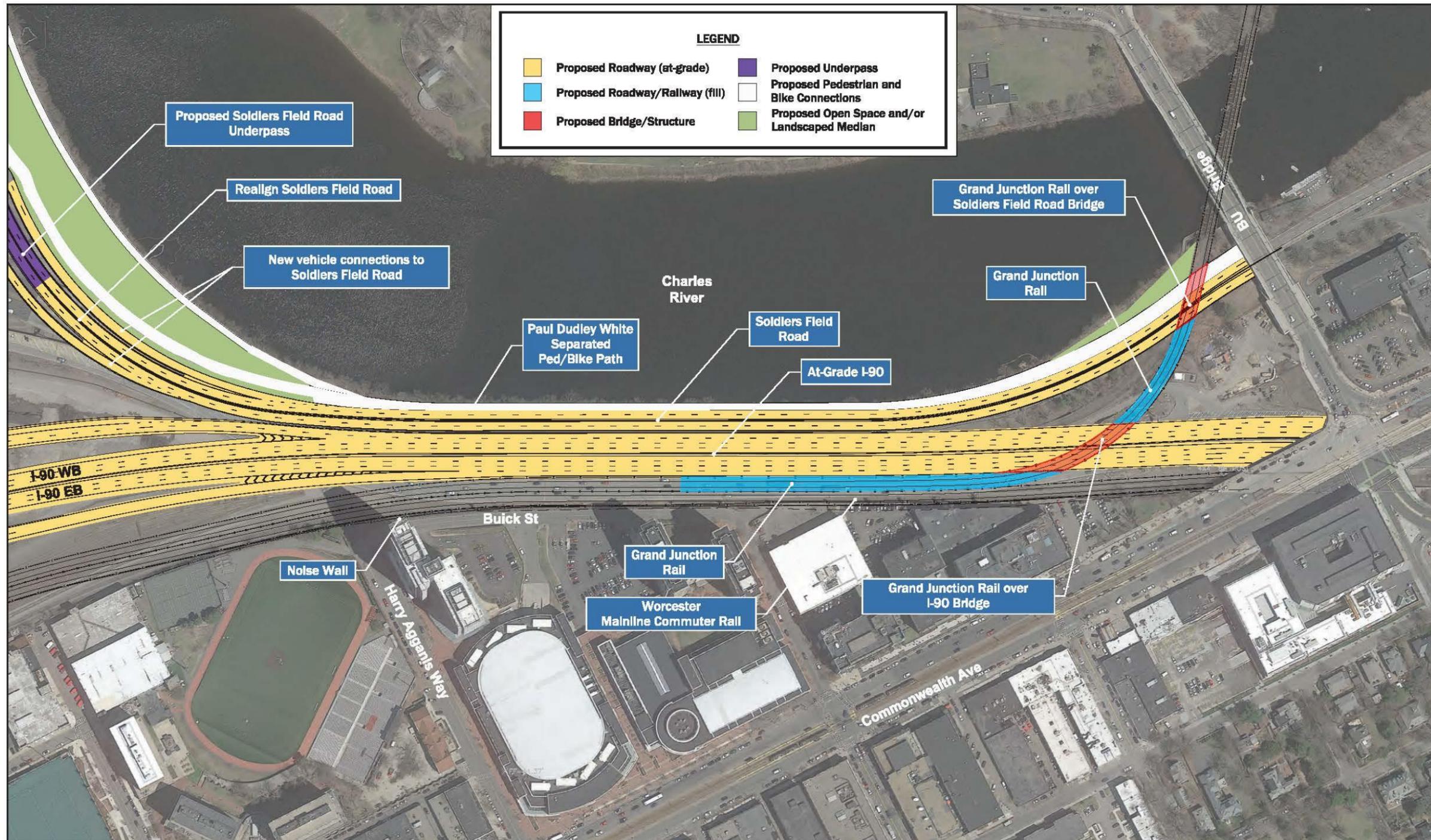
I-90 Allston Multimodal Project
Allston, Massachusetts



3L Re-Alignment Alternative
Highway Viaduct Throat Area Cross Section
Figure 7

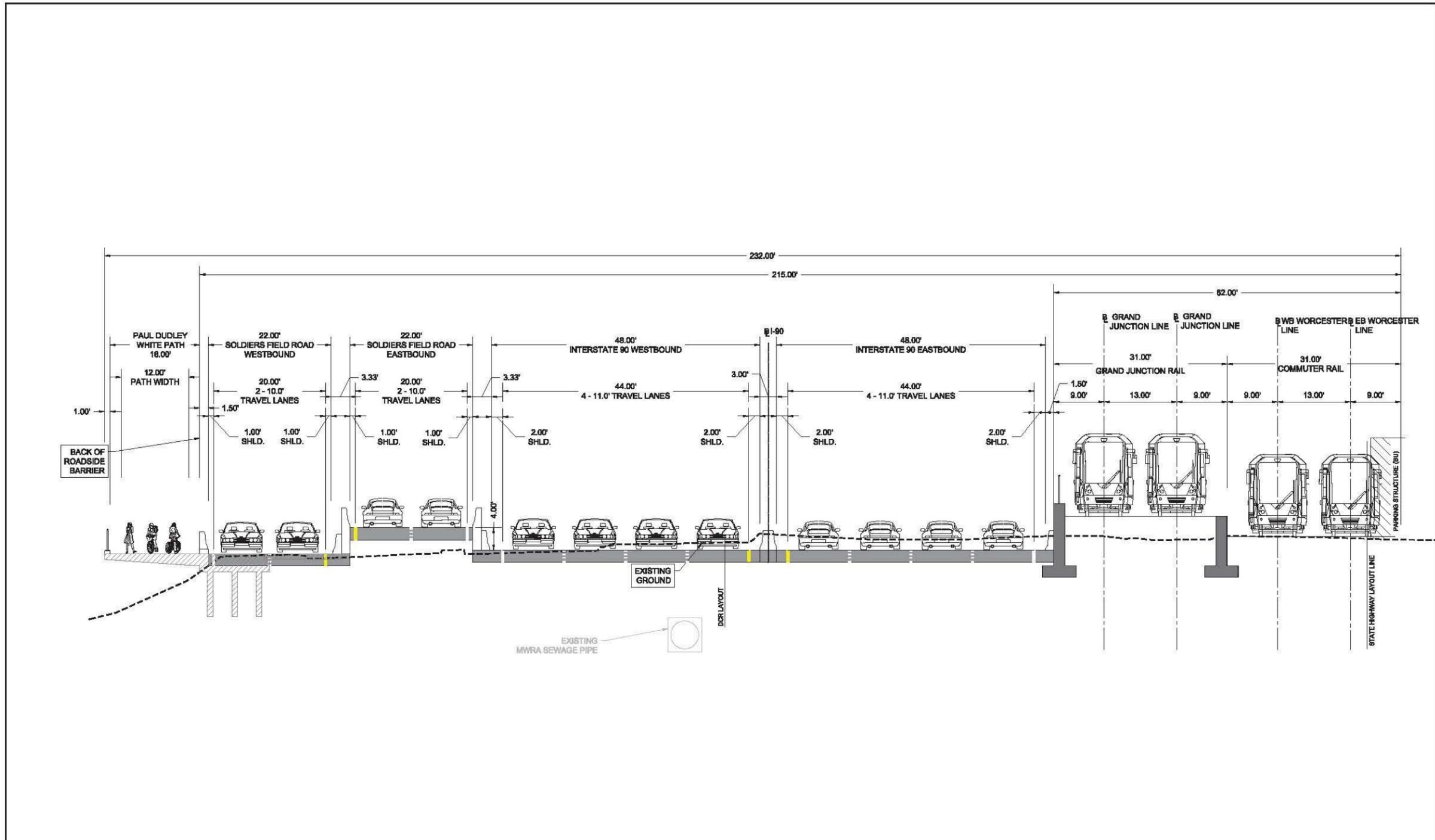
The At-Grade Option. The At-Grade option proposes to reconstruct I-90 at-grade/below grade to eliminate the viaduct and retain all other transportation infrastructure at-grade, with the exception of a length of GJR track as it passes over I-90 and SFR after rising in elevation in a parallel alignment (See Figures 8-9). This alternative does not expand green space within the Throat Area.

- *Geometry.* Both directions of I-90 are reconstructed at-grade and partially below-grade in depressed structural sections with retaining walls to be low enough in elevation to accommodate the profile of the proposed overpassing GJR structure. This option also requires replacement of the Grand Junction bridge over SFR to enable the railroad profile to meet the fixed elevation of the railroad bridge that crosses the Charles River. Most of the lengths of the WML tracks and the GJR tracks do not follow the same profiles in the Throat Area, limiting cross over capability to only the westerly end of the Throat and diminishing operational flexibility. The PDW Path would be 12-foot-wide on a cantilevered structure for approximately 500 feet in the most constrained location in the Throat Area. In addition, the lane widths of reconstructed SFR are reduced from the existing 11-foot widths to 10-foot widths to minimize river encroachment. The travel lane widths of I-90 are also reduced in width from 12 feet to 11 feet and shoulders are 2-foot-wide. In addition, approximately 7 feet of Boston University property are taken to provide enough width to reconstruct the infrastructure at-grade.
- *Utilities.* The MassDOT pump station under the existing viaduct at the easterly abutment will need to be reconstructed in a different location. Because a portion of I-90 is in a depressed section and below the water table, highway runoff will need to be pumped. The BWSC 60" storm drain that crosses the Throat east to west in the vicinity of the Commonwealth Avenue Overpass is also gravity-dependent and must be lowered in elevation to cross the depressed I-90 section. This constraint requires construction of a syphon or new BWSC pump station. This major utility relocation requires jacking pits to advance the new pipes under active transportation lines.
- *Construction Staging.* Construction staging for the At-Grade option has some similar characteristics to the staging for the SFR Hybrid option. Reconstructing the GJR tracks from their existing at-grade location to an elevated structure in combination with space constraints in the Throat Area requires suspension of GJR service for a majority of the construction duration. Commuter rail service on the WML would also be reduced during certain stages. Also, the temporary relocation of SFR into the Charles River on a temporary trestle, similar to what is proposed for the SFR Hybrid option (below), would likely be required to maintain SFR and the PDW Path and provide temporary I-90 at-grade alignments during removal of the existing highway viaduct and construction of permanent at-grade highway and elevated GJR alignments.

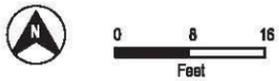


Allston Multimodal Project
 Allston, Massachusetts

**3L Re-Alignment Alternative
 At-Grade Throat Area Option Plan
 Figure 8**

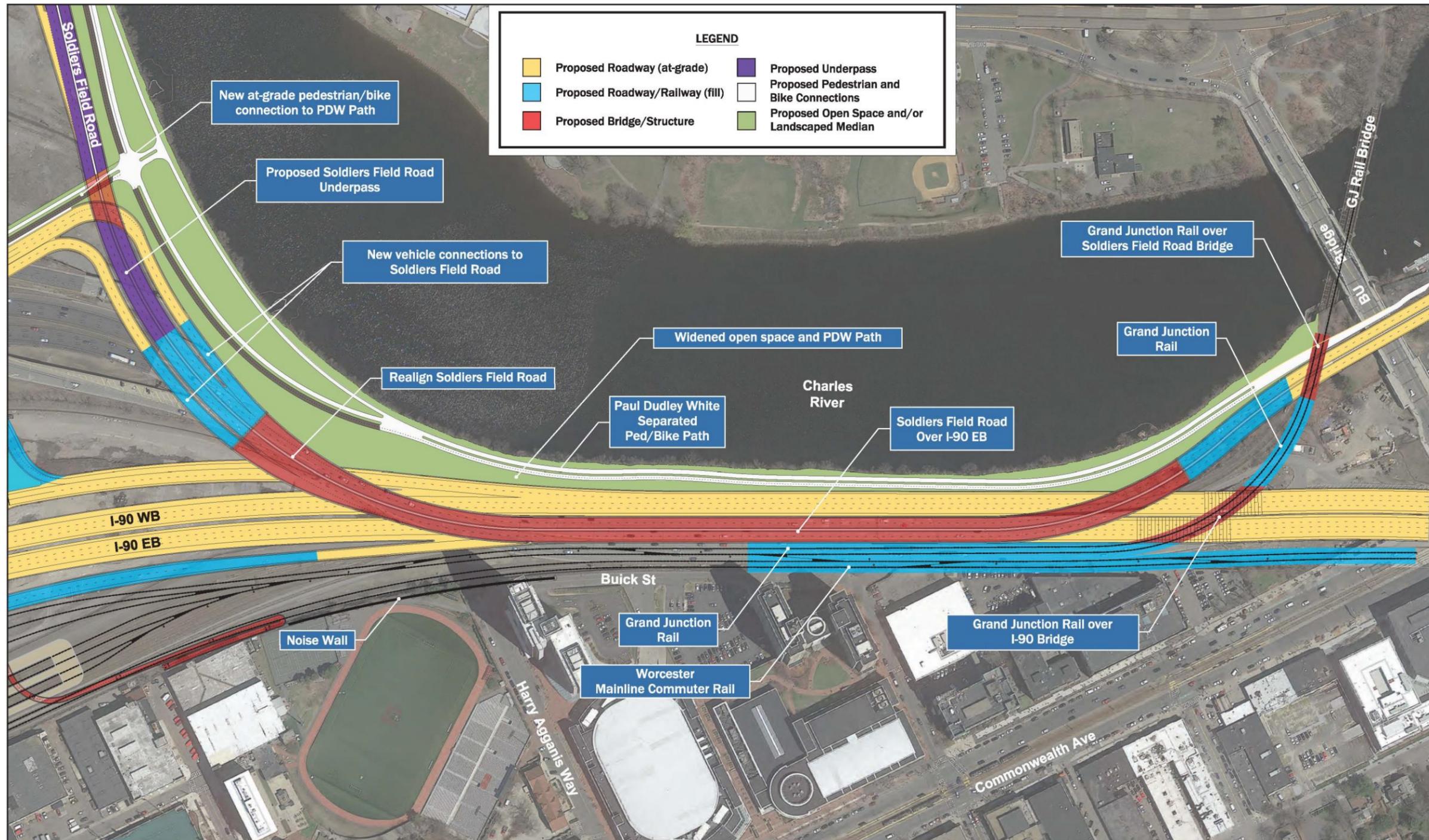


I-90 Allston Multimodal Project
Allston, Massachusetts



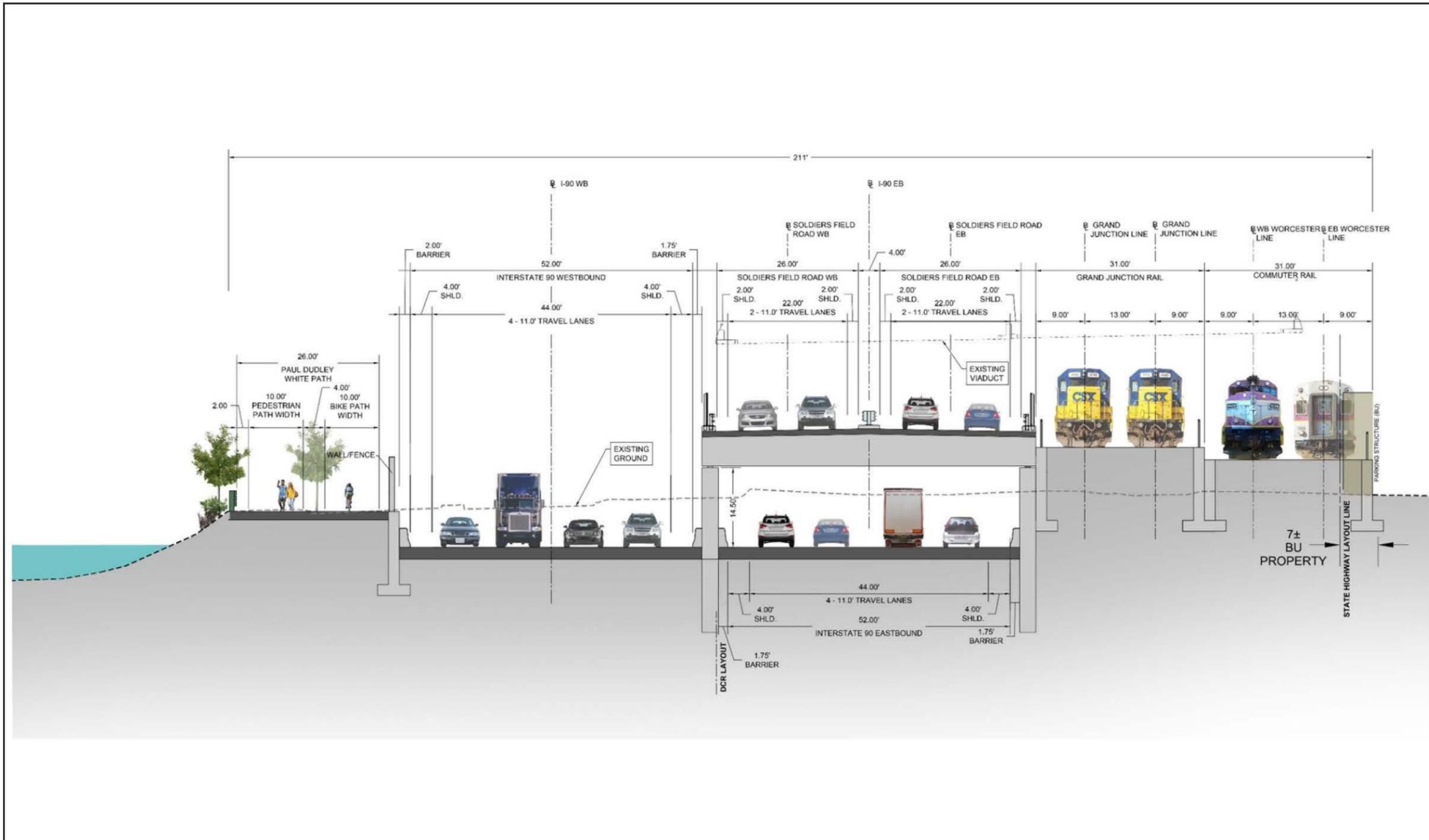
**3L Re-Alignment Alternative
At-Grade Throat Area Option Cross Section
Figure 9**

- *The Soldiers Field Road Hybrid (SFR Hybrid) Option.* The SFR Hybrid option elevates SFR above an at-grade / below-grade four-lane section of the I-90 eastbound travel lanes and shoulders. Because the Throat is too narrow to construct all transportation infrastructure at-grade without permanent encroachment into the Charles River, this option proposes to elevate SFR over I-90 as a means of avoiding that impact (See Figures 10-11). This arrangement is in comparison to I-90 being elevated over the railroad tracks as it is under existing conditions and in the HV option.
 - *Geometry.* Both directions of I-90 need to be reconstructed partially below-grade in depressed structural sections with retaining walls to be low enough in elevation to accommodate the profiles of proposed overpassing SFR and railroad structures. The two GJR tracks rise in elevation from an at-grade elevation near West Station, transition to retained fill and then to an elevated viaduct that passes over both directions of I-90 before passing over SFR on a new structure. The two WML tracks that partially parallel the alignment of the GJR tracks follow the same transitional profile as Grand Junction to accommodate switch operations at the same elevations between the two lines. East of the switches, the WML tracks descend in elevation from the retained fill section to an at-grade section just west of Buick Street. Again, these structurally retained and elevated structures for the railroad tracks are in comparison to I-90 being elevated over the rail lines as it is under existing conditions and the HV option. The PDW Path remains at-grade, providing separate paths for bicycle and pedestrian uses. This option opens almost 20' of new park space adjacent to the Charles River.
 - *Utilities.* Depressing I-90 impacts existing utilities and consequently, extensive utility relocations are required. The existing 60" MWRA water main that crosses the Throat north-south must be relocated to a deeper alignment passing under the depressed I-90 section. The 60" MWRA sewer line that runs north-south for the length of the Throat Area must be relocated out of the I-90 footprint, but because it is gravity-dependent, the profile cannot change. Consequently, the sewer must be relocated close by and parallel to the proposed I-90 depressed alignment within the created open space. Similar to the At-Grade option, the BWSC 60" storm drain must be lowered in and requires construction of a syphon or new BWSC pump station. These major utility relocations require jacking pits to advance the new pipes under active transportation lines. In addition, the MassDOT pump station under the existing viaduct at the easterly abutment must be reconstructed in a different location. Because the I-90 section is below-grade and in the water table, pavement drainage must also be pumped.
 - *Construction Staging.* Because I-90 is proposed at- or below-grade, the GJR tracks must follow a parallel alignment to I-90 as they rise from an at-grade elevation to an elevation high enough to pass over I-90. With the WML tracks also at-grade or on retained fill, insufficient space remains available within the Throat to temporarily shift travel lanes or railroad tracks out of the way to enable construction to proceed and still maintain operation of travel lanes and rail service. Consequently, a temporary trestle for SFR is proposed in the Charles River along the Boston edge, thereby freeing-up space to shift I-90 travel lanes out of the way of construction. Rail service on the GJR line may be suspended for the duration of construction due to the significant change from at-grade infrastructure to elevated infrastructure and the construction staging to build it.



I-90 Allston Multimodal Project
Allston, Massachusetts

**3L Re-Alignment Alternative
SFR Hybrid Throat Area Option Plan
Figure 10**



I-90 Allston Multimodal Project
Allston, Massachusetts

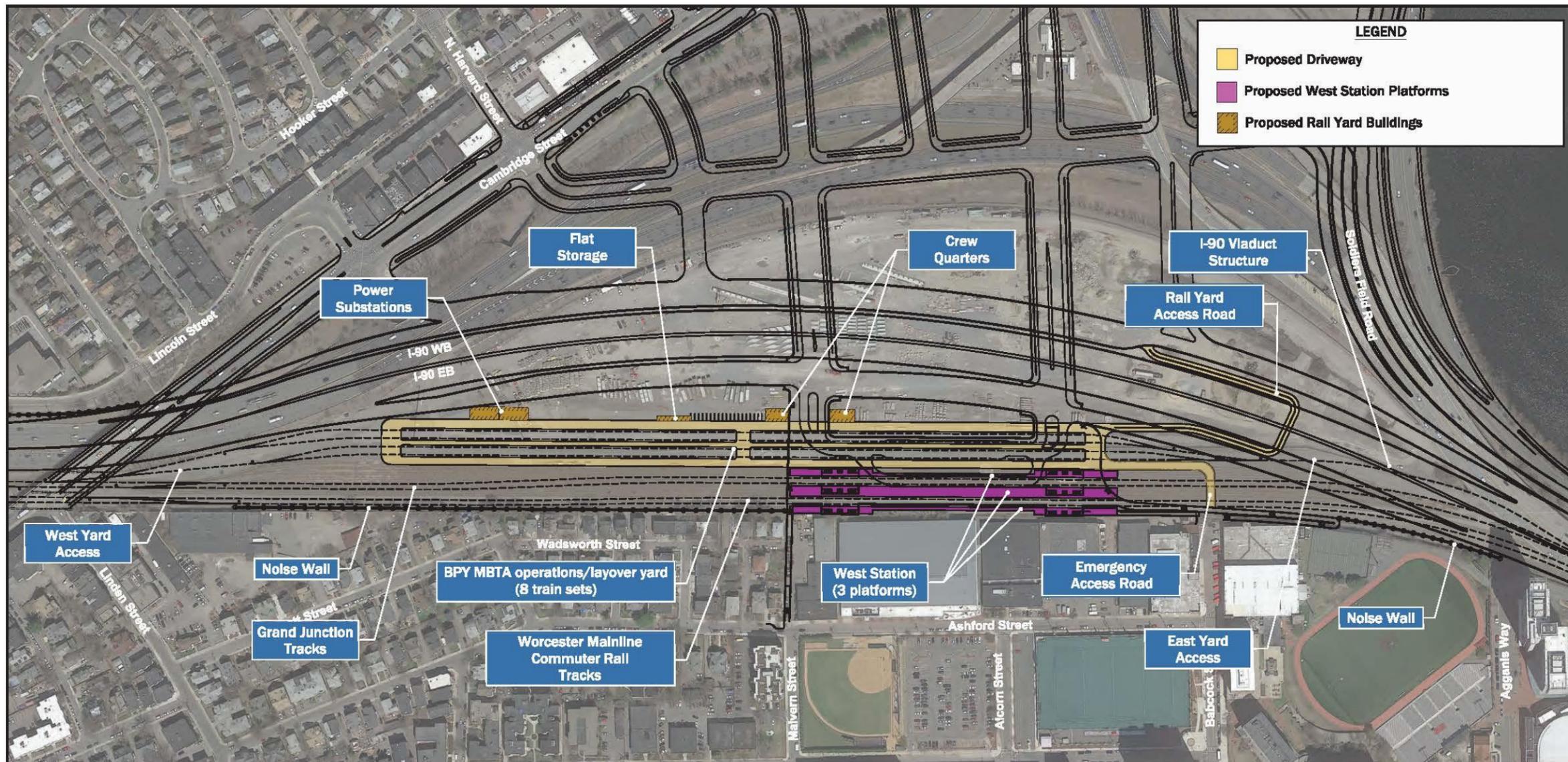


3L Re-Alignment Alternative
SFR Hybrid Throat Area Option Cross Section
Figure 11

Commuter rail service on the WML is also impacted due to the space constraints of construction and one of the two tracks would require closure for up to half the duration of construction. Construction staging for this option will necessarily require more time than other Throat options to move major utilities, construct the temporary trestle, and then sequentially construct the proposed railroad, interstate, and parkway infrastructure.

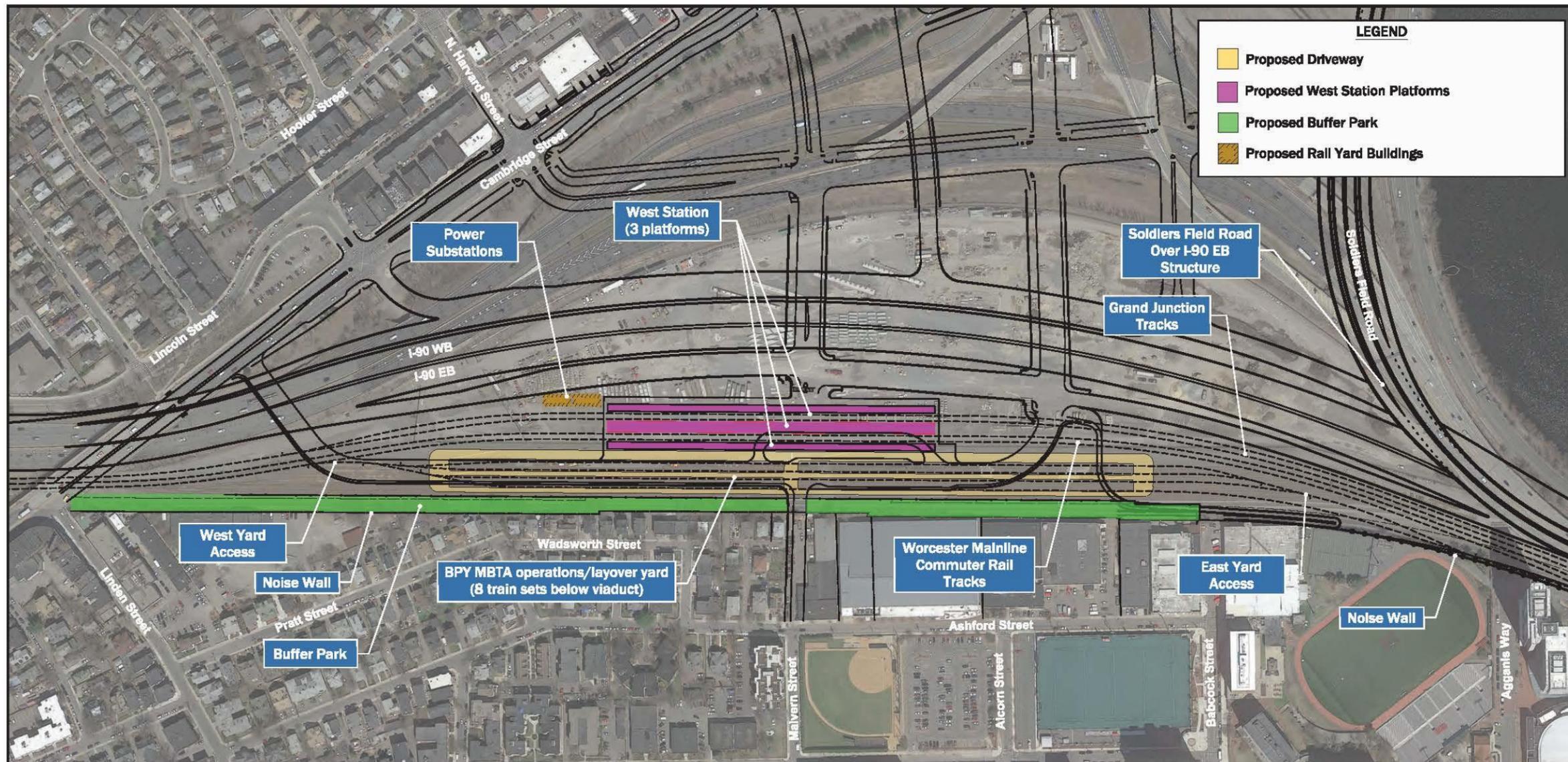
2. West Station and BPY Layover. Three design options were advanced during preliminary planning of the I-90 Allston Multimodal Project. Each of the station options would provide a new West Station with access to the WML tracks and provision of layover space. These station concepts were developed in conjunction with the broader I-90 interchange alternatives. The options described below have been developed as part of the 3L Re-alignment alternative. Slight modifications to the track layout and the design would be incorporated as part of the various Throat Area highway alignment options. The major components of and differences between these West Station options are described below. The continued use of the BPY for rail layover is granted by right in the 2003 easement agreement. The configuration of the layover yard is influenced by the Project alternatives and Throat options as well as the West Station design options as described below.

- *DEIR Layout Option.* The DEIR included a multimodal West Station located along the existing WML tracks on the southern edge of the site roughly between Malvern Street and Babcock Street, with the layover yard located in the yard area to the north of West Station (See Figure 12). Under this arrangement, there would be two WML tracks maintaining an alignment that supports existing 79 mile per hour maximum design speeds through BPY, two GJR tracks, three platforms, and walk-up access from the south for pedestrians to access station platforms. The layover yard would include four tracks to accommodate eight layover train sets and access via a lead track from the GJR. Bus access to West Station would be from a bus loop spurred from the highway interchange, while pedestrian access would be south via at grade paths from Malvern Street and Babcock Street, and north via sidewalks along the bus loop. Such an arrangement would favor maintaining and expanding service along the WML, and near universal flexibility among the WML, layover yard, and GJR tracks for rail operations. The DEIR concept did not include direct roadway access to air rights development south of I-90.
- *Flip Layout Option.* Since the publication of the DEIR, additional designs for West Station have been proposed, and MassDOT continues to refine rail facilities details. Harvard University conceived a design concept known as the “Flip,” that would position West Station to the north side of BPY and the layover yard to the south side of the station, opening up further air rights development potential east of West Station and introducing a Cambridge Street bypass for access to anticipated air rights development throughout the site (See Figure 13). The Flip would include two WML tracks that divert to the north from the existing alignment resulting in a reduction in design speeds to 49 mile per hour. The Flip provides two GJR tracks and three island platforms but would not provide at-grade walk-up access for pedestrians from the neighborhoods to the south as the DEIR option would. The layover yard would include four tracks for eight layover train sets, but access would be from a yard lead branched from the main line instead of from the GJR per the DEIR alternative alignments.



I-90 Allston Multimodal Project
Allston, Massachusetts

3L Re-Alignment Alternative
DEIR West Station and Rail Layout Option
Figure 12



Bus access would continue to be available from the new I-90 interchange and points north as well as from the proposed Cambridge Street Bypass. The Flip would include a roadway connection to the south from West Station for buses only via Malvern Street. Pedestrian access would be provided at Malvern Street and Babcock Street, connecting to points north via the interchange area grid, and west via the Cambridge Street bypass or a new path from a new bicycle and pedestrian bridge over I-90 from Franklin Street along an approximately 35-foot-wide strip of land carved out of the exiting WML alignment. This layout would provide for future robust GJR service but would reduce operating speeds and increase travel time for many WML riders. It would also limit operational flexibility between WML, layover, and GJR because the geometric constraints presented by the layout prevents some crossover moves contained in the DEIR option. This alternative also requires the limited freight movements along this line to cross over mainline tracks on each side of the yard, introducing freight/commuter rail conflicts that can be avoided with other station layouts.

The Flip would provide opportunities for and access to air rights development, additional space on the south side of the layover yard with additional bicycle and pedestrian accommodations, as compared to the DEIR alternatives. The Flip would result in slower WML speeds and be more limiting to WML operations as layover moves are made along and across mainline tracks.

Modified Flip Layout Option. MassDOT refined the Flip concept to optimize and balance goals of both the landowner (Harvard University) and the operator (MBTA), resulting in a West Station option now called the “Modified Flip.” The Modified Flip would include the WML rail operational benefits of the DEIR option, while incorporating key elements of the Flip. Like the original Flip, the Modified Flip locates West Station to the north side of BPY, with bus access available from the new interchange and points north as well as from a future Cambridge Street Bypass. The Modified Flip would also provide the transitway connection to Malvern Street and anticipate construction of the Cambridge Street bypass all to the benefit of future access to air rights development. The Modified Flip provides three station tracks and two platforms serving both WML and potential Grand Junction passenger service. The Modified Flip maintains two ‘express’ tracks kept along the existing right-of-way, which allows commuter rail and Amtrak trains to bypass West Station for express services. Unlike the Flip, the Modified Flip could be designed to meet or exceed the existing 79 mile per hour Maximum Allowable Speed established under current rule.

The Modified Flip positions a four-track layover yard to the south of West Station, with the lead track into the yard developed from the West Station commuter rail track, leaving the express tracks and Grand Junction tracks largely unimpacted by yard moves. The Modified Flip layout is consistent with the Massachusetts Turnpike Authority/Harvard Easement Agreement, which provided for perpetual and irrevocable rights to use the MBTA Easement Area for main line and layover uses consistent with MBTA’s operating procedures. The Modified Flip maintains the WML track alignment and the layover tracks entirely within the MBTA Easement area. Because the Modified Flip maintains railroad service on the existing tracks (south of the layover yard), it does not provide the buffer park that was proposed by Harvard in the original Flip concept.

As in the DEIR concept, the Modified Flip layout would offer universal flexibility among the WML, layover yard and GJR, while balancing prospective future GJR service with expansion of high-speed intercity service and express commuter rail service along the WML. By incorporating the Flip’s Cambridge Street bypass and general layout with West Station north of the layover yard, the Modified Flip would open up further air rights development east of West Station and access to

air rights development throughout the site to satisfy the technical feasibility and economic viability established by the landowner. The Modified Flip would integrate the beneficial rail features and layout presented in the DEIR with the original Flip. (See Figure 14)

3.3 Alternatives Suggested for Dismissal from Further Evaluation

Alternative development and screening are based primarily on the Project's purpose and need. An alternative must fully meet the Project purpose and address the needs described in Section 2 to be deemed suitable. An alternative that only partially meets the Project's purpose and need is considered unsuitable and is suggested for dismissal from further evaluation. If a preliminary alternative fully meets the Project purpose and need, secondary screening criteria are used to evaluate the reasonability of the preliminary alternative. An alternative that fully meets the Project purpose and need as well as the secondary screening criteria is deemed reasonable and will be explored further in the DEIS. Secondary screening criteria include construction logistics and feasibility, potential environmental impacts, traffic operations, rail operations, as well as cost and schedule constraints.

Construction Logistics and Feasibility

- *Is the alternative feasible to construct with existing technologies?*

Environmental Impacts

- *Does the alternative cause excessive permanent environmental impacts to natural resources when compared to other alternatives?*

Traffic Operations

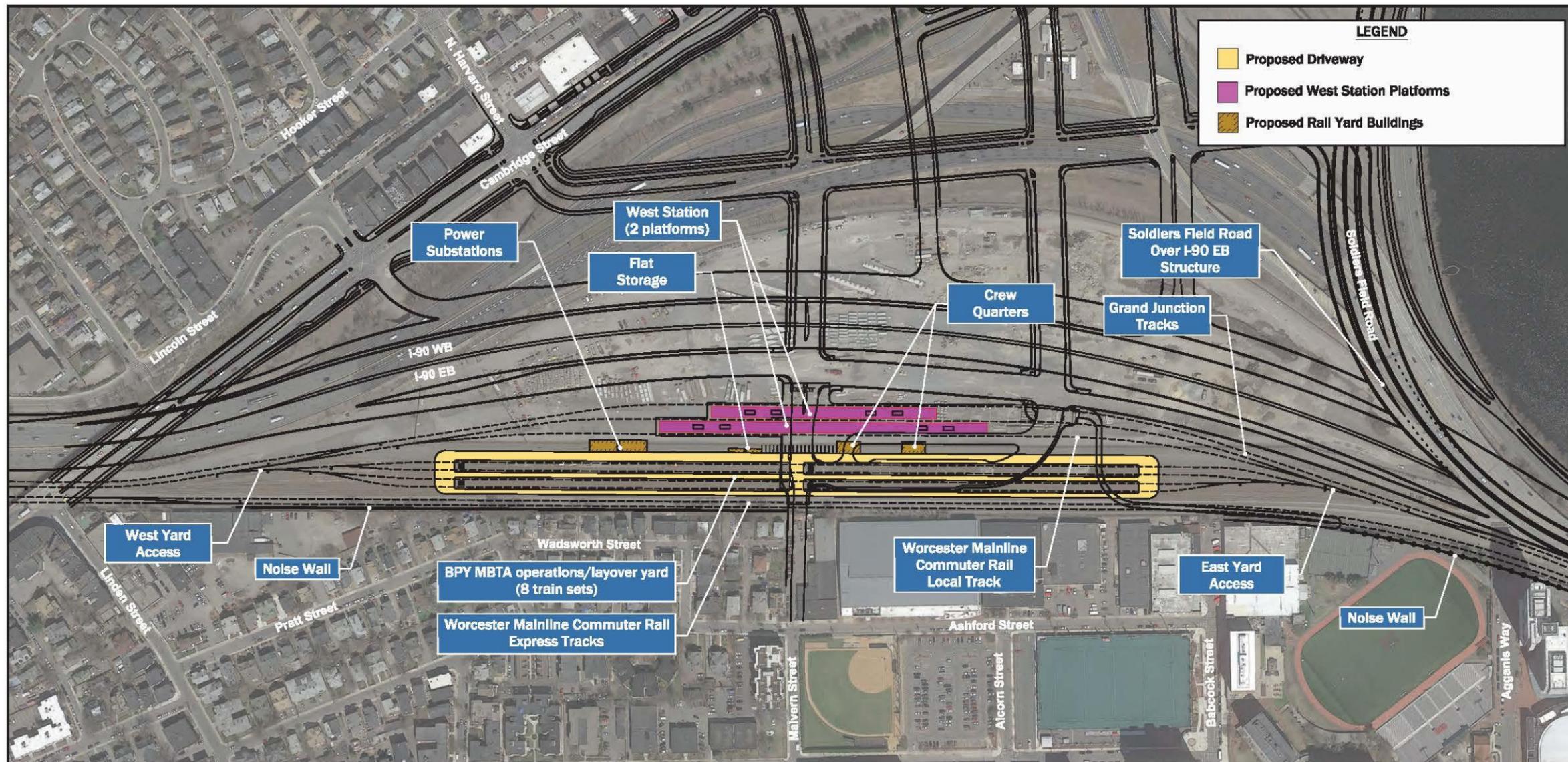
- *Does the alternative adversely impact travel times within the Project Area due to congested conditions on existing or proposed roadways, or at existing or proposed intersections?*
- *Does the alternative result in worse Level of Service at existing or proposed intersections, or long vehicular queues that impact operations at adjacent intersections?*

Rail Operations

- *Does the alternative support local and regional multi-modal (pedestrian, bicycle, bus, passenger vehicle, and transit) access to a future West Station?*
- *Does the alternative support the rail operation needs of MBTA including providing operational flexibility between WML, layover, and GJR?*

Cost and Schedule

- *Does the alternative require an unreasonably high cost compared to other alternatives?*
- *Does the alternative require an unreasonably complicated or lengthy project schedule?*



In summary, categories of alternative screening criteria include:

- Ability to Meet Purpose and Need
- Roadway Deficiencies
- Safety
- Mobility
- Charles River Reservation Access
- Construction Logistics and Feasibility
- Environmental Impacts
- Traffic Operations
- Rail Operations
- Cost and Schedule

It is the goal of MassDOT and FHWA to eventually select a preferred alternative that best meets the Project's purpose and need while also balancing constructability concerns, environmental impacts, traffic operations, rail operations, as well as cost and schedule requirements of the Project. The preliminary alternatives have been evaluated based on their ability to meet the screening criteria described above. The following alternatives and options are suggested for dismissal during the scoping process and will not be further evaluated in the DEIS.

3.3.1 Major Rehabilitation and Replacement Alternative

The Major Rehabilitation and Replacement Alternative (Section 3.2.2) would address the structural deficiencies of the viaduct as outlined in the Project's purpose and need (Section 2). However, it does not address these deficiencies while improving the visual quality of the neighborhood. The height and position of the viaduct would continue to impede opportunities for the public in neighborhoods in Allston, Brighton, Brookline, and BU to access the Charles River Reservation. This alternative would not address other existing deficiencies within the Project Area including substandard highway layout and geometry, excessive queuing along the ramps, or safety concerns on I-90 and at the intersection of Cambridge Street and SFR. This alternative would nominally improve mobility within the Project Area with the addition of West Station but does not provide any improved access to the Charles River Reservation and has limited bus connectivity. This alternative addresses one aspect of the Project's need but does not address any of the other existing deficiencies within the Project Area. ***The Major Rehabilitation and Replacement alternative only partially meets the Project's purpose and need and is therefore suggested for dismissal from further evaluation.***

3.3.2 3L Realignment: Highway Viaduct Option

The 3L Re-alignment alternative with the Highway Viaduct Option in the Throat Area of the Project only partially meets the purpose and need (Section 2). The purpose of the Project includes providing or allowing for connections from the Allston, Brighton, Brookline, and Boston University neighborhoods to the Charles River Reservation as well as addressing deficiencies of the viaduct which should include improving the visual quality of the neighborhood. A highway viaduct would continue to act as a barrier for Boston University and the Brookline neighborhood, and the height and position of a highway viaduct will continue to impede access to the Charles River Reservation. The highway viaduct option does not reduce visual impacts for surrounding neighborhoods. Further, as described in Section 3.1 of this document, public comment on the MEPA DEIR indicated there was a lack of support for the Highway Viaduct option in the Throat Area as it would continue to act as a barrier between the Allston community and the Charles River. ***The Highway Viaduct option in the Throat only partially meets the purpose and need. Therefore, the Highway Viaduct throat option is suggested for dismissal from further evaluation.***

3.3.3 3L Realignment: At-Grade Throat Option

The 3L Re-alignment alternative with the At-Grade option would align all modes (all lanes of I-90, SFR, the commuter rail, and GJR freight) at-grade side by side through the Throat, and therefore, would present a wider cross section within the Throat Area when compared to other options (the SFR Hybrid and the Highway Viaduct). The PDW Path would be placed on a 17' wide cantilever wall or structure over the Charles River. The PDW would be approximately 12' wide. Over 4,000 square feet land under water and over 600 linear feet of bank would be permanently impacted as a result of the At-Grade option. Among the options, this option would create the least amount of new public open space and would not provide a landscape buffer between the PDW Path and SFR within the Throat Area.

A purpose of the Project (see Section 2) includes improving transportation access to the Charles River Reservation by providing or allowing for non-motorized connections from the Allston, Brighton, Brookline, and Boston University neighborhoods to the Charles River Reservation. The At-Grade Throat option does not allow for connections from these neighborhoods to the Charles River Reservation due to the limited space along the reservation for ramping touch down areas that would be required. Therefore, the At-Grade option does not meet the purpose and need of the Project.

The Project's need specifically describes the lack of adequate pedestrian and bicycle facilities within the Project Area and notes the existing PDW Path is too narrow to accommodate the heavy multi-use traffic using the path every day. Any at-grade layout, including the one proposed, cannot address these concerns within the Throat without causing permanent impacts to the Charles River. As described above, excessive permanent impacts to natural resources has been established as a screening criterion during alternatives analysis. An at-grade layout would require approval of permanent impacts to the Charles River beyond the fill required for outfall construction. This approval would be difficult to obtain from the permitting authorities when other reasonable alternatives exist for the Project that do not require permanent impacts to the Charles River to this extent. The remaining Throat options do not require permanently impacting the Charles River beyond minor impacts due to outfall construction. Therefore, this option does not meet the environmental impacts criterion as it results in relatively high permanent impacts to natural resources.

Because the At-Grade Throat Option does not fully meet the purpose and need and also causes excessive permanent impacts to natural resources, the At-Grade Throat option is suggested for dismissal from further evaluation.

3.3.4 3L Realignment: MEPA DEIR West Station and Rail Layout Option

The DEIR presented a multimodal West Station located along the existing WML tracks on the southern edge of the site roughly between Malvern Street and Babcock Street, with the layover yard located in the yard area to the north of West Station. This option does not meet local planning objectives as outlined by the City of Boston and described in Section 2 of this document. Specifically, the DEIR rail layout limited air rights development and access to anticipated development throughout the Project Area. MassDOT and FHWA recognize the potential for future development and a large, new mixed-use district in North Allston and are committed to a Project that would not preclude potential future development within the Project Area as described in Section 2. ***The DEIR West Station does not fully meet the purpose and need of the Project, nor does it meet local planning objectives. As a result, the DEIR rail layout is suggested for dismissal from further evaluation.***

3.3.5 3L Realignment: Flip West Station and Rail Layout Option

The Flip presented a multimodal West Station positioned to the north side of BPY and the layover yard to the south side, opening further air rights development potential east of West Station and introducing a Cambridge Street bypass for access to anticipated air rights development. While the Flip would provide additional air rights development benefits, and a potential for the creation of an open space buffer path on the south side of the layover yard, it diverts the existing tangential tracks into multiple curved alignments, imposing a civil speed restriction that decreases to a maximum of 49 mph, and increases customer travel times. Alternatively, the Modified Flip maintains two Express tracks along the existing tangential alignment that would allow the MBTA to maintain the existing Maximum Authorized Speed of 79 mph within the Flip concept track limits. Express tracks provide faster and more reliable service and flexibility in operations for both commuter rail and Amtrak intercity movements. Further, under the Flip configuration, layover and freight movements would be redirected along and across the mainline tracks, introducing conflicts on the mainline that could otherwise be avoided. This layout would hamper operational flexibility between WML, layover, and GJR because geometric constraints presented by the Flip layout limit crossover moves. For example, under the Flip, trains cannot move between the Grand Junction tracks at proposed West Station towards a south side destination. Once on the two northerly Grand Junction tracks, all eastbound trains must cross into Cambridge. Likewise, potential future urban rail vehicles originating from the east could not access the Grand Junction tracks at West Station under the original Flip option.

As described above, providing operational flexibility between WML, layover and GJR has been established as a rail operations screening criterion for preliminary alternatives. In addition, local and regional multi-modal (pedestrian, bicycle, bus, passenger vehicle, and transit) access to a future West Station is also a rail operations screening criterion established for preliminary alternatives. The Flip layout features would not adequately address these rail operational deficiencies. **The Flip West Station and Rail Layout option does not provide full operational flexibility when compared to other alternatives and is therefore suggested for dismissal from further evaluation.**

3.3.6 Summary of Alternative Decisions

In summary, the following alternatives are suggested for dismissal from further evaluation as they have not been deemed reasonable per the alternative screening criteria described above (Section 3.3).

- Major Rehabilitation and Replacement Alternative
- 3L Re-alignment Alternative: Highway Viaduct Throat Area Option
- 3L Re-alignment Alternative: At-Grade Throat Area Option
- 3L Re-alignment Alternative: MEPA DEIR West Station and Rail Layout Option
- 3L Re-alignment Alternative: Flip West Station and Rail Layout Option

Alternatives recommended for further study in the DEIS include:

- No Build Alternative
- 3L Re-alignment Alternative with the SFR Hybrid Throat Area and Modified Flip West Station and Rail Layout

The public and agencies are invited to provide comment on the Project alternatives presented in this report as part of the scoping process. At the conclusion of scoping, MassDOT and FHWA will identify those reasonable alternatives that will be carried forward for analysis in the DEIS.

4.0 Environmental Analysis

1. What federal and state regulations will be satisfied with the environmental review?
2. What resource categories and topics will be considered?
3. Which state and federal permits and approvals will be required for the Project?

4.1 Introduction

The environmental analysis of the Project will include qualitative and quantitative assessment of potential impacts for each alternative carried forward into the DEIS. The No Build alternative will also be assessed as an environmental baseline for the analysis. The analysis will consider the significance of potential impacts based on their context and intensity¹². A full range of technical reviews will be conducted as appropriate in compliance with NEPA. Environmental analysis will also consider indirect and cumulative impacts caused by each alternative carried forward into the DEIS.

4.2 Methodology

This document presents the methodologies that will be used to assess the impacts of alternatives, the results of which will be presented in the EIS. This document has been prepared to support collaboration with participating agencies regarding the technical approaches and the level of detail required in the analysis of each alternative for the Project.

The methodologies will be developed to support decision-making relative to highway, rail, and other transportation elements. The proposed methodologies will provide the level of detail necessary to enable participating agencies, reviewing agencies, decision-makers, and the public to understand the range of environmental consequences and trade-offs among the alternatives under consideration. Each resource category presented below includes the regulatory context and methodology to assess the Project's impacts on that resource category. Regulatory context language is directly from FHWA guidance 6640.8a.¹³

Land Use Impacts

Regulatory Context. According to FHWA guidance 6640.8A, this discussion should identify the current development trends and the state and/or local government plans and policies on land use and growth in the area which will be impacted by the proposed project.

Methodology. The Boston GIS Zoning Datalayer and Institutional Master Plans (IMP) will be reviewed in coordination with the regional transportation demand model developed for the Project by the Central Transportation Planning Staff (CTPS). Methodology will also include review of the National Geologic Map Database of Massachusetts published by the U.S. Geological Survey (USGS), Project survey plans, and the MassGIS soil data layer, comparing existing to proposed conditions.

MassDOT will consult with the Metropolitan Area Planning Council (MAPC), Boston Planning and Development Agency (BPDA), Harvard University and CTPS to develop 2040 land use projections for lands controlled by Harvard in Allston. The 2040 projections will be developed by MAPC with input from BPDA and Harvard and will be based upon previous land use projections developed by Harvard for

¹² 40 C.F.R. § 1508.27

¹³ Federal Highway Administration, FHWA Technical Advisory T 6640.8A: Guidance for Preparing and Processing Environmental and Section 4(F) Documents, October 30, 1987, https://www.environment.fhwa.dot.gov/legislation/nepa/guidance_preparing_env_documents.aspx. Accessed August 30, 2019.

planning documents such as its 10-year Institutional Master Plan (IMP) and other zoning and environmental permit filings with the City of Boston.

The 2040 buildout of Harvard's Allston academic campus and the proposed Enterprise Research Campus (ERC), which are located north of the Project Area, is expected to be comprised of approximately 4.7 million square feet of new development. The development will consist of a mix of uses including office or research and development space, academic and residential space, and some retail and other space.

The 2040 build out within the Project Area (former BPY) is projected to be comprised of approximately 3.8 million square feet. This development is expected to occur on terra firma parcels and will also be comprised of a mix of uses including office/research and development space, residential space and some retail space. The environmental consequences assessment will address only those effects that are induced by and attributable to the proposed action.

The total 2040 build-out of Harvard controlled lands within the Project Area, the Allston academic campus and the ERC is anticipated to be approximately 8.5 million square feet (4.7 million square feet for ERC plus 3.8 million square feet for BPY). This development is forecast to create approximately 12,300 new jobs within the study area and increase the number of households in the area by approximately 3,000.

Visual Impacts

Regulatory Context. According to FHWA guidance 6640.8A, the DEIS should state whether the Project alternatives have a potential for visual quality impacts.

Methodology. Photographs will highlight varying site conditions, providing an inventory with which to compare the Project Alternatives. Annotated graphics will show the locations where views will change within the Project Area. Graphics will show plan views and conceptual renderings of the alternatives and variations and provide locations of the cross sections at the narrowest location within the Throat Area.

A shadow study will examine the Throat options at three times of the day on four days of the year. Assumptions will include the following:

- Shadow information will be based on schematic level design work available for each concept.
- Shadow information will be based on roadway elevations and include some representation of barriers but not all railings, snow fences, possible noise walls or other elements are included.
- Shadow information will not include any future real estate development.
- Shadows from existing buildings will be comparable for all concepts.
- Shadow information will be for parkland at the SFR/Charles River edge only: the throat.

Economic Impacts

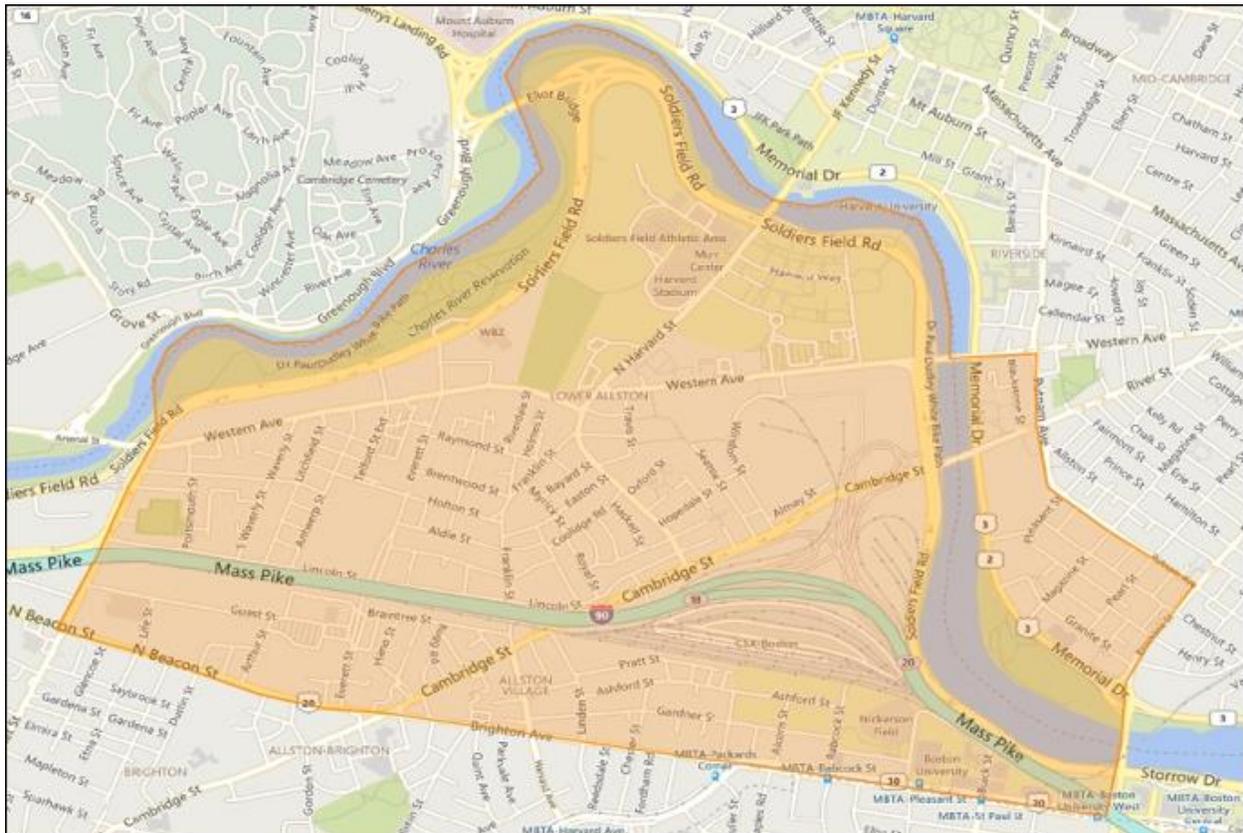
Regulatory Context. According to FHWA guidance 6640.8A, where there are foreseeable economic impacts, the DEIS should discuss the following for each alternative commensurate with the level of impacts:

- a. The economic impacts on the regional and/or local economy such as the effects of the Project on development, tax revenues and public expenditures, employment opportunities, accessibility and retail sales. Where substantial impacts on the economic viability of affected municipalities are likely to occur, they should also be discussed together with a summary of any efforts undertaken and agreements reached for using the transportation investment to support both public and private economic development plans. To the extent possible, this discussion should rely upon results of coordination with and views of affected state, county, and city officials and upon studies

performed under Section 134.

- b. The impacts on the economic vitality of existing highway-related businesses (e.g., gasoline stations, motels, etc.) and the resultant impact, if any, on the local economy. For example, the loss of business or employment resulting from building an alternative on new location bypassing a local community.
- c. Impacts of the proposed action on established business districts, and any opportunities to minimize or reduce such impacts by the public and/or private sectors. This concern is likely to occur on a project that might lead to or support new large commercial development.

Methodology. MassDOT has identified an area surrounding the Project Area where social and economic conditions are most likely to be directly affected by the Project, identified herein as the Local Affected Area. The Local Affected Area was drawn to include key institutional properties of Harvard University and BU, and important development projects such as Boston Landing and Barry’s Corner. This area includes the neighborhoods whose residents and businesses are most affected by the existing interchange configuration, and therefore, will be most likely to be impacted by any changes in access and accessibility as a result of the Project.



Local Affected Area

A multi-criteria economic evaluation will be conducted. The geographic context for this evaluation encompasses the five counties in the CTPS regional model used for this project: Suffolk, Norfolk, Middlesex, Worcester and Essex. Detailed information will be included for Population and Household Characteristics; Education and Occupation; Transportation Characteristics; Housing Characteristics;

Business Profiles; Regional Employment; Employment Sector Changes; Populations Relevant to Environmental Justice Criteria; and Asian Population in the Affected Area.

The economic analysis will recognize how households and businesses can take advantage of lower direct costs of transportation and improvements in travel time and reliability. The major input to this analysis is the annual performance of the transportation system, generated from CTPS' regional travel demand model (TDM). To better understand the impact of the Project, two scenarios will be modeled comparing the 2040 Full Build to No Build alternatives. Assumptions for the Project Build alternatives are as follows:

- *Scenario 1:* 2040 street network without Harvard's development of BPY (i.e., the 2040 Build transportation network with the 2040 No-Build land use assumptions). This scenario will enable a straightforward comparison of the Project's impact on jobs, business output, household incomes and taxes, and user benefits and costs. It will be based strictly on the extent to which the Build scenario changes travel times (accessibility), vehicle miles traveled, and other transportation measures compared to the existing (No Build) street network.
- *Scenario 2:* 2040 street network with Harvard's development of BPY (i.e., the 2040 "Build transportation network with the 2040 Build land use assumptions). This scenario will include additional auto and truck trips that will be generated by new development within BPY and made possible by implementation of the Project. These additional trips will erode some travel time and other transportation benefits impacts of the 2040 Build network but add the economic benefits of BPY development.

A proprietary subscription database will be used to develop social, economic and business profiles of the Local Affected Area. Those profiles then will be compared to the same data for the City of Boston and City of Cambridge. This data will be supplemented with census data and a review of planning documents relevant to development in the Local Affected Area.

Because the Project is likely to have impacts on economic development in the area, an inventory of reasonably foreseeable projects will be compiled from the BPDA's Article 80 Process where development projects are reviewed by the city. A user benefit-cost analysis will also be conducted. User benefit-cost analyses are a commonly used to provide information about the societal value of a project relative to its costs. User benefit-cost analyses do not consider the value of development in the Project footprint or other potential economic development impacts unrelated to changes in travel times, accident reductions, air quality, noise and other quantifiable effects of transportation changes. In addition to economic impacts on the regional economy and benefit-cost analysis, the economic evaluation will identify future tax revenue impacts due to additional economic activity in the region.

Historic and Archaeological Resources

Regulatory Context. Section 106 of the National Historic Preservation Act of 1966 (Section 106) requires federal agencies to take into account the effects of their undertakings on historic properties and to provide the Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment. Federal agencies are also required to consult on the Section 106 process with the State Historic Preservation officer and Tribal Historic Preservation Officers (THPO), Indian Tribes (Tribes) and Native Hawaiian Organizations (NHO). The procedures that define how federal agencies meet these statutory regulations are defined in 36 CFR 800.

In accordance with FHWA guidance 6640.8A, the DEIS will contain a discussion demonstrating that historic and archeological resources have been identified and evaluated in accordance with the requirements of 36 CFR 800.4.

Methodology. The FHWA, as the lead federal agency for the Project, will be responsible for initiating consultation with the Massachusetts State Historic Preservation Officer (MA SHPO). In addition, FHWA will identify appropriate THPOs and other consulting parties and involve them in findings and determinations made during the Section 106 process. FHWA will also provide the public with information on the undertaking and its effects on historic properties and consider any comments they provide.

FHWA, in consultation with the MA SHPO, will establish an Area of Potential Effect (APE) for the project area. The APE, as defined by 36 CFR 800.16 (d)], is "...the geographic area within which the undertaking may cause changes in the character of or use of historic properties, if any such properties exist." FHWA will also seek information from the MA SHPO, THPOs and consulting parties to identify historic properties, including archaeological resources, within the APE and evaluate those properties, in consultation with the MA SHPO, to determine if they are eligible for NR listing. The NR is the official list of the country's historic buildings, districts, sites, structures, and objects worthy of preservation. A property must meet the National Register Criteria for Evaluation to be considered eligible for NR listing.

Project impacts on historic resources will be evaluated and one of three effect determinations will be made by FHWA, in consultation with the MA SHPO: no historic properties affected, no adverse effect on historic properties, or adverse effect on historic properties. An adverse effect is found when an undertaking may alter, either directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

If an adverse effect is found, FHWA will continue consultation to resolve the adverse effect pursuant to 36 CFR 800.6. FHWA will consult with the MA SHPO, THPO, and other consulting parties to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize, or mitigate adverse effects on historic properties. FHWA will also notify the ACHP of the adverse effect finding and invite the ACHP to participate in consultation. If FHWA and the MA SHPO agree on how the adverse effect will be resolved, a memorandum of agreement will be executed. If consultation to resolve the adverse effects is unsuccessful, the procedures in 36 CFR 800.7 will be followed. Projects that result in Section 106 adverse effects also trigger extended reviews under Section 4(f) of the Transportation Act of 1966. Section 4(f) applies to projects that require either a property acquisition from, or that are determined in the Section 106 process to have an adverse effect upon NR-eligible or NR-listed properties. Further detail about Section 4(f) is provided in its own resource category section of this document.

Considerations Relating to Pedestrians and Bicyclists



The existing Franklin Street Bridge pedestrian and bicycle bridge across I-90 provides an important connection between North Allston and Allston Village.

Regulatory Context. According to FHWA guidance 6640.8A, where current pedestrian or bicycle facilities or indications of use are identified, the DEIS should discuss the current and anticipated use of the facilities, the potential impacts of the affected alternatives, and proposed measures, if any, to avoid or reduce adverse impacts to the facility(ies) and its users.

Methodology. The methodology will include figures, photographs, measurements (e.g., slope), plans, perspectives, and sections to demonstrate existing and proposed bicycle and pedestrian facilities, including potential



alignment with relevant local plans. Input from community on local bicycle paths and usage will be included.

Joint Development

Regulatory Context. According to FHWA guidance 6640.8A, where appropriate, the DEIS should identify and discuss those joint development measures which will preserve or enhance an affected community's social, economic, environmental, and visual values. This discussion may be presented separately or combined with the land use and/or social impacts presentations. The benefits to be derived, those who will benefit (communities, social groups, etc.), and the entities responsible for maintaining the measures will be identified.

Methodology. As indicated above, this category will be considered under other categories, including Land Use Impacts, Social Impacts, and Considerations Relating to Pedestrians and Bicyclists.

Social Impacts – Roadway

Regulatory Context. According to FHWA guidance 6640.8A, where there are foreseeable impacts, the DEIS should discuss the following items for each alternative commensurate with the level of impacts and to the extent they are distinguishable. Impacts of alternatives on highway and traffic safety as well as on overall public safety.

Methodology. The future design year traffic volumes that will be used to analyze traffic operations associated with the various alternatives that will be evaluated, including the 2040 No-Build alternative, will be derived from traffic volume data generated by the CTPS regional travel demand model. The CTPS model uses socioeconomic data such as employment, population, households, etc., to forecast future motor vehicle use, transit use and walking/pedestrian use with the region. The CTPS model covers an area in eastern Massachusetts that encompasses 101 cities and towns.

For the 2040 No-Build scenario, the CTPS model will include approximately 4.7 million square feet of development that has been assumed to occur by 2040 within Harvard University's Allston academic campus and Enterprise Research Campus (ERC). For the 2040 Build scenario, the CTPS model will assume an additional 3.8 million square feet of development by Harvard within the Project Area (BPY), for a total assumption of 8.5 million square feet. The development with the BPY by 2040 is assumed to occur on terra firma parcels.

The traffic count data from 2018 will be increased by 0.25% per year to reflect the "existing conditions" analysis year of 2020 to account for traffic growth that may have occurred since those counts were performed. The count also data will be seasonally adjusted to reflect average annual conditions. the 2018 volumes will be seasonally adjusted prior to being increased to 2020. The various traffic analyses that will be undertaken for this study will be performed in accordance with the methodologies set forth in the latest versions of the Highway Capacity Manual (2010 HCM for highway and ramp analyses and the 2000 HCM for intersection analyses).

The crash data to be analyzed for the safety analysis will be from the period of 2015 – 2018, the most recent four-year period available from MassDOT's crash record database. The MassDOT crash data will be augmented by crash records from the City of Boston Police Department (BPD) and Boston Emergency Medical Services (EMS).

Social Impacts – Rail

Methodology. CTPS developed ridership projections and transit vehicle loading forecasts to assess the impacts of the Build alternatives using the CTPS regional travel demand model. The model scenarios included 2040 Design Year alternatives, for both No Build and Build conditions.

The 2040 travel demand forecasts provided by CTPS assume the implementation of several transportation projects by 2040, consistent with the currently adopted Long-Range Transportation Plan (LRTP) of the Boston Region Metropolitan Planning Organization (MPO), Charting Progress to 2040 (2015). Future improvements likely to have the greatest influence within or adjacent to the Project Area include:

- Increased service on the Worcester Main Line (commuter rail)
- Green Line extension to College Avenue and Union Square in Somerville



MBTA commuter train operation north of residences on Wadsworth Street

The 2040 No Build alternative does not include West Station. Also, no significant changes in MBTA bus services within, or adjacent to, the Project Area are expected to occur by 2040 in the No Build alternative.

The 2040 Build alternatives assume the opening of West Station, a new stop on the MBTA's Worcester Line commuter rail service. MassDOT developed a proposed commuter rail schedule that meets the MBTA's Service Delivery Policy of providing at least three morning and four afternoon peak period, peak direction train stops at West Station. The MBTA's service policy also includes provision of 180-minute headways at a minimum during off-peak periods. The model assumes that

some Worcester Line trains will stop at the new Boston Landing Station as well as at West Station. Several commuter rail peak period trains will run express through both stations. Urban rail train service was not incorporated within the ridership model horizon because a future build year has not been determined and service frequency has not been defined.

Air Quality Impacts GHG Emissions and Energy

Regulatory Context. According to FHWA guidance 6640.8A, the DEIS should contain a brief discussion of the transportation-related air quality concerns in the Project Area and a summary of the Project-related carbon monoxide (CO) analysis if such analysis is performed. NEPA documentation should also include a consideration of energy consumption pre- and post- construction. For most projects, the DEIS should discuss in general terms the construction and operational energy requirements and conservation potential of various alternatives under consideration. Direct energy impacts refer to the energy consumed by vehicles using the facility. Indirect impacts include construction energy and such items as the effects of any changes in automobile usage. The alternative's relationship and consistency with a state and/or regional energy plan, if one exists, should also be indicated.

Under the authority of the Clean Air Act, as amended, U.S. Environmental Protection Agency (EPA) established a set of National Ambient Air Quality Standards (NAAQS) for various 'criteria' air pollutants.



These standards are intended to protect the public health and welfare. The Massachusetts ambient air quality standards (MAAQS) are identical to the NAAQS.

Massachusetts, through its State Implementation Plan (SIP), specifies target dates for achieving compliance with the NAAQS and identifies specific emission reduction goals for nonattainment or maintenance areas. The Project's emissions are not explicitly included in the modeling emissions inventory for the Conformity analysis in a conforming Regional Transportation Plan (RTP) or a Transportation Improvement Program (TIP); therefore, preparation of a project level emissions inventory is required.

The Boston area is also designated as a Maintenance Area for CO, having achieved attainment in 1995 after being designated as a Moderate Nonattainment area. Massachusetts is designated as in attainment or unclassifiable for all of the other criteria pollutants, including, NO₂, SO₂, PM₁₀, PM_{2.5}, and Pb. Federally funded or approved projects, except those covered under the transportation conformity rule (U.S. EPA Transportation Conformity Rule (40 CFR 51 Subpart T)), located in nonattainment areas must comply with the U.S. EPA General Conformity Rule (40 CFR 51 Subpart W). Federal Rail Administration (FRA) activities are not covered under transportation conformity; General Conformity regulations apply. Therefore, a regional analysis of project-related direct and indirect emissions is required for purposes of demonstrating compliance with the General Conformity Rules. The General Conformity Determination will be provided in the EIS.

Methodology. The assessment of the existing air quality will be based on review of data for existing and historical air quality conditions, and projections based on local traffic and rail activities in the Study Area.

The methodology will also include existing transportation-related greenhouse gas (GHG) emissions. The primary GHG discussed will be carbon dioxide (CO₂). While there are other GHGs, CO₂ is the predominant contributor to global warming, and emissions can be calculated for CO₂ with readily accessible data.

The air quality study area will be large enough to include all roadway links that will be significantly modified by the Project. The study area for all alternatives includes the I-90 mainline roadway, from approximately the Cambridge Street bridge to the Commonwealth Avenue bridge and Cambridge Street from I-90 to SFR. The study area will also include the proposed West Station and Layover Yard and neighborhood streets to south of the proposed station.

The emissions inventories will include emissions from the diesel locomotives, as well as motor vehicles and intercity buses on roadways in the air quality study area. The motor vehicle and bus emission factors will be calculated using the most recently approved version of U.S. EPA's MOVES computer program (currently Version 2014a). MEPA also requested that ultrafine particulates and diesel particulate matter (DPM) be analyzed in the DEIR. This analysis will be carried into the DEIS. Ultrafine particulates (UFPs) refer to particulate matter that is generally less than 100 nanometers in size. UFPs are emitted from both natural and anthropogenic sources, although the majority comes from fuel combustion such as from motor vehicles and diesel locomotives. Similarly, diesel exhaust is emitted from a broad range of diesel engines, including the on-road diesel engines of trucks, buses and cars and the off-road diesel engines that include locomotives, marine vessels and heavy-duty equipment.

Noise and Vibration Impacts

Regulatory Context. Federal, state and local regulations, policies and ordinances apply to the evaluation of potential noise and vibration effects of the proposed Project. Since the proposed Project would include modification to both highway and rail sources, the policies and procedures for assessing noise and vibration from the FHWA and the FTA will be used to evaluate the existing noise and vibration conditions, assess potential impact and evaluate mitigation.

According to FHWA guidance 6640.8A, the DEIS should contain a summary of the noise analysis including the following for each alternative under detailed study:

- A brief description of noise sensitive areas (residences, businesses, schools, parks, etc.), including information on the number and types of activities which may be affected. This should include developed lands and undeveloped lands for which development is planned, designed, and programmed.
- The extent of the impact (in decibels) at each sensitive area. This includes a comparison of the predicted noise levels with both the FHWA noise abatement criteria and the existing noise levels. (Traffic noise impacts occur when the predicted traffic noise levels approach or exceed the noise abatement criteria or when they substantially exceed the existing noise levels). Where there is a substantial increase in noise levels, the highway agency (HA) should identify the criterion used for defining "substantial increase." Use of a table for this comparison is recommended for clarity.
- Noise abatement measures which have been considered for each impacted area and those measures that are reasonable and feasible and that would "likely" be incorporated into the proposed project. Estimated costs, decibel reductions and height and length of barriers should be shown for all abatement measures.
- Noise impacts for which no prudent solution is reasonably available and the reasons why.

FHWA Noise Regulation and MassDOT Noise Policy

FHWA regulation 23 CFR 772 describes the procedures required for highway noise studies to help protect the public health and welfare, to supply abatement criteria, and to establish the requirements for information to be given to local officials for use in the planning and design of highways that are funded or otherwise subject to FHWA approval. This federal regulation requires MassDOT to have a noise policy that implements the requirements of the regulation.

The MassDOT highway noise policies and procedures apply to all highway construction projects that receive federal aid or are otherwise approved by the FHWA. A Type I project is defined as one that includes construction of a highway on new location, the physical alteration of an existing highway that results in substantial horizontal or vertical alterations, the addition of through-traffic lanes, the addition of auxiliary lanes, the addition or relocation of interchange lanes or ramps, restriping to add through-lane capacity, or substantial alterations to toll plaza, or rest stops.

Substantial vertical alteration is defined as changes to a highway elevation that would expose line-of-sight between a receptor and the traffic noise sources. Substantial horizontal alteration is defined as relocating a highway so that the distance between the highway and the closest receptor is half that of the existing condition. If any portion of a project is determined to be a Type I project, then the entire Project Area is considered a Type I project. A Type II project is a voluntary project that receives federal-aid involving the construction of highway noise barriers on existing highways where there are no capacity improvements. MassDOT has a voluntary Type II Noise Abatement Program which is implemented in accordance with FHWA requirements and as state funding is available.

The proposed Project meets the definition of a Type I highway project due to the introduction of new roadways and horizontal and vertical alterations. The Project study area for the noise assessment generally extends from the Franklin Street bicycle and pedestrian bridge west of the Cambridge Street bridge to the Boston University bridge. Two potential Type II noise barriers on the westbound side of I-90 between Franklin Street and Everett Street and between Everett Street and Market Street, which have been on the MassDOT Type II priority list since 1992, have been included in the noise study to evaluate the feasibility and reasonableness of mitigation. These Type II noise barriers have been included in the

study since they are adjacent to the western Project terminus and the proposed project may facilitate the potential construction of the Type II barriers.

FTA Noise and Vibration Guidance

The FTA has a noise and vibration guidance manual that describes the methods and criteria used to assess potential noise and vibration impacts for mass transit and highway infrastructure improvement projects that are subject to review under NEPA¹⁴. This guidance manual is also used to assess potential impacts of the proposed project in accordance with MEPA. The FTA guidance manual describes the methods to measure, model, assess impact, and recommend mitigation for rail and highway projects.



Boston University noise measurement location

The FHWA highway noise regulation, MassDOT noise policy and FTA guidance manual require that potential noise impact be assessed, including both highway and rail sources. Therefore, cumulative noise conditions including both highway and rail sources are used to characterize the existing conditions. FTA guidance is to assess noise impact according to FTA and/or FHWA noise criteria depending on the contributions of rail and highway noise sources. Since there are substantial both rail and highway sources of noise in the study area, both FTA and FHWA criteria will be applied.

MassDOT Noise Abatement Criteria

FHWA has established Noise Abatement Criteria (NAC) to help protect public health, welfare and livability from excessive vehicle traffic noise. The NAC are considered the upper limit of acceptable highway traffic noise for different types of land use Activity Categories. The NAC focus on levels where highway traffic noise could potentially interfere with speech communication in exterior areas and are used to evaluate whether noise abatement is needed for exterior areas of frequent human use.

Noise receptors are primarily located at ground-level outdoor areas of frequent human use. If an upper-floor multi-family residence has exterior areas such as balconies or roof decks, then receptors will be located at these upper elevations. For some institutional facilities, such as hospitals, schools, libraries, places of worship and recording studios, receptors may be located inside the building if there are no areas of frequent outdoor human use.

Potential noise abatement measures that must be considered include traffic management measures, traffic control devices, vehicle-type restrictions, nighttime use restrictions, reducing speeds, designated lanes, alteration of the horizontal or vertical alignment, or construction of noise walls. The feasibility and reasonableness of noise walls is evaluated according to MassDOT Type I and Type II Noise Abatement Policies and Procedures. MassDOT has criteria to evaluate whether noise walls are likely to be constructed as part of Type I or Type II projects. These criteria have been established to provide a

¹⁴ Federal Transit Administration "Noise and Vibration Impact Assessment, Report FTA-VA-90-1003-06, May, 2006

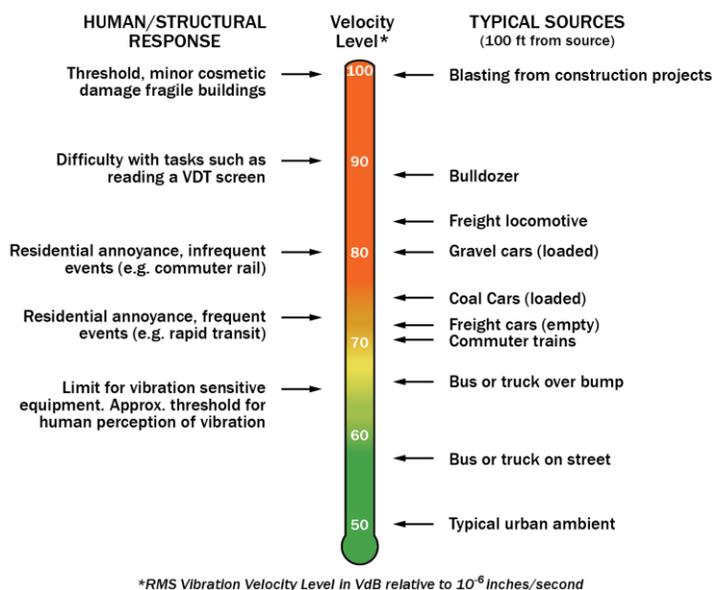
consistent approach and procedures for providing noise abatement across the entire state. The criteria evaluate the need for mitigation and whether it would be feasible and reasonable.

If a noise wall is determined to be feasible and reasonable, then the viewpoints of property owners and residences would be surveyed to determine if at least two thirds of the weighted total number of residential votes are in favor of the barrier. MassDOT would hold a public information meeting in the neighborhoods where the barrier is proposed, and a mail survey would be conducted.

FTA Noise Impact Criteria

FTA categorizes noise-sensitive land use similar to the FHWA land use Activity Categories using the following FTA Noise Categories:

- **FTA Noise Category 1:** Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, and such land uses as outdoor amphitheaters and concert pavilions, as well as National Historic Landmarks with significant outdoor use. Also included are recording studios and concert halls.
- **FTA Noise Category 2:** Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity is assumed to be of utmost importance.
- **FTA Noise Category 3:** Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, theaters and churches where it is important to avoid interference with such activities as speech, meditation and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and certain historical sites and parks with passive use are included in this category.



Typical Ground-Borne Vibration Levels. Source: FTA, 2006, color addition, MassDOT

There are some buildings, such as television studios, concert halls, recording studios and theaters that can be very sensitive to noise and/or vibration and may warrant special attention. Similar to the MassDOT noise policy, FTA noise impact criteria apply to exterior locations of frequent human use. Receptors are primarily located at exterior ground-level locations. Upper-floor receptors may be included in an assessment if there are outdoor areas of frequent human use such as balconies.

FTA noise impact criteria are founded on well-documented research on community reaction to noise and are based on change in noise exposure using a sliding scale. Noise impact is assessed by comparing the existing noise exposure to the potential increase in noise due to the proposed Project.

In neighborhoods where existing noise levels are higher, lower increases in overall future noise conditions are allowed. For example, if the existing noise levels are 70 dBA (Ldn), then moderate noise impact would occur if the future noise level would increase by 1.5 dBA or more and severe impact would occur if noise levels would increase by 3 dBA or more. FTA defines two levels of noise impact, “moderate” and “severe,” depending on the change in future noise condition. Severe noise impact is typically considered to be significant as it relates to impact assessments under NEPA. Moderate noise impact is typically considered to be less than significant.

Noise mitigation, according to FTA guidance, is generally not warranted for projects where there is No Impact. For Severe noise impacts, mitigation is typically warranted if it is feasible and prudent. For Moderate noise impacts, mitigation must be considered, but may not be warranted depending on specific factors such as the number of receptors affected, where within the moderate range future noise levels would be, the sensitivity of the receptors, and whether the receptors are already in an existing high noise environment.

FTA Vibration Impact Criteria

Vibration-sensitive land uses are similar to noise-sensitive land uses except that vibration, as it relates to human annoyance, is only evaluated inside buildings. The general vibration criteria are based on the overall level and are used when the frequency content of vibration is not available. If the vibration assessment indicates there would be vibration impact, then the need for and effectiveness of vibration mitigation must be evaluated according to the FTA’s guidance manual.

Section 4(f) Noise Assessment Criteria

Information about noise as it relates to Section 4(f) is included in the Section 4(f) section of this document.

Noise Prediction Methodology. The methodology for evaluating noise and vibration conditions for the proposed Project includes identifying noise and vibration-sensitive land use, conducting measurements at key receptor locations and modeling noise and vibration at all receptors within the study areas. The noise model includes both highway and rail sources. Noise conditions will be determined at all receptors based on results of the FHWA’s Traffic Noise Model and modeling according to the FTA Detailed Noise Assessment methodology.

Vibration Prediction Methodology. The methodology for predicting vibration from trains is based on measuring existing vibration conditions in the study area and then modeling adjustments to the vibration conditions based on procedures in the FTA guidance manual.¹⁵ Changes in future vibration conditions would be due to changes in track location, the introduction of special trackwork such as crossovers or turnouts, and/or the relocation of tracks. Similar to noise, special trackwork increases vibration by introducing gaps in the rail running surface that the trains wheels impact.

Wetland Impacts, Water Body Modification and Wildlife Impacts

Wetland Impacts and Water Body Modification

Regulatory Context. According to FHWA guidance 6640.8A, when an alternative will impact wetlands the DEIS should:

1. Identify the type, quality, and function of wetlands involved,
2. Describe the impacts to the wetlands,

¹⁵ ibid

3. Evaluate alternatives which would avoid these wetlands, and
4. Identify practicable measures to minimize harm to the wetlands.

In evaluating the impact of the Project on wetlands, the following two items should be addressed:

1. The importance of the impacted wetland(s); and
2. The severity of this impact.

Merely listing the number of acres taken by the various alternatives of a highway proposal does not provide sufficient information upon which to determine the degree of impact on the wetland ecosystem. The wetlands analysis should be sufficiently detailed to provide an understanding of these two elements. If the preferred alternative is located in wetlands, to the fullest extent possible, the FEIS needs to contain the finding required by Executive Order 11990 that there are no practicable alternatives to construction in wetlands. Where the finding is included, approval of the FEIS will document compliance with the Executive Order 11990 requirements (23 CFR 771.125(a)(1)).

The Charles River is subject to federal protection under the Rivers and Harbors Act and the Clean Water Act, both administered by the United States Army Corps of Engineers (USACE). The USACE regulates construction and other work in navigable waterways under Section 10 of the Rivers and Harbors Act of



Bank of the Charles River along SFR

1899 and has authority over the discharge of dredged or fill material into the “Waters of the United States” (a term which includes wetlands and all other aquatic areas) under Section 404 of the Clean Water Act. The Charles River is considered a non-tidal navigable water of the U.S. and any work within the river below the ordinary high water (OHW) line, elevation 2.0 (NAVD88) or within federal wetlands, is subject to a permit from the USACE. The project will also be subject to state wetland and waterway regulations. Approvals will be required from Massachusetts Department of Environmental Protection (MassDEP) under Section 401 of the Clean Water Act for the discharge of dredge and fill material in the Charles River. Approval from the Boston

Conservation Commission will be required for work in state regulated wetland resource areas in compliance with the Massachusetts Wetlands Protection Act. Approval for work within filled and flowed tidelands of the Charles River is required under the Massachusetts Public Waterfront Act.

Methodology. Field delineations will be conducted to determine jurisdictional boundaries of Project Area Wetlands. Regulatory thresholds will be reviewed to evaluate potential wetland and waterways impacts. For the Project Area, the presumptive OHW will be based on two plans: Plan of the Charles River from Waltham Line to Boston Harbor (1894) and U.S. Coast Survey, A.D Bache (1877).

Wildlife Impacts and Fisheries

Regulatory Context. According to FHWA guidance, for each alternative under detailed study, the DEIS should contain exhibits and discussions identifying the location and extent of water body modifications (e.g., impoundment, relocation, channel deepening, filling, etc.). The use of the stream or body of water for recreation, water supply, or other purposes should be identified. Impacts to fish and wildlife resulting from the loss degradation, or modification of aquatic or terrestrial habitat should also be discussed. The results of coordination with appropriate Federal, State and local agencies should be documented in the DEIS. For example, coordination could involve United States Fish and Wildlife Service (USFWS) of the Department of Interior (DOI) under the Fish and Wildlife Coordination Act of 1958.

Methodology. Project plans will be reviewed to evaluate potential impacts to fisheries and associated habitats using the above regulatory framework.

Floodplain Impacts

Regulatory Context. According to FHWA guidance 6640.8A, National Flood Insurance Program (NFIP) maps or, if NFIP maps are not available, information developed by the highway agency should be used to determine whether an alternative will encroach on the base (100-year) floodplain. The location hydraulic studies required by 23 CFR 650, Subpart A, must include a discussion of the following items commensurate with the level of risk or environmental impact, for each alternative which encroaches on base floodplains or would support base floodplain development.

- a. The flooding risks;
- b. The impacts on natural and beneficial floodplain values;
- c. The support of probable incompatible floodplain development (i.e., any development that is not consistent with a community's floodplain development plan);
- d. The measures to minimize floodplain impacts; and
- e. The measures to restore and preserve the natural and beneficial floodplain values.

The DEIS should briefly summarize the results of the location hydraulic studies. If any alternative (1) results in a floodplain encroachment or supports incompatible floodplain development having significant impacts, or (2) requires a commitment to a particular structure size or type, the DEIS needs to include an evaluation and discussion of practicable alternatives to the structure or to the significant encroachment.

For each alternative encroaching on a designated or proposed regulatory floodway, the DEIS should provide a preliminary indication of whether the encroachment would be consistent with or require a revision to the regulatory floodway. Engineering and environmental analyses should be undertaken, commensurate with the level of encroachment, to permit the consistency evaluation and identify impacts. Coordination with the Federal Emergency Management Agency (FEMA) and appropriate state and local government agencies should be undertaken for each floodway encroachment. If the preferred alternative encroaches on a regulatory floodway, the FEIS should discuss the consistency of the action with the regulatory floodway. If a floodway revision is necessary, the EIS should include evidence from FEMA and local or state agency indicating that such revision would be acceptable.

Methodology. Impacts to the 100-year floodplain or flood zone within the Project Area will be assessed through reference to the latest FEMA Flood Insurance Rate Maps (FIRMs) for Suffolk County, Massachusetts. The maps that cover the Project Area include 25025C0057G and 25025C0076G, both with an effective date of September 25, 2009. The Preferred Alternative and Throat Area variation plans will be compared to the FEMA FIRM maps to determine impacts to the flood zone.

Future Resilience Considerations

The Project alternatives will be evaluated with regard to their resilience to natural hazards. Since the Project is located in low lying areas adjacent to the Charles River, flooding – both riverine and upland (i.e., “backdoor flooding”) – is a natural hazard of particular interest. Accordingly, this consideration is included as a subsection of Floodplain Impacts. Once a preferred alternative is selected, specific designs will be incorporated to enhance the resilience of the preferred alternative. Design approaches may include culvert sizing, hardening infrastructure, and nature-based solutions,¹⁶ but specific designs will not be advanced until the selection of the preferred alternative. Methodologies included below will be utilized to assess the resilience-related impacts of the Project.

In 2016 FHWA published technical guidance manual HEC-17, 2nd edition, to support design, maintenance and operations involving highway infrastructure in a riverine environment to provide the most current hydrologic guidance for extreme flooding events, climate change, and resilience. Following Hurricane Sandy in 2012, the Obama Administration established the Mitigation Framework Leadership Group (MitFLG), comprised of representatives from all federal departments, to develop a federal approach to account for and reduce the risk to infrastructure from future climate conditions. In 2015 the group published the Federal Flood Risk Management Standard (FFRMS) to ensure that federal actions located in or near floodplains consider risks, changes in climate and vulnerability. HEC-17, 2nd edition, updates FHWA’s approach for highway infrastructure design in river environments in response to the FFRMS.

In HEC-17, FHWA recommends hydrologic analysis using the recent NOAA (National Oceanic and Atmospheric Administration) Atlas 14 in place of NOAA’s historic standard, TP-40 (Technical Paper 40). TP-40 has provided guidance for hydrologic analysis since its publication in 1961, but it has become less representative or predictive for current and potential future rainfall events. TP-40 is based on only 200 data stations for the entire United States, whereas Atlas 14 data is obtained from thousands of stations. More importantly, Atlas 14 precipitation frequency estimates are regionally based, as opposed to TP-40’s one model covering the entire country. In addition, TP-40 is based on data more than 50 years old that has become non-representative of rainfall events over the ensuing time period and less useful as a reliable predictive analysis tool for future rainfall events.

MassDOT has not officially adopted Atlas 14 for drainage design but is committed to designing the Project in consideration of climate change and potential flood risks to the proposed infrastructure and has directed the design team to use Atlas 14 in the stormwater calculations. The BWSC has also requested stormwater calculations using Atlas 14 rainfall data for this project. Consequently, the proposed drainage system within the entire Project Area will be designed using Atlas 14.

The projections for year 2070 and year 2100 represent the trend towards higher rates of precipitation over time, which is generally accepted by climatologists and modelers, but the values are uncertain, and the magnitude of uncertainty is acknowledged by the modelers to be fairly significant for the farthest outlying estimated projections. The uncertainty is inherent with downscaled global climate change models (GCM) due to variability in model-to-model consistency. Precipitation processes in the Northeast region, in particular, are not understood to the extent that the outlying projections can be confidently predicted. BWSC projections, although generally accepted by peer reviewers, offer limited validation with respect to regional precipitation mechanisms. In consideration of these qualifiers, proposed drainage system design for the entire project will include an analysis of impact that the projected 2100, medium probability, 10-year storm event will create on the system and the amount of stormwater storage to attenuate the peak

¹⁶ Federal Highway Administration (FHWA), Nature-Based Solutions for Coastal Highway Resilience: An Implementation Guide, FHWA, 2019. https://www.fhwa.dot.gov/environment/sustainability/resilience/ongoing_and_current_research/green_infrastructure/implementation_guide/fhwahep19042.pdf . Accessed October 3, 2019.

discharge from this event will be evaluated. Due to the uncertainty of the projected precipitation value, no adjustment will be made to downstream infrastructure. For the same reasons the pavement drainage system for the portions of the Project under MassDOT jurisdiction will be designed using the current accepted MassDOT methodology. For those areas of the Project under City of Boston jurisdiction, City of Boston pavement drainage design criteria will be implemented.

Additional information about stormwater runoff is included in the Water Quality Impacts section.

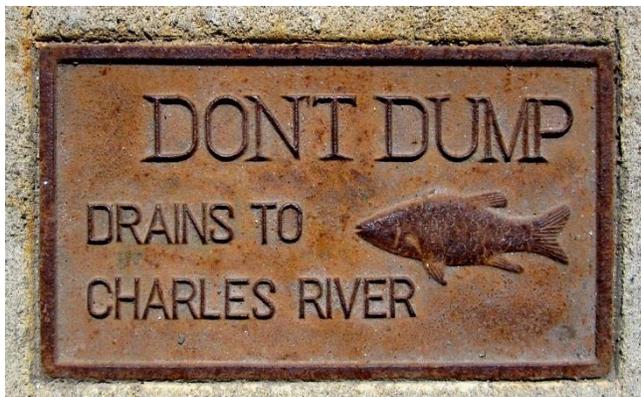
Threatened and Endangered Species

Regulatory Context. According to FHWA guidance 6640.8A, the HA must obtain information from the USFWS of the DOI and/or the National Marine Fisheries Service (NMFS) of the Department of Commerce to determine the presence or absence of listed and proposed threatened or endangered species and designated and proposed critical habitat in the proposed Project Area (50 CFR 402.12(c)). Where the information is obtained from a published geographical list the reasons why this would satisfy the coordination with DOI should be explained. If there are no species or critical habitat in the proposed Project Area, the Endangered Species Act requirements have been met. The results of this coordination will be included in the DEIS.

Methodology. The presence or absence of species, including plants, animals and birds, is determined by reviewing federal and state databases and conducting field surveys if the likelihood of a species may be present in the Project Area. The USFWS's New England Field Office publishes a list of species for Massachusetts by county. The Massachusetts Natural Heritage and Endangered Species Program (NHESP) publishes maps and lists of protected species for each town. A review of the list and maps will be conducted to identify species and mapped priority or estimated habitats for threatened or endangered species in the Project Area. Confirmation as to the presence or absence of the species will be made directly through the New England Field Office of the USFWS.

Impacts will be evaluated based on the potential to cause a temporary or permanent loss of habitat, or a disturbance to local wildlife or threatened and endangered (T&E) species. The positive and negative effects will be determined. Minimal impacts are those that may affect individuals, either directly or through changes in habitat quality, but have no detectable, permanent effect at the population level. In particular, project plans will be reviewed for potential habitat loss or change, roadway crossings, impacts to species' travel, and/or construction disturbances.

Water Quality Impacts



Regulatory Context. According to FHWA guidance 6640.8A, the DEIS should include summaries of analyses and consultations with the State and/or local agency responsible for water quality. Coordination with the U.S. EPA under the Federal Clean Water Act may also provide assistance in this area. The discussion should include sufficient information to describe the ambient conditions of streams and water bodies which are likely to be impacted and identify the potential impacts of each alternative and proposed mitigation measures. Under

normal circumstances, existing data may be used to describe ambient conditions. The inclusion of water quality data spanning several years is encouraged to reflect trends.

The DEIS should also identify any locations where roadway runoff or other nonpoint source pollution may have an adverse impact on sensitive water resources such as water supply reservoirs, ground water recharge areas, and high-quality streams. The 1981 FHWA research report entitled "Constituents of Highway Runoff," the 1985 report entitled "Management Practices for Mitigation of Highway Stormwater Runoff Pollution," and the 1987 report entitled "Effects of Highway Runoff on Receiving Waters" contain procedures for estimating pollutant loading from highway runoff and would be helpful in determining the level of potential impacts and appropriate mitigative measures. The DEIS should identify the potential impacts of each alternative and proposed mitigation measures.

Federal Regulations. The U.S. EPA requires states to establish priority rankings for waters and develop Total Maximum Daily Loads (TMDLs) for these waters under section 303(d) of the Clean Water Act to address pollution from point and non-point source discharges. TMDLs represent a pollution budget that establishes the maximum amount of a pollutant that can occur in a waterbody and still meet Massachusetts Water Quality Standards (WQS). States are required to submit lists of impaired waters to the U.S. EPA for approval. "Impaired" status means that the waterway does not meet state WQS. These are waters that are too polluted or otherwise degraded to meet WQS, and once approved under the 303(d) program, the state then continues to study and test the waterway and if the quality degrades further, then eventually a TMDL is developed for a specific pollutant.

303(d) Listed Impairment in the Charles River. According to the *Massachusetts Year 2014 Integrated List of Waters* by the Massachusetts Department of Environmental Protection (MassDEP), the segment of the Charles River in the Project vicinity, identified as MA72-36, is listed as impaired for chlorophyll-a, DDT (chemical pesticide), *Escherichia coli*, fishes bioassessments, nutrient/ eutrophication biological indicators, oil and grease, dissolved oxygen, PCB in fish tissue, high pH, total phosphorous, secchi disk transparency, sediment bioassays acute toxicity freshwater, and others.

TMDLs in the Charles River. There are two TMDLs that apply to the segment of the Charles River within the Project vicinity: *The Final TMDL for Pathogen TMDL* dated June 2007 and *The Final TMDL for Nutrients in the Lower Charles River Basin Watershed* dated June 2007.

Methodology. Hydrologic analyses will be performed for each jurisdiction (using the computer program HydroCAD©) to determine the peak discharge rate for existing and proposed conditions. Runoff hydrographs will be generated for the 2-year and 10-year 24-hour storm events using the SCS TR-20 Method and a rainfall distribution based on the Atlas 14 rainfall data. For all three alternatives and options, the post-development runoff hydrographs will be flood routed through the proposed stormwater management facilities. Thirty design points will be used to evaluate post-development runoff rates. Each design point will relate to a specific portion of the project that contributes stormwater runoff to an appropriate discharge point for an evaluation of peak rates of runoff. Some of these points will be combined or eliminated under proposed conditions making comparison of existing and proposed conditions difficult. Ultimately all Project runoff discharges to the Charles River; therefore, peak rates will be evaluated at this one location. The tributary areas will be further broken down into subcatchment areas corresponding to the drainage patterns within each tributary area.

The infiltration practices proposed in each alternative will be given a 90% reduction credit in pathogen concentrations in stormwater. The BMP Performance Curves shown in Appendix F Attachment 3 of the MA MS4 General Permit will be used to calculate phosphorus load reduction.

Another way to measure improvements to water quantity and quality is by tracking the amount of effective impervious cover (IC) removal. This is not a measure of how much impervious area is physically removed from the project area, but rather a measure of the amount of runoff from impervious area that will be removed from direct connection with downstream receiving waters. Redirecting this discharge to an

infiltrating stormwater best management practice (BMP) will improve water quality by allowing runoff to recharge and allowing sediments and pollutants to settle and filter out.

MassDOT will evaluate the stormwater design and its potential impacts of the I-90 Interchange alternatives and options for the Opening Year of 2025 and the Design Year of 2040. In the 2040 Design Year, the anticipated stormwater management demand is higher than that of the 2025 Opening Year due to the additional impervious area expected at that time.

Hazardous Waste Sites

Regulatory Context. According to FHWA guidance 6640.8A, hazardous waste sites are regulated by the Resource Conservation and Recovery Act (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). During early planning, the location of permitted and nonregulated hazardous waste sites should be identified. Early coordination with the appropriate Regional Office of the EPA and the appropriate State agency will aid in identifying known or potential hazardous waste sites. If known or potential waste sites are identified, the locations should be clearly marked on a map showing their relationship to the alternatives under consideration. If a known or potential hazardous waste site is affected by an alternative, information about the site, the potential involvement, impacts and public health concerns of the affected alternative(s), and the proposed mitigation measures to eliminate or minimize impacts or public health concerns should be discussed in the DEIS. If the preferred alternative impacts a known or potential hazardous waste site, the FEIS should address and resolve the issues raised by the public and government agencies.

Methodology. To characterize the existing hazardous waste within the Project Area and vicinity, the following databases and historical sources will be reviewed.

- Federal databases including the current CERCLIS, NPL, RCRA TSD, RCRA Generators, and ERNS list. The state databases included the state equivalent CERCLIS list, spills, USTs, SWL, and public water supply lists.
- MassDEP files to provide more information about reported releases of oil and hazardous material (OHM) identified through the database search on or adjacent to the Project Area. The MassDEP files provided additional information regarding past ownership; historical site usage; past usage, storage and disposal of OHM on and adjacent to the Project Area; and other evidence of potential environmental impacts.
- Municipal and historical files to help confirm ownership history and past usage. Resources included tax records, aerial photographs, Board of Health Department records, Building Department records, Fire Department records, Conservation Commission records, and Sanborn fire insurance maps. The site history review also identified reports of historic spills, disposal areas, or other past releases of OHM on or adjacent to the property.

In addition to database review, MassDOT will conduct site reconnaissance on accessible portions of the Project Area to observe overt evidence of a release or threat of release of oil or hazardous materials. The uses of abutting properties will also be documented.

The scope of work for the assessment effort will be modeled after select sections of the *American Society for Testing and Materials (ASTM) Environmental Site Assessment Protocol E 1527-13 Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process* and will be modified as needed to accommodate transportation corridor applications. The scope of the *ASTM 1527-13 Standard Practice* is intended to provide adequate review in order to identify Recognized Environmental Concerns (RECs) at properties within the Site area prior to redevelopment activities. The term Recognized Environmental Conditions is defined in the ASTM Standard as, “the presence or likely

presence of any hazardous substances or petroleum products in, on or at a property (1) due to a release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.”¹⁷ For the purpose of this review, hazardous substances and petroleum products include materials as defined by the Massachusetts Oil and Hazardous Materials Release Prevention and Response Act, Massachusetts General Law, Chapter 21E. The extent that this work precipitates additional testing or evaluation, the intent will be to inform construction planning and materials management during construction. This investigation will include a review of historical resources such as Sanborn Fire Insurance Maps and aerial photographs to identify historic land uses of potential environmental concern such as the presence of underground storage tanks, chemical usage, railroad-related material storage/maintenance or vehicle repair facilities. Environmental databases compiled by local, state and federal regulatory agencies and proprietary databases published by companies such as Environmental Data Resources, Inc. (EDR) will be reviewed for evidence of releases of oil and/or hazardous materials to the environment within the Project Area.

Social Impacts - Joint Development

Regulatory Context. According to FHWA guidance 6640.8A, where there are foreseeable impacts, the DEIS should discuss the following items for each alternative commensurate with the level of impacts and to the extent they are distinguishable:

- Changes in the neighborhoods or community cohesion for the various social groups as a result of the proposed action. These changes may be beneficial or adverse, and may include splitting neighborhoods, isolating a portion of a neighborhood or an ethnic group, generating new development, changing property values, or separating residents from community facilities, etc.
- Changes in travel patterns and accessibility (e.g., vehicular, commuter, bicycle, or pedestrian).
- Impacts on school districts, recreation areas, churches, businesses, police and fire protection, etc. This should include both the direct impacts to these entities and the indirect impacts resulting from the displacement of households and businesses.
- Impacts of alternatives on highway and traffic safety as well as on overall public safety.
- General social groups specially benefitted or harmed by the proposed project. The effects of a project on the elderly, handicapped, nondrivers, transit-dependent, and minority and ethnic groups are of particular concern and should be described to the extent these effects can be reasonably predicted. Where impacts on a minority or ethnic population are likely to be an important issue, the EIS should contain the following information broken down by race, color, and national origin: the population of the study area, the number of displaced residents, the type and number of displaced businesses, and an estimate of the number of displaced employees in each business sector. Changes in ethnic or minority employment opportunities should be discussed and the relationship of the project to other Federal actions which may serve or adversely affect the ethnic or minority population should be identified.

The discussion should address whether any social group is disproportionately impacted and identify possible mitigation measures to avoid or minimize any adverse impacts.

Methodology. Demographic data, and standards will be reviewed, especially in comparisons to Boston and local areas. A broad range of potential adverse effects to environmental justice populations will be

¹⁷ ASTM E1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, ASTM International, West Conshohocken, PA, 2013, www.astm.org. Accessed August 30, 2019

evaluated. Of these effects, the following were determined to have a potential to adversely impact environmental justice populations:

- Land acquisition and job displacement;
- Increases in noise levels;
- Air quality; and
- Increases in traffic congestion.

Potential impacts from these categories will be evaluated for disproportionate impacts to environmental justice populations.

Construction Impacts and Cost

Regulatory Context. According to FHWA guidance 6640.8A, the DEIS should discuss the potential adverse impacts (particularly air, noise, water, traffic congestion, detours, safety, visual, etc.) associated with construction of each alternative and identify appropriate mitigation measures. Also, where the impacts of obtaining borrow or disposal of waste material are important issues, they should be discussed in the DEIS along with any proposed measures to minimize these impacts. The FEIS should identify any proposed mitigation for the preferred alternative.



Typical utility trench

Methodology. For the purposes of this construction impacts analysis, it will be assumed that all Project elements will be evaluated as if they are constructed under one contract. Anticipated construction impacts will be analyzed with particular regard to water quality, recreation, bicycle and pedestrian facilities (including the Dr. Paul Dudley White Path), noise, traffic, and rail. The Project will strive to meet the needs and interests of the all users, while minimizing construction period duration and disruptions, to the extent practicable.

Section 4(f) Evaluation

Regulatory Context. Section 4(f) of the Transportation Act of 1966 (Section 4(f)) was enacted to ensure that the U.S. Secretary of Transportation develops “transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities.” Under Section 4(f) now codified at 23 U.S.C. § 138 and 49 U.S.C. § 303, “publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, refuge, or site)” are considered protected resources requiring special consideration.

State Departments of Transportation (DOTs) are required through the Section 4(f) process to avoid and minimize the use of 4(f) properties. For Historic properties, project impacts that require either a property acquisition from, or that are determined in the Section 106 process to have an adverse effect upon, an NR-listed or NR-eligible property will require review under Section 4(f). FHWA regulation 23 CFR 774 describes the methods used to implement Section 4(f) requirements including potential constructive use

determinations. Unlike some other environmental categories that assess impacts, Section 4(f) specifically looks at use of a property, and if a use is determined to occur, the potential impacts of that use. The use of a Section 4(f) property may be:

1. Direct - through direct alteration of the feature;
2. Indirect or “constructive” - such as a visual or noise impact that impairs the functional use or quality of the 4(f) properties; and/or
3. Temporary - the function or quality of the property would only be impacted temporarily such as during construction, then return to its original state at later time.

Federal Highway Administration (FHWA) Guidance indicates that “before approving a project that uses Section 4(f) property, FHWA must either determine that the impacts are de minimis or undertake a Section 4(f) Evaluation. A de minimis impact is one that, after considering avoidance, minimization, mitigation, and enhancement measures, results in no adverse effect to the activities, features, or attributes qualifying a park, recreation area, or refuge for protection under Section 4(f). For historic properties, a de minimis impact is one that results in a Section 106 determination of “no adverse effect” or “no historic properties affected.” A Section 106 No Adverse Effect finding only requires a Section 4(f) de minimis finding if a taking or permanent easement is proposed. Otherwise a Section 106 No Adverse Effect finding is not considered to be a “use” of a historic site, and no Section 4(f) evaluation is required.

If the Section 4(f) Evaluation identifies a feasible and prudent alternative that completely avoids Section 4(f) properties, it must be selected. If there is no feasible and prudent alternative that avoids all Section 4(f) properties, FHWA has some discretion in selecting the alternative that causes the least overall harm to the 4(f) property and its intended use. FHWA must also find that all possible planning to minimize harm to the Section 4(f) property has occurred.

The projected noise level increase attributed to the Project that may interfere with the use and enjoyment of a noise-sensitive facility must be considered as part of a potential constructive use determination. The types of situations that FHWA has determined a noise-related constructive use would occur include: (1) if a project would affect the ability to hear a performance at an outdoor amphitheater; (2) to sleep in a campground; (3) to enjoy a historic site where quiet is a recognized attribute of the site’s significance; (4) to enjoy an urban park where serenity and quiet are significant attributes; or (5) to view wildlife in an area intended for such. The FHWA has determined a noise-related constructive use does not occur: (1) if the predicted noise levels with the proposed project do not exceed the FHWA Noise Abatement Criteria (NAC) or Federal Transit Administration noise impact criteria; or (2) if the increase in noise due to the proposed project (compared to the No Build condition) is 3 dBA or less even if the noise levels do exceed the FHWA or FTA thresholds.

As part of a potential constructive use determination, the projected noise level increase attributed to the proposed project that may substantially interfere with the use and enjoyment of a Section 4(f) property must be considered. Unlike the absolute Noise Abatement Criteria used to assess the need for mitigation under MassDOT noise policy and 23 CFR 772, the key evaluation for 4(f) properties is whether the difference between the No Build and Build conditions would result in a significant change in noise.

Methodology. Preliminary impacts to 4(f) properties will be assessed for each alternative and option, based on identifying and evaluating 4(f) properties, consulting with the landowner(s), coordinating with the SHPO on Section 106 Effect findings, and all planning to minimize harm. The 4(f) Evaluation to be issued by FHWA as part of the NEPA process will need to determine which alternative represents the alternative with the least overall harm.

4.3 Potential Permits and Approvals

Coordination with state and Federal permitting agencies is ongoing. A list of potential permits and approvals that may be required for the Project is provided in Table 1 and the draft Project permitting timetable is provide in Appendix A.

Table 1 Potential Permits and Approvals

Agency	Approval and/or Consultation
Federal	
U.S. Coast Guard (USCG)	Section 9 of the Rivers and Harbors Act of 1899 and the General Bridge Act of 1946 Bridge Permit
U.S. Army Corps of Engineers (USACE)	Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act Massachusetts General Permit Pre-Construction Notification (PCN)
U.S. Environmental Protection Agency (EPA)	Clean Water Act, Section 402 National Pollutant Discharge Elimination System (NPDES) Construction General Permit
FHWA	The Department of Transportation Act Section 4(f) Evaluation
State	
State Historic Preservation Officer	Section 106 of the National Historic Preservation Act of 1966 Section 106 Review
Massachusetts Department of Environmental Protection (MassDEP) Wetlands Division	Section 401 of the Clean Water Act 401 Water Quality Certification for Fill and Excavation Projects; and 401 Water Quality Certification for Dredging and Dredge Material Disposal
Massachusetts Department of Environmental Protection (MassDEP) Waterways Division	Chapter 91, The Massachusetts Public Waterfront Act Chapter 91 Waterways License /Variance Request
Massachusetts Department of Conservation and Recreation (DCR)	Construction Access Permit
Massachusetts Environmental Policy Act	Massachusetts General Law (MGL) Ch. 30 Sec. 61-62 Environmental Impact Report
Massachusetts Legislature	Article 97 of the Amendments to the Massachusetts Constitution Land Transfer
Massachusetts Water Resources Authority (MWRA)	Section 8(m) of Chapter 372 of the Acts of 1984 8(m) Approval
Local	
Boston Conservation Commission	Massachusetts Wetland Protection Act MGL Ch. 131 Sec. 40 Notice of Intent

5.0 Agency and Public Coordination

1. What are the roles and responsibilities of Cooperating and Participating Agencies?
2. How will coordination with agencies occur?
3. How will the public stay informed throughout the Project?

5.1 Preliminary Schedule

In accordance with Executive Order 13807: Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects, the goal of the Project team is to complete the environmental review process for the Project within two years from publication of the Notice of Intent (October 18, 2019) to publication of the Notice of Availability for the joint FEIS and Record of Decision in October 2021. The DEIS is expected to be published in January of 2021, initiating a minimum 45-day public comment period. Throughout the environmental review process, coordination with agencies as well as the public will be a vital component of planning and project development.

5.2 Future Opportunities for Agency Coordination

23 U.S.C. §139 increased opportunities for federal, state, and local agencies to have active and early involvement in the NEPA process and to provide comments on specific project milestones.

A Cooperating Agency is any federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative. A state or local agency of similar qualifications or, when the effects are on lands of tribal interest, a Native American tribe may, by agreement with the lead agencies, also become a cooperating agency (40 CFR § 1508.5). Cooperating Agencies are responsible for identifying, as early as possible, any issues of concern regarding the potential environmental or socioeconomic impacts of the alternatives being considered in the EIS that could substantially delay or prevent an agency from granting a permit or other approval needed for the Project. A Participating Agency is any federal or non-federal agency with an interest in the project (23 USC 139(d)). Cooperating Agencies and Participating Agencies are responsible for providing comments, responses, studies, or methodologies on those areas within the special expertise or jurisdiction of the agency.

Prior to the publication of the Notice of Intent and availability of this Scoping Report, MassDOT and FHWA have held several meetings with state and federal agencies to gain feedback on central elements of the Project including the purpose and need, potential impacts and permitting timetable. MassDOT and FHWA will continue to coordinate with local, state and federal agencies and stakeholders throughout the NEPA process. Table 2 provides a list of invited Participating and Cooperating Agencies.

Cooperating Agencies are required to adhere to Concurrence Points as directed by the April 9, 2018 OMB Memorandum of Understanding: Implementing One Federal Decision Under Executive Order 13807. For projects that fall under E.O. 13807, an Agency Coordination Plan (ACP) is required and has been developed for this Project (See Appendix B). The ACP includes the required concurrence points as well as coordination protocols that are agreed-upon by the Cooperating Agencies and must be adhered to during the Pre-NOI Activity stage, throughout NEPA (from NOI to ROD) and permitting.

Table 2 Cooperating and Participating Agencies

Agency	Agency Role	Responsibilities
Project Sponsor		
Massachusetts Department of Transportation – Highway Department (MassDOT) Massachusetts Department of Transportation – Massachusetts Bay Transit Authority (MBTA)	Lead State Agency and Project Sponsor	Plan and design project; facilitate environmental review process; facilitate opportunity for public and agency involvement
Federal Agencies		
Federal Highway Administration (FHWA)	Lead Federal Agency	Manage environmental review process; prepare NEPA decision document
Federal Transit Administration (FTA)	Cooperating Agency (accepted)	Rail and Bus Operations
U.S. Coast Guard (USCG)	Cooperating Agency (accepted)	Issue Section 9 Bridge Permit
U.S. Army Corps of Engineers (USACE)	Cooperating Agency (accepted)	Issue Section 404/Section 10 Permit, Clean Water Act and Rivers and Harbors Act
U.S. Environmental Protection Agency (EPA)	Cooperating Agency (accepted)	U.S. EPA National Pollutant Discharge Elimination System (NPDES) General Permit for Clean Water Act, Section 402; Section 404 Clean Water Act Clean Air Act Section 309 (NEPA) review and coordination
U.S. Department of Interior (DOI)	Cooperating Agency (invitation not accepted)	Consultation for Individual Section 4(f) Evaluation, U.S. Department of Transportation Act
Federal Railroad Administration (FRA)	Participating Agency (accepted)	Intracity rail movements
Advisory Council on Historic Preservation (ACHP)	Participating Agency (accepted)	Consultation for Section 106 review pursuant to National Historic Preservation Act
U.S. Fish and Wildlife Service (USFWS)	Participating Agency (accepted)	Consultation for Section 7, Endangered Species Act; Fish and Wildlife Coordination Act for Section 404 Permit
Amtrak	Participating Agency (accepted)	Intracity rail movements
National Marine Fisheries Service (NMFS)	Declined invitation to participate as a Cooperating or Participating Agency	Consultation for Section 7, Endangered Species Act; Consultation for Essential Fish Habitat, Magnuson-Stevens Fishery Conservation and Management Act

Agency	Agency Role	Responsibilities
State Agencies		
Massachusetts Department of Environmental Protection (MassDEP)	Cooperating Agency (invited)	<p>Section 401 of Clean Water Act (314 CMR 9.00) Water Quality Certification (Filling & Excavation); Massachusetts Wetland Protection Act Appeals M.G.L Ch. 131 Sec. 40, (310 CMR 10.00) Order of Conditions</p> <p>Section 401 of Clean Water Act (314 CMR 9.00) Water Quality Certification (Dredging); Massachusetts Wetland Protection Act Appeals M.G.L Ch. 131 Sec. 40, (310 CMR 10.00) Order of Conditions</p> <p>Massachusetts Public Waterways Act: M.G.L Ch. 91, (310 CMR 9.00)</p>
Massachusetts Department of Conservation and Recreation (DCR)	Cooperating Agency (accepted)	Article 97 of the 1972 Amendments to the Massachusetts Constitution Construction Access Permit
Massachusetts State Historic Preservation Officer (SHPO)	Cooperating Agency (invited)	<p>Consultation under Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800); Consultation for Section 4(f) Evaluation, U.S. Department of Transportation Act</p>
Massachusetts Environmental Policy Act Office (MEPA)	Participating Agency (invitation not accepted)	
Massachusetts Water Resources Authority (MWRA)	Participating Agency (accepted)	
Massachusetts Division of Marine Fisheries	Participating Agency (invited)	
City Agencies		
Boston Conservation Commission	Participating Agency (invited)	Massachusetts Wetlands Protection Act M.G.L Ch. 131 Sec. 40 (310 CMR 10.00) Order of Conditions
City of Boston, Public Works Department	Participating Agency (accepted)	
City of Boston, Planning and Development Agency (BPDA)	Participating Agency (accepted)	
Boston Water and Sewer Commission (BWSC)	Participating Agency (invited)	



5.3 Future Opportunities for Public Involvement

Public involvement is a central aspect of the transportation planning and environmental review processes. Accordingly, the goal of the public involvement process for the I-90 Allston Multimodal Project is to ensure transparent, collaborative, and meaningful public involvement and agency participation throughout the environmental review process.

The public involvement and agency participation efforts for this project have been developed in compliance with legislation and policies that guide public involvement in project development, including but not limited to the following:

National Environmental Policy Act of 1969 (NEPA) requires federal agencies to conduct the environmental review process in coordination with the public and with other agencies:

- Efficient Environmental Reviews for Project Decision making (23 U.S. Code § 139) which outlines project development procedures applicable to all projects for which an Environmental Impact Statement is prepared under NEPA;
- Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, 54 USC 306108, and its implementing regulations, 36 CFR Part 800;
- Executive Order 12898 of 1994 (“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”);
- Massachusetts Environmental Policy Act (MEPA), which provides meaningful opportunities for public review of potential environmental impacts of projects for which certain actions by state agencies are required; and
- MassDOT project development procedures for Public Involvement.

23 U.S. Code § 139 establishes milestones within the environmental review process for public involvement and review opportunities. Table 3 summarizes significant coordination points and project milestones. Anticipated completion dates are included for informational and resource planning purposes and are subject to change. Timeframes and review periods are established in accordance with 23 U.S. Code § 139 unless covered under existing agreements. Note that this table does not document historic project activities.

Table 3 Key NEPA Milestones

Project and Public Review Milestones	Anticipated Completion Date
Notice of Intent Publication	October 2019
Scoping Information Packet Publication	November 2019
Completion of the DEIS	January 2021
Completion of the FEIS/ROD	October 2021
Permits, licenses, or approvals after FEIS/ROD	January 2022

Public involvement activities for the Project will continue to build on the outreach efforts that MassDOT began undertaking in April 2014. These efforts have included the operation of a Project Task Force, public information meetings at key project milestones, email blasts to the Project’s stakeholder database, briefings to community groups and elected officials upon request, and maintenance of the Project’s website as a 24-hour informational portal about the Project providing not only an overview of the ongoing work, but also the PowerPoint presentations and minutes generated for public and Task Force meetings, and community briefings. A more detailed description of public involvement activities that will be used throughout the NEPA process can be found in the Project’s Public Involvement Plan (Appendix C).



Draft Permitting Timetable I-90 Allston Multimodal Project

Boston, MA

**Submitted to:
Federal Highway Administration**



MA Division Permitting Timetable Worksheet

The status of all EA and EIS projects are required to be posted on the Permitting Dashboard (www.permits.performance.gov). Milestones are organized by agency and agency action and include the NEPA and permitting actions required for the project, including Lead Agency and Cooperating Agencies. Specific state permits are listed for informational purposes and because some federal permits are dependent on state actions.

Project: Allston I-90 Multimodal Project
Class of Action: EIS
Sponsor: MassDOT

Lead Agency / Action

FHWA / Environmental Impact Statement

Milestone	Date
Issuance of Notice of Intent to prepare an Environmental Impact Statement (EIS)	October 18, 2019
Scoping (Scoping package available to public – Close of scoping period)	November 6, 2019 – December 12, 2019
Official Notice of Availability of a Draft EIS published in the Federal Register (FR) beginning both the public comment period and concurrent CAA Section 309 Review	January 26, 2021
Issuance of Record of Decision or combined Final EIS / Record of Decision	October 18, 2021

FHWA / Section 4(f)

Milestone	Date
Determination of Applicability of Section 4(f)	October 18, 2019
Coordination with / Concurrence from Officials with Jurisdiction	July 1, 2021
FHWA Approval/Conclusion of Section 4(f)	October 17, 2021

FHWA / Section 106

Milestone	Date
Consultation initiated with SHPO/THPO	November 8, 2019
Consulting Parties Invited	November 29, 2019
Effect Determination made by FHWA	March 12, 2021
Section 106 Consultation Concluded*	June 30, 2021

*Conclusion of Section 106 can be: (1) No historic properties affected; (2) Finding of no adverse effect, or (3) Memorandum of agreement or programmatic agreement, or other conclusion to resolve adverse effects reached



Cooperating Agency / Action:

U.S. Army Corps of Engineers / Section 404 Clean Water Act and Section 10 Rivers and Harbors Act, Massachusetts General Permit

Milestone	Date
Joint Section 404/10 General Permit Application Received	April 13, 2021
Application Deemed Complete	July 19, 2021
Publication of Public Notice	N/A
Permit Decision Rendered	October 28, 2021

U.S. Coast Guard / Bridge Permit

Milestone	Date
Navigation Data Received by FHWA	October 9, 2019
Issuance of Navigation Determination	November 15, 2019
Application Received	December 26, 2020
Publication of Public Notice	January 26, 2021 (Same as DEIS)
Application Deemed Complete	November 3, 2021
Permit Decision Rendered	January 15, 2022

Massachusetts Department of Environmental Protection (DEP) 401 Water Quality Certification for Dredging and Dredge Material Disposal

Milestone	Date
Initial Application Received	February 1, 2021
Start of 21 Day Public Comment	February 12, 2021
Application Deemed Complete	March 28, 2021
Issuance of Permit/Approval	September 26, 2021

Massachusetts Department of Environmental Protection (DEP) Water Quality Certification 401 Water Quality Certification for Fill and Excavation Projects

Milestone	Date
Initial Application Received	February 1, 2021
Start of 21 Day Public Comment	February 12, 2021
Application Deemed Complete	March 28, 2021
Issuance of Permit/Approval	October 13, 2021

Massachusetts DEP Chapter 91 License

Milestone	Date
Initial Application Received	May 2, 2021
Application Deemed Complete	October 15, 2021
Start of 30 Day Public Comment	June 22, 2021
Public Hearing	July 2, 2021
Issuance of Decision for Permit/Approval	February 18, 2022

Massachusetts Wetland Protection Act

Milestone	Date
Application Received (NOI Filed)	January 26, 2021
Public Hearing	February 3, 2021
Issuance of Decision for Permit/Approval (OOC)	March 27, 2021



Agency Coordination Plan I-90 Allston Multimodal Project

Boston, MA

**Submitted to:
Federal Highway Administration**



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1.0 Introduction

The Massachusetts Department of Transportation (MassDOT) and the Federal Highway Administration (FHWA) are initiating the environmental review process for the proposed I-90 Allston Multimodal Project located within the City of Boston, Suffolk County, Massachusetts. MassDOT, as the Project sponsor and non-federal joint lead agency, in coordination with FHWA, the lead federal agency, prepared this Agency Coordination Plan (ACP) to facilitate and document the plan for interaction between MassDOT, FHWA, and state and federal agencies during the Environmental Impact Statement (EIS) process. This ACP describes the regulatory requirements that must be met to implement the Project, the public agencies with permitting or other regulatory authority or approvals necessary for the Project, and the process by which the federal and joint lead agencies will engage the public in the environmental review of the Project.

2.0 Process

2.1 National Environmental Policy Act (NEPA)

MassDOT is requesting approvals from the FHWA and other federal agencies for implementation of the I-90 Allston Multimodal Project. These federal approvals are subject to environmental review under the National Environmental Policy Act (NEPA). The procedural provisions of NEPA (set forth in 40 CFR §§ 1500-1508) require federal agencies to consider the environmental impacts of their actions, including not only direct and indirect effects, but also cumulative effects.

The Project is classified as a NEPA Class I project, in accordance with 23 CFR Part 771.115, which requires an EIS to determine the likely impacts a project will have on the environment. In addition, as a result of Executive Order (E.O.) 13807: Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure Projects issued on August 15, 2017, this Project will be processed under the One Federal Decision (OFD) process. The steps in the NEPA EIS and OFD processes are described below. Agency coordination on these activities are described in Section 3.

- **Pre-Notice of Intent Activities.** In alignment with the One Federal Decision Memorandum of Understanding and FHWA's Working Agreement with the federal resource agencies, several activities will be completed prior to publication of the Notice of Intent in the Federal Register. During the Pre-Notice of Intent stage, FHWA and MassDOT, in consultation with the cooperating and participating agencies, will:
 - Identify Cooperating and Participating Agencies for the Project
 - Develop a draft Purpose and Need
 - Develop a draft Coordination Plan that includes a permitting timetable
 - Identify communities and stakeholders affected and develop a Public Involvement Plan
 - Identify a preliminary Range of Alternatives
 - Determine the extent of analysis needed for each resource (methods)
 - Initiate applicable resource surveys/studies
 - Identify potentially significant environmental issues
 - Identify potential mitigation strategies
 - Initiate permit activities as soon as possible, such as pre-application



- **Notice of Intent.** The EIS process will begin with publication of a Notice of Intent (NOI) to prepare an EIS in the Federal Register.
- **Scoping.** The scoping process will be initiated soon after publication of the NOI in the Federal Register. A Scoping Information Packet or Scoping Report will be prepared and made publicly available. The Scoping Information Packet or Scoping Report will include a description of the purpose and need, alternatives to be considered in the DEIS, and the framework of analysis for the full EIS process. The public will be invited to comment on the alternatives under consideration and the scope of analysis for the EIS process. The public will also be provided the opportunity to submit comments in writing. There will be a 30-day comment period for project scoping from the date it is made publicly available. A Scoping Summary Report, which will summarize the comments received and will summarize responses as appropriate, will be prepared and made available on the Project website and at project repositories.
- **Draft Environmental Impact Statement (DEIS).** Following scoping, the DEIS will be prepared to assess the environmental impacts of the project consistent with NEPA, OFD, and other applicable regulations and requirements. The DEIS will identify a preferred alternative for the Project. Once FHWA approves the DEIS for public circulation, a Notice of Availability will be published in the Federal Register. The Notice of Availability will establish the public review period for the DEIS.
- **Public Review.** The public review of the DEIS will include distribution of the document to government agencies, elected officials, civic and interested groups, and the public. FHWA has established a 45-day public comment period for the DEIS. During that time, public hearing(s) will be held at which members of the public can offer oral testimony on the findings of the DEIS. Written comments will also be accepted.
- **Final Environmental Impact Statement (FEIS)/Record of Decision (ROD).** After the public comment period on the DEIS closes, the goal will be to prepare a combined FEIS/ROD, in lieu of the traditional FEIS followed by a ROD approach. The combined FEIS/ROD will include the substantive comments and responses on the DEIS and any necessary revisions to the DEIS to address the comments. The FEIS/ROD will identify the selected alternative for the Project and serves as the basis for the decision. Further, the FEIS/ROD will identify the selected alternative's environmental impacts and any required mitigation commitments. The FEIS/ROD will conclude the NEPA process. After it is approved by FHWA, the FEIS/ROD will be made publicly available and a Notice of Availability will be published in the Federal Register.
- **Post-ROD Activities.** Under the OFD approach established in E.O. 13807, all necessary federal environmental review and authorization decisions (and state dependencies, i.e. Section 401 of the Clean Water Act) will be issued within 90 days of issuance of the ROD, subject to limited exceptions.

2.2 Massachusetts Environmental Policy Act (MEPA)

The Massachusetts Environmental Policy Act (MEPA) requires state agencies to study the environmental consequences of their actions when MEPA review thresholds are exceeded, and a state agency action is required such as a permit, financial assistance, or land transfer from state agencies. Like the NEPA process, MEPA requires state agencies to study alternatives of the proposed project and develop mitigation commitments for environmental impacts that cannot be avoided. The MEPA statute, along with the MEPA regulations, 301 CMR 11.00, govern the MEPA review process.

An Environmental Notification Form (ENF) for the Project was filed on October 31, 2014 and Notice of Availability was published in the Environmental Monitor on November 5, 2014, Executive Office of Energy and Environmental Affairs (EOEEA) File Number 15278. On December 24, 2014, the Secretary of the EOEEA issued a Certificate on the ENF requiring MassDOT to prepare an Environmental Impact Report (EIR). On November 30, 2017, notice of availability for the Draft Environmental Impact Report (DEIR) was published. Since publication of the ENF and DEIR, MassDOT has worked in collaboration with a broad range of stakeholders during the MEPA process including the Project Task Force, the City of Boston, Harvard University, Boston University, and other abutters and public groups. The Task Force is comprised of local residents and activists, members of the Allston business community, and representatives of key institutional stakeholders such as Harvard University and Boston University.

A Notice of Project Change (NPC) will be required under MEPA to document changes to the Project scope since publication of the DEIR. The NPC will generally align with the Scoping Report prepared for the Project under NEPA. While the MEPA and NEPA processes are generally viewed as two separate processes during environmental review, the information presented (alternatives, impacts, mitigation, etc.) during the state process will support the information provided in the Federal process and vice versa.

2.3 Other Federal and State Regulatory Requirements, Permits, Approvals and Consultations

Implementation and construction of the I-90 Allston Multimodal Project is subject to a number of state and federal permits and approvals in addition to NEPA and MEPA. FHWA, as the lead federal agency for the Project, will be the lead for carrying out NEPA and will be responsible for coordinating and conducting all federal environmental consultations necessary for this Project as listed below. It is assumed that the federal cooperating and participating agencies will adopt FHWA's coordination/consultations for this Project. The list below is a summary of the regulatory requirements identified thus far as applicable to this Project.

- **Clean Air Act (42 USC § 7506(c); 40 CFR Part 93).** The conformity requirements of the Clean Air Act (CAA) limit the ability of federal agencies to assist, fund, permit, and approve projects in non-attainment or maintenance areas that do not conform to the applicable State Implementation Plan (SIP). Conformity determinations for federal actions related to transportation plans, programs, and projects approved under 23 CFR must be made by the project's lead federal transportation agency, FHWA in this case. A transportation conformity determination for the project will be made by FHWA prior to the ROD.

Since the U.S. Army Corps of Engineers (USACE) would be authorizing the discharge of dredged and fill material, USACE would be responsible for demonstrating conformity of that action with state implementation plans as per the general conformity regulations (40 CFR § 93, Subpart B). Under Section 309 of the CAA, the U.S. Environmental Protection Agency (USEPA) must review and comment in writing on the environmental impact of any matter relating to its responsibilities under the CAA. In the event that USEPA determines that federal legislation, regulations, or actions are unsatisfactory from the standpoint of public health or welfare related to environmental quality, the determination is published, and the matter is referred to the Council on Environmental Quality (CEQ).

- **Article 97 of the Amendments to the Massachusetts Constitution.** Any state action that results in a change in use of publicly owned land held for natural resource protection purposes must follow the Executive Office of Energy and Environmental Affairs (EOEEA) Article 97 Land



Disposition Policy pursuant to Article 97 of the Articles of Amendment to the Constitution of the Commonwealth of Massachusetts.

- **Endangered Species Act (16 USC §§ 1531-1544; 50 CFR Part 402).** Section 7 of this Act requires FHWA to consult with the U.S. Fish and Wildlife Service (USFWS) and/or the National Marine Fisheries Service (NMFS) for any project activities that may jeopardize threatened or endangered species or destroy or adversely modify their critical habitats.
- **Environmental Justice (Executive Order 12898 of 1994, 59 FR Page 7629, February 16, 1994; 1997 U.S. Department of Transportation [USDOT] “Order to Address Environmental Justice in Minority Populations and Low-Income Populations,” 62 FR Page 18377, April 15, 1997, Commonwealth of Massachusetts Executive Order No. 552).** These Orders require that impacts and benefits from a federal transportation project are equitably distributed among all population groups and that minority or low-income areas are not overburdened with the adverse aspects of project alternatives. FHWA is responsible for complying with the Executive Order. The U.S. DOT’s “Final Order on Environmental Justice” indicates that project sponsors should elicit public involvement opportunities, including soliciting input from affected minority and low-income populations in considering project alternatives. Environmental Justice populations are present within the project area. As described in the Project’s Public Involvement Plan, the I-90 Allston Multimodal Project will continue to engage environmental justice communities through targeted media outlets and will provide special services for these communities as necessary.
- **Floodplains (Executive Order 11988 of 1977; USDOT Order 5650-2, “Floodplain Management and Protection,” April 23, 1979).** Federal and state agencies must regulate and limit the location of a project in a floodplain to avoid any adverse impacts from the occupancy and modification of floodplains. FHWA will make a floodplain determination for the Project pursuant to Executive Order 11988.
- **General Bridge Act of 1946 (22 USC § 403).** Bridges over navigable waters of the United States require a bridge permit under the General Bridge Act of 1946, which is issued by the U.S. Coast Guard (USCG) or the USACE. The bridge permit under the General Bridge Act also satisfies the requirements of Section 9 of the Rivers and Harbors Act of 1899.
- **Magnuson-Stevens Fishery Conservation and Management Act (16 USC §§ 1801-1884).** This act mandates an identification of Essential Fish Habitat (EFH) for managed aquatic species and requires measures to conserve and enhance the habitat needed by fish to carry out their life cycle. The Act requires consultation with NMFS for any effects on EFH.
- **National Historic Preservation Act (54 USC § 300101, et seq.; 36 CFR Part 800).** Projects potentially affecting historic and archaeological resources must comply with the National Historic Preservation Act (NHPA) Section 106 review process. FHWA is responsible for carrying out the Section 106 review for this project in consultation with the Massachusetts State Historic Preservation Officer (SHPO) at the Massachusetts Historical Commission (MHC) and other individuals and organizations with an interest in the effects of a project on historic properties (i.e., consulting parties). FHWA also must afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment.

FHWA will extend invitations to the Tribal Historic Preservation Officers, local historical commissions, and other interested parties to participate as Section 106 Consulting Parties.

- **Rivers and Harbors Act of 1899 (33 U.S.C. 403).** Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army acting through USACE for the construction of any structure in or over any navigable waters of the United States; the excavation from or deposition of material in these waters; or any obstruction or alteration in these waters. USACE must evaluate, in the public interest, the benefits of the proposed activity versus potential detriments. In addition, authorization under Section 9 of the Rivers and Harbors Act of 1899 is required for issuance of a Bridge Permit by the USCG, as described above.
- **Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 USC § 4601, et seq.).** Federally funded or assisted projects that require property acquisition through eminent domain must comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.
- **U.S. Department of Transportation Act—Section 4(f) (49 USC § 303; 23 CFR §774).** Section 4(f) prohibits the Secretary of Transportation from approving programs or projects that use a property protected under Section 4(f) unless there is no prudent and feasible alternative to the use of such land and the project includes all possible planning to minimize harm to such land. A Section 4(f) property is defined as a publicly-owned parkland, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; or land from a historic site of national, state, or local significance, which are properties listed in or eligible for listing in the National Register of Historic Places. In accordance with 23 CFR § 774.5, FHWA must provide opportunities for coordination and comment to the official(s) with jurisdiction over the Section 4(f) property that may be affected by the project as well as the U.S. Department of the Interior (DOI), as appropriate. Review of the Project’s Section 4(f) Evaluation will likely include FHWA, MassDOT, DCR, DOI, and SHPO. Potential effects on historic properties are being coordinated through Section 106 of the NHPA. FHWA will make a Section 4(f) finding for this Project.
- **Wetlands (Executive Order 11990 of 1977; USDOT Order 5660.1A, “Preservation of the Nation’s Wetlands,” August 24, 1978, Massachusetts Wetlands Protection Act MGL Ch. 131 Sec 40, Clean Water Act Sections 401/404).** Federal and state agencies must avoid adverse impacts from the destruction or modification of wetlands unless there is no practical alternative and all possible measures to minimize harm are taken. FHWA will make a formal wetland finding for this Project. Approvals will be required from Massachusetts DEP under Section 401 of the Clean Water Act for the discharge of dredge and fill material in the Charles River. Approval from the Boston Conservation Commission will be required for work in state regulated wetland resource areas in compliance with the Massachusetts Wetlands Protection Act.
- **Massachusetts Public Waterfront Act MGL Ch. 91** Through Chapter 91, the Commonwealth seeks to preserve and protect the rights of the public, and to guarantee that private uses of tidelands and waterways serve a public purpose. The Chapter 91 regulations require that nonwater-dependent projects must provide greater benefits than detriments to the public’s rights in waterways. Approval for work within filled and flowed tidelands of the Charles River is required under the Massachusetts Public Waterfront Act.

3.0 Agency Coordination

23U.S.C. Section 139 increased opportunities for federal, state, and local agencies to have active and early involvement in the NEPA process and to provide comments on specific project milestones. This ACP describes the process and communication methods that have been and must be followed to disseminate information about the project, as well as to solicit and consider input from the agencies.

According to Council on Environmental Quality (CEQ) regulations (40 CFR § 1508.5), “Cooperating Agency” means any federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative. Cooperating Agencies are defined as agencies which have an environmental review authorization under E.O. 13807. “Participating Agencies” are those federal, state, or local agencies with an interest in the project.

Cooperating and Participating Agencies are responsible for identifying, as early as practicable, any issues of concern regarding the project’s potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval.

The following agencies have been identified as potential Cooperating Agencies:

- Federal Transit Administration;
- U.S. Army Corps of Engineers (USACE);
- U.S. Coast Guard (USCG);
- U.S. Environmental Protection Agency (USEPA);
- Massachusetts Department of Environmental Protection (DEP); and
- Massachusetts Department of Conservation and Recreation (DCR).

The following agencies have been identified as potential Participating Agencies:

- Advisory Council on Historic Preservation (ACHP);
- Federal Rail Administration (FRA);
- U.S. Fish and Wildlife Service (USFWS);
- U.S. Department of the Interior (DOI);
- Massachusetts State Historic Preservation Officer (SHPO);
- Massachusetts Environmental Policy Act (MEPA) Office;
- Massachusetts Water Resources Authority (MWRA);
- City of Boston Public Works Department (Boston PWD);
- City of Boston, Planning and Development Agency (BPDA);
- Boston Transportation Department;
- Boston Conservation Commission;
- Boston Water and Sewer Commission (BWSC); and
- Amtrak.

3.1 Concurrence Points and Coordination Protocol

Concurrence points are directed by the April 9, 2018 OMB Memorandum of Understanding: Implementing One Federal Decision Under Executive Order 13807. Per the *Memorandum for Heads of Federal Departments and Agencies – One Federal Decision Framework for the Environmental Review and Authorization Process for Major Infrastructure Projects under Executive Order 13807*, concurrence is defined as, “confirmation by the agency that the information is sufficient for that stage, and the environmental review process may proceed to the next stage of the NEPA process, as set forth in the lead agency’s request for written concurrence. Each applicable cooperating agency will either confirm its concurrence or inform the lead agency that it cannot yet concur. A non-concurring agency will undertake to resolve the issue and provide the requested concurrence, and will if necessary, elevate the issue pursuant to Section XII [of the memorandum]. Cooperating agency Project Points-of-Contact will respond to the lead agency’s request for concurrence within 10 business days. Failure to respond within 10 business days may be treated as concurrence, at the discretion of the lead federal agency.”

For projects that fall under E.O. 13807, an ACP is required. In that ACP, and included herein, are concurrence points and coordination protocols that are agreed-upon by the Cooperating Agencies and must be adhered to during the Pre-NOI Activity stage, and throughout NEPA (from NOI to ROD) and permitting.

After written agreement on a concurrence point is submitted, or after agreement is deemed waived, that concurrence point will not be revisited unless necessitated by public comment or legal review; unless there are substantial changes to the proposed action; or unless significant new circumstances or information, relevant to environmental concerns, is brought to light.

The following depicts the timeframes established and associated with the coordination protocol and required concurrence points. All timeframes are assumed to be calendar days unless otherwise noted.

During the Pre-NOI Activity Phase (Phase I)

Coordination Point #1 – Early Contact. MassDOT and FHWA will identify and develop a potential list of Cooperating and Participating Agencies. MassDOT and/or FHWA will reach out to these federal and state agencies, as appropriate, (by e-mail and phone) and have an initial discussion on the project, describe the early studies that have occurred, and inform them of potential invitation to become a Cooperating or Participating Agency on the Project.

Coordination Point #2 – Invitation for Cooperating Agency Status / Coordination Package. At least 15 days prior to the initial Agency Coordination Meeting, MassDOT and FHWA will send letters, formally inviting state and federal agencies, as appropriate, to become Cooperating Agencies on the Project. FHWA and MassDOT will coordinate with Cooperating Agencies to determine a date to hold an Agency Coordination Meeting on the Project and will request the Cooperating Agencies to respond with their availability.

Prior to the initial Agency Coordination Meeting, MassDOT and FHWA will provide materials to the Cooperating Agencies to allow for an informed discussion at the initial Agency Coordination Meeting on the following (Coordination Package):

- Draft Purpose and Need statement;
- Draft Permitting Timetable; and
- Draft Agency Coordination Plan.



Coordination Point #3: Initial Agency Coordination Meeting. An initial Agency Coordination Meeting will be held between MassDOT, FHWA, and all Cooperating Agencies to discuss the information presented in Coordination Point #2. At this meeting, or within 15 days following the meeting, all Cooperating Agencies shall provide the following:

- One Point of Contact from their Agency empowered to make decisions and be involved throughout the NEPA process;
- Comments on the draft Purpose and Need statement;
- Comments on potential adverse environmental impacts; and
- Comments on the draft Permitting Timetable and any comments on the level of permitting required.

Concurrence Point #1a: Written Concurrence on Purpose and Need.. MassDOT and FHWA shall submit the final Purpose and Need statement to all Cooperating Agencies at least 15 days following the initial Agency Coordination Meeting (Coordination Point #3), allowing for at least 15 days of dialogue between the initial Agency Coordination Meeting (Coordination Point #3) and the formal submission to the Cooperating Agencies by FHWA and MassDOT for Concurrence Point #1a. The Cooperating Agencies have 10 business days from receipt of the final Purpose and Need statement to concur.

During the NOI to DEIS Phase (Phase II)

Concurrence Point #1b: Written Concurrence on Permitting Timetable. MassDOT and FHWA shall submit the final Permitting Timetable to all Cooperating Agencies at least 15 days following the initial Agency Coordination Meeting (Coordination Point #3), allowing for at least 15 days of dialogue between the initial Agency Coordination Meeting (Coordination Point #3) and the formal submission to the Cooperating Agencies by FHWA and MassDOT for Concurrence Point #1b. The Cooperating Agencies have 10 business days from receipt of the final Permitting Timetable to concur. All agencies will comply with the milestones set forth in the Permitting Timetable to the maximum extent practicable and permitted by law.

NEPA Milestone: FHWA Issues NOI and Publishes Permitting Timetable. The NOI will be published in the Federal Register and the Permitting Timetable will be posted publicly on the Federal Permitting Dashboard. The Permitting Timetable must be posted on the Federal Permitting Dashboard within 30 days of the NOI publication in the Federal Register.

NEPA Milestone / Coordination Point #4: Scoping Report. MassDOT and FHWA will send the Scoping Report to each Cooperating Agency POC for review and comment, as well as to the public and to the Participating Agencies. The Scoping Report will provide the Purpose and Need, Alternatives Considered, Methodologies, and the Project's Public Involvement Plan. The Cooperating Agencies, Participating Agencies, and the public will have the opportunity to provide comments to MassDOT and FHWA within 30 days of receipt. Following the receipt of public comments, a Scoping Summary Report will summarize substantive comments received during the scoping process. It will also provide an overview of the alternatives carried forward into the DEIS and alternatives eliminated from further review (see Coordination Point #5 and Concurrence Point #2).

Coordination Point #5: Information Exchange – Alternatives. MassDOT and FHWA will provide a level of information to the Cooperating Agencies to allow for an informed discussion on the following:

- Identification of alternatives to be carried forward for evaluation in the DEIS; and
- Identification of Preferred Alternative.

Information should include reasons for discounting certain alternatives in scoping and the reasons for carrying certain alternatives forward for further evaluation in the DEIS. Regarding the preferred alternative identification, MassDOT and FHWA will submit information including the rationale for the selection of the preferred alternative.

MassDOT and FHWA will deliver and present this information through a meeting or through written correspondence which will be determined with the Cooperating Agencies at the initial Agency Coordination Meeting. In either event, MassDOT and FHWA will allow for 30 days of dialogue between the agencies before sending the final concurrence request on the below Concurrence Points #2 and #3.

Concurrence Points #2 and #3: Alternatives to be Carried Forward for Evaluation and Identification of Preferred Alternative. At the completion of Coordination Point # 5 (Information Exchange – Alternatives), MassDOT and FHWA shall submit a request for written concurrence of the Alternatives to be Carried Forward, and the Preferred Alternative. If deemed necessary, these concurrence points could occur independently. The Cooperating Agencies have 10 business days from the receipt of the Request for Concurrence on Concurrence Points #2 and #3 to concur on the submission.

Coordination Point #6: Preliminary Draft of the DEIS. Prior to publication of the DEIS, MassDOT and FHWA will distribute a preliminary draft of the DEIS to Cooperating Agencies for review. The Cooperating Agencies will have 30 days to review and provide comments on the preliminary draft.

Coordination Point #7: Issuance of DEIS Public Notice. FHWA is responsible for publication of the DEIS Notice of Availability in the Federal Register, allowing for 45 days of public review of the DEIS. The notice will also announce a joint public hearing, if a hearing is determined to be required by FHWA and/or other Cooperating Agencies (e.g., USACE, USCG).

Coordination Point #8: DEIS Public Hearing(s) Held / Close of DEIS Public Comment Period. Public hearing(s) on the DEIS will meet the requirements of FHWA. Details regarding public hearings for the Project can be found in the Public Involvement Plan.

Coordination Point #9: Addressing and Resolving Substantive Public Comments. MassDOT and FHWA lead the resolution of comments received on the DEIS and will submit a draft of the resolution document to all Cooperating Agencies following the close of the DEIS Public Comment Period. The Cooperating Agencies will review the resolution document and provide comments back to MassDOT and FHWA within 15 days of receipt.

Coordination Point #10: FHWA Submits Draft FEIS/ROD to Cooperating Agencies for Comment. MassDOT and FHWA will submit a draft FEIS/ROD to all Cooperating Agencies for review and comments. The Cooperating Agencies will review the package to ensure the documentation meets their NEPA obligations and will submit comments to MassDOT and FHWA within 30 days of receipt.



During the FEIS/ROD Phase (Phase III)

NEPA Milestone: FHWA Issues Combined FEIS/ROD. FHWA is responsible for publication of the Combined FEIS and ROD in the Federal Register. The final decision on the selected alternative will be identified in the Combined FEIS/ROD. The approval of the ROD concludes the NEPA process.

After FEIS/ROD (Phase IV)

Coordination Point #11: Permits are Issued. All Cooperating Agencies shall issue their approvals and permits within 90 days of the FEIS/ROD signature date, with limited exceptions.

3.2 Meeting Schedule

Group and individual meetings will be held with the agencies throughout the environmental review process to update them on the status of the Project and discuss other topics as appropriate. Initial discussions will include purpose and need, range of alternatives, methodology, impacts assessment, and mitigation measures. At the first Cooperating Agency Meeting held on July 16, 2019, MassDOT, FHWA, and Cooperating Agencies agreed to regularly scheduled meetings to be held every six weeks, as needed. These meetings will serve to provide an update to Cooperating Agencies on the status of NEPA and review of any upcoming Coordination Points or Concurrence Points.

3.3 Permits and Approvals

As described above, a number of permits and approvals are being sought from federal and state agencies.

4.0 Public Outreach Program

A separate Public Involvement Plan (PIP) for the Project has been prepared to facilitate and document the plan for interaction between MassDOT, FHWA, and the public during the Environmental Impact Statement (EIS) process. The PIP can be found on the project website located at <https://www.mass.gov/allston-multimodal-project>. Public involvement is a central aspect of the transportation planning process. Accordingly, the goal of the public involvement program for the I-90 Allston Multimodal Project is to ensure transparent, collaborative, and meaningful public involvement and agency participation throughout the environmental review process.

Public involvement activities for the I-90 Allston Multimodal Project will continue to build on the outreach efforts that MassDOT has already undertaken beginning in April 2014. These efforts have included: the operation of a Project Task Force, public information meetings at key Project milestones, email blasts to the Project's stakeholder database, briefings to community groups and elected officials upon request, and maintenance of the Project's website as a 24-hour informational portal about the Project providing not only an overview of the ongoing work, but also the PowerPoint presentations and minutes generated for public and task force meetings as well as community briefings.

In keeping with the open participatory process undertaken to date, the I-90 Allston Multimodal Project process will continue to solicit input from the public and cooperating agencies, encourage open discussion of the advancing design, and provide ample opportunities for comments and questions.

5.0 Repositories

Local repositories throughout the project area will enable members of the public to examine Project documents, including EIS documents and other informational materials. The established repositories include local libraries, town halls, and other locations.

Project documents will be available for public viewing at the locations listed below.

Boston Public Library System at Copley Square
700 Boylston Street
Boston, MA 02116

Brookline Public Library System in Brookline Village
361 Washington Street
Brookline, MA 02445

Honan Branch of the Boston Public Library System in Allston
300 N. Harvard Street
Allston, MA 02134

Central Square Branch of the Cambridge Public Library
45 Pearl Street
Cambridge, MA 02139

Massachusetts Department of Conservation and Recreation
251 Causeway Street
Boston, MA 02114

Framingham Public Library
49 Lexington St.
Framingham, MA 01702

Worcester Public Library
3 Salem St.
Worcester, MA 01608



6.0 Contact Information

For further information on the Project, please visit the Project website at <https://www.mass.gov/allston-multimodal-project> or please contact:

Jeffrey McEwen, P.E.
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Public Involvement Plan I-90 Allston Multimodal Project

Boston, MA

**Submitted to:
Federal Highway Administration**



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1.0 Introduction

The Massachusetts Department of Transportation (MassDOT) and the Federal Highway Administration (FHWA) are initiating the environmental review process for the proposed I-90 Allston Multimodal Project located within the City of Boston, Suffolk County, Massachusetts. MassDOT, as the Project sponsor and non-federal joint lead agency, in coordination with FHWA, the lead Federal agency, prepared this Public Involvement Plan (PIP) to facilitate and document the plan for interaction between MassDOT, FHWA, and the public during the National Environmental Policy Act (NEPA) process.

The Project is located within the City of Boston and includes the area encompassed by the former Beacon Park Yards within the existing Allston-Brighton interchange area on I-90 in the Allston neighborhood. The Project is bounded by Ashford Street to the south, the Commonwealth Avenue Bridge and the Charles River to the east, and Cambridge Street to the north and west. MassDOT and FHWA are initiating an Environmental Impact Statement (EIS) in accordance with NEPA to address roadway deficiencies, address safety issues, improve mobility, and improve transportation access to the Charles River Reservation within this area.

Public involvement is a central aspect of the transportation planning and environmental review processes. Accordingly, the goal of the public involvement process for the I-90 Allston Multimodal Project is to ensure transparent, collaborative, and meaningful public involvement and agency participation throughout the environmental review process.

The public involvement and agency participation efforts for this Project have been developed in compliance with legislation and policies that guide public involvement in Project development, including but not limited to the following:

- National Environmental Policy Act of 1969 (NEPA), which requires federal agencies to conduct the environmental review process in coordination with the public and with other agencies;
- Efficient Environmental Reviews for Project Decision making (23 U.S. Code § 139) which outlines project development procedures applicable to all projects for which an Environmental Impact Statement is prepared under NEPA;
- Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, 54 USC 306108, and its implementing regulations, 36 CFR Part 800;
- Executive Order 12898 of 1994 (“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”); and
- Massachusetts Environmental Policy Act (MEPA), which provides meaningful opportunities for public review of potential environmental impacts of projects for which certain actions by state agencies are required.



2.0 National Environmental Policy Act of 1969 (NEPA)

NEPA mandates public involvement in the environmental review process of proposed Federal agency actions. NEPA requires agencies to make a diligent effort to involve the public in preparing and implementing their NEPA procedures during the environmental review process in accordance with 40 CFR § 1506.6. NEPA also requires agencies to provide public notice of NEPA-related hearings, public meetings, and the availability of environmental documents to inform individuals and agencies that may be interested or affected. As described in more detail below, MassDOT and FHWA will solicit comments from the public on the proposed Project at several milestones in the NEPA process.

23 U.S. Code § 139 Efficient environmental reviews for project decision making. 23 U.S. Code § 139 serves to increase opportunities for the public and federal, state, and local agencies to have early, proactive and ample involvement in the NEPA process. 23 U.S. Code § 139 requires the development of a coordination plan for all highway and transit projects for which an EIS is being prepared under NEPA. Accordingly, the lead federal agency (FHWA) and the state sponsor (MassDOT) have prepared this Public Involvement Plan (PIP) to lay out the process and communication methods which will be followed to disseminate information about the Project, as well as to solicit and consider input from the public. The PIP will be in effect throughout the environmental review process, beginning with scoping and ending with the Record of Decision (ROD). The plan is intended to establish an outreach process that can be amended as needed and appropriate over the life of the Project.

FHWA has identified and invited appropriate federal and state agencies and MassDOT has identified and invited Massachusetts State agencies to participate in the environmental review process by serving as cooperating or participating agencies. According to Council on Environmental Quality (CEQ) regulations (40 CFR § 1508.5), “cooperating agency” means any federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative. With agreement from the lead agencies, a state or local agency of similar qualifications may also become a cooperating agency. “Participating agencies,” as defined by 23 U.S. Code § 139, are those Federal, State, tribal, regional or local government agencies that may have an interest in the project. Cooperating and participating agencies are responsible for identifying, as early as practicable, any issues of concern regarding the project’s potential environmental or socioeconomic impacts that could substantially delay or prevent an agency from granting a permit or other approval. Meetings will be held with the agencies throughout the environmental review process to update them on the status of the project and discuss other topics as appropriate.

3.0 Key Resource Concerns

The EIS will contain an analysis of the Project’s potential adverse impacts on a wide range of social, environmental and economic considerations, such as:

- Wetlands and Water Quality;
- Historic and Archaeological Resources;
- Air Quality;
- Noise and Vibration;
- Construction Impacts;
- Access to transit;
- Impacts on traffic in the neighborhoods most closely adjoining the project in Allston, Brookline, and Cambridge;

- Bicycle and pedestrian connectivity across the Interchange site; and,
- Bicycle and pedestrian connectivity from points surrounding the Interchange to the Charles River cycling and walking pathway system.

4.0 Coordination Points and Completion Dates

23 U.S. Code § 139 establishes milestones within the environmental review process for involvement and review opportunities. Table 1 summarizes significant coordination points and Project milestones. Anticipated completion dates are included for informational and resource planning purposes. Timeframes and review periods are established in accordance with 23 U.S. Code § 139 unless covered under existing agreements (i.e. review periods established in the MassDOT/FHWA Section 106 Agreement). Note that this table does not document historic project activities.

Table 1 Key NEPA Milestones

Project & Public Review Milestones	Anticipated Completion Date
Notice of Intent Publication	October 2019
Scoping Report Publication	November 2019
Completion of the DEIS	January 2021
Completion of FEIS/ROD	October 2021
Completion of permits, licenses, or approvals after the ROD	January 2022

5.0 Section 106 Consultation

Section 106 of the National Historic Preservation Act (NHPA; 36 CFR § 800) requires federal agencies to take into account the effects of their undertakings on historic properties that are listed in or eligible for listing in the National Register of Historic Places (NR). Federal agencies are required to consult on the Section 106 process with the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officers (THPOs), the Advisory Council on Historic Preservation (ACHP), representatives of local governments, and individuals and organizations with a demonstrated interest in the project due to the nature of their legal or economic relation to the project or affected historic properties, or their concern with the project's effects on historic properties (i.e., Section 106 consulting parties).

The Section 106 process also has a specific public involvement component. FHWA is responsible for identifying consulting parties, as defined in 36 CFR 800.2(c), and will involve these parties in the findings and determinations made during the Section 106 process for the Project. FHWA, in consultation with the SHPO and THPOs, as applicable, shall identify appropriate points for seeking public input and for notifying the public of the proposed actions associated with the I-90 Allston Multimodal Project. The regulations require that the lead agency seek and consider the views of the public in a manner that reflects the nature and complexity of the Project and its effects on historic properties. The lead agency shall provide the public with information about the Project and its effects on historic properties and seek public comment and input. Public outreach for purposes of NEPA can be used to satisfy the public involvement requirements under Section 106, provided that the NEPA document includes adequate information about the Project's effects on historic properties.



6.0 Executive Order 12898, Environmental Justice

Executive Order 12898 (“Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”) requires federal agencies to involve the public on project issues related to human health and the environment. The U.S. Department of Transportation’s “Final Order on Environmental Justice” indicates that project sponsors should elicit public involvement opportunities, including soliciting input from affected minority and low-income populations in considering project alternatives.

Since the Project began in 2014, efforts have been undertaken to reach minority and low-income populations with the Project Area. These efforts have centered on ensuring that notification of the ongoing public process is made available in Spanish, ensuring that representatives of low-income populations are involved in the public process, and lowering barriers to accessing materials generated to support the public involvement process. Meetings have been advertised in *El Planeta* and *El Mundo*, the Spanish language newspapers for the Boston area. The Allston-Brighton Community Development Corporation (CDC) is a member of the Project’s Task Force, and major Project filings such as the Draft Environmental Impact Report (DEIR) have been placed in local libraries within the Project Area to ensure that individuals who have limited time and resources to look at such documents do not need to leave their neighborhood to review materials at the Executive Office of Energy and Environmental Affairs (EOEEA) office in downtown Boston. The I-90 Allston Multimodal Project will continue to engage environmental justice communities through targeted media outlets and will provide special services (i.e., translation) for these communities as necessary to ensure their access to public involvement activities.

7.0 Public Involvement Activities

Public involvement activities for the I-90 Allston Multimodal Project will continue to build on the outreach efforts that MassDOT has already undertaken beginning in April 2014. These efforts have included the operation of a Project Task Force, public information meetings at key Project milestones, email blasts to the Project’s stakeholder database, briefings to community groups and elected officials upon request, and maintenance of the Project’s website as a 24-hour informational portal about the project providing not only an overview of the ongoing work, but also the PowerPoint presentations and minutes generated for public and task force meetings as well as community briefings.

In keeping with the process undertaken to date, the I-90 Allston Multimodal process will continue to solicit input from the public and cooperating agencies, respond to community inquiries as they are communicated to the project team’s public involvement specialist and/or MassDOT legislative liaison, encourage open discussion of the advancing design, and provide ample opportunities for comments and questions. Methods that will be used to carry out the public involvement effort include:

Public Information Meetings will be held at Project milestones. Going forward, at major Project milestones during both the MEPA and NEPA processes, such as the circulation of the Notice of Project Change (NPC), the Draft Environmental Impact Statement (DEIS) and Final Environmental Impact Statement (FEIS), public information meetings will again be held in Allston, Brookline, and Cambridge. Meetings will also be undertaken in MetroWest, most likely in Framingham or Natick, and Worcester. Documents to which the community would need access in order to fully participate in such meetings will also be held in a centrally located community such as Framingham in Boston’s MetroWest region since many residents of MetroWest are commuters who use the Worcester/Framingham commuter rail line and I-90 as part of their daily journey to work in Boston. Such documents will also be placed on deposit at the Boston Public Library main branch in Copley Square and the Honan Branch located in Allston less than ¼ mile from the Project site.

Major public meetings will be advertised in local newspapers to encourage maximum public participation in the environmental review process. Outreach will include advertisement in Boston's Spanish language newspapers as well. Access to public information and public meeting venues will be in accordance with the American Disabilities Act of 1990 (ADA). Notification of public information meetings will also be placed on the project website: <https://www.mass.gov/allston-multimodal-project> which will be updated to reflect the current stage of project development and MassDOT's participation in the federal NEPA process. Public notices and other notification about public meetings will inform the public how to request reasonable accommodations.

Comments and questions offered by members of the public through the public meetings described above will be documented through the production of meeting minutes posted to the Project website. These minutes will also serve as the basis for the chapters discussing public outreach in the various state and federal environmental documents that MassDOT will submit between the time of writing of this document and completion of the environmental process. Written comments and their responses from the Project team, if substantive, will be captured in the appropriate sections of applicable environmental filing filings.

Public Hearings will be held in Accordance with State and Federal Permitting Requirements

Wetlands Protection Act

In accordance with MGL Ch. 131 Sec 40, the Project sponsors will adhere to public involvement activities as outlined within the Massachusetts Wetlands Protection Act. If the Project will impact wetlands or lands within 25 feet of a perennial stream or other resource areas, a Notice of Intent (NOI) will be filed with the local conservation commission. The local conservation commission will set a time for a public hearing for the proposed Project and advertise the hearing in the local paper.

Ch. 91, The Massachusetts Public Waterfront Act

In the case of nonwater-dependent projects, MassDEP will hold a public hearing within the city or town where the project is located. The following information will be provided at the hearing: project description, location of the project, location of the historic mean high and low water marks on the site, description of existing waterways authorization that may exist for the site, and an explanation of how the project meets the Standards for nonwater-dependent infrastructure facilities requirements specified in 310 CMR section 9.55 of the Chapter 91 Waterways Regulations.

Public Comment Periods Will Be Established. In accordance with 23 CFR § 771.123 and 23 U.S. Code § 139, the Project team will establish opportunities for public comment throughout the environmental review process. Upon publication of the Notice of Intent to prepare an EIS in the Federal Register, FHWA and MassDOT will ensure the scoping process allows 30 days for the receipt of public comments. For comment by agencies and the public on a draft EIS, a deadline of not fewer than 45 days nor more than 60 days after notice of publication in the Federal Register will be established unless the deadline is extended by the lead agency for good cause. If a public hearing is held upon publication of the DEIS, the Project team will make the draft EIS available to the public at the hearing and at least 15 days in advance of the hearing. The Project team will provide responses to all substantive comments received within these timeframes. Substantive comments do one or more of the following:

- Question, with reasonable basis, the accuracy of information in the EIS.
- Question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis.
- Present new information relevant to the analysis.
- Present reasonable alternative other than those analyzed in the EIS.



- Causes change or revisions in one or more of the alternatives.

Meetings of the I-90 Allston Multimodal Project Task Force will continue. The I-90 Allston Multimodal Project's task force is composed of residents of Allston, Cambridge, and Brookline, members of concerned local advocacy groups addressing cycling, walking, open space, and the Charles River, representatives of the Cities of Boston and Cambridge, local elected officials, and representatives of the Massachusetts Bay Transit Authority (MBTA). The Task Force was constituted by MassDOT in 2014 as a way for members of the groups listed above to work closely with the agency and its consultant team to address the myriad details associated with Project development and to facilitate two-way communication between MassDOT and the community between standard public information meetings.

Task Force membership was selected based on MassDOT's understanding of known, interested advocacy organizations, such as WalkBoston and Livable Streets, applicable state agencies such as DCR and the MBTA, local community organizations such as the Allston-Brighton CDC and the Allston Civic Association, representatives of the transportation field such as AAA and Massachusetts Motor Carriers, and a mix of elected and appointed officials for the Project Area. At the Project outset in 2014, community representatives were suggested to MassDOT by area elected officials. A listing of current task force members can also be found on the Project web site as a way for members of the community to reach out to the task force member which most closely aligns to their concerns whether they trend to residential, transportation, or advocacy issues. Task force membership is administered by MassDOT. Any member of the community may apply to MassDOT through the Project's legislative liaison.

All Task Force meetings are documented through the production of meeting minutes and made available, once approved by MassDOT, for distribution on the Project website (See below for detailed discussion of the Project website). Such minutes and presentations will continue to be posted as they are generated and MassDOT approves them for public display on the website. This group will continue to meet as Project development continues. Members of the state delegation at the house and senate levels for districts from Worcester east along I-90 have been added to the task force for the DEIS/FEIS phase of work. Throughout the DEIS/FEIS phase of work it will be the goal of MassDOT to meet, whether it be in an evening meeting, daytime working session, or other venue such as a Project site walk, with the task force at least quarterly. At such times more input from the group is needed, meetings will be held more regularly, as they have been for the bulk of 2019. At times when less input is needed, such as when major environmental documents are being prepared, the time between meetings may extend to as much as five months. Throughout the DEIS/FEIS phase, each Task Force meeting's agenda will include an update on the advancing MEPA/NEPA process. Depending on the status of the environmental process and other elements slated for discussion, this portion of the meeting is expected to vary in length.

Working with the Task Force is an ongoing, iterative process. Since beginning work with the group, MassDOT and its Project team have frequently needed to delay responding to questions posed by Task Force members until such time as the field investigations or engineering work needed to provide a sound answer have been done. Considering the 24-month timeframe mandated by One Federal Decision, for the DEIS/FEIS process, MassDOT and its Project team will provide Task Force members with a sense as to when their question will be answered. Questions which remain open in this manner will be tracked by the Project's public involvement specialist to ensure that they are responded to in a timely fashion.

Throughout the public process to date, members of the Task Force have been able and have felt free to propose agenda items for discussion by their group. Such requests have typically come in the form of emails to the Project's public involvement specialist, legislative liaison, or MassDOT project manager. For the DEIS/FEIS phase of work, Task Force members will be encouraged to submit such requests to the project's official email account: I-90Allston@dot.state.ma.us. Any such request will be responded to within a maximum of two weeks with an indication as to the timing of when the Project team will be able to

support discussion of the agenda item with appropriate data and/or level of engineering detail. Any such requests received by the project team through other channels will be processed the same way. Throughout the DEIS/FEIS phase, MassDOT and its Project team, will endeavor to provide Task Force members with an overview of what they will be discussing at upcoming meetings at least one week in advance of the session in question.

Briefings on request will continue. Since responding to an initial request for a briefing by the Cambridge City Council in April of 2014, the Project team for the I-90 Allston Multimodal Project has made it a point to respond to requests for targeted briefings on a timely fashion as they come up. Briefings have been delivered to such diverse groups as the Brookline Transportation Committee, the Allston Civic Association and Allston-Brighton CDC's Healthy Transportation Champions Group, and the Charles River Watershed Association. The Project team has also sent representatives to the open houses regarding transportation in Allston hosted by the City of Boston. This approach will continue throughout the NEPA process.

Site walks will be made available when needed and appropriate. During the Project, MassDOT has undertaken site walks with members of the public and Task Force as well as coordinating agencies during the run-up to filing of the DEIR. MassDOT has also undertaken one site bicycle ride with members of the Task Force representing the bicycle advocacy community. It is anticipated that additional site visits may be part of the NEPA process.

The Project website will be maintained. The I-90 Allston Multimodal Project has its own dedicated website at <https://www.mass.gov/allston-multimodal-project>. All materials posted to the Project website are made compliant for those who access the internet using assistive technologies. Throughout the NEPA process, this site will be maintained. Materials to be posted to the website shall include the following:

- PowerPoint presentations and minutes generated to support public information meetings, task force sessions, and targeted briefings.
- Handouts generated to support public information meetings, Task Force sessions, and targeted briefings if the same are not already part of the PowerPoint presentations or other materials presented at these meetings.
- Notes taken to document the above listed interactions with the public will also be posted.
- The Project's fact sheet is currently posted, and will be kept updated, to reflect the Project's current phase of development.

Materials for the Project website must be posted in an accessible format for those who access the internet using assistive technologies. During the DEIS/FEIS phase, it will be the goal of MassDOT's Project team to ensure that presentations, graphics etc. are posted within two weeks of the date of their original display to the public. The goal timetable for minutes will also be two weeks. It is recognized by MassDOT and its Project team that depending on the complexity of the materials in question, these timetables may be longer than listed here. Once the Project goes to construction, the website will remain live, but be transitioned to provide information about ongoing construction, travel impacts, etc. to residents and commuters.

The Project's stakeholder database will be maintained and continue to expand. The current I-90 Allston Multimodal Project's stakeholder database consists of over 1,000 entries. Any member of the public who has attended a public meeting, Task Force meeting, or targeted briefing since 2014 and provided the Project team with their contact information has been added to the database. Email blasts using MassDOT's Gov-Delivery system are sent out using the database to alert stakeholders as to when public information meetings are coming up and when major Project filings, such as the DEIR, are



available for public comment. Throughout the NEPA process, as additional meetings are held, the database will continue to expand.

Media outreach will continue. MassDOT's media office will continue to provide updates to the local press and television networks as the Project throughout the NEPA process. The Project team's public involvement specialist will continue to work with MassDOT's media personnel to ensure that such elements as are provided to the local press are presented in as accessible a manner as possible.

Information materials will be produced at key Project milestones. Each time the Project has moved into a new phase, dating back to 2014, its website and downloadable fact sheet have been updated to reflect the Project's current stage of development. At the time of this writing, the same refresh has been completed undertaken for the NEPA process. At public and Task Force meetings, as well as briefings, when needed and appropriate, informational boards have been placed to allow members of the audience to get a closer look at design details which may be hard to see on a screen at the front of the room as part of a PowerPoint show. Packets of visualizations of Project elements have also been provided, when needed and appropriate. All these elements will continue throughout the NEPA process.

Depositories have been established and will remain in use. When MassDOT filed its DEIR for the Project, copies were placed on reserve at the main library of the Boston Public Library System at Copley Square, in the main library of the Brookline Public Library System in Brookline Village, at the Honan Branch of the Boston Public Library System in Allston, and the Central Square Branch of the Cambridge Public Library. When the NPC, DEIS and FEIS/ROD are filed and made available for public comment, these same libraries will be used as well as additional copies available at Worcester Public Library and Framingham Public Library. When the DEIR was filed, copies were also made available for download through the project's website. This will also be done for the DEIS, and FEIS/ROD.

8.0 Contact Information

For further information about the Project, please visit the Project website at: <https://www.mass.gov/allston-multimodal-project> or please contact:

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