SOUTH STATION
EXPANSION

South Station Expansion Project

Appendix 6 – Coastal Resources Technical Report

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massDOT
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1. Introduction

The Massachusetts Department of Transportation (MassDOT), the Massachusetts Bay Transportation Authority (MBTA), and the National Railroad Passenger Corporation (Amtrak) have for decades identified the expansion of rail capacity at Boston South Station as a crucial transportation need, one that has been articulated in multiple local, regional, state, and Northeast Corridor (NEC)-wide planning documents.[1] In cooperation with the Federal Railroad Administration (FRA), Amtrak, and the MBTA, MassDOT is now pursuing the expansion of South Station to support existing NEC and commuter rail services and to provide for future Amtrak and MBTA service expansions. The current track capacity, layout, and operations of South Station limit the ability to accommodate projected future expanded services. In addition to expanding South Station terminal facilities, the South Station Expansion (SSX) project will also identify a solution to address existing and future intercity and commuter rail service layover needs. The SSX project includes planning, environmental reviews, and preliminary engineering for the five primary elements of the project:

1. **Expand the South Station terminal facilities**, including the addition of up to seven tracks and four platforms and construction of a new passenger concourse and other amenities.
2. **Acquire and demolish the U.S. Postal Service (USPS) General Mail Facility** located on Dorchester Avenue adjacent to South Station, which would provide an approximate 14-acre site on which to expand South Station. (Note that the relocation of the USPS facility will be the subject of a separate environmental review process by others.) Dorchester Avenue would be restored for public and station access.
3. **Create an extension of the Harborwalk along reopened Dorchester Avenue.**
4. **Provide for the possibility of future joint public/private development** adjacent to and over an expanded South Station.
5. **Provide adequate rail vehicle layover space** to address existing and future intercity and commuter rail service needs.

This Coastal Resources Technical Report has been prepared in support of the Draft Environmental Impact Report (Draft EIR) and Environmental Assessment (EA) for the SSX project, in accordance with the Certificate of the Secretary of the Office of Energy and Environmental Affairs (EEA) on the Environmental Notification Form (ENF) for the SSX project (April 19, 2013), the Massachusetts Environmental Policy Act (MEPA) regulations, 301 CMR 11.00 (revised, May 10, 2013), and FRA's Procedures for Considering Environmental Impacts, 64 Federal Register (FR) 101 (26 May 1999), pp. 28545-28556.

2. Summary of Findings

The SSX project sites, consisting of South Station and the layover facility sites, include project elements within the Massachusetts Coastal Zone requiring Federal Consistency review under the Massachusetts Coastal Zone Management Policy Guide[2] which is a component of the federally approved Massachusetts Coastal Program, replacing the March 2002 Massachusetts Coastal Zone Management Plan, as and filled

[1] Documents citing the need for an expanded South Station include: *Critical Infrastructure Needs on the Northeast Corridor* (2013), "The Northeast Corridor Infrastructure Master Plan" (2010); "The Amtrak Vision for High-Speed Rail in the Northeast Corridor" (2010), "A Vision for the Northeast Corridor" (2012), the Massachusetts Department of Transportation "Rail Plan" (2010), the Massachusetts Department of Transportation *Freight Plan* (2010), and the two most recent long range transportation plans of the Boston Region Metropolitan Planning Organization (2007, 2011).

[2] Massachusetts Executive Office of Environmental Affairs. *Massachusetts Office of Coastal Zone Management Policy Guide*, October 2011.

tidelands subject to the licensure requirements of Massachusetts General Law (M.G.L.) Chapter 91. Filled tidelands located greater than 250 feet landward of existing flowed tidelands of Fort Point Channel or the Charles River are landlocked and exempt from licensing. Project elements within landlocked tidelands would be subject to Public Benefit Review under 2007 Massachusetts Acts Chapter 168, Section 8.

The following is an assessment of review and approval requirements for the SSX project by the Massachusetts Office of Coastal Zone Management (CZM) for Federal Consistency, the Massachusetts Department of Environmental Protection (MassDEP) for licensing under Chapter 91, and the Secretary of Energy and Environmental Affairs for a Public Benefit Determination:

- The No Build Alternative would not require Federal Consistency review, any new Chapter 91 License, or a Public Benefit Determination.
- Alternative 1 – Transportation Improvements Only would require a Federal Consistency review for the improvements at South Station and a new nonwater-dependent infrastructure license for the construction of tracks, platforms and a new headhouse fronting on Dorchester Avenue. This alternative would meet applicable regulatory requirements for nonwater-dependent structures as outlined in the Chapter 91 regulations at 310 CMR 9.55. Of note is the exemption for nonwater-dependent infrastructure facilities from the regulatory standards at 310 CMR 9.51 (Conservation of Capacity for Water-Dependent Use), 310 CMR 9.52 (Utilization of Shoreline for Water-Dependent Purposes), and 310 CMR 9.53 (Activation of Commonwealth Tidelands for Public Use).
- Alternative 2 – Joint/Private Development Minimum Build would require Federal Consistency review, a new nonwater-dependent infrastructure license for the transportation elements, and one or more nonwater-dependent use licenses for the joint/private development components. Project elements on landlocked tidelands would require a Public Benefit Determination.
    - The infrastructure component would meet applicable regulatory requirements for nonwater-dependent structures as outlined in the Chapter 91 regulations at 310 CMR 9.55. As previously cited, as a nonwater-dependent infrastructure facility, the terminal expansion would be exempt from certain performance standards of Chapter 91.
    - The joint/private development components would meet all applicable regulatory standards for open space, building height and setback.
    - The ground floor of the private development buildings within licensing jurisdiction would need to be dedicated as facilities of public accommodation.[3]
- Alternative 3 – Joint/Private Development Maximum Build would require a Federal Consistency review, a new nonwater-dependent infrastructure license for the transportation elements, and one or more nonwater-dependent use licenses for the joint/private development components. This alternative would require certain regulatory substitutions to comply with the building height, setback requirements and the water-dependent use zone, and potentially open space restrictions and could only be licensed under the provisions of an approved Municipal Harbor Plan. Project elements on landlocked tidelands would require a Public Benefit Determination.
- The Widett Circle layover facility site is located in the Massachusetts Coastal Zone and would require Federal Consistency review.

[3] Massachusetts Department of Environmental Protection. *Waterways Regulations (310 CMR 9.02)* June 2009. Accessed October, 2012. http://www.mass.gov/dep/service/regulations/310cmr09.pdf.

- The Widett Circle and Beacon Park Yard layover facility sites contain filled landlocked tidelands which are exempt from licensing under Chapter 91 but would require a Public Benefit Determination under 2007 Massachusetts Acts, Chapter 186, Section 8.
- The Readville – Yard 2 layover facility site is not located within the Massachusetts Coastal Zone and would not require a Federal Consistency review, nor does the site contain filled or flowed tidelands subject to Chapter 91 or the Public Benefit Requirements of 2007 Massachusetts Acts Chapter 168, Section 8.

3. Regulatory Context

3.1. Introduction

This section describes the project's jurisdiction under the Massachusetts Coastal Zone regulations and M.G.L. Chapter 91 – Waterways (Chapter 91).

The SSX project sites and study areas include the South Station site and three layover facility sites, consisting of Widett Circle, Beacon Park Yard, and Readville-Yard 2 (Figure 1). The Widett Circle site (Figure 2) is located approximately 0.9 track-miles south of South Station, the Beacon Park Yard site (Figure 3) is located approximately 3.8 track-miles west of South Station, and the Readville-Yard 2 site (Figure 4) is located approximately 8.8 track-miles south of South Station.

Table 1 identifies the coastal regulatory jurisdiction applicable to South Station and the layover facility sites.

Table 1—Coastal Jurisdiction of SSX Project Sites

Project Element	Coastal Zone	Chapter 91	Public Benefit Determination
South Station	Yes	Yes[a]	Yes[b]
Widett Circle	Yes	N/A	Yes[b]
Beacon Park Yard	N/A	N/A	Yes[b]
Readville – Yard 2	N/A	N/A	N/A

a Construction on filled tidelands located within 250 feet of the high water mark of flowed tidelands (i.e. Fort Point Channel) are subject to Chapter 91.
b Filled tidelands located greater than 250 feet from the high water mark of flowed tidelands are "landlocked" and not subject to Chapter 91. Construction on landlocked tidelands requires a Public Benefit Determination.

The South Station site and the Widett Circle and Beacon Park Yard sites are shown in Figure 5 and Figure 6 in the context of the historic shoreline and the Massachusetts Coastal Zone. Each of these geographic areas contains filled tidelands formerly subject to daily tidal flooding and is therefore potentially subject to M.G.L. Chapter 91 and the Massachusetts waterways regulations at 310 CMR 9.00.

The Readville – Yard 2 site (Figure 4) does not contain filled tidelands and is not located within the geographic areas subject to Chapter 91 jurisdiction. The South Station site and the Widett Circle site are located within the Massachusetts Coastal Zone and are potentially subject to Federal Consistency review under the provisions of the CZM Plan. Neither the Beacon Park Yard site nor and the Readville-Yard 2 site are located within the Massachusetts Coastal Zone. Demonstration of consistency with the CZM Polices is included in Chapter 7 of this Technical Report.

3.2. Massachusetts Coastal Zone Management Federal Consistency Review

The South Station site and the Widett Circle layover facility site are located within the Massachusetts Coastal Zone established pursuant to the Federal CZM Act of 1972 and administered by the CZM under M.G.L. Chapter 21A, Sections 2 and 4A and the 301 CMR 21.00 (as revised). The Coastal Zone boundary is shown in

Figure 5. The current regulatory and programmatic policies regarding the Massachusetts Coastal Zone were published by CZM in October 2011.[4] No part of the SSX project is located within any Designated Port Area established pursuant to 301 CMR 21.00 or 301 CMR 25.00.

The purpose of the Massachusetts Coastal Zone Management Act is to ensure that federal activities or development projects, or projects requiring federal licenses or permits located in or likely to affect the Massachusetts Coastal Zone, are consistent with established state and federal policies intended to protect the state's limited coastal resources and preserve these areas for water-dependent uses.

The coastal zone regulations list federal activities, licenses and permits which routinely require Federal Consistency Certification. The SSX project potentially requires consistency review because of the likelihood for federal funding through the FRA; however, the project does not include an activity listed as routinely requiring Consistency Certification. The regulations at 301 CMR 20.00 establish CZM's discretionary authority to require formal consistency review for any project requiring federal action, license or permit. Therefore, the project's Federal Consistency requirements must be determined in consultation with CZM.

Projects requiring Federal Consistency Certification must demonstrate that they comply with the applicable regulatory policies and management principles established by the regulations at 301 CMR 20.00. These planning policies and management principles address potential impacts to the following:

- Water Quality
- Habitat
- Protected Areas
- Coastal Hazards
- Port and Harbor Infrastructure
- Public Access
- Energy
- Ocean Resources
- Growth Management

Consistency with these policies and principles is required for projects requiring formal consistency certification or for projects requiring a new or amended Chapter 91 waterways license under the provisions of the Waterways Regulations at 310 CMR 9.54. Projects exempt from formal Consistency Certification but requiring a Chapter 91 license undergo an informal interagency consistency review.

[4] Massachusetts Executive Office of Energy and Environmental Affairs. *Massachusetts Office of Coastal Zone Management Policy Guide*, October 2011.

3.3. Massachusetts General Law Chapter 91

M.G.L. Chapter 91 and its implementing regulations (310 CMR 9.00) require a state-issued license, permit, license amendment or other approval for any construction, placement, excavation, addition, improvement, maintenance, repair, replacement reconstruction, demolition or removal of any fill or structures located within filled or flowed tidelands or any change in use of such fill or structures not previously authorized.

The statutory authority to issue waterways licenses has been delegated to various legislatively established commissions and agencies since the late 1800s. These include:

- Massachusetts Harbor and Land Commission
- Port of Boston Commission
- Massachusetts Commission on Public Lands
- Massachusetts Department of Public Works
- Massachusetts Department of Environmental Protection (formerly Department of Environmental Quality Engineering)

MassDEP is the current regulatory authority with the responsibility and authority to issue waterways licenses under Chapter 91 and to administer previously issued licenses issued by predecessor agencies and commissions.

The Waterways Regulations at 310 CMR 9.04(1) establish Chapter 91 jurisdiction over the following "public trust lands" and require licensing or permitting by MassDEP pursuant to 310 CMR 9.05, including:

1. All waterways, including all flowed tidelands and all submerged lands lying below the high water of Great Ponds, certain named major rivers and non-tidal rivers and streams for which public funds have been expended for stream clearance, channel improvement or any form of flood control, either upstream of downstream…; and
2. All filled tidelands, except landlocked tidelands, and all filled lands lying below the natural high water mark of Great Ponds.

3.4. Municipal Harbor Planning

A Municipal Harbor Plan (MHP) is a voluntary process by which municipalities may obtain approval from the Secretary of EEA to modify certain licensing standards established under the Waterways Regulations at 310 CMR 9.00 in a manner consistent with local planning objectives and local and regional circumstances. MHPs are prepared pursuant to M.G.L. Chapter 21A, Sections 2 and 4A and the CZM Regulations at 301 CMR 23.00.

The Waterways Regulations at 310 CMR 9.34(2) require projects located within an area covered by a MHP to conform to the provisions of said plan to the degree applicable under the plan approval. The South Station site is located within the Fort Point Downtown Waterfront Municipal Harbor Planning Area, for which Phase 1 and Phase 2 MHPs have been approved.

Phase 1 of the Municipal Harbor Plan established the planning area boundaries and outlined basic planning principles for the planning area. Phase 2 required the City of Boston to complete a master planning effort for Fort Point Channel area south of Summer Street prior to completion of a Phase 3 Plan seeking modifications to any Chapter 91 baseline requirements. The only specific requirement included within Phase 2 was dedication of a minimum of 25% of the ground floor space to Special Public

Destination Facilities. The Phase 2 approval decision anticipates the preparation of a Phase 3 MHP focusing on the South Station expansion and reuse of the existing USPS facility.

None of the layover sites are located within a Municipal Harbor Planning area.

In 2014, the City of Boston initiated a master planning process for the South Station/USPS area, which is located within the Fort Point Downtown Waterfront Municipal Harbor Planning Area. BRA's goals for the Master Plan are to coordinate major public and private planning and development, and prepare a comprehensive, long-range plan for land use, multi-modal transportation, urban design and the public realm. Through the master planning process, BRA will propose development guidelines to advance an amendment to the Fort Point Downtown Phase 2 MHP, as well as provide zoning recommendations for the South Station site.

MassDOT is committed to work with the BRA, the City's Municipal Harbor Planning Committee and CZM, as well as the general community to prepare this plan.

3.5. Public Benefit Determination

The SSX project is subject to the jurisdiction of the 2007 statute, "An Act Relative to Licensing Requirements for Certain Tidelands" (2007 Massachusetts Acts Chapter 168, Section 8) (the "Act") because portions of the project sites are located on landlocked tidelands as defined by the referenced statute and the Waterways Regulations at 310 CMR 9.02. Landlocked tidelands located within the SSX project sites include the Widett Circle and Beacon Park Yard layover facility sites and the potential joint/private development at the South Station site, to the extent that such development is located on air-rights above the planned South Station transportation improvements.

The SSX project exceeds EIR review thresholds, as defined in 301 CMR 11.03, and, therefore, requires a Public Benefit Determination in accordance with the regulations at 301 CMR 13.00. The Act requires the Secretary to consider the following when making a Public Benefit Determination:

- Purpose and effect of the development;
- The impact on abutters and the surrounding community;
- Enhancement of the property;
- Benefits to the public trust rights in tidelands or other associated rights;
- Community activities on the development site;
- Environmental protection and preservation;
- Public health and safety;
- General welfare.

In weighing the adequacy of the proposed public benefit, the Secretary is required to place particular emphasis on the benefit to the public trust rights in tidelands. The Secretary is further instructed by the Act to consider the differences between tidelands, landlocked tidelands, and great ponds when assessing the public benefit and shall consider the practical impact of the public benefit on development. A Public Benefit Review and Determination is included in DEIR as Chapter 7.

4. Methodology

This section describes the methodology that was used to determine the geographic extent of Chapter 91 jurisdiction at the 49-acre South Station site and the layover facility sites. Additionally, it defines the critical constraints to the planned transportation improvements and joint/private development at the South

Station site, as established by Chapter 91 and the CZM Plan. This methodology was based upon consultation with MassDEP, in accordance with the Waterways regulations, 310 CMR 9.00, and as recommended by the Secretary in the Certificate on the ENF.

- Reviewed readily available historic, maps, charts and surveys to document the history of filling at the project sites;
- Met with MassDEP's Waterways Program to confirm Chapter 91 licensing requirements associated with the SSX project;
- Reviewed selected acts and resolves of the Massachusetts General Court pertaining to the filling and development of Fort Point Channel;
- Reviewed City of Boston planning documents related to the Fort Point Downtown Waterfront MHP (Phase 1 and Phase 2) and the planned Boston Downtown Waterfront MHP and assessment of potential development or licensing constraints presented therein;
- Coordinated with the Boston Redevelopment Authority (BRA) on the MHP Planning process for the South Station area;
- Prepared MassGIS-based draft Chapter 91/CZM jurisdictional plans depicting:
    - Historic mean high and historic mean low water marks based on best available sources (presumed to be MassDEP);
    - Historic plan overlay plans using project base maps and selected historic plans, charts and surveys;
    - Location and extent of licensed fill and structures depicted on history waterways licenses;
    - Location and extent of filled tidelands subject to licensing and landlocked filled tidelands exempt from licensing at the project site;
    - Building height setbacks, open space and public access requirements based on existing Chapter 91 regulations;
    - Building height setbacks, open space and public access requirements based on potential off-sets and substitutions contained in the anticipated Fort Point Downtown Waterfront MHP Phase 3; and
    - Massachusetts Coastal Zone boundary.
- Identified proposed activities within filled tidelands subject to licensing under Chapter 91 under 310 CMR 9.00;
- Identified proposed activities within landlocked tidelands subject to Public Benefit Review under 301 CMR 13.00;
- Identified MEPA review thresholds exceeded by the project;
- Identified potential impacts to the public rights in tidelands;
- Identified potential measures to avoid, minimize or mitigate potential impacts to the public rights in filled tidelands; and
- Documented the project's compliance with the following regulations, as applicable, for each element of the project:
    - M.G.L. Chapter 91 within the context of existing regulations and, if available, the anticipated Fort Point Downtown Waterfront MHP;
    - CZM Plan, Federal Consistency review procedures as stipulated by 301 CMR 21.00 including a narrative summary of the project's compliance with all applicable CZM regulatory policies and management principles contained therein; and
    - Massachusetts Public Benefit Review Regulations established by 301 CMR 13.00.

5. Existing Conditions

This section provides an analysis of the Chapter 91 jurisdiction governing the project elements located within filled tidelands or within the Massachusetts Coastal Zone. The analysis considers historic

shorelines in the project area, prior licensing and current statutory and regulatory requirements and published guidelines.

5.1. South Station Site

The South Station site occupies approximately 49 acres located near Chinatown, Fort Point Channel, and the South Boston Waterfront/Innovation District. The site includes the following: South Station Rail/Transit Terminal and South Station Bus Terminal; and the USPS General Mail Facility/South Postal Annex site of approximately 14 acres, including that portion of Dorchester Avenue fronting the site and running parallel to Fort Point Channel. The USPS owns in fee that portion of Dorchester Avenue that extends from the southern line of Summer Street to a line on the southern shore of Fort Point Channel adjacent to the Gillette property. Of the remaining area, approximately 14 acres consist primarily of track, the one-acre Rolling Bridge Park, and adjacent Harborwalk and a portion of Fort Point Channel located at the southern end of the site. The South Station site extends to include the historic headhouse to the north, located at the intersection of Atlantic Avenue and Summer Street. The site extends along a portion of the NEC Main Line to the west, extending past Cove Interlocking. The site extends along a portion of the MBTA's Fairmount Line/Old Colony Railroad to the south, extending just past Broad Interlocking.

The historic shoreline in Fort Point Channel area has been reviewed in detail by the Massachusetts EEA Massachusetts Chapter 91 Mapping Project.[5] According to the Massachusetts Chapter 91 Mapping Project Report, a portion of the South Station site (including the existing USPS property, South Station, MassDOT Vent Building #1 and Dorchester Avenue) are seaward of Boston's original shoreline and include filled tidelands. This analysis selected four maps to define the historic high and low water marks of Fort Point Channel and the former South Bay.

Figure 5 shows the compiled historic high and historic low water marks in the vicinity of the South Station site and the Widett Circle layover facility site. Figure 7 through Figure 10 depict the South Station site and the Widett Circle layover facility site in the context of these maps as follows:

- John Hills, circa 1770: Untitled and undated map of Boston Harbor (Figure 7).
- U.S. Coast Survey, 1846-1847: Boston Harbor City of Boston. Reg. No. 229 (Figure 8).
- E.S. Chesborough, City of Boston Engineer, 1852: Map of Boston Harbor Showing Commissioner's Lines, Wharves, Etc. (Figure 9).
- U.S. Coast Survey, 1860: Comparative Map of Boston Harbor (Figure 10).

5.1.1. Chapter 91 Jurisdiction

The Dorchester Avenue extension, which separates Fort Point Channel from the existing USPS facility, is owned in fee by the USPS, a quasi-public agency, but the roadway is not open to the public for vehicular or pedestrian use at large. Unrestricted pedestrian and vehicular access along Dorchester Avenue through the South Station site is limited to an approximately 400 linear feet of roadway to provide access to the USPS customer service entrance and via a 200 linear foot MBTA easement to provide access to South Station. Accordingly, this section of Dorchester Avenue does not meet the definition of a public way in the Waterways Regulations and does not by itself create landlocked tidelands.

[5] Massachusetts Executive Office of Environmental Affairs, Office of Coastal Zone Management. *Massachusetts Chapter 91 Mapping Project,* 2006.

Section 85 of Chapter 235 of the 2000 Acts of Massachusetts General Court created a special exception under Chapter 91 to facilitate redevelopment on air-rights above intermodal transportation facilities located on landlocked tidelands, but for the abandonment of an historic public way. This statute states:

> *"Notwithstanding any provision of chapter 91 of the General Laws or any other general or special law, rule or regulation to the contrary, no waterways license pursuant to said chapter 91 shall be required for the construction of any structure on air rights, including necessary supports and foundations incidental thereto, adjacent to or over an intermodal transportation center, constructed on filled tidelands, which are more than 250 feet from the high water mark and any portion of such filled tidelands are separated from any flowed tidelands by a public way in existence at any time which was subsequently discontinued or abandoned and which way was used for the operations of any instrumentality of the United States, including any independent agency, establishment or department of any branch of government thereof. The chief planning agency in the city or town in which such intermodal transportation center is located and the regional transit authority shall work cooperatively to promote public access to flowed tidelands over and through any such intermodal transportation center."*

While the statute does not specifically identify South Station as the focus of the Massachusetts Legislature's intent, the site meets the specific geographic criteria. Therefore, Dorchester Avenue is determined to be a public way for the purposes of waterways licensing projects to be built on air-rights located over an intermodal transportation facility and separated by a public way in existence at any time and later discontinued and used for operations by any instrumentality of the U.S. Government. This statute creates landlocked tidelands – for potential joint/private development – at a point 250 feet landward of the existing mean high water of Fort Point Channel.

Based on current City of Boston Tax Assessor records, nearly all filled tidelands in the South Station site (including South Station, the USPS facility, MassDOT Vent Building #1 and the Dorchester Avenue extension) are held by the Commonwealth or a quasi-public agency or authority for the benefit of the public and therefore meet the regulatory definition of Commonwealth Tidelands. The exception to this definition is for a portion of the 245 Summer Street parcel, located immediately adjacent to South Station (but outside the South Station Expansion project site boundary), which lies between the historic mean high water and historic mean low water marks. The filled land located seaward of the historic low water mark at 245 Summer Street is regulated as Commonwealth Tidelands. The filled land located landward of the historic low water mark at 245 Summer Street is regulated as filled Private Tidelands.

As described in Section 8.2, Alternative 1 would be reviewed as a nonwater-dependent infrastructure project and would not be subject to the numeric land use standards under Chapter 91. Approximately 14 of the South Station site's 49 acres are located within 250 feet of the high water mark of Fort Point Channel. As part of Alternative 2 and Alternative 3, these 14 acres would therefore be subject to detailed review under Chapter 91 for land use, open space, building heights, and setback restrictions. This jurisdictional area is described in detail in Section 6.

5.1.2. Prior Waterways Licensing

This section describes the prior waterways licensing for the South Station site based on licensing databases maintained by MassDEP and reflected in records maintained at the Suffolk County Registry of Deeds. The approximate license areas described herein are shown in Figures 11 through 13.

The South Station site and immediate area were initially built-out beginning in the early part of the 19th century with the construction of wharves and piers along the western shoreline of Fort Point Channel.

This development continued incrementally until the end of the 19th century, when the City of Boston constructed a seawall (License 2041) at the edge of the existing channel and South Station was built by the Boston Terminal Company (License 2040). Numerous waterways licenses were issued authorizing work in Fort Point Channel prior to the construction of the seawall and South Station. These historic licenses issued by the Massachusetts Harbor and Land Commission are listed in Table 2.

Table 2—South Station Site and Fort Point Channel: Historic/Superseded Waterways Licenses issued by the Massachusetts Harbor and Land Commission

License	Year	Licensee	Authorized Work
Unknown	1878	City of Boston	Rebuild Washington Street Bridge.
644	1881	Francis' Wharf	Extend Francis Wharf into Fort Point Channel, short of Massachusetts Harbor Line.
635	1882	City of Boston	Widen draw opening, drive and remove piles for Mt. Washington Avenue Bridge.
651	1882	Francis' Wharf	Extend Francis' Wharf into Fort Point Channel, short of Massachusetts Harbor Line.
669	1883	Howe's Wharf	Extend existing Howe's Wharf into Fort Point Channel.
682	1883	Howe's and Tirrell's Wharf	Modify existing docks and place fill in Fort Point Channel.
1140	1889	New York and New England Railroad Company	Build a bulkhead and fill land at its dock on Fort Point Channel.
1267	1890	City of Boston	Reconstruct Federal Street Bridge.
1490	1892	Jesse Tirrell	Construct Extension of Tirrell's Wharf.
1565	1893	Trustees of Will E. Francis	Place fill at existing Francis Wharf.
1572	1893	Thomas Walsh et al.	Construct Wales Wharf Improvements.
1673	1894	C.W. Wales	Construct Improvements on Wales Wharf.
2043	1897	City of Boston	Reconstruct Summer Street Drawbridge
2095	1898	City of Boston Engineering Department	Construct Bridge, Seawall and filling at Fort Point Channel in connection with Federal Street Bridge.
2125	1898	City of Boston Engineering Department	Modify Mt. Washington Avenue Bridge.
2172	1898	American Telephone and Telegraph Company	Place piles in Fort Point Channel.
3216	1907	City of Boston Engineering Department	Construct New Retractile Draw in Mt. Washington Avenue Bridge over Fort Point Channel.

In 1897, licensing commenced for the construction of the Boston South Station Terminal Building and tracks. Two licenses were issued by the Harbor and Lands Commission to fill the remaining open water and flats within the footprint of South Station and Dorchester Avenue. These licenses, Nos. 2040 and 2041, were issued to the Boston Terminal Company and the City of Boston, respectively. The placement of fill and construction of bridges needed to access the station was authorized in 1898 through the authority granted by licenses Nos. 2102 and 2003. These licenses authorized the placement of fill and/or structures within or above the waters of Fort Point Channel. Consistent with the format of licenses issued in the late 1800s, no additional rights or obligations were specifically conveyed or established by the licenses, with the exception of compensation paid to the Commonwealth for the displacement of tidewater pursuant to the license.

Several waterways licenses were issued between 1947 and 1973 to authorize the installation of utility lines in, over and under the waters of Fort Point Channel in close proximity to the South Station site. These licenses, listed in Table 3, were issued by the Port of Boston Commission (Port of Boston) or the Massachusetts Department of Public Works (DPW). The status of the improvements authorized by these

Table 3—Waterways Licenses Authorizing Utility Structures in the Waters of Fort Point Channel

License	Year	Licensee	Issuing Authority	Authorized Work
25	1947	New England Telephone and Telegraph Company	Port of Boston	Operate and maintain submarine cables.
74	1948	New England Telephone and Telegraph Company	Port of Boston	Lay and maintain submarine cables.
81	1948	MassDPW	Port of Boston	Construct Bridge Alterations and Reconstruct Dorchester Avenue.
84	1948	Western Union Telegraph Company	Port of Boston	Lay and maintain submarine cables.
4435	1961	Boston Edison Company	MassDPW	Install sleeves and pipeline over Fort Point Channel.
5961	1973	Boston Edison Company	MassDPW	Install ground bed consisting of six nodes in Fort Point Channel and pipe on existing seawall.

licenses is not presently known. Each license granted the licensee rights to construct operate and maintain utilities in, under, or over the waters of Fort Point Channel. Table 4 provides a list of these four licenses issued for the original construction of Dorchester Avenue, the South Station headhouse, and the adjacent vehicular and railroad bridges to the south.

In the 1930s, the eastern end of the South Station Terminal was demolished and the existing USPS building was constructed. At that time, a new license was not required for construction of buildings located on existing licensed fill, such as that within the South Station site. As a result, the existing transportation uses remain authorized by Waterways License 2040 issued to the Boston Terminal Company, and portions of Dorchester Avenue remain authorized by Waterways License 2041 issued to the City of Boston and transferred with land ownership to the USPS.

Table 4—South Station Site Original Headhouse and Track Construction Chapter 91 Licenses

License	Year	Licensee	Issuing Authority	Authorized Work
2040	1897	Boston Terminal Company	Harbor and Land Commission	Fill waters on Fort Point Channel at the foot of Summer Street.
2041	1897	City of Boston	Harbor and Land Commission	Construct seawall on pier head line, place fill between wharves and Summer Street Extension.
2102	1898	City of Boston	Harbor and Land Commission	Construct a seawall on the northerly pier line of Fort Point Channel from the northerly line of Broadway to westerly line of Dorchester Avenue.
2103	1898	Old Colony Railroad Co., Boston and Providence Railroad Corp.	Harbor and Land Commission	Construct railroad bridges over Fort Point Channel

The next licenses bearing on the project site were not issued until 1996 and 1997 during the planning for the MassDOT Central Artery / Tunnel Project. These licenses, provided in Table 5, include special conditions which require the licensee to meet all commitments made in the 1990 Final Supplemental EIR in the vicinity of Fort Point Channel.[6]

Construction of the MassDOT Vent Building #1, redevelopment of the immediately surrounding area, and modifications to Dorchester Avenue were authorized by two separate licenses. The vent building foundation and realignment of the Dorchester Avenue Bridge were authorized by License 6544, issued to the Massachusetts Highway Department on June 6, 1997; and the above ground structure was authorized by License 7733, issued to the Massachusetts Highway Department on July 30, 1997. Surface restoration in the vicinity of Fort Point Channel was authorized by License 10048, issued to the Massachusetts Highway Department on August 24, 2004.

Table 5—Central Artery / Tunnel Project Chapter 91 Licenses for the South Station Site

License	Year	Licensee	Issuing Authority	Authorized Work
5518	1996	Massachusetts Highway Department	MassDEP	Initial construction in Fort Point Channel, utility and bridge work. Alterations to Dorchester Avenue and railroad bridges.
6544	1997	Massachusetts Highway Department	MassDEP	Construct and maintain tunnel, permanent configuration of Dorchester Avenue and Dorchester Avenue Branch Railroad Bridges and associated utilities and temporary structures in Fort Point Channel.
7733	1997	Massachusetts Highway Department	MassDEP	Construct permanent surface improvements and above-ground structures at MassDOT Vent Building #1.

5.2. Layover Facility Sites

The following three layover sites in Boston have been recommended for further evaluation in the environmental review phase of the project:

- Widett Circle
- Beacon Park Yard
- Readville-Yard 2

The following sections describe the regulatory status of each.

5.2.1. Widett Circle

The Widett Circle site, totaling approximately 29.4 acres, is industrial zoned and located in South Boston along the MBTA's Fairmount Line, approximately one track-mile from South Station. It is comprised of two parcels, primarily in private ownership: Cold Storage and Widett Circle.

[6] Massachusetts Department of Public Works. *Central Artery (I-93)/Tunnel (I-90) Project Final Supplemental Environmental Impact Report, EOEA# 4325.* November 1990.

Widett Circle is located in the Massachusetts Coastal Zone and is subject to Federal Consistency review. Furthermore, Widett Circle contains a small area of filled tidelands, as shown in Figure 5, however these tidelands are located greater than 250 feet from existing flowed tidelands and are separated from the watersheet of Fort Point Channel by one or more interconnected public ways that was in existence on January 1, 1984.[7] Therefore, any filled tidelands at Widett Circle are landlocked and not subject to Chapter 91 licensing pursuant to Chapter 368 of the Acts of 2007 and 310 CMR 9.00. Pursuant to this statute, the construction of a layover facility at this site would require a Public Benefit Determination. No historic licensing data exist for this site.

5.2.2. Beacon Park Yard

Beacon Park Yard is located along Cambridge Street in the Allston neighborhood of Boston. The approximate 30-acre site is located on the MBTA Framingham/Worcester Line approximately 3.8 track-miles from South Station. It is an industrial-zoned site located between the Massachusetts Turnpike Interstate Route 90 (I-90) Allston Toll Plaza and the MBTA Framingham/Worcester Line. The site has served for many years as a major freight rail yard and intermodal terminal in Boston for CSX Transportation, Inc. (CSXT). The freight and most of CSXT intermodal services relocated to central Massachusetts in 2013.

The Beacon Park Yard site (Figure 3) is located along the Charles River and includes filled tidelands. To date, neither the MassDEP nor the Chapter 91 Mapping Project has defined a historic low water mark in the Charles River in the vicinity of the site. The Chapter 91 Mapping Project defined the historic high water mark in the vicinity of this layover site using an 1894 park planning map.

Figure 6 shows the historic shoreline in the vicinity of the Beacon Park Yard site. Figure 12 shows the historic high mark and the existing (2012) shoreline in the context of the historic map titled "Metropolitan Parks Commission and the State Board of Health, 1894: Plan of Charles River from Waltham to Boston Harbor."

As shown in Figure 12, Beacon Park Yard contains a small area of filled tidelands; these filled tidelands, however, are located greater than 250 feet from existing flowed tidelands and are separated from the watersheet of Boston Harbor by one or more interconnected public ways that were in existence on January 1, 1984. Any filled tidelands at Beacon Park Yard are landlocked and not subject to Chapter 91 licensing. Pursuant to Chapter 368 of the Acts of 2007, work within filled tidelands requires a Public Benefit Determination. No historic licensing data exist for this site. Beacon Park Yard is located outside of the Massachusetts Coastal Zone and therefore not subject to Federal Consistency review under the CZM Plan.

5.2.3. Readville – Yard 2

The MBTA's Readville - Yard 2 is located in the Readville section of Hyde Park in Boston in the northeast quadrant of the intersection of the NEC and the MBTA Fairmount Line, approximately 8.8 track-miles south of South Station. Readville - Yard 2 is a maintenance repair facility and the largest layover yard used by the MBTA for its south side service. The MBTA currently uses Readville – Yard 2 for mid-day layover storage of 10 trainsets[8] of variable lengths.

[7] Massachusetts Department of Environmental Protection. *Waterways Regulations (310 CMR 9.02).* June 2009. Accessed October, 2012. http://www.mass.gov/dep/service/regulations/310cmr09.pdf.

[8] A trainset is used to describe the physical makeup of a combination of locomotives and coaches coupled together and operating as one unit.

The Readville - Yard 2 site is located adjacent to the Neponset River and approximately 8.6 miles upstream from its discharge into Boston Harbor. The river has a long history of modifications by the construction of dams dating to the mid-1600s. Presently, the Readville section of the Neponset River is separated from flowed tidelands of Boston Harbor by the Baker Chocolate Factory and the Tileston and Hollingsworth dams both built in the 1960s. Based on the presence of these dams, the river does not meet the regulatory criteria for flowed tidelands. Accordingly, the Neponset River adjacent to site is regulated as a non-tidal river or stream under 310 CMR 9.04(1)(e). Therefore the site does not contain any filled tidelands subject to the licensing requirements of Chapter 91. No work is proposed below the high water mark of the river and no Chapter 91 approval would be required. Readville – Yard 2 is located outside of the Massachusetts Coastal Zone and not subject to Federal Consistency review.

6. Potential Impacts to Filled Tidelands

This section addresses potential impacts to filled tidelands subject to Chapter 91 resulting from the project at South Station and its immediate vicinity. There are no jurisdictional filled tidelands at any of the three layover facility sites and therefore no impacts at those sites. Similarly, the No Build Alternative would not include any new construction or change in use triggering a new license and therefore would not result in any new impacts to filled tidelands.

Section 8 describes how each alternative at the South Station site would comply with Chapter 91.

M.G.L. Chapter 91 is the modern codification of centuries of Massachusetts law dating to the Colonial Ordinances of 1641 - 1647 which reserve for the public certain rights to access the shoreline for lawful purposes. This statutory construct is unique to Massachusetts and attempts to balance public rights to access the waterfront for traditional purposes of fishing, fowling and navigation with private ownership of formerly flowed tidelands. These rights are preserved through the administration of the Massachusetts Waterways Licensing Program under the authority granted by the regulations at 310 CMR 9.00.

The purposes of the Massachusetts Waterways Regulations are to:

- Protect and promote the public's interest in tidelands, Great Ponds, and non-tidal rivers and streams in accordance with the public trust doctrine, as established by common law and codified in the Colonial Ordinances of 1641-47 and subsequent statutes and case law of Massachusetts;
- Preserve and protect the rights of tidelands of the inhabitants of the Commonwealth by ensuring that the tidelands are utilized only for water-dependent uses or otherwise serve a proper public purpose;
- Protect the public health, safety and general welfare as it may be affected by any project in tidelands, great ponds and non-tidal rivers and streams; and
- Foster the rights of the people to clean air and water, freedom from excessive and unnecessary noise, and the natural scenic historic and esthetic qualities of the environment under Article XCVII of the Massachusetts Constitution.

This section reviews the joint/private potential to impact the public's use of filled and flowed tidelands for water-dependent uses in the context of the purpose of the Waterways Regulations. Section 8 of this Technical Report provides a summary of each alternative's compliance with applicable provisions of the regulations.

None of the three layover facility sites contain jurisdictional filled tidelands. Filled tidelands at the Widett Circle and Beacon Park Yard sites are located greater than 250 feet from flowed tidelands and the filled tidelands are separated from flowed tidelands by one or more intervening interconnected public ways. Accordingly, these filled tidelands are landlocked and not subject to the licensure requirements of

the Chapter 91. Readville – Yard 2 does not contain any filled or flowed tidelands and is not subject to Chapter 91.

6.1. No Build Alternative

6.1.1. Summary

The No Build Alternative represents a future baseline condition against which the Build Alternatives are compared (Figure 13). With the No Build Alternative, South Station, including the headhouse and track operations, and the USPS General Mail Facility, would remain as they currently exist. The majority of Dorchester Avenue at the site would remain in private use by the USPS in support of USPS operations. Extending from the southern line of Summer Street, the MBTA would continue to maintain a permanent easement along Dorchester Avenue for pedestrians and vehicles of over approximately 200 feet. Generally unrestricted public access would continue to be provided along Dorchester Avenue of over approximately 400 feet for customer use of USPS facilities.

With the No Build Alternative, there would be no private development associated with South Station beyond the development previously approved by the Massachusetts EEA: the South Station Air Rights (SSAR) project. The SSAR project was approved by the Secretary of EEA in 2006 (EEA Number 3205/9131) as an approximate 1.8 million sf mixed-use development to be located directly above the railroad tracks at the South Station headhouse. The SSAR project also includes a horizontally expanded bus terminal of approximately 70,000 square feet, pedestrian connections from the train station concourse and platforms to the expanded bus terminal, and a 3-level parking garage with 775 spaces located above the bus terminal.

With the No Build Alternative, the Widett Circle site would remain in private development. The Beacon Park Yard site would remain largely the same as today, with the exception of highway reconfiguration of the Massachusetts Turnpike to the north of the site and MBTA Framingham/Worcester Line track improvements to the south of the site. The MBTA would continue to use Readville – Yard 2 to provide layover space for ten trainsets.

6.1.2. Impacts

The No Build Alternative would continue to have significant adverse impacts to the public's use of filled tidelands within Dorchester Avenue and access to Fort Point Channel waterfront. Presently, there are no public rights to pass along a substantial portion of the project shoreline for any public purpose. The filled tidelands between the existing guard shacks and vehicle control points, approximately one-half mile of roadway and approximately five acres, are closed to public access. The only unrestricted public access along Dorchester Avenue is the existing 1.0-acre Rolling Bridge Park, accessible by a circuitous route around Cabot Cove of Fort Point Channel, approximately 400 linear feet of roadway and sidewalks providing access to the customer service window at the USPS facility from Summer Street and access to South Station via MBTA-owned easement.

The remainder of filled tidelands at the South Station site and the three layover facility sites are entirely landlocked and not subject to the licensure requirements of Chapter 91.

6.2. Alternative 1 - Transportation Improvements Only

6.2.1. Description

This section addresses potential impacts to filled tidelands subject to Chapter 91 resulting from the project at South Station and its immediate vicinity. There are no jurisdictional filled tidelands at any of the three layover facility sites and therefore there are no impacts at the layover sites to analyze.

Alternative 1 would include the previously-approved private development included in the No Build Alternative (Figure 14). In addition, South Station would be expanded onto the adjacent 14-acre USPS property. MassDOT would acquire and demolish the USPS General Mail Facility/South Postal Annex. The existing South Station Terminal would be expanded by approximately 400,000 sf, consisting of an expanded passenger concourse and passenger support services. Capacity improvements would include construction of up to seven new tracks and four platforms for a total of up to 20 tracks and 11 platforms. Tower 1 Interlockings and approach interlockings at the terminal approach would be reconstructed. With Alternative 1, no provision would be made for future private development as part of the SSX project.

Dorchester Avenue would be restored for public and station access. Restoration of Dorchester Avenue would reconnect Dorchester Avenue to Summer Street as a public way. It would include landscaping and improved pedestrian and cycling connections and facilities (adjacent sidewalks, crosswalks, and cycle track). Restoration also would include construction of a long-awaited extension of the Harborwalk along reopened Dorchester Avenue.

6.2.2. Structural Alterations and Changes in Use

This analysis considers the potential impacts to jurisdictional filled tidelands at the South Station site. These Commonwealth tidelands are located between the limit of flowed tidelands in Fort Point Channel (defined by mean high water) and a line drawn parallel to and 250 feet landward of mean high water.

Alternative 1 would result in the following substantial positive impacts to the public rights in jurisdictional filled tidelands at the South Station site:

- Opening approximately five acres of filled tidelands within Dorchester Avenue to public access that have been closed since the USPS facility was built in the 1930s and Dorchester Avenue discontinued by the City of Boston in 1966, providing:
    - One-half mile of newly reopened public roadway comprised of two travel lanes and on-street parallel parking;
    - One-half mile of the Harborwalk along Fort Point Channel waterfront;
    - One-half mile of cycle track within the Dorchester Avenue alignment; and
    - One-half mile of universally accessible sidewalk on the western side of newly reopened Dorchester Avenue.
- Removal of the building presently housing the USPS General Mail Facility – a nonwater-dependent use - that has prevented access and use by the general public since the facility was built in 1954 and Dorchester Avenue discontinued in 1966; and
- Expansion of the existing facilities of public accommodation comprised of transportation infrastructure and passenger services at South Station to meet existing and anticipated regional rail demand through the construction of the following nonwater-dependent infrastructure facilities:
    - Construction of new tracks, platforms, a new headhouse fronting on Dorchester Avenue and related pedestrian oriented and back-of-house rail facilities; and
    - Construction of approximately 400,000 sf of new buildings for nonwater-dependent use within filled tidelands subject to Chapter 91.

6.3. Alternative 2 – Joint/Private Development Minimum Build

6.3.1. Description

This section addresses potential impacts to filled tidelands subject to Chapter 91 resulting from the project at South Station and its immediate vicinity. There are no jurisdictional filled tidelands at any of the three layover facility sites and therefore there are no impacts at the layover sites to analyze.

Alternative 2 would include all of the improvements included in Alternative 1, including provisions for future private development by incorporating appropriate structural foundations into the overall station and track design (Figure 15). Future private development with Alternative 2 could include approximately 660,000 sf of mixed-use development consisting of residential, office, and commercial uses, including retail and hotel uses, with building heights ranging up a maximum of 130 feet within jurisdictional filled tidelands. Development could include approximately 234 parking spaces, not including public/private shared parking opportunities.

6.3.2. Structural Alterations and Changes in Use

Alternative 2 would have all of the same positive impacts to the public rights in jurisdictional filled tidelands as Alternative 1 related to:

- Removal of the USPS General Mail Facility;
- Reopening of Dorchester Avenue with the construction of new vehicular travel lanes, cycle track and the Harborwalk along Fort Point Channel shoreline; and
- Construction of substantial public transportation infrastructure improvements addressing regional rail capacity deficiencies.

In addition to these improvements provided by Alternative 1, Alternative 2 would provide a joint/private development component to be constructed, in part, within jurisdictional filled tidelands extending west of Dorchester Avenue at the ground level, above and adjacent to the expanded South Station. The joint/private development would result in the following additional positive impacts to the public use of filled tidelands:

- In compliance with CMR 310 9.53(2)(b), approximately one-half acre of open space would be provided at the ground level contiguous with Dorchester Avenue, replacing portions of the existing building footprint, loading docks and other paved areas closed to public access since 1966 with the City of Boston Discontinuance; and
- In compliance with CMR 310 9.53(2)(c), 78,000 square feet of facilities of public accommodation (in addition to the 24,000 sf headhouse)would be constructed between the new tracks and platforms and Dorchester Avenue, resulting in activation of filled tidelands and construction of facilities of public accommodation at the ground level. This would comprise the entirely of the ground floor area, and would include lobbies.

6.4. Alternative 3 – Joint/ Private Development Maximum Build

6.4.1. Description

This section addresses potential impacts to filled tidelands subject to Chapter 91 resulting from the project at South Station and its immediate vicinity. There are no jurisdictional filled tidelands at any of the three layover facility sites and therefore there are no impacts at the layover sites to analyze.

Alternative 3 would include all of the improvements included in Alternative 1, including provisions for future private development by incorporating appropriate structural foundations into the overall station and track design (Figure 16). Future private development with Alternative 3 potentially could include approximately 2 million square feet of mixed-use development consisting of residential, office, and commercial uses, including retail and hotel uses, with building heights ranging up to approximately 21 stories. Development could include approximately 506 parking spaces, not including public/private shared parking opportunities.

In Alternative 3, the maximum potential for future private development at the South Station complex would be limited by the FAA's maximum building height limits, pursuant to the Terminal Instrument Procedures (TERPS) regulations applicable to Boston Logan International Airport. Accordingly, MassDOT determined that building heights would be limited to approximately 290 feet to the top of the mechanical space. Alternative 3 would require an amendment to the MHP, modifying applicable Chapter 91 regulations.

6.4.2. Structural Alterations and Changes in Use

Alternative 3 would have all of the same positive impacts to the public rights in jurisdictional filled tidelands that Alternative 2 would have. In addition, the Alternative 3 building footprint would be located approximately 80 feet from Fort Point Channel – 20 feet closer than the Alternative 2 building footprint. The new South Station headhouse footprint would be the same in Alternative 2 and Alternative 3.

This building footprint change would result in the following additional impacts to jurisdictional filled tidelands:

- Open space provided at the South Station site would decrease by approximately one-half acre to a total of approximately 6.6 acres when compared to the seven acres provided in Alternative 2;
- The open space between the joint/private development and Fort Point Channel would be reduced in width by approximately 20 feet adjacent to the joint/private development in comparison with Alternative 2 to provide a greater building footprint and increase development density. The footprint of the planned Harborwalk extension and the Dorchester Avenue cycle track would not change appreciably between Alternative 2 and Alternative 3;
- The joint/private development building massing included in Alternative 3 would have a maximum approximate height of 277 to 290 feet within jurisdictional filled tidelands.
- The ground floor facilities of public accommodation provided at the ground floor of Alternative 3 would total approximately 88,000 sf.

7. Consistency with Massachusetts Coastal Zone Management Requirements

The South Station site and the Widett Circle layover facility site are located within the Massachusetts Coastal Zone established pursuant to the Federal Coastal Zone Management Act of 1972 and administered by the CZM under M.G.L. Chapter 21A, Sections 2 and 4A and the Code of Massachusetts Regulations (CMR) at 301 CMR 21.00. The Coastal Zone boundary defined by 301 CMR 21.99 is shown in Figure 7. No part of the SSX project is located within any Designated Port Area established pursuant to 301 CMR 25.00. Section 3.2 of this Technical Report provides additional background on the project's jurisdiction under the Massachusetts Coastal Zone Management Plan.

Table 6 provides a list of the policies established by the CZM and identifies which are applicable to the project. The following sections provide an overview of each Massachusetts Coastal Zone Policy, identify which area is applicable to the project and describe the project's compliance with each.

7.1. Water Quality Policies

7.1.1. Water Quality Policy #1

Ensure that point-source discharges and withdrawals in or affecting the coastal zone do not compromise water quality standards and protect designated uses and other interests.

The project would not include any new untreated point source discharges. The stormwater management systems would be designed and constructed in accordance with all applicable state and federal effluent limitations and water quality controls. The project would be subject to review by the Boston Conservation Commission for compliance with the Massachusetts Stormwater Regulations established by 310 CMR 10.05(6)(k) and would require coverage under the U.S. EPA National Pollutant Discharge Elimination System (NPDES) Construction General Permit for construction and operation of the facility.

7.1.2. Water Quality Policy #2

Ensure the implementation of nonpoint source pollution controls to promote the attainment of water quality standards and protect designated uses and other interests.

The project would include stormwater best management practices (BMPs) to ensure that non-point source pollution is minimized (see Chapter 4, Section 4.5.3 and Table 4-7). As previously stated, the project would meet all applicable standards through its compliance with the MassDEP Stormwater Management Policy and U.S. EPA NPDES Program.

7.1.3. Water Quality Policy #3

Ensure that subsurface waste discharges conform to applicable standards, including the siting, construction, and maintenance requirements for on-site wastewater disposal systems, water quality standards, established Total Maximum Daily Load limits, and prohibitions on facilities in high-hazard areas.

This policy is not applicable to the project because it does not include any subsurface discharge of sanitary flows. Sanitary flows from the Build Alternatives would be discharged to existing Boston Water and Sewer Commission facilities and eventually conveyed to the Massachusetts Water Resources Authority Deer Island Treatment Facility.

Table 6—Massachusetts Coastal Zone Management Applicable Policies

CZM Policy	Summary	Applicable
Water Quality Policy #1	Point source discharges	Yes
Water Quality Policy # 2	Nonpoint pollution controls / surface water quality standards	Yes
Water Quality Policy # 3	Sub-surface waste discharges and sources of air and water pollution and protection of wetlands	No
Habitat Policy # 1	Protect coastal wetland habitats	Yes
Habitat Policy # 2	Restoration of degraded or former coastal wetlands	Yes
Protected Areas Policy # 1	Preserve, protect and restore coastal resources or regional or statewide significance	No
Protected Areas Policy # 2	Protect state and locally designated scenic rivers and state classified scenic rivers in the coastal zone	No
Protected Areas Policy # 3	Protection of historic properties and districts	Yes
Coastal Hazards Policy # 1	Preserve, protect, restore and enhance the beneficial functions of natural storm damage prevention and flood control	No
Coastal Hazards Policy # 2	Minimize interference with water circulation and sediment transport	No
Coastal Hazards Policy # 3	Do not exacerbate natural hazards and be reasonably safe from flooding	Yes
Coastal Hazards Policy # 4	Prioritization of the use of public funds for acquisition of hazardous coastal areas	No
Ports Policy # 1	Dredging and dredged material disposal	No
Ports Policy # 2	Channel dredging requirements	No
Ports Policy # 3	Designated Port Area requirements	No
Ports Policy # 4	Preserve berthing capacity	Yes
Ports Policy # 5	Designated Port Area requirements	No
Public Access Policy # 1	Promote public access to coastal areas	Yes
Public Access Policy # 2	Improve public access to coastal recreational facilities	Yes
Public Access Policy # 3	Expand coastal recreational facilities	Yes
Energy Policy # 1	Coastally dependent energy facility requirements	No
Energy Policy # 2	Encourage energy conservation and renewable energy	Yes
Ocean Resources Policy # 1	Aquaculture requirements	No
Ocean Resources Policy # 2	Extraction of marine minerals requirements	No
Ocean Resources Policy # 3	Offshore sand and gravel mining requirements	No
Growth Management Policy #1	Encourage sustainable development	Yes
Growth Management Policy #2	Ensure that federally funded infrastructure projects serve developed urban areas	Yes
Growth Management Policy #3	Encourage redevelopment in the coastal zone	Yes

7.2. Habitat Policies

7.2.1. Habitat Policy #1

Protect coastal, estuarine, and marine habitats—including salt marshes, shellfish beds, submerged aquatic vegetation, dunes, beaches, barrier beaches, banks, salt ponds, eelgrass beds, tidal flats, rocky shores, bays, sounds, and other ocean habitats—and coastal freshwater streams, ponds, and wetlands to preserve critical wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes.

The sites do not contain any salt marsh, shellfish beds, dunes, barrier beaches, salt ponds, eelgrass beds or ocean habitats or freshwater wetlands. The project would require an Order of Conditions under the Massachusetts Wetlands Protection Act for work within 100 feet of Coastal Bank and Land Subject to Coastal Storm Flowage at the South Station site.

7.2.2. Habitat Policy #2

Advance the restoration of degraded or former habitats in coastal and marine areas.

The project complies fully with the Massachusetts DEP Stormwater Management Policy and the U.S. EPA NPDES Program and would not degrade water quality in any receiving water body.

7.3. Protected Area Policies

7.3.1. Protected Areas Policy #1

Preserve, restore, and enhance coastal Areas of Critical Environmental Concern, which are complexes of natural and cultural resources of regional or statewide significance.

This policy is not applicable because the project sites are not located within or proximate to any state-designated ACEC.

7.3.2. Protected Areas Policy #2

Protect state designated scenic rivers in the coastal zone.

This policy is not applicable because none of the waterways adjacent to the project sites are designated scenic and wild rivers.

7.3.3. Protected Areas Policy #3

Ensure that proposed developments in or near designated or registered historic places respect the preservation intent of the designation and that potential adverse effects are minimized.

Potential adverse impacts to nearby designated or registered districts of sites would be minimized through consultation with the Massachusetts Historical Commission, State Historic Preservation Officer (SHPO) in accordance with Section 106 of the National Historic Preservation Act. The project is expected to require a Memorandum of Agreement with the Massachusetts Historical Commission.

7.4. Coastal Hazards Policies

7.4.1. Coastal Hazards Policy #1

Preserve, protect, restore, and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms, such as dunes, beaches, barrier beaches, coastal banks, land subject to coastal storm flowage, salt marshes, and land under the ocean.

The project sites are located on filled land adjacent/proximate to Fort Point Channel as well as Boston Harbor and do not contain any natural coastal landforms that could provide substantial storm damage prevention or flood control.

7.4.2. Coastal Hazards Policy #2

Ensure that construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Flood or erosion control projects must demonstrate no significant adverse effects on the project site or adjacent or downcoast areas.

The project does not include any work within the waters of Fort Point Channel or any new point source discharges or in any areas of sediment transport.

7.4.3. Coastal Hazards Policy #3

Ensure that state and federally funded public works projects proposed for location within the coastal zone will:

1. *Not exacerbate existing hazards or damage natural buffers or other natural resources.*

   The project would not exacerbate any existing hazard or damage any natural buffer at the site. No natural buffers exist in this developed port area and no substantial hazards exist.

2. *Be reasonably safe from flood and erosion-related damage.*

   At the South Station site, approximately 2.9 acres of the site overlie the 100-year floodplain, and approximately 18.9 acres of the site overlie the 500-year floodplain. FEMA indicates that the existing 100-year coastal floodplain does not reach the Widett Circle layover facility site by an overland connection. During the 500-year storm, FEMA indicates that the Widett Circle site is subject to potential flooding which would affect almost the entire site. All proposed transportation infrastructure would be designed in accordance with applicable regulations for work in this coastal floodplain. In addition, construction-period erosion control measures would be implemented as part of the Stormwater Pollution Prevention Plan (SWPPP) in accordance with the National Pollutant Discharge Elimination System (NPDES) Construction General Permit requirements.

3. *Not promote growth and development in hazard-prone or buffer areas, especially in velocity zones and Areas of Critical Environmental Concern.*

   The project would not promote development in hazard-prone or buffer areas, velocity zones or ACECs because none of these coastal resources are present at the sites. The project does not contain any Coastal Barrier units such as salt marsh, coastal dunes, or barrier beaches.

4. *Not be used on Coastal Barrier Resource Units for new or substantial reconstruction of structures in a manner inconsistent with the Coastal Barrier Resource/Improvement Acts.*

   This standard is not applicable because the project sites are not located on a Coastal Barrier Unit.

7.4.4. Coastal Hazards Policy #4

Prioritize acquisition of hazardous coastal areas that have high conservation and/or recreation values and relocation of structures out of coastal high-hazard areas, giving due consideration to the effects of coastal hazards at the location to the use and manageability of the area.

The project does not include land acquisition of hazardous coastal areas.

7.5. Ports Policies

7.5.1. Ports and Harbors Policy #1

Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity, and public health and take full advantage of opportunities for beneficial re-use.

This policy is not applicable to the project because it does not include any proposed dredging.

7.5.2. Ports and Harbors Policy #2

Obtain the widest possible public benefit from channel dredging and ensure that Designated Port Areas (DPAs) and developed harbors are given highest priority in the allocation of resources.

This policy is not applicable because the project does not include any channel dredging and is not located in a Designated Port Area.

7.5.3. Ports and Harbors Policy #3

Preserve and enhance the capacity of Designated Port Areas to accommodate water-dependent industrial uses and prevent the exclusion of such uses from tidelands and any other Designated Port Area Plans lands over which an EEA agency exerts control by virtue of ownership or other legal authority.

This policy is not applicable because the project is not located in a Designated Port Area.

7.5.4. Ports and Harbors Policy #4

For development on tidelands and other coastal waterways, preserve and enhance the immediate waterfront for vessel-related activities that require sufficient space and suitable facilities along the water's edge for operational purposes.

While the development at the South Station site and (to a limited extent) Widett Circle is located on tidelands, this policy is applicable to the project only in the context of small vessels because:

- The project sites have no existing capacity for vessel related activity because of the presence of a seawall separating the site from Fort Point Channel.
- The adjacent section of Fort Point Channel is limited to low clearance vessels because the Summer Street and Congress Street draw bridges are no longer operable and the Evelyn Moakley Bridge has a fixed span with a very limited clearance, even at low tide.

The project is protective of the capacity of Fort Point Channel to serve small vessels because it preserves substantial open space along the project shoreline for water-dependent uses.

7.5.5. Ports and Harbors Policy #5

Encourage, through technical and financial assistance, expansion of water-dependent uses in Designated Port Areas and developed harbors, re-development of urban waterfronts, and expansion of physical and visual access.

This policy is not applicable to the project because it does not include work within any Designated Port Area.

7.6. Public Access Policies

7.6.1. Public Access Policy #1

Ensure that development (both water-dependent and nonwater-dependent) of coastal sites subject to state waterways regulation will promote general public use and enjoyment of the water's edge, to an extent commensurate with the Commonwealth's interests in flowed and filled tidelands under the Public Trust Doctrine.

All Build Alternatives at the South Station site would include significant improvements to public access to Fort Point Channel waterfront through the reopening of Dorchester Avenue to public use. These alternatives include the construction of a new one-half mile segment of Harborwalk across the site and an adjacent cycle track to encourage additional public access by non-motorized vehicles. Alternative 2 and Alternative 3 would include additional public open space landward of Dorchester Ave and facilities of public accommodation at the ground floor within each building within Chapter 91 licensing jurisdiction as required for buildings for nonwater-dependent use within Commonwealth Tidelands commensurate with Commonwealth's interests and the Public Trust Doctrine.

7.6.2. Public Access Policy #2

Improve public access to existing coastal recreation facilities and alleviate auto traffic and parking problems through improvements in public transportation and trail links (land- or water-based) to other nearby facilities. Increase capacity of existing recreation areas by facilitating multiple use and by improving management, maintenance, and public support facilities. Ensure that the adverse impacts of developments proposed near existing public access and recreation sites are minimized.

The project purpose is to improve regional rail capacity to accommodate existing and projected ridership for routes servicing South Station. Additionally, all Build Alternatives would enhance public access to coastal recreational facilities by extending the Harborwalk and creating a new public access point to the existing Rolling Bridge Park and the Harborwalk located at the southern end of the site connecting to existing facilities south of the site and improving overall connectivity with surrounding neighborhoods. The project includes a comprehensive transportation analysis including recommendations for improvements to alleviate auto traffic and parking problems in the vicinity of the site. A detailed traffic analysis is provided in Appendix 9- *Traffic Analysis Technical Report*.

7.6.3. Public Access Policy #3

Expand existing recreation facilities and acquire and develop new public areas for coastal recreational activities, giving highest priority to regions of high need or limited site availability. Provide technical assistance to developers of both public and private recreation facilities and sites that increase public access to the shoreline to ensure that both transportation access and the recreation facilities are compatible with social and environmental characteristics of surrounding communities.

All Build Alternatives would expand recreational opportunities by creating a Harborwalk extension, new cycle track and travel lanes across the site creating new opportunities at a site that has been largely closed to public access since 1966. This improvement would encourage access by a wide range of users compatible with the traveling public who would use the expanded transportation facilities, South Boston and the adjacent areas of the Financial District through the creation of new facilities of public accommodation including special public destination faculties as may be required during the licensing process

7.7. Energy Policies

7.7.1. Energy Policy #1

For coastally dependent energy facilities, assess siting in alternative coastal locations. For non-coastally dependent energy facilities, assess siting in areas outside of the coastal zone. Weigh the environmental and safety impacts of locating proposed energy facilities at alternative sites.

This policy does not apply to the project because it is not a coastally dependent energy facility.

7.7.2. Energy Policy #2

Encourage energy conservation and the use of renewable sources such as solar and wind power in order to assist in meeting the energy needs of the Commonwealth.

The project would comply with all applicable state and federal requirements regarding energy conservation including the potential inclusion of renewable energy components. As required by the Secretary's Certificate on the ENF, the DEIR Sections 4.14 and Chapter 5 describe the project's approach to energy conservation and sustainable design.

7.8. Ocean Resources Policies

7.8.1. Ocean Resources Policy #1

Support the development of sustainable aquaculture, both for commercial and enhancement (public shellfish stocking) purposes. Ensure that the review process regulating aquaculture facility sites (and access routes to those areas) protects significant ecological resources (salt marshes, dunes, beaches, barrier beaches, and salt ponds) and minimizes adverse effects on the coastal and marine environment and other water-dependent uses.

This policy is not applicable because the project does not include any aquaculture.

7.8.2. Ocean Resources Policy #2

Except where such activity is prohibited by the Ocean Sanctuaries Act, the Massachusetts Ocean Management Plan, or other applicable provision of law, the extraction of oil, natural gas, or marine minerals (other than sand and gravel) in or affecting the coastal zone must protect marine resources, marine water quality, fisheries, and navigational, recreational and other uses.

This policy is not applicable because the project does not include any marine mineral extraction.

7.8.3. Ocean Resources Policy #3

Accommodate offshore sand and gravel extraction needs in areas and in ways that will not adversely affect marine resources, navigation, or shoreline areas due to alteration of wave direction and dynamics. Extraction of sand and gravel, when and where permitted, will be primarily for the purpose of beach nourishment or shoreline stabilization.

This policy is not applicable because it does not include any offshore sand and gravel mining.

7.9. Growth Management Policies

7.9.1. Growth Management Policy #1

Encourage sustainable development that is consistent with state, regional, and local plans and supports the quality and character of the community.

The project would comply with all applicable local, state and federal sustainable design requirements and to the extent practicable in a manner consistent with current plans. The project's approach to sustainability is described in DEIR Section 4.14 and Chapter 5.

7.9.2. Growth Management Policy #2

Ensure that state and federally funded infrastructure projects in the coastal zone primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

At the South Station site, all Build Alternatives would include state and federal funding to improve public transportation infrastructure and would be located in the highly developed Fort Point Channel area connecting Boston's Financial District and the South Boston Waterfront/Innovation District. While the transportation improvements would primarily serve the commuters, the public access improvements would result in benefits which would meet the needs of the adjacent urban communities. Chapter 1 and Chapter 2 of the Draft EIR describe the project's consistency with state and regional planning efforts and the South Station project's status as a "high priority project" of the Commonwealth.

7.9.3. Growth Management Policy #3

Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and financial support for residential, commercial, and industrial development.

At the South Station site, Alternative 2 and Alternative 3 would include the revitalization of the neighborhood by creating new opportunities for residential and commercial development which activates the site on a year-round basis.

8. Consistency with Chapter 91 Regulatory Requirements

This section provides a summary of compliance of each Build Alternative with applicable provisions of the Chapter 91 Waterways regulations.

To the extent any Build Alternative would not meet the numeric standards under 310 CMR 9.00, substitute standards, referred to as "offsets and substitutions" would be required as part of an approved Municipal Harbor Plan. Potential offset measures anticipated for Alternative 3 would be determined during the preparation of the MHP and would be subject to additional technical and regulatory review

during that public process. Such offset measures may include public programming and activation of the open space areas, and additional public amenities.

The three Build Alternatives would require a new waterways license pursuant to 310 CMR 9.05(1)(a) because they would include:

> *"construction, placement, excavation, addition, improvement, maintenance, repair, replacement, reconstruction, demolition or removal of any fill or structures, not previously authorized, or for which a previous grant or license is not presently valid."*

Furthermore, each alternative would require a new waterways license pursuant to 310 CMR 9.05(1)(d) because they would include:

> *"…change(s) in use of fill or structures from that expressly authorized in a valid grant or license or, if no such use statement was included, from that reasonably determined by the Department to be implicit therein, whether such authorization was obtained prior to or after January 1, 1984."*

The following analysis divides the SSX project's compliance with the waterways regulations into two sections following the general regulatory format. Any project requiring a waterways license must comply with two overriding standards described as follows:

1. **Basic Licensing Requirements** – The SSX project has been reviewed relative to the basic licensing requirements contained in 310 CMR 9.31(1). The applicability of these standards has been determined. The basic licensing requirements would apply to all of the Build Alternatives to varying degrees. Section 8.1 documents compliance with all applicable standards for each Build Alternative.
2. **Proper Public Purpose Requirements** – The waterways regulations at 310 CMR 9.31(2) require MassDEP to determine that all projects requiring a license meet a proper public purpose which provides greater benefit than detriment to the rights of the public in said land. Portions of the proper public purpose requirements would apply to each of the Build Alternatives. Section 8.2 describes the SSX project's compliance with this requirement for each Build Alternative.

8.1. Basic Licensing Requirements

Table 7 lists the basic requirements established by 310 CMR 9.31 and identifies which standards are applicable to each alternative. Compliance with standards applicable to all Build Alternatives is described in this section.

Table 7—Applicability of Basic License Requirements

310 CRM Section	Requirement Description	No Build	Alternative 1	Alternative 2	Alternative 3
9.32	Categorical restrictions on fill and structures	Yes	Yes	Yes	Yes
9.33	Environmental protection standards	Yes	Yes	Yes	Yes
9.34	Conformance with municipal zoning	No	No	Yes	Yes
9.34	Conformance with municipal harbor plans	No	No	No	Yes
9.35(2)	Standards to preserve water-related public rights	No	Yes	Yes	Yes
9.35(3)	Public rights applicable to Tidelands and Great Ponds	Yes	Yes	Yes	Yes
9.35(4)	Compensation for interference with public rights in Commonwealth Tidelands	No	No	Yes	Yes
9.35(5)	Management of areas accessible to the public	Yes	Yes	Yes	Yes
9.36	Standards to protect water-dependent uses	Yes	Yes	Yes	Yes
9.37	Engineering and construction standards	Yes	Yes	Yes	Yes
9.38	Use standards for recreational boating facilities	No	No	No	No
9.39	Use standards for marinas, boats yards and boat ramps	No	No	No	No
9.40	Standards for dredging and dredged material disposal	No	No	No	No
9.31(1)(i)	Prohibition on discrimination	Yes	Yes	Yes	Yes

The SSX project Build Alternatives comply with these basic license requirements as described in the following sections.

8.1.1. Categorical restrictions on fill and structures - 310 CMR 9.32

This regulation prohibits the issuance of a waterways license for any project which does not meet the criteria contained in 310 CMR 9.32(1). 310 CMR 9.32(1)(a)1 permits MassDEP to issue a license for fill or structures for any use within previously filled tidelands.

The project would not include any new fill or structures within flowed tidelands. Therefore all Build Alternatives comply with this standard.

8.1.2. Environmental protection standards - 310 CMR 9.33

This standard requires projects to comply with all applicable environmental regulatory programs of the Commonwealth. For the SSX project, these programs are anticipated to include the following:

- Massachusetts Environmental Policy Act, M.G.L. chapter 30, section 61 through 62H and 301 CMR 11.00.
- Wetlands Protection Act, M.G.L. chapter 131, section 40, and 310 CMR 10.00.
- Massachusetts Clean Waters Act, M.G.L. chapter 21, sections 26 through 53:
- 314 CMR 7.00 - Sewer Extension/Connection Permits

- Massachusetts Historical Commission Act, M.G.L. chapter 9, sections 26 through 27C.
- Hazardous Waste Management Act, M.G.L. chapter 21C and 310 CMR 30.00.
- Solid Waste Disposal Act, M.G.L. chapter 16, sections 18 through 24, and 310 CMR 16.00.
- Air Pollution Act, M.G.L. chapter 111, sections 142A through I and 310 CMR 7.00.

MassDOT is committed to obtaining the necessary and appropriate permits required for the project under these anticipated jurisdictions and any other applicable regulatory programs of the Commonwealth that may be further identified during the design and permitting process. Chapter 1 of the Draft EIR provides a list of anticipated permits for each Build Alternative.

8.1.3. Conformance with Municipal Zoning - 310 CMR 9.34

This standard would not apply to the No Build Alternative or Alternative 1 because MassDOT is exempt from local zoning requirements. The joint/private development components of Alternative 2 and Alternative 3 would be subject to review under this standard because these alternatives would include private development components.

8.1.4. Conformance with Municipal Harbor Plans - 310 CMR 9.34

This standard would not apply to the No Build Alternative, Alternative 1, or Alternative 2 because these alternatives would not require any relief from the baseline Chapter 91 standards. Only Alternative 3 would require relief from baseline Chapter 91 standards and conformance with a Municipal Harbor Plan.

8.1.5. Standards to preserve water-related public rights - 310 CMR 9.35(2)

This standard prohibits projects from substantively interfering with: a) the public rights of navigation which exist in all waterways; b) free passage over and through the water; and c) access to town landings.

This standard would not apply to the project because the South Station site does not include any flowed tidelands.

8.1.6. Public rights applicable to Tidelands and Great Ponds - 310 CMR 9.35(3)

This standard requires that projects not significantly interfere with the public rights of fishing and fowling which exist within all tidelands and Great Ponds, nor with the ability of the public to walk or otherwise pass freely on private tidelands, for purposes of fishing, fowling or navigation, and on Commonwealth tidelands, for all other lawful activities.

The project would not adversely affect the public rights to tidelands and would result in a significant net benefit to such rights by opening approximately one-half mile of Dorchester Avenue to public access for fishing, fowling, and free and unrestricted passage. All of the Build Alternatives comply with this standard.

8.1.7. Compensation for interference with public rights in Commonwealth Tidelands - 310 CMR 9.35(4)

This standard would not apply to the No Build Alternative or Alternative 1 because these alternatives would not include any private use of Commonwealth tidelands. This standard would apply to Alternative 2 and Alternative 3 because these alternatives would include private use of filled tidelands. The specific compensation for interference with public rights in Commonwealth Tidelands is determined by MassDEP during the licensing process and may be outlined during the Municipal Harbor Planning process.

8.1.8. Management of areas accessible to the public - 310 CMR 9.35(5)

This standard requires that a project that includes tidelands that are accessible to the public under the requirements of 310 CMR 9.35(1) through (4) provide for long-term management of such areas. This regulation applies to exterior spaces within filled tidelands. The use and management of interior spaces for nonwater-dependent use project is governed by 310 CMR 9.51 through 9.53. The regulatory standard established by 310 CMR 9.35(5) covers hours of availability, scope of allowed activities, signage, and access.

Hours of Availability and Scope of Allowed Activities

No limitations on hours of accessibility or scope of allowed activity, or other substantial restrictions, may be placed on said public access except as expressly authorized in the license. Reasonable rules may be adopted by the license, and may be subject to review and approval by the Department…

MassDOT anticipates that rules for public access that may be required would be reviewed with MassDEP during the licensing process. Such rules for access are anticipated to be consistent with other public spaces and would be developed to maximize public access to tidelands while balancing the need to protect public health and safety and private and public property.

Signage

Any project required to provide public access facilities in accordance with 310 CMR 9.35(3)(b)2… shall encourage public patronage of such facilities by placing and maintaining adequate signage at all entryways and at other appropriate locations on the project site.

MassDOT would comply with appropriate public access signage requirements that may be required during the Waterways Licensing process and intended to encourage public use of open space within the site. MassDOT anticipates that the signage details would be refined during final design and reviewed in detail with MassDEP during the licensing process.

Accessibility to Public

No gates, fences, or other structures may be placed on any areas open to public access in a manner that would impede or discourage the free flow of pedestrian movement thereon; and all pedestrian exterior open spaces shall be open to the public 24 hours per day, unless otherwise authorized by the Department.

No gates, fences or other obstructions to public access would be constructed in a manner that would prevent the free flow of pedestrians within areas open to the public. MassDOT anticipates that all exterior areas open to the public would be open 24 hours per day except for such restrictions that may be necessary to protect public health and safety or private property. Pursuant to this regulation, such restrictions would require prior approval by MassDEP.

8.1.9. Standards to protect water-dependent uses - 310 CMR 9.36

The regulations at 310 CMR 9.36 establish the following four standards applicable to all proposed projects subject to Chapter 91. These standards are intended to preserve the littoral property owners' rights from adjacent development which would diminish the capacity of sites to support nearby existing, planned or recent water-dependent uses.

Private Access to Littoral or Riparian Property

The regulation at 310 CMR 9.36(2) prohibits projects from significantly interfering with littoral or riparian property owners' right to approach their property from a waterway and to approach the waterway from said property.

The project complies with this standard because it would not interfere with the capacity of any littoral or riparian property owner to approach their property that may exist in Fort Point Channel. There are no known littoral or riparian ownership rights adjacent to the South Station site. The adjacent section of Fort Point Channel is limited to low clearance vessels because the Summer Street and Congress Street draw bridges are no longer operable and the Evelyn Moakley Bridge has a fixed span with a very limited clearance, even at low tide.

Protection of Existing Water-Dependent Uses

The regulation at 310 CMR 9.36(3) prohibits the disruption of "any existing water-dependent use project in operation, as of the date of license application, at an off-site location within the proximate vicinity of the site."

Potential impacts to existing water-dependent uses would be limited to temporary construction-related impacts to pedestrian access to Rolling Bridge Park. Each of the Build Alternatives would be expected to result in short-term impacts to such access.

Recent Water-Dependent Uses

The regulation at 310 CMR 9.36(4) prohibits the displacement of water-dependent use that has occurred at the site within five years prior to the date of application except upon a clear showing that:

- The activity did not take place on a reasonably continuous basis, for a substantial period of time, or
- The activity has been or would be discontinued at the site by the user, for reasons unrelated to the proposed project or as a result of voluntary arrangements with the applicant.

Water-dependent uses constructed in the vicinity of South Station within the last 20 years are limited to use of Rolling Bridge Park and the adjacent sections of the Harborwalk. None of the project alternatives would result in any long-term impacts to these public amenities.

Designated Port Areas

The regulation at 310 CMR 9.36 (5) regulates nonwater-dependent use activities within Designated Port Areas. This standard would not apply to the SSX project because the South Station site is not located within a Designated Port Area.

8.1.10. Engineering and construction standards - 310 CMR 9.37

The Waterways Regulations establish engineering and construction standards for a project in tidelands (310 CMR 9.37). The project's location adjacent to Fort Point Channel and within a Zone A designated floodplain requires compliance with the individual performance standards contained in this section of the Waterways Regulations. As required by this regulation and others, the project would be designed and built in accordance with the applicable local and state building codes and federal flood insurance requirements, including but not limited to:

- Design certification by a Registered Professional Engineer.
- Design and construction standards sufficient to withstand the coastal storms.
- Minimum setback requirements.

Table 8 provides a description of the applicable engineering and construction standards addressed by this regulation. Appendix 5- *Natural Resources Technical Report* provides the floodplain zones at and in the vicinity of the South Station site, as depicted on the preliminary 2013 Flood Insurance Rate Map.

Table 8—Compliance with Engineering and Construction Standards

Section	Element	Project Compliance
9.37 (1)(a)	Fill and Structures: *Certification*	All design and construction plans would be prepared and certified by Registered Professional Engineer in the Commonwealth of Massachusetts.
9.37 (1)(b)	Fill and Structures: *Construction in Flood Plains*	Construction activities within FEMA designated flood plains would be limited to approximately 2.9 acres of the mapped 100-year coastal floodplain to Fort Point Channel. These areas are limited to Dorchester Avenue and the waterside edge of the joint/private development. All construction in these areas would comply with applicable sections of the Massachusetts State Building Code and Massachusetts Wetlands Protection Act.
9.37 (1)(c)	Fill and Structures: *Ability to Dredge*	The project does not include any work within Fort Point Channel and would not adversely affect the ability to dredge Fort Point Channel in the future.
9.37 (2)(a)	Flood Zone: *Location*	Alternative 2 and Alternative 3 would include construction in a Zone AE with a base flood elevation of 12 ft (NAVD88). All construction would be required to withstand wind and wave forces associated with the statistical 100-year storm. The SSX project would consider designs to withstand or adapt to a range of conditions including changes in temperatures, humidity, precipitation, seasonal hydrology, flooding, and increased sea levels.
9.37 (2)(b)	Flood Zone: *Design and Construction*	All habitable structures would be built in accordance with the Massachusetts State Building Code of work in floodplains to the extent necessary.
9.37 (3)	Coastal or Shoreline Engineering Structures	This standard addressed the construction of seawalls and other coastal engineering structures and is not applicable to the South Station project as no such structures are proposed.
9.37 (4)	Pipelines and Conduits	The project is not expected to include any pipes or conduits below the mean high water mark of Fort Point Channel that would present a hazard to navigation.

8.1.11. Use standards for recreational boating facilities - 310 CMR 9.38

This standard does not apply to the project because no recreational boating facilities are proposed under any alternative.

8.1.12. Use standards for marinas, boats yards and boat ramps - 310 CMR 9.39

This standard does not apply to the project because no marinas, boat yards or boat ramps are proposed under any alternative.

8.1.13. Standards for dredging and dredged material disposal - 310 CMR 9.40

This standard is not applicable to the project because no dredging or dredged material disposal would occur under any alternative.

8.1.14. Prohibition on discrimination - 310 CMR 9.31(1)(i)

This regulation prohibits any licensee from denying access to its services and facilities to any person in a discriminatory manner, as determined in accordance with the constitution of the Commonwealth of Massachusetts, of the United States of America, or with any statute, regulation, or executive order governing the prevention of discrimination.

MassDOT offers its services and access to its facilities in accordance with all applicable statutes and manner consistent with all applicable statutes and does not deny such access in a discriminatory manner.

8.2. Proper Public Purpose Requirements

The regulations at 310 CMR 9.31(2) require projects subject to licensure under Chapter 91 to provide a proper public purpose which provides greater benefit than detriment to the rights of the public in said lands. The regulations at 310 CMR 9.31(2)(b) specify public purpose criteria for a nonwater-dependent use project, as described in the following sections.

- *"Complies with the standards for conserving and utilizing the capacity of the project site to accommodate water-dependent use, according to the applicable provisions of 310 CMR 9.51 through 9.52."*
    - The No Build Alternative would not be subject to this standard because no new construction or change in use would be proposed by the project that would require a new license.
    - Alternative 1 would not be subject to this standard because, pursuant to 310 CMR 9.55, such projects are exempt from 310 CMR 9.51 through 9.52.
    - Alternative 2 and Alternative 3 would be subject to the requirements of 310 CMR 9.51 (Conservation of Capacity for Water-Dependent Use) and 310 CMR 9.52 (Utilization of Shoreline for Water-Dependent Purposes). These Alternatives' compliance with these standards is described in Sections 8.2.1 and 8.2.2.
- *"Complies with the additional standard for activating Commonwealth tidelands for public use, according to the applicable provisions of 310 CMR 9.53."*
    - The South Station site consists entirely of filled Commonwealth Tidelands. This standard would apply to Alternative 2 and Alternative 3 because these alternatives would include facilities of private tenancy on Commonwealth Tidelands. Alternative 1 would be exempt from 310 CMR 9.53 under the provisions of 310 CMR 9.55 – Standards for Nonwater-dependent Infrastructure Facilities. Section 8.2.3 addresses the compliance of Alternatives 2 and 3 with 310 CMR 9.53.
- *"If located in the coastal zone, complies with the standard governing consistency with the policies of the Massachusetts Coastal Zone Management Program, according to 310 CMR 9.54."*

- This regulation is a Chapter 91 requirement that projects in the Massachusetts Coastal Zone comply with the policies of the CZM Program. This standard duplicates this requirement for projects subject to Federal Consistency Certification. The South Station site and the Widett Circle site are located in the Massachusetts Coastal Zone and all Build Alternatives would need to comply with the policies of the Massachusetts Coastal Zone Management Program. Section 7 of this technical report describes the project's compliance with these policies.

- *"If consisting entirely of infrastructure facilities, to which 310 CMR 9.31(2)(b)1 does not apply, complies with the special mitigation and public access standards governing such facilities, according to 310 CMR 9.55."*
  - Alternative 1 would be a nonwater-dependent infrastructure project to which 310 CMR 9.31(2)(b)1 does not apply. Section 8.2.5 describes this alternative's compliance with the requirements of 310 CMR 9.55.

8.2.1. Conservation of Capacity for Water-Dependent Use - 310 CMR 9.51

This regulation establishes the following applicable standards for nonwater-dependent use projects located on filled tidelands described in 310 CMR 9.51(1). Alternative 1 would be exempt from these standards.

Prevention of Significant Conflict in Use - 310 CMR 9.51(1)

This standard requires projects to be developed in a manner that would prevent significant conflict in operation between users of a nonwater-dependent facility and those of a water-dependent facility that can reasonably be expected to locate on or near the project site.

The project alternatives have been designed to enhance the water-dependent uses anticipated to occur along Fort Point Channel water sheet and would remove the existing substantial conflicts between water-dependent and nonwater-dependent user groups. These improvements would be a direct result of the opening of Dorchester Avenue to public access in all Build Alternatives.

Prevention of Significant Conflict in Design - 310 CMR 9.51(2)

This regulation requires that projects including nonwater-dependent uses be developed in a way that protects the utility and adaptability of the site for water-dependent uses, by preventing significant conflicts of design with water-dependent uses that could reasonably be expected to occur at the site.

The regulations identify aspects of the build environment which could result in such a conflict:

- *The total surface area of buildings proposed in so far as it may affect the amount of open space where flexibility to provide water-dependent uses can be retained;*

Alternative 1 would be exempt from this standard as a nonwater-dependent use infrastructure subject to 310 CMR 9.55. Alternative 2 would meet this standard by providing a minimum of one square foot of open space at the project site for every square foot of space dedicated to buildings for nonwater-dependent use. Proposed building and transportation uses would be set back from the water to the extent practicable to preserve the capacity for the site to provide additional future water-dependent uses.

Alternative 3, as presently envisioned, would also meet the minimum open space requirements; however, in the event design modifications prevent this alternative from meeting such requirements, a substitute

provision could be sought under the MHP. Alternative 3 would require a substitute provision under the MHP to allow construction of nonwater-dependent use buildings. in the 100-foot wide Water-Dependent Use Zone.

The layout and configuration of buildings in so far as they may affect existing and potential views of the water, marine related features or other cultural, historic or scenic value of the waterfront;

Under existing conditions, the majority of the potential waterfront views of Fort Point Channel from the north and west are blocked by the existing South Station headhouse, bus terminal and USPS facility. Under all Build Alternatives, the USPS facility would be removed and a new headhouse would be built with sweeping views of Fort Point Channel and Boston Harbor.

The scale of proposed buildings in so far as they may affect wind, shadow, and other environmental factors which may affect users of water-dependent facilities;

Potential impacts from wind and shadow are analyzed and included below in Section 8.4 and 8.5.

Landscape of the exterior design in so far as it may affect the attainment of "effective pedestrian circulation" at the site;

All Build Alternatives would result in substantial improvements to pedestrian circulation at and in the vicinity of the site. Under existing conditions, approximately one-half mile of Dorchester Avenue and Fort Point Channel waterfront are closed to public pedestrian access, cutting off a potential vital pedestrian link between South Boston and the Financial District neighborhoods. The pedestrian improvements planned for the Build Alternatives would establish this vital pedestrian link that has been closed for many years.

Limitation on Site Coverage (Open Space) - 310 CMR 9.51(3)(d)

These regulations establish the following criteria:

- *One square foot of open space shall be reserved within filled tidelands for every square foot of buildings for nonwater-dependent use within filled tidelands.*
- *One square foot of open space shall be reserved for every square foot within Commonwealth tidelands not within the footprint of buildings and a minimum of 50% of this open space shall be dedicated to pedestrian oriented facilities, as opposed to roads, driveways and parking.*

Open Space considerations under Chapter 91 differ substantially from traditional land use planning descriptions. Under the Waterways regulations, "open space" includes any land which is open to the sky at the ground plain including such programmed uses as roads, surface parking, sidewalks, etc. while traditional land use planning considerations would typically limit "open space" to parks, public plazas and other recreational areas dedicated to public non-transportation uses. Furthermore, Chapter 91 open space considerations are typically limited to jurisdictional filled tidelands; however, site-wide open space may also be considered on a case-by-case basis allowing proponents and MassDEP to weight overall public benefits provided by a project. Such considerations are typical of projects subject to review under approved municipal harbor plans, as is expected with the SSX project. Accordingly, the following open space analysis focuses on jurisdictional filled tidelands but also estimates proposed open spaces across the entire South Station site.

All Build Alternatives except Alternative 3 would provide a minimum of one square foot of open space landward of the project shoreline for every square foot dedicated to buildings for nonwater-dependent use

as required by this regulation. It is the intent of MassDOT to maximize open space associated with Alternative 3 within the context of the planned joint/private development. Table 9 provides a summary of the project area and potential uses under each alternative relative to the open space standards.

Table 9—Compliance with Open Space Standards

Jurisdictional Filled Tidelands	Alternative 1 (ac)[b]	Alternative 2 (ac)	Alternative 3 (ac)
Site Open Space Requirements Under Chapter 91[a]			
Buildings for Nonwater-Dependent Use	0.56	2.36	2.59
Minimum Open Space Required	0.56	2.36	2.59
Open Space Planned	8.37[c]	7.00	6.65
Open Space Provided Beyond Chapter 91 Requirements	7.81[c]	4.64	4.06
Compliance with Commonwealth Tidelands Open Space Requirements			
Pedestrian Use (includes cycle track)	4.66	5.12	4.74
Vehicles	1.71	1.88	1.90
Unprogrammed space	2.00	0.00	0.00
Total Open Space	8.37	7.00	6.65
% of Open Space for Pedestrian Uses	80%	73%	71%
% of Open Space for Vehicular Uses	20%	27%	29%
Site-Wide Open Space	**14.9**	**13.0**	**12.7**

a For the purposes of Chapter 91 "open space" includes all land open to the sky and represents only those 14 acres within Chapter 91 Jurisdiction: Harborwalk, cycle track, public ways, sidewalks, surface parking and other vehicle access, joint development open space and parks.
b Alternative 1 provided here for information purposes only. As a Nonwater-Dependent Infrastructure Project it is not subject to 310 CMR 9.51.
c Includes 2.0 acres of undedicated space between the Dorchester Avenue sidewalk and the transportation improvements.

Additionally, all Build Alternatives dedicate a minimum of 50% of the planned open space within Commonwealth Tidelands to pedestrian-oriented rather than vehicular uses, such as roads, driveways and parking, as demonstrated in Table 9.

8.2.2. Utilization of Shoreline for Water-Dependent Purposes - 310 CMR 9.52

This regulation requires that projects that use tidelands for nonwater-dependent uses devote a reasonable portion of such lands to water-dependent uses. The regulation at 310 CMR 9.52 further directs MassDEP to consider relevant information concerning the capacity of the site to accommodate water-dependent purposes, especially in the vicinity of a Water-Dependent Use Zone (WDUZ). The regulations at 310 CMR 9.52(1) require projects with a water-dependent use zone to provide:

- *One or more facilities that generate water-dependent activity of a kind and to a degree that is appropriate for the project site, given the nature of the project, conditions of the water body on which it is located, and other relevant circumstances.*
- *A pedestrian access network of a kind and to a degree appropriate for the project site and the facilities in accordance with this regulation.*

Alternative 1 and Alternative 2 provide a 100-foot setback between the project shoreline and buildings for nonwater-dependent use, as required by this regulation. Alternative 3 provides an 80-foot setback between the project shoreline and buildings for nonwater-dependent use.

Alternative 3 would extend buildings for nonwater-dependent use approximately 20 feet into the water-dependent use zone. This configuration of uses is not permitted under the Waterways Regulations without a substitute provision approved by the Secretary of EEA though an approved MHP or an amendment to an existing MHP. The BRA is in the early stages of commencing an effort to amend the Fort Point Downtown MHP. Alternative 3 assumes that such an amendment would include a substitute or modified Chapter 91 standards to allow construction of buildings for nonwater-dependent use within the 100-foot wide water-dependent use zone. See Section 3.4 for additional information regarding the status of the Fort Point Downtown Municipal Harbor Plan.

8.2.3 Activation of Commonwealth Tidelands for Public Use - 310 CMR 9.53

This regulation establishes minimum standards for the activation of Commonwealth Tidelands for public use and requires that projects on filled tidelands promote public use and enjoyment of Commonwealth tidelands "to a degree that is fully commensurate with the proprietary rights of the Commonwealth therein." In considering this goal in licensing nonwater-dependent use projects, the Waterways Regulations establishes the following three standards:

- *"The project shall not include fill or structures for nonwater-dependent use on Commonwealth tidelands which the Department determines are necessary to accommodate a public agency which intends to pursue a water-dependent use on such lands…"*

  MassDOT is not aware of any plans for any anticipated water-dependent use at the project site other than the re-opening of Dorchester Avenue and construction of the waterfront Harborwalk and cycle track facilities included in all Build Alternatives of the South Station project. As indicated in Chapter 1 of the DEIR, this project serves a state, regional and local transportation need and would meet local community goals.

- *"The project shall attract and maintain substantial public activity on the site on a year round basis, through the provision of water-related public benefits of a kind and to a degree and that is appropriate for the site…"* MassDEP relies on the following two standards in determining compliance with this requirement:

  - *"In the event the project includes a Water-Dependent Use Zone, at least one facility utilizing the shoreline … must promote water-based public activity…"*

  All Build Alternatives provide a facility utilizing the shoreline for water-dependent uses – the planned Harborwalk extension. In addition, the planned one-half mile cycle track is anticipated to be deemed a water-dependent use under 310 CMR 9.12(2)(a)4.[9]

  - *"The project shall include exterior open spaces for active or passive public recreation, examples of which are parks, plazas and observation areas. Such areas shall be located at or near the water to the maximum reasonable extent, unless otherwise deemed appropriate by the Department."*

  Minimum open space required by this regulation is one square foot of open space for every square foot of Commonwealth tidelands landward of the project shoreline that is outside the footprint of proposed buildings.

[9] The regulations at 310 CMR 9.12(2)(a)4 define the following uses, among others to be water-dependent: "parks, esplanades, boardwalks and other pedestrian facilities that promote use and enjoyment by the general public at the water's edge…"

All Build Alternatives are planned to provide exterior open spaces for active and passive public recreation in accordance with this regulation. This goal is primarily achieved in all Build Alternatives through the construction of approximately one-half mile of new Harborwalk and cycle track within the currently closed section of Dorchester Avenue. Table 8 provides a summary of each alternative's compliance with this standard.

- *"The project shall devote interior space to facilities of public accommodation, other than public parking, with special consideration given to facilities that enhance the destination value of the waterfront by serving significant public needs, attracting a broad range of people or providing innovative amenities for public use."*

As required by regulation, interior space at the ground floor of all buildings containing facilities of private tenancy located within filled Commonwealth Tidelands would be reserved for facilities of public accommodation, with the exception of upper floor accessory uses as may be permitted under the regulations.

8.2.4 Consistency with Coastal Zone Management Policies - 310 CMR 9.54

If the project is located in the coastal zone, then the project must comply with the standard governing consistency with the policies of the Massachusetts Coastal Zone Management Program, according to 310 CMR 9.54.

The South Station site is located in the Massachusetts Coastal Zone and all Build Alternatives would need to comply with the applicable policies of the Massachusetts Coastal Program. As described in Section 7, all Build Alternatives comply with the applicable regulatory policies of the Massachusetts Coastal Program. The applicable CZM polices focus on the protection of water quality, public access to the waterfront and growth management. In summary, the Build Alternatives comply with these policies as follows:

- *Water Quality:* The project would meet the water quality policies by complying with all applicable state and federal regulations governing collection, treatment and discharge of stormwater runoff from transportation facilities.
- *Public Access:* The project would result in substantial benefits to public access along the long-closed section of Dorchester Avenue;
- *Growth Management:* The project would promote responsible growth management under all Build Alternatives by encouraging use of public transportation and planning for adequate capacity for anticipated increases in ridership at South Station. Alternative 2 and Alternative 3 would promote responsible growth management by focusing redevelopment efforts at the edge of Boston's highly developed Financial District.

8.2.5 Standards for Nonwater-dependent Infrastructure Facilities - 310 CMR 9.55

If the project consists entirely of infrastructure facilities, to which 310 CMR 9.31(2)(b)1 does not apply, the project must then comply with the special mitigation and public access standards governing such facilities, according to 310 CMR 9.55." Alternative 1 would be a nonwater-dependent infrastructure project subject to which 310 CMR 9.31(2)(b)1 does not apply.

Alternative 1 would consist entirely of infrastructure facilities as defined at 310 CMR 9.02 because it *"produces, delivers or otherwise provides ...transportation services ...to the public."* Proposed infrastructure facilities would be regulated as nonwater-dependent under the provisions of 310 CMR 9.12(1) because they do not require direct access to the waterfront.

Therefore, and as confirmed by MassDEP in its comment letter on the ENF (provided in DEIR Section 9.1), Alternative 1 would be a nonwater-dependent infrastructure project subject to the licensing standards established by 310 CMR 9.55 and not subject to the requirements of 310 CMR 9.51 through 9.53. However, such projects are required to include mitigation and/or compensation measures as deemed appropriate by MassDEP to ensure that all feasible measures are taken to avoid or minimize detriments to the water-related interests of the public. Furthermore, all nonwater-dependent use projects on tidelands are required to take *"reasonable measures to provide open spaces for active or passive recreation at or near the water's edge, wherever appropriate."* Such measures may be provided by any means consistent with the need to avoid undue interference with the infrastructure facilities in question, and to protect public health, safety, or the environment.

This section lists the public interests in tidelands that nonwater-dependent infrastructure projects are required to protect, followed by a summary of how Alternative 1 would meet each requirement. As stipulated in 310 CMR 9.55(2), *"such measures may be provided by any means consistent with the need to avoid undue interference with the infrastructure facilities in question, and to protect public health, safety, or the environment."*

Protection of maritime commerce, industry, recreation and associated public access

Alternative 1 would not have any direct or indirect impact on maritime commerce or industry because the project would be limited to construction activities and changes in use on filled tidelands. The planned construction is separated from flowed tidelands of Fort Point Channel by the existing Dorchester Avenue extension.

Alternative 1 would have a significant beneficial impact on recreation and associated public access to filled tidelands and Fort Point Channel waterfront. The planned improvements would include the reopening of Dorchester Avenue and the creation of a new Harborwalk extension, cycle track, publicly accessible travel lanes, and a sidewalk along the western edge of Dorchester Avenue. These project elements would protect and enhance the public's interest in tidelands at the site.

Protection, restoration, and enhancement of living marine resources

Alternative 1 would protect living marine resources by avoiding any construction activity in Fort Point Channel. Furthermore, this alternative would promote the restoration and enhancement of living marine resources indirectly by protecting runoff water quality to Fort Point Channel and Boston Harbor in accordance all applicable local, state and federal regulations. The attainment of water quality goals by this alternative is summarized below and described in detail in Appendix 7 - *Water Quality and Stormwater Technical Report*.

Attainment of water quality goals

Alternative 1 would meet applicable water quality goals for redevelopment projects as required by the Massachusetts Stormwater Regulations and described in detail in Appendix 7 – *Water Quality and Stormwater Technical Report*.

Reduction of flood and erosion-related hazards on lands subject to the 100-year storm event or to sea level rise, especially those in damage-prone or natural buffer areas

The proposed project would include construction and development in areas of both 100-year and 500-year floodplain within the South Station site boundary. Footprint areas overlying both 100-year and 500-year floodplains were calculated using data gathered from preliminary 2013 FEMA Flood Insurance Study and its associated FIRMs. As shown in the Appendix 5 – *Natural Resources Technical Report*, using refined

limits of the floodplain based upon city-wide survey information, the area of 100-year floodplain affected by the project footprint would be approximately 129,200 square feet (2.9 acres). Based on the preliminary data released by FEMA in 2013, the area of 500-year floodplain affected by the project footprint would be approximately 823,200 square feet (18.9 acres). All areas of floodplain occurring at the site are currently developed land, therefore SSX project activities at the South Station site do not contain any natural buffer areas. Impacts to floodplains at the South Station site are likely to include redevelopment of existing developed areas, and depending upon final site design and ground elevations. As described in Section 5.3.3 of the DEIR, to the extent practicable, MassDOT would incorporate sea level rise considerations into the project design, construction, and operation.

Protection and enhancement of public views and visual quality in the natural and built environment of the shoreline

Alternative 1 would protect and enhance public views along Fort Point Channel by preserving as open space the 100-foot Water-Dependent Use Zone along the edge of Fort Point Channel and reactivating these tidelands for public access. The proposed South Station headhouse would be designed in consideration of public rights and interests in tidelands including the protection and enhancement of public views and visual quality in the natural and built environment. At a minimum, the Build Alternatives preserve a one-half mile long corridor to provide public access and expansive views of Fort Point Channel.

Preservation of historic sites and districts, archaeological sites, and other significant cultural resources near waterways

All Build Alternatives preserve existing historic sites and districts near waterways. Phase I archaeological studies have not identified areas of archaeological sensitivity. Additional information on these subjects is contained in Appendix 13 - *Historic Resources Technical Report*.

8.3. Wind

The pedestrian level wind analysis identified potential impacts to the ground level environment including the public realm, existing open space and proposed open space in the vicinity of South Station to address 310 CMR 9.51(2) which requires:

"…new structures for nonwater-dependent use be developed in a manner that protects the utility and adaptability of the site for water-dependent purposes by preventing significant incompatibility in design with structures and spaces which reasonably can be expected to serve such purposes."

Furthermore, 310 CMR 9.51(2)(c) requires MassDEP to consider the following:

"the scale of buildings and other permanent structures, insofar as it may affect wind, shadow and other conditions at the ground level environment that may affect users of water-dependent facilities."

The pedestrian level wind study used three-dimensional models of the proposed buildings and surroundings under the No Build Alternative (including the SSAR project and Alternative 3). Alternative 1 was not examined in the wind study because as a nonwater-dependent infrastructure project subject to 310 CMR 9.55, it is not subject to the provisions of 310 CMR 9.51. Alternative 2 was also not examined as part of the wind study because this alternative would meet all applicable building height and setback requirements under Chapter 91, and would likely have fewer wind impacts than Alternative 3. Alternative 3 would exceed building height and setback limitations established by 310 CMR 9.51 and therefore requires a review of the potential for the project to result in impacts to public realm spaces.

This section provides a summary of the wind study results suitable for assessing potential impacts to jurisdictional filled tidelands at the South Station site.

The analysis modeled predicted wind conditions on a seasonal and annual basis using recent meteorological data for Boston. Eighty sensors located in the vicinity of South Station were examined to identify the potential for each to exceed established wind speed criteria deemed comfortable for sitting, standing and walking. The study identified "uncomfortable" locations that would be expected to exceed these criteria more than 1% of the year. It also examined the potential for Alternative 3 to result in unacceptable wind gusts in the project area. The analysis included a consideration of preliminary mitigation measures such as high coniferous trees and porous wind screens to address uncomfortable wind conditions in potentially sensitive areas.

8.3.1. Mean Speed Analysis

Under the No Build Alternative, 12 locations were determined to be uncomfortable. Most of these locations are in the vicinity of Dewey Square adjacent to Summer Street. Notable uncomfortable locations in the No Build Alternative include #17 (near the southern end of existing USPS facility), #66 (at the corner of Summer Street and Dorchester Avenue), and #77 (on the South Boston shoreline of the Fort Point Channel).

Of the 80 locations identified, preliminary results comparing the No Build Alternative and Alternative 3 identified 70 locations where wind conditions were reduced or were unchanged. Ten of these 80 locations experienced increased wind conditions. Of these 10, five locations would still experience comfortable wind conditions, while another five locations would experience new uncomfortable wind conditions, as shown in Table 11. Of these five locations, uncomfortable wind conditions occurred at four publicly-accessible locations while one location was also uncomfortable but is located on the tracks and not accessible to the public. Therefore, it was not considered for further analysis.

8.3.2. Wind Gust Analysis

Uncomfortable wind conditions (including unacceptable wind gusts >31 mph) without mitigation were also created at an open space site (OS-1) (#18) and the entrance to the JD-1 (#17) building. The study therefore incorporated potential mitigation measures into Alternative 3 (Figure 28). These mitigation measures eliminated the unacceptable wind gusts at location #17, and eliminated both unacceptable and uncomfortable wind conditions at location #18 which includes OS-1. The potential mitigation consisted of high coniferous trees and 10-foot high screen walls. These mitigation measures are preliminary in nature and would be refined during final design to ensure that wind conditions are suitable at the ground level environment. However, they demonstrate that it is possible to reduce the wind speed at these potentially sensitive locations. The results of the wind study, comparing the No Build Alternative with Alternative 3, including preliminary mitigation, are provided in Table 10. The predicted changes in pedestrian level winds are provided in Table 11.

Table 10—Pedestrian Level Wind Study Results: Alternative 3 with Mitigation vs. No Build Alternative

Comfort Category	Hourly Mean Wind Speed Exceeded 1% of the Time	No Build	Alternative 3 w/ Mitigation	Net Change
Sitting	≤ 12	17	17	0
Standing	> 12 and ≤ 15	27	25	-2
Walking	> 15 and ≤ 19	22	21	-1
Uncomfortable	> 19 and ≤ 27	12	17	+5
Dangerous	> 27	0	0	0
Total		**80**	**80**	

Table 11—Predicted Changes in Pedestrian Level Winds: Alternative 3 with Mitigation vs. No Build Alternative

Changes in Hourly Mean Wind Speed Exceeded 1% of the Time	Number of Locations	Notable Study Locations
Reduced or Unchanged	70[a]	numerous
Increased but Still Comfortable	5	#1, #2, #3, #6, #14
New Uncomfortable	5	# 15, #20, #59, #60, #62
Dangerous	0	n/a
Total	**80**	

a Included in Reduced or Unchanged are two sites that improved (#66 and #77)

8.3.3. Conclusion

The wind study shows that Alternative 3 would have minimal impacts to the pedestrian level wind environment within the project site in comparison to the No Build Alternative. The project is not expected to result in substantial changes to the pedestrian level wind environment including existing and proposed open spaces. Predicted wind conditions along the Dorchester Avenue sidewalk, Summer Street Bridge and jurisdictional areas along the edges of the Fort Point Channel are consistent with ground level public activity and enjoyment of the site. No adverse impacts to public use of new open spaces are anticipated. No dangerous wind conditions or new unacceptable wind conditions were predicted by the study.

8.4. Shadow Impacts Assessment

MassDOT conducted a shadow analysis to identify potential impacts to filled tidelands cast by the project to address the following requirements of 310 CMR 9.51(2):

- *"…new structures for nonwater-dependent use be developed in a manner that protects the utility and adaptability of the site for water-dependent purposes by preventing significant incompatibility in design with structures and spaces which reasonably cam be expected to serve such purposes."*

- *"the scale of buildings and other permanent structure, insofar as it may affect wind, shadow and other conditions at the ground level environment that may affect users of water-dependent facilities."*

The shadow analysis used a three-dimension CAD model of the City of Boston to identify shadows cast in the following project conditions:

- Existing Conditions (including the No Build Alternative which includes shadow impacts from the SSAR project).
- Alternative 1 – Transportation Improvements Only.
- Alternative 2 – Joint/Private Development Minimum Build.
- Alternative 3 – Joint/Private Development Maximum Build.

The analysis estimated the shadows cast by these alternatives on October 23, which is a commonly used and accepted date by both CZM and MassDEP for shadow analysis within Chapter 91 jurisdiction. Estimated impacts on an hourly basis from 9 a.m. until 6 p.m. Eastern Daylight Time (EDT) were analyzed using applicable altitude and azimuth data available for Boston. Net new shadows cast by each Build Alternative are shown in the context of existing shadows. The results of this hourly analysis are depicted on Figures 17 through 26, distinguishing between the No Build Alternative, Alternative 1, Alternative 2, and Alternative 3. The figures separate the shadow impacts associated with each alternative in different colors.

Typically a shadow analysis identifies the additional shadow impacts beyond a Chapter 91 compliant baseline. To provide a more detailed analysis for the potential shadow impacts from the project, all alternatives were considered and are described herein.

This shadow analysis examined the potential impacts to the ground-level public spaces within filled and flowed tidelands focusing on public open spaces, major pedestrian areas, sidewalks and the watersheet of Fort Point Channel. For the purposes of this analysis, shadows cast by proposed buildings or other structures onto existing or proposed buildings in the vicinity of South Station are not considered impacts because they do not meet the criteria established by 310 CMR 9.51(2)(c). Due to the orientation of the South Station site and the open air/coastal setting of adjacent Fort Point Channel, the SSX project's potential for shadow impacts in the first half of the day would be minimal. As the sun moves into the western sky at approximately 3 p.m., the existing and proposed buildings would have greater potential to cast shadows on the public spaces on the watersheet of Fort Point Channel and the adjacent public open spaces.

The following sections summarize the results of the shadow analysis for October 23rd, hourly from 9 a.m. to 6 p.m. On this date, the sun rises at approximately 7:07 a.m. EDT and sets at 5:51 p.m. EDT.

9 A.M.

At 9:00 a.m., the sun has been visible for nearly two hours and the sun is in the southeastern sky at an angle perpendicular to Fort Point Channel. All existing and proposed buildings would cast shadows to the northwest, toward the existing South Station headhouse and Atlantic Avenue. Dorchester Avenue and nearly the entire Fort Point Channel south of Summer Street are in full sunlight. No net new shadows would be created by Alternative 1. Alternative 2 and Alternative 3 would each cast narrow slivers of new shadow on internal South Station site open spaces, occupying a very small areas of OS-3 adjacent to the proposed buildings. This small sliver of new shadow notwithstanding, internal ground level open spaces including OS-1 and OS-2 would be substantially in full sunlight. There would be no new shadow impacts to the Rolling Bridge Park open space located adjacent to the South Station site.

The narrow slivers of shadows cast on internal open spaces would not have any substantive effect on use of these spaces by the public. Similarly, the project would not cast any new shadows on Dorchester Avenue or Fort Point Channel and no adverse impacts are anticipated.

10 A.M.

At 10:00 a.m., the sun is still relatively low in the southeastern sky and shadows from the project South Station site are cast in a northwesterly direction away from Fort Point Channel. Dorchester Avenue, OS-1, OS-2, and greater than 95% of Fort Point Channel watersheet south of Summer Street would be in full sunlight, No net new shadows would be created by Alternative 1. A small sliver of new shadow would be cast by Alternative 2 or Alternative 3 into OS-3.

The small shadows cast on OS-3 and OS-4 would not have any appreciable effect on the public use of OS-3. None of the alternatives would have any impact on the use of existing or proposed open spaces in the vicinity of the South Station, the watersheet of Fort Point Channel or any other areas in South Boston. There would be no new shadow impacts to the Rolling Bridge Park open space located adjacent to the South Station site.

11 A.M.

At 11:00 a.m., the sun is still in the southeastern sky and shadows are cast to the northwest. The majority of the modeled new shadows would fall within the South Station site. No new shadows from the South Station site in any Build Alternative would be cast on Dorchester Avenue, Fort Point Channel watersheet or South Boston. The existing I-90 Vent Building would cast OS-1 partially in shade. No net new shadows would be created by Alternative 1. Small areas of OS-2 and OS-3 would be shaded in Alternative 2 and Alternative 3.

No adverse impacts on the public use of these spaces are anticipated, as most of OS-2 and OS-3 would be sunlit at this hour. Similarly, the project would not cast any new shadows on Dorchester Avenue or Fort Point Channel and no adverse impacts are anticipated.

12 NOON

By 12:00 p.m., the sun has moved to the southern sky and shadows are cast almost due north. At this time, approximately 50% of the planned open space OS-1 would be shaded by the I-90 Vent Building in all alternatives.

Alternative 1 would create a small area of net new shadows adjacent to the existing South Station platforms but no new shadows in any area subject to Chapter 91. Approximately 25% of the OS-2, OS-3 and OS-4 open spaces would be shaded by Alternative 2. Approximately 50% of OS-4 would be shaded in Alternative 3.

In Alternative 3, up to 50% of OS-2 and OS-3 would be shaded and small slivers of shadow would be cast on the western sidewalk of Dorchester Avenue by the joint/private development buildings. These minimal shadows would be limited to sidewalk within a few feet of the building's facade and would not be expected to have substantial effect on the public use of this sidewalk. The remainder of Dorchester Avenue and nearly all of Fort Point Channel watersheet would be in full sunlight.

There would be no new shadow impacts to the Rolling Bridge Park open space located adjacent to the South Station site in Alternative 2 or Alternative 3.

1 P.M.

At 1:00 p.m., the sun is in the southwestern sky having passed solar noon at 12:29 p.m. At this time, all shadows are cast to the north-northeast, nearly parallel to the orientation of the South Station site and Fort Point Channel. Due to this solar orientation and the azimuth, all project-related shadows would remain within the South Station site. Alternative 1 would create a small area of net new shadows adjacent to the existing South Station platforms, but no new shadows would be cast in any area subject to Chapter 91. Shadows cast by Alternative 2 on OS-2 and OS-3 would increase to approximately 40%. The I-90 Vent Building would partially shade OS-1 in all alternatives.

Alternative 3 would shade approximately 80% of OS-2 and OS-3 and all of OS-4. The small shadows cast on the Dorchester Avenue sidewalk near the corners of the Joint/Private Development would be minimal in Alternative 3. The remainder of Dorchester Avenue and nearly all of Fort Point Channel watersheet would be in full sunlight.

Neither Alternative 2 nor Alternative 3 would cast any new shadows on Rolling Bridge Park open space. Furthermore, neither alternative is expected adversely affect public use of these open spaces.

2 P.M.

At 2:00 p.m., the sun has moved further into the southwestern sky and is lined up with the orientation of the South Station site and Fort Point Channel. All project-related shadows would remain within the South Station site. Alternative 1 would create a small area of net new shadows adjacent to the existing South Station platforms and immediately adjacent to the planned headhouse, but not within any planned public open space or sidewalk. Alternative 2 would shade nearly all of the open spaces OS-2 and OS-3 and a small sliver of OS-4 at this hour, leaving small slivers of sunlight at the northeastern edges of these spaces. Alternative 3 would shade all of OS-2, OS-3 and OS-4. Additionally, Alternative 3 would cast long narrow shadows along the adjacent area of the Dorchester Avenue sidewalk. The majority of Dorchester Avenue and all of Fort Point Channel would be in full sunlight. No new shadows would be cast on OS-1 in any studied alternative.

3 P.M.

At 3:00 p.m., the sun is in the southwestern sky and for the first time in the day, substantial new shadows are cast on Dorchester Avenue and Fort Point Channel by existing buildings. The majority of OS-1 would be shaded in existing conditions. Alternative 1 would create a small area of net new shadows approximately 100 feet wide adjacent to the existing South Station platforms, but not within any planned public open space. In Alternative 2, the only new shadows cast on public open spaces would be the complete shading of OS-2 and OS-3 and approximately 50% of the eastern section of OS-3. Rolling Bridge Park would be in full sunlight at this hour. On a fall day, 3:00 p.m. is a transition time when the sun is low in the sky and shadows start to dominate the City's urban landscape. The OS-2 and OS-3 spaces would have been in shade for over an hour by 3:00 p.m. Even on sunny days, the public use of OS-2 and OS-3 would be expected to be limited at this hour and date. The minor new shading on OS-2 and OS-3 is not expected to adversely affect the public use of these spaces.

Alternative 3 would shade all of OS-2 and OS-3, approximately 1,600 linear feet of Dorchester Avenue and the edge of Fort Point Channel. For the first time in the day, Alternative 3 would cast new shadows on public spaces beyond the South Station site boundaries reaching the western end of the Summer Street Bridge and adjacent sidewalks and the Harborwalk. The sidewalk and the Harborwalk at this location would be in shadows cast by Alternative 3. While these areas would be sunlit in Alternative 2, they would be shaded in Alternative 3.

4 P.M.

At 4:00 p.m., the sun is low in the southwestern sky casting shadows to the northeast. All of Dorchester Avenue from Summer Street to the I-90 Vent Building and the majority of OS-1 would be in shadow in existing conditions in all alternatives. Rolling Bridge Park would be in full sunlight. Alternative 1 would create net new shadows approximately 175 feet of the proposed headhouse. New shadows cast by Alternative 2 and Alternative 3 would completely shade the public open spaces OS-2 and OS-3. New shadows cast by Alternative 3 would shade approximately 50% of Fort Point Channel watersheet between Summer Street and the southern end of joint/private development. Additionally, Alternative 3 would cast new shadows on the western half of Summer Street and a small area at the midpoint of the Congress Street Bridge near the Tea Party Ship Museum. No new shadows would fall on this private museum. None of the Build Alternatives would cast new shadows on any existing waterfront facility along Fort Point Channel. The entire eastern shoreline of Fort Point Channel would be in full sun, including the public spaces at Children's Wharf and Fort Point Pier.

5 P.M.

At 5:00 p.m., the sun is very low in the southwestern sky and is within one hour of sunset at approximately 6:00 p.m. Most of the City is in shadow, including OS-1 and all but the southern end of Dorchester Avenue and Fort Point Channel. Rolling Bridge Park would, however, be in full sunlight.

Alternative 1 would not create any net new shadows. Alternative 2 would completely shade the on-site public open spaces OS-2 OS-3 and the eastern shoreline of Fort Point Channel, partially shading Fort Point Pier and the adjacent sections of the Harborwalk. The potential impacts to public use of project open spaces from Alternative 2 would be expected to be minimal at 5:00 p.m. on October 23. The OS-2 and OS-3 areas would be adjacent to large buildings and their shading would be predictable at a time when nearly all of the City of Boston is in shadow. The use of these east-facing spaces on a late fall afternoon would expected to be limited. The public use of the eastern shoreline of the Fort Point Channel this late in day and season is expected to be minimal and limited to small watercraft returning to the dock to be removed from the water and walking or strolling. The additional shadows predicted by Alternative 2 would not adversely affect the ability of Fort Point Pier to provide these functions and would not discourage the use of the facility by the public.

Alternative 3 would shade OS-2, OS-3, and OS-4, but would also shade the entire eastern shoreline of Fort Point Channel for approximately 1,000 feet south of Summer Street and one block into South Boston. Alternative 3 shadows would extend as far northeast as Children's Wharf, shading the small sunlit area on the wharf at this hour. As with Alternative 2, the shadows cast by Alternative 3 would not be expected to discourage the use of these spaces by the public. Open spaces OS-2 and OS-3 would be adjacent to the eastern facades of large buildings and would predictably be in shadow at this hour. The new shadows cast on Fort Point Pier and Children's Wharf at this hour would convert some of the remaining sunlit spaces along the shoreline in Fort Point Channel area to shade. The Boston Children's Museum closes at 5:00 p.m. most days, resulting in a reduced population of visitors to Children's Wharf at this hour. No substantial adverse effects are anticipated.

6 P.M.

At 6:00 p.m., the sun is setting and nearly the entire City of Boston is deep in shadow from the existing urban environment. Alternative 2 and Alternative 3 each add incrementally to these shadows, filling in small gaps in the existing shadows created by the Boston skyline.

Alternative 1 would not result in any net new shadows. Net new shadows cast on public open spaces by Alternative 2 would be limited to landlocked tidelands several blocks east of Fort Point Channel. None of these areas are subject to Chapter 91 jurisdiction and no impacts to the public use of these spaces would be expected due to the impending sunset and the extensive shadows present in the city at this hour.

Alternative 3 would also create new shadows, filling in small gaps in the shade dominated areas of South Boston in the vicinity of Seaport Boulevard and open spaces adjacent to Pier 4 in South Boston. No adverse impacts are anticipated from these minor new shadows created by Alternative 3.

8.4.1. Conclusion

The following conclusions are based on the forgoing shadow analysis:

- Alternative 1 would not create any new shadows on exterior public spaces and, as a nonwater-dependent infrastructure project, would not be subject to 310 CMR 9.51(2)(c).
- Alternative 2 would meet the Chapter 91 standards for building height, open space, and setback, and would not be expected to require mitigation for the relatively minor shadow impacts predicted.
- Alternative 3 would exceed the building height and setback requirements of Chapter 91 and create new shadows on portions of the project site and, in the late afternoon, in South Boston. The shadows cast on the planned on-site open spaces OS-2 and OS-3 would not negate the strong public benefits accrued from the project along Dorchester Avenue from opening approximately five acres of filled tidelands for public use. The anticipated shadows cast on the South Boston shoreline of Fort Point Channel would last approximately one hour, and are not expected to result in substantial adverse impacts to the public use of these spaces.
- No mitigation is anticipated for new shadows cast on Dorchester Avenue, because all Build Alternatives would result in a substantial net benefit to public use of the waterfront. The relatively brief duration of the predicted new shadows on the South Boston shoreline of Fort Point Channel would be unlikely to require mitigation.

9. Summary of Findings

This section addresses potential impacts to filled tidelands subject to Chapter 91 resulting from the project at South Station and its immediate vicinity. There are no jurisdictional filled tidelands at any of the three layover facility sites and therefore no impacts at those sites. Similarly, the No Build Alternative would not include any new construction or change in use triggering a new license and therefore would not result in any new impacts to filled tidelands.

9.1. No Build Alternative

The No Build Alternative would maintain the existing conditions relative to compliance with M.G.L. Chapter 91 and the Massachusetts Waterways Regulations. In this alternative, the following conditions would continue to define the South Station and layover facility sites site pursuant to Chapter 91

- The existing South Station Terminal, including tracks, platforms, headhouse, loading docks, bus terminal, and ancillary facilities would continue to operate as a licensed multi-modal transportation facility.
- The USPS General Mail Facility would continue to operate under the existing federal pre-emption, exempting the facility from all operational, design, and public access requirements of Chapter 91 and the Waterways Regulations. Dorchester Avenue and the western shoreline of

Fort Point Channel would remain closed to public use between the existing security gates limiting public access to approximately 400 linear feet of Dorchester Avenue adjacent to Summer Street; and,

- The layover facility sites at Widett Circle and Beacon Park Yard are not subject to Chapter 91 and would continue to be landlocked pursuant to Chapter 91, Section 18. The Readville – Yard 2 Layover Facility does not contain filled tidelands and is not subject to Chapter 91.

9.1.1. Licensing Approach

The No Build Alternative would not require any new Chapter 91 licensing or approvals.

9.2. Alternative 1 – Transportation Improvements Only

Alternative 1 would include the following structural alterations and/or changes in use subject to review under Chapter 91:

- Removal of the USPS General Mail Facility including:
  - Demolition of the building, loading docks, underground parking, and gated access control.
- Reopening of Dorchester Avenue and construction of new surface features connecting Summer Street with the public portion of Dorchester Avenue located south of MassDOT Vent Building #1 and on the South Boston side of Fort Point Channel, including:
  - One-half mile of Harborwalk extension comprising approximately one acre;
  - One-half mile of new paved cycle track;
  - One-half mile of re-opened publicly accessible travel lanes; and
  - One-half mile of public sidewalk on the western side of Dorchester Avenue.
- Construction of up to seven new tracks and associated platforms and public areas at South Station;
- Construction of a new South Station headhouse fronting on Dorchester Avenue;
- Construction of several buildings above and adjacent to the planned transportation improvements; and,
- Dedication of greater than one square foot of open space for every square foot dedicated to buildings for nonwater-dependent use within the jurisdictional area as open space. All of the layover facilities are exempt from Chapter 91 opens space requirements because none of them contain filled tidelands subject to licensure.

9.2.1. Licensing Approach

Alternative 1 would require a new nonwater-dependent infrastructure license for all transportation improvements related to (a) demolition of the existing USPS General Mail Facility (b) the track improvements and related construction within 250 feet of the flowed tidelands of Fort Point Channel, and (c) the reopening of approximately one-half mile of Dorchester Avenue and its rededication to publicly accessible uses.

9.2.2. Conclusion

Alternative 1 would fully comply with M.G.L. Chapter 91 and the Massachusetts Waterways Regulations.

9.3. Alternative 2 – Joint/Private Development Minimum Build

Alternative 2 would include the following elements subject to review under Chapter 91:

- Removal of the USPS General Mail Facility including:
  - Demolition of the building, loading docks, underground parking, and gated access control.
- Reopening of the presently closed portion of Dorchester Avenue and construction of new surface features connecting Summer Street with the public portion of Dorchester Avenue located south of MassDOT Vent Building #1 and on the South Boston side of Fort Point Channel, including:
  - One-half mile of a Harborwalk extension comprising approximately one acre;
  - One-half mile of new paved cycle track;
  - One-half mile of re-opened publicly accessible travel lanes; and
  - One-half mile of public sidewalk on the western side of Dorchester Avenue.
- Construction of up to seven new tracks and associated platforms and public areas at South Station;
- Construction of a new South Station headhouse fronting on Dorchester Avenue;
- Construction of several building buildings above and adjacent to the planned transportation improvements; and
- Dedication of a minimum of one square foot of open space for every square foot of building for nonwater-dependent use within jurisdictional area as open space. All of the layover facilities are exempt from Chapter 91 opens space requirements because none of them contain filled tidelands subject to licensure.

9.3.1. Licensing Approach

Alternative 2 would require the following Chapter 91 approvals:

- A nonwater-dependent Infrastructure License for all transportation improvements related to: (a) the track improvements located within 250 feet of the flowed tidelands of Fort Point Channel; (b) the reopening of Dorchester Avenue and its rededication to publicly accessible uses; and
- One or more nonwater-dependent use licenses for the construction of the joint/private development located within 250 feet of the flowed tidelands of Fort Point Channel. These licenses are anticipated to be sought under a Consolidated Written Determination to facilitate a concise public review of the Joint/Private Development and issuance of a series of licenses with a consistent set of Special Conditions.

9.3.2. Conclusion

Alternative 2 complies with all applicable Chapter 91 standards through the issuance of a new nonwater-dependent infrastructure license for the planned transportation improvements located within 250 feet of the edge of Fort Point Channel and one of more nonwater-dependent use licenses for the joint/private development buildings.

9.4. Alternative 3 – Joint/Private Development Maximum Build

Alternative 3 would include the following elements subject to review under Chapter 91:

- Removal of the USPS General Mail Facility including:
  - Demolition of the building, loading docks, underground parking and gated access control.
- Reopening of Dorchester Avenue and construction of new surface features connecting Summer Street with the public portion of Dorchester Avenue located south of MassDOT Vent Building #1 and on the South Boston side of Fort Point Channel, including:
  - One-half mile of a Harborwalk extension comprising one acre;
  - One-half mile of new paved cycle track;
  - One-mile of re-opened publicly accessible travel lanes; and
  - One-half mile of public sidewalk on the western side of Dorchester Avenue.
- Construction of up to seven new tracks and associated platforms and public areas at South Station;
- Construction of a new South Station headhouse fronting on Dorchester Avenue;
- Construction of several buildings above and adjacent to the planned transportation improvements. These buildings would exceed the building height setbacks established by 310 CMR 9.51(3)(e) and 310 CMR 9.51(3)(c) because they would be taller than allowed under existing regulations and within the 100-foot wide Water-Dependent Use Zone; and
- Dedication of a minimum of one square foot of open space for every square foot of buildings for nonwater-dependent use within the Chapter 91 jurisdictional area as open space. All of the layover facilities are exempt from Chapter 91 opens space requirements because none of them contain filled tidelands subject to licensure.

9.4.1. Licensing Approach

Alternative 3 would require the following Chapter 91 Licenses and related approvals:

- A nonwater-dependent Infrastructure License for all transportation improvements related to: (a) the track improvements located within 250 feet of the flowed tidelands of Fort Point Channel. (b) the reopening of Dorchester Avenue and its rededication to publicly accessible uses.
- A Municipal Harbor Plan Approval would be required for Alternative 3 because the Joint/Private Development component would:
  - Exceed the building height limits established by 310 CMR 9.51 (3)(e).
  - Include buildings for nonwater-dependent use in the 100-foot wide water-dependent use zone.
- One or more Nonwater-dependent Use Licenses for the construction of the joint/private development located within 250 feet of the flowed tidelands of Fort Point Channel. These licenses are anticipated to be sought under a Consolidated Written Determination to facilitate an efficient public review of the joint/private development and issuance of a series of licenses with a consistent set of Special Conditions.

9.4.2. Conclusion

Alternative 3 would require a new nonwater-dependent infrastructure license for the transportation elements and one or more nonwater-dependent use licenses for the Joint/Private Development components. This alternative complies with baseline open space requirements. However, this alternative would require certain regulatory substitutions to comply with the building height, setback requirements, and the water-dependent use zone restrictions.

10. Figures

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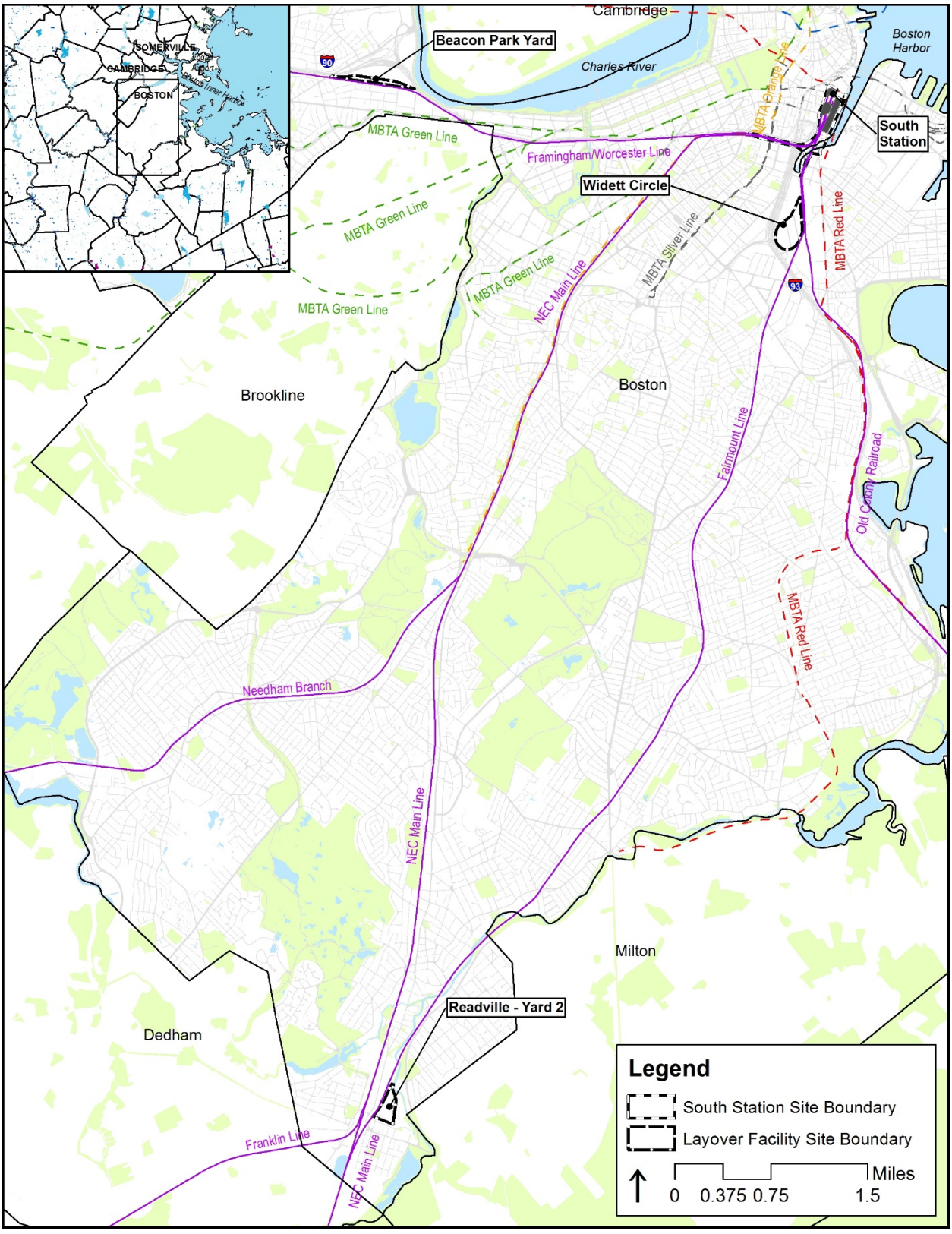

Figure 1—South Station Expansion Site Boundaries

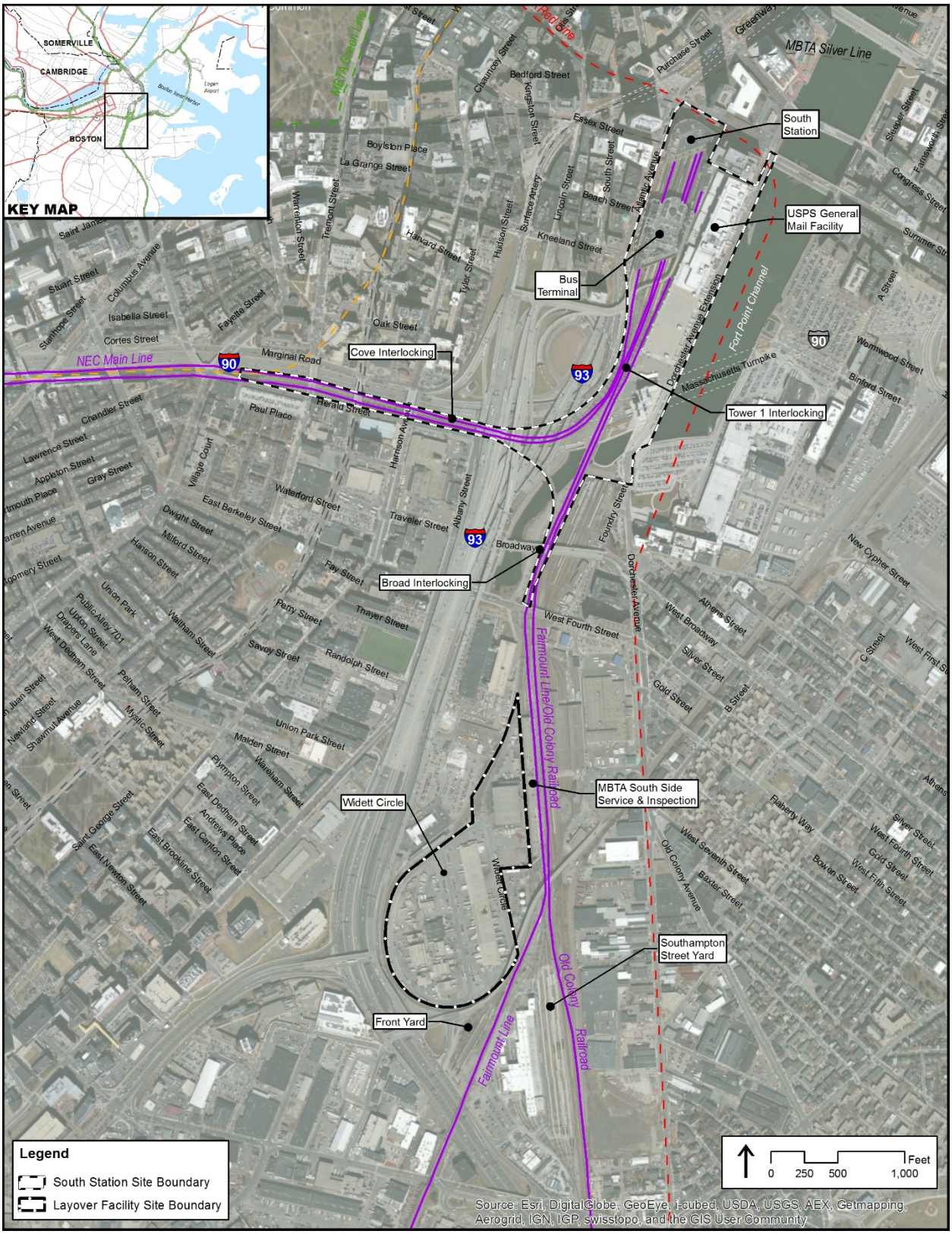

Figure 2—South Station and Widett Circle Layover Facility Site Boundaries

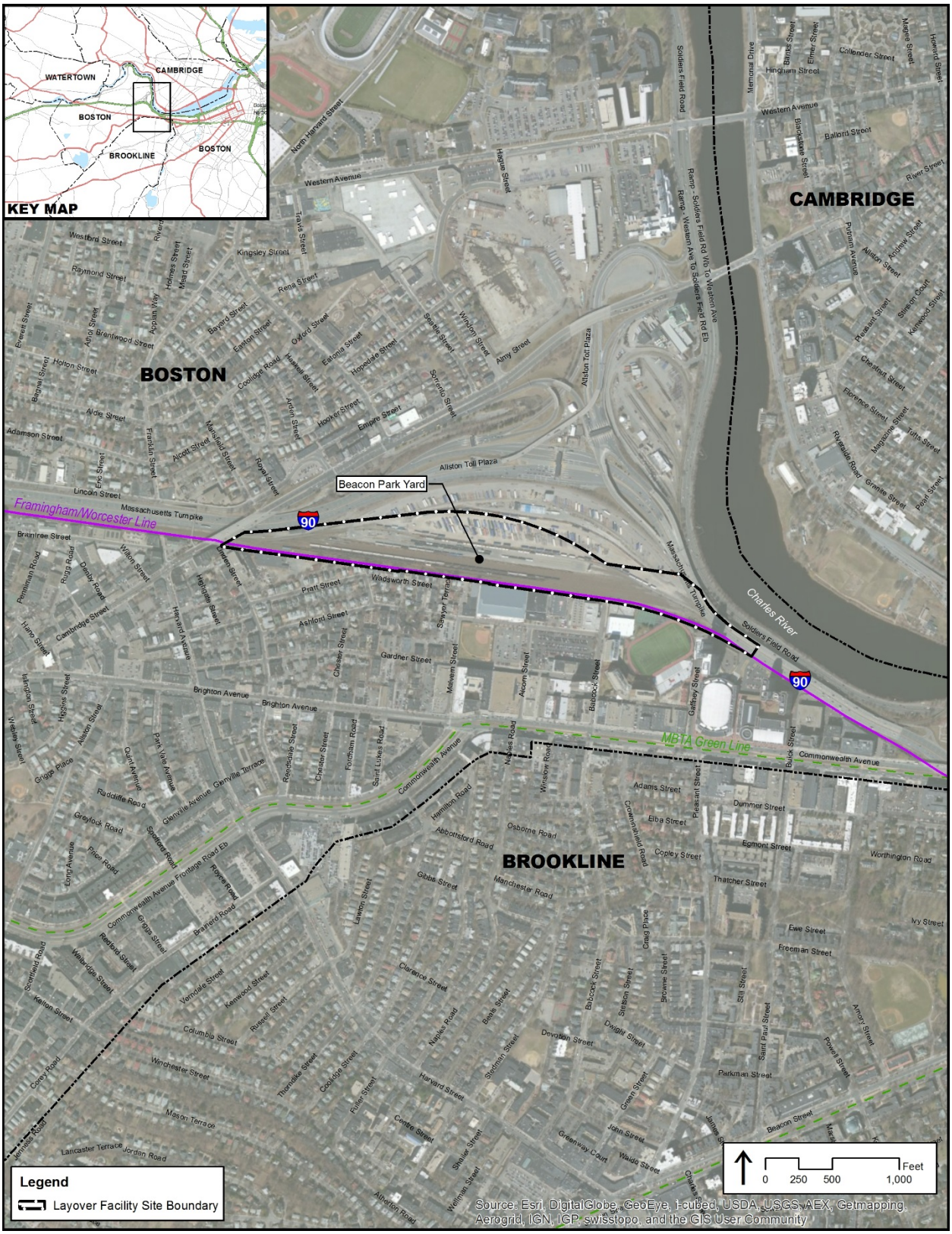

Figure 3—Beacon Park Yard Layover Facility Site Boundary

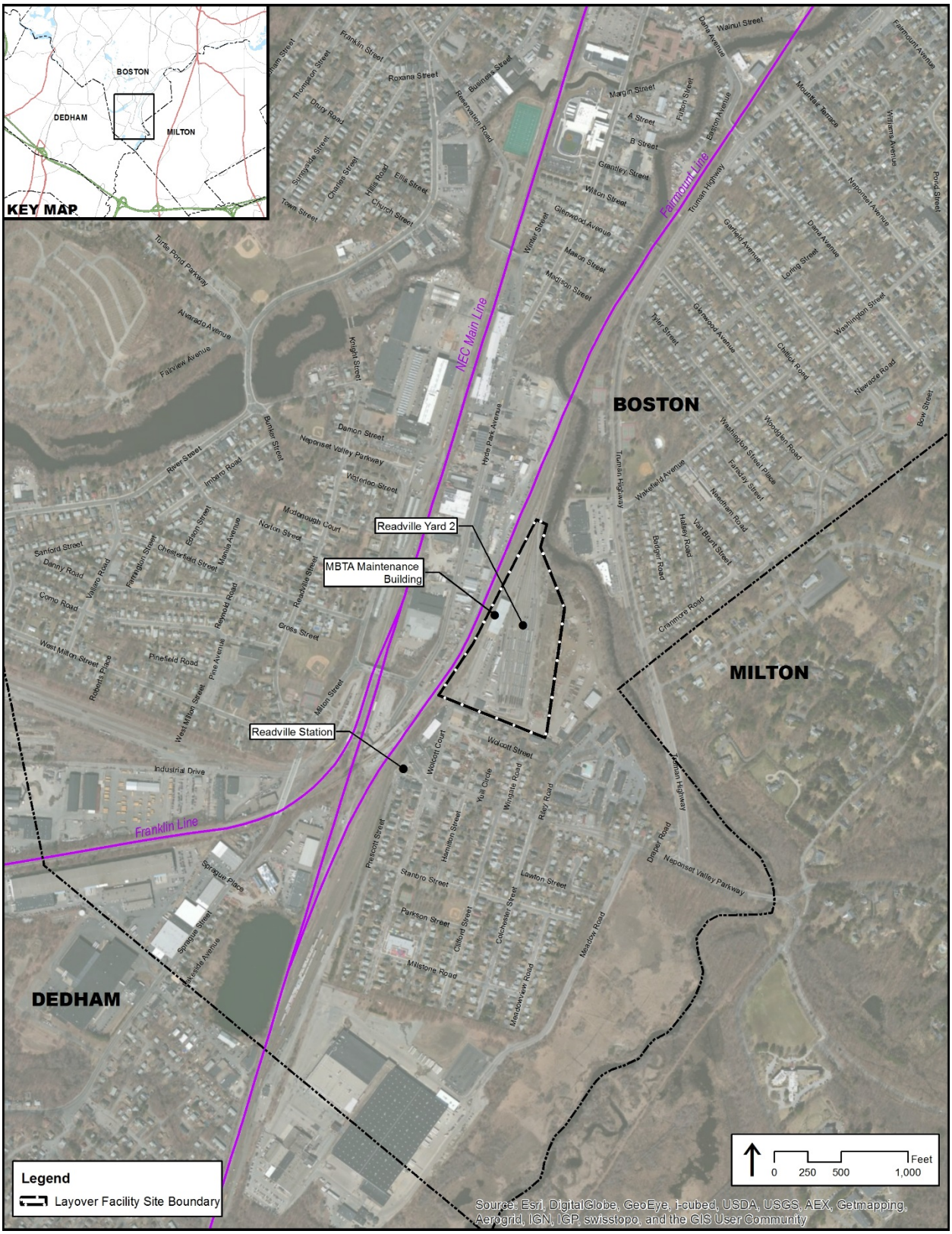

Figure 4—Readville - Yard 2 Layover Facility Site Boundary

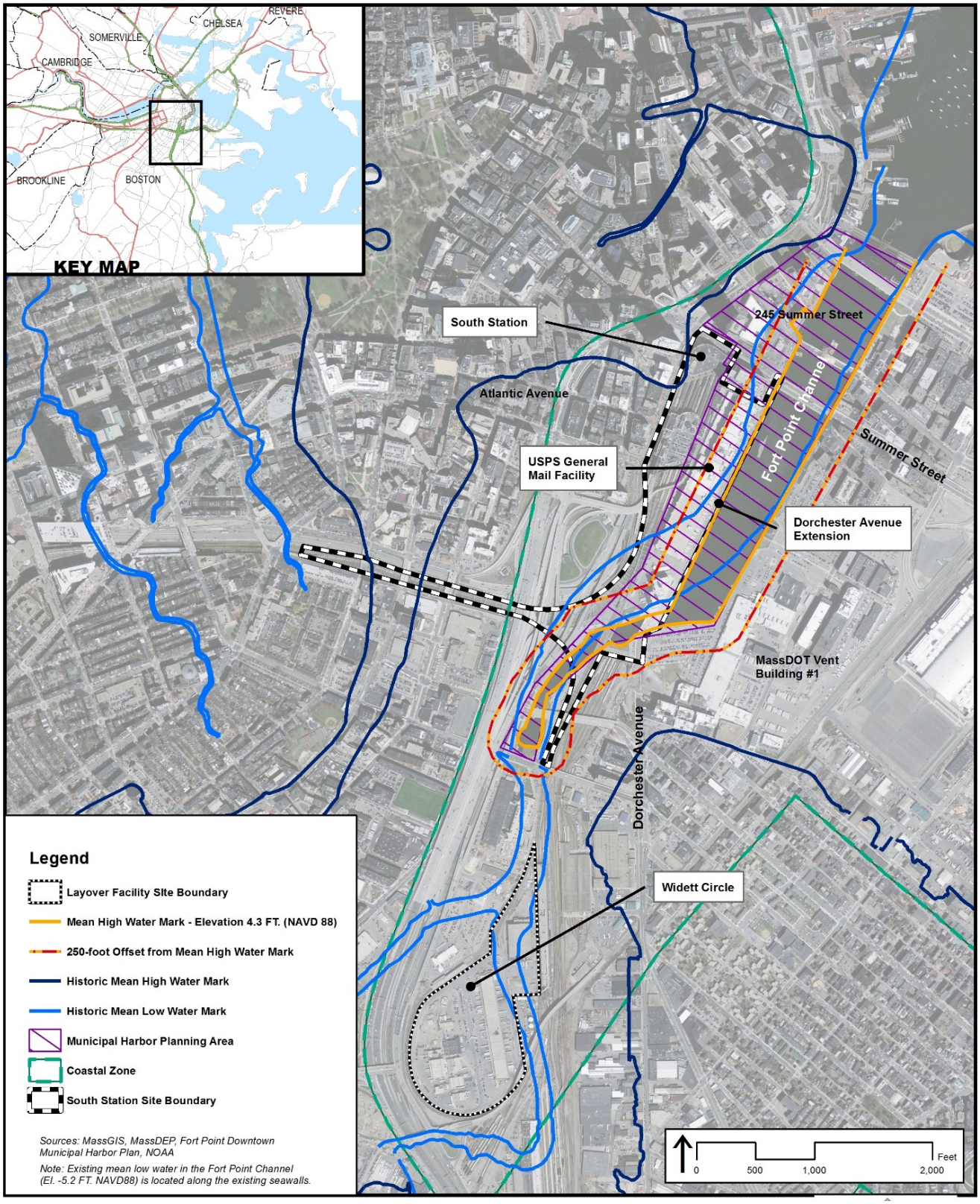

Figure 5—South Station and Widett Circle Historic Shoreline and Massachusetts Coastal Zone

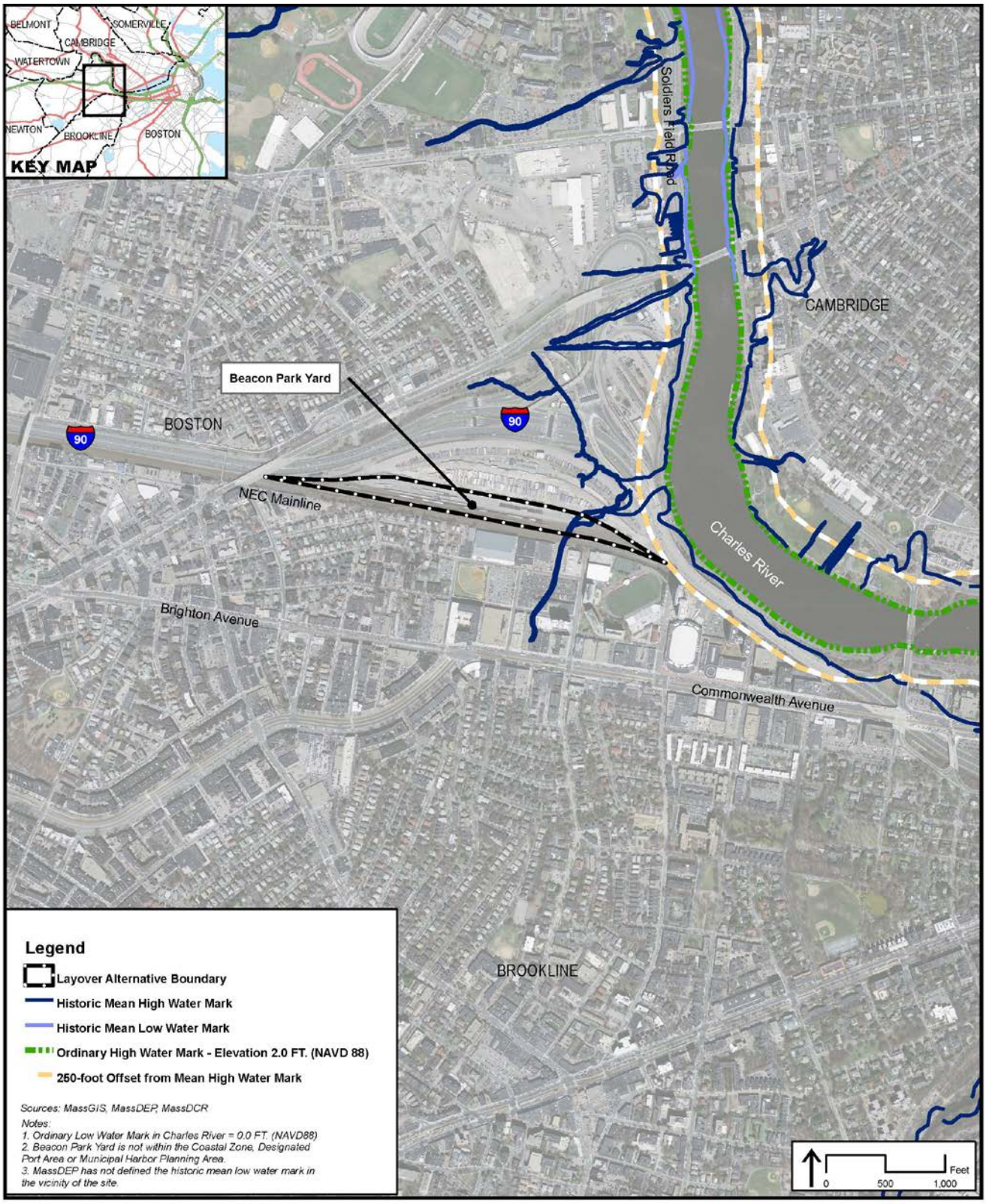

Figure 6—Beacon Park Yard Historic Shoreline

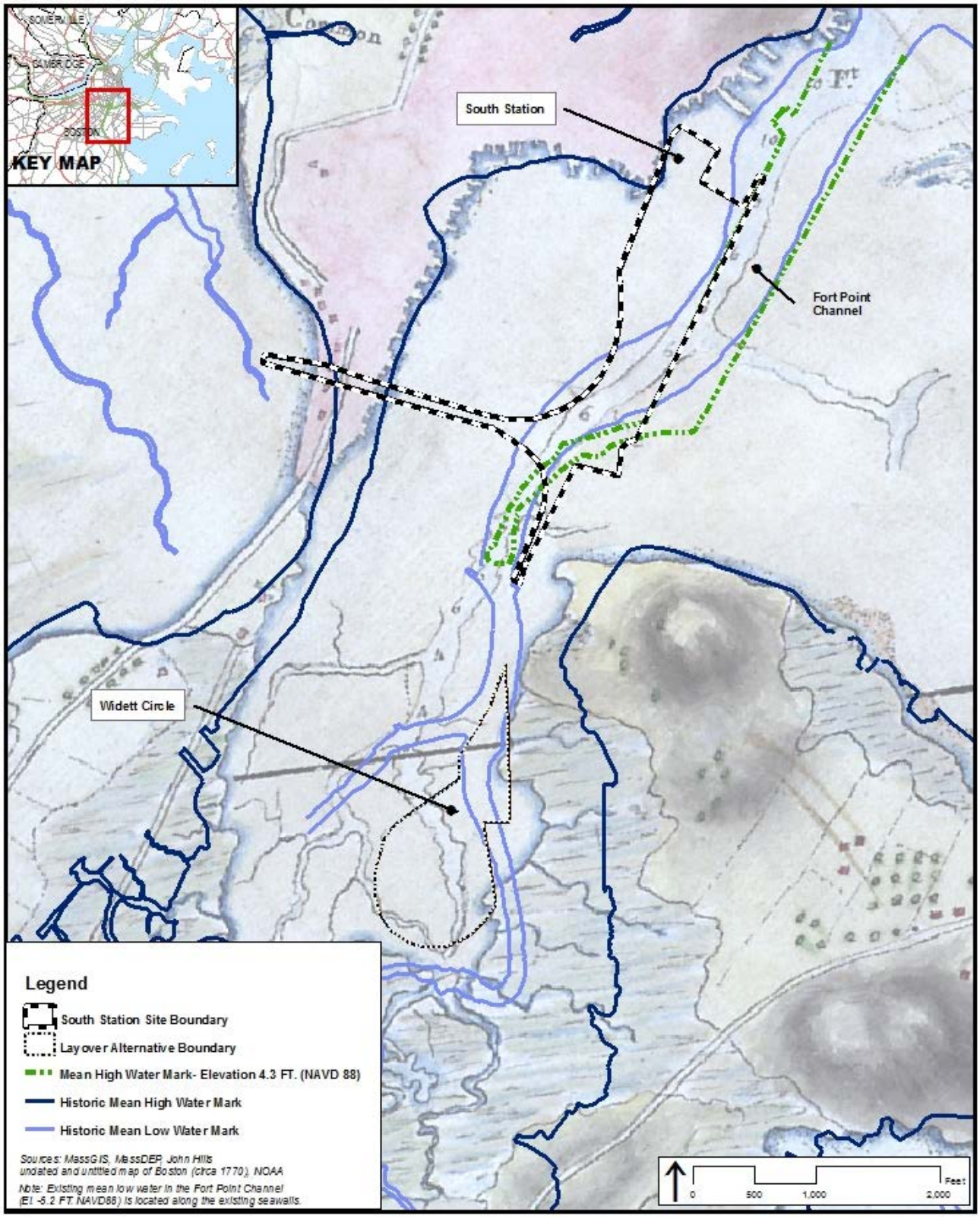

Figure 7—John Hills Map of Boston, 1770

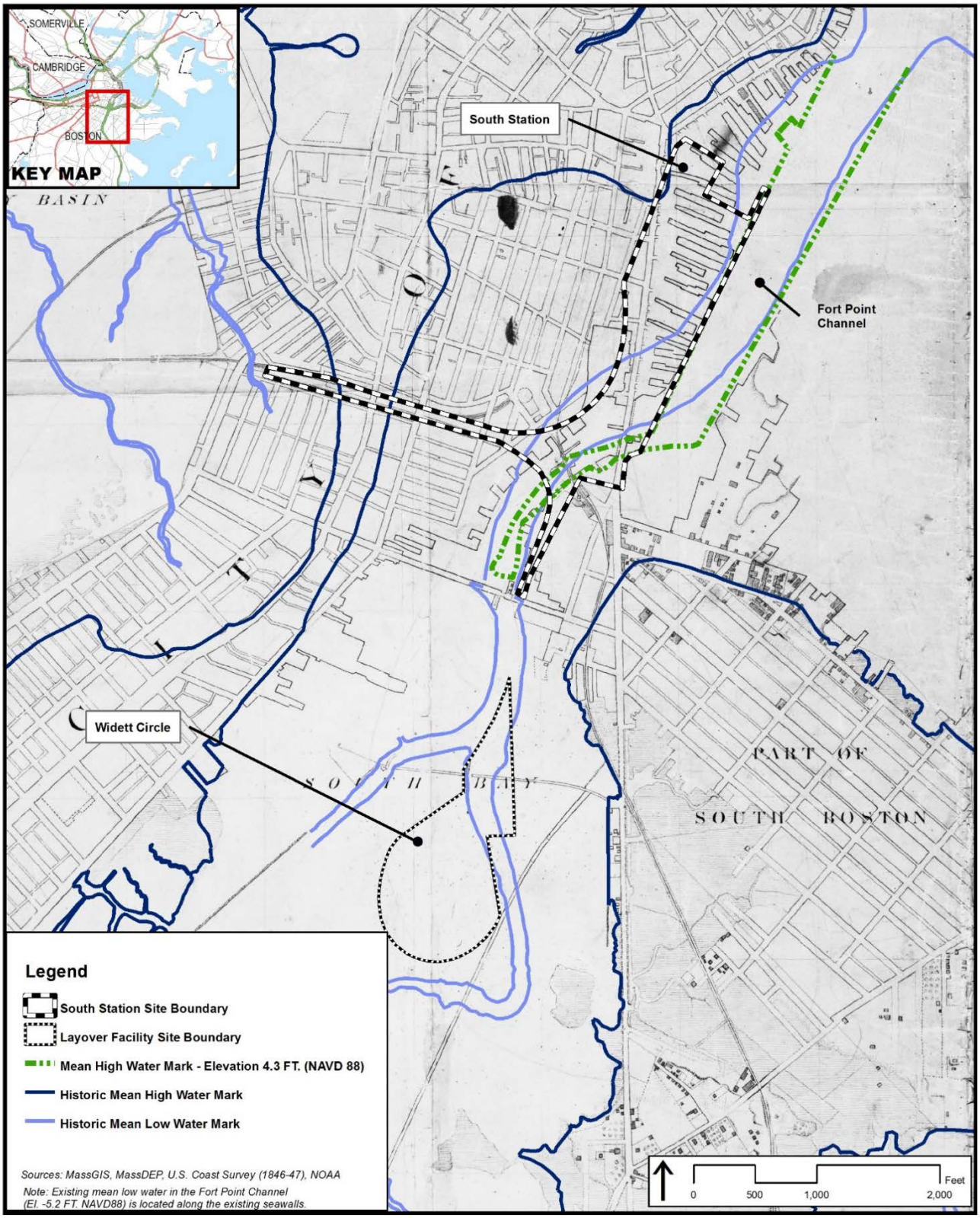

Figure 8—United States Coast Survey, 1846

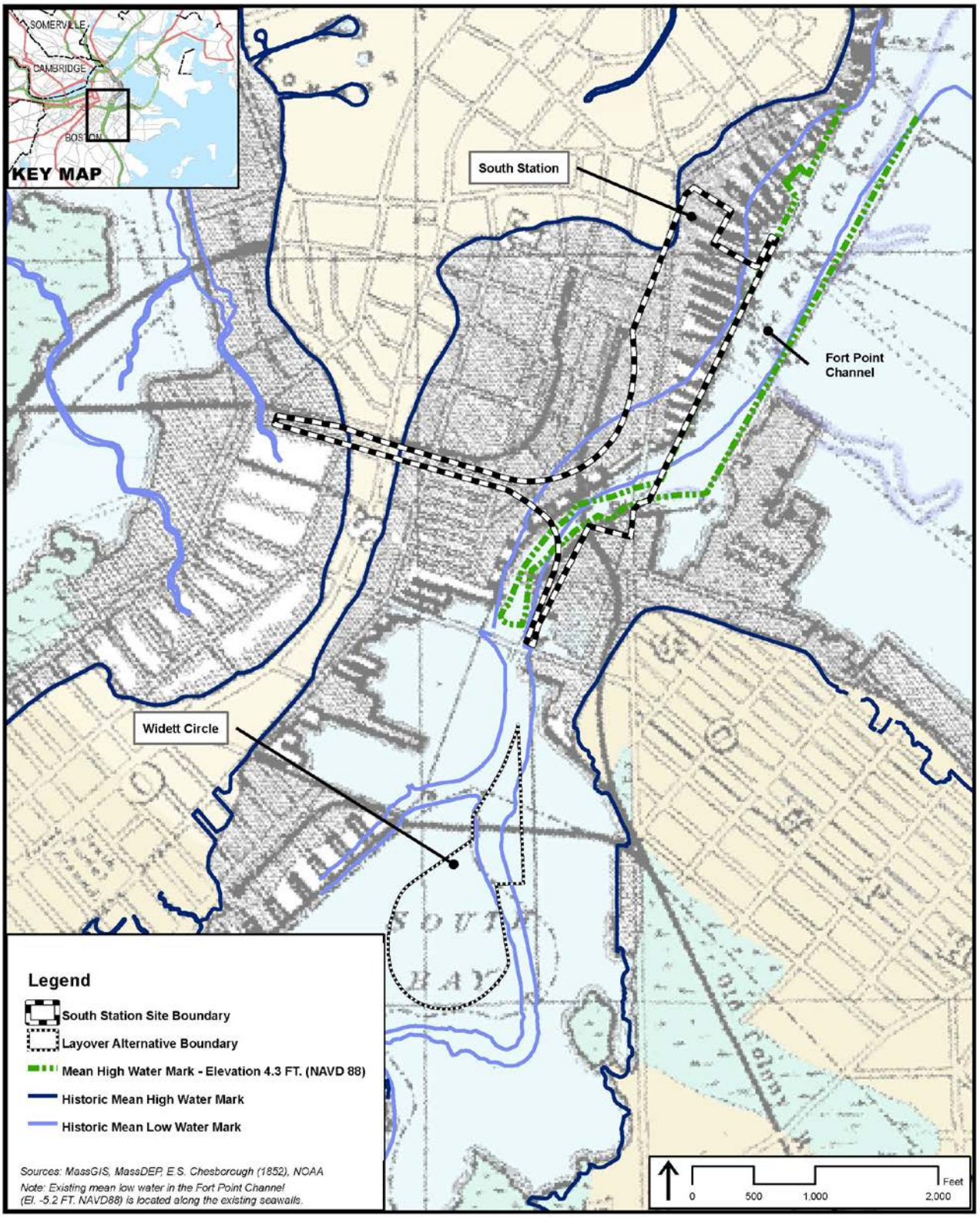

Figure 9—E.S. Chesborough Map of Boston, 1852

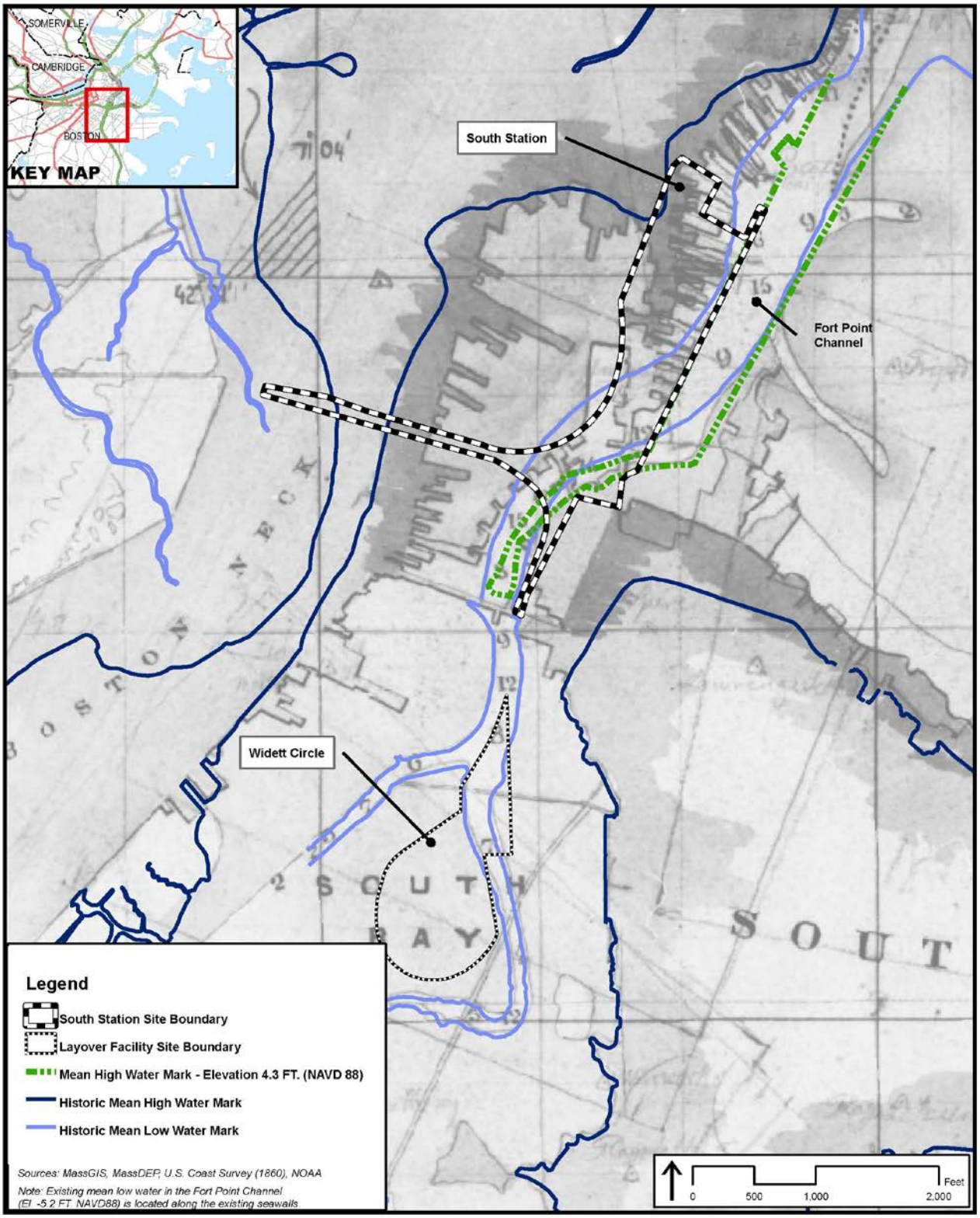

Figure 10—United States Coast Survey, 1860

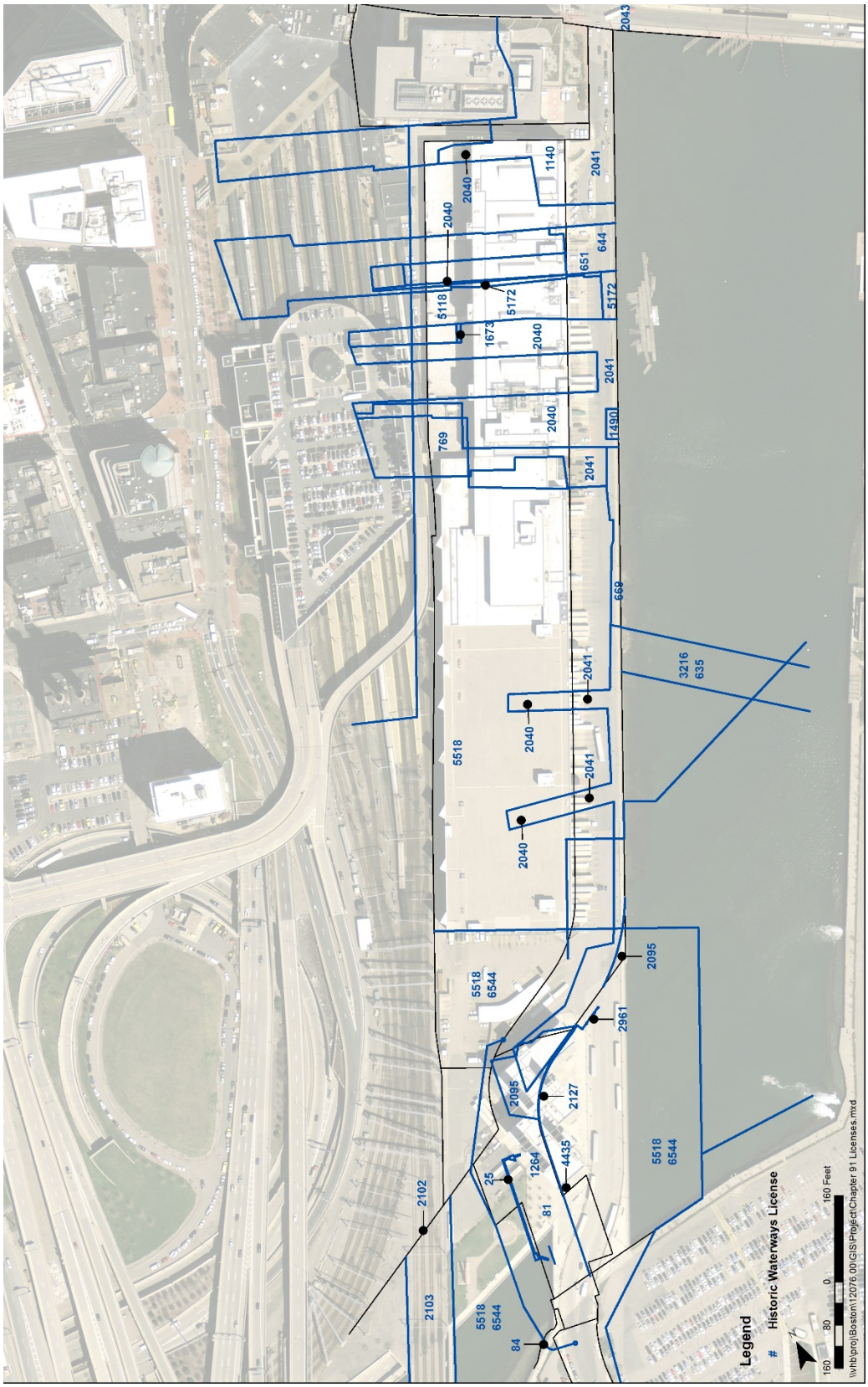

Figure 11—Fort Point Channel Historic Waterways Licenses

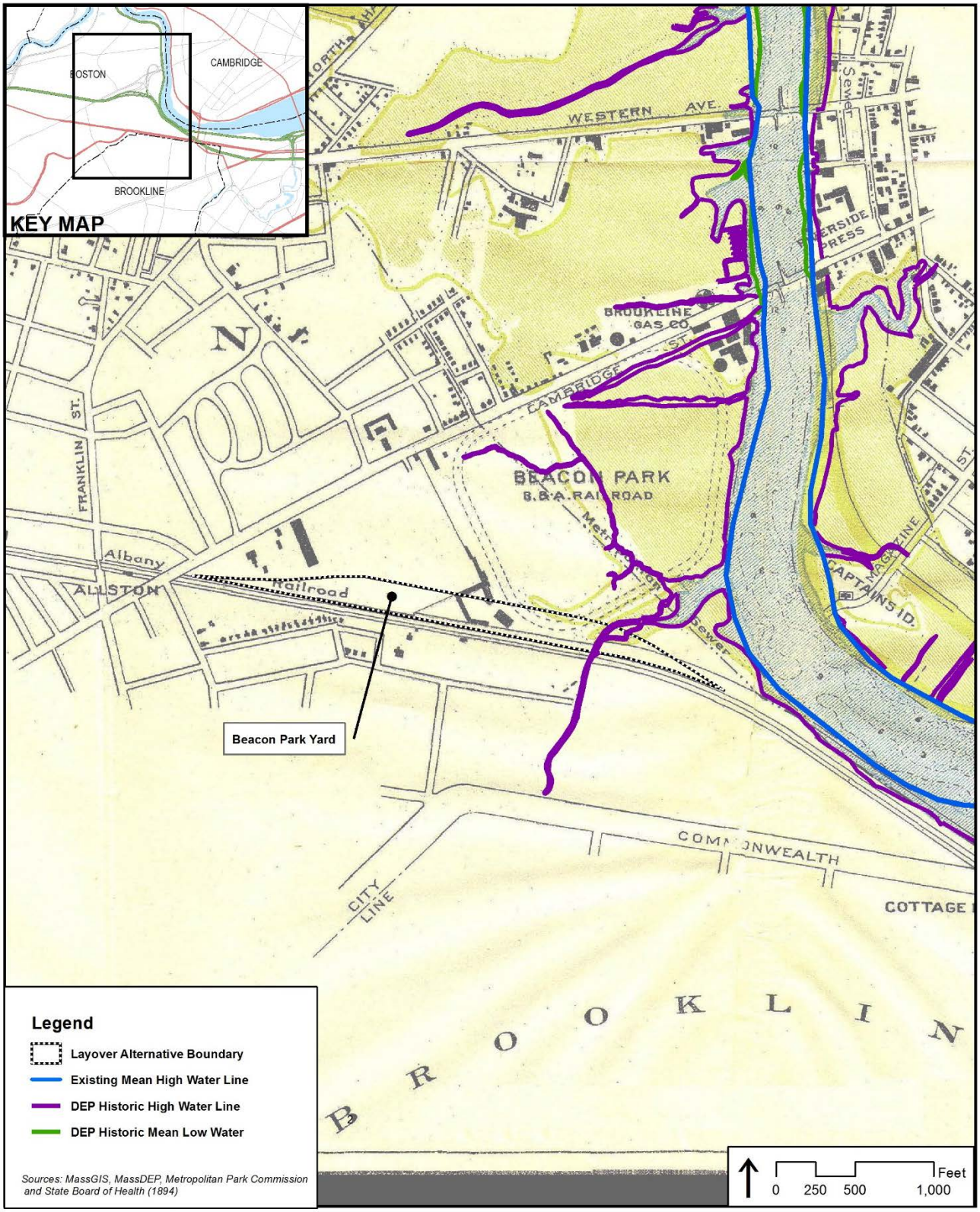

Figure 12—Beacon Park Yard – Metropolitan Parks Commission Map, 1894

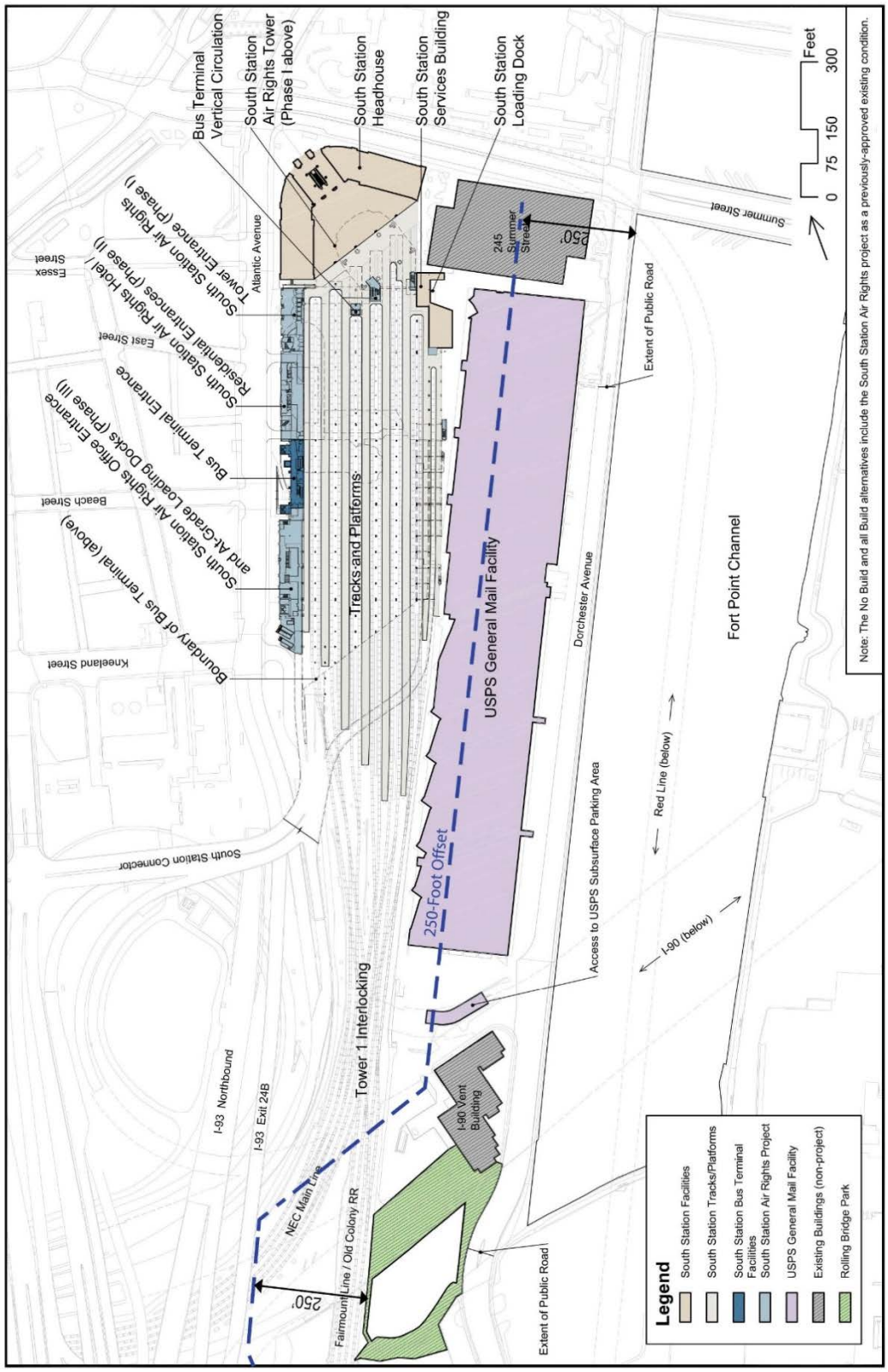

Figure 13—No Build Alternative

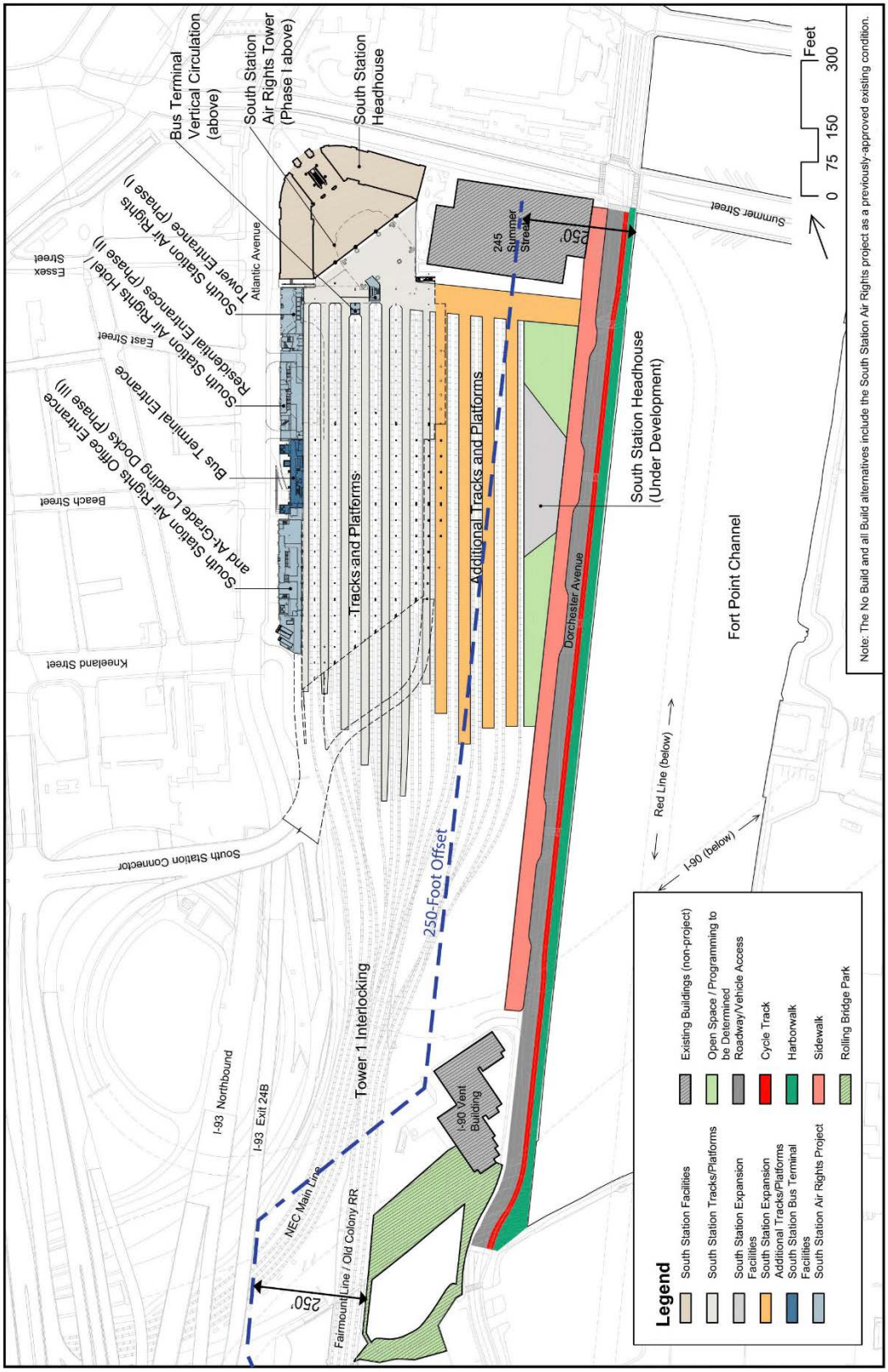

Figure 14—Alternative 1 – Transportation Improvements Only

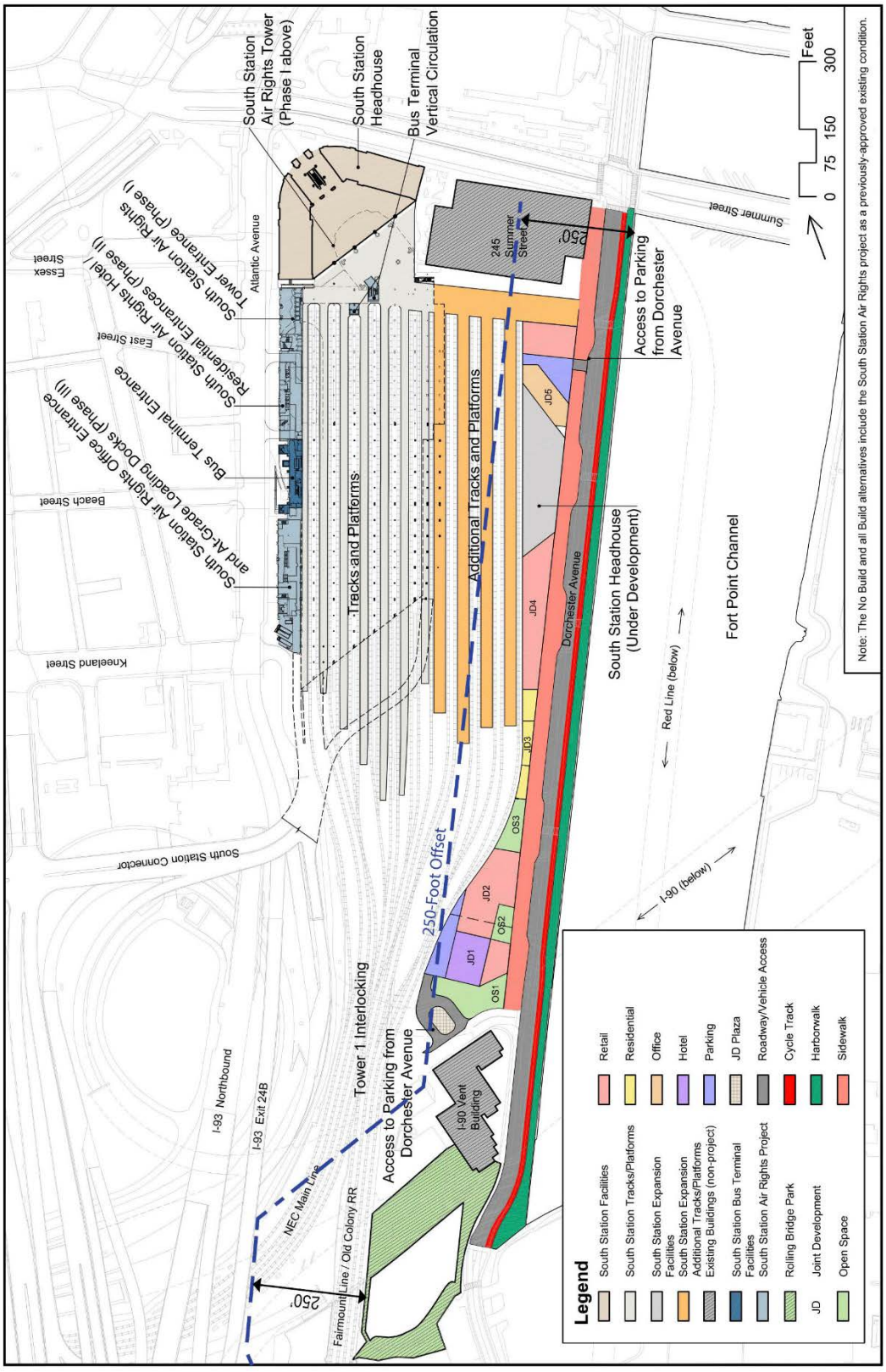

Figure 15—Alternative 2 – Joint/Private Development Minimum Build

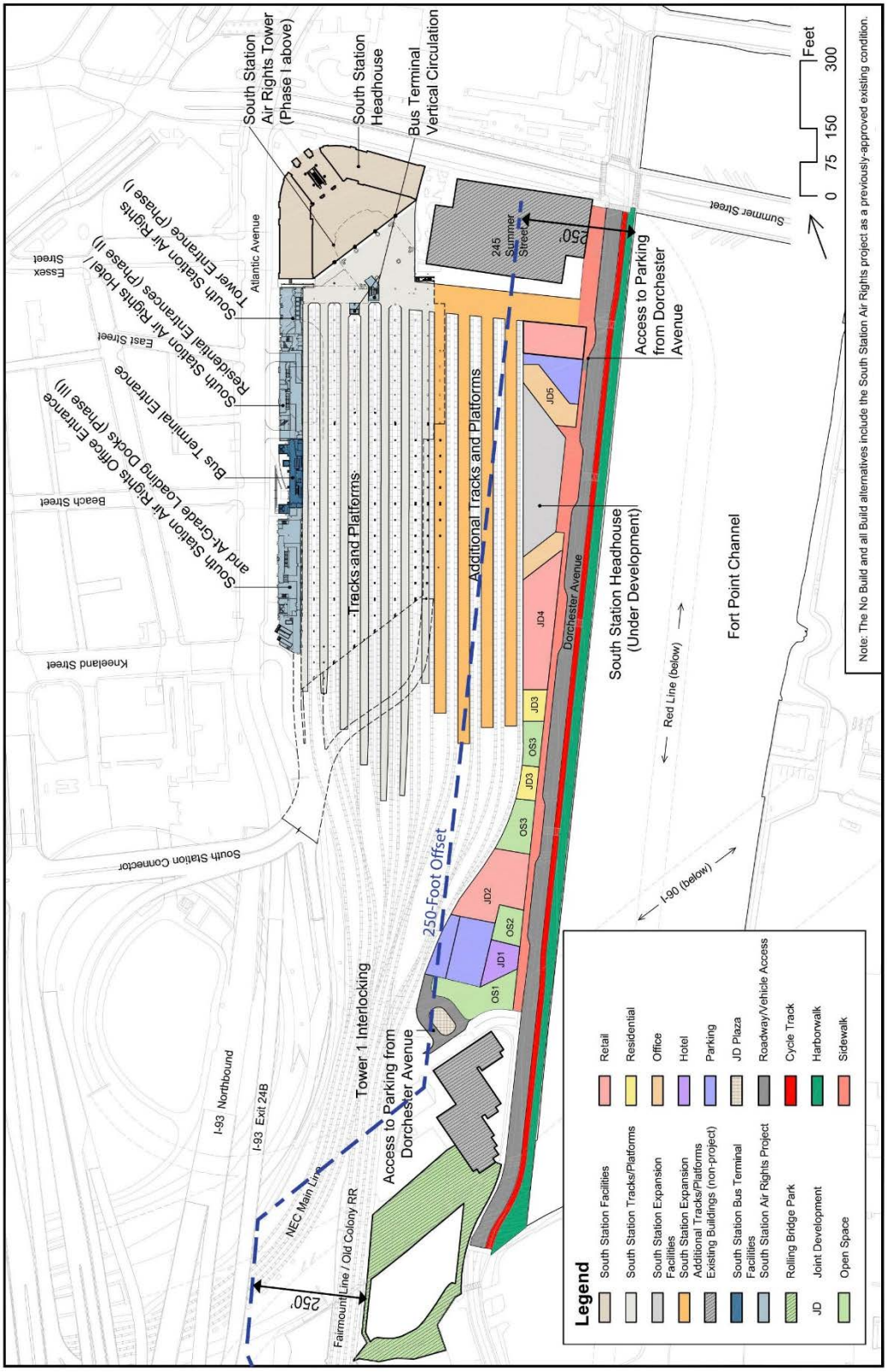

Figure 16—Alternative 3 – Joint/Private Development Maximum Build

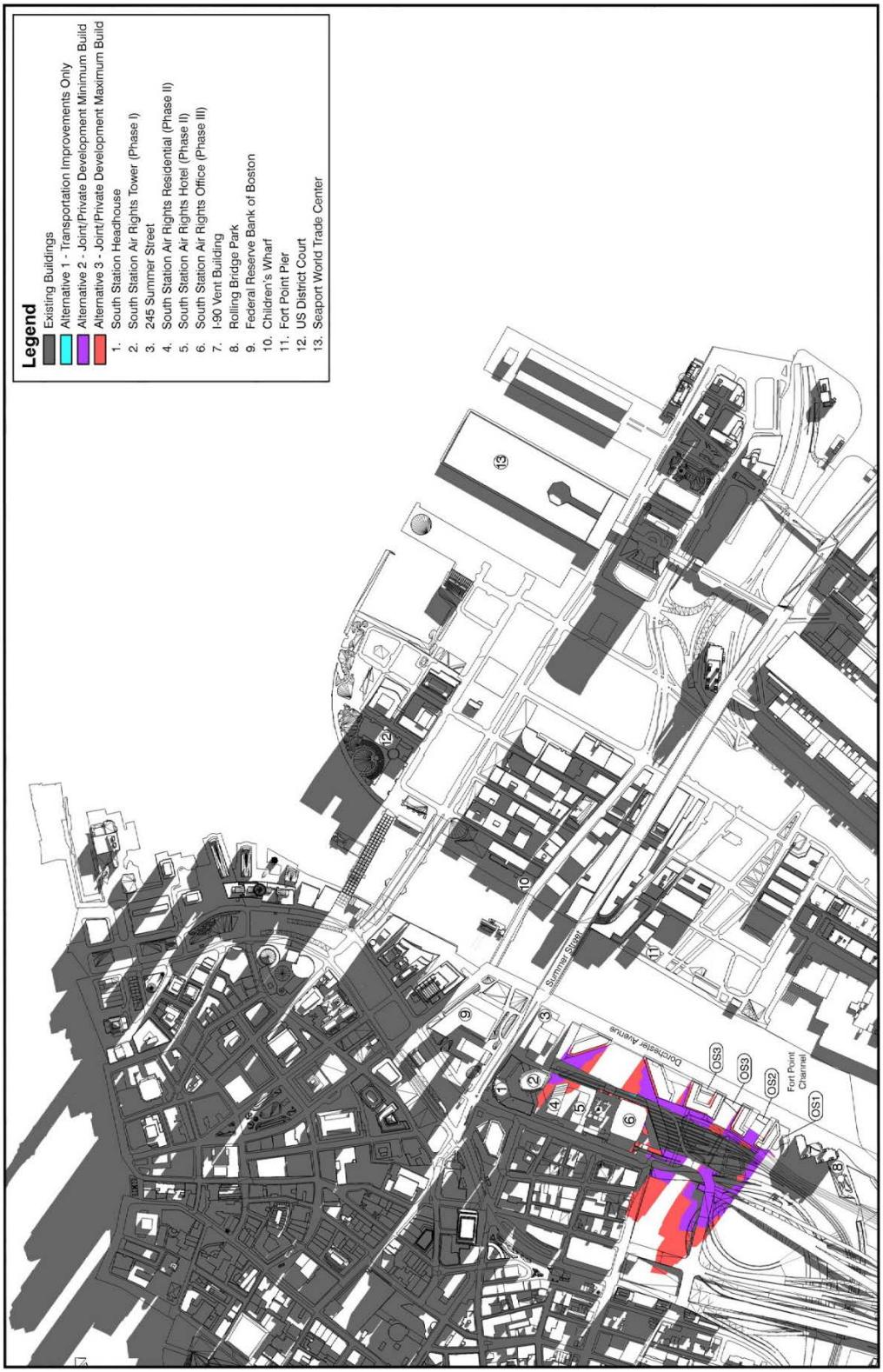

Figure 17—Shadow Study – October 23 at 9 a.m.

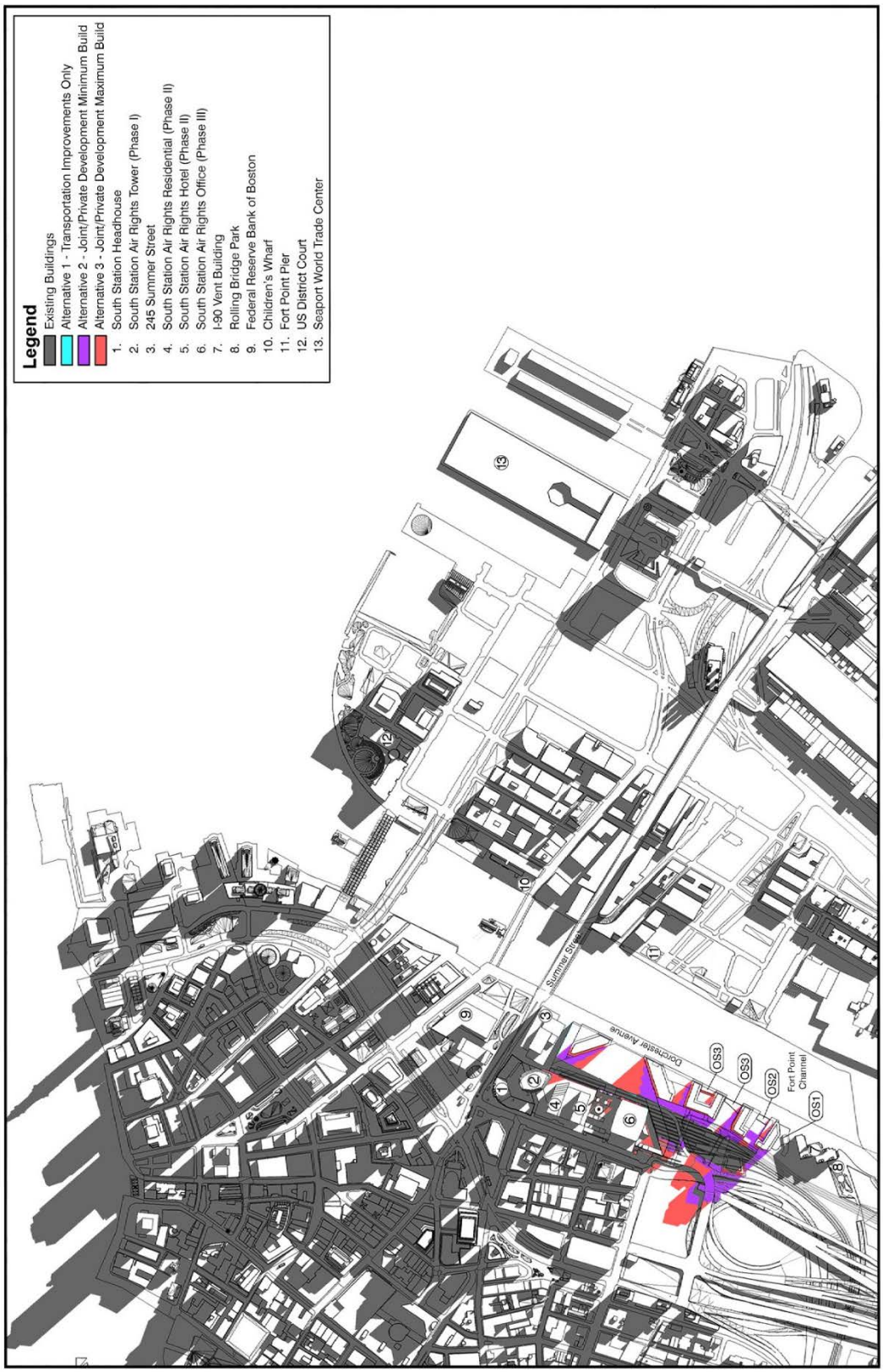

Figure 18—Shadow Study – October 23 at 10 a.m.

Figure 19—Shadow Study – October 23 at 11 a.m.

Figure 20—Shadow Study – October 23 at 12 p.m.

Figure 21—Shadow Study – October 23 at 1 p.m.

Figure 22—Shadow Study – October 23 at 2 p.m.

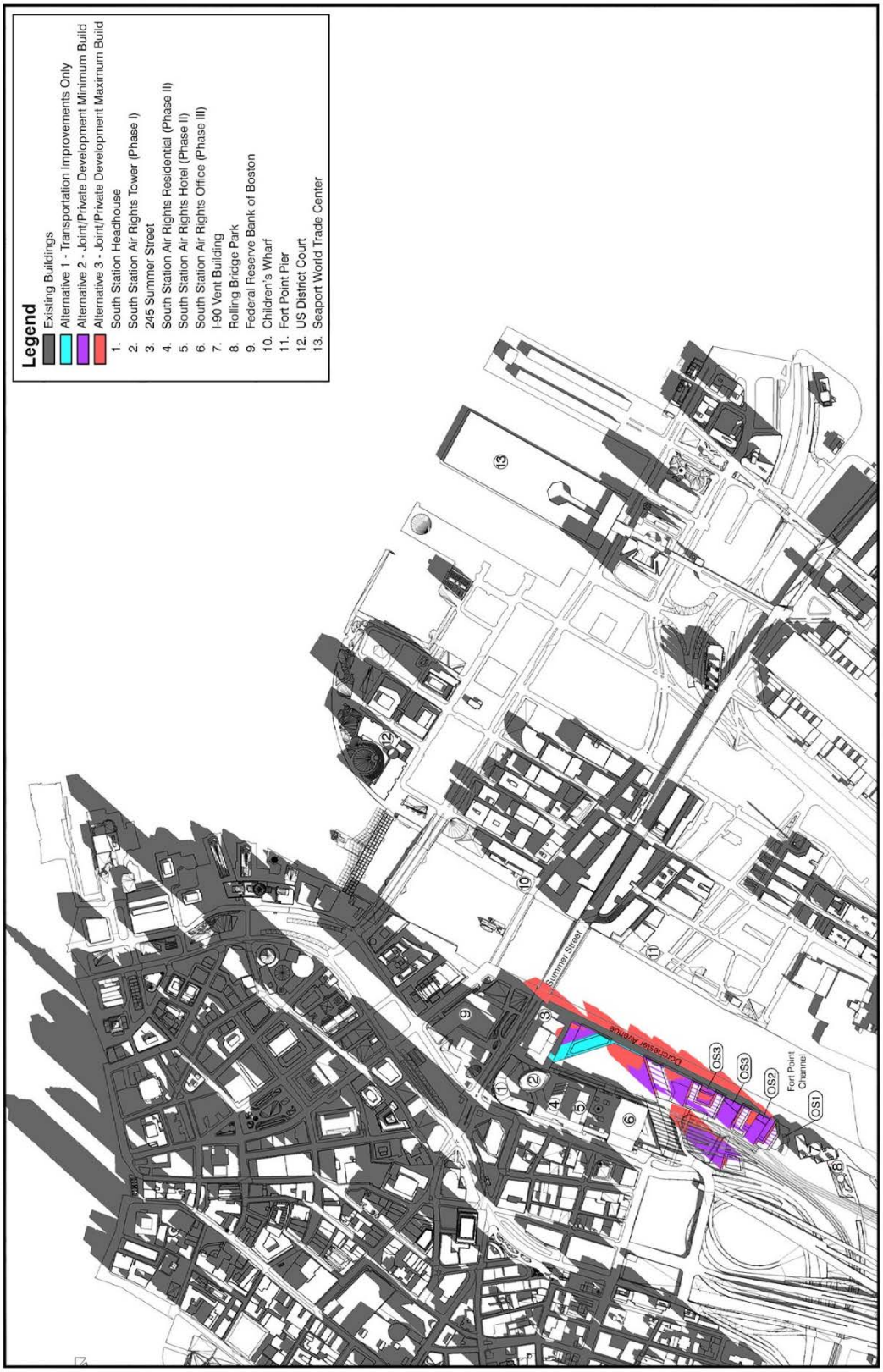

Figure 23—Shadow Study – October 23 at 3 p.m.

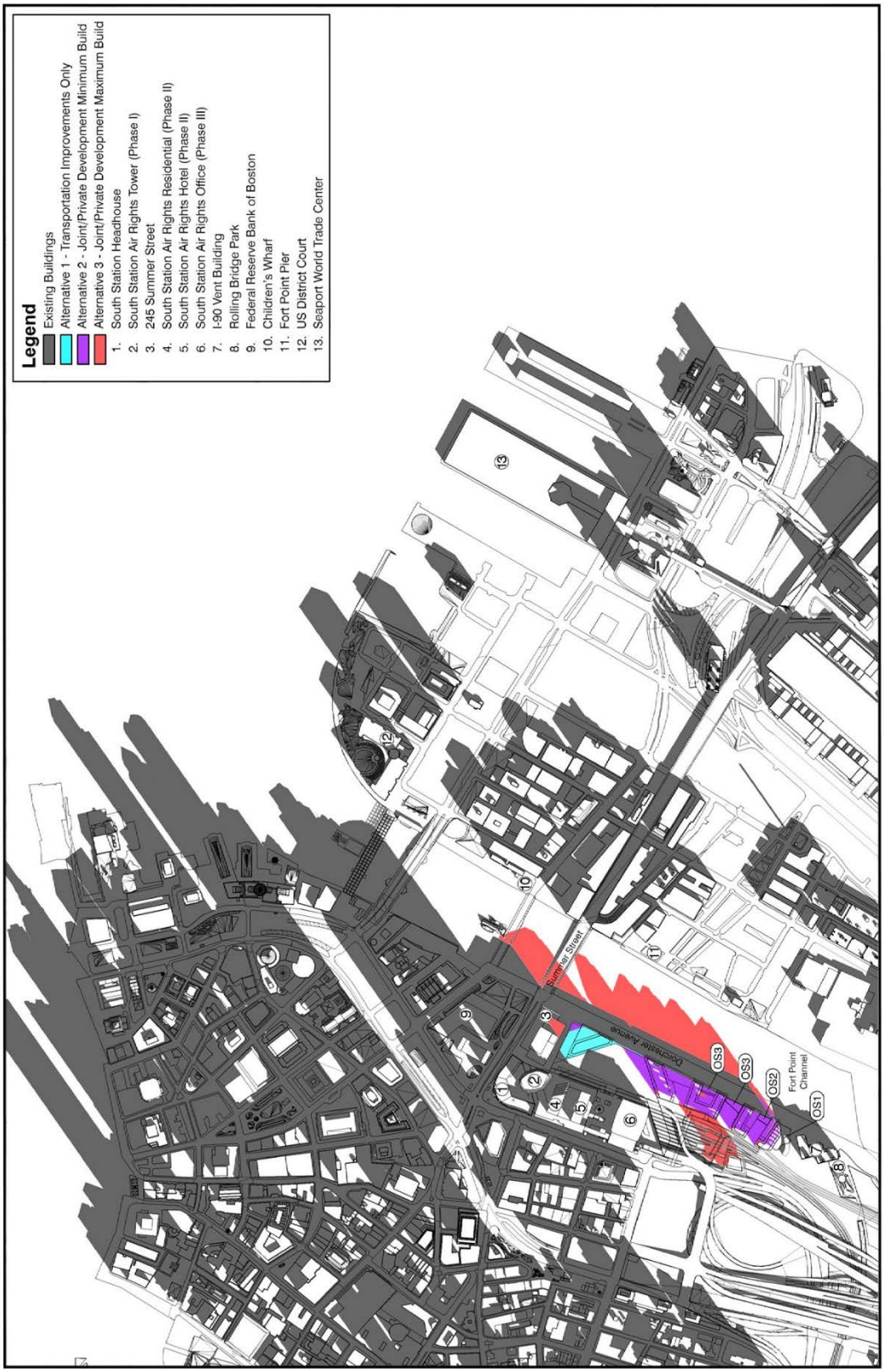

Figure 24—Shadow Study – October 23 at 4 p.m.

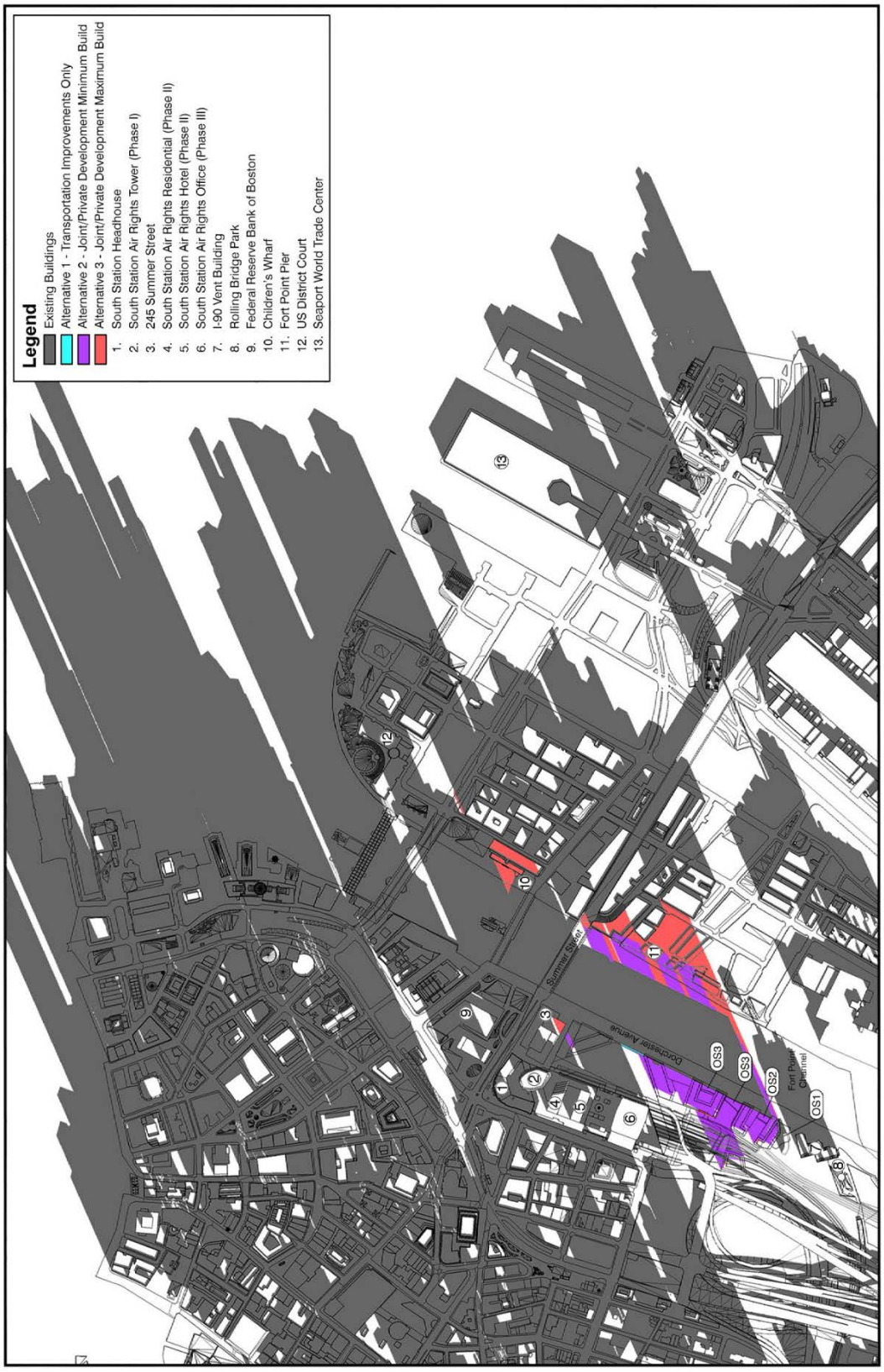

Figure 25—Shadow Study – October 23 at 5 p.m.

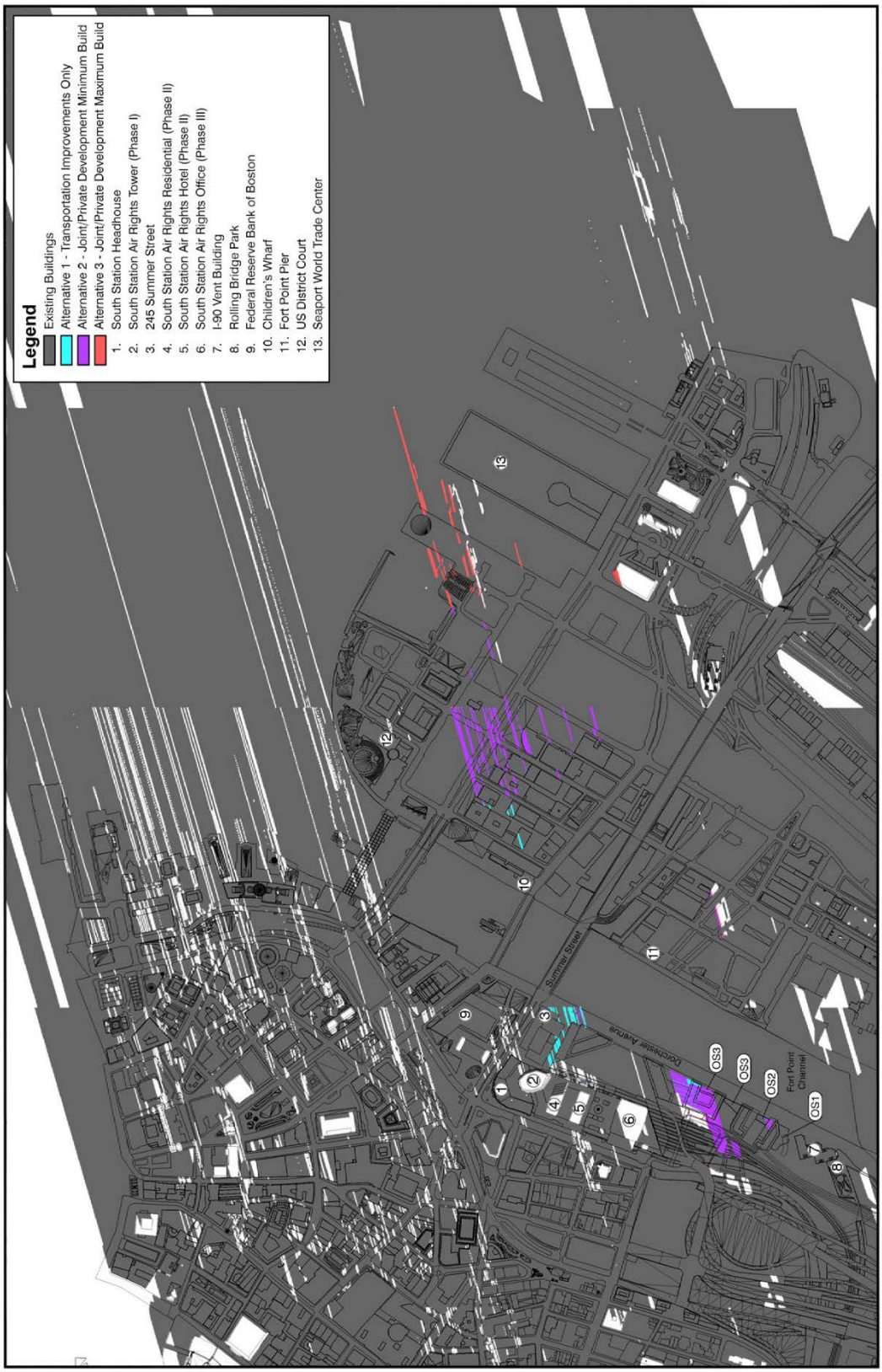

Figure 26—Shadow Study – October 23 at 6 p.m.

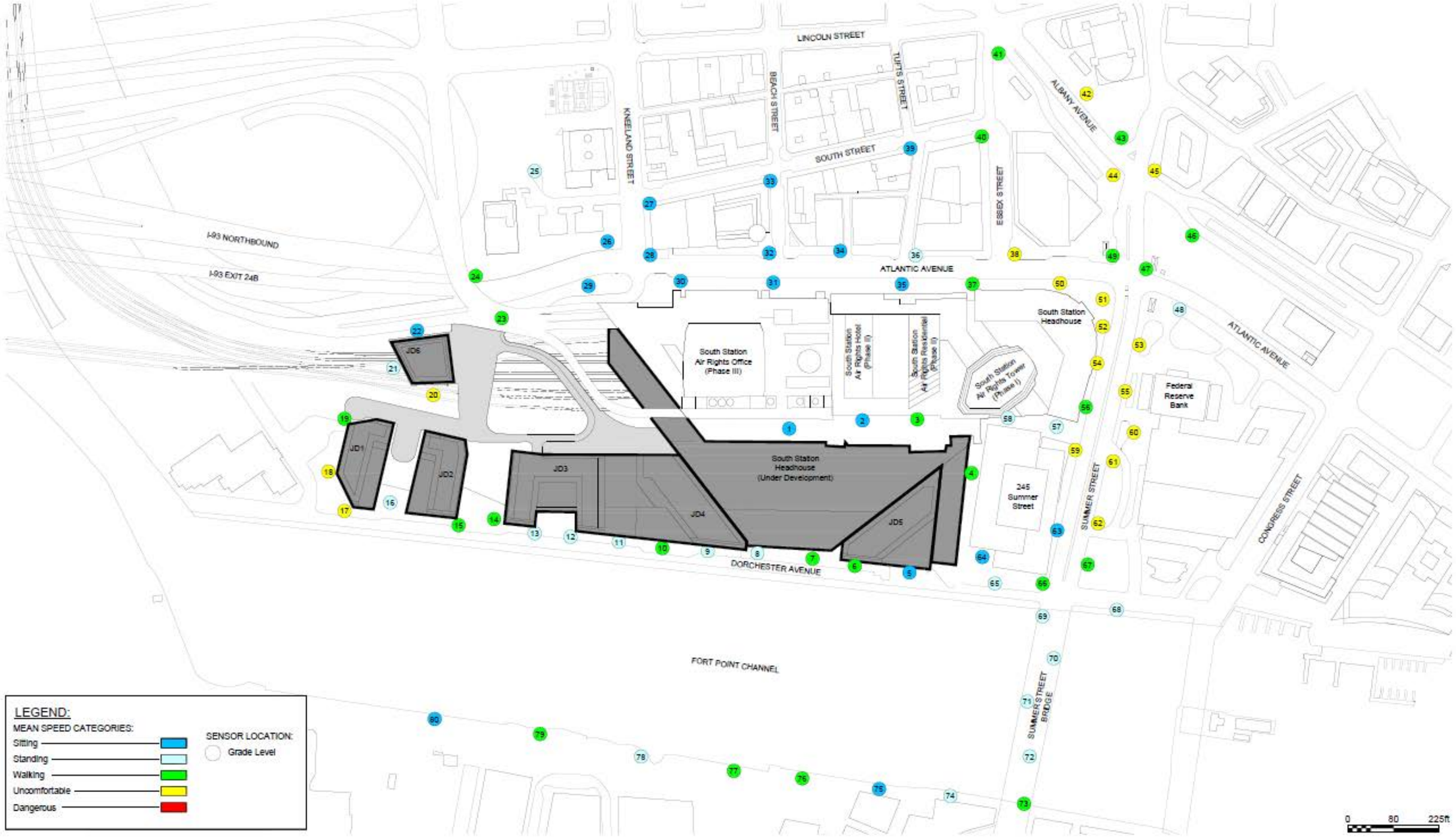

Figure 27—Pedestrian Wind Conditions - Mean Speed - Alternative 3- Joint/Private Development Maximum Build Annual (January to December, 0:00 to 23:00)

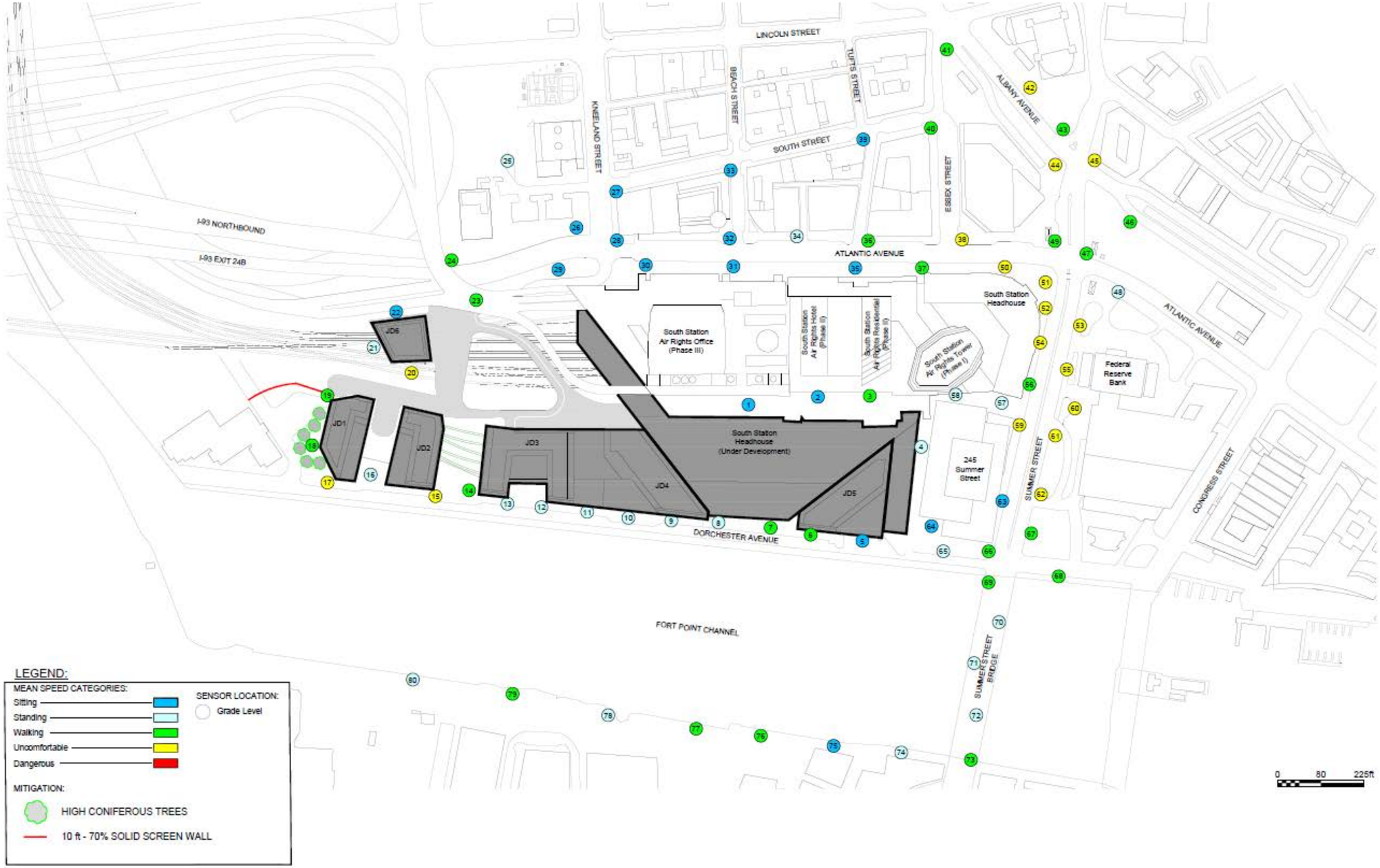

Figure 28—Pedestrian Wind Conditions - Mean Speed - Alternative 3- Joint/Private Development Maximum Build with Mitigation Annual (January to December, 0:00 to 23:00)