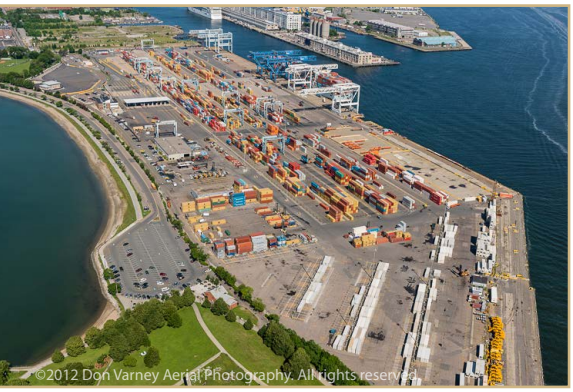
Environmental Notification Form

Conley Terminal Improvements, Dedicated Freight Corridor, and Buffer Open Space



Prepared for

massport

1 Harborside Drive
Boston, Massachusetts 02128

Prepared by

VHB *Vanasse Hangen Brustlin, Inc.*

Planning | Land Development | Transportation | Environmental
99 High Street
Boston, Massachusetts 02111

In association with

HDR Engineering, Inc.
Boston, Massachusetts

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MAY 2013

Massachusetts Port Authority
One Harborside Drive, Suite 200S
East Boston, MA 02128-2909
Telephone (617) 568-5000
www.massport.com

May 15, 2013

Secretary Richard K. Sullivan, Jr.
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, Massachusetts 02114

Re: *Conley Terminal Improvements, Dedicated Freight Corridor, and Buffer Open Space*
East First Street, South Boston, MA

Dear Secretary Sullivan:

On behalf of the Massachusetts Port Authority (Massport), I am pleased to submit for your review the Environmental Notification Form (ENF) for the *Conley Terminal Improvements, Dedicated Freight Corridor, and Buffer Open Space.* This project has been in the planning phases for many years and represents a successful collaboration between Massport, local elected officials, several state agencies and the South Boston community.

As you are aware, Massport owns and operates Conley Container Terminal along East First Street in South Boston. In anticipation of projected growth in container operations at Conley Terminal, Massport has planned a series of facility and operational improvements. These improvements, at an estimated cost of $35 million, include three key components:

1) Integrating the 30-acre former Coastal Oil site into Conley Terminal to enable the Port of Boston to respond to future global shipping demand;
2) Constructing a new 2/3-mile dedicated truck haul road (Dedicated Freight Corridor) that will allow Massport to remove all container truck traffic from East First Street and portions of Summer Street; and
3) Constructing a new 4.5-acre community open space to be built and maintained by Massport. The Buffer Open Space will serve as a significant noise and visual buffer for adjacent residents and create a valuable new amenity for the neighborhood.

With these significant investments, Massport will be able to grow and modernize Conley Terminal to remain competitive and better serve the Boston and New England economies, as well as to make major and immediate improvements to address the impacts of container operations on area residents.

The ENF thoroughly describes the purpose of, and need for, the proposed improvements, the alternatives considered, potential environmental impacts and proposed mitigation measures. While the proposed improvements require preparation of an ENF due primarily to the proposed Dedicated Freight Corridor, the project does not meet the Massachusetts Environmental Policy Act (MEPA) requirements for preparation of an Environmental Impact Report.

Given the importance of this project, Massport requests that the Secretary approve an extension of the ENF comment period from 20 days to 42 days. The extended comment period will begin on May 22, 2013, the publication date of the next Environmental Monitor, and will close on July 2, 2013. All parties on the distribution list contained in the ENF will be sent a copy of the document. In addition, the ENF will be available for inspection at a number of public libraries (as shown on the ENF distribution list) and on Massport's website (www.massport.com).

Massport hopes that you and other reviewers of the ENF find the document informative. We look forward to your review of this document and to close consultation with you and other reviewers in during the public comment period. In coordination with your staff, a MEPA scoping session will be scheduled for a date soon after Memorial Day.

Please feel free to contact me at (617) 946-4435 or Andrew Hargens at (617) 568-3103 if you have any questions.

Sincerely,

Massachusetts Port Authority

Deborah A. Hadden
Acting Port Director

cc: T. Glynn, J. Doolin, S. Sleiman, J. Masso, A. Guerriero, A. Hargens, K. McWeeney, S. Dalzell, N. Donohue, N. Hoang

Commonwealth of Massachusetts

Executive Office of Energy and Environmental Affairs
Massachusetts Environmental Policy Act (MEPA) Office

Environmental Notification Form

For Office Use Only

EEA#: _____

MEPA Analyst: _____

The information requested on this form must be completed in order to submit a document electronically for review under the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: **Conley Terminal Improvements, Dedicated Freight Corridor, and Buffer Open Space**		
Street Address: **East First Street**		
Municipality: **Boston**	Watershed: Boston Harbor	
Universal Transverse Mercator Coordinates: **19N 333236E 4689407N**	Latitude: **42°20' 20.7" N** Longitude: **71°1' 28.3" W**	
Estimated commencement date: **2014**	Estimated completion date: **2022**	
Project Type: **Transportation**	Status of project design: **30** %complete	
Proponent: **Massport (Massachusetts Port Authority)**		
Street Address: **One Harborside Drive**		
Municipality: **Boston**	State: **MA**	Zip Code: **02128-2909**
Name of Contact Person: **Andrew Hargens**		
Firm/Agency: **Massport**	Street Address: **One Harborside Drive, Suite 200S**	
Municipality: **Boston**	State: **MA**	Zip Code: **02128-2909**
Phone: **617-568-3103**	Fax:	E-mail: ahargens@masssport.com

Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)? ☐Yes ☒No

If this is an Expanded Environmental Notification Form (ENF) (see 301 CMR 11.05(7)) or a Notice of Project Change (NPC), are you requesting:

a Single EIR? (see 301 CMR 11.06(8)) ☐Yes ☒No
a Special Review Procedure? (see 301CMR 11.09) ☐Yes ☒No
a Waiver of mandatory EIR? (see 301 CMR 11.11) ☐Yes ☒No
a Phase I Waiver? (see 301 CMR 11.11) ☐Yes ☒No

(Note: Greenhouse Gas Emissions analysis must be included in the Expanded ENF.)

Which MEPA review threshold(s) does the project meet or exceed (see 301 CMR 11.03)?
An ENF is required because the Proposed Project exceeds review thresholds in 301 CMR 11.03(3) for an ENF and Other MEPA Review if the Secretary so Requires, specifically those related to wetlands, waterways and tidelands. The wetland-related threshold exceeded by the Proposed Project is the alteration of man-made Coastal Bank for the construction of the proposed bridge crossing the Exelon inlet.

Which State Agency Permits will the project require? **The Project will require an Order of Conditions under the Massachusetts Wetlands Protection Act (issued locally by Boston Conservation Commission, or upon appeal MassDEP) and Coastal Zone Management Consistency Review.**

Identify any financial assistance or land transfer from an Agency of the Commonwealth, including the Agency name and the amount of funding or land area in acres: **The construction of this Project is funded by the Massachusetts Port Authority (Massport).**

Summary of Project Size & Environmental Impacts	Existing	Change	Total
LAND			
Total site acreage	39.9 acres		
New acres of land altered		0 acres	
Acres of impervious area	39.9 acres	+1.7 acres (new impervious area = Bridge over Reserved Channel + paved area in Buffer Open Space) – 3.1 (new pervious area Buffer Open Space) = **-1.4**	38.5 acres
Square feet of new bordering vegetated wetlands alteration		0 acres	
Square feet of new other wetland alteration		• 925 SF Coastal Beach • 1,000 SF Land Under Water • 200 LF Coastal Bank • 2,300± SF Land Subject to Coastal Storm Flowage	
Acres of new non-water dependent use of tidelands or waterways		n/a	
STRUCTURES			
Gross square footage	0	1,000 (new gatehouse)	1,000
Number of housing units	n/a	n/a	n/a
Maximum height (feet)	n/a	n/a	n/a
TRANSPORTATION			
Vehicle trips per day	1226	1,680	2,906
Parking spaces	63 (Exelon) 57 (East First Street) = 120	-63 (Exelon) (-57 East First Street) (+114 East First Street)	114
WASTEWATER			
Water Use (Gallons per day)	n/a	n/a	n/a
Water withdrawal (GPD)	n/a	n/a	n/a
Wastewater generation/treatment (GPD)	n/a	n/a	n/a
Length of water mains (miles)	n/a	0.63 miles	0.63 miles
Length of sewer mains (miles)	n/a	0.36 miles	0.36 miles

Has this project been filed with MEPA before?
☐ Yes (EEA #_____) ☒No

Has any project on this site been filed with MEPA before?
☒ Yes (EEA # 8827) ☐No

GENERAL PROJECT INFORMATION – all proponents must fill out this section

PROJECT DESCRIPTION

As global cargo volumes and the regional demand for marine cargo increase, Conley Terminal must grow as well and improvements are required to attract and retain business and remain competitive. The Massachusetts Port Authority (Massport) is proposing improvements to Conley Terminal in order to accommodate this future growth. This Environmental Notification Form (ENF) specifically addresses the expansion of Conley Terminal's container handling yard onto the former Coastal Oil site. The former Coastal Oil site is currently a vacant industrial brownfield site purchased by Massport with the intent to develop the Terminal. The site is undergoing remediation. Future improvements, which are not part of this Project, would include the reorganization of the facilities on the existing Conley Terminal site.

Conley Terminal, owned and operated by Massport, is located within the South Boston Designated Port Area (DPA) on the Reserved Channel, and is New England's largest full service container terminal with the only deep-water access in the Port of Boston. Cargo shipments to and from Conley Terminal are transported via shipping containers, which are built to international standards to be handled on ships, trucks, and rail facilities worldwide. Because containers vary in size, the number of containers handled are often referred to as TEUs (twenty foot equivalent units), which are standard 20-foot long containers. Operations at Conley Terminal reached a high mark for containers handled annually in fiscal year 2008, when the level of annual activity reached approximately 216,000 TEUs (eg. a 40-foot container equals two TEUs). In fiscal year 2012, the number had dropped to approximately 186,000 TEUs in response to the weaker global economy and trade conditions. Massport projects volumes of up to 450,000 TEUs by 2022 if strong economic growth occurs. Environmental impacts presented in this ENF are based on a future increase of up to 500,000 TEUs in 2022 for a conservative approach.

In anticipation of the planned Terminal improvements on the former Coastal Oil property, Massport proposes to construct the DFC. Although East First Street has adequate capacity to serve the volume of container trucks predicted in 2022, adding the DFC with gate processing to the expanded Conley Terminal Area on the former Coastal Oil site will improve truck access to Conley Terminal and minimize impacts to the residential area on East First Street. The DFC would be constructed as part of the Proposed Project. Container freight trucks carrying inbound and outbound containers currently use East First Street to access Conley Terminal and pass through the Terminal gate complex on the south side of the Terminal via the entrance/exit gate at the corner of Farragut Road and East First Street. The DFC would completely remove all Conley container trucks from East First Street and portions of Summer Street and eliminate Conley container trucks from the intersections of East First Street and Summer Street to the west and Farragut Road to the east.

The DFC is a 3,100-foot long roadway that would provide a connection for freight truck traffic between an expanded Conley Terminal and Summer Street. The DFC provides a dedicated route for container truck traffic, however, Conley Terminal employees and other non-truck traffic, would continue to access Conley Terminal at the existing entrance via East First Street and Farragut Road. The proposed DFC route begins to the west at a new intersection with Summer Street, approximately 275 feet south of the Summer Street bridge over the Reserved Channel. The DFC would cross the Exelon Inlet on a bridge structure and continue on a route through two industrial properties, portions of which Massport is proposing to take ownership of, and would extend to the former Coastal Oil site, the location of the proposed Conley Terminal expansion. A new security processing complex is proposed as well as separate in-gate and out-gate processing for container trucks entering and leaving Conley Terminal.

As part of the proposed expansion of Conley Terminal, a landscaped buffer (the Buffer Open Space) would be constructed along the north side of East First Street. The Buffer Open Space would be constructed as mitigation for Massport's incorporation and activation of the former Coastal Oil site as part of the Conley Terminal. The Buffer Open Space would be constructed in conjunction with the proposed DFC.

In 2010, new Massachusetts legislation defined an approximately 100-foot by 2,000-foot area with Article 97 designation to provide a passive use visual and noise Buffer Open Space. The area to be occupied by the Buffer Open Space borders East First Street, and will total approximately 4.2 acres. A noise wall along the north edge of the Buffer would create a visual and auditory barrier from the expanded Conley Terminal. As part of the Buffer Open Space construction and at the request of the community, Massport would reconfigure existing parking along the north side of East First Street to provide 114 parking spaces (6 parallel and 108 angled) along East First Street, which would serve both open space users and the neighboring community.

Alternatives

Three alternatives were considered for the location and alignment of the DFC: Alternative A; Alternative B1 and Alternative B2; as well as a No-Action Alternative. Alternative B1 was chosen as the Proposed Action. The differences between the alternatives are described below.

Alternative A would intersect Summer Street at the existing main driveway to the Exelon facility, and would be situated partially on new fill, and partially on existing ground on the Exelon site. Alternative A was dismissed because it has the potential for greater impacts to land use and coastal resources since it requires the placement of fill and structures in the Exelon Inlet to accommodate the road.

Alternative B1 would intersect Summer Street 1,050 feet north of the existing main driveway to the Exelon facility, and would cross the Reserved Channel Inlet on a bridge. Alternative B1 was chosen as the Proposed Action because it has fewer direct impacts on land use and coastal resources since it avoids impacts to the southern shoreline of the inlet. While including some bridge support structures, this Alternative also avoids fill in waters of the United States.

Alternative B2 is a modification of Alternative B1 that would intersect Summer Street approximately 900 feet north of East First Street on a bridge over the Reserved Channel. Alternative B2 was dismissed because it would not minimize impacts to aquatic resources and because the new intersection at Summer Street would have constrained vehicle sight distance and would not be able to provide the desired dedicated southbound left-turn lane to the DFC.

The No-Action Alternative assumes that there would be no major improvements under this Alternative and Conley Terminal would not be expanded to the former Coastal Oil Property. Freight traffic to and from Conley Terminal would continue to use East First Street and access Conley Terminal at the Conley Container Terminal Gate at East First Street and Farragut Road and the DFC would not be constructed. The Buffer Open Space would not be constructed, and the area north of East First Street would remain in its existing condition. The No-Action Alternative was dismissed because it does not support the purpose of the Project.

The attached ENF narrative provides more information on the Proposed Project and alternatives considered (Chapter 2); existing environmental resources (land use, wetlands and coastal resources, water quality, transportation, air quality, noise, hazardous materials, and historical resources) and associated impacts from the Proposed Project (Chapters 3-10).

AREAS OF CRITICAL ENVIRONMENTAL CONCERN:

Is the project within or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____)

☒No

if yes, does the ACEC have an approved Resource Management Plan? ___ Yes ___ No;
If yes, describe how the project complies with this plan.

_____

Will there be stormwater runoff or discharge to the designated ACEC? ___ Yes ___ No;
If yes, describe and assess the potential impacts of such stormwater runoff/discharge to the designated ACEC.

_____

RARE SPECIES:

Does the project site include Estimated and/or Priority Habitat of State-Listed Rare Species? (see http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/priority_habitat_home.htm)

☐Yes (Specify_____) ☒No

HISTORICAL /ARCHAEOLOGICAL RESOURCES:

Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?

☒Yes (Specify **Boston Edison L Street Power Station**) ☐No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources? ☐Yes (Specify_____) ☒No

The Boston Edison L Street Power Station is listed on the Inventory of Historic and Archaeological Assets of the Commonwealth. The Proposed Project involves the removal of two abandoned oil tanks associated with the L Street Power Station. However, in a letter dated August 10, 2012, MHC stated that these oil tanks were constructed outside of the period of significance for the site. MHC recommends the U.S. Army Corps of Engineers as lead federal agency make a finding of "no adverse effect" because it is anticipated that the Proposed Project will not alter the setting, feelings, or associations attributed to the industrial nature of the L Street Power Station (see attached ENF narrative Chapter 10, Historical Resources, for more information).

WATER RESOURCES:

Is there an Outstanding Resource Water (ORW) on or within a half-mile radius of the project site?___Yes __X__No;
if yes, identify the ORW and its location.

(NOTE: Outstanding Resource Waters include Class A public water supplies, their tributaries, and bordering wetlands; active and inactive reservoirs approved by MassDEP; certain waters within Areas of Critical Environmental Concern, and certified vernal pools. Outstanding resource waters are listed in the Surface Water Quality Standards, 314 CMR 4.00.)

Are there any impaired water bodies on or within a half-mile radius of the project site? __X_Yes ___No; if yes,
identify the water body and pollutant(s) causing the impairment:

The Boston Inner Harbor (Segment ID MA70-02_2008), located directly north of Conley Terminal, is listed as a Category 5 waterbody, requiring a Total Maximum Daily Load (TMDL). The Boston Inner Harbor is impaired due to Fecal Coliform, PCB in Fish Tissue, and Other according to the Final Massachusetts Year 2012 Integrated List of Waters. See Chapter 5 for discussion of Water Quality.

Is the project within a medium or high stress basin, as established by the Massachusetts Water Resources Commission? ___Yes __X__No

STORMWATER MANAGEMENT:

Generally describe the project's stormwater impacts and measures that the project will take to comply with the standards found in MassDEP's Stormwater Management Regulations:

The Proposed Project is redevelopment of a brownfields site, and is anticipated to result in an improvement in storm water quality. As required by the Massachusetts Stormwater Standards for redevelopment, the expansion of Conley Terminal would include a storm water collection and treatment system to improve the capture of suspended solids and other pollutants, consistent with the requirements for a Land Use with Higher Potential Pollutant Loads (LUPPHL). Massport's Stormwater Pollution Prevention Plan (SWPPP) for the Conley Terminal would be modified to incorporate any changes in site configuration, storm water management, or activities with the potential to generate pollutants. A new subsurface drainage system would be constructed on the former Coastal Oil site, including appropriate storm water treatment systems, in compliance with the Massachusetts Storm water Standards and the requirements of the NPDES Multi-Sector General Permit. Massport's SWPPP would be modified to incorporate the new container storage area, storm water management system, and any changes to the Inspection and Monitoring Plan. A new snow storage area would be designated in compliance with DEP's Snow Removal Policy.

The Dedicated Freight Corridor would be designed with a storm water collection, conveyance and treatment system that will comply with the Massachusetts Storm water Standards for redevelopment, and for coastal discharges. The Buffer Open Space area will replace a strip of broken pavement and gravel with a stable, vegetated landscaped area and multi-use path. The majority of stormwater generated on the site will be infiltrated into the ground due to the site's pervious vegetated cover. This element of the Proposed Project would improve storm water quality by reducing suspended solids, and would reduce storm water volumes by replacing impervious areas with vegetation. For further information, please see Chapter 5, Water Quality.

MASSACHUSETTS CONTINGENCY PLAN:

Has the project site been, or is it currently being, regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes __X__ No ___; if yes, please describe the current status of the site (including Release Tracking Number (RTN), cleanup phase, and Response Action Outcome classification):

Conley Terminal would expand onto the Former Coastal Oil Site which is an MCP site in its entirety (RTN-3-257) and would require compliance with the MCP. The Dedicated Freight Corridor (DFC) would cross two MCP sites (one with an Activity and Use Limitation (AUL)) associated with the Massachusetts Bay Transportation Authority (MBTA), one of which is out of compliance with its MCP obligations. Construction of the Buffer Open Space would require compliance with the MCP, since the Buffer Open Space crosses MCP sites. For further information, please see Chapter 9, Hazardous Materials.

Is there an Activity and Use Limitation (AUL) on any portion of the project site? Yes _X_ No__;
if yes, describe which portion of the site and how the project will be consistent with the AUL:

The DFC passes directly through RTN 3-15183, which has an AUL. The requirements of the AUL are consistent with MCP compliance which includes preparation of a SMP and HASP. Construction of a roadway is consistent with allowable uses of the AUL. The AUL (RTN 3-15183) is also present on the eastern half of the Buffer Open Space on the MBTA property. The AUL prohibits residential and consumptive gardening on the site due to the presence of lead and asbestos. Although recreational use is not specifically prohibited, it is not explicitly permitted and may not be an acceptable use given the type of soil contamination on the site. It is likely that the upper three feet of soil would need to be removed and replaced with clean fill or capped. Fill excavated from within the AUL area would likely not be able to be re-used at the former Coastal Oil site and would need to be disposed of off-site at an out of state landfill.

Are you aware of any Reportable Conditions at the property that have not yet been assigned an RTN?
Yes ___ No __X__; if yes, please describe:

SOLID AND HAZARDOUS WASTE:

If the project will generate solid waste during demolition or construction, describe alternatives considered for re-use, recycling, and disposal of, e.g., asphalt, brick, concrete, gypsum, metal, wood:
Construction of the Project is expected to generate several categories of solid waste. Sources of waste will include former asphalt and concrete pavements; buried and above-grade utility pipes and conduits of various materials; portions of marine structures including timber, concrete and steel bulkhead and wharf elements; foundation elements from former site structures; miscellaneous existing small buildings, utility cabinets, and trailers; and miscellaneous site improvements such as curbing, fencing, light standards, bollards, etc.

The project construction specifications will include a section on Demolition Waste Management and Disposal containing requirements consistent with Massachusetts regulations as well as Massport's own Sustainable Design Standards and Guidelines. The construction Contractor will be required to develop and implement a Waste Management Plan (WMP) which includes detailed procedures for waste identification, reduction, handling, transportation and recycling/disposal.

Key provisions of the WMP are expected to include the following:

- **A specific area on the project site will be designated for the purpose of separating, stockpiling, containerizing demolition debris; including both recyclable and non-recyclable materials.**
- **Asphalt pavement, brick and concrete rubble (ABC waste) will either be processed on site for re-use as an aggregate or stone substitute, or be brought to an offsite asphalt or aggregate batching plant for processing and subsequent re-use.**
- **Other types of demolition waste will be sorted and stacked or containerized by type. Materials expected to be encountered on this project include masonry; wood; metals; asphalt shingles; ceiling panels and tile; and electrical equipment and plumbing fixtures.**
- **Within each of the above categories, materials will be further sorted as either salvageable or non-salvageable.**

(NOTE: Asphalt pavement, brick, concrete and metal are banned from disposal at Massachusetts landfills and waste combustion facilities and wood is banned from disposal at Massachusetts landfills. See 310 CMR 19.017 for the complete list of banned materials.)

Will your project disturb asbestos containing materials? Yes _X___; No ___;
if yes, please consult state asbestos requirements at http://mass.gov/MassDEP/air/asbhom01.htm

Describe anti-idling and other measures to limit emissions from construction equipment:

During construction, idling of construction vehicles would be kept to a minimum in accordance with the Massachusetts anti-idling regulations. Please refer to Chapter 7, Air Quality, for more information.

DESIGNATED WILD AND SCENIC RIVER:

Is this project site located wholly or partially within a defined river corridor of a federally designated Wild and Scenic River or a state designated Scenic River? Yes ___ No __X__;
if yes, specify name of river and designation:

If yes, does the project have the potential to impact any of the "outstandingly remarkable" resources of a federally Wild and Scenic River or the stated purpose of a state designated Scenic River?
Yes ___ No ___ ; if yes, specify name of river and designation: _____;
if yes, will the project will result in any impacts to any of the designated "outstandingly remarkable" resources of the Wild and Scenic River or the stated purposes of a Scenic River.
Yes ___ No ___ ;
if yes,describe the potential impacts to one or more of the "outstandingly remarkable" resources or stated purposes and mitigation measures proposed.

ATTACHMENTS:

1. List of all attachments to this document. ENF Narrative, and Appendices A through F (on CD).
2. U.S.G.S. map (good quality color copy, 8-½ x 11 inches or larger, at a scale of 1:24,000) indicating the project location and boundaries.
3.. Plan, at an appropriate scale, of existing conditions on the project site and its immediate environs, showing all known structures, roadways and parking lots, railroad rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
4 Plan, at an appropriate scale, depicting environmental constraints on or adjacent to the project site such as Priority and/or Estimated Habitat of state-listed rare species, Areas of Critical Environmental Concern, Chapter 91 jurisdictional areas, Article 97 lands, wetland resource area delineations, water supply protection areas, and historic resources and/or districts.
5. Plan, at an appropriate scale, of proposed conditions upon completion of project (if construction of the project is proposed to be phased, there should be a site plan showing conditions upon the completion of each phase).
6. List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
7. List of municipal and federal permits and reviews required by the project, as applicable.

LAND SECTION – all proponents must fill out this section

I. Thresholds / Permits

A. Does the project meet or exceed any review thresholds related to **land** (see 301 CMR 11.03(1) ___ Yes_X_No; if yes, specify each threshold:

II. Impacts and Permits

A. Describe, in acres, the current and proposed character of the project site, as follows:

	Existing	Change	Total
Footprint of buildings	0 sq.ft.	1,000 sq.ft.	1,000 sq.ft.
Roadways	0	3.3[1] acres	3.3 acres
Parking and other paved areas	765 sq.ft.[2]	33.5[3] acres	33.5 acres
Other altered areas	0	3.1[4] acres	3.1 acres
Undeveloped areas	0	0	0
Total: Project Site Acreage	765 sq.ft.	39.9 acres	39.9 acres

1 Dedicated Freight Corridor
2 Existing Conley Terminal entrance is 765 square feet (0.02 acre).
3 Change includes the addition of Storage & Handling area on the former Coastal Oil parcel, Buffer Open Space Parking, and new Exit Gate Area.
4 Buffer Open Space landscaped area.

Has any part of the project site been in active agricultural use in the last five years? ___ Yes_X_No; if yes, how many acres of land in agricultural use (with prime state or locally important agricultural soils) will be converted to nonagricultural use?

B. Is any part of the project site currently or proposed to be in active forestry use? ___ Yes_X_No; if yes, please describe current and proposed forestry activities and indicate whether any part of the site is the subject of a forest management plan approved by the Department of Conservation and Recreation:

C. Does any part of the project involve conversion of land held for natural resources purposes in accordance with Article 97 of the Amendments to the Constitution of the Commonwealth to any purpose not in accordance with Article 97? ___ Yes_X_ No; if yes, describe:

D. Is any part of the project site currently subject to a conservation restriction, preservation restriction, agricultural preservation restriction or watershed preservation restriction? ___ Yes_X_No; if yes, does the project involve the release or modification of such restriction? ___ Yes ___ No; if yes, describe:

E. Does the project require approval of a new urban redevelopment project or a fundamental change in an existing urban redevelopment project under M.G.L.c.121A? ___ Yes_X_No; if yes, describe:

F. Does the project require approval of a new urban renewal plan or a major modification of an existing urban renewal plan under M.G.L.c.121B? Yes ___ No_X_; if yes, describe:

III. Consistency

A. Identify the current municipal comprehensive land use plan
Title: **The Seaport Public Realm Plan** Date: **February 1999**

B. Describe the project's consistency with that plan with regard to:

1) economic development **The Project is consistent with the Seaport Public Realm Plan's economic development goals. Specifically, the Proposed Project will improve the physical environmental and streetscape appearance of East First**

Street, a neighborhood commercial corridor, by creating a safer environment for all roadway users and removing intensive truck traffic from East First Street to the Dedicated Freight Corridor. The redevelopment of the former Coastal Oil site will redevelop a brownfield site to its highest and best use for port operations. The efficiency gained from expanded port operations and efficiency of the layout of the port will enhance Conley Terminal, which has provided economic opportunities to the residents of Boston.

2) adequacy of infrastructure **The Proposed Project will improve the infrastructure of the City of Boston South Boston neighborhood consistent with the goals and objectives of the Seaport Public Realm Plan and the South Boston Waterfront Municipal Harbor Plan, specifically to improve the physical environment and streetscape appearance. The Dedicated Freight Corridor and Conley Terminal Improvements will add a dedicated truck corridor to serve Conley Terminal helping to maximize efficiency for the Conley Terminal while improving conditions for the surrounding neighborhood.**

3) open space impacts **The Proposed Project is consistent with the Seaport Public Realm Plan. The Proposed Project supports the goals and objectives focused on enhancing the South Boston Community by increasing the amount of public open space through the addition of the Buffer Open Space along East First Street.**

4) compatibility with adjacent land uses **The Proposed Project is compatible with adjacent land uses. The majority of land uses directly affected by the Project are industrial uses. Adjacent land uses include port, industrial, commercial, and residential land uses. The residential land uses would be buffered by the proposed Buffer Open Space, an improvement to what currently exists.**

C. Identify the current Regional Policy Plan of the applicable Regional Planning Agency (RPA)
RPA: **Metropolitan Area Planning Council (MAPC)**
Title: **MetroFuture** Date **May 2008**

Describe the project's consistency with that plan with regard to:

1) economic development **Not Applicable.**

2) adequacy of infrastructure **The Proposed Project supports MAPC's regional goal of focusing new growth at previously developed land and buildings. All of the proposed work as part of the Conley Terminal Improvements, Dedicated Freight Corridor, and Buffer Open Space project utilizes existing industrial land and even converts some of this land into open space, and parkland. Pedestrian experiences and overall quality of life for residences would be enhanced by removing freight truck traffic from East First Street to a dedicated corridor within existing developed areas.**

3) open space impacts **The Project also supports MAPC's goal of providing access to parks for all neighborhoods through the creation of a new Buffer Open Space. Through this Buffer, open space for local residents would be increased in a mainly industrial area.**

RARE SPECIES SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **rare species or habitat** (see 301 CMR 11.03(2))? ___ Yes_X_No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **rare species or habitat**? __Yes _X No

C. Does the project site fall within mapped rare species habitat (Priority or Estimated Habitat) in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes _X_No

D. If you answered "No" to all questions A, B and C, proceed to the **Wetlands, Waterways, and Tidelands Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Rare Species section below.

II. Impacts and Permits

A. Does the project site fall within Priority or Estimated Habitat in the current Massachusetts Natural Heritage Atlas (attach relevant page)? ___ Yes___No. If yes,

1. Have you consulted with the Division of Fisheries and Wildlife Natural Heritage and Endangered Species Program (NHESP)? ___Yes ___No;
   if yes, have you received a determination as to whether the project will result in the "take" of a rare species? ___ Yes ___ No;
   if yes, attach the letter of determination to this submission.

2. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes ___ No;
   if yes, provide a summary of proposed measures to minimize and mitigate rare species impacts

3. Which rare species are known to occur within the Priority or Estimated Habitat?

4. Has the site been surveyed for rare species in accordance with the Massachusetts Endangered Species Act? ___ Yes ___ No

5. If your project is within Estimated Habitat, have you filed a Notice of Intent or received an Order of Conditions for this project? ___ Yes ___ No;
   if yes, did you send a copy of the Notice of Intent to the Natural Heritage and Endangered Species Program, in accordance with the Wetlands Protection Act regulations? ___ Yes ___ No

B. Will the project "take" an endangered, threatened, and/or species of special concern in accordance with M.G.L. c.131A (see also 321 CMR 10.04)? ___ Yes __No;
if yes, provide a summary of proposed measures to minimize and mitigate impacts to significant habitat:

WETLANDS, WATERWAYS, AND TIDELANDS SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wetlands, waterways, and tidelands** (see 301 CMR 11.03(3))? X Yes__No; if yes, specify, in quantitative terms:

The Proposed Project will exceed MEPA threshold: 301 CMR 11.03(3)(b)1.a – alteration of coastal dune, barrier beach or coastal bank. Approximately 200 linear feet of Coastal Bank would be altered for the construction of the proposed bridge crossing the Exelon inlet.

B. Does the project require any state permits (or a local Order of Conditions) related to wetlands, waterways, or tidelands? _X_Yes ___ No; if yes, specify which permit:

An Order of Conditions (OOC) will be required for the removal of derelict structures from the Exelon Inlet, construction of the bridge, work within Land Subject to Coastal Storm Flowage and work within 100 feet of Coastal Bank along the project shoreline. Please refer to Chapter 4, Wetlands and Coastal Resources.

C. If you answered "No" to both questions A and B, proceed to the **Water Supply Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wetlands, Waterways, and Tidelands Section below.

II. Wetlands Impacts and Permits

A. Does the project require a new or amended Order of Conditions under the Wetlands Protection Act (M.G.L. c.131A)? _X_Yes ___No;
if yes, has a Notice of Intent been filed?__Yes X No;
if yes, list the date and MassDEP file number:
if yes, has a local Order of Conditions been issued? __Yes ___ No;
Was the Order of Conditions appealed? ___ Yes ___No.
Will the project require a Variance from the Wetlands regulations? ___ Yes _X_No.

B. Describe any proposed permanent or temporary impacts to wetland resource areas located on the project site:

Wetland resources on the project site include Land Under the Ocean, Land Subject to Tidal Action, Coastal Bank, Coastal Beach and Land Subject to Coastal Storm Flowage. Additionally work within 100 feet of Coastal Bank is subject to review under the Wetlands Protection Act. Permanent impacts include installation of piles within land under the ocean and construction of bridge abutments on coastal bank and an area defined as coastal beach that was formed by erosion of fill materials caused by a dilapidated bulkhead. Beneficial impacts include the removal of derelict structures to permit the construction of the proposed bridge. No temporary wetland impacts are anticipated.

C. Estimate the extent and type of impact that the project will have on wetland resources, and indicate whether the impacts are temporary or permanent:

Coastal Wetlands	Area (square feet) or Length (linear feet)	Temporary or Permanent Impact?
Land Under the Ocean	1,000 SF	permanent
Designated Port Areas	34 Ac	permanent
Coastal Beaches	925 SF	permanent (shading)
Coastal Dunes	0	
Barrier Beaches	0	
Coastal Banks	200 LF	permanent
Rocky Intertidal Shores	0	

Salt Marshes	0	
Land Under Salt Ponds	0	
Land Containing Shellfish	0	
Fish Runs	0	
Land Subject to Coastal Storm Flowage	2,300 SF	permanent
Inland Wetlands		
Bank (lf)	0 SF	
Bordering Vegetated Wetlands	0 SF	
Isolated Vegetated Wetlands	0 SF	
Land under Water	0 SF	
Isolated Land Subject to Flooding	0 SF	
Bordering Land Subject to Flooding	0 SF	
Riverfront Area	0 SF	

D. Is any part of the project:
   1. proposed as a **limited project**? ___ Yes_X_No;
      if yes, what is the area (in sf)?
   2. the construction or alteration of a **dam**? ___ Yes_X_No;
      if yes, describe:
   3. fill or structure in a **velocity zone** or **regulatory floodway**? ___ Yes_X_No
   4. dredging or disposal of dredged material? ___ Yes_X_No;
      if yes, describe the volume of dredged material and the proposed disposal site:
   5. a discharge to an **Outstanding Resource Water (ORW)** or an **Area of Critical Environmental Concern (ACEC)**? ___ Yes_X_No
   6. subject to a wetlands restriction order? ___ Yes_X_No;
      if yes, identify the area (in sf):
   7. located in buffer zones? _X_Yes ___No;
      if yes, how much (in sf): **Approximately 16,000 SF of proposed work will occur within the buffer zone to Coastal Bank.**

E. Will the project:
   1. be subject to a local wetlands ordinance or bylaw? ___Yes _X_No
   2. alter any federally-protected wetlands not regulated under state law? ___ Yes _X_No;
      if yes, what is the area (sf)?

III. Waterways and Tidelands Impacts and Permits

A. Does the project site contain waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? ___ Yes_X_No;
   if yes, is there a current Chapter 91 License or Permit affecting the project site? __Yes _ No;
   if yes, list the date and license or permit number and provide a copy of the historic map used to determine extent of filled tidelands:
   Note: Massport is exempt from licensing under the M.G.L. Chapter 91 by the Massachusetts Port Authority Enabling Act (Massachusetts General Law, Part I, Title XIV, Chapter 91 Waterways).

B. Does the project require a new or modified license or permit under M.G.L.c.91?__Yes_X_No;
   if yes, how many acres of the project site subject to M.G.L.c.91 will be for non-water-dependent use? Current ___ Change ___ Total ___
   If yes, how many square feet of solid fill or pile-supported structures (in sf)?

C. For non-water-dependent use projects, indicate the following:
   Area of filled tidelands on the site:
   Area of filled tidelands covered by buildings:
   For portions of site on filled tidelands, list ground floor uses and area of each use:
   Does the project include new non-water-dependent uses located over flowed tidelands?
   Yes ___ No ___
   Height of building on filled tidelands:

Also show the following on a site plan: Mean High Water, Mean Low Water, Water-dependent Use Zone, location of uses within buildings on tidelands, and interior and exterior areas and facilities dedicated for public use, and historic high and historic low water marks.

D. Is the project located on landlocked tidelands? ___ Yes _X_No;
if yes, describe the project's impact on the public's right to access, use and enjoy jurisdictional tidelands and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

E. Is the project located in an area where low groundwater levels have been identified by a municipality or by a state or federal agency as a threat to building foundations? __Yes_X_No;
if yes, describe the project's impact on groundwater levels and describe measures the project will implement to avoid, minimize or mitigate any adverse impact:

F. Is the project non-water-dependent **and** located on landlocked tidelands **or** waterways or tidelands subject to the Waterways Act **and** subject to a mandatory EIR? ___ Yes_X_No;

(NOTE: If yes, then the project will be subject to Public Benefit Review and Determination.)

G. Does the project include dredging? ___ Yes_X_No; if yes, answer the following questions:
What type of dredging? Improvement ___ Maintenance ___ Both ____
What is the proposed dredge volume, in cubic yards (cys) _____
What is the proposed dredge footprint ____length (ft) ___width (ft)____depth (ft);
Will dredging impact the following resource areas?
Intertidal Yes__ No__; if yes, ___ sq ft
Outstanding Resource Waters Yes__ No__; if yes, ___ sq ft
Other resource area (i.e. shellfish beds, eel grass beds) Yes__ No__; if yes __ sq ft

If yes to any of the above, have you evaluated appropriate and practicable steps to:
1) avoidance; 2) if avoidance is not possible, minimization; 3) if either avoidance or minimize is not possible, mitigation?

If no to any of the above, what information or documentation was used to support this determination?

Provide a comprehensive analysis of practicable alternatives for improvement dredging in accordance with 314 CMR 9.07(1)(b). Physical and chemical data of the sediment shall be included in the comprehensive analysis.

Sediment Characterization
Existing gradation analysis results? __Yes ___No:
if yes, provide results.
Existing chemical results for parameters listed in 314 CMR 9.07(2)(b)6? ___Yes ____No;
if yes, provide results.
Do you have sufficient information to evaluate feasibility of the following management options for dredged sediment?
If yes, check the appropriate option.
Beach Nourishment ___
Unconfined Ocean Disposal ___
Confined Disposal:
Confined Aquatic Disposal (CAD) ___
Confined Disposal Facility (CDF) ___
Landfill Reuse in accordance with COMM-97-001 ___
Shoreline Placement ___
Upland Material Reuse____
In-State landfill disposal____

Out-of-state landfill disposal ____

(NOTE: This information is required for a 401 Water Quality Certification.)

IV. Consistency:

A. Does the project have effects on the coastal resources or uses, and/or is the project located within the Coastal Zone? X Yes No;
if yes, describe these effects and the projects consistency with the policies of the Office of Coastal Zone Management:

The Proposed Project is within the Massachusetts Coastal Zone. The Coastal Zone Management (CZM) Program encourages water-dependent industrial use within Designated Port Areas. Conley Terminal and the parcels associated with the Terminal improvements also fall within the CZM-established South Boston Designated Port Area. The Proposed Project is consistent with the Coastal Zone Management Plan by maintaining and enhancing the capacity of the site to support water-dependent industrial activities and providing an enhanced open space to the public.

B. Is the project located within an area subject to a Municipal Harbor Plan? X Yes No;
if yes, identify the Municipal Harbor Plan and describe the project's consistency with that plan:

The South Boston Waterfront District Municipal Harbor Plan (July 2000) creates a vision for the South Boston Waterfront and defines a framework for future development. One of the primary goals of the Plan is to "preserve and enhance the industrial port and balance the growth of mixed use and recreational activity along Boston Harbor with the needs of maritime commerce." The Conley Terminal project supports this goal by increasing Conley Terminal's capacity while creating new public parkland and working to minimize the Terminal's impacts to surrounding neighbors. Local residents are protected from this new development through the creation of the Buffer Open Space, which is a public amenity designed with a noise barrier. The Project also supports the City's overall Harborpark planning policies, such as revitalizing Boston's underutilized and dilapidated piers and shoreline, and promoting the working port.

WATER SUPPLY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **water supply** (see 301 CMR 11.03(4))? ___ Yes X No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **water supply**? ___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Wastewater Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Water Supply Section below.

II. Impacts and Permits

A. Describe, in gallons per day (gpd), the volume and source of water use for existing and proposed activities at the project site:

	Existing	Change	Total
Municipal or regional water supply	_____	_____	_____
Withdrawal from groundwater	_____	_____	_____
Withdrawal from surface water	_____	_____	_____
Interbasin transfer	_____	_____	_____

(NOTE: Interbasin Transfer approval will be required if the basin and community where the proposed water supply source is located is different from the basin and community where the wastewater from the source will be discharged.)

B. If the source is a municipal or regional supply, has the municipality or region indicated that there is adequate capacity in the system to accommodate the project? ___ Yes ___ No

C. If the project involves a new or expanded withdrawal from a groundwater or surface water source, has a pumping test been conducted? ___ Yes ___ No; if yes, attach a map of the drilling sites and a summary of the alternatives considered and the results.

D. What is the currently permitted withdrawal at the proposed water supply source (in gallons per day)?
Will the project require an increase in that withdrawal? ___Yes ___No;
if yes, then how much of an increase (gpd)?

E. Does the project site currently contain a water supply well, a drinking water treatment facility, water main, or other water supply facility, or will the project involve construction of a new facility? ___ Yes ___No.
If yes, describe existing and proposed water supply facilities at the project site:

	Permitted Flow	Existing Avg Daily Flow	Project Flow	Total
Capacity of water supply well(s) (gpd)	_____	_____	_____	_____
Capacity of water treatment plant (gpd)	_____	_____	_____	_____

F. If the project involves a new interbasin transfer of water, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or proposed?

G. Does the project involve:
1. new water service by the Massachusetts Water Resources Authority or other agency of the Commonwealth to a municipality or water district? ___ Yes ___ No
2. a Watershed Protection Act variance? ___ Yes ___ No;
if yes, how many acres of alteration?
3. a non-bridged stream crossing 1,000 or less feet upstream of a public surface drinking water supply for purpose of forest harvesting activities? ___ Yes ___ No

III. Consistency

Describe the project's consistency with water conservation plans or other plans to enhance water resources, quality, facilities and services:

WASTEWATER SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **wastewater** (see 301 CMR 11.03(5))? ___ Yes_X__No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **wastewater**? ___ Yes_X__No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Transportation -- Traffic Generation Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Wastewater Section below.

II. Impacts and Permits

A. Describe the volume (in gallons per day) and type of disposal of wastewater generation for existing and proposed activities at the project site (calculate according to 310 CMR 15.00 for septic systems or 314 CMR 7.00 for sewer systems):

	Existing	Change	Total
Discharge of sanitary wastewater	_____	_____	_____
Discharge of industrial wastewater	_____	_____	_____
TOTAL	_____	_____	_____

	Existing	Change	Total
Discharge to groundwater	_____	_____	_____
Discharge to outstanding resource water	_____	_____	_____
Discharge to surface water	_____	_____	_____
Discharge to municipal or regional wastewater facility	_____	_____	_____
TOTAL	_____	_____	_____

B. Is the existing collection system at or near its capacity? ___ Yes ___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

C. Is the existing wastewater disposal facility at or near its permitted capacity? ___ Yes___ No; if yes, then describe the measures to be undertaken to accommodate the project's wastewater flows:

D. Does the project site currently contain a wastewater treatment facility, sewer main, or other wastewater disposal facility, or will the project involve construction of a new facility? ___ Yes ___ No; if yes, describe as follows:

	Permitted	Existing Avg Daily Flow	Project Flow	Total
Wastewater treatment plant capacity (in gallons per day)	_____	_____	_____	_____

E. If the project requires an interbasin transfer of wastewater, which basins are involved, what is the direction of the transfer, and is the interbasin transfer existing or new?

(NOTE: Interbasin Transfer approval may be needed if the basin and community where wastewater will be discharged is different from the basin and community where the source of

water supply is located.)

F. Does the project involve new sewer service by the Massachusetts Water Resources Authority (MWRA) or other Agency of the Commonwealth to a municipality or sewer district? ___ Yes ___ No

G. Is there an existing facility, or is a new facility proposed at the project site for the storage, treatment, processing, combustion or disposal of sewage sludge, sludge ash, grit, screenings, wastewater reuse (gray water) or other sewage residual materials?__Yes __No; if yes, what is the capacity (tons per day):

	Existing	Change	Total
Storage	_____	_____	_____
Treatment	_____	_____	_____
Processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

H. Describe the water conservation measures to be undertaken by the project, and other wastewater mitigation, such as infiltration and inflow removal.

III. Consistency

A. Describe measures that the proponent will take to comply with applicable state, regional, and local plans and policies related to wastewater management:

B. If the project requires a sewer extension permit, is that extension included in a comprehensive wastewater management plan? ___ Yes ___ No;
if yes, indicate the EEA number for the plan and whether the project site is within a sewer service area recommended or approved in that plan:

TRANSPORTATION SECTION (TRAFFIC GENERATION)

I. Thresholds / Permit

A. Will the project meet or exceed any review thresholds related to **traffic generation** (see 301 CMR 11.03(6))? __Yes X No; if yes, specify, in quantitative terms:

Please refer to *Chapter 6, Section 6.5.3, Traffic Volumes.*

B. Does the project require any state permits related to **state-controlled roadways**?
___ Yes X No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Roadways and Other Transportation Facilities Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Traffic Generation Section below.

II. Traffic Impacts and Permits

A. Describe existing and proposed vehicular traffic generated by activities at the project site:

	Existing	Change	Total
Number of parking spaces	_____	_____	_____
Number of vehicle trips per day	_____	_____	_____
ITE Land Use Code(s):	_____	_____	_____

B. What is the estimated average daily traffic on roadways serving the site?

Roadway	Existing	Change	Total
1._____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____

C. If applicable, describe proposed mitigation measures on state-controlled roadways that the project proponent will implement:

D. How will the project implement and/or promote the use of transit, pedestrian and bicycle facilities and services to provide access to and from the project site?

E. Is there a Transportation Management Association (TMA) that provides transportation demand management (TDM) services in the area of the project site? ____ Yes__No; if yes, describe if and how will the project will participate in the TMA:

F. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation facilities? __Yes__No; if yes, generally describe:

G. If the project will penetrate approach airspace of a nearby airport, has the proponent filed a Massachusetts Aeronautics Commission Airspace Review Form (780 CMR 111.7) and a Notice of Proposed Construction or Alteration with the Federal Aviation Administration (FAA) (CFR Title 14 Part 77.13, forms 7460-1 and 7460-2)?

III. Consistency

Describe measures that the proponent will take to comply with municipal, regional, state, and federal plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services:

TRANSPORTATION SECTION (ROADWAYS AND OTHER TRANSPORTATION FACILITIES)

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **roadways or other transportation facilities** (see 301 CMR 11.03(6))? __Yes _X__ No;
if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **roadways or other transportation facilities**? ___ Yes_X__No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Energy Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Roadways Section below.

II. Transportation Facility Impacts

A. Describe existing and proposed transportation facilities in the immediate vicinity of the project site:

B. Will the project involve any
1. Alteration of bank or terrain (in linear feet)? None
2. Cutting of living public shade trees (number)? None
3. Elimination of stone wall (in linear feet)? None

III. Consistency

Describe the project's consistency with other federal, state, regional, and local plans and policies related to traffic, transit, pedestrian and bicycle transportation facilities and services, including consistency with the applicable regional transportation plan and the Transportation Improvements Plan (TIP), the State Bicycle Plan, and the State Pedestrian Plan:

ENERGY SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **energy** (see 301 CMR 11.03(7))? ___ Yes_X_No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **energy**? ___ Yes_X_No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Air Quality Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Energy Section below.

II. Impacts and Permits

A. Describe existing and proposed energy generation and transmission facilities at the project site:

	Existing	Change	Total
Capacity of electric generating facility (megawatts)	_____	_____	_____
Length of fuel line (in miles)	_____	_____	_____
Length of transmission lines (in miles)	_____	_____	_____
Capacity of transmission lines (in kilovolts)	_____	_____	_____

B. If the project involves construction or expansion of an electric generating facility, what are:
   1. the facility's current and proposed fuel source(s)?
   2. the facility's current and proposed cooling source(s)?

C. If the project involves construction of an electrical transmission line, will it be located on a new, unused, or abandoned right of way? ___Yes ___No; if yes, please describe:

D. Describe the project's other impacts on energy facilities and services:

III. Consistency

Describe the project's consistency with state, municipal, regional, and federal plans and policies for enhancing energy facilities and services:

AIR QUALITY SECTION

I. Thresholds

A. Will the project meet or exceed any review thresholds related to **air quality** (see 301 CMR 11.03(8))? ___ Yes_X_No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **air quality**? ___ Yes_X_No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Solid and Hazardous Waste Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Air Quality Section below.

II. Impacts and Permits

A. Does the project involve construction or modification of a major stationary source (see 310 CMR 7.00, Appendix A)? ___ Yes ___ No;
if yes, describe existing and proposed emissions (in tons per day) of:

	Existing	Change	Total
Particulate matter	_____	_____	_____
Carbon monoxide	_____	_____	_____
Sulfur dioxide	_____	_____	_____
Volatile organic compounds	_____	_____	_____
Oxides of nitrogen	_____	_____	_____
Lead	_____	_____	_____
Any hazardous air pollutant	_____	_____	_____
Carbon dioxide	_____	_____	_____

B. Describe the project's other impacts on air resources and air quality, including noise impacts:

III. Consistency

A. Describe the project's consistency with the State Implementation Plan:

B. Describe measures that the proponent will take to comply with other federal, state, regional, and local plans and policies related to air resources and air quality:

SOLID AND HAZARDOUS WASTE SECTION

I. Thresholds / Permits

A. Will the project meet or exceed any review thresholds related to **solid or hazardous waste** (see 301 CMR 11.03(9))? ___ Yes _X_ No; if yes, specify, in quantitative terms:

B. Does the project require any state permits related to **solid and hazardous waste**? ___ Yes _X_ No; if yes, specify which permit:

C. If you answered "No" to both questions A and B, proceed to the **Historical and Archaeological Resources Section**. If you answered "Yes" to either question A or question B, fill out the remainder of the Solid and Hazardous Waste Section below.

II. Impacts and Permits

A. Is there any current or proposed facility at the project site for the storage, treatment, processing, combustion or disposal of solid waste? ___ Yes ___ No;
if yes, what is the volume (in tons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Treatment, processing	_____	_____	_____
Combustion	_____	_____	_____
Disposal	_____	_____	_____

B. Is there any current or proposed facility at the project site for the storage, recycling, treatment or disposal of hazardous waste? ___ Yes ___ No;
if yes, what is the volume (in tons or gallons per day) of the capacity:

	Existing	Change	Total
Storage	_____	_____	_____
Recycling	_____	_____	_____
Treatment	_____	_____	_____
Disposal	_____	_____	_____

C. If the project will generate solid waste (for example, during demolition or construction), describe alternatives considered for re-use, recycling, and disposal:

D. If the project involves demolition, do any buildings to be demolished contain asbestos? ___ Yes ___ No

E. Describe the project's other solid and hazardous waste impacts (including indirect impacts):

III. Consistency

Describe measures that the proponent will take to comply with the State Solid Waste Master Plan:

HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

I. Thresholds / Impacts

A. Have you consulted with the Massachusetts Historical Commission? _X_ Yes ___ No;
if yes, attach correspondence.

A letter was sent to the Massachusetts Historical Commission in July 2012. In a letter dated August 10, 2012, the MHC recommended that the U.S. Army Corps of Engineers make a finding of "no adverse effect" for this project based on the minimal impacts to cultural resources that would affect their integrity. For more information, please refer to *Chapter 10, Historical Resources*. Please refer to *Appendix F* of this ENF for MHC correspondence.

For project sites involving lands under water, have you consulted with the Massachusetts Board of Underwater Archaeological Resources? X___Yes _No;
if yes, attach correspondence **Please refer to *Appendix F* of this ENF for Massachusetts Board of Underwater Archaeological Resources correspondence.**

B. Is any part of the project site a historic structure, or a structure within a historic district, in either case listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth? X_Yes__No;

The Boston Edison L Street Power Station is recorded in the Inventory of Historic and Archaeological Assets of the Commonwealth. This property lies east of Summer Street and north of East First Street, and is referred to as the Exelon Site in other sections of this ENF. There would be no anticipated impacts to features of this historic property.

if yes, does the project involve the demolition of all or any exterior part of such historic structure? ___ Yes X_No;
if yes, please describe:

The Proposed Project involves the removal of two abandoned above-ground oil storage tanks from the Boston Edison L Street Power Station property. However, MHC has determined that these oil tanks do not contribute to the historic character of the property since the oil tanks were likely constructed outside of the period of significance of the Power Station.

C. Is any part of the project site an archaeological site listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth?
___ Yes_X_No;

if yes, does the project involve the destruction of all or any part of such archaeological site?
___ Yes ___ No;
if yes, please describe:

D. If you answered "No" to all parts of both questions A, B and C, proceed to the **Attachments and Certifications** Sections. If you answered "Yes" to any part of either question A or question B, fill out the remainder of the Historical and Archaeological Resources Section below.

II. Impacts

Describe and assess the project's impacts, direct and indirect, on listed or inventoried historical and archaeological resources:

The Boston Edison L Street Power Station is recorded in the Inventory of Historic and Archaeological Assets of the Commonwealth. This property is where the beginning point of the new Dedicated Freight Corridor will be constructed (east of Summer Street). Although the Dedicated Freight Corridor will travel through the Boston Edison L Street Power Station property, no buildings will be removed or features altered that contribute to the historic nature of the site. In a letter dated August 10, 2012, MHC stated that the proposed work for the Dedicated Freight Corridor, which requires removing two abandoned oil tanks and constructing a new bridge, will have no adverse effect on historic resources. The MHC noted that the construction of a new bridge over an existing fuel barge slip will not significantly affect the setting, feelings, or associations attributed to the industrial nature of the L Street Power Station. Therefore, no impacts to historic or archaeological resources associated with the Dedicated Freight Corridor or the Proposed Project are anticipated.

III. Consistency

Describe measures that the proponent will take to comply with federal, state, regional, and local plans and policies related to preserving historical and archaeological resources:

The Proposed Project is consistent with all federal, state, regional, and local plans and policies related to preserving historical and archaeological resources.

CERTIFICATIONS:

1. The Public Notice of Environmental Review has been/will be published in the following newspapers in accordance with 301 CMR 11.15(1):

   (Name) Boston Herald (Date) May 22, 2013

2. This form has been circulated to Agencies and Persons in accordance with 301 CMR 11.16(2).

Signatures:

5/14/13 Andrew O Hargens		5/15/2013 Lisa A Standley	
Date	Signature of Responsible Officer or Proponent	Date	Signature of person preparing ENF (if different from above)

Andrew Hargens	Lisa A. Standley
Name (print or type)	Name (print or type)
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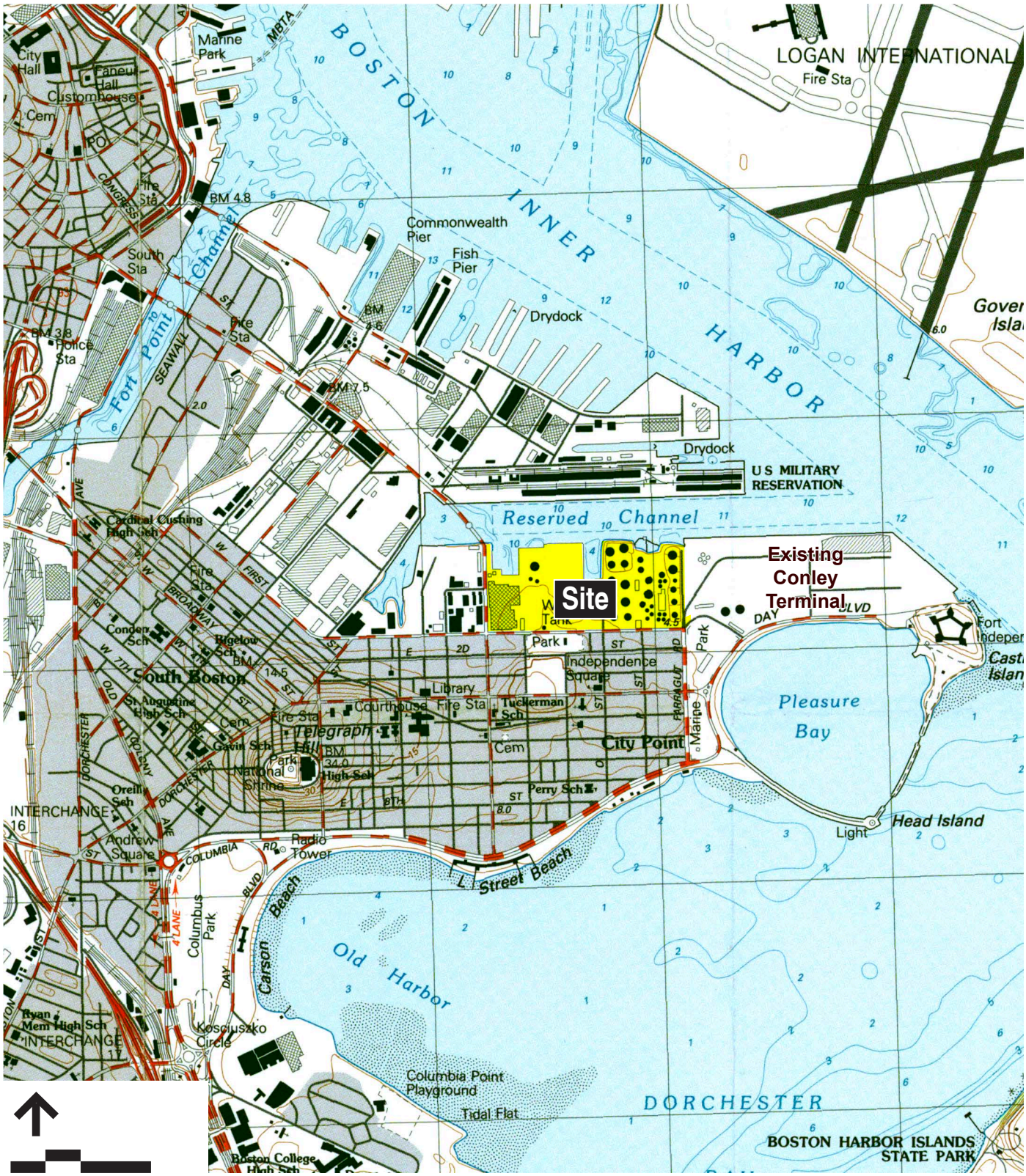

Source: USGS Digital Raster Quadrangle, Boston, Massachusetts, 2001

Conley Terminal Improvements

Figure 1-1

Site Location Map

massport

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Environmental Notification Form

Conley Terminal Improvements, Dedicated Freight Corridor, and Buffer Open Space

Boston, Massachusetts

Prepared for

1 Harborside Drive
Boston, Massachusetts 02128

Prepared by

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May 2013

Table of Contents

Appendices:

- Appendix A: Wetlands and Coastal Resources
- Appendix B: Transportation
- Appendix C: Air Quality
- Appendix D: Noise
- Appendix E: Hazardous Materials
- Appendix F: Historical Resources

Appendices provided as electronic files on CD-Rom.

List of Tables

List of Figures

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1 Introduction

1.1 Introduction

The Paul W. Conley Container Terminal (Conley Terminal) is a vital transportation and economic resource in the Port of Boston serving Massachusetts and New England. To sustain this position, the Massachusetts Port Authority (Massport) proposes to expand existing Conley Terminal operations onto the adjacent former Coastal Oil site, as part of this Conley Terminal Improvements project.

As part of this Proposed Project, Massport proposes two significant beneficial measures: the Dedicated Freight Corridor (DFC) and a Buffer Open Space. The DFC would create a new connection between Summer Street and the Conley Terminal, removing container truck traffic serving Conley Terminal from East First Street and shifting traffic away from adjacent residents. This new corridor would reduce impacts to the neighboring community from future anticipated growth of Conley Terminal. As a second measure, Massport is also proposing an approximately 4.2-acre landscaped buffer open space between East First Street and the expanded Terminal and DFC to provide visual screening and noise attenuation to the neighborhood adjacent to East First Street.

The Proposed Project represents a unique opportunity to improve the competiveness of the Port of Boston while, at the same time, creating a buffer and urban open space amenity for South Boston residents. The project location is shown on Figure 1-1.

1.2 Project Proponent

The proponent for the Conley Terminal Improvements project is the Massachusetts Port Authority.

1.3 Massport, Conley Terminal and the Port of Boston

Massport is a self-sustaining public authority of the Commonwealth of Massachusetts, created by act of the Legislature in 1956. Massport owns and operates Boston-Logan International Airport, L.G. Hanscom Field, Worcester Regional Airport, and several major maritime terminals and other waterfront properties within the Port of Boston, including the Conley Container Terminal and Black Falcon Cruise Terminal. Massport's premier transportation facilities generate more than $8 billion of economic activity every year and stimulate economic growth and vitality both locally and throughout New England.

The Port of Boston is the oldest continuously active major port in the Western Hemisphere. It is the region's major seaport and a center of domestic and international shipping and commerce that handles more than 13 million metric tons of containerized and bulk cargo per year. Port activities support 34,000 jobs annually contributing more than $2.4 billion to the local, regional, and national economies. The Port has multiple deep-water berths, recently dredged 40-foot depth channels, and direct access to the open ocean. Conley Terminal is able to receive trans-Atlantic shipments from Europe and the Mediterranean and Asia a day or more ahead of other major United States ports on the Atlantic coast because of its geographic position. On the landside, the Central Artery/Tunnel Project greatly enhanced interstate highway access serving the Conley Terminal. From many perspectives, the Conley Terminal is well positioned to serve its New England, upstate New York, the Midwest, and eastern Canadian markets.

1.4 Conley Terminal

Conley Terminal, owned and operated by Massport, is located within the South Boston Designated Port Area (DPA) on the Reserved Channel, and is New England's largest full-service container terminal with the only deep-water access in the Port of Boston. Cargo shipments to and from Conley Terminal are transported via shipping containers, which are built to international standards to be handled on ships, trucks, and rail facilities worldwide. Because containers vary in size, the number of containers handled are often referred to as TEUs (twenty foot equivalent units), which are standard 20-foot long containers. Operations at Conley Terminal reached a high mark for containers handled annually in fiscal year 2008, when the level of annual activity reached approximately 216,000 TEUs (eg. a 40-foot container equals two TEUs). In fiscal year 2012, the number had dropped to approximately 186,000 TEUs in response to the weaker global economy and trade conditions.

Two of the top international shipping lines serve Conley Terminal and provide direct and trans-shipment service between Boston and major ports throughout the world:

- Mediterranean Shipping Company (MSC) provides direct Northern European and Mediterranean service with two ship calls per week; and

- China Ocean Shipping Company (COSCO) and its vessel sharing partners, "K" Line, Yang Ming Line and Hanjin, provides a weekly ship call with direct service between major ports in China, Japan, and Boston via the Panama Canal.

Boston is considered a regional port with regard to container operations. The operations at Conley Terminal are modest in scale compared to larger ports such as the Port of New York/New Jersey; however, Conley Terminal plays a significant role in the regional economy by moving roughly one-third of the waterborne cargo in and out of the New England market. Boston's top imports through Conley Terminal are alcoholic beverages, frozen seafood, footwear, and furniture. Top exports include hides and skins, automobiles, logs and lumber, frozen seafood, paper (including wastepaper), and scrap metal. Over 25,000 jobs can be specifically attributed to operations at Conley Terminal, a number expected to increase as the economy rebounds and container operations rise. Loss of any service at Conley Terminal would have a significant negative impact to the local economy, and to the Commonwealth's tax receipts.

1.5 MEPA Jurisdiction

In accordance with the Massachusetts Environmental Policy Act (MEPA) Regulations, 301 Code of Massachusetts Regulations (CMR) 11.00, Massport has prepared this Environmental Notification Form (ENF), which describes the Proposed Project, the potential environmental impacts, and mitigation strategies. An ENF is required because the Proposed Project exceeds review thresholds in 301 CMR 11.03(3) for an ENF and Other MEPA Review if the Secretary so requires, specifically those related to wetlands, waterways and tidelands. The only wetland or tideland related threshold exceeded requiring the preparation of an ENF is the alteration of man-made Coastal Bank for the construction of the proposed DFC bridge crossing the Exelon Inlet. The Proposed Project does not exceed any review thresholds for an Environmental Impact Report (EIR). Massport has met with MEPA staff to confirm MEPA jurisdiction.

1.6 Project Purpose

Massport is proposing to expand existing Conley Terminal operations onto approximately 23 acres of the adjacent former Coastal Oil site in South Boston to remain competitive in the global container shipping business. These plans to grow Conley Terminal are projected to increase truck traffic along East First Street and Summer Street. In response to this, Massport has committed to construct the new 3,100-foot long DFC and an approximately 4.2-acre Buffer Open Space as forms of community mitigation for the Conley Terminal expansion. Further details on the background of each of these project components are provided in the sections below.

1.6.1 Conley Terminal Improvements

The global container shipping business is complex and highly competitive. Ports compete regionally, nationally, and even internationally, to secure commitments from international shipping lines to import and export containers, which are transported to/from the container terminals by truck and rail. The competitiveness of a port is determined generally by the cost and speed with which it can move a container between producers and consumers. Low costs, efficient terminals, and good connections to inland transportation systems that serve an established customer base are critical to port competitiveness. The quality and capacity of container terminal infrastructure impacts each of these factors.

Container terminal capacity is generally determined based on three components: the capacity of the berths to accommodate and load/unload vessels, the capacity of the terminal to move and store containers, and the capacity of the system of roadways serving the terminal. Over the last decade, Massport has invested millions of dollars in capital improvements at Conley Terminal to increase facility efficiency and capacity. In 2007, Massport completed a two-year enhancement project costing nearly $30 million. Upgrades included adding new environmentally-friendly equipment, drainage, lighting, and reinforced pavement. In 2008, Massport acquired the former Coastal Oil property, an approximately 33-acre brownfield site adjacent to the existing Conley Terminal. When it acquired this property, Massport accepted responsibility for the on-going clean-up of the site. With proper remediation, the additional land was envisioned to allow for future growth of the container operations at Conley Terminal. In 2011, Massport implemented a $1.2-million Marine Terminal Operating System (MTOS) at Conley Terminal that has streamlined terminal management and would facilitate more efficient truck gate operations in the future in conjunction with the construction of the DFC.

The Conley Terminal includes two active container ship berths, Berths 11 and 12, which total approximately 2,000 linear feet of hardened edge. The deep-water berths at Conley Terminal are dredged to 45 feet deep, and served by six low-profile cranes. In early August of 2010, Massport kept pace with the Panama Canal expansion by acquiring a pair of pre-owned low-profile cranes and four rubber tired gantry yard cranes at a cost of $15 million. With this acquisition, Conley Terminal now operates four cranes that have the height and reach to serve vessels with container stacks five high and 18 wide. Two additional, older cranes have a reach of 13 containers. It is important to note that the height of the existing cranes and any future equipment on the current Conley Terminal footprint are limited by airspace restrictions associated with Logan Airport runways. Based on these limitations, Conley Terminal berths have the capacity to serve vessels generally in the 3,000 to 6,000 TEU range, which are considered small to medium given the general trend toward large container ships.

On the landside, the existing Conley Terminal container yard has the capacity to store approximately 4,050 TEUs. This capacity is used to store full containers, empty containers, and refrigerated containers. The Terminal area also includes key security, administrative and support service functions. The major investments completed by Massport in 2007 reconfigured the container yard and increased Terminal storage capacity by 50 percent. Despite these enhancements, container storage at

Conley Terminal is a limitation on future growth operations and a key constraint to the Terminal's competitiveness.

In anticipation of future growth in container handling and trucking activity, Massport acquired the former Coastal Oil property in 2008. Massport also committed to construct the DFC, consistent with Chapter 153 of the Acts of 2010. The legislation also enables Massport to create a buffer open space, with input from the Buffer Open Space Advisory Committee, to separate the neighboring community from the proposed DFC and industrial port activities.

Massport secured ownership of the eastern segment of the proposed DFC right-of-way (ROW) in 2008. The Massachusetts Legislature passed H.R. 4801 in 2010, which authorized the transfer of land to Massport from Massachusetts Bay Transportation Authority (MBTA) and Massachusetts Department of Conservation and Recreation (DCR) for the purpose of building the DFC and Buffer Open Space.

1.6.2 Dedicated Freight Corridor

In anticipation of the planned Terminal improvements on the former Coastal Oil property, Massport proposes to construct the DFC. Although East First Street has adequate capacity to serve the volume of container trucks predicted in 2022, adding the DFC with gate processing to the expanded Conley Terminal Area on the former Coastal Oil site will improve truck access to Conley Terminal and minimize impacts to the residential area on East First Street. The DFC has been under consideration for more than a decade to improve the flow of goods to and from Conley Terminal and to reduce noise and other impacts on area residents. In 1998, Massport commissioned the Conley Terminal Dedicated Truck Road Feasibility Study, which recommended a preferred alignment for the roadway.

Most container trucks move to and from South Boston via Interstate 90 (east/west) or Interstate 93 (north/south). The Central Artery/Tunnel Project built interstate highway access ramps in South Boston and also constructed the South Boston Bypass Road (a dedicated truck route) and the Massport Haul Road (a designated truck route) that together form the spine of truck access serving maritime industrial activities in the South Boston Waterfront. The existing Conley Terminal gate facility is approximately 1.5 miles from the eastern terminus of these existing truck routes, which requires trucks to use local streets to make the "last mile" connection to/from the Terminal. Today, an average of 450 trucks per day (900 trips) use East First Street and Summer Street to reach the Terminal. Both streets function adequately today from a transportation standpoint; however, daily container truck activity, particularly occasional queuing and idling, impact livability along East First Street. There is also a strong community desire to relocate container trucks from these streets to a new haul road (the proposed DFC).

1.6.3 Buffer Open Space

The proposed Buffer Open Space is designed to serve the dual purposes for community residents: the approximately 100-foot wide landscaped corridor will

separate the public street from the new DFC, the expanded Conley Terminal, and the industrial uses of the Designated Port Area, and also will create a public open space amenity for the neighborhood. This public green space would address a long-term goal of the South Boston neighborhood residents adjacent to the East First Street.

In 2010, Massachusetts legislation designated an area of roughly 200,000 square feet immediately north of East First Street as Article 97 (state-designated open space) land and specified Massport as the entity to design, build, and maintain a Buffer Open Space in this area. According to the legislation, the Buffer Open Space will "help reduce visual and noise impacts associated with existing and future uses along Reserved Channel." Most of the area of the buffer is owned by Massport as part of the former Coastal Oil site. To the west along East First Street, the legislation authorized the transfer of other parcels from the MBTA to Massport control for the purpose of constructing and maintaining the buffer.

In addition to providing mitigation for the proposed expansion of container storage and handling operations on the Coastal Site, the buffer will provide a passive open space with a multi-use path and a beneficial transitional zone between the industrial uses north of East First Street and the mixed uses and residences south of East First Street.

1.7 Massport Sustainability Policy

Sustainability has played a significant role in Massport's planning and decision-making for many years. In 2000, Massport adopted an Environmental Management Policy designed to support its sustainability goals. This Policy includes a commitment to:

- Operate all facilities in an environmentally sound and responsible manner.
- Minimize the impact of its operations on the environment to the extent feasible and practicable.
- Define and apply sustainable design principles in the planning, design, operation and decommissioning of its facilities.
- Ensure environmental considerations are included in the business, financial, operational and programmatic decisions.

In October 2004, Massport prepared the *Massachusetts Port Authority Sustainability Plan* which presents Massport's long-term and short-term sustainability goals. It also identifies the actions necessary to achieve the goals, the staff members responsible for each sustainability goal, and the timeline for achieving the goals. Massport's Sustainability Plan and Policy informs the design decisions made for key infrastructure projects at Massport. This section describes key elements of the Sustainability Plan and Policy and how these relate to the Conley Terminal Improvements project specifically.

1.7.1 Sustainable Design Standards and Guidelines

In June 2009, Massport developed the *Sustainable Design Standards and Guidelines* (SDSG), which apply to projects in Massport's Capital Program. These guidelines are one component of Massport's overall sustainability program, several diverse sustainability initiatives ranging from facilities maintenance to innovative partnerships and public incentives. The standards are tailored to Massport's operations, facilities, and geography, and are intended to be used by architects, engineers, and planners working on capital projects for Massport. The standards apply to both new construction and rehabilitation projects (building and non-building, such as roads) of any square footage or monetary value and may also be used on tenant alterations or development projects on Massport property. The standards incorporate sustainable design principles as they relate to the project site design, materials, energy efficiency, water use and management, air emissions, and indoor air quality, and are based on the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED®) Green Building Rating System but can be applied to non-building projects not covered by LEED.

1.7.2 Executive Order 484 – Leading By Example

Massport is committed to supporting the Commonwealth's sustainable initiatives, including Executive Order 484 – Leading By Example (EO 484), which establishes the Leading by Example Program as a way to oversee and coordinate sustainable efforts (e.g., promote energy conservation, waste reduction, natural resource protection) by state agencies and encourage private sector developers to implement sustainable practices. As part of EO 484, the Executive Office for Administration and Finance mandates a set of minimum standards for sustainable design and construction of new buildings and major renovations by Executive Agencies (the MA LEED Plus program). While Massport is not an executive agency of the Commonwealth, it is nevertheless committed to constructing its facilities in accordance with MA LEED Plus whenever feasible. Elements of the MA LEED Plus program related to energy performance third party commissioning and water efficiency are incorporated into the SDSG. The SDSG will be applied to the Conley Terminal Improvements Project to the extent practicable.

1.7.3 Port Sustainability Initiatives

Massport has several programs in place that contribute to the environmentally sustainable operation and maintenance of the Port and its facilities, and encourages its tenants to do the same. Massport continues to strive to minimize the impact of its operations on the environment through the continuous improvement of its environmental performance and the implementation of pollution prevention measures. The following are key examples of Massport's commitment to sustainability as an organization and specifically within the Maritime Department:

- An Environmental Management Policy, with a specific commitment to sustainable development, sustainable operations and continuous improvement;

- Development and implementation of Environmental Management Systems (EMS) at its facilities, including the ISO-14001 certified EMS at Conley Terminal (Conley Terminal has been ISO certified since 2004);
- Implementing a Clean Truck Program which provides federal and Massport funding for up to 50 percent of the cost (up to $25,000) for the replacement of tractor trailers that are 15 to 26 years old with a 2007 emission compliant truck or newer;
- Compliance with the Massport *Sustainable Design Standards and Guidelines* for new and renovated facilities;
- Using the LEED Plus green building design and construction standard for development on Massport properties;
- Committing to maintain first-class open space on the Boston waterfront;
- Voluntarily implementing programs to reduce environmental impacts, such as air emissions, in a manner above and beyond that required by regulations;
- Planning for future shore power at additional Massport berths;
- Seeking to redevelop underutilized and brownfield properties and support regional "smart growth" policies;
- Developing "Green" lease terms with tenants, environmental audits, and voluntary sustainable tenant initiatives; and
- Adhering to the guidelines outlined in the Leading By Example Program.

1.8 Agency Coordination

To ensure effective and inclusive outreach to stakeholders throughout various stages of the project's development, Massport implemented a comprehensive stakeholder process that includes local, state, and federal agencies.

Table 1-1 lists all the meetings with local, state, and federal agencies, and the topics discussed at each meeting. In the future, in support of project permitting, Massport plans to conduct meetings with the City of Boston Conservation Commission and the Massachusetts Department of Environmental Protection (DEP), in addition to a MEPA scoping meeting associated with this ENF filing.

Table 1-1 Agency Meetings

Agency	Meeting Date	Topic
MEPA	February 7, 2012	Introduction of CTDFC Design team and provided project overview. MEPA indicated that the project could be permitted through and expanded ENF.
MBTA	February 14, 2012	Introduction of CTDFC Design team to MBTA Personnel. Project overview.
USCG/ USACE/ DEP/ EPA/CZM	March 16, 2012	Provided project overview. Solicited agency comments/concerns.
MBTA	April 9, 2012	Review Buffer parking concepts and MBTA operational requirements in front of Power Plant.
BRA/BTD	July 26, 2012	Introduction of CTDFC Design team to BTD and BRA Personnel. Project overview.
MBTA	July 31, 2012	HDR on-site meeting with the MBTA at power plant to discuss operational requirements at north side of power plant.
BRA/BTD	September 18, 2012	Meeting with BTD Engineering Staff to discuss technical issues.
BRA/BTD	September 28, 2012	Meeting with BTD, BTD, and the Interim Director for Mayor Menino's Boston Bikes Program to provide project overview with specific focus on open space buffer.
DCR	January 18, 2013	Provided overview of Conley Terminal Dedicated Freight Corridor Project to DCR Staff.

Notes:
BRA = Boston Redevelopment Authority
BTD = Boston Transportation Department
CZM = Coastal Zone Management
DCR = Department of Conservation and Recreation
DEP = Massachusetts Department of Environmental Management
EPA = United States Environmental Protection Agency
MEPA = Massachusetts Environmental Policy Act Office
USACE = United States Army Corps of Engineers
USCG = United States Coast Guard

1.9 Public Outreach

Massport implemented a community outreach process that provided information and sought input from interested community members, including the Buffer Open Space Advisory Committee, neighborhood groups and other stakeholders. The 2010 legislation also called for the creation of a ten-member committee of South Boston community residents to guide Massport in the design of the Buffer Open Space, which is described in Section 1.9.1.

1.9.1 Buffer Open Space Advisory Committee

The Buffer Open Space Advisory Committee includes South Boston residents, appointees by the City of Boston and state representatives. Massport involved the Committee from the beginning of the Buffer Open Space design development process. Massport convened committee meetings in 2011 through 2012 and work sessions with committee members, Massport staff, and consultants to solicit feedback on the design of the Buffer Open Space. Table 1-2 lists the meetings and the topic discussed at each meeting.

Table 1-2 Buffer Open Space Advisory Committee Meetings

Date	Topic Discussed
June 9, 2011	Initial South Boston Buffer Advisory Committee meeting.
November 29, 2011	Introduced the Buffer Design team.
February 13, 2012	Discussed design considerations with Committee.
June 19, 2012	The Committee agreed to the perimeter fence and closing of the Buffer Open Space at night. It also agreed with the angled parking on the street solution.
August 13, 2012	➤ Bus tour of Massport's parks and buffers. ➤ Presentation of noise study and model. ➤ Discussion of noise wall height.
November 13, 2012	A discussion lead by South Boston elected officials, dealt with the idea of providing on-street angled parking along the Buffer Open Space.
December 3, 2012	The Buffer Design team incorporated the angled parking along East First Street into the Buffer concept design, and presented it to the Committee. An overview of the Coastal Oil site remediation effort was also provided.
February 12, 2013	Review of the final Buffer concept. Samples of Buffer furnishings were presented and the Committee's input on interpretative display was solicited.

1.9.2 Public and Stakeholder Meetings

In addition to the Buffer Open Space Advisory Committee, Massport held community or public meetings with the public and elected officials. Table 1-3 lists the public meetings with the South Boston Community, local elected officials, and neighborhood groups, and the topic discussed at each meeting.

Table 1-3 Public and Locally Elected Officials Meetings

Date	Topic Discussed
February 22, 2010	Conley Terminal Land Configuration and Haul Road Meeting with the South Boston Community. Meeting was conducted at the South Boston Public Library.
March 5, 2012	Meeting with South Boston Community hosted by South Boston elected officials. Project overview and status provided by Massport and the Design team.
March 14, 2012	Massport invited South Boston elected officials (Senator Hart, Representative Collins, and City Councilor Linehan) to a presentation of the Exelon parcel crossing options and Buffer Open Space concepts.
June 12, 2012	At the request of the South Boston City Point Neighborhood Association, Massport provided a project overview and status.
June 16, 2012	Presented the Conley Terminal Improvements Project to the Castle Island Association.
November 17, 2012	Provided an update of all MPA projects to the Castle Island Association.

Table 1-4 lists meetings that Massport has held with other stakeholders in the vicinity of the Project Area, and topics discussed.

Table 1-4 Stakeholder Outreach Meetings

Date	Topic Discussed
November 7, 2012	Meeting with Mr. Read Coughlin of King Terminals at King Terminal's office to provide an overview of the Conley Terminal Improvements Project Dedicated Freight Corridor (DFC).
November 15, 2012	Meeting with Paul Pender of the Lobstermen's Association at the Lobstermen's Cooperative in South Boston to provide an overview of the Conley Terminal Improvements Project DFC.

1.10 Organization of this ENF

This ENF Narrative provides an introduction on the Conley Terminal Improvements project (Chapter 1); purpose and need and alternatives (Chapter 2); and the environmental resources affected by the Proposed Project (Chapters 3 through 10). Chapter 11 provides the Distribution List as required by MEPA regulations.

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2

Proposed Project and Alternatives Considered

2.1 Introduction

This chapter describes the proposed Conley Terminal Improvements project which includes: 1) the expansion of the existing Conley Terminal; 2) construction of a new Dedicated Freight Corridor; and 3) construction of a new Buffer Open Space. Each of these project elements and alternatives considered are described in the following sections. Figure 2-1 shows the existing conditions within the vicinity of the Project Area.

The expansion of Conley Terminal and associated project components support various City of Boston goals and objectives related to the economic development of the industrial waterfront. The goals of the *South Boston Waterfront District Municipal Harbor Plan* (last amended 2009), the *South Boston Seaport Public Realm Plan* (1999), and the *Port of Boston Economic Development Plan* (1996) encourage the preservation and enhancement of the industrial port, including Conley Terminal, while balancing the growth of mixed use and recreational activity in this area with the needs of maritime commerce. The Conley Terminal Improvements are also consistent with the Massachusetts Coastal Zone Management Plan and the Designated Port Area (DPA) that encourages water-dependent industrial use. The Conley Terminal Improvements project supports these overall goals by expanding container storage areas, providing enhanced container truck access to and from the Terminal, and creating a Buffer Open Space for the community.

Massport is committed to operating all of its facilities including maritime industrial terminals and commercial development projects, in an environmentally friendly and sustainable manner. For both environmental and financial reasons, Massport has a strong interest in developing and maintaining efficient, high-performance facilities. As a self-financed authority, Massport strives to make strategic initial capital investments and optimize its facility operations to reduce on-going costs. Overall, Massport manages its assets with environmental, economic and community needs and impacts in mind. Details on the sustainable components of the Proposed Project are also provided in this chapter.

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Conley Terminal Improvements

Figure 2-1

Existing Conditions

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2.2 Conley Terminal Improvements

Massport is proposing to expand existing Conley Terminal operations onto approximately 23 acres of the adjacent former Coastal Oil site in South Boston to remain competitive in the global container shipping business. As further described in *Chapter 1, Introduction, Section 1.6.1,* Conley Terminal's capacity to efficiently handle import and export containers is currently limited by the available container storage space. This Environmental Notification Form (ENF) specifically addresses the extension of Conley Terminal's container handling yard onto the former Coastal Oil site, and the relocation of the entry and exit processing gates. This ENF does not address potential future improvements at the Conley Terminal, such as the reorganization of the facilities on the existing Conley Terminal site and the construction of an additional berth along the Reserved Channel. This berth, which is not reasonably foreseeable during the MEPA planning timeframes, would be the subject of a separate ENF, and is only anticipated in the future as demand and funding warrants.

2.2.1 Conley Terminal Existing Conditions

The Paul W. Conley Container Terminal is located in South Boston, MA, and covers approximately 100 acres. There are two active ship berths along the Reserved Channel served by six low-profile ship-to-shore electric cranes. Import and export containers are stacked and handled by twelve rubber tire gantry cranes (RTGs), which move parallel to the berth. These RTGs service six container stack rows oriented in an east-west direction. Containers are transported from the stacks to the ship (and vice versa) via yard tractor trailer trucks, and from the street to the stacks (and vice versa) via street trucks. Inbound (export) and outbound (import) containers pass through the Terminal gate complex, which is on the south side of the Terminal, via the entrance/exit gate at the corner of Farragut Road and East First Street. As an interim measure, in 2011, Massport constructed a truck queuing yard to receive arriving trucks on the Terminal and prevent them from backing up on to East First Street in the early morning.

2.2.2 Purpose and Need

In fiscal year 2012, Conley Terminal processed approximately 186,000 TEUs or twenty-foot equivalent units, the industry standard of measure for containerized cargo. This volume of container activity was down from a high mark of 216,000 TEUs in fiscal year 2008. During recent years, prior to the global economic recession in 2007/2008, Conley Terminal experienced peak year-to-year growth in container activity at an average rate of between 5 and 6 percent.

Despite some recent declines in operations, there remains a strong regional customer base in New England to grow the Port of Boston container business. Currently, the Port handles roughly one-third of the waterborne containers moving to and from the New England region. The majority of container shipping to and from the region occurs through the Port of New York/New Jersey, with additional lesser amounts via major West Coast terminals and other eastern ports. However, Conley Terminal remains the largest container terminal in New England and has the only deep-water access in the Port of Boston. Massport's Maritime Department seeks to grow Conley Terminal volumes by capturing a larger percentage of the regional shipping market. This is likely to be achieved by working with shipping lines to increase shipping volumes on the vessels already calling the Port and also by attracting new ships to call on Boston. As a result, the pattern of growth is likely to be a combination of year-to-year growth, in response to improving economic conditions, combined with periodic jumps in volume with each new ship call (perhaps up to an increase of 50,000 to 70,000 TEUs annually).

Although difficult to predict due to economic uncertainty, Massport projects the annual growth rate in Conley Terminal container activity is likely to be approximately 5 percent per year between now and 2022. This moderate growth projection is premised on an economic recovery leading to an increase in consumer activity and associated import shipping demand. Massport projects volumes of up to 450,000 TEUs by 2022 if strong economic growth does occur. Environmental impacts presented in this ENF are based on a future increase of up to 500,000 TEUs in 2022 for a conservative approach.

As stated in *Chapter 1, Introduction, Section 1.6.1,* the global container shipping business is highly competitive and a port's success is dependent on its ability to provide cost-effective shipping operations, efficient terminals, and superior access to inland transportation systems to deliver and receive goods. Ensuring Conley Terminal has sufficient container storage capacity and truck access in and out of the Terminal will have positive economic benefits for the New England region.

Massport has made strategic investments in capital improvements at Conley Terminal; however, container storage at Conley Terminal remains a limitation on future growth and a key constraint to the Terminal's ability to better serve the New England region. The City of Boston and Massport's *Port of Boston Economic Development Plan* analyzed the Port of Boston's existing conditions and future needs including an analysis of current factors affecting the port as well as strategies and infrastructure needed to enhance the competitiveness of the port. As noted in the Plan, "as backland needs are generally proportional to container volume, the amount of space dedicated to support functions may be expected to grow significantly from current levels."[1] *The Port of Boston Economic Development Plan* notes that Conley Terminal is estimated to need "as much as 30 acres (2,000 containers)" to support Conley Terminal in higher growth scenarios.[2] Massport now anticipates growth at Conley Terminal from approximately 190,000 TEUs per year to up to 450,000 TEUs per year by 2022. The higher growth scenarios, 400,000 TEUs in 2010, envisioned by the *Port of Boston Economic Development Plan*, are

▼

1 City of Boston and Massachusetts Port Authority. *Port of Boston Economic Development Plan*. March 1996. Pg. 54.
2 Ibid.

now anticipated by Massport in 2022. Therefore, to support the growth predicted for Conley Terminal, additional container storage at Conley Terminal is needed. The Proposed Project meets this need by providing an additional container storage and handling area for Conley Terminal.

In anticipation of the planned Terminal improvements on the former Coastal Oil property, Massport proposes to construct the DFC. Although East First Street has adequate capacity to serve the volume of container trucks predicted in 2022, adding the DFC with gate processing to the expanded Conley Terminal Area on the former Coastal Oil site will improve truck access to Conley Terminal and minimize impacts to the residential area on East First Street.

More than 25,000 jobs are directly and indirectly created within the New England region by the container ships that call at the Port of Boston. Any potential loss in service would have an enormous negative impact on the local economy, and to Massachusetts state tax receipts. The increase in capacity afforded by the extension of container storage and handling in concert with improved ground access is anticipated to result in new and expanded business for the Port of Boston. The Conley Terminal Improvements support the continued competiveness of the Port of Boston, thereby helping to support this important local jobs creator and tax base.

2.2.3 No-Action Alternative

The No-Action Alternative would not implement the proposed improvements. Existing facilities would remain in their existing locations, however the demand for import and export of container cargo would be anticipated to increase. Conley Terminal would operate inefficiently and over-capacity with greater impacts on local roads and the adjacent residential community. The DFC and the Buffer Open Space would not be constructed. This alternative was not selected because it does not meet the project purpose and need.

2.2.4 Proposed Action

The Proposed Project would expand the existing container stacks and RTGs operations, in the same general east-west layout, onto approximately 23 acres of the former Coastal Oil site (Figure 2-2). The former Coastal Oil industrial property is currently owned by Massport. It is a vacant brownfield site that was partially paved, formerly occupied by above-ground oil storage tanks, that was owned by the Coastal Oil Company. The site is enclosed by a chain link fence and includes vacant previously-developed land, broken concrete pavement, and the remnants of structures.

The former Coastal Oil site would be improved to accommodate Conley Terminal container operations. This expanded configuration of Conley Terminal would allow for increased capacity and optimized traffic flow at the Terminal. The former Coastal Oil site would be regraded and paved to accommodate the additional container storage areas and vehicles, and provide maximum efficiency and growth capacity for Conley Terminal operations over the long-term. On the improved site, container

stack rows would be oriented in an east-west direction parallel to the Reserved Channel. RTGs would move parallel to the container stack rows to service containers and transport the containers from the stacks to tractor trailer trucks. The trailer trucks transport containers to the ship (and vice versa) to the yard.

Consistent with current Conley Terminal practices, Massport anticipates the container stack height on the former Coastal Oil site would be no more than three containers, up to approximately 30 feet.

The Proposed Project also includes installing site utilities (electric and communications, a stormwater collection/conveyance/treatment system, lighting, a security fence, and related surveillance infrastructure). A new subsurface drainage system would be constructed on the former Coastal Oil site, including appropriate stormwater treatment systems.

In order to meet the anticipated levels of throughput at Conley Terminal, container trucks entering and exiting the Terminal would be processed at separate in-gate and out-gate locations. Container trucks entering Conley Terminal would pass through an initial security check at a new guard house located north of the MBTA power plant. They would then enter into the Terminal near the southwest corner of the former Coastal Oil site and proceed east along the Freight Corridor to the processing lanes at their existing location on Conley Terminal. Among other benefits, this protocol for entering trucks will allow Massport to better enforce anti-truck idling regulations as all truck queuing would be within the Conley Terminal perimeter.

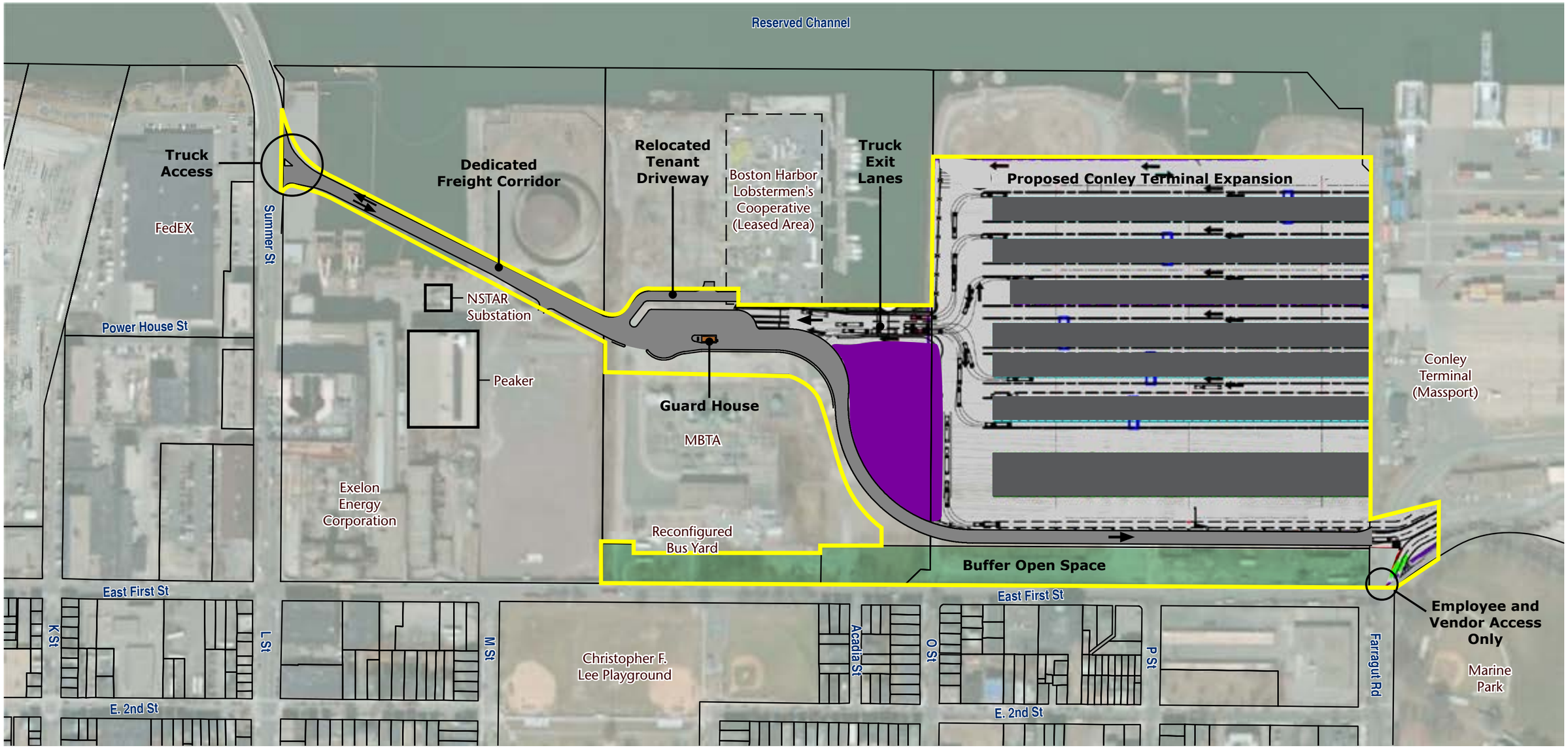
Trucks exiting the Terminal would go through a separate set of processing lanes to be located just west of the Coastal boundary. They would then be checked at the guard house described above and proceed west along the Freight Corridor to Summer Street.

Federal agencies, including U.S. Customs and Border Protection, would be relocated from their current site on Conley Terminal to an area just west of the Coastal boundary. This area would be under the jurisdiction of the Federal Government, and may include a small office building and parking area, as well as a truck screening/x-ray facility. The Federal agency area would be configured so that both entering and exiting trucks could be screened as required. The screening facility may be an early action item within the overall program of Conley Terminal improvements.

Figure 2-2 shows the layout of the entry, exit, and Federal agency areas as described in the preceding paragraphs.

2.2.4.1 Sustainability

The expansion of the Conley Terminal operations onto the Coastal site is currently at the conceptual design level. As the planning and design for the project progresses, sustainable design opportunities would be considered for the project. The Proposed Project would also follow Massport's Sustainable Design Standards and Guidelines (SDSG), and incorporate sustainable design principles as they relate to the project site



- Project Area
- Dedicated Freight Corridor
- Buffer Open Space
- Federal Agency Inspection Facility
- Container Stacks

0 125 250 Feet

Conley Terminal Improvements

Figure 2-2

Proposed Action-Conceptual Layout

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design, materials, energy efficiency, water use and management, and air emissions. Redeveloping the former Coastal Oil site is consistent with Massport's policy to develop underutilized and brownfield properties, and supports regional "smart growth" policies.

Massport has adopted a robust suite of sustainability measures at the Conley Terminal Improvements, and will extend these sustainability measures to the Coastal Oil property:

- Continuing implementation of the Environmental Management System and ISO 14001 Certification;
- Recycling waste oil;
- Recycling fluorescent bulbs;
- Recycling specialized waste, such as batteries, tires and anti-freeze;
- Integrating environmental considerations into purchasing decisions for new equipment;
- Installing diesel oxidation catalysts on mobile equipment to reduce air emission impacts;
- Converting yard equipment to Ultra Low Sulfur Diesel;
- Retrofitting mobile and stationary equipment to use electricity instead of fossil fuels;
- Replacing older equipment with "Green" equipment;
- Continuing the truck idling reduction policy;
- Continuing participation in EPA's National Clean Diesel Funding Assistance Program described above;
- Continuing implementation of the Clean Truck Program; and
- Continuing to explore alternative adaptation measures to address sea level rise.

Additional sustainable design opportunities will be incorporated as project design progresses into Design Development and Construction Documents, especially as they relate to the proper specification of sustainable materials and construction practices including:

- Incorporating infrastructure for collection, storage and handling of recyclables;
- Including stormwater capture and re-use to conserve water resources;
- Incorporating stormwater treatment infrastructure to reduce water pollution;
- Implementing measures to reduce energy use;
- Implementing measures to reduce water use;
- Incorporating alternative and/or renewable energy systems;
- Installing LED lighting where appropriate;
- Designing a truck layover area to reduce idling;

- Installing shore power conduits and other alternative power infrastructure;
- Painting equipment to blend with sky colors;
- Alternative measures to reduce noise from equipment beacons; and
- Using non-sodium street lighting.

2.2.4.2 Construction Schedule

Construction of improvements on the Coastal site will be phased in over the 2014-2022 period as a series of prioritized projects. Initial projects are anticipated to focus on the utility and pavement improvements required to support expanded container storage and handling. Subsequent improvements will focus on optimizing terminal flow, including the relocation of the out-gate processing area.

2.2.4.3 Cost

The cost for the initial construction required to accommodate container storage and handling is anticipated to be in the range of $15 million to $20 million. Subsequent phases including relocation of out-gate processing are anticipated to cost $3 million to $5 million.

2.3 Dedicated Freight Corridor (DFC)

Massport's plans to expand Conley Terminal operations over 10 years in response to business demand are projected to increase trucking. In anticipation of the planned Terminal improvements on the former Coastal Oil property, Massport has committed to construct the DFC, consistent with Chapter 153 of the Acts of 2010. This DFC would be constructed as mitigation for Massport's incorporation of the former Coastal Oil site into the Conley Terminal, and would be constructed as part of the Proposed Project.

The DFC, as shown in Figure 2-2, would completely remove all Conley container trucks from East First Street and portions of Summer Street, and eliminate Conley container trucks from the intersections of East First Street and Summer Street to the west and Farragut Road to the east.

Removing container trucks from East First Street and separating them from the adjacent community with a landscaped buffer and noise barrier are significant project benefits. Importantly, the DFC would create a dedicated route for container trucks that would address the "last mile" of truck access to Conley Terminal better linking Conley Terminal to the existing truck route network. The DFC would create permanent and more efficient on-terminal truck access and screening facilities, which are expected to help reduce vehicle queuing and vehicle miles travelled on the Terminal. These reductions have the potential to improve the overall competiveness of Terminal operations and reduce environmental and community impacts.

2.3.1 Project Description

The DFC is a 3,100-foot long roadway that would provide a connection for freight truck traffic between an expanded Conley Terminal and Summer Street. The DFC provides a dedicated route for container truck traffic, however, Conley Terminal employees and other non-truck traffic would continue to access Conley Terminal at the existing entrance via East First Street and Farragut Road. The DFC design would employ port and transportation industry best practices to design an efficient container terminal access roadway that meets today's terminal operating requirements and enables future growth in response to trends in global shipping.

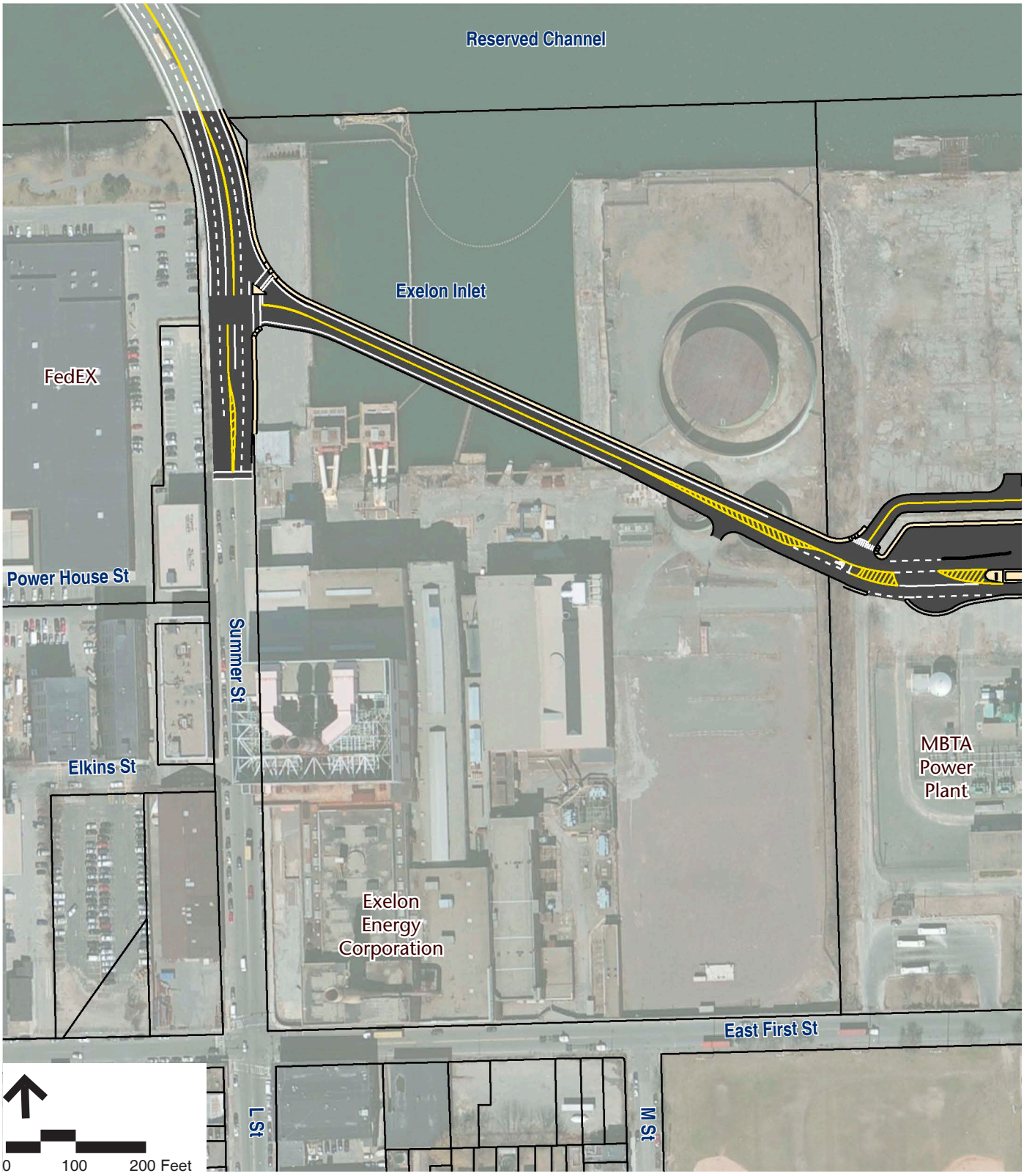
2.3.1.1 Roadway Design

The proposed DFC route begins to the west at a new intersection with Summer Street, located approximately 275 feet south of the Summer Street bridge over the Reserved Channel (Figure 2-3). The new intersection would incorporate an existing driveway serving a Federal Express facility on the west side of Summer Street, creating a four approach intersection. A portion of Summer Street, beginning immediately south of the Reserved Channel bridge, would be widened by approximately 6 feet and restriped to provide a dedicated southbound left turn lane from Summer Street to the DFC and a dedicated northbound left turn from Summer Street into the Federal Express facility.

Under proposed conditions, Summer Street would maintain two southbound lanes and two northbound lanes. Paved shoulders, consistent with those already existing on the Reserved Channel bridge, would be provided. The northbound left-turn lane from Summer Street in front of the Federal Express facility would mitigate restricted sight distance, which vehicles may experience from on-coming southbound traffic.

The Summer Street widening would begin at the southern abutment of the bridge over the Reserved Channel and extend approximately 450 feet to the south towards East First Street. This widening would be limited to the east side of Summer Street and include reconstruction of the easterly sidewalk and fence. The widening would be partially outside of the existing City right-of-way, on land to be acquired by Massport from Exelon as part of this project. Existing MBTA bus stops along Summer Street would be maintained.

At the intersection with Summer Street, the DFC would consist of two westbound lanes and one eastbound lane. A divisional island at the intersection would separate the westbound lanes. The island could be used by Summer Street pedestrians crossing the DFC. The proposed intersection geometry would reinforce the intended primary operation of the roadway, i.e. large container trucks serving Conley Terminal would only be allowed to enter the DFC from the north approach (left-in) and would only exit to Summer Street northbound (right-out). The second westbound lane is provided to allow left-turns onto Summer Street for smaller vehicles, including occasional Conley personnel, Exelon employees, and vehicles accessing Massport tenants such as the Boston Harbor Lobstermen's Cooperative.



Source: ArcGIS Online Bing Aerial Maps

Conley Terminal Improvements

Figure 2-3

Proposed Dedicated Freight Corridor (West End) and Summer Street Intersection Improvements

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Traffic control measures would consist of pavement markings, crosswalk and stop control for westbound (DFC) and eastbound (Federal Express driveway) vehicles at the intersection with Summer Street.

Between Summer Street and the Conley Terminal, the DFC would cross land, as well as an inlet of the Reserved Channel, currently owned by Exelon. East of the proposed bridge over the Exelon Inlet, the DFC crosses onto land which Massport would acquire from the MBTA in accordance with the 2010 legislation. The roadway would widen in this area to provide a left turn lane for eastbound vehicles to access a proposed, relocated tenant driveway and existing parcels to the north. The relocated tenant driveway would be approximately 900 feet east of Summer Street, just east of the Exelon parcel property line. The relocated tenant driveway would consist of a 20-foot wide cross section which extends approximately 350 feet north and west to connect the DFC to the relocated Boston Harbor Lobstermen Cooperative driveway and a vacant parcel to the north.

As the DFC extends east of the relocated tenant driveway, it would continue to widen to approximately 100 feet in order to accommodate Conley Terminal's relocated security gate complex. The proposed project would relocate the existing security gate complex from the Farragut Road entrance to this location north of the MBTA power plant in order to facilitate future port expansion and to prohibit public access to the balance of the DFC beyond the tenant driveway. The widened pavement area is required to allow truck parking for Massport identification processing, truck turn around area and security operations. The proposed sidewalk along the north side of the roadway would terminate in this area. Public access beyond this point would be prohibited without proper credentials, per Department of Homeland Security regulations.

Just east of the security gate complex, the DFC would turn south and east and would be parallel and adjacent to the Buffer Open Space. Placing the roadway at the southern edge of the former Coastal Oil site preserves the area north of the DFC for future Terminal operations on the site. The DFC would narrow to a standard 32-foot wide pavement section (12-foot travel lane with a 4-foot shoulder in each direction). The DFC would terminate near the existing guard house and entrance to Conley Terminal near Farragut Road. Some reconfiguration of the existing entrance area is required to separate truck traffic using the proposed DFC from Conley Terminal employees and other non-truck traffic, which would continue to access Conley Terminal via East First Street and Farragut Road. The DFC would include a noise wall, 16 feet high and 1,500 feet long, along the south edge of the DFC.

2.3.1.2 Bridge Design

The crossing of the Exelon Inlet would begin approximately 75 feet east of Summer Street, and would consist of a 475-foot long, six-span bridge on a diagonal alignment. The proposed bridge would consist of two 12-foot travel lanes (one in each direction) with 2-foot shoulders provided on each side. In addition, a 6-foot sidewalk is proposed along the north side of the bridge.

The proposed bridge super structure would consist of pre-cast concrete beams and steel pipe piles with concrete pile bents supporting the superstructure. Figure 2-4

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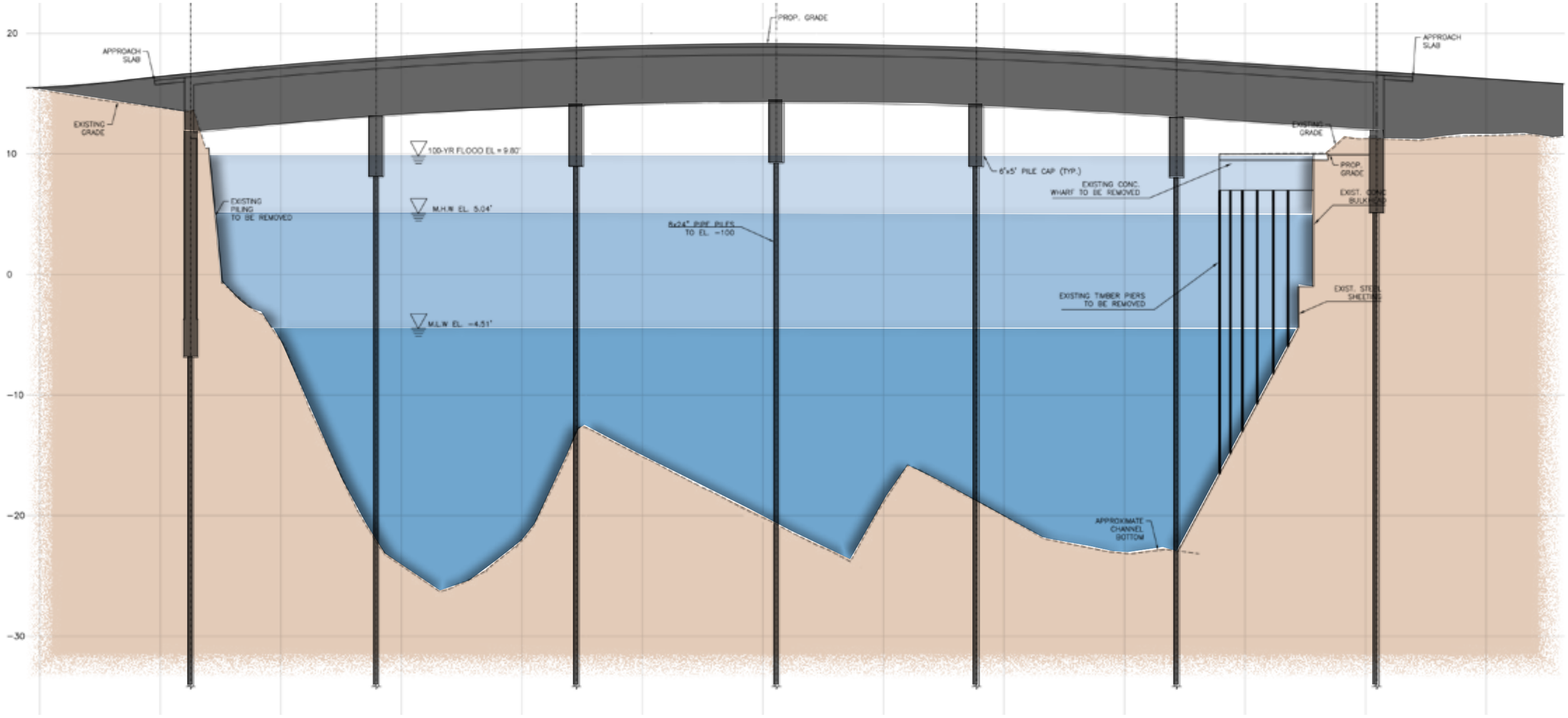

Source: HDR Engineering, Inc.

Conley Terminal Improvements

Figure 2-4

Proposed Bridge Elevation

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shows a detailed elevation of the bridge. This system was chosen to avoid impacts associated with the need for deep cofferdams to form concrete footings and piers. Concrete abutments would be supported by piles and be protected with rip-rap revetment. At both the east and west ends of the Exelon Inlet temporary sheet piling would be required in order to construct the bridge abutments.

The bridge construction would require partial removal of an existing sheet pile bulkhead. This existing bulkhead bisects the Exelon Inlet and formerly acted as a thermal barrier for the now defunct water intake and outfall systems at the power plant. The proposed bridge includes abutments constructed landward of the limit of Coastal Beach. These structures would replace the existing steel and timber bulkhead within the road section. The adjacent area of the existing bulkhead would be shored up and maintained to avoid erosion of the adjacent filled parking lot/shoreline. During construction, Massport may determine that it is necessary to reconstruct a larger segment of this bulkhead. A portion of the existing concrete wharf would be removed to construct the eastern abutment of the proposed bridge.

2.3.1.3 Stormwater Management

All stormwater runoff from the proposed DFC west of, and including, the relocated security gate area would be collected via deep sump catch basins located in the gutter and conveyed via closed conduits to stormwater treatment devices in accordance with federal, state and local regulations.

Stormwater runoff from the high point of the proposed bridge would be collected in the curbed gutter and conveyed east and west. Catch basins would be placed off the bridge to intercept the gutter flow and convey it to respective stormwater treatment devices located along the north side of the DFC at each end of the bridge. The western stormwater treatment device would also collect flow from the adjacent Exelon parking lots and would replace an existing stormwater treatment unit. The outlet for the proposed stormwater treatment would replace the existing infrastructure and convey treated runoff into the Exelon Inlet. The eastern stormwater treatment device would collect flow from the high point of the bridge east to the next high point along the DFC approximately 600 feet east of the bridge. The eastern stormwater treatment device would include a new outlet to the Exelon Inlet. A third stormwater treatment device is proposed east of the security gate area to collect runoff from the portion of the DFC that runs north-south and would include a new outlet near the Boston Harbor Lobstermen's Cooperative facility.

Runoff from the segment of the DFC that is adjacent to the Buffer Open Space would sheet flow onto the Massport (former Coastal Oil) property to the north and infiltrate into the ground, until such time as initial Terminal yard expansion is implemented. The new drainage system at the expanded yard would also collect runoff from the portion of the DFC adjacent to the Buffer Open Space.

2.3.1.4 Sustainability

The following are sustainable design elements of the proposed DFC:

- Recycling as part of construction management practices (required);
- Installing LED Street lighting;
- Using recycled pavement materials;
- Gatehouse constructed using green building design principles; and,
- Incorporating stormwater treatment infrastructure to reduce water pollution.

2.3.1.5 Construction Schedule

It is anticipated that the construction contract for the DFC would be advertised in the winter of 2013/2014, with construction commencing late spring of 2014 and lasting approximately 24 months.

2.3.1.6 Cost

The cost for the DFC is anticipated to be in the range of $20 million to $25 million.

2.3.2 Alternatives Analysis

In addition to the No-Action Alternative, three location alternatives and two construction alternatives were considered for the location and alignment of the DFC across the Exelon Parcel. The three location alternatives are Alternative A, Alternative B1, and Alternative B2. The DFC was designed with the following primary considerations:

- The roadway was sited to minimize direct impacts to the Exelon Site and the operations of the active power generation facility at this location.
- The roadway was sited to minimize direct impacts to the operations of the MBTA bus layover and power station to the south and the Boston Harbor Lobstermen's Cooperative to the north of the Project Area.
- The roadway was sited along the southern edge of the former Coastal Oil property to maximize the freight storage and operational capacity for the expanded Conley Terminal operations. If the DFC was moved farther north, any part of Coastal property cut off by the road to the south would become useless in terms of expanding terminal operational efficiency and capacity, the primary purposes of the Proposed Project.
- The roadway was designed to minimize impacts to MBTA bus routes.
- The roadway and intersection at Summer Street was designed based on the number of operations in 2022 and the predicted traffic levels on Summer Street anticipated in 2022 as well as necessary security measures.

2.3.2.1 Dedicated Freight Corridor No-Action Alternative

Under the No-Action Alternative, the DFC would not be constructed and there would be no major improvements made to East First Street other than routine maintenance and minor modifications, which may be undertaken during standard City of Boston street maintenance. The No-Action Alternative assumes that the freight truck traffic to and from the Conley Terminal would continue to use East First Street and access the Conley Terminal at the Conley Terminal Gate at East First Street and Farragut Road. The No-Action Alternative is based on the level of expanded operations and terminal activity predicted in 2022 within the existing Conley Terminal area. The No-Action Alternative was eliminated from further consideration because it does not meet the project purpose. It is presented in this ENF as the basis for assessing the impacts of the Proposed Action.

2.3.3 Dedicated Freight Corridor Build Alternatives

The build alternatives evaluated for the DFC would have a similar layout and footprint, but differ in the location of the Summer Street intersection and in the route across the Exelon Inlet. The Alternative A roadway would begin at the current driveway to the Exelon property and would be located on existing land parallel to the bulkhead of the existing Exelon Yard. The Alternative B roadway alignments would cross the Exelon Inlet. Figure 2-5 shows the build alternatives.

2.3.3.1 Dedicated Freight Corridor Alternative A

Alternative A is a two-way road which would intersect Summer Street at the existing main driveway to the Exelon Site, approximately 770 feet north of East First Street (Figure 2-5). The proposed intersection would not be signalized. The DFC would have one travel lane and shoulder in each direction with a sidewalk on the north side. Summer Street would be slightly widened to accommodate the turning movements of large trucks.

The existing upland between the existing NSTAR substation on the Exelon property and the water sheet of the Exelon Inlet is not wide enough to accommodate the DFC and avoid the existing NSTAR substation. The new road would require an area of fill of approximately 10,200 square feet behind a new steel sheetpile bulkhead. The new roadway would be situated partially on the new fill, and partially on existing ground.

Construction of Alternative A would require the demolition or abandonment of certain unused Exelon infrastructure which was formerly associated with the operation of the large power plant at the site. Elements to be removed include above-grade portions of former intake/discharge piping, a retired A-frame crane, a portion of a concrete wharf, and abandoned and empty above-ground oil storage tanks. Elements to be stabilized and abandoned within the roadway footprint include a number of large intake/discharge pipes and tunnels, with depths up to 40 feet below roadway grade.

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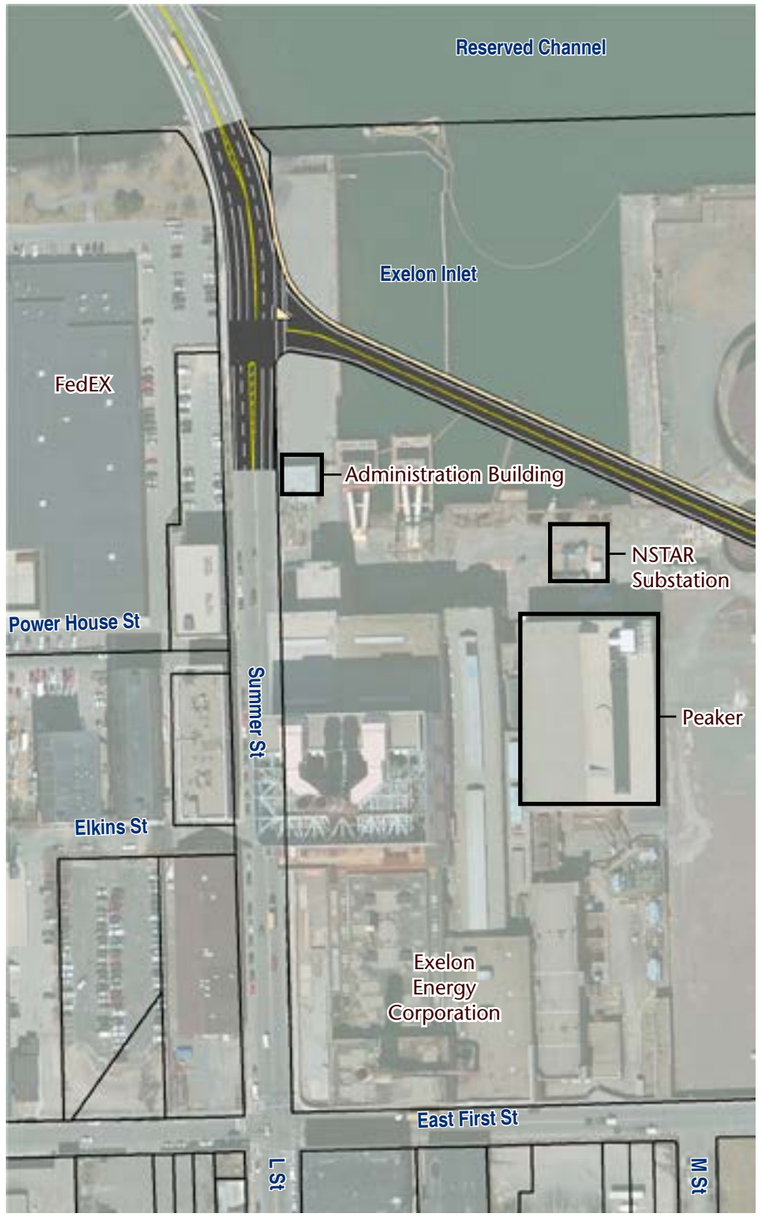
Alternative A



Alternative B1
(Preferred Alternative)

Alternative B2

0 100 200 Feet

Source: ArcGIS Online Bing Aerial Maps

Conley Terminal Improvements

Figure 2-5

Dedicated Freight Corridor Alternatives

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Certain active infrastructure serving the Exelon Site and Summer Street would need to be relocated, including a small transformer, above-ground sanitary sewer pump station, a MBTA bus shelter, and site sanitary and storm drainage systems.

Alternative A would impact personnel and vehicle access by Exelon and NSTAR staff to the site, and would also subdivide Exelon's secure site into two separate "zones", one to the north, and one to the south of the DFC. The DFC would be designed to allow Exelon and NSTAR staff and vehicle access off it to the "south" zone; and an existing curb cut off of Summer Street would be reconstructed to allow access to the "north" zone. The project would maintain the security of both Exelon zones, including fencing, video cameras, and remote-operated gates and access control devices connected back to Exelon's existing on-site security office.

Alternative A was dismissed from further consideration because it has the potential for greater impacts to land use and greater impacts to coastal resources because it requires the placement of a substantial amount of solid fill in the Inlet to accommodate the road. This alternative would likely require mitigation for fill and additional permits with effects on both cost and schedule.

2.3.3.2 Dedicated Freight Corridor Alternative B1 (Preferred Alternative)

Alternative B1 is a two-way roadway which would intersect Summer Street north of the existing main driveway to the Exelon Site, approximately 1,050 feet north of East First Street, and 275 feet south of the existing Summer Street bridge over the Reserved Channel (Figure 2-5).

The DFC would cross the Exelon Inlet via a new structure 41.5 feet wide and 475 feet in length, including a segment now covered by a concrete wharf. Two construction options were evaluated for the Alternative B1 alignment: a bridge structure and a solid fill structure. The solid fill structure was eliminated because it would result in substantially greater environmental impacts, including the loss of approximately 20,000 square feet of subtidal habitat and indirect impacts to an additional 1.5 acres of intertidal and subtidal land that would become an isolated basin with no connection to the tidal waterway. The solid fill structure would also have greater impacts to the existing Exelon facility.

Alternative B1, the bridge construction alternative, was selected as the recommended alternative because it would minimize impacts to aquatic resources and would have fewer direct impacts on land use (Exelon's existing operations). It would avoid placing substantial solid fill along the southern shoreline of the Inlet and minimize disruption to the Exelon Site and NSTAR substation.

2.3.3.3 Dedicated Freight Corridor Alternative B2

Alternative B2 is a modification of Alternative B1 that would intersect Summer Street north of the existing main driveway to the Exelon Site, approximately 900 feet north of East First Street, and 425 feet south of the existing Summer Street bridge over the Reserved Channel (Figure 2-5). Alternative B2 was dismissed because it would not

minimize impacts to aquatic resources and because the new intersection at Summer Street would have constrained vehicle sight distance due to the presence of the adjacent Exelon administration building. In addition, it would not be feasible to provide the desired dedicated southbound left-turn lane to the DFC, due to right-of-way constraints caused by the Exelon power plant and administration buildings. Without a dedicated southbound left-turn lane, traffic could queue on Summer Street when a vehicle attempts to make a left turn from Summer Street to the DFC.

2.4 Buffer Open Space

As part of the proposed expansion of Conley Terminal, a landscaped buffer (the Buffer Open Space) would be constructed along the north side of East First Street. The Buffer Open Space would be constructed as mitigation for Massport's incorporation and activation of the former Coastal Oil site as part of the Conley Terminal.

Early discussions between Massport and the South Boston community regarding Massport's acquisition and use of the former Coastal Oil site included the commitment that a landscape edge buffer along East First Street would screen residents from existing and future maritime industrial uses in the DPA to the north. Authorizing legislation passed in 2010 defined the area of the buffer as 100 feet in depth, measured from the northern side of the East First Street right-of-way, and 2,000 feet long, measured from Farragut Road to the MBTA-Exelon property boundary. Most of the area of the buffer is owned by Massport as part of the former Coastal Oil site. To the west along East First Street, the legislation authorized the transfer of other parcels from the MBTA to Massport control for the purpose of constructing and maintaining the buffer.

As stated in the legislation, the purpose of the proposed buffer is to "help reduce visual and noise impacts associated with existing and future uses along the Reserved Channel." In addition to defining the physical boundaries of the buffer, the legislation designated the entire buffer as open space under Article 97, which restricts its future use for other purposes without additional legislative action. The legislation further called for the creation of a ten-member committee of South Boston community residents selected by South Boston elected officials to guide Massport in the design of the buffer open space. Massport convened the committee in the summer of 2011 and held a series of work sessions with committee members, Massport staff, and consultants. See *Chapter 1, Introduction, Section 1.9.1* for further details on these meetings. Massport has developed the conceptual plan for the buffer with significant committee input.

The Buffer Open Space is intended primarily as a passive public open space that creates a visual and noise buffer between residents and port activities and provides a safe and inviting pedestrian and bike access to the existing waterfront parks along Day Boulevard in the South Boston community. Specifically, the project would better link the City Point neighborhood to Marine Park and Evans Field to the east and Christopher Lee Playground and N Street and M Street Parks to the west. Per the committee's direction, partly due to the several existing playgrounds and ball fields in the area, Massport has

not included active uses (e.g, playground, ball fields and courts) as part of the conceptual design.

As part of the Buffer Open Space construction and at the request of the community, Massport would reconfigure existing parking along the north side of East First Street to provide 114 parking spaces (6 parallel and 108 angled) along East First Street, which would serve both the neighboring community and open space users.

2.4.1 Existing Conditions

The area to be occupied by the Buffer Open Space borders East First Street and spans the southern-most portions of the MBTA and former Coastal Oil properties. The MBTA portion of the property contains bus operations and a driveway. The former Coastal Oil site is an abandoned industrial area containing broken pavement and the remnants of structures.

2.4.2 Buffer Open Space Project Description

The proposed Buffer Open Space is designed to serve dual purposes for community residents: the approximately 100-foot wide landscaped corridor will separate the public street from the new DFC, the expanded Conley Terminal, and the industrial uses of the Designated Port Area, and also will create a public open space amenity for the neighborhood. Figure 2-6 shows the proposed design of the Buffer Open Space including key design elements.

2.4.2.1 Buffer Design

The design of the Buffer Open Space incorporates elements which emerged from the community outreach process with the Buffer Open Space Advisory Committee, and is based on feedback from these outreach efforts. The buffer would serve as a community open space with a pedestrian path, native plantings, open lawn, and limited seating. As designed, a paved multi-use pathway curves through the open space, leading site visitors beneath shady tree canopies. Benches provide pleasant places to sit along the path. Pedestrian-scale lights illuminate the pathway while taller street lights are placed at the outer edge of the buffer, lighting the roadway as well as the new north sidewalk and angled parking area, which are also part of the overall improvements.

Native tree, shrub, and ground plane plantings form a multi-layered green swath along the north edge of the buffer, separating the pathway and landscape from the noise and security barrier. Trees planted throughout the open space create dappled sunlight patterns across the open lawn and pathway. Piers and gates mark entrances into the open space, which are aligned with intersecting streets. The fence and gates provide design elements that serve as visual and physical gateways into the landscape while also serving as a security measure; the buffer would be closed during nighttime hours, consistent with other open spaces owned and operated by

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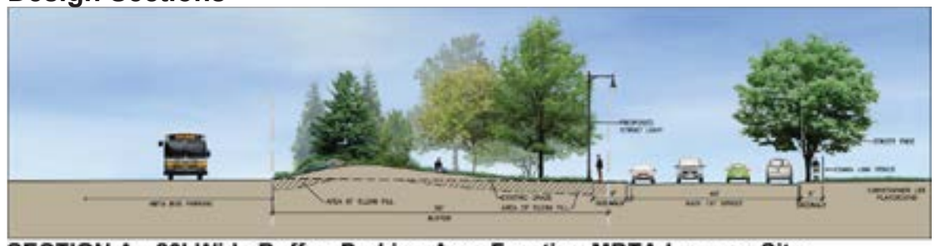
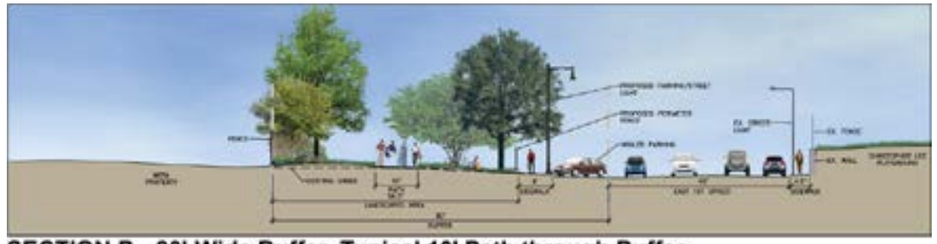
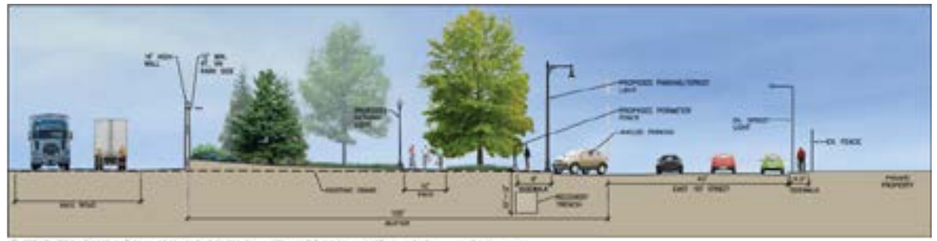
Design Sections



SECTION A - 80'-Wide Buffer, Parking Area Fronting MBTA Layover Site



SECTION B - 80'-Wide Buffer, Typical 10' Path through Buffer



SECTION C - 100'-Wide Buffer at Parking Area

Site Elements

Entry Piers and Gates Design Option, East Boston Piers Park

Park Bench

Pendant Style Street Light
approximately 26 feet high

Acorn Style Pedestrian Pole Light
approximately 15 feet high

Trash Receptacle

Design Plan

Conley Terminal Improvements

Figure 2-6

Proposed Buffer Open Space

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Massport. Interpretive panels would provide geographic, historical, and other information to the public.

A memorial and sitting area dedicated to Thomas J. Butler are proposed at the eastern entrance of the Buffer Open Space. Thomas J. Butler, who was the longtime Director of External Relations for Massport, passed away in March of 2011. Originally from South Boston, and a public servant for his entire career, Mr. Butler was, as the Boston Globe described him, "a social worker by training, a juvenile probation officer by vocation, and an activist at heart."[3] As the head of Massport's government and community relations team, Mr. Butler was an advocate for neighboring communities within Massport, reminding staff planners that they needed to take into account impact of operations on Massport's neighbors. Most importantly, Mr. Butler always sought a middle-ground– promoting Massport's mission while improving the quality of life of residents. Massport intends to name the Dedicated Freight Corridor and Open Space Buffer after Mr. Butler when they are completed.

The buffer provides physical distance between the neighborhood to the south of East First Street and the maritime activity to the north, significantly reducing the impacts of the existing Conley operations and future activity on the Coastal site. Together, the width of the buffer and the East First Street right-of-way would place trucking and other maritime activities more than 150 feet from the nearest residences. The design of the Buffer Open Space provides approximately 8,600 square feet of additional landscaped area at the eastern end of the Buffer and along East First Street in the form of landscaped bump outs, outside the limits of the original Article 97-designated area.

2.4.2.2 Noise Wall

The Buffer Open Space would not only provide a valuable open space landscape for the South Boston community, but it also creates a visual and noise buffer, reducing noise levels from both the DFC and the expanded Conley Terminal. A noise wall would be provided that extends alongside the DFC, at the north edge of the Buffer Open Space from approximately O Street to Farragut Road. It would be approximately 1,500 feet long and measure a minimum of 16 feet in height from the DFC side in order to maximize its noise attenuating effectiveness. From the park side, the wall would measure a minimum of 12 feet because of the buffer terrain. The landscape is designed to ensure the noise wall is not a visually dominant feature with the grade higher at the base of the wall. Plantings would be carefully placed to screen views of the noise wall as well as to aid in security, eliminating opportunities to access or climb the wall.

[3] The Boston Globe. McGrory, Brian. *Southie loses a stalwart*. March 11,2011.

2.4.2.3 Buffer Parking

New parking spaces, which would be regulated as overnight South Boston residential parking, would be provided in the Buffer Open Space frontage. Security and enforcement for the residential parking spaces would be the responsibility of the City of Boston. The new parking area would replace the existing 57 parallel parking spaces on East First Street with 114 parking spaces (6 parallel and 108 angled) and would also serve visitors utilizing the Buffer Open Space.

2.4.2.4 Pedestrian/Bicycle Connections

The new public open space would also provide a valuable link in Boston's Harborwalk. The Buffer Open Space would offer an improved, dedicated, pedestrian/bike path separated from East First Street, providing an important connection between the residential neighborhoods to the south and west of the Proposed Project, to the existing three-mile segment of parkland and beach stretching along the South Boston shoreline between Castle Island, Pleasure Bay, the L Street Beach, and Carson Beach. Overall, the proposed landscape design functionally buffers the DFC and expanded Conley Terminal from nearby residents while also transforming an underused former industrial landscape into a valuable community green space.

2.4.2.5 Sustainable Design

The following are sustainable design opportunities that will be implemented for the Buffer Open Space:

- Decreasing the urban heat island effect by creating shade;
- Specifying the use of native woody plants (shrubs and trees) and reserve perennial and herbaceous plants as focal points to reduce maintenance, improve aesthetics and native biodiversity;
- Reducing long-term pesticide, herbicide, and fertilizer use;
- Enriching soil with composting and leaf shredding to increase organic matter and allow plantings to resist insects and disease invasion and tolerate periods of drought;
- Installing LED lighting where appropriate;
- Installing recycling receptacles and compactors possibly powered by solar; and
- Designing stormwater collection systems that maximize on-site infiltration.

2.4.2.6 Construction Schedule

It is anticipated that the construction contract for the Buffer Open Space would be advertised in the winter of 2013/2014, with construction commencing late spring of 2014 and lasting approximately 24 months.

2.4.2.7 Cost

The cost for the Buffer Open Space is anticipated to be in the range of $4 million to $5 million.

2.4.2.8 Operations and Maintenance

The 2010 legislation that defined the area of the Buffer Open Space also established Massport's obligation to maintain this new public open space. Massport owns and maintains a number of parks and open spaces throughout the Boston area, including South Boston Maritime Park, East Boston Piers Park, Bremen Street Park, the Logan Airport edge buffers, and future East Boston Greenway Connector. Massport maintains the landscaping and structures in these and other open spaces to a high standard and is committed to maintaining the Buffer Open Space in the same high-quality manner. Massport's Maritime Department would assume operations and maintenance responsibility for the entire Buffer Open Space, from Farragut Road to the east to the MBTA-Exelon property boundary to the west. This would include care of lawns, shrubs, and trees; rat and pest control measures; maintenance of irrigation systems; litter, trash and recycling collection; snow removal; maintenance of lighting in the buffer; graffiti removal; and periodic repair of hard surfaces due to wear.

Based on lessons learned at Massport's other parks and open spaces, the Maritime Department staff has provided input to the buffer design to help create a landscape that would remain in good condition. Massport works to incorporate sustainable and low impact landscape management approaches into its operations whenever feasible. This would include the use of drought-tolerant plant species where appropriate. Receptacles for recyclables would be included as part of the waste management plan for the buffer.

Massport would provide policing of the Buffer Open Space in addition to physical maintenance. Massport's Security Services Unit would oversee security in the buffer, which would include a combination of on-site patrols and electronic surveillance. In addition, the Massachusetts State Police also would have jurisdiction over the buffer and would provide coordinated enforcement with Port Officers. Currently, the Security Services Unit secures all Massport Maritime Department facilities, including other public open spaces, in East Boston and South Boston. Maritime Department rules and regulations would be posted in the open space and they would be enforced by Port Officers. The Security Services Unit maintains a command post located at Conley Terminal, which Port Officers staff 24 hours per day. This facility would provide nearby incident response serving the Buffer Open Space. The Buffer Open

Space is being designed with Port Officer input to create a landscape that would be safe for the public and meet maritime security regulations.

2.5 Summary

In order to stay competitive within the international shipping industry, additional landside container storage at Conley Terminal is needed. The Conley Terminal Improvements include expanding Conley Terminal onto the former Coastal Oil site in order to address this need. The DFC is proposed as part of the project to remove the container truck traffic from East First Street, providing an important mitigation feature to the project and improving ground access for container trucks served by Conley Terminal by providing a direct connection to Conley Terminal and eliminating additional travel time along East First Street. A second mitigation feature, the Buffer Open Space, is also included as part of the Proposed Project. The Buffer Open Space includes a parkland corridor separating East First Street from the DFC and expanded Conley Terminal, while also creating a new public amenity for the neighborhood. The new open space would be transformed into a passive public open space. The DFC and Buffer Open Space would also include a noise wall as mitigation for the Conley Terminal Improvements.

3 Land Use

3.1 Introduction

This chapter describes the existing land uses in the vicinity of the Project Area, and assesses impacts to land uses by three components of the Proposed Project including the Conley Terminal Improvements, the Dedicated Freight Corridor (DFC), and the Buffer Open Space, including consistency with local plans. The Proposed Project's consistency with the Massachusetts Coastal Zone Management Plan and the Designated Port Area (DPA) is discussed in *Chapter 4, Coastal Resources.*

3.2 Key Findings

- The Proposed Project is consistent with the goals of the *Port of Boston Economic Development Plan* (1996), *South Boston Waterfront District Municipal Harbor Plan* (2000), and the *South Boston Seaport Public Realm Plan* (1999).
- The two mitigation features of the Proposed Project, the DFC and the Buffer Open Space, would improve the land use compatibility along East First Street and create a better balance between the industrial uses of the Port and the mixed-use neighborhood south of East First Street.
- The Buffer Open Space would improve pedestrian and bike linkages along Boston Harbor.
- As a state entity, Massport is exempt from local zoning regulations.

3.3 Methodology

This assessment evaluates the land use of the Project Area and properties immediately adjacent to the Project Area. The Project Area covers approximately 40 acres within a heavy to light industrial area on the South Boston waterfront. It is bordered by Summer Street to the west, the Reserved Channel of Boston Harbor to

the north, East First Street to the south, and the existing Conley Terminal to the east. Figure 3-1 is a map of land uses within the Project Area and adjacent properties. The City of Boston Assessor's information on the City of Boston's Assessor's Database was used to retrieve current ownership information and land uses.[4]

3.4 Affected Environment

For the purposes of this ENF, the Project Area (the area in which construction would occur) is the former Coastal Oil site now owned by Massport, the footprint (and property acquisitions) required for the DFC, and the area to be occupied by the Buffer Open Space (Figure 3-1). The Study Area for the land use analysis is the land area east of Summer Street and north of East First Street, and extends one-half block west of Summer Street and one-half block south of East First Street to analyze the level of land use compatibility of the Proposed Project with adjacent areas. The Study Area includes a mix of commercial, light industrial, and residential land uses. Properties west of Summer Street and south of East First Street are within the South Boston Neighborhood District, which is established to protect "residential uses while encouraging commercial and industrial growth where appropriate." Figure 3-2 shows the existing property ownership within the Project Area.

3.4.1 Existing Land Use Plans

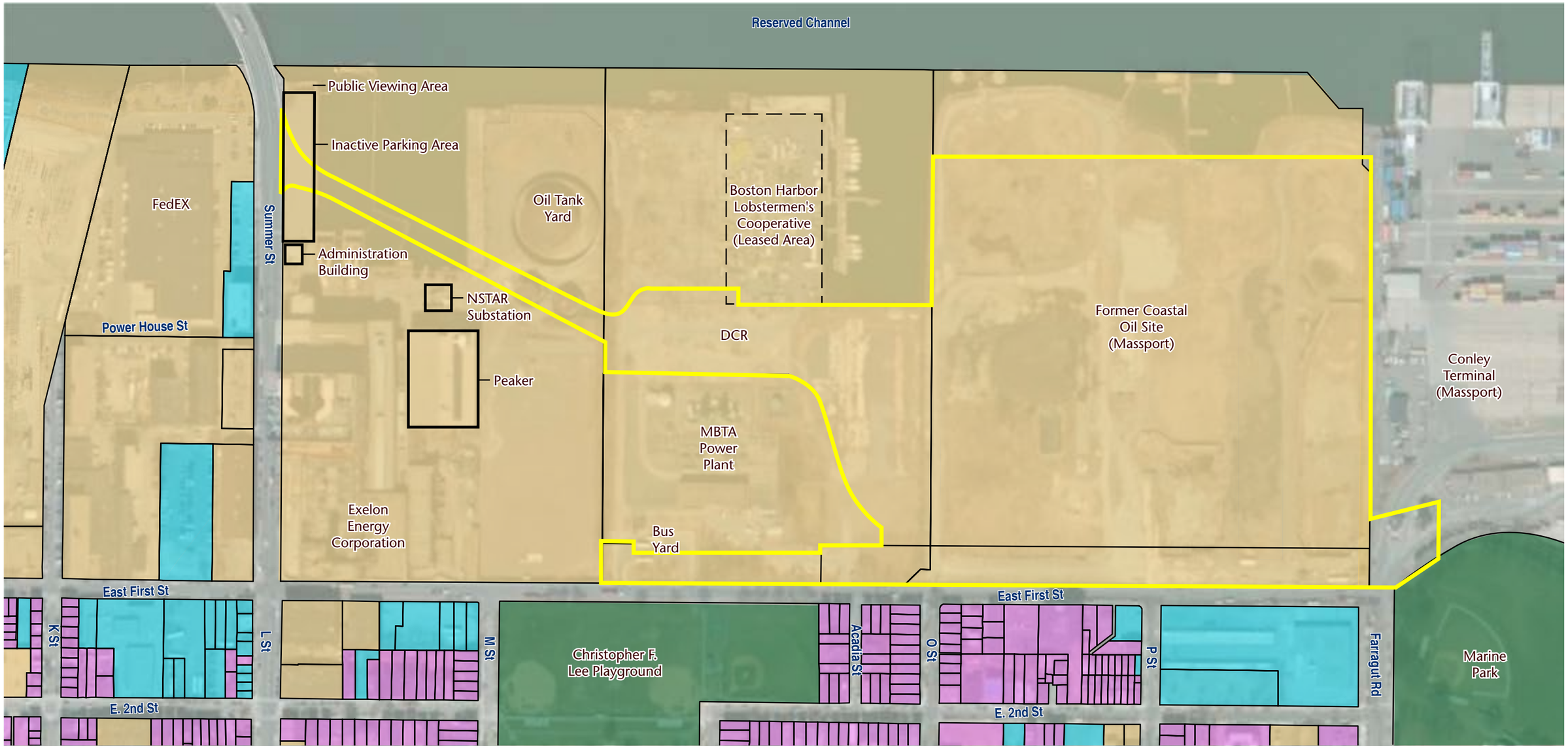
This section describes the City of Boston's primary land use plans governing the Project and Study Areas, and how the Proposed Project supports the goals of these land use plans.

3.4.1.1 Port of Boston Economic Development Plan

The *Port of Boston Economic Development Plan*, issued in 1996, was the product of a comprehensive effort between Massport and the City of Boston to work towards the goal of protecting the economic viability of the Port of Boston. According to the Plan, "[Conley Terminal] represents a major investment by Massport to establish, enhance and expand public container facilities within the Port of Boston."[5] The Plan acknowledges that:[6]

> Access to the Port facilities by sea, rail and highway is essential to the survival of the seaport. The backbone of the port, the commercial shipping trade, is entirely dependent on deep water ship channels, nearby rail service, and safe and efficient truck access for intermodal cargoes, fuel oil, cruise ships, seafood distribution, and bulk commodities.

4 City of Boston.gov, Assessing Online. FY2012 Real Estate Assessments and Taxes. http://www.cityofboston.gov/assessing/search/. Accessed January 10, 2012.
5 City of Boston and Massachusetts Port Authority. *Port of Boston Economic Development Plan*. March 1996. Pg. 2-11
6 Ibid. Pg. 3-1.



Conley Terminal Improvements

Figure 3-1

Existing Land Uses

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By enhancing and expanding Conley Terminal container facilities, the Proposed Project supports overall goals of *the Port of Boston Economic Development Plan*. Primary objectives include: promoting and encouraging the development of the seaport economy; maintaining maritime industrial jobs and preserving essential port properties for active maritime uses; and providing the waterside and landside public infrastructure to support the future growth of the industrial seaport.

3.4.1.2 The Seaport Public Realm Plan

The primary comprehensive plan covering the Project and Study Areas is the *South Boston Seaport Public Realm Plan*. The Seaport Plan was issued in 1999 by the Boston Redevelopment Authority (BRA) as the primary framework for future waterfront development in the area. According to the BRA, "the Plan was developed to ensure that this emerging district would provide not only a place for business expansion and job opportunities, but also an accessible waterfront, an attractive open space network, active civic uses, new places to live, a strong urban design character and convenient system of public transit." [7]

The primary goals of the Seaport Plan are to:

- Promote Boston Harbor as a shared natural resource;
- Preserve and enhance the industrial port;
- Plan the Seaport as a vital, mixed use neighborhood; and
- Develop the Seaport as an integral part of Boston's economy.

The City of Boston is currently implementing the Plan through the Municipal Harbor Plan to the Commonwealth of Massachusetts under the Chapter 91 Waterways program (described below); the development of new zoning regulations for the port areas; and the review of proposed development projects under the BRA's development review procedures (Article 80). In preserving and enhancing the industrial port, the Seaport Plan notes that the "Plan must protect the Port and its boundaries, including the provision of adequate buffers between new uses and existing industrial ones, and of convenient truck movement in and out of the Port."[8]

3.4.1.3 South Boston Waterfront District Municipal Harbor Plan

The BRA's Municipal Harbor plan, issued in 2000, builds upon the *Seaport Public Realm Plan* to create a vision for the South Boston Waterfront and defines a framework for future development. One of the primary goals of the Plan is to "preserve and enhance the industrial port and balance the growth of mixed use and recreational activity along Boston Harbor with the needs of maritime commerce."[9] Since 2000, there have been subsequent amendments to the Municipal Harbor Plan,

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7 Boston Redevelopment Authority. http://www.bostonredevelopmentauthority.org/planning/PlanningInitsIndividual.asp?action=ViewInit&InitID=3. Accessed September 2012.
8 City of Boston Redevelopment Authority. *The Seaport Public Realm Plan*. February 1999. Pgs. 4-5.
9 City of Boston Redevelopment Authority. *The South Boston Waterfront District Municipal Harbor*. Pg. i.

which affect the Fort Point Channel Area, but not specifically to the Project Area, which is the focus of this ENF.

3.4.2 Exelon Site

The 24.2-acre Exelon Site is in the South Boston Harborfront area and is bounded by Summer Street to the west, East First Street to the south, a property containing vacant land and the Massachusetts Bay Transportation Authority (MBTA) Power Plant station to the east, and the Reserved Channel to the north (Figure 3-1). The Exelon Site currently contains a large power plant building, a substation currently operated by NSTAR, some smaller brick buildings, a sewer pump station serving the power plant, a parking area, and three abandoned oil tanks with secondary containment areas. The Exelon Site is now owned by Exelon New Boston LLC, and was previously owned by the Boston Edison Company.

Portions of the Exelon Site would be included in the Proposed Project. The four primary land use areas and functions within the Exelon Site are described below.

3.4.2.1 Summer Street Exelon Parking Area

This 0.7-acre parking area is on the Exelon Site at the western edge of the parcel adjacent to Summer Street. It is directly north of the main access gate to the Exelon Site on Summer Street. The parking area contains 63 spaces but is currently not used. The western edge of the parking lot adjacent to the Exelon Inlet is supported by a failing timber bulkhead.

3.4.2.2 Public Viewing Area

The public viewing area at the northernmost point of the Exelon Parking Area was required as part of Chapter 91 license 4529 for the Boston Edison Company (dated March 10, 1995) for the thermal barrier. There is currently no direct access to the viewing area. When the Summer Street bridge was reconstructed, a guard rail was constructed between the public viewing area and the sidewalk along Summer Street essentially blocking public access to the site. The public viewing area has two benches and picnic tables facing the Reserved Channel. A chain link fence between the Reserved Channel and the viewing area partially obstructs views. The public viewing area has an unmaintained grass surface.

3.4.2.3 Exelon Yard Facility/Administration Building

The Exelon Yard Facility is directly north of existing power plant buildings and just south of the Reserved Channel. This 2.2-acre area contains offices in the Administration Building south of the Summer Street Parking Area. The Yard Facility also contains intake/discharge systems that were previously used to provide cooling water to the turbines in the power plant. A newer intake/discharge piping system,

also presently unused, runs from the Reserved Channel to the power plant building. The Exelon Yard Facility has yard infrastructure such as guard rails, fencing and lighting. The perimeter of the site has a chain link fence with barbed wire and a motorized security gate at the main entrance to the yard on Summer Street.

The Exelon Yard Facility currently contains a "peaker" power plant, which operates only during period of peak electricity demand, such as during a heat wave. The Exelon Yard Facility also contains extensive electrical infrastructure including a NSTAR substation for which NSTAR has an easement over the Exelon Site.

3.4.2.4 Oil Tank Yard

The 3.9-acre Oil Tank Yard is in the northeast corner of the Exelon Site. The Oil Tank Yard contains three abandoned above-ground oil storage tanks ranging in size from 630,000 gallons to 5,460,000 gallons. For more information about the oil tanks refer to *Chapter 9, Hazardous Materials, Section 9.3.3.* The remaining portion of this area is undeveloped with a crushed stone or grass surface.

3.4.3 MBTA Property/Department of Conservation and Recreation Property

This approximately 25-acre industrial property borders the Exelon Site on the west (Figure 3-1). The southern portion of the site is owned by the MBTA and contains an MBTA bus depot and a one-story brick MBTA-operated power plant that supplies energy to the subway system. The northern portion of the site is adjacent to and includes a portion of the Reserved Channel and is currently owned by the Massachusetts Department of Conservation and Recreation (DCR).

The northern portion currently owned by DCR is largely vacant but a smaller 2.2-acre area in the northeast portion of the site is leased to the Boston Harbor Lobstermen's Cooperative. Members of the cooperative use the Cardinal Medeiros boat dock on the Reserved Channel. A road through the MBTA property to East First Street is used by lobster fishermen for access to the site.

3.4.4 Former Coastal Oil Site

This approximately 30-acre industrial property is currently owned by Massport. Massport purchased the site in 2008 from El Paso Energy with the intention of expanding Conley Terminal container operations. It is a vacant brownfield site that was formerly owned by the Coastal Oil Company, and is now actively undergoing remediation. The site area is enclosed with a chain link fence and includes vacant land, concrete pavement, and wall structures.

3.4.5 Adjacent Land Uses

This section describes the land uses adjacent to the Project Area within the Study Area in the vicinity of Summer Street and East First Street.

3.4.5.1 Summer Street Area

Three blocks with a series of one-story and multi-story light industrial and commercial buildings, including the FedEx World Service Center, are west of the Exelon Site across Summer Street. The two blocks from Power House Street to the corner of East First Street and Summer Street include a multi-story light industrial/office building and a large warehouse building.

3.4.5.2 East First Street Area

South of the Project Area along East First Street are a series of industrial, residential and park uses. Between L Street and Farragut Road, the three blocks along East First Street include fenced parking lot and industrial buildings (between L Street and M Street); the Christopher Lee Playground, which includes an actively used playground, playing fields and basketball courts (between M Street and Acadia Street); a series of multi-family residential buildings (between O Street and P Street); and light industrial buildings and warehouses (between P Street and Farragut Road).

3.4.5.3 Marine Park

Directly south and east of the current Conley Terminal entrance on East First Street and Farragut Road is Marine Park, which is owned and maintained by the DCR. The approximately 109-acre park includes a baseball field, tennis court, and ice rink.

3.5 Environmental Consequences

This section describes the environmental impacts to land use as a result of the Proposed Project. The Proposed Project is consistent with the industrial and commercial land uses in the immediate vicinity. The Proposed Project does not meet or exceed any of the Massachusetts Environmental Policy Act (MEPA) review thresholds specifically related to land for a Mandatory EIR or an ENF and Other MEPA Review if the Secretary so Requires as defined by 301 CMR 11.03 (1).

3.5.1 Conley Terminal Improvements

The Conley Terminal Improvements include expanding the existing rubber tire-gantry cranes (RTG) operations, in the same general layout, onto approximately 23 acres of the former Coastal Oil site. RTGs are large cranes that move large import

and export containers to and from stacks within the port container storage areas. The Conley Terminal is currently in active use and the expansion onto the former Coastal Oil site would not conflict with existing land uses. The former Coastal Oil site portion of the Conley Terminal would consist of container handling and storage operations.

The Conley Terminal Improvements would not have any other direct or indirect impacts to land uses in the vicinity of the Proposed Project other than the redevelopment of the vacant former Coastal Oil site. Although Massport is exempt from local zoning regulations as a state entity, the redevelopment of this site is consistent with the site's zoning within the South Boston Maritime Economic Reserve (MER) subdistrict. According to the United States Environmental Protection Agency (U.S. EPA), a brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.[10] Brownfields can have the effect of undermining neighborhoods by decreasing surrounding property values and deterring economic development within surrounding neighborhoods. In addition to remediating the project parcels, the redevelopment of this former industrial site would also help to revitalize the currently unused industrial site for productive use as a port use, which is consistent with City of Boston's *Port of Boston Economic Development Plan* and the *Seaport Public Realm Plan.*

3.5.2 Dedicated Freight Corridor

The DFC is consistent with the goals and policies of the *Port of Boston Economic Development Plan* which called for improvements to the approach to Conley Terminal along East First Street and "the designation of special routes for trucks carrying international containers."[11] The DFC provides this special route. The DFC is also consistent with goals and policies of the City of Boston's *Seaport Public Realm Plan*, which strives to "preserve and enhance the industrial port" with "convenient truck movement into and out of the Port."[12] The Plan envisions a corridor similar to the one currently proposed through the Exelon Site to provide an additional access point to Conley Terminal and minimize truck traffic in the residential areas of South Boston. The DFC extends and complements the network of truck routes in South Boston serving the Port.

The DFC begins at the intersection of Summer Street, crosses through the Exelon property via a bridge, passes over land through the former MBTA property and curves to the south through the Massport-owned Coastal Oil site. To construct and maintain the DFC, Massport will take ownership of the properties from the DFC right of way north to the Reserved Channel. Figures 3-2 and 3-3 show the current and proposed property ownership for the MBTA/DCR properties and the Exelon property.

The DFC would affect the largely unused Exelon parking area along Summer Street removing over half of its current parking capacity. Access to the remaining parking

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10 United States Environmental Protection Agency, http://www.epa.gov/brownfields/basic_info.htm. Accessed September 2012.
11 City of Boston Redevelopment Authority and Massport. *Port of Boston Economic Development Plan.* Pg. 1-10.
12 City of Boston Redevelopment Authority. *The Seaport Public Realm Plan.* February 1999. Pgs. 2-3.

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Conley Terminal Improvements

Figure 3-2

Property Ownership - Existing

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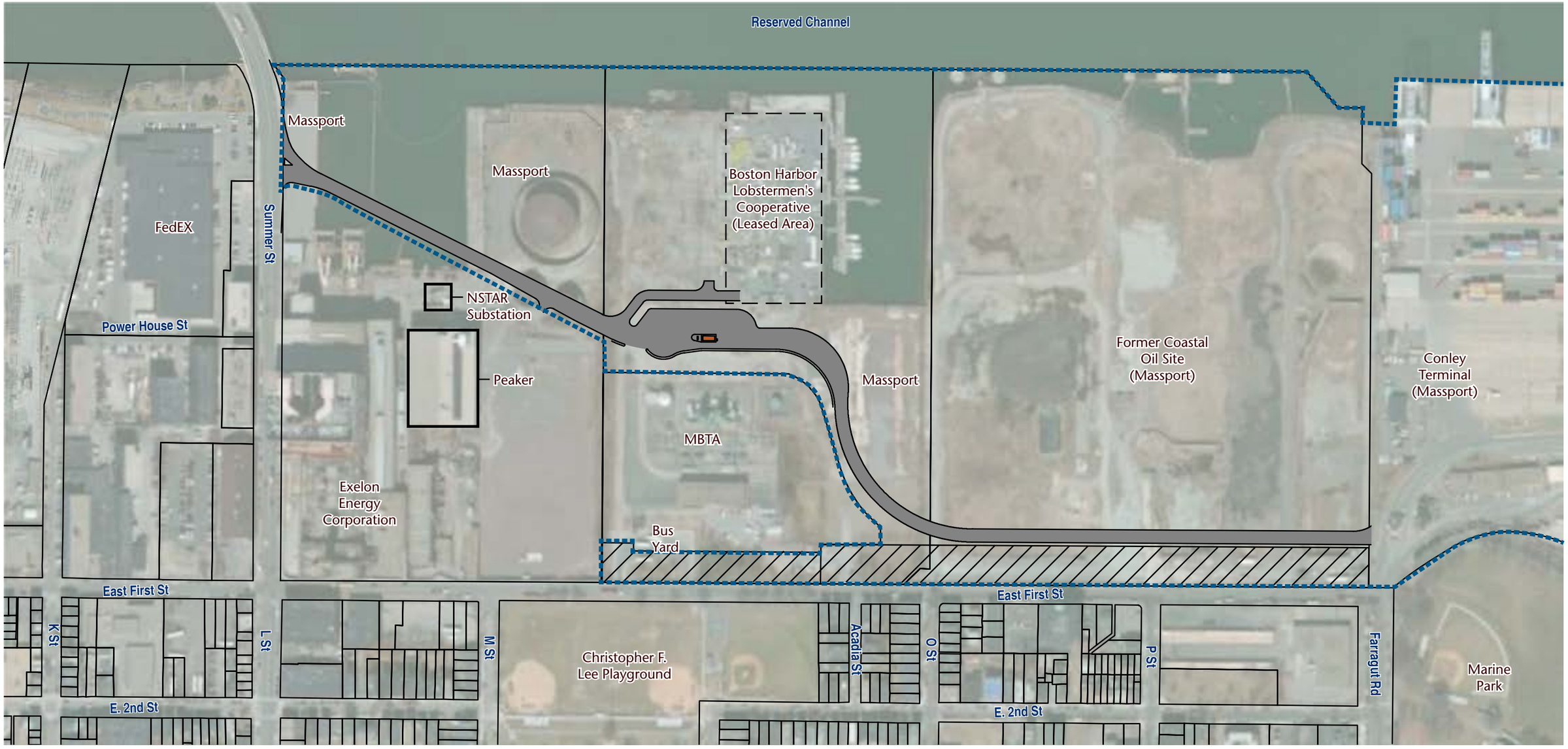

Conley Terminal Improvements

Figure 3-3

Property Ownership - Proposed

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area would be provided from Summer Street. The Corridor would also impact two of three abandoned oil containers on the Exelon Site. The DFC would not impact personnel and vehicle access by Exelon and NSTAR staff to the site and has been designed to maintain the Exelon security perimeter. The DFC would not impact the public viewing area at the northern end of the Exelon parking area.

The Boston Harbor Lobstermen's Cooperative is currently leasing an area north of the MBTA site. The DFC includes an access point to their operations via a relocated driveway along the DFC. The Corridor would not affect the current and future operations of the Boston Harbor Lobstermen's Cooperative.

3.5.3 Buffer Open Space

As described in *Chapter 1, Introduction,* in 2010, Massachusetts passed legislation to create a buffer open space area between the proposed DFC and East First Street.[13] The legislation defined the area of the buffer as 100 feet in depth, measured from the northern side of the East First Street right-of-way, and 2,000 feet long, measured from Farragut Road to the MBTA-Exelon property boundary. The Buffer Open Space extends along East First Street from the MBTA parcel to the entrance of the Conley Terminal. Although the Buffer Open Space contains parking, any open space lost within the parking area is offset by the extension of the Buffer Open Space at the corner of Farragut Street. Specifically, the design of the Buffer Open Space provides approximately 8,600 square feet of additional landscaped area at the eastern end of the Buffer and along East First Street in the form of landscaped bump outs, outside the limits of the original Article 97-designated area.

The Buffer Open Space would provide an important passive recreational space to South Boston residents and the neighboring community. The Buffer would also provide attractive visual screening and noise attenuation for the multi-family residences along East First Street. Replacing this portion of the former Coastal Oil brownfield site with an open space amenity would have beneficial effects to land use by converting the brownfield site into a valuable community green space. The Buffer Open Space is consistent with goals and policies of the City of Boston's *Seaport Public Realm Plan*, which strives to "enhance the South Boston community."

This Buffer Open Space would also provide a safer, more visually appealing pedestrian link in the Boston Harborwalk.[14] While East First Street is currently designated as a segment of the Boston Harborwalk, the Buffer Open Space would provide a dramatically improved pedestrian experience for users of the Boston Harborwalk by providing a safer, visually appealing, and naturalistic setting for pedestrians. The Buffer Open Space would help provide a connection between the residential neighborhoods to the south and west of the Proposed Project to the existing three-mile segment of parkland and beach stretching along the South Boston shoreline between Castle Island, Pleasure Bay, the L Street Beach, and Carson Beach.

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13 Massachusetts General Law, Chapter 153, Section 6, 2010.
14 For a current map of the Boston Harborwalk, refer to Boston Harborwalk Map.at http://www.bostonharborwalk.com/placestogo/location.php?nid=6. Accessed September 2012.

The parking area provided at the Buffer Open Space will also help to serve both park users and for users of the ballfields across East First Street at the Christopher Lee Playground.

3.6 Summary

The Conley Terminal Improvements would not change the current industrial land use within the Project Area and would have beneficial impacts to land use because the former Coastal Oil site, which is currently a brownfield, would be redeveloped for port uses and public open spaces enhancing the usefulness of the land for port and community activities. The expansion of Conley Terminal activities onto the Coastal Oil site is consistent with state regulations specifically intended to support maritime use in this area, is consistent with Coastal Zone Management (CZM) policies and supports the Designated Port Area (DPA), which would become more active and supportive of the industrial waterfront uses. The two mitigation elements, the DFC and the Buffer Open Space, would have very positive land use effects. The Conley Terminal Improvements, the DFC, and the Buffer Open Space are consistent with the goals of the *Port of Boston Economic Development Plan* (1996) and the *South Boston Seaport Public Realm Plan* (1999) to enhance and support the industrial uses of this port. The Proposed Project is also consistent with the South Boston Waterfront District Municipal Harbor Plan's goal to "preserve and enhance the industrial port and balance the growth of mixed use and recreational activity along Boston Harbor with the needs of maritime commerce."

4

Wetlands and Coastal Resources

4.1 Introduction

The Project Area is located on the southern shoreline of Boston's Reserved Channel and includes a combination of upland industrial, shipping and energy related developed areas, land subject to tidal action and a water sheet contiguous with Boston Harbor. The Project Area contains state and federally-regulated coastal wetland resource areas, is located on filled tidelands and is within the Massachusetts Coastal Zone and the South Boston Designated Port Area (DPA). The Project Area is located within the planning boundaries for the 2000 South Boston Waterfront District Municipal Harbor Plan.

This chapter describes the Project Area's existing conditions, the project's potential impacts and proposed mitigation measures related to state and federally regulated wetlands and coastal resources. The Proposed Project's compliance with applicable state and federal regulations is described.

The Massachusetts Environmental Policy Act (MEPA) regulations at 301 CMR 11.03(3)(a) establish Environmental Notification Form (ENF) and Environmental Impact Review (EIR) review thresholds for projects altering state-regulated wetlands or coastal resource areas. The MEPA regulations at 301 CMR 11.03(3)(b) require an ENF and other MEPA review if required by the Secretary for projects that result in specific coastal resources impacts. This Project requires an ENF filing because it proposes the alteration of Coastal Bank for the construction of the bridge abutments. The Project does not exceed any other MEPA review threshold.

While the Proposed Project is located on filled tidelands, no Waterways license is required because the water-dependent industrial activities undertaken by Massport at this facility are exempt from licensing under the M.G.L. Chapter 91 by the Massachusetts Port Authority Enabling Act.[15]

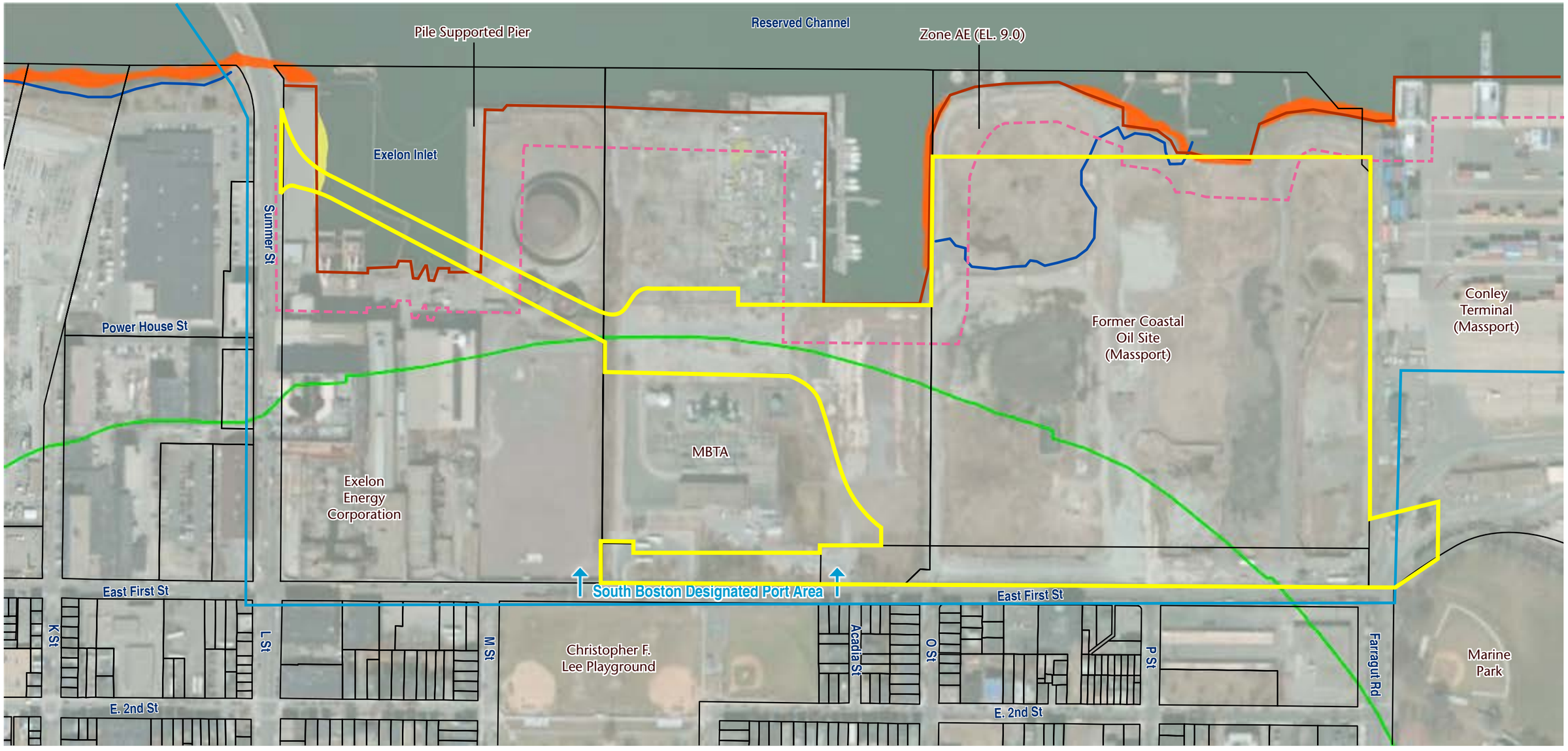
15 Massachusetts General Law, Part I, Title XIV, Chapter 91 Waterways.

4.2 Key Findings

- The Proposed Project results in limited unavoidable wetland and Coastal Beach impacts to Land Under the Ocean, Coastal Bank and Land Subject to Coastal Storm Flowage (LSCSF) for construction of a pile-supported bridge and site improvements.
- The Proposed Project requires an Order of Conditions and Army Corps of Engineers Permit (Category 2) but is exempt from licensing under M.G.L. Chapter 91 by the Massport exemption at 310 CMR 9.03(3)(a).
- The proposed bridge has been authorized by the U.S. Coast Guard under the Bridge Program's Advance Approval authority.
- Re-use of the former Coastal Oil Site for Conley Terminal supports the Designated Port Area (DPA), which would become more active and supportive of the industrial waterfront uses.
- The removal of portions of the existing steel and timber thermal barrier within the Exelon Inlet would result in environmental benefits, such as a net improvement in water circulation within the Inlet and better support the uses in the DPA.
- The Proposed Project would have a net beneficial effect on the Massachusetts Coastal Zone by maintaining and enhancing the capacity of the area to support water-dependent industrial activities. The expansion of operations will allow Conley Terminal to remain competitive into the future while also supporting the goals of the Massachusetts Coastal Zone Act and its associated DPA.

4.3 Affected Environment

For the purposes of this ENF, the Project Area (the area in which construction would occur) is the former Coastal Oil site now owned by Massport, the footprint (and property acquisitions) required for the Dedicated Freight Corridor (DFC) and the area to be occupied by the Buffer Open Space (Figure 2-2). The Project Area covers approximately 40 acres in a heavy to light industrial area on the South Boston waterfront. Figure 4-1 shows the existing coastal resources within and adjacent to the Project Area. There is one water inlet to Boston Harbor within the Exelon Site within the Project Area. North of the Project Area is another inlet separating the former Coastal Oil site and the Boston Lobsterman's Cooperative property. The Project Area is located within the Massachusetts Coastal Zone, the South Boston DPA and contains filled tidelands. State and federally regulated wetlands within the Project Area are limited to the project shoreline, the waters of the Exelon Inlet and areas subject to flooding during the statistical 100-year storm event. A state-regulated 100-foot buffer zone to Coastal Bank extends along the project shoreline and is present within each of the project subareas. The following sections describe each of the subareas.



Source: MassDEP and U.S. Coast Survey Plan of the Inner Harbor of Boston, 1847
All elevations NAVD 88

- Project Area
- Land Subject to Coastal Storm Flowage
- Coastal Bank
- 100-Foot Buffer Zone
- Historic Mean High Water
- South Boston Designated Port Area
- Coastal Beach*
- Rocky Intertidal Shore*

0 125 250 Feet

Conley Terminal Improvements

Figure 4-1

Existing Coastal Resources

massport

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4.3.1 Former Coastal Oil Site

The former Coastal Oil site is adjacent to Conley Terminal and is a former fuel oil storage facility. The site contains the state-regulated resource areas Coastal Bank and LSCSF. Federal wetland jurisdiction (waters of the U.S.) is present along the water's edge to the mean annual high water mark (El. 4.63 FT NAVD88 above mean sea level).[16]

4.3.2 Exelon Facility and Inlet

The Exelon facility is a 24-acre parcel consisting of developed land and an inlet to Boston Harbor at the western end of the Project Area, adjacent to Summer Street. The Project includes only an approximately 50-foot wide roadway corridor crossing this parcel.

The water sheet portion of the Exelon Site (the Exelon Inlet) was used for many years as a source for water intake and discharge used to generate steam for the turbines on the site, but is now no longer used. The Inlet is divided roughly in half by a timber and steel bulkhead built to provide thermal isolation between the intake and return water facilities. The original thermal barrier was of timber construction. Portions of the barrier were reinforced and/or replaced with steel sheeting at a later date. The barrier completely isolates the western 1.75 acres of water sheet it circumscribes. There are no openings in the barrier to allow vessels of any size to enter this enclosed portion of the water sheet. The eastern half of the Inlet is separated from the Reserved Channel by a floating boom intended to preclude private vessels from entering the property. This is a temporary float system anchored to the shoreline and the thermal barrier.

The western shoreline of the Inlet is a failing timber bulkhead that supports the adjacent Exelon parking lot. The southern shoreline contains two large abandoned water intake buildings and pump facilities. These substantial structures are located within the water sheet and are connected to the adjacent land by catwalks and large-diameter pipes. The shoreline adjacent to these intake structures and pump houses consists of granite blocks and rip-rap fill. The remainder of the southern shoreline consists of a combination of timber and steel bulkheads with a variety of water intake, discharge and drainage pipes. None of this equipment is currently in use.

The eastern shoreline of the Inlet contains a pile supported pier approximately 400 feet by 40 feet originally constructed to support coal and later fuel oil deliver by ships. The shoreline beneath the pier is placed stone rip rap.

The Exelon Site contains two land areas that directly border the Reserved Channel. These include approximately 85 linear feet of shoreline at the northern end of the Exelon parking lot adjacent to Summer Street and approximately 350 linear feet of

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16 National Oceanic and Atmospheric Administration: http://tidesandcurrents.noaa.gov/data_menu.shtml?stn=8443970 Boston, MA&type=Datums. Accessed June 2012.

shoreline east of the pier adjacent to the former oil tank yard. Both of these areas are separated from the waters of the Reserved Channel by a combination of steel and timber sheeting. The sheeting adjacent to both the parking lot and the former oil tank yard is in very poor condition with multiple holes allowing fill to erode into the Reserved Channel.

4.4 Coastal/Wetland Regulatory Jurisdictions

The Project Area contains coastal resources subject to federal and state jurisdictions requiring permits for construction, demolition or placement of fill and/or structures. The area's location within and adjacent to coastal waters places it within the geographic jurisdiction of the following federal and state statutes:

- Section 9 of the Rivers and Harbors Act (33 U.S.C. 403)
- Section 10 of the Federal Rivers and Harbors Act (33 U.S.C. 403)
- Section 404 of the Federal Clean Water Act (33 U.S.C. 1251 - 1376)
- Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, sec. 40)
- Massachusetts Clean Waters Act (M.G.L. Ch. 21. sec. 26-53)
- Massachusetts Coastal Zone Management Plan (M.G.L. Ch. 21A, sec. 2, 4A)
- Magnuson-Stevens Fishery Conservation and Management Act

The following sections describe the specific coastal resources present at the area subject to these statutes.

The Project is not subject to the Public Benefit Review established by Statute 2007, Chapter 168, Section 8 as codified in M.G.L. Chapter 91, Section 18A and administered under 301 CMR 13.00. because it consists entirely of water-dependent industrial uses or accessory uses thereto located on previously filled or flowed tidelands within the Port of Boston. Massport is exempt from Chapter 91. The approximate extent and location of coastal resources present at the site are shown on Figure 4-1.

4.4.1 Waters/Navigable Waters of the United States

The Project Area borders on Navigable Waters of the United States along its entire shoreline (refer to Figure 4-1). This coastal resource is regulated by the United States Rivers and Harbors Act of 1899 and Federal Water Pollution Control Act (the Clean Water Act).

The coastal resources extending from mean high tide, El. 4.63 feet[17] (NAVD88) above mean sea level seaward to the property line meet the regulatory criteria for "waters

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17 National Oceanic and Atmospheric Administration: http://tidesandcurrents.noaa.gov/data_menu.shtml?stn=8443970 Boston, MA&type=Datums

of the United States" under the Clean Water Act (33 U.S.C. 1251). This area also meets the criteria for navigable waters of the United States under the Section 10 of the Rivers and Harbors Act pursuant to 33 CFR 328 and "navigable waters of the United States" as defined by 33 CFR 329. This status as a navigable water extends to the entire water sheet of the Exelon Inlet including beneath existing pile-supported structures, the bulkhead wall under the wharf, adjacent to the water intake structures and the entire area partitioned by the existing timber and steel sheet thermal barrier. Pursuant to the regulations at 33 CFR 329.9(a), the entire water sheet of the Inlet is subject to federal jurisdiction as navigable waters because, prior to construction of the thermal barrier, the partitioned water sheet was navigable and capable of serving interstate or foreign commerce.

4.4.2 Essential Fish Habitat

Boston Harbor, including the Reserved Channel, has been mapped by the National Oceanic and Atmospheric Administration as containing Essential Fish Habitat (EFH) for 23 fish species.[18] The U.S. Army Corps of Engineers (USACE) reviews potential impacts to EFH during its permitting review to ensure compliance with the Magnuson-Stevens Fishery and Conservation Management Act. The Act requires that projects minimize to the extent practicable adverse effects on EFH. The Exelon Inlet is unlikely to provide such habitat due to the thermal barrier and the probable presence of oil and hazardous materials in sediments. The adjacent Reserved Channel does not have EFH habitat functions and values that are capable of providing "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Reserved Channel lacks many of the attributes that sustain a healthy, stable and viable population of fish at any life stage. The low potential for the Proposed Project area to contain EFH would be confirmed during consultation with the National Marine Fisheries Service as part of the USACE permitting process.

4.4.3 Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, sec. 40)

The Project Area contains coastal wetland resources subject to protection under the Massachusetts Wetlands Protection Act (M.G.L. Chapter 131, sec. 40) and the Massachusetts Wetlands Regulations (310 CMR 10.00). This jurisdiction, administered locally by the Boston Conservation Commission, includes the resource areas present within the Project Area:

- Land Under the Ocean
- Coastal Bank
- Land Subject to Tidal Action

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18 National Oceanic and Atmospheric Administration Summary of Essential Fish Habitat Designation: http://www.nero.noaa.gov/hcd/STATES4/CapecodtoNH/42207100.html

- Coastal Beach
- Rocky Intertidal Shores

- Land Subject to Coastal Storm Flowage (LSCSF)

The following sections describe the coastal resource areas based on available data and observations. The delineation of specific resource areas is subject to the approval of the Boston Conservation Commission during permitting. The approximate location and extent of coastal resources present at the Project Area are shown on Figure 4-1.

4.4.3.1 Land Under the Ocean

As defined in 310 CMR 10.25(2), Land Under the Ocean "means land extending from the mean low water line seaward to the boundary of the municipality's jurisdiction and includes land under estuaries."

Land Under the Ocean exists within the Inlet and the Reserved Channel seaward of the existing mean low water mark (El -5.17 FT NAVD88).[19] The entire Inlet and Reserved Channel below mean low water contains this resource area.

According to data maintained by the Massachusetts Online Data Viewer (OLIVER), the Project Area is not within mapped eelgrass bed or shellfish suitable areas.

4.4.3.2 Coastal Bank

As defined in 310 CMR 10.30(2), Coastal Bank "means the seaward face or side of any elevated landform other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action or other wetland."

Coastal Bank is present along the shoreline of the entire Project Area including the coastal inlets, seawalls, riprap slopes and man-made structures that normally abut and confine the waterbody. The "elevated landform" varies across the Project Area and consists of stone rip rap, filled slopes, concrete bulkheads and steel and timber sheeting. Coastal Bank in the vicinity of the proposed DFC bridge consists of dilapidated steel and timbers bulkhead on the western shoreline and a concrete bulkhead/retaining wall beneath a pile supported pier on the eastern shore.

4.4.3.3 Land Subject to Tidal Action

As defined by 310 CMR 10.04, "Land Subject to Tidal Action means land subject to the periodic rise and fall of a coastal water body, including spring tides."

Land Subject to Tidal Action extends from Extreme Low Water (defined by NOAA as Mean Lower Low Water), El. -5.52 FT (NAVD88) to Extreme High Water (defined by

19 NOAA Tides and Currents. http://tidesandcurrents.noaa.gov/data_menu.shtml?stn=8443970 Boston, MA&type=Datums

NOAA as Mean Higher High Water), El. 4.77 FT (NAVD88) occurring during spring tides and therefore includes the resources Coastal Beach and Rocky Intertidal Shores. This resource is present along the entire shoreline of the Project Area. The landform for Land Subject to Tidal Action at the Project Area includes granite blocks, stone rip-rap, coastal beach, and concrete and steel structures. The following sections describe Coastal Beach present at the Project Area and a review of the Rocky Intertidal Shores definition confirming it is not present.

Coastal Beach

As defined in 310 CMR 10.27(2), Coastal Beach "means unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and included tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bank line or the seaward edge of existing manmade structures, when these structures replace one of the above lines."

An area meeting the definition of Coastal Beach is present along the water's edge in the western portion of the Project Area within the Exelon Inlet enclosed by the existing timber and sheet pile thermal barrier (Figure 4-1). The coastal beach is not naturally occurring and appears to consist of stony gravel and other fill material eroded from behind the failing timber bulkhead at the edge of the water sheet. It extends from mean low water (MLW) to the timber bulkhead. The extent of coastal beach has not been field delineated but is evident in aerial photographs and is identified on Massachusetts Department of Environmental Protection (DEP) published wetland resource area maps (Source: MassGIS).

Rocky Intertidal Shores

As defined in 310 CMR 10.31(2), Rocky Intertidal Shores "means naturally occurring rocky areas, such as bedrock or boulder-strewn areas between the mean high water line and the lean low water line."

Rocky Intertidal Shores have been mapped by the DEP along the project shoreline in the vicinity of the bridge abutments where the Summer Street Bridge crosses the waters of Boston Harbor at the western edge of the Reserved Channel, along the edge of the former Coastal Oil site and adjacent portions of the Conley Terminal.The mapped Rocky Intertidal Shore(s) extend from MLW to MHW in these areas. Since the definition cited above requires Rocky Intertidal Shores to be naturally occurring, and the rocky shores at the Project Area are all filled slopes and placed riprap, these areas do not meet this regulatory definition and would ultimately be regulated only as Land Subject to Tidal Action, not the more ecologically significant resource area Rocky Intertidal Shores.

4.4.3.4 Land Containing Shellfish

As defined in 310 CMR 10.34(2), Land Containing Shellfish "means land under the ocean tidal flats, rocky intertidal shores, salt marshes and land under salt ponds when such land contains shellfish.

As established by 310 CMR 10.34(3), such lands are significant to the protection of land containing shellfish and the protection of marine fisheries when it has been identified and mapped by the conservation commission or the Department in consultation with Division of Marine Fisheries or the local shellfish constable.

The most recently available Shellfish Growing Area Map[20] published by the Massachusetts Division of Marine Fisheries identifies the entire Reserved Channel, including the water sheet of the Exelon Site as closed to shellfishing. Therefore the Project Area does not contain the resource area Land Containing Shellfish. Mussel species (*Mytilus* sp.) were observed on the bulkheads and other structures and evidence of mussel predation by gulls was observed on the pier. However, these observations do not indicate the presence of the state-regulated resource area Land Containing Shellfish.

4.4.3.5 Land Subject to Coastal Storm Flowage (LSCSF)

As defined in 310 CMR 10.04, LSCSF "means land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge or record or storm of record, whichever is greater."

According to the most recently issued Flood Insurance Rate Map, the Project Area includes two locations subject to coastal flooding during the 100-year storm event. These areas, shown on Figure 4-1 include:

1. Exelon Inlet: An AE Zone with a base flood elevation of 9.0 FT (NAVD88) located along the edges of the Exelon Inlet. The LSCSF zone does not extend above the bulkheads onto the land.
2. Coastal Oil Site: An AE Zone with a base elevation of 9.0 FT (NAVD88) located in the northwest corner of the former Coastal Oil site.

4.4.4 Massachusetts Coastal Zone

The entire Project Area is located within the Massachusetts Coastal Zone established pursuant to the Federal Coastal Zone Management Act of 1972 and administered by the Massachusetts Office of Coastal Zone Management (CZM) under M.G.L. Chapter 21A, sec. 2 and 4A and the regulations at 301 CMR 21.00. The Project Area is also located with the CZM-established South Boston DPA subject to the regulations at 301 CMR 25.00. The locations of this boundary is shown on Figure 4-1.

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20 Massachusetts Division of Marine Fisheries, Designated Shellfish Growing Areas. Map GBH4, Issued September 10, 2009. Source: http://www.mass.gov/dfwele/dmf/programsandprojects/shellfish/gbh/gbh4.pdf

The purpose of the Coastal Zone Management Program is to ensure that applicable projects 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 Massachusetts Coastal Zone Management Plan and applicable regulations identify DPAs as geographic areas of particular state, regional and national significance with respect to the promotion of commercial fishing, shipping, and other vessel-related activities associated with water borne transportation or access to the water.

The CZM Program encourages water-dependent industrial use within DPAs and prohibits, on tidelands subject to M.G.L. Chapter 91, other uses except for compatible public access and temporary uses that can occur without detriment to the capacity of the DPA to accommodate water-dependent industrial uses in the future.

4.5 Environmental Consequences

This section describes the potential impacts to coastal resource areas for each project element, including the Conley Terminal Improvements, the DFC, and the Buffer Open Space.

4.5.1 Conley Terminal Improvements

The potential for adverse impacts to coastal resources on the former Coastal Oil site resulting from the Conley Terminal improvements are negligible because no work would be required within coastal wetland resource areas other than LSCSF. Improvements would be limited to existing developed land and would not result in any adverse impacts to state or federally regulated resource areas. Minor activities may be required within the coastal floodplain or buffer zone areas but would not result in any direct or indirect impacts to additional coastal resource areas. The improvements would stabilize the site and improve the quality of stormwater runoff.

No work is required seaward of the top of Coastal Bank, and no direct or indirect impacts are anticipated. Work within the 100-foot buffer zone to Coastal Bank is expected to be limited to approximately 5,000 square feet of previously developed land along the western edge of the former Coastal Oil site. Potential impacts to adjacent resource areas would be avoided through the use of site perimeter erosion controls. These construction-period erosion controls will also better stabilize the site and improve the water quality of stormwater.

Work within LSCSF would be required within the areas of Conley Terminal and the former Coastal Oil site below the mapped base flood elevation. The work would not result in any adverse impacts to Boston Harbor or any adjacent land area because the displacement of floodwaters in coastal settings does not result in incremental flooding of adjacent land.

All work within 100 feet of Coastal Bank would be designed, constructed and operated to avoid, minimize and mitigate direct and indirect impacts to wetland resource areas and water quality in Boston Harbor. Construction activities within the

100-foot buffer zone on the former Coastal Oil site are expected to occur within 20 feet of the top of Coastal Bank and result in improvements to the landside and coastal resources. No adverse impacts are anticipated to these resources.

The Conley Terminal Improvements would result in a net improvement to the use of filled tidelands present within the Project Area by converting an abandoned tank farm and contaminated site to a functioning, well-managed container port within an existing DPA. By converting the contaminated site into an extended area of the Conley Terminal, water quality is improved and the contaminants on the site that may have originally caused harm to the environment are remediated and no longer pose a threat. For further details on hazardous materials and the remediation of the Coastal Site, please refer to *Chapter 9, Hazardous Materials*. The conversion would also result in a net improvement in the capacity of the area to further the goals of the Massachusetts Coastal Zone Management Plan and the South Boston DPA.

4.5.2 Dedicated Freight Corridor

The DFC bridge would cross the Exelon Inlet at an angle to minimize potential impacts to existing shoreline structures and electric utility infrastructure along the Inlet's shoreline. The two-lane bridge would be supported by five pile bents and concrete abutments on the shore.

Although there will be the need to place pilings within the Inlet, the pile-supported bridge design was selected because it avoided the need to place fill within Boston Harbor and minimized the potential for interrupting water circulation within the Inlet. According to the USACE, pilings are not considered fill, therefore, are not regulated as such. As described in Section 2.3.3, the bridge alternative was selected over a land-based alternative to avoid substantial and costly impacts to existing buildings, water intake structures and electric utility infrastructure on the Exelon Site. Additionally, the land-based alternative would have included substantial construction-related impacts to the shoreline and the placement of fill in Boston Harbor.

The Proposed Project would not have a substantial adverse effect on EFH, as the Exelon Inlet and adjacent Reserved Channel lacks the attributes required for EFH. By removing the existing sheet piling, the project would have a beneficial effect on fish within the Reserved Channel by expanding the available habitat.

The proposed roadway would result in the following direct and unavoidable impacts to Boston Harbor:

- Remove approximately 200 linear feet of the existing obsolete steel and timber thermal barrier which divides the Inlet;
- Remove a portion of the existing concrete pier and supporting piles on the eastern shore of the Inlet to construct a new abutment;
- Remove a portion of the existing dilapidated steel and timber bulkhead on the western shoreline of the Exelon Inlet to construct a new abutment; and,
- Install steel piles within the water sheet of the Exelon Inlet to Boston Harbor.

The footprint of the proposed roadway is shown on Figure 4-1 in the context of existing coastal resources.

The construction of the DFC bridge across the Exelon Inlet would result in unavoidable impacts to state-regulated Coastal Wetland Resource Areas under the jurisdiction of the Massachusetts Wetlands Protection Act requiring an Order of Conditions. Table 4-1 lists these impacts by resource.

Table 4-1 Wetland Impacts – DFC

Resource Area	Preferred Alternative
Land Under the Ocean	1,000 SF
Land Subject to Tidal Action: Coastal Beach	925 SF
Coastal Bank	200 LF
Land Subject to Coastal Storm Flowage	2,300± SF

The estimated impacts to Coastal Bank along the western shoreline of the Exelon Inlet assume the existing fill and bulkhead are stable and may remain in place following construction of the DFC. If this fill is determined to be unstable, additional sections of this man-made Coastal Bank would need to be removed and stabilized, likely by a stone riprap slope.

The Project Area does not contain any vegetated wetlands and alteration of Land Under the Ocean would be approximately 1,000 square feet for placement of pilings. No dredging is proposed and the project meets the conditions for coverage under the USACE's General Permit for Massachusetts. Therefore, the project does not require individual review for Water Quality Certification.

The proposed DFC would result in direct and indirect impacts to the Massachusetts Coastal Zone and South Boston DPA by the proposed bridge across the Exelon Inlet of Boston Harbor. The removal of obsolete structures described above will be a positive impact. Potential DFC impacts to the DPA are expected to be negligible because of the substantial existing obstacles to using the southern shoreline of the Exelon Inlet for vessel loading or off-loading under existing conditions. In fact, the DFC itself will greatly improve access to Massport and other uses in the DPA. The proposed bridge configuration minimizes impacts to the berth on the Inlet's eastern shoreline. The construction of the road/bridge would have a negligible effect on the capacity for water intake and discharge operations at the site because the structure would be pile supported and would not result in any fill within the water sheet except for the area of the pilings. By returning the abandoned former Coastal Oil site brownfield into a working area that can be utilized for Conley Terminal, the DPA becomes more active and supportive of the industrial waterfront uses.

One effect on the use of the Exelon Site resulting from the construction of the DFC is the future isolation of land within the South Boston DPA from direct waterfront access, reducing its potential to support water-dependent industrial uses. However, the majority of the land is already isolated from the waterfront by the Exelon and Nstar power generation facilities and does not support water-dependent uses. With construction of the DFC, portions of the DPA would be better connected to the area

road system and portions of the eastern side of the Exelon Inlet would remain accessible under potential Massport ownership.

4.5.3 Buffer Open Space

The Buffer Open Space would consist of an approximately 100-foot wide corridor along East First Street. The Buffer Open Space would be a minimum of 500 feet landward of any state-regulated wetland resource areas or buffer zone. No direct or indirect impacts to any coastal wetland resource areas are anticipated.

4.6 Beneficial Measures

The Project would include measures, when appropriate, to offset unavoidable impacts to coastal wetland resource areas subject to the federal Clean Water Act, Massachusetts Wetlands Protection Act and to the Massachusetts Coastal Zone and South Boston DPA. Measures would include short-term construction-related procedures designed to avoid direct impacts to regulated wetland resource areas and long-term design elements. These measures are expected to enhance and expand the capacity of the South Boston DPA to support water-dependent industrial uses. This section describes these proposed measures.

Short-term construction-related mitigation measures would include a variety of site and erosion control measures to physically isolate the planned construction activities from the coastal wetland resources and the waters of Boston Harbor, including:

- Perimeter fencing
- Limit of work barriers
- Hay bales and silt fence
- Floating silt and debris booms for the in-water work
- Temporary soil stockpile controls
- Temporary seeding
- Temporary stormwater basins
- Catch basin inlet protection
- Time of year restrictions on in-water work, if required by Massachusetts Division of Marine Fisheries or USACE.

Long-term benefits of the Proposed Project include:

- Net improvement in water circulation within the Exelon Inlet due to the removal of portions of the existing steel and timber thermal barrier;
- Overall improvement of water quality through the remediation of the former Coastal Oil contaminated site; and
- Re-use of the former Coastal Oil Site for Conley Terminal supports the DPA, which would become more active and supportive of the industrial waterfront uses.

4.7 Regulatory Compliance

The Project has been designed to comply with all applicable local state and federal permits and regulations by avoiding and minimizing potential impacts to coastal resources and mitigating impacts that are unavoidable. The following sections describe how the Proposed Project complies with each applicable regulatory program.

4.7.1 Department of the Army Permit

The Project would require a permit from the USACE because it would include the placement of structures within waters of the United States and navigable waters of the United States. Rebuilding retaining walls adjacent to the bridge abutments would not constitute the placement of fill.

The proposed alternative is eligible for USACE authorization under the Programmatic General Permit for Massachusetts, as modified July 28, 2011 (General Permit), subject to USACE confirmation. The General Permit allows the USACE to approve certain projects that do not exceed established limits on fill, avoid impacts to Special Aquatic Sites[21] and avoid adverse impacts on navigation provided they undergo Massachusetts Wetland Protection Act review.

The DFC, located in part in navigable waters, is subject to review under the criteria contained in Appendix A, Section II of the General Permit. These criteria allow the USACE to issue a Category 2 permit for projects which do not exceed the following applicable standards:

(a) Fill: less than 1 acres waterway fill and secondary waterways impacts.

(c) Dredging/excavation and associated disposal: less than 25,000 cubic yards.

(f) Miscellaneous: Structures or fill in or affecting tidal or navigable waters not previously defined, including bridges.

The DFC includes structures within the Exelon Inlet to support the bridge crossing and therefore requires a USACE permit under Section 10. The bridge would be supported by concrete abutments constructed on the Exelon Inlet shoreline. The USACE regulations define fill as the placement or replacement of any unconsolidated material within a water of the United States. The abutment construction and bulkhead replacement in the vicinity of the bridge may require temporary shoring, excavation and replacement of fill at the water's edge. This would be regulated as fill under Section 404 of the Clean Water Act. The regulations at 33 CFR 323.3(c)(2) state that the placement of pilings in waters of the United States that do not have the effect of a discharge of fill materials and would not by themselves require a Section 404 permit.

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21 Special Aquatic Sites (SAS) are identified at 40 CMR 230.40-230.45 and defined at 40 CFR 230.4(q-i) as significantly influencing or positively contributing to the general overall environmental health or vitality of the entire ecosystem or region.

If during construction, additional sections of the fill slope and bulkhead on the western shoreline of the Exelon Inlet must be stabilized, some additional fill is possible along this slope, potentially seaward of the existing high tide line. The placement of fill seaward of the existing fill slope would be avoided and minimized to the extent practicable as required by the USACE regulations.

4.7.1.1 Section 9 of the Rivers and Harbors Act

Section 9 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) prohibits the construction of any bridge, dam, dike or causeway over or in navigable waterways of the United States without Congressional approval. Administration of Section 9 has been delegated to the Coast Guard. Structures authorized by State legislatures may be built if the affected navigable waters are totally within one State, provided that the plan is approved by the Chief of Engineers and the Secretary of Army (33 U.S.C. 401).

The United States Coast Guard administers Section 9 of the Rivers and Harbors Act under its bridge permitting program. Under this authority, the Coast Guard approves the location and plans of bridges and causeways and imposes any necessary conditions relating to the construction, maintenance, and operation of these bridges in the interest of public navigation.

A bridge permit is the written approval of the location and plans of the bridge or causeway to be constructed or modified across a navigable waterway of the United States. Any individual, partnership, corporation, or local, state, or federal legislative body, agency, or authority planning to construct or modify a bridge or causeway across a navigable waterway of the U.S. must apply for a Coast Guard bridge permit in accordance with 33 CFR 115.50.[22]

On April 13, 2012, the United States Coast Guard approved the construction of the proposed bridge crossing as an Advance Approval pursuant to the authority granted by 33 CFR 115.70. Please refer to Appendix A. Accordingly, no further review under Section 9 is required.

4.7.1.2 Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act prohibits the construction of any wharf, pier, dolphin or other structure within navigable waters of the United States except as approved by the Chief Engineer of the Department of the Army (now the Army Corps of Engineers) (33 U.S.C. 401). The discharge of dredged or fill material into waters of the United Stated is regulated by the USACE under Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1251-1376).

The USACE has issued a Programmatic General Permit for Massachusetts to authorize certain projects under Section 10 of the Rivers and Harbors Act and

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22 "Bridge Permit Application Guide" Document: COMDTPUB P16591.3C. U.S. Coast Guard Office of Bridge Programs, Department of Homeland Security, October 2011.

Section 404 of the Clean Water Act. While these approvals have separate statutory authority, they are administered by the USACE as a single permit.

The proposed DFC would require a Section 10 permit, and meets the definition of the General Permit Section II, Navigable Waters, Category 2 (f)(1) as "structures or work in tidal or navigable waters… including….bridges". The DFC would require approval by the USACE as described above.

4.7.1.3 Essential Fish Habitat

The USACE reviews potential impacts to Essential Fish Habitat (EFH) during its permitting review to ensure compliance with the Magnuson-Stevens Fishery and Conservation Management Act. The Act requires that projects minimize to the extent practicable adverse effects on EFH. This requirement typically results in restrictions on demolition and construction methods and time of year restrictions for in-water work to minimize potential impacts to EFH.

Boston Harbor, including the Reserved Channel and the Exelon Inlet is mapped as EFH for 23 fish species[23]. The Exelon Inlet is unlikely to provide such habitat due the presence of the thermal barrier and the likely presence of oil and hazardous materials in sediments. As the adjacent Reserved Channel does not have EFH habitat functions and values that are capable of providing "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" and lacks many of the attributes that sustain a healthy, stable and viable population of fish at any life stage, the Proposed Project would not have a substantial adverse effect on EFH. The Proposed Project would meet the USACE requirements to avoid impacts to EFH because of the limited extent of suitable habitat at the site, time of year restrictions and limitations on methodologies for in-water work, as may be required. Further coordination with Massachusetts Division of Marine Fisheries and National Oceanic and Atmospheric Administration-National Marine Fisheries Services (NOAA-NMFS) will occur during final design.

4.7.2 U.S. Coast Guard Bridge Permit

The Project includes a new bridge over navigable waters of the United States. Section 9 of the Rivers Harbors Act codified as 33 U.S.C. 401 requires the U.S. Coast Guard to approve the construction of any bridge or causeway over navigable waters of the United States.

Coast Guard regulations at 33 CMR 115.70 authorizes the advance approval of bridges over certain navigable waters not actually navigated. This regulation states:

> *"(a) The General Bridge Act of 1946 requires the approval of the location and plans of bridges prior to start of construction (33 U.S.C. 525). The Commandant has given his advance approval to the location and plans of bridges to be constructed across reaches of*

▼

23 National Oceanic and Atmospheric Administration Summary of Essential Fish Habitat Designation: http://www.nero.noaa.gov/hcd/STATES4/CapecodtoNH/42207100.html

waterways navigable in law, but not actually navigated other than by logs, log rafts, rowboats, canoes and small motorboats. In such cases the clearances provided for high water stages would be considered adequate to meet the reasonable needs of navigation."

Massport has consulted with the Coast Guard's Bridge Program requesting confirmation of the project's potential requirements under Section 9 and the Advance Approval provisions. Based on the alternatives described in this ENF, the District Commander for the First Coast Guard District has determined, in accordance with these regulations, that a formal Coast Guard Bridge Permit would not be required. A copy of the Coast Guard's determination in this matter is provided in Appendix A.

4.7.3 Massachusetts Water Quality Certificate

The Massachusetts 401 Water Quality Certificate Program was established to meet the Commonwealth's obligations to enforce Section 401 of the Federal Clean Water Act and is implemented by the Massachusetts DEP under the regulations at 314 CMR 9.00. These regulations require the state to certify that proposed discharges of dredged or fill material, dredging and dredged material disposal in waters of the United States comply with the applicable Surface Water Quality Standards and other applicable state law.

The Proposed Project does not exceed any of the Wetlands Protection Act thresholds, meets the criteria established by 314 CMR 9.03, does not require an Individual Section 404 permit and therefore does not require an Individual 401 Water Quality Certificate.

4.7.4 Massachusetts Wetlands Protection Act

The project would require an Order of Conditions under the Massachusetts Wetlands Protection Act because construction of the DFC and construction on the Coastal Site requires work which would remove, fill, dredge or alter areas subject to protection under the regulations at 310 CMR 10.00. The following section describes the performance standards for potential work in affected resource area and how the proposed project would comply with each standard.

4.7.4.1 Land Under the Ocean (310 CMR 10.25)

Projects which affect Land Under the Ocean shall, if water-dependent, be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water dependent, have no adverse effects, on marine fisheries or wildlife habitat caused by:

a) Alterations in water circulation;

b) Destruction of eelgrass (*Zostera marina*) or widgeon grass (*Ruppia maritima*) beds;

c) Alterations in the distribution of sediment grain size;

d) Changes in water quality, including, but not limited to, other than natural fluctuations of dissolved oxygen, temperature or turbidity, or addition of pollutants; or

e) Alterations of shallow submerged lands with high densities of polychaetes, mollusks or macrophytic algae.

By bridging the Exelon Inlet on a pile supported structure, the Proposed Project avoids nearly all potential impacts to Land Under the Ocean and therefore complies with these regulations. The proposed bridge would be constructed on five pile bents occupying an aggregate footprint of approximately 1,000 square feet of Land Under the Ocean. The selection of a pile-supported design avoids the placement of structural (solid) fill within Boston Harbor and minimizes the potential for alteration of water circulation or destruction of any benthic habitat in Land Under the Ocean. The removal of portions of the existing steel and timber thermal barrier would result in a net improvement in water circulation within the Inlet.

4.7.4.2 Land Subject to Tidal Action/Coastal Beach (310 CMR 10.27)

The Proposed Project would cross an area defined as Coastal Beach on the western shoreline of the Inlet. The Project would not result in an adverse effect by increasing erosion or decreasing the volume or changing the form of this Coastal Beach for the following reasons:

- The unconsolidated sediment making up the beach within the Exelon Inlet is not the result of natural accretion, rather it was created by the failure of the adjacent steel and timber bulkhead supporting the adjacent parking lot;
- This area is within an enclosed water sheet surrounded by steel and timber sheeting, significantly reducing – or eliminating – the potential for the beach to serve as a sediment source or sink for adjacent areas of Boston Harbor or the Reserved Channel. Accordingly, there is no down drift coastal beach.
- The proposed bridge includes abutments constructed landward of the limit of Coastal Beach. These structures would replace the existing steel and timber bulkhead within the road section. The adjacent area of the existing bulkhead would be shored up and maintained to avoid erosion of the adjacent filled parking lot/shoreline. During construction, Massport may determine that it is necessary to reconstruct a larger segment of this bulkhead.

The Project would not result in any adverse impacts to this artificial beach in the Exelon Inlet or any nearby beach. No beach nourishment is anticipated.

4.7.4.3 Coastal Bank (310 CMR 9.30)

The Coastal Bank within the Project Area consists of filled rocky slopes and manmade coastal engineering structures. These sections of Coastal Bank are presumed to be significant to storm damage prevention and flood control because

they are vertical buffers to stormwaters. The regulations at 310 CMR 10.30(6) establish the following performance standard for Coastal Banks:

"Any project on such coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank."

The project design would result in a net improvement to the stability of the coastal bank by replacing a portion of the dilapidated steel and timber bulkhead on the western shoreline of the Exelon Inlet with a concrete bridge abutment and stone riprap protection. The Project would improve the stability of coastal bank at the Project Area.

4.7.4.4 Land Subject to Coastal Storm Flowage (LSCSF)

The wetlands regulations at 310 CMR 10.00 do not contain performance standards for work in LSCSF.

4.7.4.5 Work within 100 Feet of Coastal Bank or Coastal Beach

The wetlands regulations at 310 CMR 10.00 require construction activities within 100 feet of Coastal Bank or Coastal Beach be reviewed by the local conservation commission to ensure that such work is designed and constructed to avoid wetland alteration. Impacts to the man-made Coastal Bank and Coastal Beach during construction in the 100-foot buffer zone would be avoided through the use of perimeter erosion controls, and clearly defined limits of work. Construction activities in the buffer zone would be phased and staged in a manner that avoids unnecessary site disturbance or stockpiling of soils in these areas.

4.7.5 Chapter 91 Waterways

Massachusetts General Law Chapter 91 and the Massachusetts Waterways Regulations (310 CMR 9.00) require a state-issued license for the construction, reconstruction, demolition, excavation, placement of fill or changes in use to any flowed tidelands or any filled land located seaward of the historic mean high water mark. Waterways licenses are issued to protect the public's traditional rights to fish fowl and navigate within tidal waters. Massport is exempt from Chapter 91. The DFC would require the removal of obsolete and derelict structures on the Exelon property that are currently covered by Chapter 91 licenses. Massport is exempt from Chapter 91 by the Massachusetts Port Authority Enabling Act (Massachusetts General Law, Part I, Title XIV, Chapter 91 Waterways).

4.7.6 Coastal Zone Management Federal Consistency Review

The Proposed Project is subject to the Massachusetts Coastal Zone Management Plan's Federal Consistency Review established under the regulations at 301 CMR 21.07 because it is geographically located in the Massachusetts Coastal Zone and requires a federal permit issued by the USACE. The regulations require the proponent to demonstrate and the Massachusetts Office of Coastal Zone Management Program to certify that projects subject to such review are consistent with the regulatory policies and management principles listed in 301 CMR 21.98.

The regulations allow CZM some discretion in the procedures for completing this review. Consistency certification can be completed upon receipt of a formal request for project review or, in the case of coverage under a USACE General Permit, during interagency consultation.

Massport anticipates that the Office of Coastal Zone Management would initially review and comment on the project's consistency during the MEPA process, followed by a formal Federal Consistency Certification. Table 4-2 lists each regulatory policy and management principle established by the regulations at 301 CMR 21.98.

The Conley Terminal Improvements would extend the container storage, handling and truck movements across the former Coastal Oil site, expanding the ongoing water-dependent industrial activities in the South Boston DPA. The Proposed Project would have a net beneficial effect on the Massachusetts Coastal Zone by maintaining and enhancing the capacity of the area to support water-dependent industrial activities. Conley Terminal currently plays a major role in maritime industrial activity within the region, and the expansion of operations will allow Conley Terminal to remain competitive into the future while also supporting the goals of the Massachusetts Coastal Zone Act and its associated DPA.

The proposed DFC is an accessory to the existing water dependent industrial operations at Conley Terminal and is mitigation for the planned expansion of the Terminal. Both alternatives would allow for the reuse of presently vacant industrial land within the DPA for marine industrial uses consistent with the goals of the Coastal Zone Management Plan. Table 4-2 lists the Project's consistency with Massachusetts Coastal Zone Management Policies.

Table 4-2 Consistency with Massachusetts Coastal Zone Management Policies

MCZM Policy	Compliance
Water Quality Policy #1 – Ensure that point source discharges in or affecting the coastal zone are consistent with federally-approved state effluent limitations and water quality controls	The Project would not include any new untreated point source discharges. The stormwater management system would be designed and constructed in accordance with all applicable state and federal effluent limitations and water quality controls and be a significant improvement over current conditions. 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) for construction and operation of the facility. See *Chapter 5, Water Quality*, for a complete description of the proposed water quality controls.
Water Quality Policy # 2 – Ensure that nonpoint pollution controls promote the attainment of state surface water quality standards in the coastal zone.	The Project includes recommended stormwater Best Management Practices to ensure that non-point source pollution is minimized. As stated above the project meets all applicable standards through its compliance with the Massachusetts DEP Stormwater Management Policy and U.S. EPA NPDES Program. See *Chapter 5, Water Quality*, for a complete description of the measures designed to comply with the Massachusetts Surface Water Quality Standards.
Water Quality Policy # 3 – Ensure that activities in or affecting the coastal zone conform to applicable state requirements governing sub-surface waste discharges and sources of air and water pollution and protection of wetlands.	NA. The Project does not include any subsurface discharge of storm or sanitary flows.
Habitat Policy # 1 – Protect wetland areas including salt marshes, shellfish beds, dunes, beaches, barrier beaches, salt ponds, eel grass beds, and freshwater wetlands for their role as natural habitats.	NA. The Project Area does not contain any salt marsh, shellfish beds, dunes, barrier beaches or freshwater wetlands.
Habitat Policy # 2 – Promote the restoration of degraded or former wetland resources in coastal areas and ensure that activities in coastal areas do not further wetland degradation but instead take advantage of opportunities to engage in wetland restoration.	The project complies with this policy through improving stormwater runoff quality. The project would comply fully with the Massachusetts DEP Stormwater Management Policy and the U.S. EPA NPDES Program.
Protected Areas Policy # 1 – Assure preservation, restoration and enhancement of complexes of coastal resources or regional or statewide significance through the Areas of Critical Environmental Concern (ACEC) Program.	NA. The Project Area is not located within any state-designated Area of Critical Environmental Concern (ACEC).
Protected Areas Policy # 2 – Protect state and locally designated scenic rivers and state classified scenic rivers in the coastal zone.	NA. The Reserved Channel is not a state or locally designated scenic river.
Protected Areas Policy # 3 – Review proposed developments in or near designated or registered districts or sites to ensure that the preservation intent is respected by federal, state and private activities and those potential adverse effects are minimized.	The Massachusetts Historical Commission has determined that the project, as proposed would not result in any adverse impact to any state-listed historic property. See *Chapter 10, Historical Resources* for additional information.
Coastal Hazards Policy # 1 – Preserve, protect, restore and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms.	NA. The Project Area is located on filled land adjacent to Boston Harbor and does not contain any natural coastal landforms that could provide substantial storm damage prevention or flood control.
Coastal Hazards Policy # 2 – Ensure construction in water bodies and contiguous land areas would minimize interference with water circulation and sediment transport.	The Project includes a bridge crossing of the Exelon Inlet and waters of Boston Harbor. However, the bridge would be constructed on piles to avoid the placement of fill within Boston Harbor. The planned design includes five (5) pile bents spaced approximately 75 feet on-center. This spacing would avoid interference with water circulation in the Exelon Inlet. Furthermore, the removal of approximately 180 linear feet of the existing thermal barrier would improve water circulation within the Inlet.

Table 4-2 Consistency with Massachusetts Coastal Zone Management Policies (Continued)

MCZM Policy	Compliance
Coastal Hazards Policy # 3 – Ensure that state and federally funded public works projects proposed for location within the coastal zone would: Not exacerbate existing hazards or damage natural buffers or other natural resources; Be reasonably safe from flood and erosion related damage; Not promote growth and development in hazard-prone or buffer areas, especially in velocity zones and Areas of Critical Environmental Concern and Not be used on Coastal Barrier Resource Units.	1. 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 at the site other than the presence of oil and hazardous materials at the former Coastal Oil site. The Project would permanently stabilize this area by paving and conversion to a working marine terminal. 2. The former Coastal Oil site and the waterfront edges of the Exelon facility contain lands subject to inundation during the 100-year storm or storm of record. The Project would raise the elevation of the former Coastal Oil site to avoid inundation of the expanded Conley Terminal during coastal storm events. 3. NA. The Project would not promote development in hazard-prone or buffer areas, velocity zones or Areas of Critical Environmental Concern because none of these coastal resources are present at the site. 4. NA. The Project does not contain any Coastal Barrier units such as salt marsh, coastal dunes or barrier beaches.
Coastal Hazards Policy # 4 – Prioritization of the use of public funds for acquisition of hazardous coastal areas.	The Project includes planned land acquisition necessary to accommodate the DFC contemplated by Massport's acquisition of the former Coastal Oil site. This limited land acquisition is required by statute to construct the roadway and Buffer Open Space.
Ports Policy # 1 – Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity and public health.	NA. The Project does not include any dredging.
Ports Policy # 2 – Channel dredging requirements.	NA. The project does not include any channel dredging.
Ports Policy # 3 – Designated Port Area requirements.	The Project consists entirely of the construction of water-dependent industrial facilities and related transportation improvements required for the Conley Terminal expansion and meets all requirements for activities within the South Boston Designated Port Area.
Energy Policy # 1 – Coastally dependent energy facility requirements.	NA. The project does not include any coastally dependent energy facilities and would not interfere with the operation of any energy facilities at the Exelon Site.
Ocean Resources Policy # 1 – Aquaculture requirements.	NA. The project does not include any aquaculture.
Ocean Resources Policy # 2 – Extraction of marine minerals requirements.	NA. The project does not include any marine mineral extraction.
Ocean Resources Policy # 3 – Offshore sand and gravel mining requirements.	NA. The project does not include any offshore sand and gravel mining,

NA = Not applicable.

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5 Water Quality

5.1 Introduction

This chapter identifies the impacts to water resources that may result from implementing each element of the Proposed Project. Surface and ground water resources are protected under several federal and state regulatory programs, including the federal Clean Water Act (Section 404) and the Massachusetts Clean Waters Act (MGL Chapter 21, §26-53). Other applicable regulations include the Massachusetts Section 401 Discharge Regulations (314 CMR 9.00), Groundwater Quality Standards (314 CMR 6.00), Surface Water Quality Standards (314 CMR 4.00), and Wetland Protection Regulations (310 CMR 10.00).

Although there are no specific Massachusetts Environmental Policy Act (MEPA) regulatory thresholds applicable to water quality, the MEPA regulations require "a detailed description and assessment of the negative and positive potential environmental impacts of the Project and its alternatives."[24] This section provides information in compliance with this regulation.

5.2 Key Findings

- Massport's existing Stormwater Pollution Prevention Plan (SWPPP) for the Conley Terminal, as required by the EPA NPDES Multi-Sector General Permit, would be amended to incorporate additional stormwater best management practices (BMPs) and an updated operations and maintenance plan for the former Coastal Oil site.
- The Proposed Project would be designed in compliance with the Massachusetts Stormwater Standards, and would treat and improve all runoff discharging to Boston Harbor and the Reserved Channel compared to existing conditions.

24 301 Code of Massachusetts Regulations, Title 11.00: MEPA Regulations. Section 11.07- EIR Preparation and Filing, (6) Form and Content of EIR, (h) Assessment of Impacts. (11 CMR 11.07(6)(h)).

- The Proposed Project would improve water quality by adding stormwater treatment BMPs to the former Coastal Oil site and portions of the Exelon Site, and by creating a vegetated area along East First Street.

5.3 Affected Environment

Most stormwater runoff from the Project Area drains to the Reserved Channel of Boston Harbor. A portion of the runoff from the Former Coastal Oil site where the Buffer Open Space would be located also flows to the municipal system prior to discharge to the Reserved Channel. The Reserved Channel is part of Boston Inner Harbor, which is considered an Impaired Water in the Massachusetts 2012 Integrated List of Waters.[25] Boston Inner Harbor is classified as Category 5, Waters Requiring a Total Maximum Daily Limit (TMDL) for *Enterococcus*, fecal coliform, dissolved oxygen, and Polychlorinated Biphenyls (PCBs) in fish tissue. The City of Boston has recently completed the Reserved Channel Sewer Separation Project which has separated the formerly combined stormwater drainage system and septic sewer systems in the Project Area, and eliminated two Combined Sewer Overflows (CSOs) in the Project Area; CSO-079, immediately adjacent to the Summer Street Bridge, and CSO-080, which discharges at the boundary between the Conley Terminal and the former Coastal Oil site.[26]

Stormwater discharges from Conley Terminal are regulated by the EPA's National Pollutant Discharge Elimination Program (NPDES) through the 2008 Multi-Sector General Permit for stormwater discharges associated with industrial sources. Conley Terminal is also considered as a Land Use with Higher Potential Pollutant Loads (LUHPPLs) under the Stormwater Management Standards (because it is regulated under the NPDES Multi-Sector General Permit [MSGP]). As required by the MSGP, Massport has implemented a Storm Water Pollution Prevention Plan (SWPPP) for the Conley Terminal.[27]

Management of snow and ice at Conley Terminal is a critical component of safe operations. Massport is prohibited from disposing snow into Boston Harbor except under very limited emergency situations and only with prior approval. Snow management operations result in negligible impacts to water quality and are performed in accordance with the Conley Terminal's SWPPP and the NPDES Multi-Sector General Permit. Snow is also stored on the former Coastal Oil site.

Massport and its tenants have implemented a number of BMPs to protect water quality. Many of these ongoing practices are focused on the control of pollutants at their source through education and implementation of source reduction techniques, and include:

- Annual spill, stormwater, and hazardous waste management training for Massport employees;

25 Massachusetts 2012 Integrated List of Waters: Proposed Listing of the Condition of Massachusetts' Waters Pursuant to Sections 305(b), 314 and 303(d) of the Clean Water Act.
26 http://www.bwsc.org/PROJECTS/Construction/reservedchannel/reserved.asp, accessed September 25, 2012.
27 Storm Water Pollution Prevention Plan, Paul W. Conley Container Terminal, South Boston MA. January 2009.

- Spill prevention, control and countermeasure plan implementation by Massport and tenants;
- Inspection of stormwater discharges;
- Tank management program;
- Preventative maintenance on spill response equipment and stormwater control structures; and
- Inspection of oil/water separator discharging into the storm drain system.

The former Coastal Oil site, including the area of the proposed Buffer Open Space and Dedicated Freight Corridor (DFC) extending to the western property line of the Exelon property, is a previously-developed brownfield site with a mixture of broken pavement, gravel, and disturbed grassed areas. Stormwater runoff from this area flows overland to the Reserved Channel or to the municipal system in East First Street. There is currently no treatment of stormwater runoff from the former Coastal Oil site.

Stormwater runoff on the Exelon Site is generated by buildings, abandoned oil tanks, paved parking areas and driveways, and by a small grassed area on the western side. The majority of runoff flows to the Reserved Channel by surface sheet flow, although there are some catchbasins in the parking areas that collect and discharge runoff from small subwatersheds, which also drain to the Reserved Channel.

5.4 Environmental Consequences and Mitigation

This section describes the proposed conditions for each element of the Project based on the conceptual design, and identifies the potential long-term and short-term impacts to water quality. The Proposed Project is considered to be redevelopment of a brownfields site, and is anticipated to result in an improvement in stormwater quality. Table 5-1 summarizes the existing and proposed stormwater management for each element of the Proposed Project.

5.4.1 Conley Terminal Improvements

As described in *Chapter 2, Proposed Project and Alternatives Considered*, the Conley Terminal improvements include relocating the exit and entrance gates, regrading and repaving the majority of the former Coastal Oil site, and expanding container operations onto the Coastal site. There would be no overall change in the type or magnitude of operations since container growth is projected with or without the project.

A new subsurface drainage system would be constructed on the former Coastal Oil site, including appropriate stormwater treatment systems, in compliance with the Massachusetts Stormwater Standards and the requirements of the NPDES Multi-Sector General Permit. Massport's SWPPP would be modified to incorporate the new container storage area, stormwater management system, and any changes to

the Inspection and Monitoring Plan. A new snow storage area would be designated in compliance with Massachusetts Department of Environmental Protection's (DEP) Snow Removal Policy.

Infiltration to groundwater is not a significant issue, as groundwater elevations across the Project Area are tidally controlled, the area is constructed on reclaimed land, and the resulting soils are unsuitable for recharge. The Project Area does not contribute to groundwater supplies, nor is it significant to maintaining base flows to streams or waterbodies. Therefore, the proposed stormwater management system does not include infiltration BMPs because infiltration is not occurring under existing conditions and is not feasible at this location because of inadequate separation from seasonal high groundwater and poor-quality fill materials.

Table 5-1 Proposed Stormwater Management

Element	Existing Cover Type	Current Stormwater Management	Future Stormwater Management
Former Coastal Oil Site	Broken Pavement, gravel, grassed areas	Drains to Boston Harbor via overland flow	Install new subsurface collection and treatment system with discharge to Reserved Channel
Dedicated Freight Corridor	Broken Pavement, gravel, grassed areas, abandoned oil tanks	Drains to Boston Harbor via overland flow	Install new subsurface collection and treatment system with discharge to Reserved Channel
Buffer Open Space	Broken Pavement, gravel, grassed areas	Drains to East First Street	Reduce impervious cover, add vegetation within Buffer Open Space.

5.4.2 Dedicated Freight Corridor

The DFC has been designed with a stormwater collection, conveyance and treatment system that would comply with the Massachusetts Stormwater Standards for redevelopment, and for coastal discharges. Stormwater runoff would be collected in deep sump catchbasins and conveyed to stormwater treatment devices to remove total suspended solids (TSS), hydrocarbons, and other pollutants of concern on roadways. The western-most section of the DFC would also collect flow from the existing Exelon parking lot along Summer Street, and would replace an existing stormwater treatment unit with a new structure. A second stormwater treatment device would collect flow from the high point of the bridge eastward for approximately 600 feet, and would discharge to the Reserved Channel at a new outlet. A third stormwater treatment device would be located east of the security gate area, and would have a new outlet near the Boston Harbor Lobsterman's Cooperative parcel.

5.4.3 Buffer Open Space

The Buffer Open Space area would replace a strip of broken pavement and gravel with a stable, vegetated landscaped area and walking path. Stormwater runoff would largely infiltrate into the ground on-site. Excess flow and runoff from the East First Street sidewalk would flow to the East First Street municipal stormwater collection system by sheet flow. This element of the Proposed Project would

improve stormwater quality by reducing suspended solids, and would reduce stormwater volumes by replacing impervious areas with vegetation.

5.5 Temporary Construction Impacts

The proposed DFC bridge construction is anticipated to generate suspended sediment during construction as a result of driving piles. Mooring the construction barges and using spuds to secure the barges at the construction site could also temporarily generate sediment. To mitigate for potential impacts, in-water construction would utilize floating silt booms to contain turbidity from pile-driving operations and to contain any floating debris.

Spill prevention measures would be deployed in order to prevent pollution from construction equipment or material. Protective measures, such as silt curtains and silt fencing, would be deployed throughout the construction phase in order to prevent sediment from affecting water quality at the construction site. Construction would utilize BMPs to prevent erosion of sediment that could impact water quality during the construction period. Construction may require dewatering during construction activities to keep excavated areas free of ground water.

Short-term construction-related mitigation measures would include a variety of site and erosion control measures to physically isolate the planned constriction activities from the coastal wetland resources and the waters of Boston Harbor. The following measures are anticipated to be deployed during construction of the Conley Terminal Expansion, DFC, and Buffer Open Space:

- Perimeter fencing
- Limit of work barriers
- Hay bales and silt fence
- Floating silt and debris booms
- Temporary soil stockpile controls
- Temporary seeding
- Temporary stormwater basins
- Catch basin inlet protection
- Rat and pest control
- Truck wheel wash
- Perimeter lighting
- Proper signage

Construction would require a NPDES construction permit and a comprehensive SWPPP, which are required for projects that disturb more than one acre of land and five acres of land, respectively. The SWPPP would describe potential pollutant sources on a site and dictate what BMPs must be implemented to manage stormwater and protect water quality. Any soil-disturbing activities would require erosion and sediment controls, including proper timing of construction to minimize the time that an area is left exposed, temporary stabilization of exposed areas using protective covers, and perimeter controls such as silt fences and straw bales to capture sediment before it leaves the site. Daily monitoring would be performed to

ensure that the controls are effective. Large areas of disturbance could require temporary sedimentation basins.

Spill control procedures would be in place at designated fueling locations and temporary sanitary facilities to control any accidental spills of fuel or other hazardous materials. These locations would be isolated from surface waters and provided with spill-recovery equipment. Waste materials would be disposed of properly and not left in the open where they could contaminate soil or runoff.

Any dewatering activities for excavation, channel relocation, or fill would require proper handling of the dewatering discharge. To minimize dewatering discharges, the pump intake would be kept above the bottom of the excavation. Any contaminated dewatering discharge would be stored and disposed of in accordance with Massachusetts waste disposal standards in coordination with DEP. Uncontaminated water would be discharged to a vegetated land surface or pumped into an upland settling basin surrounded by hay bales or silt fences. The basin and all accumulated sediment would be removed following dewatering operations and the area would be seeded and mulched.

Based on this assessment, the potential impacts to surface water resources during construction would be prevented with proper construction management and monitoring. With mitigation in place, none of the potential construction-period impacts would have any significant or long-term effects on surface and ground water resources.

5.6 Regulatory Compliance

The Proposed Project requires work within coastal wetland buffer zones as defined and regulated under the Massachusetts Wetlands Protection Act (WPA) and the Wetlands Protection Regulations (310 CMR 10.00). Projects that fall under the jurisdiction of the WPA must comply with the Massachusetts Stormwater Management Standards (310 CMR 10.05(6)). The Stormwater Management Standards define the requirements for proper stormwater management for new or redeveloped sites in Massachusetts. The stormwater management designs for all components of the Proposed Project would be refined and analyzed in the final design and permitting process to demonstrate full compliance with the Massachusetts Stormwater Management Standards. Table 5-2 illustrates the proposed project's compliance with the ten standards.

The Proposed Project consists entirely of the redevelopment of previously-developed areas, and therefore is required to meet the Stormwater Standards to the extent practicable for Standards 2, 3, 4, 5 and 6. The extension onto the former Coastal Oil site would be regarded as a LUHPPL under the Stormwater Management Standards (because regulated under the NPDES Multi-Sector General Permit) and would require that all stormwater discharges provide the appropriate level of treatment.

Construction would require a NPDES construction permit and a comprehensive SWPPP, which are standard for projects that disturb more than one acre of land and five acres of land, respectively (40 CFR Part 122). The SWPPP would describe potential pollutant sources on a site and dictate what BMPs must be implemented to

manage stormwater and protect water quality. The SWPPP would be developed and the NPDES permit filed before construction would begin.

Table 5-2 Compliance with MA Stormwater Standards[1]

Standard		Compliance Level Achieved
Standard 1:	No New Untreated Discharges or Erosion to Wetlands	Full compliance would be achieved. BMPs are proposed to treat stormwater runoff from the area and outlets and conveyances are protected from erosion.
Standard 2:	Peak Rate Attenuation	The Project would discharge to the coastal waters (Reserved Channel of Boston Inner Harbor) and does not require peak rate attenuation. New pervious areas would reduce the volumes and rates of runoff.
Standard 3:	Stormwater Recharge	The Project is on filled land adjacent to a coastal water and does not require groundwater recharge. Groundwater levels are tidally-controlled. Subsurface contamination precludes groundwater recharge because infiltrating groundwater could displace or disperse contaminants.
Standard 4:	Water Quality	Full compliance would be achieved. 90%TSS removal is achieved for all drainage areas with contributions from impervious surfaces.
Standard 5:	Land Uses with Higher Potential Pollutant Loads	Full compliance would be achieved. The Conley Terminal is considered a LUHPPL, and stormwater treatment systems would be designed to meet the higher standards for a LUHPPL.
Standard 6:	Critical Areas	Full compliance would be achieved. The Reserved Channel is not a designated critical area.
Standard 7:	Redevelopment Standards	Full compliance would be achieved. Although this project consists entirely of the redevelopment of brownfield sites, it would fully comply with all ten Stormwater Standards.
Standard 8:	Construction Period Pollution Prevention and Erosion and Sedimentation Controls	Full compliance would be achieved. The project would obtain coverage under the NPDES Construction General Permit prior to the start of earthmoving activities.
Standard 9:	Operation and Maintenance Plan	Full compliance would be achieved. Massport would revise the existing SWPPP's detailed O&M plan during final design as part of the Notice of Intent submittal.
Standard 10:	Prohibition of Illicit Discharges	Full compliance would be achieved. Any storm drainage structures remaining from previous development which are part of the redevelopment area would be removed. Any new on-site sanitary facilities would be connected to the existing sanitary sewer system in East First Street.

1 310 CMR 10.05(6)

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6 Transportation

6.1 Introduction

This chapter presents an evaluation and summary of transportation impacts to the South Boston Study Area with the completion of the Conley Terminal Improvements, Dedicated Freight Corridor (DFC), and Buffer Open Space Project. This analysis examines vehicle traffic, parking conditions, pedestrian and bicycle activity and public transportation in the Study Area surrounding the Terminal. The purpose of this chapter is to:

- Define and quantify existing transportation conditions in the Study Area;
- Estimate the transportation impacts under future conditions without the DFC; and
- Estimate the transportation impacts under future conditions with the DFC completion.

The following sections provide detailed descriptions of the transportation analyses conducted, study methodology, a description of the Study Area, and anticipated impacts both with and without the construction of the proposed Conley Terminal Improvements, DFC, and Buffer Open Space Project.

This chapter analyzes the transportation impacts of the Conley Terminal Improvements, DFC, and Buffer Open Space Project on the transportation infrastructure within the public realm. A 2022 study year horizon was chosen to study the impacts of a growing industry in which container shipments are expected to increase in the next ten years. Although difficult to predict, market projections estimate that the Port could process up to 450,000 container twenty-foot unit equivalent (TEUs) by 2022. As currently designed, the DFC's intersection at Summer Street will be able to process approximately 500,000 TEUs annually. The transportation study focuses on a conservative estimate of 500,000 TEUs even though market projections suggest slightly less growth in terminal operations over the next ten years.

6.2 Key Findings

Key findings of the transportation study include:

- Constructing the DFC would reduce Conley-related traffic on East First Street. With a conservative growth assumption of 500,000 container twenty-foot unit equivalent (TEUs), the tractor-trailer truck activity at Conley Terminal is expected to increase from approximately 904 truck trips to 2,410 truck trips both entering and exiting daily by 2022 . The future employee and truck activity would increase by approximately 1,680 daily vehicle trips, which is below the threshold for a mandatory Environmental Impact Report (EIR).
- The DFC would result in a reduction of traffic on East First Street by as much as 46 percent depending on time of day.
- The proposed DFC would intersect Summer Street at a new intersection north of the East First Street intersection, across from the existing FedEx parking lot driveway on Summer Street. The Proposed Project includes construction of a dedicated left-turn storage lane on the southbound Summer Street approach for trucks entering the DFC and a northbound left-turn storage lane for vehicles entering the FedEx driveway.
- Reconfigured parking along the Buffer Open Space street frontage would provide expanded overnight residential parking for the community. This new parking area would provide approximately 114 (57 net-new) angled spaces.
- Eliminating Conley-related trucks at the intersection of East First Street/Farragut Road/Shore Road/Conley Gate would allow the intersection to be reconstructed as an all-way stop with improved pedestrian accommodations and connections to adjacent public open space.

6.3 Methodology

The transportation analysis has been conducted with standard Institute of Transportation Engineers (ITE) methodologies. Capacity analyses have been conducted using Synchro 6 software based on the Highway Capacity Manual (HCM) methodologies. The study was conducted in three stages.

The first stage includes an inventory of existing conditions. It involved a survey and compilation of the existing transportation conditions within the Study Area, including:

- Traffic volume data, including cars, heavy vehicles, bicycles and pedestrians;
- Geometric characteristics of Study Area roadways and intersections, including an inventory of sidewalks and crosswalks; and
- Existing traffic control at Study Area intersections (i.e., traffic signalization, stop control, etc.).

In the second stage of the study, a ten-year time horizon was used to analyze the future transportation conditions in the year 2022 without the construction of the DFC. This included accounting for growth due to background traffic growth, and growth from other planned or approved projects in the area as well as the projected 2022 Conley Terminal growth.

The third stage of the study used the same 2022 future traffic volumes and redistributed the Conley Terminal truck traffic from East First Street to the proposed DFC. Future conditions methodology is described in further detail in Section 6.6.2.

Intersection capacity analyses were conducted and summarized for the 2012 Existing Condition, 2022 No-Build Condition (i.e., without the DFC) and 2022 Build Condition (i.e. with DFC) in the following sections.

6.4 Study Area

The Study Area for the transportation analyses includes intersections within close proximity of the Proposed Project that are expected to experience a change in traffic volume with the growth of the Conley Terminal. These intersections are illustrated in Figure 6-1 and listed below.

Signalized Intersections

- Summer Street at D Street
- Summer Street at Pumphouse Road
- Summer Street at Pappas Way and Drydock Avenue
- Summer Street at East First Street

Unsignalized Intersections

- Summer Street at Fargo Street
- East First Street at Farragut Road /Conley Gate/Shore Road
- Summer Street at FedEx Driveway (and future DFC)

These intersections were evaluated in detail to identify incremental impacts of future traffic growth and truck traffic reassignment to the proposed DFC.

6.5 Existing Conditions

This section discusses the existing transportation conditions in the Study Area, including existing Conley Terminal operations, roadway geometry, intersection conditions, traffic controls, transit availability and peak hour traffic flows including truck traffic and employee traffic as well as pedestrian and bicycle volumes.

0 500 1000 Feet

Source: **ESRI** Bing Maps Service

Conley Terminal Improvements

Figure 6-1

Traffic Study Area

massport

6.5.1 Existing Conley Terminal Operations

Conley Terminal's Main Gate is currently located at the intersection of East First Street and Farragut Road in South Boston. All employees, container trucks, and vendors use this gate to gain access to the Container Terminal. Because of existing truck restrictions in the South Boston neighborhood, all trucks arrive and depart the Container Terminal via East First Street and Summer Street.

The Terminal's security gate on East First Street opens at 6:00 AM which allows trucks to queue inside the Terminal if they arrive early so they do not queue on East First Street. The internal Conley Terminal processing gate, located inside the secure perimeter of the Terminal, is open Monday through Friday from 8:00 AM to 5:00 PM. The last inbound truck is accepted at 4:15 PM. Currently, the Terminal processes about 190,000 TEUs per year, which results in approximately 900 truck trips (entering and exiting) on a typical peak day.

Truck volumes are typically heaviest during the midday hours, outside of the commuter peak hours. Activity at the Terminal can vary by day depending on vessel activity and container arrivals. For purposes of this study, the existing conditions baseline condition includes a heavy traffic day at the Terminal as a result of one or more vessels in port.

6.5.2 Roadway Network

The roadways and study intersections in the Study Area, as shown in Figure 6-1, are described below. The descriptions of the roadways and intersections include physical characteristics, geometric conditions, pedestrian facilities, and traffic control measures.

6.5.2.1 Roadway Descriptions

Summer Street

Summer Street runs northwest-southeast from Washington Street and Winter Street in Downtown Boston to East First Street in South Boston, continuing as L Street to the south to William J Day Boulevard. It is a main connection between the South Boston neighborhood and downtown Boston. Trucks are prohibited on L Street south of East First Street. In the vicinity of the Conley Terminal, Summer Street is striped with one lane in each direction but operates as two lanes when there are high demands during the peak hours, with some on-street parking. Sidewalks are provided on both sides of the street as well as bus stops for Massachusetts Bay Transportation Authority (MBTA) Bus Route 7.

East First Street

East First Street runs east-west from Summer Street to its intersection with Farragut Road and Shore Road to the east, ending at the Conley Terminal Main Gate. In the vicinity of the Terminal, East First Street is a two-way road with one travel lane in each direction separated by a double-yellow line. Residential permit and designated visitor parking is permitted and sidewalks are provided on both sides of the street. An MBTA bus layover facility is located north of East First Street which contributes to a significant amount of bus traffic on East First Street. East First Street is served by five MBTA bus routes, including Bus Routes 5, 7, 9, 10 and 11.

Farragut Road

Farragut Road runs north-south from East First Street and Shore Road to the north to its intersection with William J Day Boulevard to the south. In the vicinity of the Terminal, Farragut Road has one travel lane in each direction, with residential permit parking on both sides of the street. Sidewalks and bus stops for MBTA Bus Routes 5, 7, 9, 10 and 11 are provided on both sides of the street.

6.5.2.2 Signalized Intersection Descriptions

Summer Street at D Street

The intersection of Summer Street and D Street is a four-legged, signalized intersection running on the Boston Transportation Department's (BTD) Central Coordination system. The intersection includes concurrent pedestrian movements. Summer Street consists of two through lanes and one exclusive left-turn lane in the eastbound approach and one shared through/left turn lane, one through lane and a channelized right-turn lane in the westbound approach. The D Street southbound approach provides an exclusive left-turn lane, one shared though/left-turn lane and one shared through/right turn lane. The D Street northbound approach provides an exclusive left-turn lane, one through lane and one shared through/right-turn lane. Two hour metered on-street parking is available on the north side of the west leg of Summer Street, as well as the west side of the south leg of D Street. Sidewalks and crosswalks are provided on all approaches.

Summer Street at Pumphouse Road

The intersection of Summer Street and Pumphouse Road is a three-legged signalized intersection. There is signal equipment for a fourth northbound approach; however, this is currently inactive. The intersection operates under an actuated traffic signal control on BTD's Central Coordination system. Because of the inactive northbound approach, the signal is set to skip phase 3 (northbound) and runs under three phases, with an exclusive pedestrian phase. Summer Street consists of two general purpose lanes in the eastbound direction and three general purpose lanes, in the westbound direction. Pumphouse Road has one exclusive left-turn lane and one shared left-turn/right-turn lane. On-street parking is not permitted on any of the

intersection approaches. Sidewalks are on both sides of Summer Street and only on the west side of Pumphouse Road with crosswalks on the east and north legs of the intersection. There is a bus stop on Summer Street on the eastbound approach of the intersection.

Summer Street at Pappas Way and Drydock Avenue

The intersection of Summer Street, Pappas Way and Drydock Avenue is a four-legged, signalized intersection that operates under an actuated three-phase traffic signal control running on BTD's Central Coordination system, with an exclusive pedestrian phase. Both Summer Street approaches provide an exclusive left-turn lane, and two general purpose lanes. Pappas Way, the northbound approach, provides one general purpose lane and Drydock Avenue, the southbound approach, provides one exclusive right turn lane and a through/left-turn lane. Sidewalks and crosswalks are along all the intersection legs, except for the west side of Pappas Way. Parking is prohibited on all intersection approaches. There is a bus stop on Summer Street on the eastbound approach of the intersection, which serves MBTA Bus Route 7 (Downtown Boston to City Point).

Summer Street at East First Street

The intersection of Summer Street and East First Street is a four-legged, signalized intersection that operates under a fully actuated three-phase traffic signal control, including an exclusive pedestrian phase. The intersection is currently not on BTD's Central Control System. Both Summer Street approaches provide an unmarked 20-foot travel lane that is mostly being used as two shared lanes. The East First Street approaches both provide one wide general purpose lane. The westbound approach at times was observed to function as two lanes; however to remain conservative in the analysis, the traffic model was set up with one wide lane. Sidewalks and crosswalks are along all the intersection legs. On street parking is mostly unregulated and is provided on all intersection approaches, except for the westbound approach. There is a bus stop that serves MBTA Bus Route 7 (Downtown Boston to City Point) on both sides of Summer Street on the north leg.

6.5.2.3 Unsignalized Intersection Descriptions

Three key unsignalized intersections were studied.

Summer Street at Fargo Street

The intersection of Summer Street and Fargo Street forms an unsignalized T-intersection with stop control on Fargo Street. The Summer Street approaches provide three general purpose lanes in both directions separated by a raised median. The Fargo Street approach provides one general purpose lane, with right and left turns allowed onto Summer Street through a cut in the median. Sidewalks are along

both sides of Summer Street and a crosswalk is on the south leg of the intersection. Mostly unregulated on-street parking is permitted on the west side of Fargo Street.

East First Street at Farragut Road/Conley Gate/Shore Road

The intersection of East First Street, Farragut Road, Shore Road and the Conley Main Gate form an unsignalized four-legged with stop control on East First Street, Conley Main Gate and Shore Road. All approaches consist of one general purpose lane. Sidewalks are along both sides of East First Street and Farragut Road with no crosswalks at the intersection. On-street resident permit parking is permitted on both sides of Farragut Road and there is a bus stop on the east side of Farragut Road in the vicinity of the intersection that is served by MBTA Bus Routes 5, 7, 9, 10 and 11.

Summer Street/FedEx Driveway

The intersection of Summer Street and the FedEx Driveway is adjacent to the Summer Street Bridge at the future location of the DFC. Summer Street has two general travel lanes at this intersection. The FedEx Driveway operates as stop-controlled. No on-street parking is provided.

6.5.3 Traffic Volumes

This section includes a description of traffic volumes and an assessment of existing traffic operations in the Study Area. Manual Turning Movement Counts (TMCs) were conducted on March 15, 2012 at each of the six Study Area intersections. Automatic Traffic Recorder (ATR) counts were conducted in May of 2011 on East First Street and Summer Street. Additional traffic counts were taken at the intersection of East First Street at Farragut Road/Conley Main Gate/Shore Road on June 21, 2012 to confirm volumes and circulation after Shore Road was changed from one-way eastbound to one-way westbound in May 2012. The compilation of the raw traffic data is included in Appendix B.

6.5.3.1 Daily Traffic Volume Counts

ATRs were installed on Summer Street (north of East First Street, near the FedEx Driveway) and East First Street (east of P Street) to collect daily traffic volumes on an hourly basis. Data was collected for a two week period from May 25th to June 6th, 2011. The daily traffic volumes are summarized in Table 6-1.

Approximately 20,000 vehicles use Summer Street, which connects South Boston to downtown Boston, on a typical weekday. In the morning peak hour, traffic is predominately northbound headed towards downtown Boston. In the evening, patterns on Summer Street are reversed with heavier southbound volumes.

Table 6-1 Existing Hourly Traffic Volumes (two-way vehicles per hour)

Time	East First Street (East of P Street)	Summer Street (North of East First Street)
12:00-1:00 AM	17	203
1:00 – 2:00 AM	11	133
2:00-3:00 AM	5	99
3:00-4:00 AM	6	68
4:00-5:00 AM	9	102
5:00-6:00 AM	42	306
6:00-7:00 AM	137	750
7:00-8:00 AM	251	1,293
8:00-9:00 AM	350	1,463
9:00-10:00 AM	363	1,065
10:00-11:00 AM	335	945
11:00-12:00 PM	413	1,030
12:00-1:00 PM	439	1,164
1:00 – 2:00 PM	427	1,162
2:00-3:00 PM	428	1,221
3:00-4:00 PM	379	1,418
4:00-5:00 PM	270	1,437
5:00-6:00 PM	217	1,523
6:00-7:00 PM	154	1,353
7:00-8:00 PM	109	1,065
8:00-9:00 PM	63	776
9:00-10:00 PM	51	607
10:00-11:00 PM	42	481
11:00-12:00 AM	37	409
Total Daily Traffic	4,557	20,074

Source: Accurate Counts

East First Street carries approximately 4,500 vehicles per day. Weekday traffic volumes peak between 11:00 AM and 3:00 PM coinciding with Conley Terminal operations. Conley Terminal truck traffic currently contributes up to 25 percent of the total traffic on East First Street during the midday hours as shown in Table 6-2. During the morning and evening peak hours, truck traffic is significantly less.

Table 6-2 Summary of Existing Traffic on East First Street

Time	Conley Trucks	Total Vehicles	% Conley Trucks
6:00-7:00 AM	4	137	3%
7:00-8:00 AM	17	251	7%
8:00-9:00 AM	47	350	13%
9:00-10:00 AM	77	363	21%
10:00-11:00 AM	78	335	23%
11:00-12:00 PM	91	413	22%
12:00-1:00 PM	80	439	18%
1:00 – 2:00 PM	106	427	25%
2:00-3:00 PM	101	428	24%
3:00-4:00 PM	74	379	20%
4:00-5:00 PM	40	270	15%
5:00-6:00 PM	3	217	1%

Source: Accurate Counts
Note: Volumes shown represent two –way volumes (entering and exiting). Daily volumes vary. Results are representative of a typical day.
Shading denotes peak hours.

6.5.3.2 Peak Hour Traffic Volume Counts

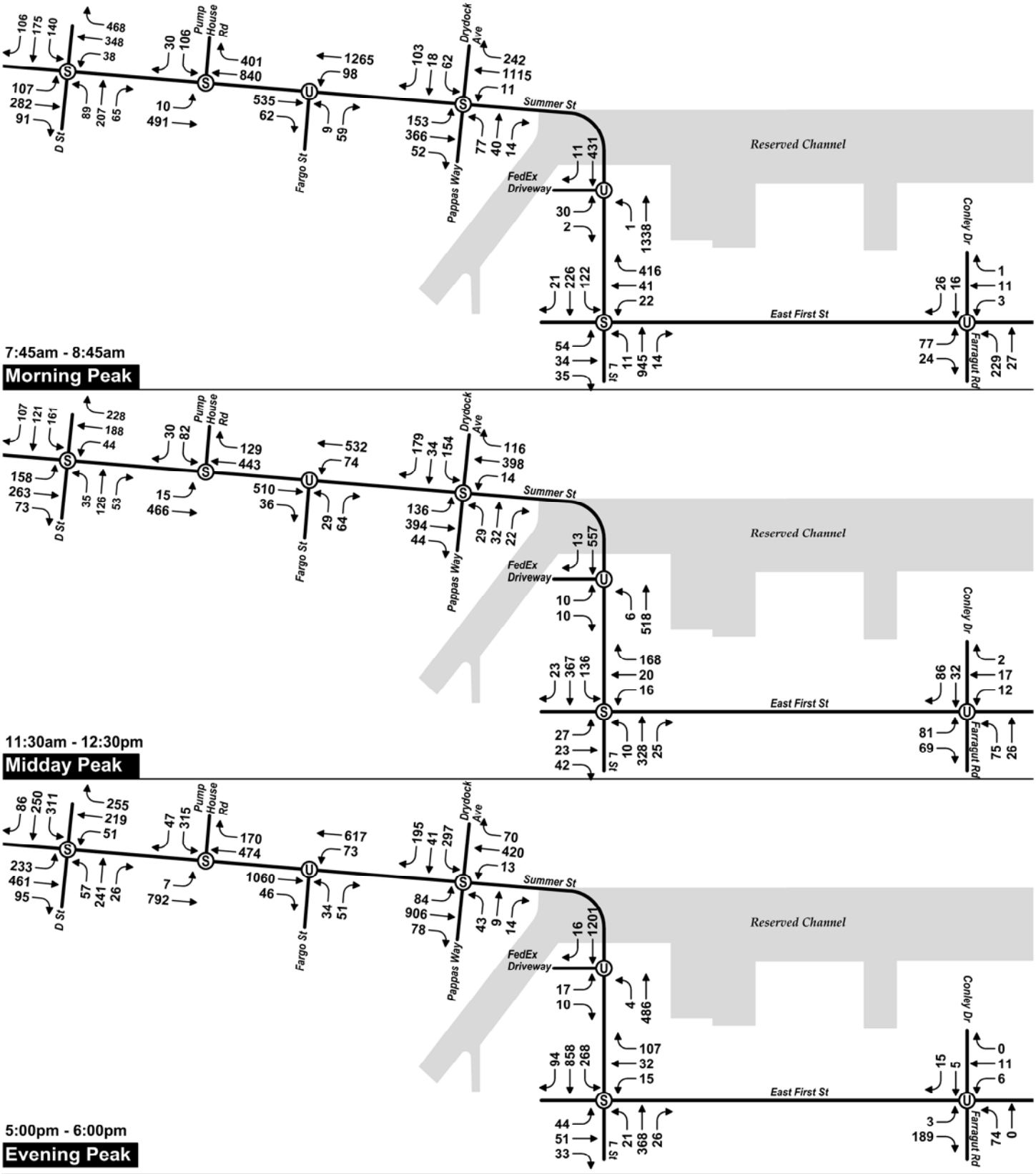
The TMCs were conducted during the Morning Peak (7:00 AM to 9:00 AM), Midday Peak (11:00 AM to 1:00 PM), and Evening Peak (4:00 PM to 6:00 PM). Counts included passenger vehicles, heavy vehicles, pedestrians and bicycles.

The TMCs were used to establish traffic networks for the 2012 Existing Condition, for the weekday morning, weekday midday and weekday evening peak hours, as shown in Figure 6-2. The Study Area's overall morning peak hour was determined to occur between 7:45 AM and 8:45 AM, the midday peak hour occurred from 11:30 AM to 12:30 PM and the evening peak hour was determined to occur between 5:00 PM and 6:00 PM.

The morning and evening peak hours in the traffic Study Area coincide with the typical peak hours of commuter traffic while Conley truck traffic peaks midday. Trucks typically try to make one or more round trips during the day arriving early in the morning and then returning just after lunch. Because of congestion leaving the City, the truck drivers typically try leave Conley Terminal in advance of the evening peak hour.

6.5.3.3 Conley Gate Hourly Counts

The Terminal's Main Gate on East First Street opens at 6:00 AM which allows trucks to queue inside the Terminal if they arrive early so they do not queue on East First



Conley Terminal Improvements

Figure 6-2

2012 Existing Condition Traffic Volumes

Street. The processing gate then opens at 8:00 AM. The last inbound truck is accepted at 4:15 PM. Processing volumes vary depending on if a vessel is in port. A peak day at the Terminal processes approximately 450 trucks on a peak day today.

Traffic counts were conducted at the existing Conley Terminal Gate on East First Street during a peak vessel day in February 2010. This day represents a typical peak day according to Massport's Maritime Department. Results of these counts, provided in Table 6-3, show that Conley Terminal traffic is distributed throughout the day with very little truck activity during the evening peak hour.

Table 6-3 Existing Conley Terminal Gate Traffic Volumes

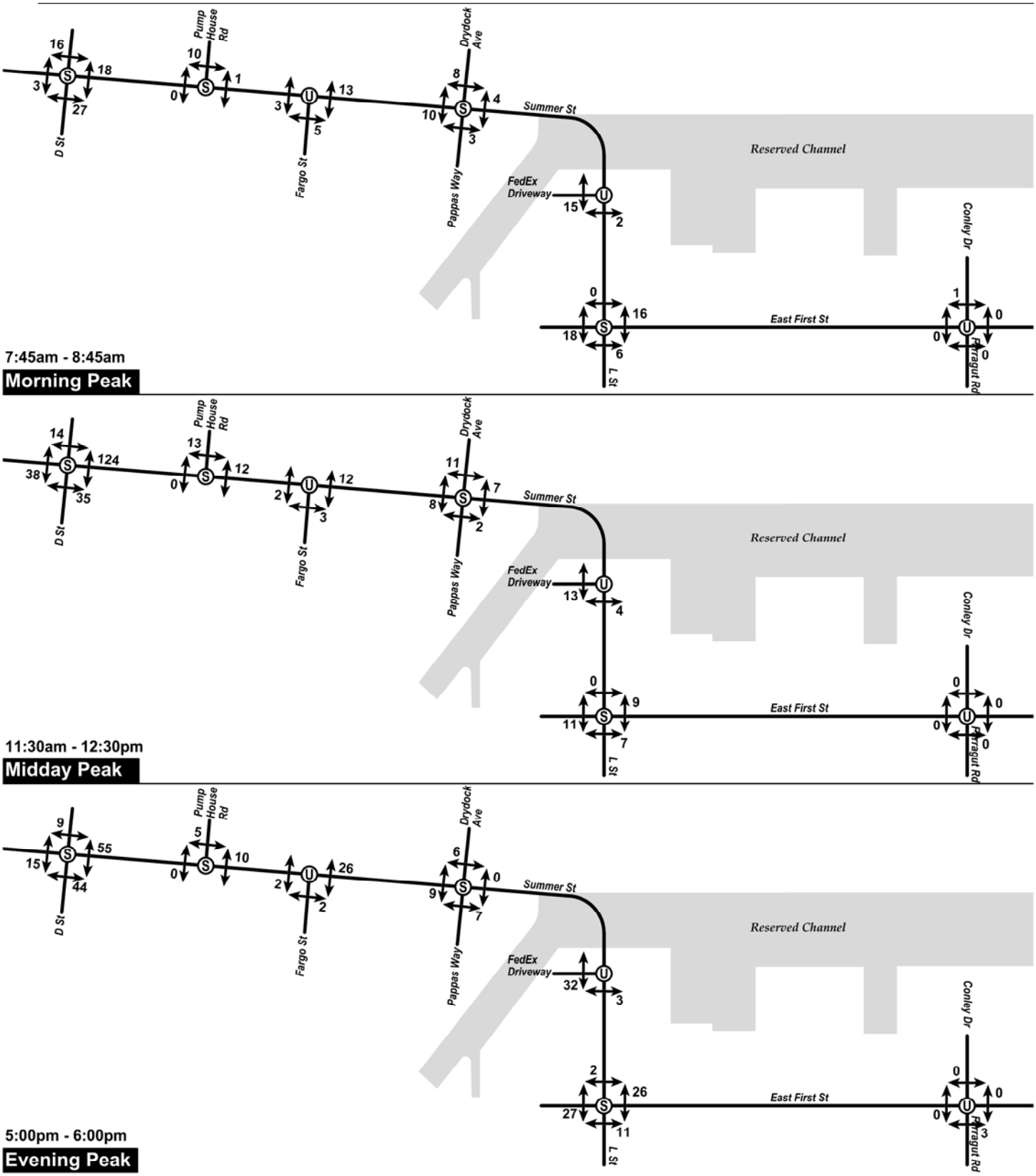
	Entering Conley				Exiting Conley				Total Volume			
Time	Cars	Vendor	Trucks	Total Entering	Cars	Vendor	Trucks	Total Exiting	Cars	Vendor	Trucks	Total
6:00-7:00 AM	54	1	4	59	11	0	0	11	65	1	4	70
7:00-8:00 AM	130	0	17	147	14	1	0	15	144	1	17	162
8:00-9:00 AM	41	1	28	70	31	1	19	51	72	2	47	121
9:00-10:00 AM	26	1	36	63	14	0	41	55	40	1	77	118
10:00-11:00 AM	29	1	37	67	11	1	41	53	40	2	78	120
11:00-12:00 PM	50	0	43	93	19	0	48	67	69	0	91	160
12:00-1:00 PM	38	1	42	81	11	0	38	49	49	1	80	130
1:00 – 2:00 PM	30	2	58	90	5	1	48	54	35	3	106	144
2:00-3:00 PM	19	0	50	69	9	0	51	60	28	0	101	129
3:00-4:00 PM	20	1	31	52	6	1	43	50	26	2	74	102
4:00-5:00 PM	14	0	5	19	3	0	35	38	17	0	40	57
5:00-6:00 PM	6	2	0	8	13	1	3	17	19	3	3	25

Source: Accurate Counts
Note: Daily volumes vary. Results are representative of a typical day.

6.5.4 Pedestrians and Bicyclists

Pedestrian and bicycle activities were observed and recorded at each of the Study Area intersections during morning, midday and evening peak hours. The counts are presented in Figure 6-3 and 6-4. The following pedestrian and bicycle activities were observed:

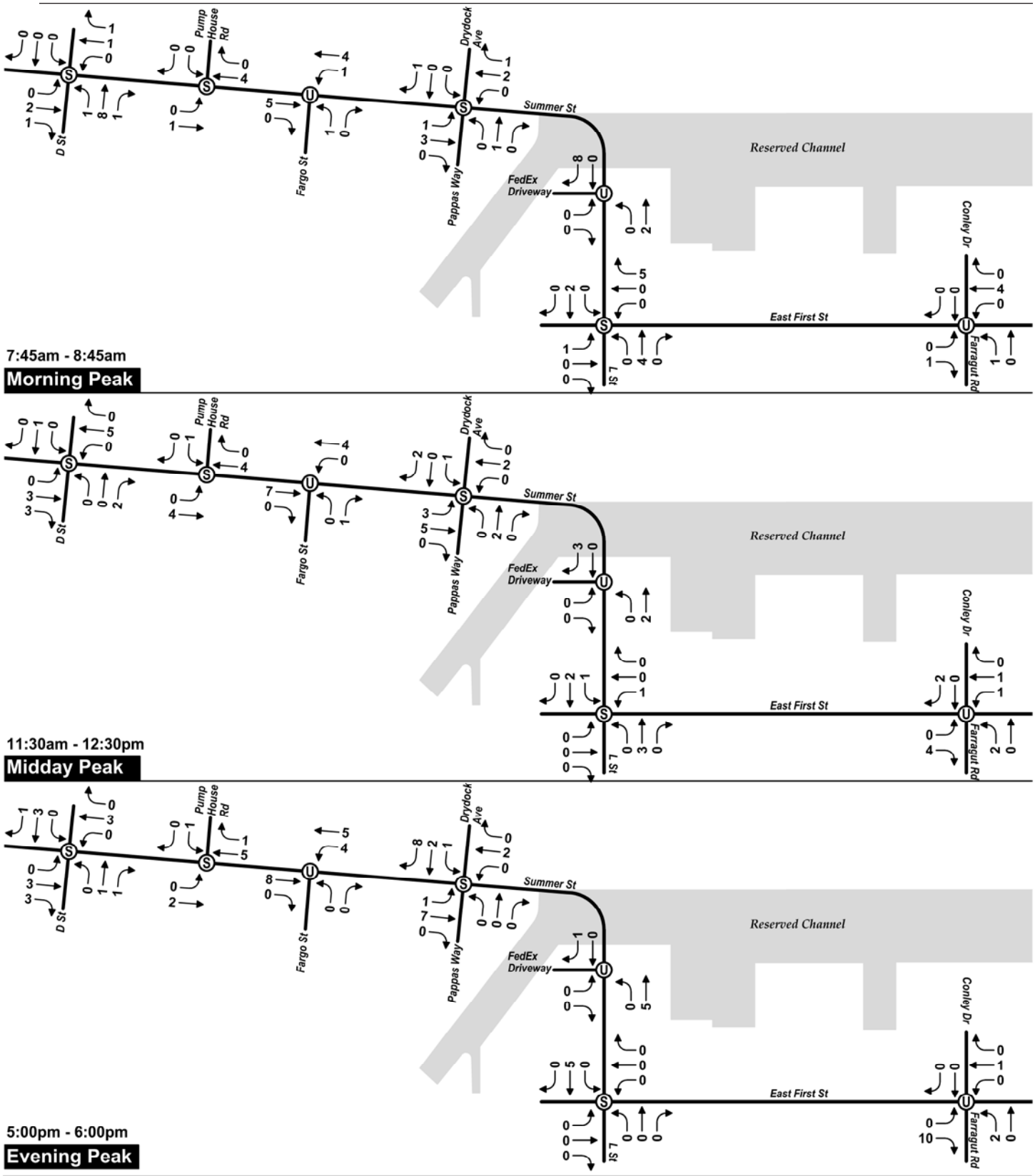
- The highest pedestrian volumes in the area were observed at the Summer Street/ D Street intersection, with 124 people crossing the east leg during the midday peak hour.
- The highest bicycle volumes in the area were observed on Drydock Avenue, turning right onto Summer Street, with 8 bicycles in the evening peak hour.



Conley Terminal Improvements

Figure 6-3

2012 Existing Condition Pedestrian Volumes



Conley Terminal Improvements

Figure 6-4

2012 Existing Condition Bicycle Volumes

- There was similar bicycle activity on D Street near the intersection with Summer Street, with 8 bicycles travelling northbound on D Street.

6.5.5 Public Transportation

Summer Street and East First Street, in the vicinity of the Conley Terminal, are served by several MBTA bus routes. These routes provide connecting service to subway, commuter rail, and bus services at South Station. Figure 6-5 illustrates the routes within the Study Area, which include:

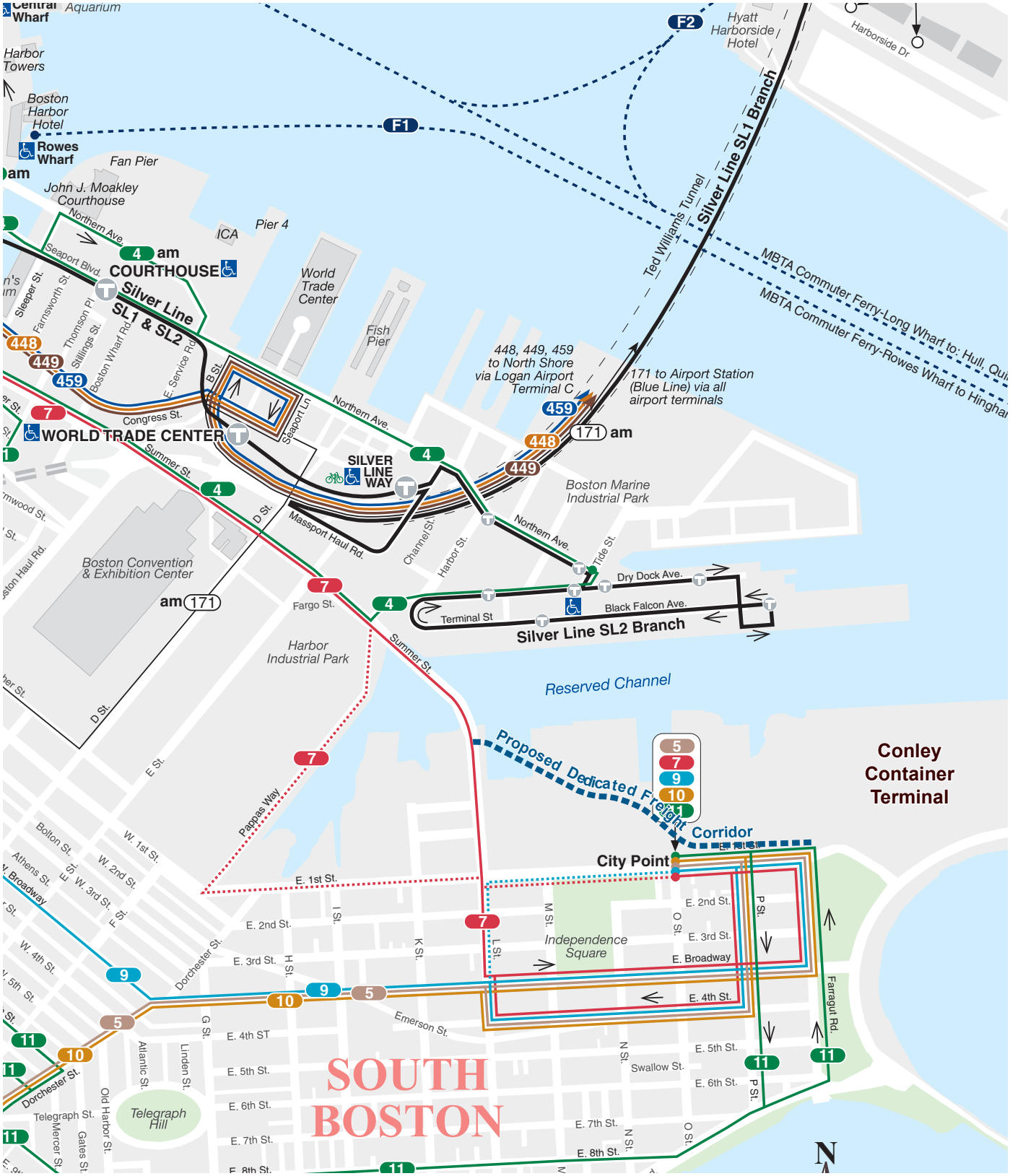
- Route 5 - City Point to McCormack Housing via Andrew Station
- Route 7 - City Point to Otis and Summer Streets and South Station
- Route 9 - City Point to Copley Square via Broadway Station
- Route 10 - City Point to Copley Square via Andrew Station and South Bay Center
- Route 11 - City Point to Downtown Bay View Route

An MBTA bus layover facility is located on East First Street which contributes to a substantial amount of bus traffic on East First Street. As shown in Table 6-4, the MBTA contributes up to 64 scheduled buses per hour to East First Street traffic. Additional bus and maintenance vehicle traffic may also be generated by the MBTA site. These hourly bus volumes were calculated using MBTA's June 2012 schedules.

Table 6-4 Summary of MBTA Bus Activity on East First Street

Time	Number of Scheduled Buses
6:00-7:00 AM	43
7:00-8:00 AM	64
8:00-9:00 AM	64
9:00-10:00 AM	34
10:00-11:00 AM	23
11:00-12:00 PM	23
12:00-1:00 PM	24
1:00 – 2:00 PM	27
2:00-3:00 PM	33
3:00-4:00 PM	37
4:00-5:00 PM	44
5:00-6:00 PM	49

Source: June 2012 MBTA Bus Schedules



Conley Terminal Improvements

Figure 6-5

MBTA Map

6.5.6 Crash Analysis

Study Area crash data were obtained from MassDOT records for the three-year period from January 2007 through December 2009 (the most recent data available). The analysis of the crash data is summarized in Table 6-5, and includes the calculated crash rates (number of reported crashes per million entering vehicles) based on the evening peak hour traffic volumes. Detailed crash rate calculations are included in Appendix B.

Table 6-5 Summary of Intersection Crash Data

Intersection	Intersection Type	Total Crashes (3-year period)	Crash Rate (Crashes per Million entering vehicles)
Summer Street at D Street	Signalized	4	0.14
Summer Street at Pumphouse Road	Signalized	0	0.00
Summer Street at Fargo Street	Unsignalized	2	0.09
Summer Street at Drydock Avenue and Pappas Way	Signalized	2	0.08
Summer Street at East First Street	Signalized	6	0.26
East First Street at Farragut Road and Shore Road	Unsignalized	2	0.54
Summer Street at FedEx Driveway	Unsignalized	0	0.00

Source: MassDOT crash data, 2007-2009

The calculated crash rates for all intersections in the Study Area fall below the District 6 average of 0.77 for signalized intersections and 0.57 for unsignalized locations. Most of the crashes were rear-end, single vehicle, or same direction sideswipes. None of the crashes resulted in fatal injury, and were split evenly between non-fatal injury and property damage only. The majority of the crashes occurred primarily outside the peak hours on dry pavement. A summary of all crashes by type is presented in Table 6-6.

Table 6-6 Summary of Intersection Crash Data

	Summer St/ D St	Summer St / Fargo St	Summer St / Pappas Way & Drydock Ave	Summer St / East First St	East First St / Farragut Rd
Year					
2007	1	1	1	2	2
2008	0	1	1	2	0
2009	3	0	0	2	0
Total	4	2	2	6	2
Average	1.33	0.67	0.67	2.00	0.67
Collision Type					
Angle	0	0	1	0	0
Head-on	0	1	0	0	0
Rear-end	1	1	0	2	0
Sideswipe, same direction	1	0	1	1	1
Single vehicle crash	0	0	0	1	1
Not reported	2	0	0	2	0
Total	4	2	2	6	2
Crash Severity					
Non-fatal injury	2	2	0	2	1
Property damage only	1	0	2	3	0
Not Reported	1	0	0	0	0
Unknown	0	0	0	1	1
Total	4	2	2	6	2
Time of Day					
Weekday, 7:00 AM - 9:00 AM	0	0	1	1	0
Weekday, 4:00 PM - 6:00 PM	1	0	0	0	0
Weekday, other time	3	2	1	5	2
Total	4	2	2	6	2
Pavement Conditions					
Dry	2	2	2	3	2
Wet	0	0	0	1	0
Snow	0	0	0	1	0
Not reported	2	0	0	1	0
Total	4	2	2	6	2

Source: MassDOT crash data, 2007-2009

6.6 2022 Future Conditions

Massport's Conley Terminal anticipates growth from approximately 190,000 TEUs per year to up to 450,000 TEUs per year by 2022. For the transportation analysis, growth projections were rounded to 500,000 TEUs to ensure that the planned DFC infrastructure could accommodate the projected growth and beyond. The increase in

containers translates to an increase in the number of trucks entering and exiting the Terminal. Container tractor-trailer truck activity at the Terminal is expected to increase from approximately 904 truck trips to 2,410 total truck trips (in and out) daily.

To mitigate the increased truck activity in the neighborhood, the DFC would be constructed to keep Conley Terminal-related truck from using East First Street. The proposed Conley DFC would intersect Summer Street north of the East First Street intersection, across from the existing FedEx driveway. The Proposed Project includes constructing a new dedicated left-turn storage lane on the southbound Summer Street approach for trucks entering the DFC.

Two future analysis scenarios (2022) were conducted to determine the impacts of the Proposed Project with and without the proposed DFC:

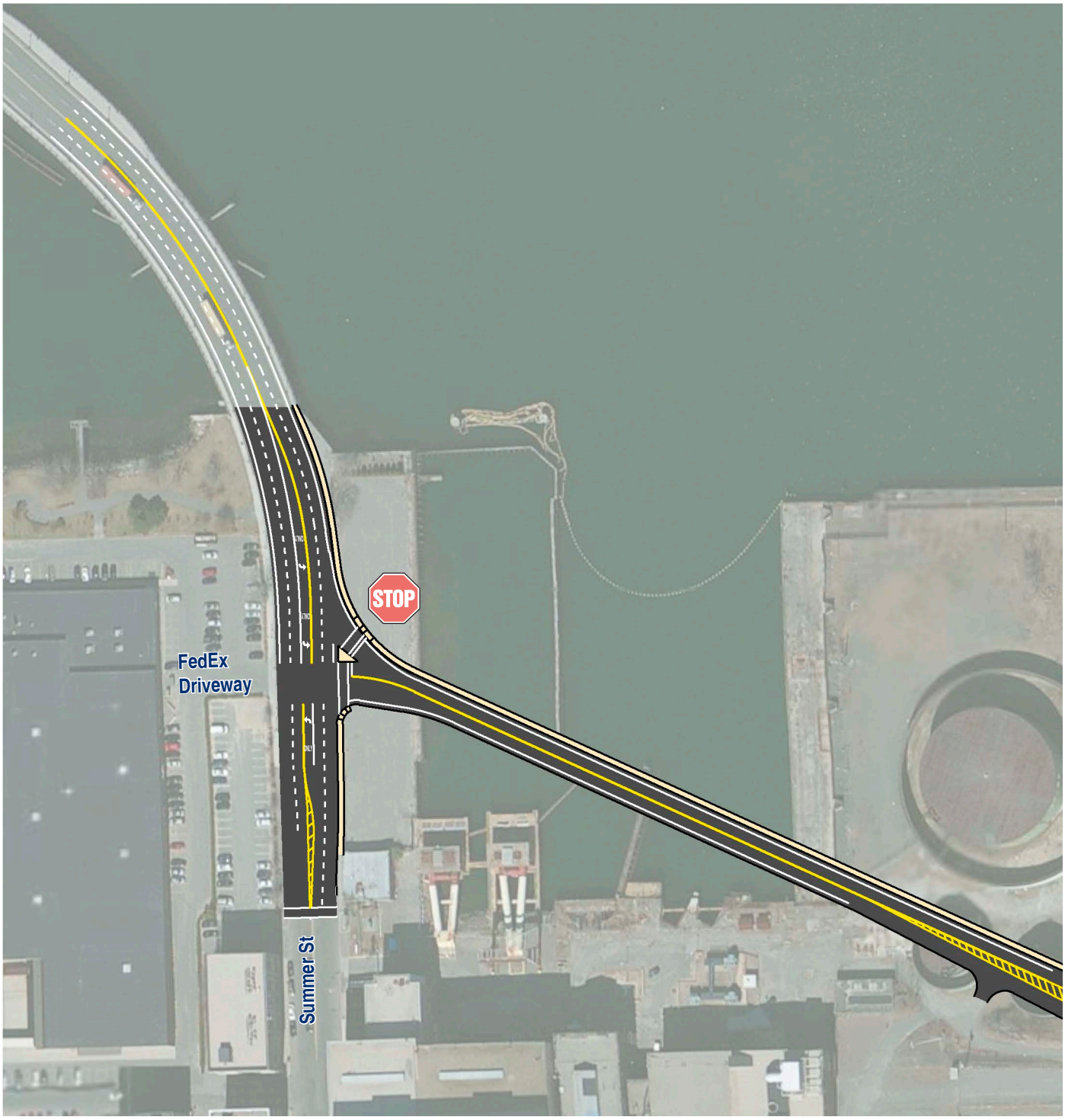
- **No-Build Condition:** The No-Build Condition has been analyzed to evaluate future transportation conditions in the Study Area without the proposed DFC in place. All future truck and employee trips would continue to use East First Street to access the Terminal, as they do today.
- **Build Condition:** The Build Condition assumes that Conley Terminal has been expanded onto the former Coastal Oil site and the DFC has been constructed. Therefore all future Conley truck traffic would access the Terminal via the new road off Summer Street. Employees would continue to use the existing Conley Gate off East First Street.

Both future analysis scenarios include a ten-year planning horizon and include increases in traffic activity on Study Area roadways due to continued regional traffic growth, planned and approved developments around the Study Area, as well as projected growth of Conley Terminal operations.

6.6.1 Dedicated Freight Corridor

The proposed DFC would intersect Summer Street to the north of the East First Street intersection, across from the existing FedEx driveway as shown in Figure 6-6. The DFC would allow tenant access to the Boston Harbor Lobstermen's Cooperative as well as maintenance access to the rear of the existing MBTA power facility. In addition, pedestrian access would be provided to a point just west of the Conley Terminal Gate. At the Terminal Gate, authorized pedestrian access will continue inside the Terminal to Seafarer's Way.

The DFC would provide one travel lane in each direction. At the intersection of Summer Street, the DFC would widen to provide a left/through lane for exiting passenger vehicles and a channelized right turn lane to accommodate trucks. All trucks would be required to make a right-turn out of the Terminal onto Summer Street only. Because of the necessary turning radius needed to accommodate trucks, a pedestrian refuge is proposed at the DFC approach to Summer Street between the two approach lanes. Acceptable sight distance, as defined by American Association of State Highway and Transportation Officials (AASHTO), is met for exiting vehicles at the proposed intersection.



0 75 150 Feet

Source: ESRI Bing Maps Service

Conley Terminal Improvements

Figure 6-6

Proposed Future Roadway Alignment
Summer Street at Dedicated Freight Corridor

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The Proposed Project includes a new dedicated left-turn storage lane on the southbound Summer Street approach for trucks entering the DFC and an opposing northbound left-turn storage lane for vehicles entering FedEx. As planned, the southbound storage lane would be approximately 180 feet long which would accommodate three tractor trailer trucks. The two existing southbound lanes on Summer Street would be maintained and through traffic would not be impacted by trucks entering the Terminal.

Massport has begun to discuss future intersection operations with the City of Boston. At the request of BTD, the proposed Summer Street cross-section would be designed not to preclude a potential future action to provide bicycle lanes.

The new intersection of Summer Street at Conley DFC would be stop controlled on the westbound approach. In order for an intersection to be signalized, it must meet traffic signal warrants as defined in the Manual of Uniform Traffic Control Devices (MUTCD). At this time, the future 2022 traffic volume projections do not meet the warrants based on traffic volumes. The design would include traffic signal infrastructure so that the intersection would not have to be reconstructed to install a traffic signal should one be required in the future.

At the time of this filing, the City is studying future characteristics of the Summer Street corridor between South Station and the South Boston neighborhood. Preliminary meetings with FedEx raised some concerns about existing travel speeds on Summer Street at the intersection of Summer Street/DFC/FedEx driveway. The project team understands that FedEx is concerned that additional truck turning volumes at this location would increase delays for vehicles exiting their facility. Through the design process Massport is committed to addressing these concerns through work with the City and FedEx to achieve a solution to improve operations at this intersection location.

6.6.2 Future Analysis Methodology

A three-step process was used to estimate future traffic demand in the Study Area. First, regional traffic growth was estimated based on growth trends along major roadways in the Study Area. The purpose of this part of the analysis is to develop and apply an annualized growth rate, which is then applied to existing condition peak-hour traffic volumes to reasonably account for future through-traffic growth in the area. The second step involved generating peak hour traffic estimates for specific developments near the Study Area, and adding them to the volumes produced under the first step. In the last step, estimated future truck and employee traffic associated with Conley Terminal growth are added to the network.

6.6.2.1 Step 1: Background Growth

An annualized growth rate was applied to 2012 Existing Condition peak hour traffic volumes to account for future traffic growth in the Study Area over the next 10 years. Typically the background growth rate accounts for increases in the population and for

development projects that cannot be specifically defined. When project traffic forecasts are known the annualized background growth increase is less.

Since many of the planned developments in the area have specific traffic projections, a background growth rate of half a percent per year (0.5 percent) was used as typically required in the City of Boston. For the midday peak, a growth rate of 1 percent was used as specific traffic projections were not available for future developments during the midday peak period.

Note that existing Conley truck and employee traffic was excluded from this growth projection, as future Conley growth is addressed under step three of this analysis.

6.6.2.2 Step 2: Development Projects

The second step in estimating future traffic demand in the Study Area is to include any anticipated transportation impacts from forecasted development projects. There are currently thirteen development projects that have been approved or under review that are expected to influence future year peak hour traffic volumes in the Study Area. Projects that were undefined at the time the traffic model was developed, such as the Boston Convention and Exhibition Center (BCEC), are not specifically included; however, the Step 1 background growth accounts for these increases.

A description of each planned project is provided below, and the expected traffic volumes from each of these developments are presented in Appendix B.

- **399 Congress Street** – This project includes the development of 388 residential rental units with parking accommodations for 144 vehicles.
- **411 D Street** – This project consists of the development of 197 units of housing in two buildings with 129 parking spaces.
- **Residential at 371-401 D Street** – The project consists of the development of 585 residential condominium units with approximately 724 parking spaces.
- **Seaport Square** – This project totals 6.5 million square feet (SF) and includes 2.8 million SF of residential space, 1.3 million SF of new office, 0.5 million SF of hotel (550 rooms), a cultural and 0.6 million SF of educational center, and 1.3 million SF of multi-level retail located on Seaport Boulevard. On-site parking of 6,500 below-grade parking spaces is included as part of this project.
- **Boston Cargo Terminal North Jetty** – This project, proposed by Marine Terminal Development on the Massport Marine Terminal site, includes an intermodal marine industrial facility to support movements of cargo. This development includes a three-building, 510,552 SF of development and an approximately 4.3-acre bulk cargo handling facility.
- **Commonwealth Flats Development Area (CFDA)** –Massport's proposed project consists of a mixed-use development program of approximately 3.4 million SF of Massport-owned land in the Seaport District. The land-uses include office, hotel,

residential, retail, cultural, industrial, restaurant and entertainment. Eleven development parcels were proposed as part of this project. Three of the parcels have been built and are occupied including Parcel G, J, and F. For this analysis the following Parcels were taken into consideration for the No Build Condition: Parcels A-1, A-2, H-1, K-1 and F-2 located between Northern Avenue and Summer Street.

- **Waterside Place/Core Block** – This project is part of the CFDA and is located on Massport-owned land referred to generally as the Core Block (Parcels C-1, C-2, C-3, D-2 and the Air Rights Garage), but also including Parcel D-1 located west of World Trade Center Avenue located between Northern Avenue and the Massport Haul Road. These parcels comprise an approximately 8.4–acre development area within Massport's CFDA. Waterside Place includes approximately 568,000 square feet of retail space in addition to a grocery store. The project plans 300 hotel rooms, 200 residential units, and a 20,000-SF Visitors Center. Parking for the project will be provided in a structured parking garage with approximately 2,350 spaces.
- **Waterside Crossing** – This proposed project includes a 300-room hotel, 47,000-square-foot grocery store, 150,000-SF retail and 490 parking spaces at the northwest corner of Summer Street and D Street. This project is parcel D-3 of the CFDA.
- **Fan Pier** – This project includes the phased development of 3 million SF of mixed-use space mixed-use development located on Northern Avenue between the Institute of Contemporary Art and the Court House that contains 1.2 million SF of office, 478,000 SF of hotel, 1.1 million SF of residential, 134,400 SF of retail/restaurant, 107,000 SF of cultural/civic space, and approximately 2,300 below-grade parking spaces and 40 on-street parking spaces.
- **Pier 4** – This project includes consists of a proposed 980,000-SF mixed-use development located on Northern Avenue adjacent to the Institute of Contemporary Art. This development will include residential, hotel, office, retail, restaurant, civic/cultural, open space, and water dependent uses. The project includes 1,200 underground parking spaces, 20,000 SF of civic space, and 12,600 SF of retail/restaurant space.
- **Distillery Project** – This project consists of a mixed-use development including 65 residential units, an art gallery, greenhouse, small scale retail space, and 147 parking spaces at 516-524 East Second Street.
- **2 H Street –** This project is a multi-family residential development with 135 residential units and a 1,600-SF retail space with a 206-parking space garage.
- **Congress Street Hotel** – This project is a 502-room hotel at 505 Congress Street, between Ramp I/C and Ramp D/F leading to the Massachusetts Turnpike/Interstate 90. The lobby includes four retail areas of 8,400 SF of ground floor retail space. The project also includes on-site parking for 150 spaces plus 18 valet parking spaces.

6.6.2.3 Step 3: Future Conley Terminal Growth

With the expansion of Conley Terminal, truck and employee trip volumes are expected to increase by year 2022. Massport's Maritime Department forecasts potential growth in container operations in response to domestic and international shipping demand. Conley Terminal is planning for a total container increase of up to 450,000 by the year 2022. To be conservative, traffic increases associated with a total container volume of 500,000 TEUs were analyzed.

In fiscal year 2012, Conley Terminal processed approximately 190,000 TEUs. This volume of container activity was down from a high mark of 216,000 TEUs in fiscal year 2008. During recent years, prior to the economic downturn that began in 2007/2008, Conley experienced peak year-to-year growth in container activity at an average rate of approximately 5 percent per year.

The pattern of growth at Conley Terminal is likely to be a combination of year-to-year growth, in response to improving economic conditions, combined with periodic, significant jumps in volume with each new ship call (perhaps up to 50,000 to 70,000 TEUs annually). Although difficult to predict due to economic uncertainty, Massport projects volumes of up to 450,000 TEUs in 2022 if strong economic growth were to happen. For this reason, the intersection of the DFC at Summer Street is currently designed to accommodate the planned growth and beyond up to 500,000 TEUs.

Future growth projections in number of truck trips and employee trips are presented in Table 6-7.

Table 6-7 Estimated Future Truck and Employee Growth Projections

Year	Average Truck Trips Per Day	Average Employee Trips Per Day
2011	904	322
2012	1,468	334
2013	1,512	348
2014	1,558	362
2015	1,604	376
2016	1,652	391
2017	1,702	407
2018	1,753	423
2019	1,806	440
2020	1,860	458
2021	1,916	476
2022	2,410	495

Note: Volumes shown are two-way trips.
Source: Massachusetts Port Authority

Conley Trip Distribution

Future Conley truck and employee traffic volumes, including projections to the year 2022, were added to the network by following the distribution patterns described below.

Truck Arrival and Departure Routes

Truck traffic is currently concentrated from the north since no trucks are allowed on L Street/Summer Street south of East First Street. For the 2022 No-Build analysis scenario trucks would access the Terminal from East First Street, as they do today. Under the 2022 Build Condition the trucks would be reassigned to make a left-turn into the DFC from Summer Street southbound and a right-turn out of the DFC onto Summer Street northbound.

Existing 12-hour gate Conley Terminal counts were used as basis for determining the hourly arrival and departure patterns of trucks throughout the day as shown in Table 6-8.

Table 6-8 Existing Truck Distribution

	Trucks Entering		Trucks Exiting	
Time	Volume	% of Daily	Volume	% of Daily
6:00 – 7:00 AM	4	1%	0	0%
7:00 – 8:00 AM	17	5%	0	0%
8:00 – 9:00 AM	28	8%	19	5%
9:00 – 10:00 AM	36	10%	41	11%
10:00-11:00 AM	37	11%	41	11%
11:00 – 12:00 PM	43	12%	48	13%
12:00 – 1:00 PM	42	12%	38	10%
1:00 – 2:00 PM	58	17%	48	13%
2:00 – 3:00 PM	50	14%	51	14%
3:00 - 4:00 PM	31	9%	43	12%
4:00 – 5:00 PM	5	1%	35	10%
5:00 – 6:00 PM	0	0%	3	1%

Note: Shading delineates peak hours
Source: Accurate Counts

The increased truck volume was then assigned to the local street network using existing Conley Terminal arrival and departure patterns. These routes are shown in Figure 6-7.

0 500 1000 Feet

Source: **ESRI** Bing Maps Service

Conley Terminal Improvements

Figure 6-7

Future Truck Arrival and Departure Routes

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Employee Commuting Patterns

The Conley DFC would be limited to truck traffic only, and employees would continue to access the Conley Terminal via the gate on East First Street, as they do today. Employee arrival/departure patterns were determined based on employee zip code data.

Analysis of employee zip code data, as presented in Table 6-9, found that 53 percent of Conley Terminal employees commute from the north, 24 percent come from the south, 3 percent from the west and the remainder from neighborhoods in the City of Boston. Approximately 58 percent of employees currently take a left from Summer Street southbound onto East First Street, and proceed via East First Street to the Conley Terminal Gate. The remaining 42 percent arrive from L Street northbound and Farragut Road northbound, as illustrated in Figure 6-8.

Table 6-9 Regional Employee Distribution

Employee Origin	Number of Employees	% of Employees
North of Boston	189	53%
South of Boston	83	24%
West of Boston	10	3%
Local Trips - Boston	71	20%
Total	353	100%

Source: Massport employee zip code data

The resulting 2022 future No-Build Condition and Build Condition volume networks are presented in Figures 6-9 and 6-10, respectively.

6.7 Intersection Operations

Level of service (LOS) is the term used to denote the different operating conditions which occur on a given roadway or intersection under various volume loads. It is a qualitative measure of the effect of a number of factors, including roadway/intersection geometry, speed, travel delay, freedom to maneuver, and safety. Level of service provides an index to the operational qualities of a roadway or intersection. LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. Typically an overall LOS D or better is considered acceptable in an urban environment.

For signalized intersections, the analysis considers the operation of each lane or lane group entering the intersection and the LOS designation is for overall conditions at the intersection. For unsignalized intersections, however, the LOS designation considered is for the most critical movement. Table 6-10 below presents the level of service delay threshold criteria as defined in the 2000 Highway Capacity Manual (HCM).

* distribution percentage differs for all three peak hours

0 500 1000 Feet

Source: **ESRI** Bing Maps Service

Conley Terminal Improvements

Figure 6-8

Regional Employee Distribution

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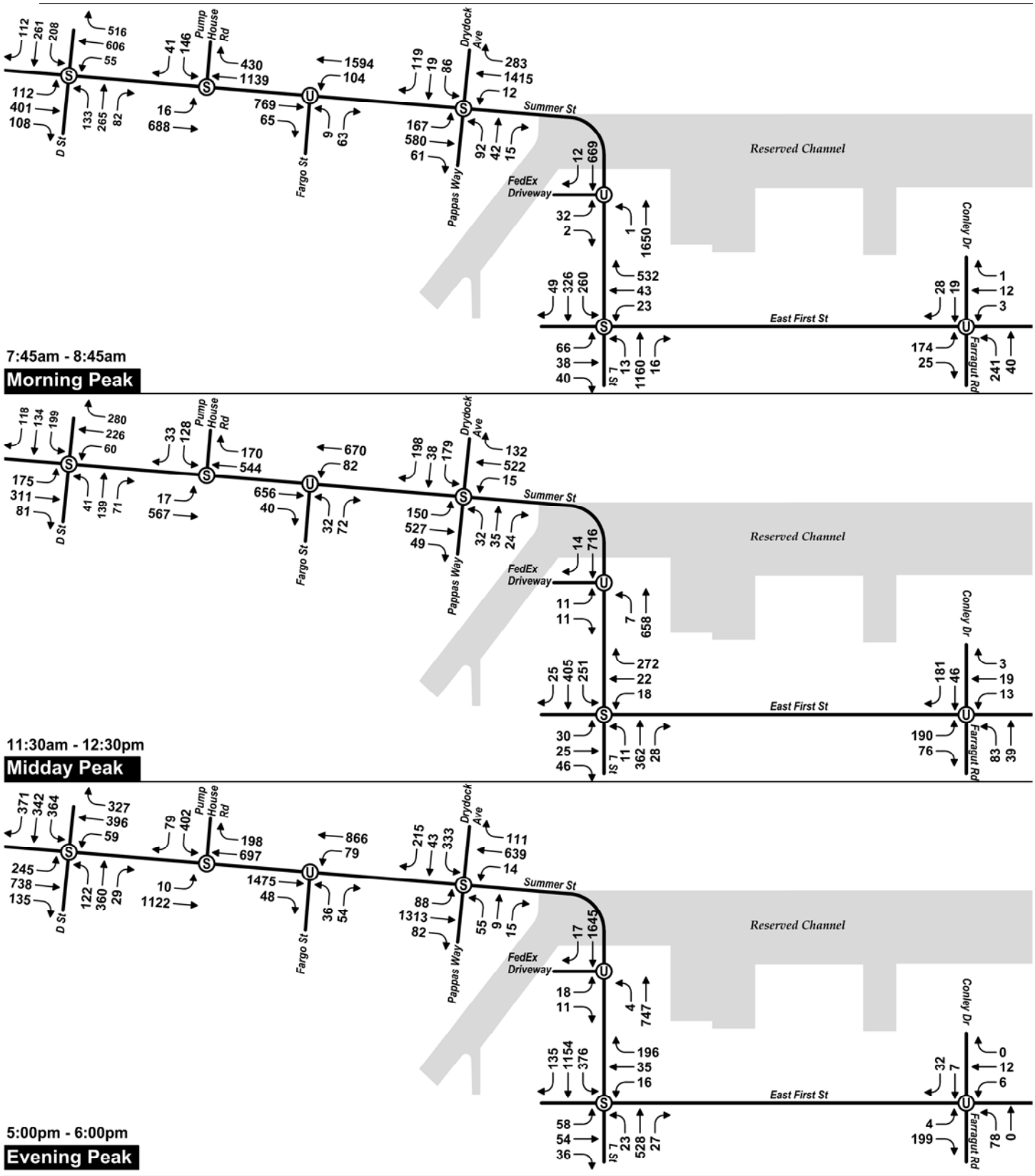
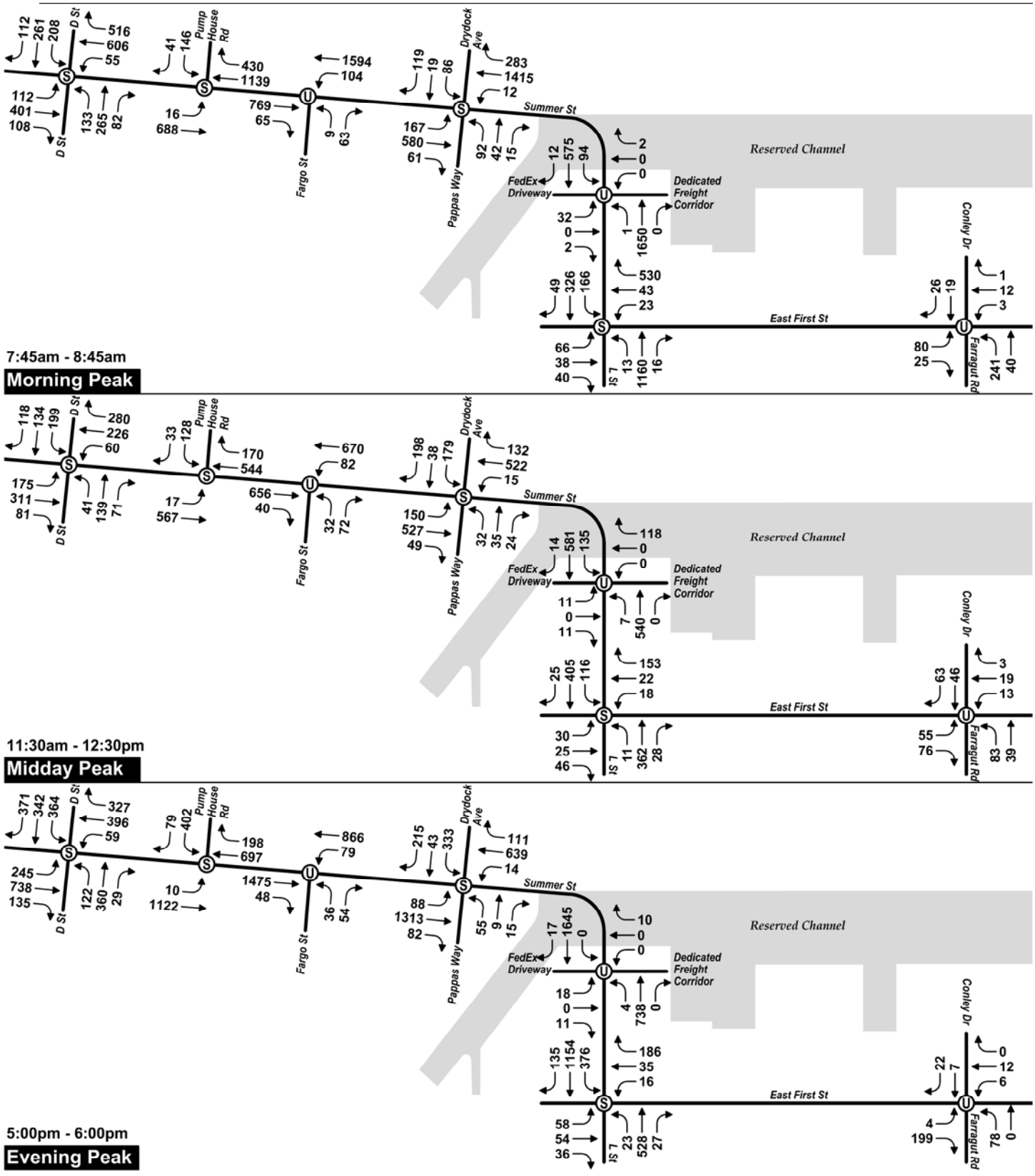


Conley Terminal Improvements

Figure 6-9

2022 No-Build Condition Traffic Volumes



Conley Terminal Improvements

Figure 6-10

2022 Build Condition Traffic Volumes

Table 6-10 Level-of-Service Criteria

Level of Service	Unsignalized Intersection Control Delay (sec/veh)	Signalized Intersection Control Delay (sec/veh)
LOS A	≤ 10	≤ 10
LOS B	>10 – 15	> 10-20
LOS C	>15 – 25	> 20-35
LOS D	>25 – 35	> 35-55
LOS E	>35 – 50	> 55-80
LOS F	>50	> 80

Source: 2000 HCM

Synchro 6 software was used to model LOS operations at the Study Area intersections. Capacity analyses were conducted at all Study Area intersections and for all study year conditions and the LOS results are summarized in the sections below.

6.7.1 Existing Conditions

Tables 6-11, 6-12 and 6-13 show the intersection capacity analysis results for the 2012 morning, midday and evening peak hour conditions with detailed volume to capacity ratios, delay and queue length. Detailed Synchro reports are included in Appendix B.

Under Existing Conditions, all signalized intersections in the Study Area operate at an overall LOS D or better during the morning, midday, and evening peak hours. Unsignalized intersections operate at a LOS D or better with the exception of Summer Street at Fargo Street during the evening peak hour. During the evening, the Fargo Street approach operates at LOS F. This delay is a result of heavy volumes and few gaps on Summer Street.

Table 6-11 2012 Existing Condition Morning Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections:					
Summer Street at D Street	EB L	0.30	12.2	B	91
	EB T/R	0.29	11.8	B	109
	WB L/T	0.75	34.5	C	#281
	WB R	0.64	11.6	B	205
	NB L	0.47	40.6	D	103
	NB T/R	0.67	44.6	D	122
	SB L	0.66	45.5	D	153
	SB L/T/R	0.57	39.6	D	114
	Overall	0.64	27.0	C	
Summer Street at Pumphouse Road	EB L/T	0.32	7.4	A	145
	WB T/R	0.54	13.4	B	291
	SB L/R	0.38	41.7	D	64
	Overall	0.49	13.8	B	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.57	16.5	B	101
	EB T/R	0.28	7.2	A	120
	WB L	0.11	15.4	B	20
	WB T/R	1.00	45.3	D	#744
	NB L/T/R	0.61	30.7	C	#120
	SB L/T	0.49	27.3	C	71
	SB R	0.08	16.8	B	19
	Overall	0.82	32.7	C	
Summer Street at East First Street	EB L/T/R	0.69	33.1	C	#172
	WB L/T/R	0.70	29.9	C	245
	NB L/T/R	0.96	43.7	D	#527
	SB L	0.88	53.6	D	#178
	SB T/R	0.32	11.2	B	163
	Overall	0.85	35.5	D	
Unsignalized Intersections:					
Summer Street at Fargo Street	EB T/R	0.14	0.0	A	0
	WB L/T	0.12	3.7	A	10
	NB L/R	0.14	12.9	B	12
Summer Street at FedEx	EB L/R	0.18	28.3	D	16
	NB L/T	0.57	0.0	A	0
	SB T/R	0.18	0.0	A	0
East First Street at Farragut Road	EB L/R	0.39	20.7	C	45
	WB L/T/R	0.08	15.8	C	7
	NB L/T/R	0.16	7.2	A	14
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 6-12 2012 Existing Condition Midday Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections:					
Summer Street at D Street	EB L	0.35	9.5	A	115
	EB T/R	0.22	8.4	A	82
	WB L/T	0.41	27.8	C	124
	WB R	0.35	13.6	B	210
	NB L	0.25	37.3	D	51
	NB T/R	0.51	39.2	D	72
	SB L	0.63	41.6	D	129
	SB L/T/R	0.48	35.6	D	83
	Overall	0.46	23.3	C	
Summer Street at Pumphouse Road	EB L/T	0.30	6.9	A	138
	WB T/R	0.26	10.7	B	112
	SB L/R	0.33	37.0	D	47
	Overall	0.30	11.8	B	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.44	15.6	B	92
	EB T/R	0.37	12.8	B	127
	WB L	0.17	25.0	C	24
	WB T/R	0.82	36.2	D	#272
	NB L/T/R	0.19	17.3	B	66
	SB L/T	0.59	22.2	C	#214
	SB R	0.13	10.3	B	35
	Overall	0.63	22.0	C	
Summer Street at East First Street	EB L/T/R	0.57	32.0	C	75
	WB L/T/R	0.36	27.8	C	77
	NB L/T/R	0.24	8.8	A	110
	SB T/R	0.41	6.7	A	131
	Overall	0.44	13.0	B	
Unsignalized Intersections:					
Summer Street at Fargo Street	EB T/R	0.13	0.0	A	0
	WB L/T	0.09	4.5	A	8
	NB L/R	0.27	16.6	C	27
Summer Street at FedEx	EB L/R	0.06	15.1	C	5
	NB L/T	0.22	0.4	A	1
	SB T/R	0.24	0.0	A	0
East First Street at Farragut Road	EB L/R	0.30	13.6	B	31
	WB L/T/R	0.23	13.4	B	21
	NB L/T/R	0.06	6.0	A	5
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 6-13 2012 Existing Condition Evening Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections:					
Summer Street at D Street	EB L	0.49	16.3	B	199
	EB T/R	0.37	14.5	B	171
	WB L/T	0.61	36.3	D	#171
	WB R	0.35	23.1	C	252
	NB L	0.30	37.7	D	67
	NB T/R	0.69	43.8	D	122
	SB L	0.79	52.0	D	#256
	SB L/T/R	0.78	44.7	D	201
	Overall	0.66	32.0	C	
Summer Street at Pumphouse Road	EB L/T	0.48	13.9	B	365
	WB T/R	0.32	16.6	B	131
	SB L/R	0.69	41.2	D	170
	Overall	0.53	20.5	C	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.30	21.2	C	60
	EB T/R	0.95	39.8	D	#352
	WB L	0.13	29.7	C	21
	WB T/R	>1.0	78.3	E	#217
	NB L/T/R	0.10	6.9	A	34
	SB L/T	0.50	9.6	A	148
	SB R	0.13	3.5	A	11
	Overall	0.66	38.2	D	
Summer Street at East First Street	EB L/T/R	0.86	69.6	E	118
	WB L/T/R	0.41	31.0	C	80
	NB L/T/R	0.34	13.0	B	140
	SB T/R	0.90	23.0	C	#571
	Overall	0.89	24.6	C	
Unsignalized Intersections:					
Summer Street at Fargo Street	EB T/R	0.30	0.0	A	0
	WB L/T	0.15	6.3	A	13
	NB L/R	0.64	>50	F	90
Summer Street at FedEx	EB L/R	0.22	40.1	E	20
	NB L/T	0.21	0.4	A	1
	SB T/R	0.51	0.0	A	0
East First Street at Farragut Road	EB L/T/R	0.27	9.7	A	27
	WB L/T/R	0.04	12.6	B	3
	NB L/T/R	0.06	7.7	A	5
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

6.7.2 2022 No-Build Condition

Tables 6-14, 6-15 and 6-16 show intersection capacity analysis results for the 2022 No-Build morning, midday and evening peak hour conditions with detailed volume to capacity ratios, delay and queue length.

Table 6-14 2022 No-Build Condition Morning Peak Hour- Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections:					
Summer Street at D Street	EB L	0.48	18.1	B	114
	EB T/R	0.45	16.8	B	170
	WB L/T	>1	>80	F	#510
	WB R	0.76	14.2	B	248
	NB L	0.58	41.0	D	142
	NB T/R	0.74	44.5	D	154
	SB L	0.79	51.3	D	#230
	SB L/T/R	0.76	43.3	D	182
	Overall	1.0	>80	F	
Summer Street at Pumphouse Road	EB L/T	0.47	8.3	A	194
	WB T/R	0.73	18.8	B	#475
	SB L/R	0.49	41.4	D	88
	Overall	0.65	17.4	B	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.45	13.9	B	110
	EB T/R	0.46	9.6	A	198
	WB L	0.12	20.6	C	20
	WB T/R	>1	>80	F	#938
	NB L/T/R	0.63	29.1	C	#155
	SB L/T	0.56	26.8	C	91
	SB R	0.10	12.1	B	19
	Overall	>1	>80	F	
Summer Street at East First Street	EB L/T/R	>1	>80	F	#229
	WB L/T/R	0.89	44.6	D	#384
	NB L/T/R	>1	>80	F	#703
	SB L/T/R	>1	>80	F	#427
	Overall	>1	>80	F	
Unsignalized Intersections:					
Summer Street at Fargo Street	EB T/R	0.19	0.0	A	0
	WB L/T	0.16	4.3	A	14
	NB L/R	0.22	17.7	C	21
Summer Street at FedEx	EB L/R	0.45	>50	F	46
	NB L/T	0.70	0.0	A	0
	SB T/R	0.29	0.0	A	0
East FirstStreet at Farragut Road	EB L/T/R	0.93	>50	F	226
	WB L/T/R	0.10	16.9	C	8
	NB L/T/R	0.17	7.0	A	15
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 6-15 2022 No-Build Condition Midday Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections					
Summer Street at D Street	EB L	0.43	11.5	B	138
	EB T/R	0.27	9.7	A	101
	WB L/T	0.58	34.5	C	#160
	WB R	0.44	16.6	B	252
	NB L	0.25	36.8	D	54
	NB T/R	0.55	39.4	D	77
	SB L	0.65	40.8	D	148
	SB L/T/R	0.52	34.9	C	98
	Overall	0.57	25.1	C	
Summer Street at Pumphouse Road	EB L/T	0.37	7.9	A	172
	WB T/R	0.35	13.1	B	145
	SB L/R	0.46	36.7	D	68
	Overall	0.39	13.7	B	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.43	20.6	C	100
	EB T/R	0.63	20.1	C	176
	WB L	0.18	32.6	C	25
	WB T/R	>1	>1	F	#361
	NB L/T/R	0.17	12.8	B	75
	SB L/T	0.53	16.1	B	#255
	SB R	0.15	5.9	A	36
	Overall	0.85	>80	F	
Summer Street at East First Street	EB L/T/R	0.61	34.2	C	83
	WB L/T/R	0.45	28.4	C	90
	NB L/T/R	0.27	9.7	A	133
	SB L/T/R	0.61	9.0	A	#209
	Overall	0.61	15.0	B	
Unsignalized Intersections					
Summer Street at Fargo Street	EB T/R	0.17	0.0	A	0
	WB L/T	0.12	4.8	A	10
	NB L/R	0.39	23.3	C	45
Summer Street at FedEx	EB L/R	0.09	19.2	C	7
	NB L/T	0.28	0.4	A	1
	SB T/R	0.31	0.0	A	0
East First Street at Farragut Road	EB L/T/R	0.75	34.5	D	152
	WB L/T/R	0.31	16.6	C	33
	NB L/T/R	0.08	5.9	A	6
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 6-16 2022 No-Build Condition Evening Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95TH Queue[4]
Signalized Intersections:					
Summer Street at D Street	EB L	0.73	30.5	C	#275
	EB T/R	0.69	23.6	C	317
	WB L/T	>1	>80	F	#336
	WB R	0.48	24.4	C	316
	NB L	0.50	36.6	D	124
	NB T/R	0.80	44.9	D	175
	SB L	>1	>80	F	#446
	SB L/T/R	>1	>80	F	#372
	Overall	>1	70.0	E	
Summer Street at Pumphouse Road	EB L/T	0.74	25.9	C	#509
	WB T/R	0.64	29.9	C	204
	SB L/R	0.71	37.8	D	#260
	Overall	0.73	29.7	C	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.31	28.8	C	62
	EB T/R	>1	>80	F	#589
	WB L	0.14	29.9	C	23
	WB T/R	>1	>80	F	#367
	NB L/T/R	0.13	7.0	A	41
	SB L/T	0.57	10.5	B	174
	SB R	0.14	3.6	A	12
	Overall	0.85	>80	F	
Summer Street at East First Street	EB L/T/R	>1	>80	F	143
	WB L/T/R	0.52	31.2	C	109
	NB L/T/R	0.61	18.6	B	252
	SB L/T/R	>1	>80	F	#1010
	Overall	>1	>80	F	
Unsignalized Intersections:					
Summer Street at Fargo Street	EB T/R	0.41	0.0	A	0
	WB L/T	0.25	9.5	A	24
	NB L/R	>1	>50	F	165
Summer Street at FedEx	EB L/R	0.59	>50	F	59
	NB L/T	0.32	0.5	A	1
	SB T/R	0.70	0.0	A	0
East First Street at Farragut Road	EB L/T/R	0.29	10.0	A	30
	WB L/T/R	0.04	13.1	B	4
	NB L/T/R	0.07	7.8	A	6
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Under the No-Build Condition, there is a significant increase in traffic volumes along the Summer Street corridor due to general background growth and specific development forecasts. This expected increase results in a decline in LOS in the Study Area. With the exception of Summer Street at Pumphouse Road, all of the signalized intersections show significant delay and unacceptable LOS.

The unsignalized intersection of Summer Street at the FedEx Driveway declines to a LOS F in the morning and evening peak hours due to increased traffic on Summer Street.

Without the construction of the DFC, the eastbound left turn movement from East First Street into Conley Terminal would operate at a LOS F during the morning peak hour. This is a result of the increased employee and truck traffic associated with the planned growth at Conley Terminal. The midday and evening peaks would continue to operate with acceptable levels of delay.

6.7.3 2022 Build Condition

The 2022 Build Condition would mitigate the increased Conley Terminal container truck traffic by relocating this activity from East First Street to the new DFC. Results of this change are presented in Tables 6-17, 6-18 and 6-19.

With the DFC, traffic volumes would be reduced on East First Street and the intersections of East First Street/Summer Street and East First Street/Farragut Road/Conley Gate.

The intersection of East First Street at Summer Street does not show an improvement in overall LOS from the 2022 No Build Condition to the 2022 Build Condition with the removal of Conley trucks due to a forecasted increase in background projects. However, the results show improvements in delay and shorter queue lengths. During the morning peak hour, the southbound queue is reduced from 427 to 261 feet. This signal is actuated, meaning that loop detectors recognize traffic flow and the amount of green time given to each signal phase is adjusted in real time. No changes to signal timings are proposed with the relocation of trucks to the DFC.

The intersection of East First Street at Farragut Road shows a substantial improvement in LOS, with the construction of the new DFC, with the LOS improving from LOS F to LOS C in the morning peak, LOS D to LOS B in the midday peak and remaining at LOS B in the evening peak.

The new DFC would operate at acceptable LOS D or better for all peak hours. Analysis results indicate that southbound trucks making a left-turn onto the DFC would operate at a LOS F (greater than 50 seconds of delay) during the morning peak hour only. This delay is caused by trucks waiting for a gap in traffic which is metered by the traffic signal at East First Street. Because of the signal timings, trucks may need to wait for the signal to turn red to create a gap in traffic. The southbound left-turn queue is expected to operate with a 95th percentile queue of approximately 180 feet equal to the southbound left-turn storage lane during the morning peak hour. The 95th percentile queue has only a 5-percent probability of being exceeded during the analysis time period and was used to determine the required southbound left-turn storage length. Average queues on a typical day are expected to be less.

Table 6-17 2022 Build Condition Morning Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections:					
Summer Street at D Street	EB L	0.48	18.1	B	114
	EB T/R	0.45	16.8	B	170
	WB L/T	>1.0	>80	F	#510
	WB R	0.76	14.2	B	248
	NB L	0.58	41.0	D	142
	NB T/R	0.74	44.5	D	154
	SB L	0.79	51.3	D	#183
	SB L/T/R	0.76	43.3	D	182
	Overall	1.0	>80	F	
Summer Street at Pumphouse Road	EB L/T	0.47	8.3	A	194
	WB T/R	0.73	18.8	B	#475
	SB L/R	0.49	41.4	D	88
	Overall	0.65	17.4	B	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.45	13.9	B	110
	EB T/R	0.46	9.6	A	198
	WB L	0.12	20.6	C	20
	WB T/R	>1.0	>80	F	#938
	NB L/T/R	0.63	29.1	C	#155
	SB L/T	0.56	26.8	C	91
	SB R	0.10	12.1	B	19
	Overall	>1.0	>80	F	
Summer Street at East First Street	EB L/T/R	>1.0	>80	F	#229
	WB L/T/R	0.89	44.3	D	#383
	NB L/T/R	>1.0	>80	F	#703
	SB L/T/R	>1.0	>80	F	#261
	Overall	>1.0	>80	F	
Unsignalized Intersections					
Summer Street at Fargo Street	EB T/R	0.19	0.0	A	0
	WB L/T	0.16	4.3	A	14
	NB L/R	0.22	17.7	C	21
Summer Street at FedEx / Dedicated Freight Corridor	EB L/T/R	>1	>50	F	-
	WB L/T/R	0.00	19.4	C	1
	NB L	0.00	8.8	A	0
	NB T/R	0.70	0.0	A	0
	SB L	>1.0	>50	F	182
	SB T/R	0.25	0.0	A	0
East First Street at Farragut Road	EB L/R	0.44	23.6	C	55
	WB L/T/R	0.09	16.8	C	8
	NB L/T/R	0.17	7.0	A	15
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet
95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 6-18 2022 Build Condition Midday Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections:					
Summer Street at D Street	EB L	0.43	11.5	B	138
	EB T/R	0.27	9.7	A	101
	WB L/T	0.58	34.5	C	#160
	WB R	0.44	16.6	B	252
	NB L	0.25	36.8	D	54
	NB T/R	0.55	39.4	D	77
	SB L	0.65	40.8	D	148
	SB L/T/R	0.52	34.9	C	98
	Overall	0.57	25.1	C	
Summer Street at Pumphouse Road	EB L/T	0.37	7.9	A	172
	WB T/R	0.35	13.1	B	145
	SB L/R	0.46	36.7	D	68
	Overall	0.39	13.7	B	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.43	20.6	C	100
	EB T/R	0.63	20.1	C	176
	WB L	0.18	32.6	C	25
	WB T/R	>1.0	>80	F	#361
	NB L/T/R	0.17	12.8	B	75
	SB L/T	0.53	16.1	B	#255
	SB R	0.15	5.9	A	36
	Overall	0.85	>80	F	
Summer Street at East First Street	EB L/T/R	0.65	36.7	D	82
	WB L/T/R	0.37	27.9	C	78
	NB L/T/R	0.27	9.0	A	121
	SB T/R	0.41	6.7	A	134
	Overall	0.45	13.3	B	
Unsignalized Intersections					
Summer Street at Fargo Street	EB T/R	0.17	0.0	A	0
	WB L/T	0.12	4.8	A	10
	NB L/R	0.39	23.3	C	45
Summer Street at FedEx / Dedicated Freight Corridor	EB L/T/R	0.18	37.2	E	15
	WB L/T/R	0.27	15.2	C	27
	NB L	0.01	8.9	A	1
	NB T/R	0.23	0.0	A	0
	SB L	0.27	14.3	B	28
	SB T/R	0.25	0.0	A	0
East First Street at Farragut Road	EB L/R	0.25	12.8	B	25
	WB L/T/R	0.27	14.3	B	26
	NB L/T	0.07	5.6	A	6
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

Table 6-19 2022 Build Condition Evening Peak Hour - Capacity Analysis

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Signalized Intersections					
Summer Street at D Street	EB L	0.73	30.5	C	#275
	EB T/R	0.69	23.6	C	317
	WB L/T	>1.0	>80	F	#336
	WB R	0.48	24.4	C	316
	NB L	0.50	36.6	D	124
	NB T/R	0.80	44.9	D	175
	SB L	>1.0	>80	F	#446
	SB L/T/R	>1.0	>80	F	#372
	Overall	>1.0	70.0	E	
Summer Street at Pumphouse Road	EB L/T	0.74	25.9	C	#508
	WB T/R	0.64	29.9	C	204
	SB L/R	0.71	37.8	D	#260
	Overall	0.73	29.7	C	
Summer Street at Drydock Avenue and Pappas Way	EB L	0.31	28.8	C	62
	EB T/R	>1.0	>1.0	F	#589
	WB L	0.14	29.9	C	23
	WB T/R	>1.0	>1.0	F	#367
	NB L/T/R	0.13	7.0	A	41
	SB L/T	0.57	10.5	B	174
	SB R	0.14	3.6	A	12
	Overall	0.85	>80	F	
Summer Street at East First Street	EB L/T/R	>1.0	>80	F	142
	WB L/T/R	0.51	31.2	C	107
	NB L/T/R	0.60	18.4	B	249
	SB T/R	>1.0	>80	F	#1001
	Overall	>1.0	>80	F	
Unsignalized Intersections:					
Summer Street at Fargo Street	EB T/R	0.41	0.0	A	0
	WB L/T	0.25	9.5	A	24
	NB L/R	>1.0	>50	F	165
Summer Street at FedEx / Dedicated Freight Corridor	EB L/T/R	0.96	>50	F	85
	WB L/T/R	0.03	14.5	B	2
	NB L	0.01	15.8	C	1
	NB T/R	0.31	0.40	A	0
	SB L	0.00	0.0	A	0
	SB T/R	0.70	0.0	A	0
East First Street at Farragut Road	EB L/R	0.29	9.9	A	30
	WB L/T/R	0.04	13.0	B	3
	NB L/T/R	0.07	7.8	A	6
	SB T/R	0.00	0.0	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service
4 Queue length in feet

95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.

6.7.4 Level of Service Summary

Results of the LOS analysis are summarized in Tables 6-20, 6-21 and 6-22 for the morning, midday and evening peak hours.

Table 6-20 Morning Peak Hour - Level of Service Comparison

Intersection		Existing Condition	No-Build Condition	Build Condition
Signalized Intersections				
Summer Street at D Street	EB L	B	B	B
	EB T/R	B	B	B
	WB L/T	C	F	F
	WB R	B	B	B
	NB L	D	D	D
	NB T/R	D	D	D
	SB L	D	D	D
	SB L/T/R	D	D	D
	Overall	C	F	F
Summer Street at Pumphouse Road	EB L/T	A	A	A
	WB T/R	B	B	B
	SB L/R	D	D	D
	Overall	B	B	B
Summer Street at Drydock Avenue and Pappas Way	EB L	B	B	B
	EB T/R	A	A	A
	WB L	B	C	C
	WB T/R	D	F	F
	NB L/T/R	C	C	C
	SB L/T	C	C	C
	SB R	B	B	B
	Overall	C	F	F
Summer Street at East First Street	EB L/T/R	C	F	F
	WB L/T/R	C	D	D
	NB L/T/R	D	F	F
	SB L/T/R	D	F	F
	Overall	D	F	F
Unsignalized Intersections:				
Summer Street at Fargo Street	EB T/R	A	A	A
	WB L/T	A	A	A
	NB L/R	B	C	C
Summer Street at FedEx / Dedicated Freight Corridor	EB L/T/R	D	F	F
	WB L/T/R	-	-	C
	NB L	-	-	A
	NB T/R	A	A	A
	SB L	-	-	F
	SB T/R	A	A	A
East First Street at Farragut Road	EB L/R	C	F	C
	WB L/T/R	C	C	C
	NB L/T/R	A	A	A
	SB T/R	A	A	A

Table 6-21 Midday Peak Hour - Level of Service Comparison

Intersection		Existing Condition	No-Build Condition	Build Condition
Signalized Intersections				
Summer Street at D Street	EB L	A	B	B
	EB T/R	A	A	A
	WB L/T	C	C	C
	WB R	B	B	B
	NB L	D	D	D
	NB T/R	D	D	D
	SB L	D	D	D
	SB L/T/R	D	C	C
	Overall	C	C	C
Summer Street at Pumphouse Road	EB L/T	A	A	A
	WB T/R	B	B	B
	SB L/R	D	D	D
	Overall	B	B	B
Summer Street at Drydock Avenue and Pappas Way	EB L	B	C	C
	EB T/R	B	C	C
	WB L	C	C	C
	WB T/R	D	F	F
	NB L/T/R	B	B	B
	SB L/T	C	B	B
	SB R	B	A	A
	Overall	C	F	F
Summer Street at East First Street	EB L/T/R	C	C	D
	WB L/T/R	C	C	C
	NB L/T/R	A	A	A
	SB L/T/R	A	A	A
	Overall	B	B	B
Unsignalized Intersections:				
Summer Street at Fargo Street	EB T/R	A	A	A
	WB L/T	A	A	A
	NB L/R	C	C	C
Summer Street at FedEx / Dedicated Freight Corridor	EB L/T/R	C	C	E
	WB L/T/R	-	-	C
	NB L	-	-	A
	NB T/R	A	A	A
	SB L	-	-	B
	SB T/R	A	A	A
East First Street at Farragut Road	EB L/R	B	D	B
	WB L/T/R	B	C	B
	NB L/T/R	A	A	A
	SB T/R	A	A	A

Table 6-22 Evening Peak Hour - Level of Service Comparison

Intersection		Existing Condition	No-Build Condition	Build Condition
Signalized Intersections				
Summer Street at D Street	EB L	B	C	C
	EB T/R	B	C	C
	WB L/T	D	F	F
	WB R	C	C	C
	NB L	D	D	D
	NB T/R	D	D	D
	SB L	D	F	F
	SB L/T/R	D	F	F
	Overall	C	E	E
Summer Street at Pumphouse Road	EB L/T	B	C	C
	WB T/R	B	C	C
	SB L/R	D	D	D
	Overall	C	C	C
Summer Street at Drydock Avenue and Pappas Way	EB L	C	C	C
	EB T/R	D	F	F
	WB L	C	C	C
	WB T/R	E	F	F
	NB L/T/R	A	A	A
	SB L/T	A	B	B
	SB R	A	A	A
	Overall	D	F	F
Summer Street at East First Street	EB L/T/R	E	F	F
	WB L/T/R	C	C	C
	NB L/T/R	B	B	B
	SB L/T/R	C	F	F
	Overall	C	F	F
Unsignalized Intersections:				
Summer Street at Fargo Street	EB T/R	A	A	A
	WB L/T	A	A	A
	NB L/R	F	F	F
Summer Street at FedEx / Dedicated Freight Corridor	EB L/T/R	E	F	F
	WB L/T/R	-	-	B
	NB L	-	-	C
	NB T/R	A	A	A
	SB L	-	-	A
	SB T/R	A	A	A
East First Street at Farragut Road	EB L/R	A	A	A
	WB L/T/R	B	B	B
	NB L/T/R	A	A	A
	SB T/R	A	A	A

The expected increase in truck activity at area intersections associated with the planned Terminal growth is summarized in Table 6-23. As shown, there would be a significant decrease in truck activity with the DFC at the Summer Street/East First Street and East First Street/Farragut Road intersections.

Table 6-23 Truck Growth (2012 and 2022) as a Percentage of Total Entering Intersection Volume

Intersection	Existing to No Build Change in Trucks	No-Build to Build Change in Trucks
AM Peak Hour		
Summer Street at D Street	0.7%	0%
Summer Street at Pumphouse Road	1.8%	0%
Summer Street at Drydock Avenue and Pappas Way	1.8%	0%
Summer Street at East First Street	1.9%	-3.7%
Summer Street at Fargo Street	1.7%	0%
Summer Street at FedEx / Dedicated Freight Corridor	2.1%	0%
East First Street at Farragut Road	9.2%	-17.7%
Midday Peak Hour		
Summer Street at D Street	3.9%	0%
Summer Street at Pumphouse Road	8.6%	0%
Summer Street at Drydock Avenue and Pappas Way	7.4%	0%
Summer Street at East First Street	9.2%	-16.9%
Summer Street at Fargo Street	8.2%	0%
Summer Street at FedEx / Dedicated Freight Corridor	9.7%	0%
East First Street at Farragut Road	16.2%	-38.9%
Evening Peak Hour		
Summer Street at D Street	0.1%	0%
Summer Street at Pumphouse Road	0.4%	0%
Summer Street at Drydock Avenue and Pappas Way	0.3%	0%
Summer Street at East First Street	0.4%	-0.4%
Summer Street at Fargo Street	0.4%	0%
Summer Street at FedEx / Dedicated Freight Corridor	0.4%	0%
East First Street at Farragut Road	3.0%	-3.0%

6.8 Conley Terminal Gate Intersection Improvements

Once Conley Terminal trucks are relocated to the DFC, Massport proposes to improve conditions at the Conley Terminal Gate at the intersection of Farragut Road/Shore Road/East First Street. Currently, the intersection is a large intersection accommodating tractor-trailer turning activity entering and exiting the Terminal. With the proposed DFC, Conley container trucks would no longer use this gate entrance.

As proposed, the new intersection would be made more pedestrian friendly by reducing the paved area and providing pedestrian crosswalks and ramps at each leg of the intersection. These changes will improve the link for pedestrians between the Buffer Open Space and Shore Drive leading to Castle Island. Traffic control would be changed to an all-way stop so that all approaches must stop at this intersection.

A LOS analysis was conducted to determine operations with the change to all-way stop control at the Conley Gate's intersection with Farragut Road/Shore Road/East First Street. Results for the 2022 Build Condition with all-way stop control are shown in Table 6-24.

Table 6-24 Conley Gate Intersection Improvements

Intersection	Movement	V/C[1]	Delay[2]	LOS[3]	95th Queue[4]
Morning Peak Hour	EB L/R	0.23	10.1	B	0
	WB L/T/R	0.05	8.4	A	0
	NB L/T/R	0.39	10.8	B	0
	SB T/R	0.15	9.0	A	0
Midday Peak Hour	EB L/R	0.22	9.4	A	0
	WB L/T/R	0.19	9.0	A	0
	NB L/T/R	0.20	9.6	A	0
	SB T/R	0.19	9.2	A	0
Evening Peak Hour	EB L/R	0.30	8.3	A	0
	WB L/T/R	0.03	7.8	A	0
	NB L/T/R	0.14	9.1	A	0
	SB T/R	0.06	7.5	A	0

1 V/C = volume to capacity ratio
2 Delay = Average delay in seconds per vehicle
3 LOS = Level-of-Service,
4 Queue length in feet

With all-way stop control, the intersection of East First Street/Farragut Road/ Shore Road at the Conley Gate would operate at a LOS B or better during all peak hours. This is an improvement over conditions that would otherwise prevail as discussed in Section 6.7.2.

6.9 Parking

The construction of the DFC will isolate the northern portion of the Exelon Summer Street parking lot from the remainder of the Exelon Site. Massport would acquire the northern portion from Exelon as part of the DFC right-of-way acquisition and this area would no longer be used for parking. Approximately 63 un-used spaces will be eliminated at the Exelon Summer Street parking lot. These spaces are not currently used, since most of the power plant facilities on the Exelon Site have been decommissioned and the site is only minimally staffed.

On East First Street, the project would result in a gain of approximately 57 on-street parking spaces on the northern side as requested by the Buffer Design Advisory Committee. In total, the Proposed Project would provide 114 parking spaces (6 parallel and 108 angled), between the MBTA bus facility's western driveway and Farragut Road. These parking spaces would be made available for the general public and controlled by BTD. Under the existing condition, there are approximately 57 parallel parking spaces in this segment.

The combined change in parking from the Summer Street parking lot and East First Street would result in a net loss of approximately 6 spaces in total. Parking changes are summarized in Table 6-25.

Table 6-25 Summary of Parking Changes

Location		Existing Spaces	Future Spaces
Exelon Surface Lot	Private	63[1]	0
	Public	0	0
East First Street	Private	0	0
(north side between MBTA facility and Farragut Road)	Public	57	114
Total Space Count	Private	63	0
	Public	57	114
		120	114

1 Not currently utilized.

6.10 Summary

With the conservative traffic analysis including 500,000 TEUs, the container truck activity at the Terminal is expected to increase from approximately 904 truck trips to 2,410 truck trips (in and out) daily. The Conley DFC would benefit traffic operations in the vicinity of the Terminal by significantly reducing traffic volumes on East First Street. More specifically, the Project is anticipated to:

- Reduce traffic volumes on East First Street by as much as 46 percent, which will improve traffic conditions for residents and MBTA bus operations;

- Relocate all Conley container truck trips to the DFC; and
- Improve operations at the intersection of East First Street at Summer Street by rerouting Conley trucks from this location. The reduction in truck volumes at this intersection would reduce the queue length and delay for the southbound Summer Street movement.

The proposed DFC's intersection with Summer Street would be unsignalized with stop control signed for trucks exiting Conley Terminal. All container trucks exiting the Terminal would make a right turn onto Summer Street. This newly created intersection would not impact operations on Summer Street since the design includes a southbound left-turn storage lane for trucks and a northbound storage lane for vehicles turning into FedEx. The existing northbound and southbound lanes on Summer Street would be maintained.

Improvements would be made on East First Street to improve operations at the intersection of East First Street/Farragut Road/Conley Gate to make this intersection an all-way stop with improved pedestrian facilities. These improvements will enhance the connection for pedestrians between East First Street and the public open space to the east. Additional overnight residential parking would be provided along the Buffer Open Space frontage by reconfiguring the existing 57 parallel parking spaces. This parking area would provide approximately 114 (57 net-new) angled spaces.

7

Air Quality

7.1 Introduction

The potential air quality effects of proposed operational changes and construction were evaluated as part of the overall project environmental review. The review focused on three aspects of the Project: operation of the expanded Conley Terminal, operation of the proposed Dedicated Freight Corridor (DFC), and overall project construction. Because the Buffer Open Space is a green space with extensive landscaping, this project component was not evaluated as part of the air quality analyses as it is assumed it will not result in negative air quality impacts.

Improvements to Conley Terminal (expansion onto the former Coastal Oil site) do not exceed any Massachusetts Environmental Policy Act (MEPA) regulatory thresholds for air quality because no new major stationary sources of emissions are proposed. As a new transportation element, an air quality analysis was conducted for the proposed DFC to demonstrate that the new roadway complies with the state and federal air quality requirements of the 1990 Clean Air Act Amendments (CAAA).

The CAAA resulted in states being divided into attainment and non-attainment areas with classifications based upon the severity of their air quality problem. A non-attainment area is an area that has had measured pollutant levels that exceed the National Ambient Air Quality Standards (NAAQS). The CAAA established emission reduction requirements that vary by an area's classification. When an area is classified as non-attainment, the state must develop a plan to bring emissions within that area into compliance with the NAAQS. This is done through development of a State Implementation Plan (SIP).

Guidance from both the EPA and Massachusetts Department of Environmental Protection (DEP) define the air quality modeling and review criteria for analyses prepared pursuant to the 1990 CAAA, which require that a proposed project not:

- Cause any new violation of the NAAQS;
- Increase the frequency or severity of any existing violations; or
- Delay attainment of any NAAQS.

This air quality study includes a local and regional air quality analysis of the mobile sources from the DFC that demonstrates compliance with the SIP and Transportation Conformity. Based on the non-attainment or maintenance designations within the

Study Area, the air quality study includes a microscale analysis of carbon monoxide (CO) and particulate matter (PM), a regional assessment of the mobile source pollutants including volatile organic compounds (VOC), oxides of nitrogen (NOx), and particulate matter (PM) as well as a regional assessment of the mobile source greenhouse gas impacts (CO_2).

Lastly, construction-phase air quality was considered. As described further in Section 7.7, while the project does not meet EPA requirements for a detailed air quality analysis, a number of construction mitigation measures will be implemented to minimize temporary adverse impacts.

7.2 Key Findings

The air quality analysis includes the shifting of truck traffic serving Conley Terminal from East First Street to the proposed DFC and the additional truck and equipment anticipated from the expansion of Conley Terminal.

The air quality analysis demonstrates that:

- No significant adverse air quality impacts from the DFC are anticipated in regional emissions.
- All existing and future CO, PM_{10}, and $PM_{2.5}$ concentrations at the hot spots (the study intersections) are below the NAAQS.
- All annual $PM_{2.5}$ concentrations ranged from 9.0 to 9.1 $\mu g/m^3$ and are well below the NAAQS of 15 $\mu g/m^3$.
- The truck, crane, and yard dog operations will affect regional emissions in different ways. The reduced mileage of truck travel would tend to decrease emissions, especially to the area along East First Street. However, increased operations of cranes would increase emissions. Although the overall project results in an increase in emissions due to all of the project activities, the air quality study demonstrates that the Proposed Project conforms to the CAAA.

7.3 Air Quality/ Attainment Status

The EPA has set the NAAQS for air pollutants to protect the public health. The predominant source of pollution anticipated from the Proposed Project is emissions from project-related motor vehicles and truck traffic as well as the on-site operations equipment. CO, PM_{10} and $PM_{2.5}$ are directly emitted by motor vehicles. CO, PM_{10} and $PM_{2.5}$ concentrations can be estimated by computer modeling and compared to the NAAQS. Table 7-1 outlines the NAAQS for all of the pollutants regulated by the EPA. A summary of the key regulated pollutants and their potential health effects are provided below.

Table 7-1 National Ambient Air Quality Standards

Pollutant	Primary Standards		Secondary Standards	
	Level	Averaging Time	Level	Averaging Time
Carbon Monoxide	9 ppm (10 mg/m^3)	8-hour[1]	None	
	35 ppm (40 mg/m^3)	1-hour[1]	None	
Lead	0.15 ug/m^3	Quarterly Average	Same as Primary	
Nitrogen Dioxide	0.053 ppm (100 ug/m^3)	Annual (Arithmetic Mean)	Same as Primary	
Particulate Matter (PM_{10})	150 ug/m^3	24-hour[2]	Same as Primary	
Particulate Matter ($PM_{2.5}$)	15 ug/m^3	Annual (Arithmetic Mean)[3]	Same as Primary	
	35 ug/m^3	24-hour[4]	Same as Primary	
Ozone	0.075 ppm (2008 std)	8-hour[5]	Same as Primary	
	0.08 ppm (1997 std)	8-hour[6]	Same as Primary	
	0.12 ppm	1-hour (applied to limited areas)[7]		
Sulfur Dioxide	0.03 ppm	Annual	0.5 ppm	3-hour
	0.14 ppm	24-hour[1]		

1 Not to be exceeded more than once per year.
2 Not to be exceeded more than once per year on average over 3 years.
3 To attain this standard, the 3-year average of the weighted annual mean $PM_{2.5}$ concentrations from single or multiple community-oriented monitors must not exceed 15.0µg/m^3.
4 To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 µg/m^3 (effective December 17, 2006).
5 To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm. (Effective 60 days after publication in the Federal Register)
6 To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm.
The 1997 standard—and the implementation rules for that standard—would remain in place for implementation purposes as EPA undertakes rulemaking to address the transition from the 1997 ozone standard to the 2008 ozone standard.
7 The standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is < 1.
As of June 15, 2005 EPA revoked the 1-hour ozone standard in all areas except the 8-hour ozone nonattainment Early Action Compact (EAC) Areas.

Carbon monoxide (CO) is a colorless and odorless gas that is a product of incomplete combustion. Carbon monoxide is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease.

The Boston area is classified by EPA as a CO Maintenance Attainment area, where the CO is classified as moderate where the area has a design value of 9.1 up to 16.4 ppm. The area would remain a Maintenance Attainment area for a 20-year period, after which it can re-designated to an Attainment area. A CO Maintenance area is an area in where the CO levels formerly exceeded the NAAQS, but have now been reduced to and meet the NAAQS. Through the federal and state Transportation Conformity requirements, proposed projects that are located in CO non-attainment or maintenance attainment areas are required to evaluate their impact on CO concentrations and the NAAQS.

Particulate matter (PM) is made up of small solid particles and liquid droplets that can enter the body through the respiratory system. PM_{10} refers to particulate matter

of 10 micrometers or less, and $PM_{2.5}$ refers to particulate matter 2.5 micrometers or less. Particulates over 10 micrometers in size are generally captured in the nose and throat and are readily expelled from the body. Particles smaller than 10 micrometers, and especially particles smaller than 2.5 micrometers, can reach the air ducts (bronchi) and the air sacs (alveoli) in the lungs. Particulates are associated with increased incidence of respiratory diseases, cardiopulmonary disease, and cancer.

The Boston area is in attainment with the NAAQS for particulate matter, however, a PM analysis was voluntarily conducted because trucks are frequently high emitters of PM.

Ozone is an irritant that affects lung tissue and respiratory function. Exposure to ozone can impair the ability to perform physical exercise; result in symptoms such as tightness in the chest, coughing, and wheezing; and ultimately result in asthma, bronchitis, or emphysema.

The Proposed Project is located in the Boston metropolitan area, which is currently classified as an attainment area for the 2008 8-hour ozone standard.

Volatile organic compounds (VOCs) are a general class of compounds containing hydrogen and carbon and are a precursor to the formation of ozone. While concentrations of VOCs in the atmosphere are not generally measured, changes in ground-level ozone is measured and used to assess potential health effects. Emissions of VOCs and nitrogen oxides (NO_x) react in the presence of heat and sunlight to form ozone in the atmosphere. While there is no NAAQS for VOC emissions, the mesoscale analysis assessed the changes in project-specific VOC regional emissions of DFC trucks, yard dogs, gantry and vessel cranes.

Nitrogen Oxides (NOx) When combustion temperatures are extremely high, as in automobile and truck engines, atmospheric nitrogen gas may combine with oxygen gas to form various oxides of nitrogen. Of these, nitric oxide (NO) and NO_2 are the most significant air pollutants. This group of pollutants is generally referred to as nitrogen oxides or NO_x. Nitric oxide is relatively harmless to humans but quickly converts to NO_2. Nitrogen dioxide has been found to be a lung irritant and can lead to respiratory illnesses. Nitrogen oxides, along with VOCs, are also precursors to ozone formation. The NOx emissions were assessed in a mesoscale (regional) context to show how the DFC's trucks, yard dogs, gantry and vessel cranes will affect regional emissions.

Carbon Dioxide (CO_2) GHGs are essential to maintaining the temperature of the Earth, without them the planet would be so cold as to be uninhabitable. While there are other GHGs, carbon dioxide (CO_2) is the predominant contributor to global warming, and emissions can be calculated for CO_2 with readily accessible data.

The Massachusetts Executive Office of Energy and Environmental Affairs (EEA) issued a policy and protocol for evaluating GHG emissions from proposed projects that are required to prepare an Environmental Impact Report (EIR) with particular emphasis on CO_2 emissions. This policy requires that projects subject to MEPA review of an EIR quantify GHGs generated by the Proposed Project and identify measures to reduce or minimize these impacts. Although not subject to this requirement, Massport has voluntarily included an analysis of project-related GHGs in this ENF.

7.4 Methodology

Mobile source emissions were evaluated for the existing and future conditions within the transportation Study Area. The Study Area for the transportation analyses includes intersections within close proximity of the Proposed Project that are expected to experience a change in traffic volume with the growth of the Conley Terminal.

The EPA and DEP have established guidelines that define the modeling and review criteria for local and regional air quality analyses prepared pursuant to the MEPA process. This process requires that a proposed project determine the change in project related vehicle emissions. If the VOC and NOx emissions from the Build Condition are greater than the No-Build Condition, then the Proposed Project should include all reasonable and feasible emission reduction mitigation measures. Massachusetts has incorporated this criterion into the State Implementation Plan (SIP).

The EPA and DEP guidelines require that the air quality study utilize traffic and emissions data for existing and future (No-Build and Build) conditions. The traffic and emissions data are incorporated into the EPA air quality modeling protocol to generate emissions projections that demonstrate whether or not the proposed project would have air quality impacts.

The air quality study for the Proposed Project evaluated several conditions, including Existing, 2022 No-Build and 2022 Build Conditions. The 2022 No-Build Condition assumed no changes to Conley Terminal, yard trucks, gantry and vessel cranes however the usage of the equipment is assumed to increase. The truck traffic was increased from 2010 to 2022 to account for growth over time at the Conley Terminal and for background growth associated with other planned projects and general background regional growth.

- ***Existing Condition*:** reflects existing (2012) traffic volumes in the traffic Study Area and the existing Conley Terminal operations equipment.
- ***No-Build Condition*:** (2022) assuming no changes to the Project Area and background growth associated with other planned projects and general background regional growth; and
- ***Build Condition*:** (2022) assuming the No-Build Condition background growth with the extension of Conley Terminal onto the former Coastal Oil site and the DFC, fully constructed and in operation.

The 2022 Build Condition assumes construction of the DFC, including the future traffic and operational equipment changes with the DFC project, as well as the expansion onto the former Coastal Oil site with additional gantry cranes and yard dogs for loading/unloading operations. No additional vessel cranes were assumed. The DFC is a new roadway to separate all of the Conley Terminal future truck traffic. Future project-related emission calculations are based upon changes in traffic and emission factor data as well as increases in on-site equipment. The traffic data include traffic volumes, vehicle-miles-of-travel, roadway operations, and physical roadway improvements. The emission factor data include emission reduction programs, analysis years, roadway speeds, and diesel engines for the gantry cranes.

The microscale and mesoscale analyses developed traffic (volumes and speeds) and emission factor data for the No-Build and Build Conditions. These data were incorporated into air quality models to demonstrate that the proposed project would meet the CAAA and SIP criteria. The mesoscale analysis evaluated the regional air quality impacts (VOCs, NOx, CO2, CO, and PM emissions) from the project by determining the change in total ozone precursor emissions (VOCs and NOx) from the existing conditions in the Study Area. The microscale analysis calculated the CO and PM concentrations for the future No-Build and Build conditions at the two most congested intersections in the Study Area.

Vehicles do not directly emit ozone, which is formed through a complex chemical process that occurs when ozone precursor emissions (NOx and VOCs) react in the presence of sunlight and heat. The ozone impacts due to the Proposed Project were evaluated by assessing changes in ozone precursor emissions in the mesoscale analysis and comparing the results to the CAAA criteria.

7.4.1 Mesoscale Analysis Methodology

The DEP guidelines require that the air quality study utilize traffic and emissions data for existing and future (No-Build and Build) conditions. The traffic and emissions data are incorporated into the DEP and the EPA air quality models to generate emissions estimates that demonstrate whether or not the Proposed Project would have regional air quality impacts.

7.4.1.1 Area Wide Roadway Emissions

The mesoscale air quality analysis utilizes developed traffic data (volumes, speeds, and roadway geometry) and emission factor data for Existing, No-Build, and Build Conditions. The future No-Build condition included regional background traffic growth and planned roadway improvements. The traffic volumes and analysis used for the air quality analysis reflected the Build conditions with the proposed dedicated freight corridor as presented in the traffic study. These data were incorporated into air quality models to demonstrate that the Proposed Project would meet the CAAA and SIP criteria. A more detailed discussion of the traffic information included in the No-Build and Build conditions can be found in *Chapter 6*, *Transportation*.

Consistent with the requirements of the SIP, the purpose of the mesoscale analysis is to estimate the area wide emissions of VOCs, NOx, PM_{10}, and $PM_{2.5}$ during a typical day in the peak ozone season (summer). The mesoscale analysis evaluated the change in emissions from the average daily traffic volumes, roadway lengths, and vehicle emissions. To demonstrate compliance with the SIP criteria, the air quality study must show the Proposed Project's change in daily (24-hour period) emissions. Using EPA-recommended air quality modeling techniques, total pollutant emissions were calculated for the Proposed Project under the Existing and future No-Build and Build Conditions. The mesoscale Study Area, at a minimum, includes all the roadway links and intersections that are projected to experience a ten percent increase in traffic from the Proposed Project and that experience a Level-of-Service (LOS) designation of "D" or

lower under existing or future conditions. Major roadways that were included in the mesoscale analysis are:

- Summer Street
- Northern Avenue
- Massport Haul Road
- D Street
- Frontage Road

7.4.1.2 Site-Specific Mesoscale Emissions

In addition to the regional pollution impacts anticipated from motor vehicles and trucks travelling to and from the Conley Terminal, the emissions related to onsite equipment were included in the mesoscale analysis. These include the ship-to-shore cranes which unload containers from the container vessel onto the container yard and the yard tractors or yard dogs which move the cargo containers to designated storage spaces in the container yard. The number of each type of equipment was based on the Conley Terminal inventory as of June 2011.

The emission factors that were used to develop the pollutant concentrations for the ship-to-shore cranes were based on a 450 KW generator. The emission factors used for the yard dogs were based on MOBILE emission factors for a heavy vehicle operating at 15 mph for the years 2012 and 2022.

The predominant source of regional pollution impacts anticipated from the proposed DFC is emissions resulting from the motor vehicles and trucks traveling to and from the Conley Terminal. The vehicular and truck traffic is expected to grow under the No-Build conditions, even without the Proposed Project. However, the site equipment was also included for a complete view of the pollutant concentration under existing and future (No-Build and Build) conditions.

7.4.2 Microscale Analysis Methodology

The microscale analysis evaluated the CO and PM concentrations at two congested intersections in the Study Area. The intersections selected for microscale air quality modeling were selected based upon the procedures outlined by the EPA and as referenced in the DEP guidelines.[28] Intersections were ranked based on traffic volumes and level of service. Two intersections were selected for analysis because they were the most congested intersections or would have the most increase in truck traffic:

- East First Street at Summer Street (existing condition)
- Summer Street at the Dedicated Freight Corridor (DFC) (future condition)

28 *Guidelines For Modeling Carbon Monoxide From Roadway Intersection,* U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Technical Support Division; Research Triangle Park, NC; EPA-454/R-92-005; November 1992.

The microscale analysis calculated maximum 1-hour and 8-hour CO concentrations, the 24-hour and annual $PM_{2.5}$ concentrations, and the 24-hour PM_{10} concentrations. The EPA's computer model CAL3QHC[29] was used to project CO and PM concentrations at receptor locations for each intersection. Receptors were placed at the edge of the roadway, but not closer than 10 feet (3 meters) from the nearest travel lane, so that they were not within the roadway mixing cell. The results calculated at these receptor locations represent the highest concentrations at each intersection. Receptor locations farther away from the intersections would have lower concentrations because of CO and PM dispersion characteristics. The receptor locations along the major roadways are also expected to have lower CO and PM concentrations than intersection receptors. The emission rates for vehicles traveling along these roadways are much lower than the emission rates for vehicles queuing at intersections. Figure 7-1 shows the location of the study intersections and their associated receptors.

7.4.2.1 Background Concentrations

The 1-hour pollutant concentrations were calculated directly using the EPA computer model, with evening peak hour traffic and emission data.

CO Background and Persistence Factors. The 8-hour CO concentrations were derived by applying a persistence factor of 0.70 to the 1-hour CO concentrations. The concentrations are expressed in parts per million (ppm) and include a 1-hour and 8-hour background concentration of 3.0 ppm and 2.1 ppm respectively. The CO persistence factor and background concentration are based on EPA's suggested factors. The 1-hour NAAQS for CO is 35 ppm. The emissions presented represent the highest emissions experienced at each intersection.

PM_{10} Background and Persistence Factors. The microscale analysis calculated the 24-hour PM_{10} concentrations for the Existing, No-Build and Build Conditions. The 1-Hour PM_{10} concentrations were calculated directly using the EPA's CAL3QHC model, with evening peak hour traffic and emission data. The 24-hour PM_{10} concentrations were calculated by applying the EPA persistence factor of 0.40 to the 1-hour concentrations. The concentrations are expressed in micrograms per cubic meter (ug/m^3) and include a 24-hour background concentration of 38.0 ug/m^3, which was based on DEP air quality monitoring data. The background concentrations are conservative because they were calculated from the DEP's most recent annual monitoring report[30] at DEP's Boston area (Harrison Avenue) permanent monitoring station. The 24-hour NAAQS for PM_{10} is 150.0 ug/m^3.

$PM_{2.5}$ Background and Persistence Factors. The microscale analysis calculated the 24-hour and annual $PM_{2.5}$ concentrations for the Existing, No-Build and Build Conditions. The 1-Hour $PM_{2.5}$ concentrations were calculated directly using the EPA's CAL3QHC model, with evening peak hour traffic and emission data. The 24-hour $PM_{2.5}$ concentrations were calculated by applying the EPA persistence factor of 0.40 to

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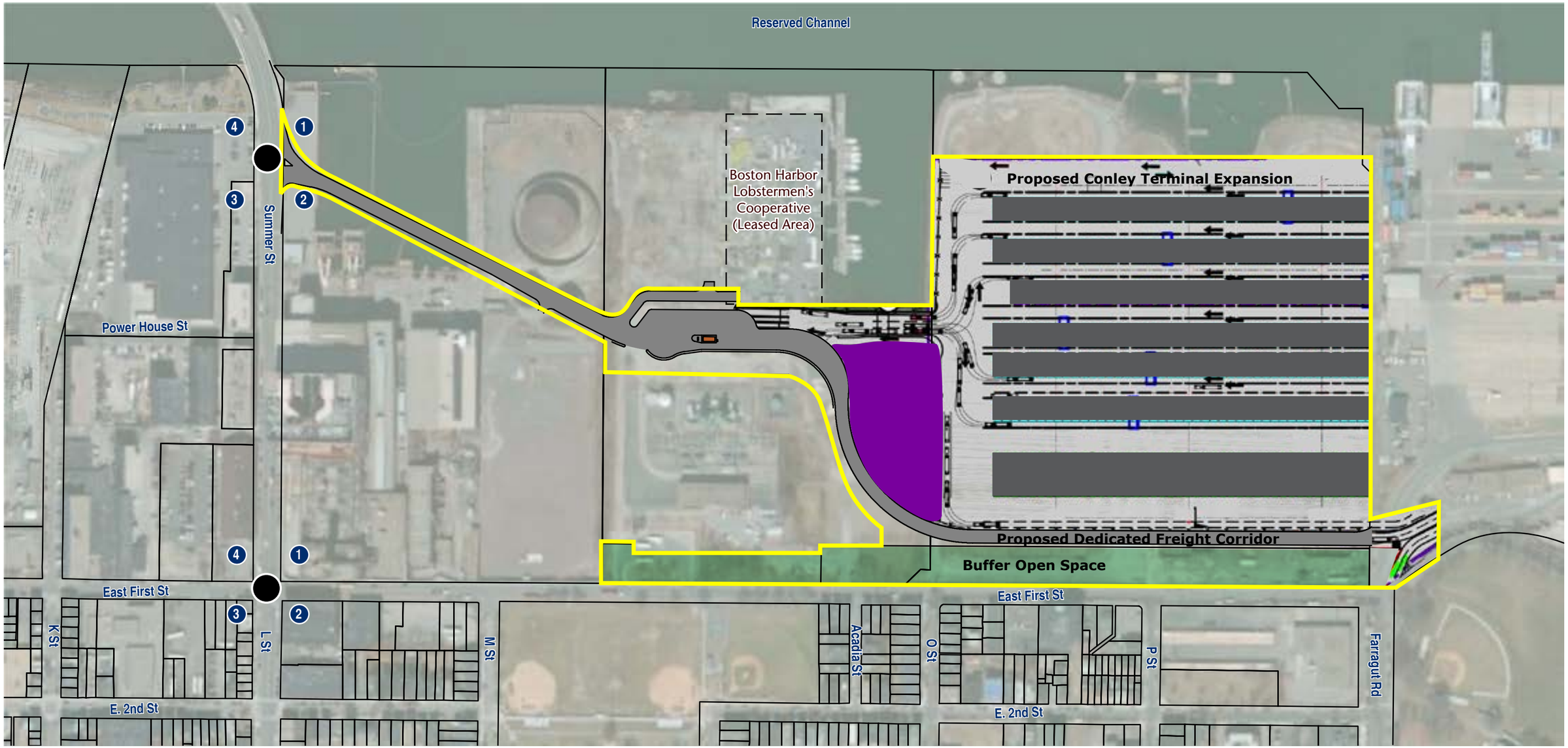
29 *User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections,* US Environmental Protection Agency, Office of Air Quality Planning and Standards, Technical Support Division; Research Triangle Park, NC; EPA-454/R-92-006; November 1992.

30 *2008-2010 Annual Report on Air Quality in New England,* US Environmental Protection Agency, Region I, Lexington, Massachusetts; July 2009 – September 2011.



Project Area
Study Intersections
Receptor Locations
Federal Agency Inspection Facility

0 125 250 Feet

Conley Terminal Improvements

Figure 7-1

Air Quality Microscale Study Intersections and Receptors

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the 1-hour concentrations and 0.08 for the annual $PM_{2.5}$. The concentrations are expressed in micrograms per cubic meter (ug/m^3) and include a 24-hour background concentration of 23.2 ug/m^3, and an annual background concentration of 8.9 ug/m^3which was based on DEP air quality monitoring data. The background concentrations were also calculated from the DEP's most recent annual monitoring report[30] at DEP's Boston-area (Harrison Avenue) permanent monitoring station. The 24-hour NAAQS for $PM_{2.5}$ is 35.0 ug/m^3 and 15.0 ug/m^3 for the annual standard.

7.4.2.2 Emission Factors

The vehicle emission factors used in the microscale and mesoscale analysis were obtained using the EPA's MOBILE6.2[31] emissions model. MOBILE6.2 calculates emission factors from motor vehicles in grams per vehicle-mile for existing and future conditions. The emission rates calculated in this air quality study are adjusted to reflect Massachusetts-specific conditions such as the vehicle age distribution, the statewide Inspection and Maintenance (I/M) Program, and the Stage II Vapor Recovery System.[32] VOC and NO_x emission factors for the mesoscale analysis were determined using the DEP recommended temperatures for the summer (ozone) season. Similarly, for the microscale analysis the CO emission factors were determined using winter seasons and PM emission factors were determined using summer seasons. The MOBILE6.2 input data are presented in Appendix C.

The air quality study used traffic data (volumes, delays, and speeds) developed for each analysis condition. The microscale analysis used the evening peak hour traffic conditions during the CO season (winter) and the PM season (summer).

7.4.3 Greenhouse Gas Analysis Methodology

The following outlines the MEPA Greenhouse Gas Policy and Protocol as well as the specific methodology applied to assessing the mobile source GHG emissions related to proposed project that require an EIR. Massport has voluntarily included an analysis of project-related GHGs in this ENF.

7.4.3.1 MEPA Greenhouse Gas Policy and Protocol

The EEA issued the MEPA Greenhouse Gas Emissions Policy and Protocol (the "MEPA GHG Policy") – an initiative under the MEPA review process that requires project proponents to identify and describe the feasible measures to minimize both mobile and stationary source GHG emissions generated by their proposed project(s) when an EIR is required.[33] Mobile sources include vehicles traveling to and from a

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31 MOBILE6.2 (Mobile Source Emission Factor Model), May 2004 release from US EPA, Office of Mobile Sources, Ann Arbor, MI.
32 The Stage II Vapor Recovery System is the process of collecting gasoline vapors from vehicles as they are refueled. This requires the use of a special gasoline nozzle at the fuel pump.
33 *MEPA Greenhouse Gas Policy and Protocol*, Executive Office of Energy and Environmental Affairs, effective November 1, 2007 (revised version effective May 5, 2010).

project. While there are other GHGs, CO_2 is the predominant contributor to global warming, and emissions can be calculated for CO_2 with readily accessible data. This evaluation makes use of the terms CO_2 and GHG interchangeably.

7.4.3.2 Greenhouse Gas: Mobile Source Assessment Methodology

The GHG mobile source analysis was conducted following procedures similar to the ozone mesoscale analysis. Mobile source GHG emissions are based upon the traffic volumes, the distance traveled and the GHG emission rates. In addition to the regional pollution impacts anticipated from motor vehicles and trucks travelling to and from the Conley Terminal, the emissions related to onsite equipment was included in the mesoscale analysis. The mobile source emissions are calculated by performing a yearly mesoscale analysis to evaluate the changes in CO_2 emissions for the existing and future conditions within the transportation Study Area. The air quality study includes an analysis of the ozone precursor emissions (mesoscale analysis). The mesoscale analysis estimates the area wide CO_2 emissions from vehicular traffic for a one year period. Mobile source emissions were calculated by performing an annual GHG emissions mesoscale analysis to evaluate the estimated change in CO_2 emissions for the existing and future conditions within the Study Area. Similar to the mesoscale analysis for ozone, the future year of analysis was selected such that it is consistent with the regional long-range transportation plan.

Mobile Source Emission Rates

Currently, MOBILE6.2 has a simple estimate of CO2 emissions factors that do not vary by speed, temperature, fuel content, or the effects of vehicle inspection maintenance programs. This analysis method assumes that the Study Area was large enough that the variation in these parameters does not have a significant net effect. The emission rates calculated in this air quality study are adjusted to reflect Massachusetts-specific conditions.

Traffic Data

The air quality study used traffic data (volumes, delays, and speeds) developed for each analysis condition. The mesoscale analysis for CO_2 emissions used a yearly traffic volume for weekday and weekend periods. Vehicle speeds were developed based upon traffic volumes, observed traffic flow characteristics, and roadway capacity.

7.5 Affected Environment

The air quality analysis included a regional (mesoscale) and local (microscale) analysis of mobile source emissions.

7.5.1 Mesoscale Results: Existing Conditions

The mesoscale analysis calculated the 2012 mobile source emissions from the major Study Area roadways and the on-site equipment used for operations at the Terminal. These emissions, presented in Table 7-2, establish a baseline to compare future emissions (see *Appendix C: Air Quality,* for further details of the analysis).

Table 7-2 Mesoscale Analysis Results – Existing Conditions

Pollutants	Units	Existing
Oxides of Nitrogen (NOx)	Kg/day	4,861.1
Volatile Organic Compounds (VOC)	Kg/day	1,487.4
Particulate Matter 2.5 ($PM_{2.5}$)	Kg/day	108.7
Particulate Matter 10 (PM_{10})	Kg/day	188.6

7.5.2 Microscale Results: Existing Conditions

The maximum CO, PM_{10} and $PM_{2.5}$ concentrations, which are all below the NAAQS criteria, are presented in Table 7-3. The microscale analysis determined that the 1-hour CO concentrations range from 3.9 to 4.1 parts per million (ppm) and 8-hour CO concentrations range from 2.7 ppm to 2.9 ppm. The 24-hour PM_{10} ranges from 39.2 to 39.6 ug/m^3. The annual $PM_{2.5}$ is 9.1 ug/m^3 and the 24-hour $PM_{2.5}$ is 24.0 ug/m^3.

Table 7-3 Microscale Results: CO, $PM_{2.5}$ and PM_{10} —Existing Condition [1]

		Carbon Monoxide (CO)		Particulate Matter 10 (PM_{10})	Particulate Matter 2.5 ($PM_{2.5}$)	
Intersection	Receptor	1-Hour[2]	8-Hour[2]	24-Hour[3]	Annual[4]	24-Hour[4]
East First Street at Summer Street	1 - 840 Summer St	3.9	2.7	39.2	9.1	24.0
	2 - 836 Summer St	4.1	2.9	39.6	9.1	24.0
	3 - 599 East First St	4.0	2.8	39.2	9.1	24.0
	4 - 620 East First St	4.1	2.9	39.2	9.1	24.0

1 Concentrations include background concentrations and project emissions. The emissions represent the highest concentration experienced at each intersection.
2 Expressed in parts per million (ppm). 1-Hour CO includes background concentration of 3.0 ppm. For 8-Hour CO, background of 2.1 ppm and a persistence factor of 0.70 were used. The NAAQS for 1-Hour and 8-Hour CO are 35 ppm and 9 ppm respectively.
3 The 24-Hour PM_{10} includes background concentration of 38.0 ug/m^3 and a persistence factor of 0.40. The 24-hour NAAQS for PM_{10} is 150.0 ug/m^3
4 The annual $PM_{2.5}$ includes background concentration of 8.9 ug/m^3, and a persistence factor of 0.08. The 24-Hour $PM_{2.5}$ includes background concentration of 23.2 ug/m^3 and a persistence factor of 0.40. The annual and 24-hour NAAQS for PM_{10} is 15.0 and 35.0 ug/m^3, respectively.

7.6 Environmental Consequences

The following sections identify potential air quality impacts resulting from the implementation of the proposed project. The air quality study included a local and regional analysis of mobile sources from the proposed project. The local (microscale)

air quality analyses evaluated the impacts of the vehicles to demonstrate compliance with the NAAQS. The regional (mesoscale) air quality analyses evaluated the changes in total emissions due to the vehicles (vehicular traffic, truck traffic, shore-to-shore cranes and yard dogs). The results of these analyses demonstrate that the Proposed Project meets the EPA's and NAAQS air quality requirements.

This section presents the mobile source analyses, including the mesoscale (regional) and microscale (local) analyses. An assessment of the GHG emissions related to the Proposed Project is also presented.

7.6.1 No-Build Condition

The No-Build Condition includes regional background growth and previously planned roadway improvements by others. The No-Build Condition also includes the same on-site equipment as in the Existing Conditions where Conley Terminal continues to operate similar to today and does not expand its operations or equipment. Table 7-4 presents a summary the mesoscale (regional) analysis for Existing Conditions and No-Build Condition for various pollutants.

The mesoscale and microscale analyses indicate that reductions in pollutant concentrations are expected to occur over time relative to the Existing Condition. The future No-Build Condition VOC, NOx, and PM emissions are lower than the Existing Conditions emissions due to the implementation of emission control programs, such as the Federal Motor Vehicle Emission Control Program, the Stage II Vapor Recovery System, and the Massachusetts Vehicle Inspection and Maintenance program.

Table 7-4 Mesoscale No-Build Analysis Emissions Results (Kg/day)

Pollutant	Existing	No-Build
Oxides of Nitrogen (NOx)	4,750.3	2,145.2
Volatile Organic Compounds (VOC)	1,483.5	1,003.5
Particulate Matter 2.5 ($PM_{2.5}$)	107.5	80.2
Particulate Matter 10 (PM_{10})	187.1	167.2

The intersections that were analyzed as part of the microscale analysis are representative of the air quality impacts in the Study Area. Tables 7-5 and 7-6 summarize the results of the No-Build conditions for the microscale analysis for the CO, $PM_{2.5}$ and PM_{10} concentrations at the Study Area intersections and associated receptors. These values are the highest concentrations for each intersection. There are only minor changes at some of the receptors between Existing and No-Build Conditions.

Table 7-5 Microscale: Maximum Predicted 1-Hour and 8-Hour CO Concentrations — No-Build Analysis Emissions Results[1]

		Carbon Monoxide 1-Hour Concentrations[2]		Carbon Monoxide 8-Hour Concentrations[2]		NAAQS	
Intersection	Receptor	Existing	No-Build	Existing	No-Build	1-Hour	8-Hour
East First Street at Summer Street	1 - 840 Summer St	3.9	4.0	2.7	2.8	35	9
	2 - 836 Summer St	4.1	4.1	2.9	2.9	35	9
	3 - 599 East First St	4.0	4.1	2.8	2.9	35	9
	4 - 620 East First St	4.1	4.1	2.9	2.9	35	9

1 Concentrations include background concentrations and project emissions. The emissions represent the highest concentration experienced at each intersection.
2 Expressed in parts per million (ppm). 1-Hour CO includes background concentration of 3.0 ppm. For 8-Hour CO, background of 2.1 ppm and a persistence factor of 0.70 were used.

Table 7-6 Microscale: Maximum Predicted PM $_{2.5}$ and PM_{10} Concentrations [1] — No-Build Analysis Emissions Results[1]

		Particulate Matter 10 (PM_{10}) Concentrations[2]				Particulate Matter 2.5 ($PM_{2.5}$) Concentrations[3]	
		24-Hour		24-Hour		Annual	
Intersection	Receptor	Existing	No-Build	Existing	No-Build	Existing	No-Build
East First Street at Summer Street	1-840 Summer St	39.2	39.2	24.0	24.0	9.1	9.1
	2-836 Summer St	39.6	39.6	24.0	24.0	9.1	9.1
	3-599 East First St	39.2	39.2	24.0	23.6	9.1	9.0
	4-620 East First St	39.2	39.6	24.0	24.0	9.1	9.1

1 Concentrations include background concentrations and project emissions. The emissions represent the highest concentration experienced at each intersection.
2 The 24-Hour PM_{10} includes background concentration of 38.0 ug/m^3. The 24-hour NAAQS for PM_{10} is 150.0 ug/m^3
3 The annual $PM_{2.5}$ includes background concentration of 8.9 ug/m^3. The 24-Hour $PM_{2.5}$ includes background concentration of 23.2 ug/m^3. The annual and 24-hour NAAQS for PM_{10} is 15.0 and 35.0 ug/m^3, respectively.

7.6.2 Build Condition

The following presents a summary of the air quality impacts of implementing the Proposed Project. The study includes a microscale analysis of CO and PM, a regional assessment of the mobile source pollutants including VOCs, NOx, and PM as well as a regional assessment of the mobile source greenhouse gas impacts.

7.6.2.1 Mesoscale Results

The mesoscale analysis projected future Study Area VOC, NOx, CO, and PM emissions due to the changes in traffic and emission data related to the Proposed Project. Motor vehicles do not emit ozone directly. They do emit ozone precursors (VOCs and NOx). The mobile source emissions are small when compared to the total emissions for the entire urban area and are not expected to affect ozone concentrations at or in the vicinity of the project site. Ozone is a regional problem that is addressed over an area that is much larger than the Proposed Project site.

Under the Build Condition, the Proposed Project would relocate trucks traveling to and from the Conley Terminal onto their own dedicated corridor, thereby reducing the distance that they must travel. The reduced travel distance for trucks reduces the overall mobile source regional emissions within the Study Area (however the additional yard equipment results in an overall increase in regional emissions).

Under the Build Condition, the project is expected to result in increased NOx emissions of 343.1 kg/day, 3.1 kg/day of VOC, 1.6 kg/day of $PM_{2.5}$, and 3.1 kg/day of PM_{10}. The increased cargo container-moving equipment increases the overall pollutant concentrations. These increases are not offset by the reduced emissions related to the reduced travel distance due to the more direct route to Conley Terminal provided by the DFC, rather than trucks currently using East First Street. Table 7-7 presents the mesoscale analysis results for Existing, No-Build and Build Conditions.

Table 7-7 Mesoscale Analysis Emissions Results

	Ship-to Shore Cranes and Yard Dog Emissions (kg/day)	Vehicle and Truck Emissions (kg/day)	Total Study Area Emissions (kg/day)	Difference between the No-Build and Build Emissions (kg/day)
Existing (2012)				
Oxides of Nitrogen (NOx)	852.6	3,897.7	4,750.3	
Volatile Organic Compounds (VOC)	19.4	1,464.1	1,483.5	
Particulate Matter 2.5 ($PM_{2.5}$)	7.4	100.1	107.5	
Particulate Matter 10 (PM_{10})	9.9	177.2	187.1	
No-Build (2022)				
Oxides of Nitrogen (NOx)	839.5	1,305.7	2,145.2	
Volatile Organic Compounds (VOC)	16.1	987.4	1,003.5	
Particulate Matter 2.5 ($PM_{2.5}$)	5.1	75.1	80.2	
Particulate Matter 10 (PM_{10})	9.4	157.9	167.2	
Build (2022)				
Oxides of Nitrogen (NOx)	1,185.0	1,303.3	2,488.3	343.1
Volatile Organic Compounds (VOC)	19.8	986.8	1,006.6	3.1
Particulate Matter 2.5 ($PM_{2.5}$)	7.0	74.8	81.8	1.6
Particulate Matter 10 (PM_{10})	12.9	157.4	170.3	3.1

1 The build condition includes the construction of the proposed Conley Terminal Dedicated Freight Corridor.
2 Difference represents the difference in project emissions between the 2022 No-Build and Build Conditions.

7.6.2.2 Microscale Results

The microscale analysis was conducted to determine whether the Proposed Project complies with the CAAA criteria.

Carbon Monoxide Microscale Results

The results of the microscale analysis demonstrate that although future CO emissions would increase, all the CO concentrations for the Existing and the No-Build and Build Conditions would be below the 1-hour CO NAAQS of 35 ppm and below the 8-hour CO NAAQS of 9 ppm. The results are presented in Table 7-8.

Table 7-8 Maximum Predicted 1-Hour and 8-Hour Carbon Monoxide (CO) Concentrations [1]

		Carbon Monoxide 1-Hour Concentrations[2]			Carbon Monoxide 8-Hour Concentrations[2]		
Intersection	Receptor	Existing	No-Build	Build	Existing	No-Build	Build
East First Street at Summer Street	1 - 40 Summer St	3.9	4.0	4.3	2.7	2.8	3.0
	2 - 836 Summer St	4.1	4.1	4.4	2.9	2.9	3.1
	3 - 599 East First St	4.0	4.1	4.2	2.8	2.9	2.9
	4 - 620 East First St	4.1	4.1	4.3	2.9	2.9	3.0
Proposed Dedicated Freight Corridor at Summer Street[3]	1 - North East	-	-	4.1	-	-	2.9
	2 - South East	-	-	4.1	-	-	2.9
	3 - South West	-	-	4.1	-	-	2.9
	4 - North West	-	-	4.2	-	-	2.9

1 Concentrations include background concentrations and project emissions. The emissions represent the highest concentration experienced at each intersection.
2 Expressed in parts per million (ppm). 1-Hour CO includes background concentration of 3.0 ppm. For 8-Hour CO, background of 2.1 ppm and a persistence factor of 0.70 were used. The NAAQS for 1-Hour and 8-Hour CO are 35 ppm and 9 ppm, respectively.
3 The Dedicated Freight Corridor does not exist under existing or no-build conditions.

Particulate Matter Microscale Results

The results of the microscale analysis show that all the calculated 24-hour PM_{10} concentrations for the Existing and the No-Build and Build Conditions are well below the 24-hour NAAQS of 150 $\mu g/m^3$ for PM_{10}. These values are consistent with the area's designation as a PM_{10} attainment area. These results are presented in Table 7-9.

Table 7-9 Microscale: Maximum Predicted 24-Hour PM_{10} Concentrations [1]

		NAAQS	Particulate Matter 10 (PM_{10}) Concentrations[2]		
Intersection	Receptor	24-Hour	Existing	No-Build	Build
East First Street at Summer Street	1 – 840 Summer St	150.0	39.2	39.2	39.6
	2 – 836 Summer St	150.0	39.6	39.6	39.6
	3 – 599 East First t	150.0	39.2	39.2	39.2
	4 – 620 East First	150.0	39.2	39.6	39.6
Proposed Dedicated Freight Corridor at Summer Street[3]	1 – North East	150.0	-	-	39.6
	2 – South East	150.0	-	-	39.2
	3 – South West	150.0	-	-	39.2
	4 – North West	150.0	-	-	39.6

1 Concentrations include background concentrations and project emissions. The emissions represent the highest concentration experienced at each intersection.
2 The 24-Hour PM_{10} includes background concentration of 38.0 ug/m^3.
3 The Dedicated Freight Corridor would not exist under existing or no-build conditions.

The maximum projected 24-hour and annual $PM_{2.5}$ concentrations for the Existing, No-Build, and Build Conditions are presented in Table 7-10. The results of the microscale analysis demonstrate that all the calculated 24-hour PM2.5 concentrations for the three conditions are below the 24-hour NAAQS of 35.0 µg/m3 for $PM_{2.5}$. Similarly, all the annual $PM_{2.5}$ concentrations are below the annual NAAQS of 15.0 µg/m3 for $PM_{2.5}$. All these values are consistent with the area's designation as a $PM_{2.5}$ attainment area.

Table 7-10 Microscale: Maximum Predicted PM 2.5 Concentrations [1]

		Particulate Matter 2.5 ($PM_{2.5}$) Concentrations (ug/m³)[3]					
		24-Hour			Annual		
Intersection	Receptor	Existing	No-Build	Build	Existing	No-Build	Build
East First Street at Summer Street	1 – 840 Summer St	24.0	24.0	24.0	9.1	9.1	9.1
	2 – 836 Summer St	24.0	24.0	24.0	9.1	9.1	9.1
	3 – 599 East First St	24.0	23.6	24.0	9.1	9.0	9.1
	4 – 620 East First St	24.0	24.0	24.0	9.1	9.1	9.1
Proposed Dedicated Freight Corridor at Summer Street[3]	1 – North East	-	-	24.0	-	-	9.1
	2 – South East	-	-	24.0	-	-	9.1
	3 – South West	-	-	24.0	-	-	9.1
	4 – North West	-	-	24.0	-	-	9.1

1 Concentrations include background concentrations and project emissions. The emissions represent the highest concentration experienced at each intersection.
2 The annual $PM_{2.5}$ includes background concentration of 8.9 ug/m³. The 24-Hour $PM_{2.5}$ includes background concentration of 23.2 ug/m³. The annual and 24-hour NAAQS for PM_{10} is 15.0 and 35.0 ug/m³, respectively.
3 The Dedicated Freight corridor would not exist under existing or no-build conditions.

7.6.3 Greenhouse Gas Results

The following outlines the projected mobile source regional GHG emissions due to the implementation of the Project. This analysis has been included for environmental disclosure.

7.6.3.1 Mobile Source Greenhouse Gas Emissions

The mobile source analysis was conducted following procedures similar to the ozone mesoscale analysis. The mobile source analysis projected the area-wide CO_2 emissions from vehicular traffic annually. The change in mobile source CO_2 emissions was calculated for existing and new trips for weekday and weekend conditions based on average yearly traffic volumes, roadway lengths and GHG emission rates. Table 7-11 presents the CO_2 analysis results for all conditions.

Table 7-11 Mobile Source Greenhouse Gas (CO_2) Analysis Results

Pollutant	Units	Existing	No-Build	Build[2]
Carbon Dioxide (CO_2)[1]	Tons/year	5,447,433	15,005,839	15,015,884

1 The CO_2 was calculated assuming an annualization factor of 365 days/year and 1000kg/1ton.
2 The build condition includes the construction of the proposed Dedicated Freight Corridor.

Under Existing conditions, the total annual CO_2 emissions are projected to be 5,447,433 tons per year. The future CO_2 emissions for the No-Build Condition are projected at 15,005,839 tons per year. This large increase is due to the increase in vehicles within the Study Area which are predicted with or without the proposed improvements. The future CO_2 emissions for the Build Condition are estimated at 15,015,884 tons per year, representing an increase of 10,045 tons per year of CO_2 emissions from the No-Build Condition. This is largely due to the increase in operations equipment on the Conley Terminal site that is estimated as part of the Conley Terminal expansion. Although the use of the Coastal site will require additional equipment and will add greenhouse emissions, the DFC route will reduce greenhouse gas emissions, and is itself is a mitigation measure.

7.6.3.2 Greenhouse Gas Mitigation Measures

Although the DFC will slightly reduce vehicle GHG emissions, the addition of yard equipment to serve the expanded Conley Terminal will result in a net increase of 10,045 tons per year of CO_2 under the Build Condition. However, the DFC will mitigate this increase and will reduce GHGs because the dedicated corridor reduces the distance that trucks must travel. The reduced travel distance for trucks reduces the overall GHG for regional mobile emissions within the Study Area and specifically at Conley Terminal; and offsets the increases from the on-site equipment.

The Clean Truck Program (discussed below) is the most recent in a long line of Massport efforts to reduce air emissions associated with all of its transportation-related operations. At Conley Terminal, these reductions have been achieved and would continue to be achieved by:

- Converting all of Massport's cargo handling equipment to ultra-low sulfur diesel fuel in 2004;
- Installing diesel oxygen catalysts (DOCs) on all of the Conley Terminal yard equipment;
- Running the existing pier cranes at Conley Terminal on electric rather than diesel power; and
- Replacing equipment with the cleanest cargo handling equipment that meets operational and financial needs.

7.6.3.3 Massport Clean Truck Program

Older trucks serving Conley Terminal are a primary source of port-related air emissions. In January 2012, Massport submitted a grant application to the EPA for $500,000 to replace trucks that are 15 to 26 years old with a 2007 emission compliant truck or newer. The government funding would cover 50 percent of the cost for the replacement truck, and the truck owner would cover the remaining 50 percent.

Massport expects up to 60 older trucks would be replaced, with truck owners contributing at least half of the replacement cost. The newer trucks would dramatically reduce lifetime emissions resulting in significant air quality and public health benefits. While the exact emissions reduction would not be known until each replacement vehicle is identified, it is estimated the program would eliminate more than 400 tons of hydrocarbons, 2800 tons of carbon monoxide, 630 tons of nitrogen oxides and more than 30 tons of particulate matter from the environment.[34] The program is expected to improve air quality in and around the Conley Terminal at a time when container shipments are projected to grow by up to 50 percent in the coming years.

7.7 Construction Air Quality Impacts and Mitigation

This section outlines the expected general construction activities as well as possible construction mitigation measures.

7.7.1 Construction Activities

Temporary air quality impacts can result from construction activities associated with utility relocation, grading, excavation, and roadway construction. Requirements established by Federal Conformity Rules regarding construction periods and impact evaluation procedures, include quantitative analysis for both operational and construction emissions, except for short-term construction activities lasting less than five years. The construction schedule for the Proposed DFC is less than five years. This project is deemed a "short-term construction activity" and, therefore, an air quality analysis of construction impacts is not required by EPA.

7.7.2 Construction Mitigation

In an effort to reduce criteria pollutants and GHG emissions from temporary construction activities, construction contractors would be contractually required to adhere to all applicable regulations regarding control of construction vehicles

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34 http://www.massport.com/news-room/News/ConleyCleanTruckProgramtoReducePort-RelatedEmissions.aspx

emissions. These could include, but not be limited to, maintenance of all motor vehicles, machinery, and equipment associated with construction activities, and proper fitting of equipment with mufflers or other regulatory-required emissions control devices. Also, the prohibition of excessive idling of construction equipment engines would be implemented, as required by MA DEP regulations in 310 CMR 7.11.

Construction specifications would stipulate that all diesel construction equipment used on-site would be fitted with after-engine emission controls such as diesel oxidation catalysts (DOCs) or diesel particulate filters (DPFs).[35] Construction contractors would be required to utilize ultra-low sulfur diesel fuel for all off-road construction vehicles as an additional measure to reduce air emissions from construction activities. Idling restriction signs would be placed on the premises to remind drivers and construction personnel of the State's idling regulation.

The contractor would be required to implement protective measures around the construction and demolition work area to protect pedestrians and prevent dust and debris from leaving the site and entering the surrounding community. Dust generated from earthwork, stockpiled soils and other construction activities would be controlled by spraying with water to mitigate wind erosion on open soil areas. Other dust suppression methods would be implemented to ensure minimization of the off-site transport of dust. Regular sweeping of the pavement of adjacent roadway surfaces would be required to minimize the potential for vehicular traffic to create airborne dust and particulate matter.

7.8 Regulatory Compliance

The 1990 Clean Air Act Amendments (CAAA) require that states with non-attainment areas evaluate the air quality impacts of transportation and transit projects during the planning process. The purpose of the air quality study is to demonstrate that the DFC is in compliance with the 1990 CAAA following the United States Environmental Protection Agency (EPA) policies and procedures.

The Proposed Project is located in Boston, which is in a CO Maintenance Attainment area and an attainment area for ozone. The results of the microscale analysis demonstrate that all the criteria pollutants would be below the annual NAAQS.

This air quality study includes a local and regional air quality analysis of the mobile sources from the DFC that demonstrates compliance with the State Implementation Plan (SIP) and Transportation Conformity.

All of the pollutant concentrations at the receptors for each of the study intersections analyzed for the DFC are well below (in compliance with) the DEP ambient air quality standards (310 CMR 6.0) for PM_{10} and CO, which meet the Federal EPA guidelines under 40 CFR Part 50:

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35 This is consistent with the Certificate of Construction Equipment Standard Compliance Form required for all bids to the MBTA.

- The highest CO 1-hour concentration would be 4.4 ppm which is well below the DEP standard of 35 ppm.
- The highest CO 8-hour concentration would be 3.1 ppm which is well below the DEP standard of 9 ppm.
- The highest PM_{10} Annual concentration would be 39.6 $\mu g/m^3$ which is well below the DEP standard of 50 $\mu g/m^3$.
- The highest $PM_{2.5}$ 24-hour concentration would be 24.0 $\mu g/m^3$ which is well below the DEP standard of 35 $\mu g/m^3$.
- The highest $PM_{2.5}$ Annual concentration would be 9.1 $\mu g/m^3$ which is well below the DEP standard of 15 $\mu g/m^3$.

The ozone precursors (NOx and VOC) were assessed on a regional basis and the results can be found in Section 7.6.2.1. No significant adverse air quality impacts from the Proposed Project are anticipated for the following pollutants: VOC, NOx, PM_{10}, $PM_{2.5}$ and CO_2. The Proposed Project would comply with all DEP regulations outlined in 310 CMR 7.0 and would reduce mobile emissions for the Conley Terminal by reducing truck VMT.

8 Noise

8.1 Introduction

This noise study evaluated the sound level impacts associated with the Proposed Project. The noise analysis evaluated the sound levels for the residential areas along East First Street for the Existing Conditions, and the future (2022) No-Build and Build Conditions. The Build Conditions represent the Conley Terminal Improvements, including expanding operations onto the former Coastal Oil site, with the creation of the DFC, Buffer Open Space, and a noise barrier wall separating the neighborhood from the DFC. While not required, Massport has voluntarily decided to construct a noise wall and to move the security processing behind the current MBTA site to enhance sound reduction. This chapter describes the analysis methodology, predicted noise levels, and construction period noise mitigation.

8.2 Key Findings

- Shifting the Conley Terminal truck traffic to the DFC, adding a landscaped buffer area with vegetated ground cover, and providing a noise barrier wall along the southern portion of the DFC would result in a substantial reduction in sound levels for the residential areas along East First Street that would range from 4 to 9 decibels (dB)(A).
- The soft landscaping of the Buffer Open Space also provides noise reduction benefits.

8.3 Background and Methodology

Noise is defined as unwanted or excessive sound. Sound becomes unwanted when it interferes with normal activities such as sleep, work, or recreation. How people perceive sound depends on several measurable physical characteristics. These factors include:

- **Intensity** – Sound intensity is often equated to loudness.

- **Frequency** – Sounds are comprised of acoustic energy distributed over a variety of frequencies. Acoustic frequencies, commonly referred to as tone or pitch, are typically measured in hertz. Pure tones have all their energy concentrated in a narrow frequency range.

Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from the threshold of hearing (0 dB) to the threshold of pain (120 dB). Because sound levels are measured in dB, the addition of two sound levels is not linear. Adding two equal sound levels creates a 3 dB increase in the overall level. Research indicates the following general relationships between sound level and human perception:

- A 3-dB increase is a doubling of acoustic energy and is the threshold of perceptibility to the average person.
- A 10-dB increase is a tenfold increase in acoustic energy but is perceived as a doubling in loudness to the average person.

The human ear does not perceive sound levels from each frequency as equally loud. To compensate for this phenomenon in perception, a frequency filter known as A-weighted [dB(A)] is used to evaluate environmental noise levels. Table 8-1 presents a list of common outdoor and indoor sound levels

A variety of sound level indicators can be used for environmental noise analysis. These indicators describe the variations in intensity and temporal pattern of the sound levels. The following is a list of other sound level descriptors:

- L90 is the sound level which is exceeded for 90 percent of the time during a selected time period. The L90 is generally considered to be the ambient or background sound level used for night time conditions.
- Leq is the A-weighted sound level used for day time conditions, which averages the background sound levels with short-term transient sound levels and provides a uniform method for comparing sound levels that vary over time.

Table 8-1 Common Outdoor and Indoor Sound Levels

Outdoor Sound Levels	Sound Pressure (μPa)[1]		Sound Level dB(A)[2]	Indoor Sound Levels
	6,324,555	-	110	Rock Band at 5 m
Jet Over Flight at 300 m		-	105	
	2,000,000	-	100	Inside New York Subway Train
Gas Lawn Mower at 1 m		-	95	
	632,456	-	90	Food Blender at 1 m
Diesel Truck at 15 m		-	85	
Noisy Urban Area—Daytime	200,000	-	80	Garbage Disposal at 1 m
		-	75	Shouting at 1 m
Gas Lawn Mower at 30 m	63,246	-	70	Vacuum Cleaner at 3 m
Suburban Commercial Area		-	65	Normal Speech at 1 m
	20,000	-	60	
Quiet Urban Area—Daytime		-	55	Quiet Conversation at 1 m
	6,325	-	50	Dishwasher Next Room
Quiet Urban Area—Nighttime		-	45	
	2,000	-	40	Empty Theater or Library
Quiet Suburb—Nighttime		-	35	
	632	-	30	Quiet Bedroom at Night
Quiet Rural Area—Nighttime		-	25	Empty Concert Hall
Rustling Leaves	200	-	20	
		-	15	Broadcast and Recording Studios
	63	-	10	
		-	5	
Reference Pressure Level	20	-	0	Threshold of Hearing

Source: *Highway Noise Fundamentals*. Federal Highway Administration, September 1980.
1 μPA – MicroPascals, which describe pressure. The pressure level is what sound level monitors measure.
2 dB(A) – A-weighted decibels, which describe pressure logarithmically with respect to 20 μPa (the reference pressure level).

8.4 Noise Impact Criteria

The City of Boston and the Massachusetts Department of Environmental Protection (DEP) have established noise impact criteria. The following is a description of their respective criteria.

8.4.1 City of Boston Noise Impact Criteria

The City of Boston has developed noise standards that establish noise thresholds deemed to result in adverse impacts. Although Massport is not subject to municipal ordinances, the noise analysis for the Conley Terminal Improvements project compared existing and future sound levels to these criteria and used these standards to evaluate whether the proposed development would generate sound levels that result in adverse impacts.

Under Chapter 40, Section 21 of the General Laws of the Commonwealth of Massachusetts and the City of Boston Code, Ordinances, Title 7, Section 50, the Air Pollution Control Commission of the City of Boston has adopted Regulations for the Control of Noise in the City of Boston[36]. These regulations establish maximum allowable sound levels based upon the land use affected by the proposed development. Table 8-2 summarizes the noise standard for the various land uses covered by the ordinance. These maximum allowable sound levels should not be exceeded.

For a residential zoning district, the maximum noise level affecting residential uses may not exceed the Residential Noise Standard. The residential land use noise standard is 60 dB(A) for daytime periods (7:00 AM to 6:00 PM) and 50 dB(A) for nighttime conditions (6:00 PM to 7:00 AM).

The City of Boston's regulations on construction sound levels state that operation of any construction devices, excluding impact devices, may not exceed 86 dB(A) during any time period.

Table 8-2 City of Boston Zoning District Noise Standards, dB(A)

Land Use Zone District	Daytime (7:00 AM – 6:00 PM)	All Other Times (6:00 PM – 7:00 AM)
Residential	60	50
Residential/Industrial	65	55
Business	65	65
Industrial	70	70

Source: Regulations for the Control of Noise in the *City of Boston, Air Pollution Control Commission*.

8.4.2 Department of Environmental Protection Noise Standards

The DEP has established a policy (DEP Policy 90--001) for implementing its noise regulations (310 CMR 7.10). This policy states that a source of sound would be considered in violation of the Department's noise policy under the following conditions if:

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36 Regulations for the Control of Noise in the City of Boston, *City of Boston Air Pollution Control Commission.*

1) The source increases the broad band sound level by more than 10 dBA above ambient (normally defined as L90 or the noise level exceeded 90 percent of the time during the hours of noise source operation); or

2) The source produces a "pure tone" condition – when any octave band center frequency sound pressure level exceeds the two adjacent center frequency sound pressure levels by 3 decibels or more.

The DEP noise policy does not include any specific standards for construction period noise generation.

8.5 Methodology

The noise analysis evaluated the potential sound level impacts associated with the future Conley Terminal operations, which include truck traffic accessing the facility and cargo loading/unloading activities with the use of gantry and vessel cranes. It included measurements of existing ambient sound levels and reference sound levels of existing mechanical equipment. Site design, such as location of the mechanical equipment, and storage area was also examined in the analysis. The noise analysis predicted the future sound levels (2022) at identified receptor locations. The Study Area for the noise analyses includes the mixed use residential area south of East First Street, extending one block south of East First Street. As described further in *Chapter 6, Transportation*, a 2022 study year horizon was chosen to study the impacts of a growing industry in which container shipments are expected to increase in the next ten years.

The noise analysis evaluated the existing and future daytime and nighttime sound levels. The daytime sound levels, which are dominated by roadway traffic, including trucks, buses, and automobiles, were analyzed using the Federal Highway Administration's (FHWA's) traffic noise model (TNM) version 2.5. Noise sources were evaluated using L_{eq} sound levels.

Conley Terminal truck traffic is limited to daytime periods. The nighttime sound levels, which are dominated by Conley Terminal on-site traffic (small trucks) and gantry and vessel cranes, were evaluated using the TNM and stationary source models. The nighttime noise sources were evaluated using L90 sound levels.

In order to measure existing (ambient) sound levels and to provide reference sound levels for the crane operations, short- and long-term measurements were conducted using a Type 1 sound analyzer (Larson Davis 831). The short-term measurements were conducted during the weekday daytime (2:00 PM to 4:00 PM) and evening (5:00 PM to 6:00 PM) periods at sensitive receptor areas on April 9, 2012. Supplemental late night measurements were conducted on April 14, 2012 from 12:00 AM to 2:00 AM. Long-term (approximately 2 days) noise measurement was also conducted from July 16, 2012 to July 18, 2012. The sound level data were dominated by vehicular traffic (primarily trucks and buses along East First Street), general neighborhood noise sources, building rooftop mechanical equipment, and aircraft activity from nearby Logan International Airport. The ambient sound level measurements were used as the base for determining potential impacts associated

with the increase in truck traffic and mechanical equipment. The measured data were also used to develop the traffic noise model for evaluating traffic noise under both existing and future conditions. The crane operation reference sound levels were used to predict the sound levels for the future crane configuration. The noise monitoring locations were selected to represent residential areas and the areas where crane reference data were collected. Noise monitoring locations are shown in Figure 8-1.

Sensitive receptor locations were identified that have outdoor activities and that might be sensitive to noise associated with the Conley Terminal Improvements project. The noise analysis selected 28 sensitive receptor locations in the vicinity of the Proposed Project. These receptor locations, selected based on land use considerations (primarily residential uses), represent the most sensitive locations in the vicinity of the Project Area. The receptor locations included multi-level residential buildings along East First Street and East Second Street. The receptor locations are also shown in Figure 8-1.

The FHWA's TNM model was used to project sound levels associated with vehicular traffic on the DFC, which would shift Conley Terminal truck traffic off of East First Street. The TNM model calculated the changes in roadway traffic sound levels attributed to traffic volumes, truck volumes, free flow vehicle speeds, and roadway and receptor geometry. One of the strengths of the TNM model is its ability to evaluate and design potential noise barriers to determine sound level reductions. The DFC is shown in Figure 8-2.

Future sound levels from the crane operations were predicted for the receptor locations based on the measured reference sound level data using the properties of sound propagation for hard ground and their distances to the sensitive receptor locations. The number of crane operations and their locations, which differed for the Existing and Build Conditions, are shown in Figures 8-3 and 8-4, respectively. The individual frequencies of the sound level data were also evaluated to determine if a "pure tone" condition exists or would be created by the Conley Terminal Improvements Project.

8.6 Affected Environment

Based on the results of the noise monitoring program for the Proposed Project, the existing daytime L_{eq} sound levels ranged from 54 dB(A) to 71 dB(A). The nighttime L_{90} sound levels ranged from 49 dB(A) to 51 dB(A). These sound levels are typical of an urbanized area and include local traffic (Massachusetts Bay Transportation Authority (MBTA) buses), mechanical equipment from the City of Boston building, Logan Airport aircraft, and Interstate 93. The noise monitoring indicates that the existing sound levels within the Study Area are above the City's daytime noise standard of 60 dB(A) and the City's nighttime standard of 50 dB(A) for Residential Districts. The existing sound level data are shown in Table 8-3.

Project Area

M# Noise Monitoring Locations

R# Receptor Locations

0 225 450 Feet

Conley Terminal Improvements

Figure 8-1

Noise Monitoring Receptor Locations

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Project Area
M# Noise Monitoring Locations
R# Receptor Locations
Noise Wall
Federal Agency Inspection Facility

0 225 450 Feet

Conley Terminal Improvements

Figure 8-2

Proposed Project with Noise Receptor Locations

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Conley Terminal Improvements

Figure 8-3

Existing Modelled Noise Sources

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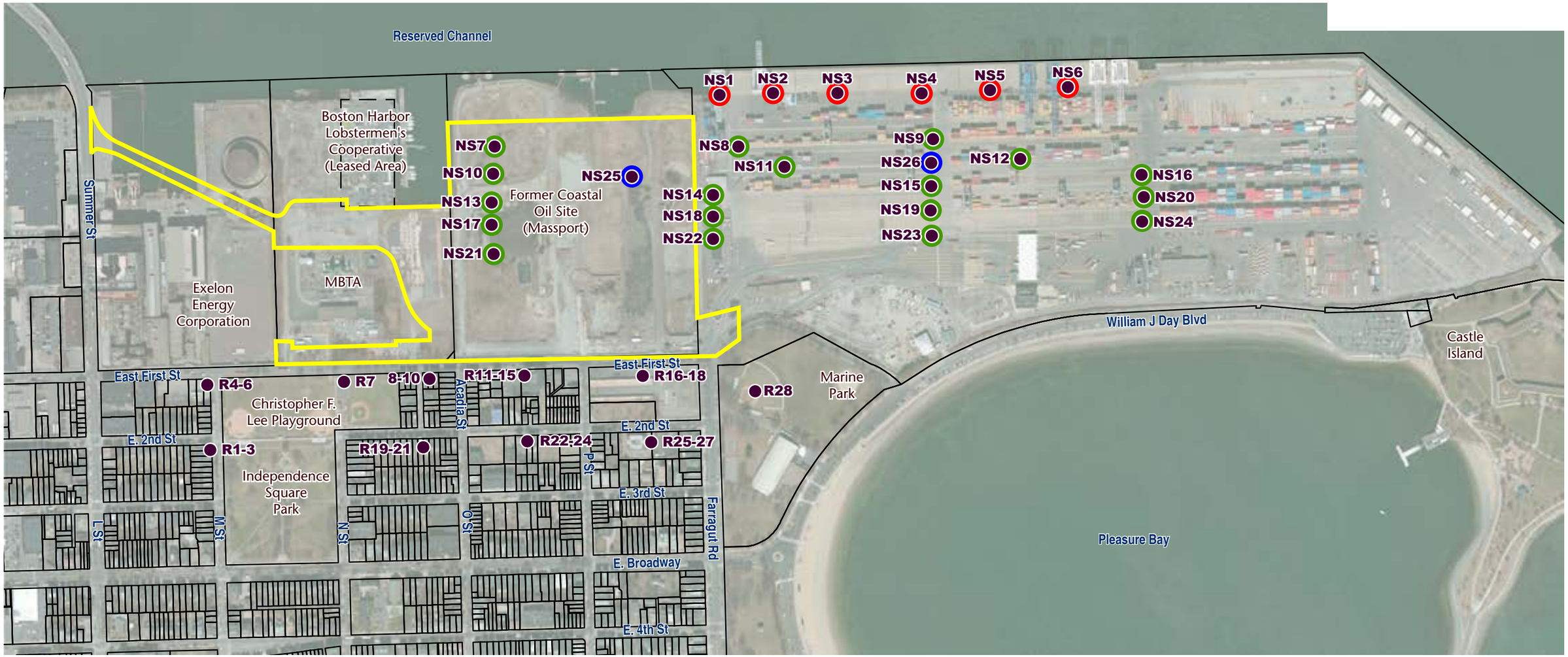

Conley Terminal Improvements

Figure 8-4

Future Modelled Noise Sources

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Table 8-3 Measured Existing Sound Levels, dB(A)

	Boston Noise Criteria		Measured Sound Levels		
Monitoring Location[1]	Daytime Leq	Nighttime L90	Daytime Leq	Nighttime L90	Pure Tone Condition
M1 - 711 East Second Street	60	50	56	-	No
M2 - Christopher Lee Park	60	50	70	-	No
M3 - East Second Street @ O Street	60	50	56	-	No
M4 - East First Street @ P Street	60	50	71	-	No
M5 - Marine Park	60	50	66	-	No
M9 - Shore Road	60	50	-	47	No
M10 – Site adjacent East First Street	60	50	-	51	No
M11 – Site	60	50	65	48	No

Source: Vanasse Hangen Brustlin, Inc.
1 See Figure 8-1 for monitoring locations.
Bold values exceed the City of Boston's noise criteria.

In addition, sound level measurements of cranes operations on the Conley Terminal site were also conducted. These data were collected to determine reference sound levels, which were used to calculate future sound levels associated with the Conley Terminal Improvements. The reference sound levels are shown in Table 8-4.

Table 8-4 Crane Operation Reference Sound Levels, dB(A)

Mechanical Equipment[1]	Measured Sound Levels (Leq)	Distance from Equipment (feet)
M6 - Vessel Gantry Crane	73	15
M7 - Container Gantry Crane	77	18
M8 - Refrigeration Container	76	12

Source: Vanasse Hangen Brustlin, Inc.
1 See Figure 8-1 for monitoring locations.

8.7 Environmental Consequences

The noise analysis evaluated the sound levels for the residential areas along East First Street for the Existing Conditions, the future No-Build, and future Build Conditions. The Build Conditions represent the Conley Terminal Improvements Project with the creation of a DFC, the Buffer Open Space, and a noise barrier wall. Noise sources include trucks accessing the area and crane operations associated with the loading/unloading of containers on/off vessels and trailers.

The noise analysis utilized traffic data for the following conditions:

- **Existing Condition (2012)** reflects existing traffic volumes and Conley Terminal operations.
- **Future No-Build Condition (2022)** assumes no changes to the roadway systems or physical changes to Conley Terminal, but includes growth over time at the Conley Terminal operations and background growth associated with other planned projects and general background regional growth.
- **Future Build Condition (2022)** assumes the same Future No-Build background growth, but includes extension of Conley Terminal onto the former Coastal Oil site, shifting the Conley Terminal truck traffic to the DFC, and providing a landscape buffer area with vegetated ground cover (Buffer Open Space) and a noise barrier wall along the south edge of the DFC.

8.7.1 No-Build Analysis

The daytime noise analysis for the No-Build Condition indicates future sound levels without the project would range from 56 dB(A) to 76 dB(A). Most of the receptor locations are predicted to experience an increase of 3 to 4 dB(A) in daytime sound levels as compared to the Existing Conditions. Twenty of the receptor locations currently and in the future No-Build Condition are expected to exceed the City's daytime and nighttime noise standards. The Existing and No-Build Conditions daytime sound levels are shown in Table 8-5.

Table 8-5 Daytime Sound Levels, Leq (dB(A))

Receptor Location[1]	Existing Condition	Future No-Build Condition	Sound Level Change
R1 - 27 M Street (Ground)	55	59	4
R2 - 27 M Street (2nd Floor)	57	61	4
R3 - 27 M Street (3rd Floor)	57	61	4
R4 - 631 East 1st Street (Ground)	72	76	4
R5 - 631 East 1st Street (2nd Floor)	71	75	4
R6 - 631 East 1st Street (3rd Floor)	71	75	4
R7 - Christopher Lee Playground (Basketball Court)	69	73	4
R8 - 859 East 1st Street (Ground)	69	73	4
R9 - 859 East 1st Street (2nd Floor)	69	73	4
R10 - 859 East 1st Street (3rd Floor)	69	73	4
R11 - 891 East 1st Street (Ground)	69	73	4
R12 - 891 East 1st Street (2nd Floor)	69	73	4
R13 - 891 East 1st Street (3rd Floor)	69	73	4
R14 - 891 East 1st Street (4th Floor)	69	73	4
R15 - 891 East 1st Street (5th Floor)	69	73	4
R16 - Proposed Development (Ground)	71	75	4
R17 - Proposed Development (2nd Floor)	70	74	4
R18 - Proposed Development (3rd Floor)	70	74	4
R19 - 835 East 2nd Street (Ground)	54	57	3
R20 - 835 East 2nd Street (2nd Floor)	55	58	3
R21 - 835 East 2nd Street (3rd Floor)	56	59	3
R22 - 865/871 East 2nd Street (Ground)	54	57	3
R23 - 865/871 East 2nd Street (2nd Floor)	55	58	3
R24 - 865/871 East 2nd Street (3rd Floor)	56	59	3
R25 - 925 East 2nd Street (Ground)	58	62	4
R26 - 925 East 2nd Street (2nd Floor)	60	63	3
R27 - 925 East 2nd Street (3rd Floor)	60	64	4
R28 - Marine Park (Baseball Field)	58	62	4

Source: Vanasse Hangen Brustlin, Inc.
1 See Figure 8-1 for receptor locations.
Bold values exceed the City of Boston's noise criteria

The nighttime noise analysis for the No-Build Condition indicates sound levels ranging from 49 to 53 dB(A). Most of the receptor locations are predicted to experience an increase of 1 to 3 dB(A) increase in sound levels as compared to the Existing Condition. Typically, increases of less than 3 dB(A) are not perceptible to the average person. The Existing and No-Build Conditions nighttime sound levels are shown in Table 8-6.

Table 8-6 Nighttime Sound Levels, L90 dB(A)

Receptor Location[1]	Existing Condition	Future No-Build Condition	Sound Level Change
R1 - 27 M Street (Ground)	49	49	0
R2 - 27 M Street (2nd Floor)	49	49	0
R3 - 27 M Street (3rd Floor)	49	49	0
R4 - 631 East 1st Street (Ground)	51	51	0
R5 - 631 East 1st Street (2nd Floor)	51	51	0
R6 - 631 East 1st Street (3rd Floor)	51	51	0
R7 - Christopher Lee Playground (Basketball Court)	51	52	1
R8 - 859 East 1st Street (Ground)	50	52	2
R9 - 859 East 1st Street (2nd Floor)	50	52	2
R10 - 859 East 1st Street (3rd Floor)	50	52	2
R11 - 891 East 1st Street (Ground)	50	53	3
R12 - 891 East 1st Street (2nd Floor)	50	53	3
R13 - 891 East 1st Street (3rd Floor)	50	53	3
R14 - 891 East 1st Street (4th Floor)	50	53	3
R15 - 891 East 1st Street (5th Floor)	50	53	3
R16 - Proposed Development (Ground)	50	53	3
R17 - Proposed Development (2nd Floor)	51	52	1
R18 - Proposed Development (3rd Floor)	51	52	1
R19 - 835 East 2nd Street (Ground)	48	50	2
R20 - 835 East 2nd Street (2nd Floor)	48	51	3
R21 - 835 East 2nd Street (3rd Floor)	48	51	3
R22 - 865/871 East 2nd Street (Ground)	48	51	3
R23 - 865/871 East 2nd Street (2nd Floor)	49	51	2
R24 - 865/871 East 2nd Street (3rd Floor)	49	51	2
R25 - 925 East 2nd Street (Ground)	49	51	2
R26 - 925 East 2nd Street (2nd Floor)	50	52	2
R27 - 925 East 2nd Street (3rd Floor)	50	53	3
R28 - Marine Park (Baseball Field)	50	53	3

Source: Vanasse Hangen Brustlin, Inc.
1 See Figure 8-1 for receptor locations.
Bold values exceed the City of Boston's noise criteria

8.7.2 Build Analyses

The Conley Terminal Improvements project includes a number of design and operational measures that would reduce sound levels at the residential area south of East First Street compared to Existing and future No-Build conditions. These measures include the shifting of Conley Terminal truck traffic to the DFC, constructing a noise barrier wall, and providing a landscape buffer area with trees and vegetated ground cover.

8.7.2.1 Elements of the Build Condition

The Build Condition includes expanding the existing Conley Terminal operations onto the former Coastal Oil site including the new RTGs and container stacking operations. Conley Terminal truck traffic will be shifted from East First Street to the DFC, and a Buffer Open Space with trees and vegetated ground cover will be constructed. A new noise barrier wall will be constructed between the Buffer Open Space and the DFC.

The landscaped Buffer Open Space will physically and visually separate the DFC and other Conley Terminal operations from the residential uses on East First Street. Additionally, the landscaped buffer zone would provide some noise attenuation due to the soft ground characteristics and the additional distance between the noise sources and the adjacent residences. The landscaped buffer area is designed to ensure the noise wall is not a visually dominant feature. Plantings would be carefully placed to screen views of the noise wall as well as well as to aid in security.

The noise wall would extend approximately 1,500 feet along the north edge of the landscape buffer area and separating the DFC from adjacent residences. It would be approximately 1,500 feet long and measure a minimum of 16 feet in height from the DFC side in order to maximize its noise attenuating effectiveness. From the Buffer Open Space side, the wall would measure a minimum of 12 feet because of the buffer terrain. The noise wall panels would be constructed of concrete supported by steel I-beams secured to the ground by concrete foundations. The wall materials would be similar to those used on interstate highway noise walls.

8.7.2.2 Impact Analysis

The Proposed Project is not projected to increase noise levels at any receptor locations. Most of the receptor locations are projected to experience a reduction of 3 to 13 dB(A) in daytime sound levels compared to the No-Build Condition, and a 1 to 2 dB reduction in nighttime conditions. Build Condition noise levels are projected to range from 49 to 65 dB(A). The future Build noise levels are predicted to be less than existing noise levels. The No-Build and Build sound levels are shown in Table 8-7.

Table 8-7 Future Daytime Sound Levels, Leq dB(A)

Receptor Location[1]	Existing	No-Build Condition	Build Condition	Sound Level Change
R1 - 27 M Street (Ground)	55	59	49	-10
R2 - 27 M Street (2nd Floor)	57	61	52	-9
R3 - 27 M Street (3rd Floor)	57	61	53	-8
R4 - 631 East 1st Street (Ground)	72	76	63	-13
R5 - 631 East 1st Street (2nd Floor)	71	75	63	-12
R6 - 631 East 1st Street (3rd Floor)	71	75	63	-12
R7 - Christopher Lee Playground (Basketball Court)	69	73	63	-10
R8 - 859 East 1st Street (Ground)	69	73	63	-10
R9 - 859 East 1st Street (2nd Floor)	69	73	63	-10
R10 - 859 East 1st Street (3rd Floor)	69	73	63	-10
R11 - 891 East 1st Street (Ground)	69	73	63	-10
R12 - 891 East 1st Street (2nd Floor)	69	73	63	-10
R13 - 891 East 1st Street (3rd Floor)	69	73	63	-10
R14 - 891 East 1st Street (4th Floor)	69	73	64	-9
R15 - 891 East 1st Street (5th Floor)	69	73	65	-8
R16 - Proposed Development (Ground)	71	75	65	-10
R17 - Proposed Development (2nd Floor)	70	74	65	-9
R18 - Proposed Development (3rd Floor)	70	74	65	-9
R19 - 835 East 2nd Street (Ground)	54	57	52	-5
R20 - 835 East 2nd Street (2nd Floor)	55	58	53	-5
R21 - 835 East 2nd Street (3rd Floor)	56	59	53	-6
R22 - 865/871 East 2nd Street (Ground)	54	57	53	-4
R23 - 865/871 East 2nd Street (2nd Floor)	55	58	53	-5
R24 - 865/871 East 2nd Street (3rd Floor)	56	59	54	-5
R25 - 925 East 2nd Street (Ground)	58	62	57	-5
R26 - 925 East 2nd Street (2nd Floor)	60	63	58	-5
R27 - 925 East 2nd Street (3rd Floor)	60	64	59	-5
R28 - Marine Park (Baseball Field)	58	62	59	-3

Source: Vanasse Hangen Brustlin, Inc.
1 See Figure 8-1 for receptor locations.
Bold values exceed the City of Boston's noise criteria

The nighttime noise analysis shows that the Build Condition is projected to produce nighttime sound levels ranging from 49 to 51 dB(A). Most of the receptor locations are projected to experience slight reductions in sound levels (1 to 2 dB(A)) compared to the No-Build Condition. The No-Build and Build Conditions sound levels are shown in Table 8-8. Nighttime noise levels are predicted to be the same or less than existing noise levels.

Table 8-8 Future Nighttime Sound Levels, L90 dB(A)

Receptor Location[1]	No-Build Condition	Build Condition	Sound Level Change
R1 - 27 M Street (Ground)	49	49	0
R2 - 27 M Street (2nd Floor)	49	49	0
R3 - 27 M Street (3rd Floor)	49	49	0
R4 - 631 East 1st Street (Ground)	51	51	0
R5 - 631 East 1st Street (2nd Floor)	51	51	0
R6 - 631 East 1st Street (3rd Floor)	51	51	0
R7 - Christopher Lee Playground (Basketball Court)	52	51	-1
R8 - 859 East 1st Street (Ground)	52	51	-1
R9 - 859 East 1st Street (2nd Floor)	52	51	-1
R10 - 859 East 1st Street (3rd Floor)	52	51	-1
R11 - 891 East 1st Street (Ground)	53	51	-2
R12 - 891 East 1st Street (2nd Floor)	53	51	-2
R13 - 891 East 1st Street (3rd Floor)	53	51	-2
R14 - 891 East 1st Street (4th Floor)	53	51	-2
R15 - 891 East 1st Street (5th Floor)	53	51	-2
R16 - Proposed Development (Ground)	53	51	-2
R17 - Proposed Development (2nd Floor)	52	51	-1
R18 - Proposed Development (3rd Floor)	52	51	-1
R19 - 835 East 2nd Street (Ground)	50	49	-1
R20 - 835 East 2nd Street (2nd Floor)	51	49	-2
R21 - 835 East 2nd Street (3rd Floor)	51	49	-2
R22 - 865/871 East 2nd Street (Ground)	51	49	-2
R23 - 865/871 East 2nd Street (2nd Floor)	51	50	-1
R24 - 865/871 East 2nd Street (3rd Floor)	51	50	-1
R25 - 925 East 2nd Street (Ground)	51	50	-1
R26 - 925 East 2nd Street (2nd Floor)	52	51	-1
R27 - 925 East 2nd Street (3rd Floor)	53	51	-2
R28 - Marine Park (Baseball Field)	53	51	-2

Source: Vanasse Hangen Brustlin, Inc.
1 See Figure 8-1 for receptor locations.
Bold values exceed the City of Boston's noise criteria

8.8 Construction Noise Impacts and Mitigation

The proposed project would generate noise associated with construction activities. Construction is expected to occur only during daytime hours (7 AM to 7 PM). The following sections describe the construction-phase noise effects.

8.8.1 Municipal Construction Noise Criteria

The City of Boston has established regulations for evaluating sound levels associated with construction activities. The Air Pollution Control Commission of the City of Boston, acting under the authority granted in Chapter 40, Section 21 of the General Laws of the Commonwealth of Massachusetts, and by the City of Boston Code, Ordinances, Title 7, Section 50, has adopted regulations for the Control of Noise in the City of Boston. Regulation 3: "Restrictions on Noise Emitted from Construction Sites" establishes maximum allowable sound levels based upon the land use impacted by the construction of a proposed project. The noise criteria provided in the regulations were used to evaluate whether or not the Project would generate sound levels that result in adverse impacts.

The City of Boston noise control regulation considers construction sound levels to be an impact if operation of construction devices exceeds the L_{10} sound levels shown in Table 8-2. If the existing background L_{10} sound level already exceeds these limits, the L_{10} sound level during construction must not exceed the background L_{10} sound level by 5 dBA or greater. Unless exempt, such as impact devices, no individual piece of construction equipment can generate a noise level exceeding 86 dBA at a distance of fifty (50) feet from the device.

8.8.2 Methodology

The existing sound levels were based on measured L_{dn} sound levels from various noise monitoring stations described in Section 8.6, above. The L_{dn} sound levels were converted into daytime L_{10} sound levels for the purpose of comparison to the City of Boston's noise criteria, which are presented in metrics of L_{10}.

Construction sound levels are a function of the types of equipment being used, the number of each type of equipment, and the distances between the construction equipment and the sensitive receptor locations. Overall construction sound levels are governed primarily by the noisiest pieces of equipment operating at a given time.

Table 8-9 provides typical maximum sound levels associated with the various types of construction equipment expected to be used at the Project site during the construction phase. During any particular activity phase, multiple pieces of equipment may operate simultaneously and for various durations throughout the construction period. Table 8-9 presents the construction equipment and the reference sound levels associated with each type of construction equipment.

Table 8-9 Construction Equipment Reference Sound Levels

Activity	Equipment	Lmax at 50 feet (dBA)[1]
DFC Pile	150 ton Crane & Barge	85
	Vibratory Pile Driver	101
	Impact Pile Driver	101
	Welder	74
	Compressor	80
	Work Boat[3]	80
	Concrete Pump	82
Coastal Site, DFC, Buffer	Excavator	85
	Bulldozer	85
	Dump Truck	84
	Grader	85
	Roller -Earth	85
	Paver	85
	Roller - Pavement	85
	Utility Truck[9]	84

8.8.3 Construction Sound Levels

The proposed construction is expected to generate typical sound levels associated with construction activities, including use of heavy equipment operations for excavation, material transport, pile-driving, and installation of concrete deck. Heavy machinery would be used intermittently throughout construction and these activities would occur during normal weekday working hours.

The greatest construction sound levels would result from pile-driving to construct the DFC bridge over the Exelon Inlet. The closest residential receptors to the DFC bridge construction, on East Second Street, are approximately 1,200 feet south of the work area and separated by the Exelon power plant building. These receptors would not experience sound levels above normal levels. Residences on East First Street, within 50 feet of the Buffer Open Space and within 150 feet of construction on the

Coastal Site, would experience elevated noise levels during construction, however these levels are not anticipated to exceed City of Boston criteria.

8.8.4 Mitigation

Sound levels from activities associated with the construction of the proposed project are anticipated to comply with the City of Boston's noise criteria, therefore no noise mitigation is required. However, construction equipment would be required to use the following noise-reduction measures:

- Maintain mufflers on construction equipment.
- Keep truck idling to a minimum in accordance with MA anti-idling regulations.
- Fit any air-powered equipment with pneumatic exhaust silencers.
- Do not allow nighttime construction.

8.9 Regulatory Compliance

The noise analysis demonstrates that the Conley Terminal Improvements, including the DFC, noise wall, and Buffer Open Space, will provide a significant noise reduction benefit and also meet the DEP's and City of Boston's noise impact criteria. The Conley Terminal Improvements would result in residential areas experiencing lower daytime sound levels than under the Existing Conditions even with projected growth in activity. The nighttime sound levels would be slightly reduced, but essentially unchanged.

Independent of the proposed improvements, existing sound levels in the Study Area are predicted to increase due to the background growth associated with Conley Terminal operations. The future No-Build Condition sound levels would increase by 3 to 4 dB(A) in the daytime and by approximately 1 to 3 dB(A) during the nighttime periods due to increases in regional traffic and increased traffic to the existing Conley Terminal independent of the proposed improvements.

The proposed improvements would substantially reduce sound levels in the Study Area due to shifting Conley Terminal truck traffic to the DFC, and providing a landscape buffer area (Buffer Open Space), with a noise barrier wall between East First Street and the expanded Conley Terminal. The approximately 100-foot setback provided by the Open Space Buffer to East First Street in addition to the noise attenuation provided by the noise wall and landscaping will all help to minimize noise to the adjacent residences. These measures would reduce the future sound levels for the residential areas along East First Street by 3 to 13 dB(A) in the daytime and by approximately 1 to 2 dB(A) during the nighttime periods. The future sound levels would be 2 to 9 dB(A) below the current daytime sound levels. The Proposed Project would be below the DEP noise criteria of a maximum 10 dB(A) increase because the future Build sound levels would result in reduced sound levels.

9 Hazardous Materials

9.1 Introduction

The Massachusetts Environmental Policy Act (MEPA) Regulations require certain information to be addressed in an Environmental Notification Form (ENF), including information on any portion of the Project Area that has been or is currently being regulated under the Massachusetts Contingency Plan (MCP). In addition, an ENF requires that the proponent identify any Activity and Use Limitations (AULs) and Reportable Conditions or Recognized Environmental Conditions (RECs) that have not been assigned a Release Tracking Number (RTN). Additional information required in an ENF includes whether a project would generate solid waste (for example, during demolition or construction), as well as a description of alternatives considered for re-use, recycling, and disposal.

9.2 Key Findings

- Twenty-three RTNs are located within the Study Area;
- Five disposal sites are expected to affect conditions in the Study Area;
- The Dedicated Freight Corridor (DFC) would cross two MCP sites (one with an AUL) associated with the Massachusetts Bay Transportation Authority (MBTA), one of which is out of compliance with its MCP obligations. It also crosses the former Coastal Oil site and road construction will need to be coordinated with remediation activities at this site.
- The redevelopment of the former Coastal Site for the expanded container and handling operations and the DFC road construction would need to be coordinated with remediation activities on this site;
- Construction of the DFC would generate excess contaminated soil, which would either be re-used on-site or would require off-site disposal; and,
- The DFC would pass directly through two empty aboveground storage tanks (ASTs), which would need to be demolished.

The likely benefits of the Conley Terminal Improvements are:

- Re-use of soil on the former Coastal Oil site is a green remediation strategy limiting the number of trucks to transport soil off site and conserve landfill space.
- Work associated with the expansion may result in achieving a Permanent Solution for the site through successful remediation measures undertaken during the construction.

9.3 Affected Environment

The Project Area is an approximately 40-acre area located north of East First Street, extending from Summer Street to Farragut Road (Figure 2-1). The properties within the Project Area include:

- The former Coastal Oil site, now owned by Massport.
- Portions of the former MBTA parcel that would be affected by the Project (the DFC, Exit Gate Processing Area, and Buffer Open Space).
- Portions of the Exelon Site where the DFC would be sited.

The Study Area includes the entirety of the parcels within the Project Area as part of the assessment for hazardous materials. The Study Area includes the area located on the northern side of East First Street to the Reserved Channel, extending from Summer Street to Farragut Road.

The Study Area has an extensive history of industrial and commercial use and consequently has been the location of several releases of oil and hazardous materials (OHM). This section describes the nature of these releases and the actions taken to address them.

9.3.1 Methodology

The information presented is based on the following resources:

- A Soil Closure Performance Report for the Exelon Site prepared for the Boston Edison Company (BEC) of Boston, Massachusetts by E.C. Jordan Co. (E.C. Jordan) of Wakefield, Massachusetts in March 1990.
- A Soil Closure Performance Report Addendum No.2 for the Exelon Site prepared for BEC by ABB Environmental Services, Inc. (ABB) of Wakefield, Massachusetts in July 1990.
- A Groundwater Closure Performance Report for the Exelon Site prepared for BEC by ABB Environmental Services, Inc. (ABB) of Wakefield, Massachusetts in February 1991.

- A Phase I Environmental Site Assessment (ESA) for the MBTA/ Department of Conservation and Recreation (DCR) Parcels prepared for Massport by GeoInsight, Inc. (GeoInsight) of Littleton, Massachusetts in July 2010.
- A Phase I Environmental Site Assessment for the Exelon Property prepared for Massport by GeoInsight, Inc. in April 2011.
- A Proposed Conley Terminal DFC Project Exelon Parcel Feasibility Report was prepared for Massport by Nitsch Engineering of Boston, Massachusetts in July 2011.
- MCP submittals for the former Coastal Oil site by various consultants.
- Site knowledge of current environmental consultant for the former Coastal Oil site, GEI Consultants of Woburn, Massachusetts.
- Knowledge of current environmental conditions at the Exelon Site by Exelon of Medfield, Massachusetts.

The E.C. Jordan and ABB Closure Performance Reports for soil and groundwater were prepared in general accordance with the requirements of 310 CMR 30.00. These reports provide information on the following:

- Assessment of Basin #1 and Basin #2 (the impoundments noted on Figure 9-1).
- Removal of the impoundments liners and limited soil excavation of soil below the liner.
- Post-liner removal groundwater testing.

The GeoInsight reports were prepared in general accordance with the American Society for Testing and Materials (ASTM) E1527-05 standard for Phase I ESAs and included review of records from the following City of Boston municipal offices:

- Fire Department
- Assessor's Office
- Inspectional Services
- Engineering Department
- Building Department
- Water and Sewer Department

The review of these records addressed past and present property use, water supplies, septic systems, proximity to surface waters, and the history of underground storage tanks (USTs) for the Study Area. In addition, GeoInsight reviewed historical information such as aerial photographs, historical maps, and city atlases, to establish uses of the properties and abutters. They also obtained and reviewed Sanborn Fire Insurance Maps of the Study Area and the Massachusetts Geographical Information System (MassGIS) Site Scoring Map, as well as the United States Geological Survey (USGS) topographic maps. As part of the ASTM Phase I ESA investigations for the Exelon and MBTA/Coastal parcels, GeoInsight also reviewed the most recently available Massachusetts Department of Environmental Protection (DEP) lists of Confirmed Disposal Sites and reported releases for sites within one mile of the Project Area. They also used database services to obtain the following federal databases, which GeoInsight then reviewed to identify listed properties within a one-mile radius of the properties:

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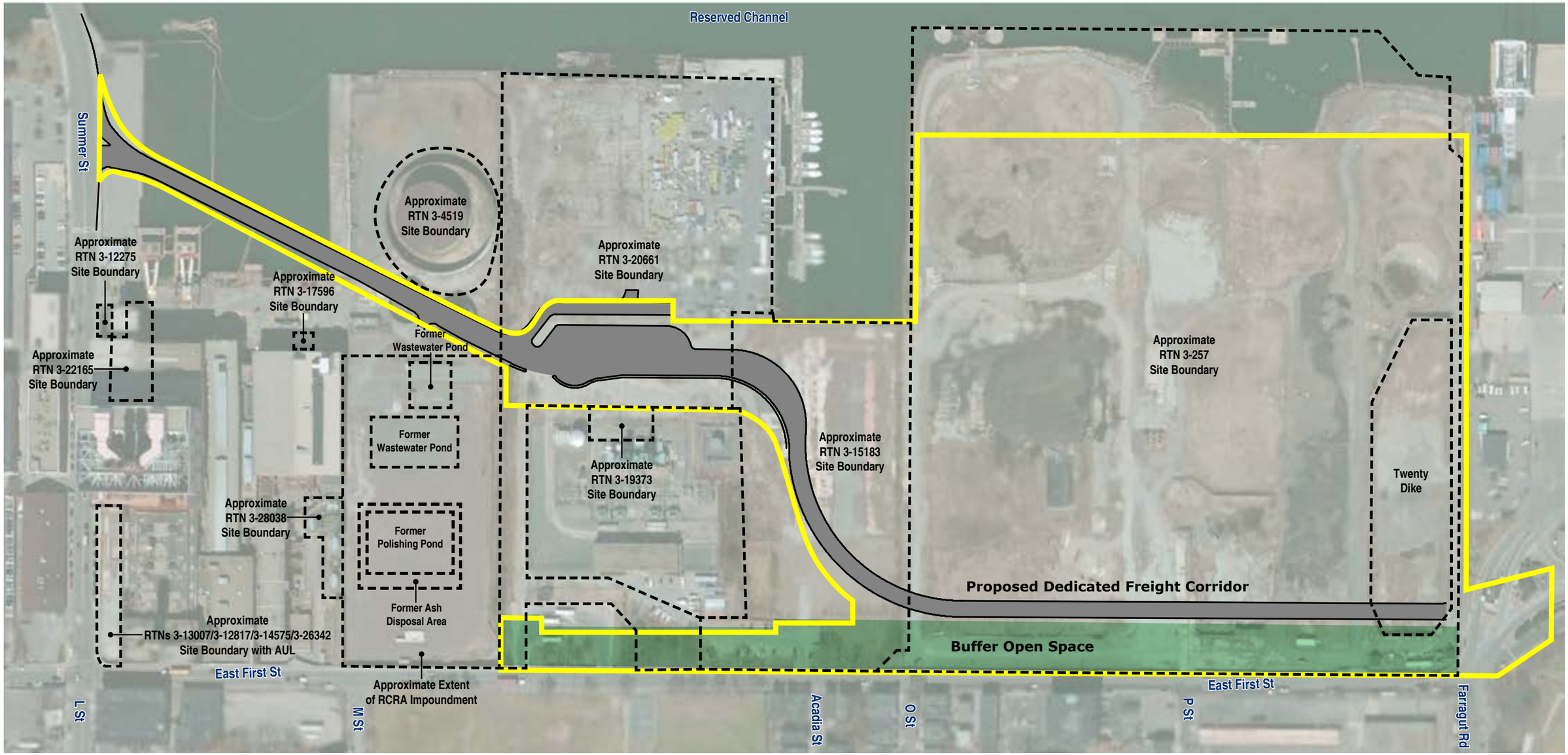

Project Area

Open and Closed Disposal Sites

0 100 200 Feet

Conley Terminal Improvements

Figure 9-1

Listed MassDEP Disposal Sites

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- National Priorities List (NPL)
- Resource Conservation and Recovery Act (RCRA) list of treatment, storage, or disposal (TSD) facilities
- RCRA Corrective Action (CORRACTS) sites

GeoInsight also obtained and reviewed the following state and federal databases to identify listed properties within a half mile radius of the Project Area:

- Leaking USTs
- Landfill/solid waste disposal sites
- Comprehensive Environmental Response, Compensation, and Liability Information System Lists (CERCLIS)
- State-listed hazardous waste sites
- Designated "Brownfield" sites

9.3.2 Regulatory Context

In the Commonwealth of Massachusetts, the management of hazardous substances and petroleum products when released into the environment is generally governed by the MCP. Hazardous substances include oil, hazardous material, and hazardous waste and are defined as those substances that may constitute a present or potential threat to human health, safety, public welfare, or the environment.

Hazardous materials, as defined in section 310 CMR 40.0006 of the MCP, include "any material in whatever form which, because of its quantity, concentration, chemical, corrosive, flammable, reactive, toxic, infectious or radioactive characteristics, either separately or in combination with any substance or substances, constitutes a present or potential threat to human health, safety, welfare, or to the environment, when improperly stored, treated, transported, disposed of, used, or otherwise managed."

According to section 310 CMR 40.0006 of the MCP, hazardous wastes are waste materials which because of their "quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to an increase in serious irreversible, or incapacitating reversible illness or pose a substantial present or potential hazard to human health, safety, public welfare, or the environment when improperly treated, stored, transported, used or disposed of, or otherwise managed." Oil includes "insoluble or partially soluble oils of any kind or origin or in any form, including, without limitation, crude or fuel oils, lube oil or sludge, asphalt, insoluble or partially insoluble derivatives of mineral, animal or vegetable oils, and white oil."

When a hazardous substance impacts (or has the potential to impact) an environmental medium, then a release (or threat of release) of OHM is said to occur or be present. According to the MCP, a "release" is defined as "spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping or disposing into the environment." A threat of release "means a substantial likelihood of a release of OHM which requires action to prevent or

mitigate damage of health, safety, public welfare, or the environment which may result from the release."

RECs, as defined by the ASTM Standard E1527-05, "means the presence or likely presence of any hazardous substance or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws."

As a further refinement of the ASTM E1527-05 definition of RECs, MCP terminology and references are used in the ASTM Phase I reports, since the management of OHM, once released in the environment, is governed by the MCP. Properties with confirmed OHM impacts are generally managed in accordance with the MCP and associated policies or guidance issued by DEP. However, depending on the type and concentrations of OHM present at a property, other federal regulations implemented by the U.S. Environmental Protection Agency (EPA) may apply including:

- **Resource Conservation and Recovery Act Regulations** – The RCRA sets forth regulations for the generation, characterization, storage, treatment (recycling/disposal), and transport of hazardous materials waste (cradle-to-grave) and establishes compliance regulations for USTs.
- **Comprehensive Environmental Response, Compensation, and Liability Act Regulations** – The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) established a fund (Superfund) to clean up hazardous waste sites. Sites were ranked using the Hazard Ranking System (HRS) to estimate the relative risk of a particular site. Sites eligible for cleanup under Superfund are referred to as the NPL.
- **Toxic Substance Control Act** – The Toxic Substances Control Act (TSCA) authorized EPA to secure information on all new and existing chemical substances, as well as to control any of the substances that were determined to cause unreasonable risk to public health or the environment.

9.3.3 Exelon Site

The Exelon Site has been used for a variety of purposes since the 19th century. Among the earliest uses were the "House of Industry" and the Lunatic Asylum, two city-run facilities located at the property until the 1850s. Later businesses included Loring's City Point Works, which conducted a variety of industrial activities such as a boiler shop, a machine shop, and ship builders. By 1899, Boston Electric Light operated a coal-fired power generator and C.H. Sprague Coal and Salt Yards were located on a portion of the Exelon Site. The predominant use of the Exelon Site since 1900 has been power generation (first by coal and later by oil, then by coal again). The site is currently used eight to ten times per year to generate peak power using a jet-fuel powered generator.

The northern portion of the Exelon Site was filled starting in 1903 and attained its current configuration by 1946. The nature of the fill was most likely coal and coal ash from the nearby coal yard used to power the electric generators. Based on soil data from nearby borings, the northern portion of the Exelon Site is comprised of 15 to 20 feet of fill.

Hazardous materials associated with the Exelon Site are consistent with its century-long use as a power station. The Phase I ESA prepared by GeoInsight for the site listed 18 aboveground storage tanks (ASTs) and USTs known to have existed at the site.

Fourteen RTNs comprising nine primary disposal sites are located at the Exelon Site. Appendix E lists these releases and disposal sites, along with those at the MBTA and Former Coastal Oil parcels. Information regarding the releases which has a significant potential to affect the DFC is discussed below and listed in Appendix E.

9.3.3.1 RTNs 3-4519, 3-10475 & 3-10496: Releases of No. 6 Fuel Oil in Tank No. 3 Area

Three fuel oil bulk storage tanks are located on the northern end of the Exelon Site. Historic releases of No. 6 fuel oil have been associated with Tank No. 3, a 6,000,000-gallon bulk oil tank located on the property (Figure 9-1). Between 1989 and 1994, four reportable spills of fuel oil were reported to DEP, the largest of which was a 218,000-gallon release within the secondary containment area. These releases were all remediated at the surface when they occurred and general investigation of the area began in 1994. The disposal site is associated with Tank No. 3.

Petroleum-contaminated soil in excess of the Upper Concentration Limits (UCLs) is located beneath Tank No. 3 and its secondary containment and immediately north of the DFC right-of-way. Environmental investigations conducted from 1994 to 1999 identified 0.25 inches of light separate phase petroleum product in monitoring wells immediately downgradient (north-northwest) of the tank and contaminated soils in the immediate tank area. In 1999, a Class C Response Action Outcome (RAO) was filed for the RTNs; the RAO concluded that No Substantial Hazard exists at the Exelon Site and that it was infeasible to conduct remedial activities. This Class C RAO remains in place. In 2007 Exelon designated the Exelon Site a Public Involvement Plan (PIP) site; public meetings regarding site activities are held each year in April and October. Periodic evaluations of the Class C RAO were performed in 2004 and 2009. It was concluded in the 2009 periodic evaluation of the Class C RAO that the achievement of a Permanent Solution was still infeasible.

No releases have been associated with Tank No. 1 or No. 2, the 630,000-gallon bulk storage tanks; however, no soil samples have been collected from beneath the tanks or their secondary containment. The tanks and associated underground piping are within the proposed DFC right of way.

9.3.3.2 RCRA Impoundment

This section describes the RCRA impoundment area on the Exelon Site, which includes surface impoundments, a former polishing pond, and former sludge accumulation area. The RCRA impoundment area, located south of the Project Area, is outside the limit of disturbance for the Proposed Project.

Surface Impoundments

In addition to the DEP sites, two surface impoundments were located on the eastern side of the Exelon Site (Figure 9-1), which has been assigned RCRA Facility ID Number MAD000845420/MAR000010702.

From at least 1972 to 1980 a wastewater storage impoundment was located on the eastern portion of the Exelon Site, which consisted of one unlined 75-foot by 75-foot basin with an earthen berm (Figure 9-1). In 1980, this structure was replaced with two ponds, lined with Hypalon, which were then closed in 1988.

Between May and August 1990, E.C. Jordan/ABB performed sampling of the impoundments, removed the impoundment liners, and performed limited excavation to remove stained soil from beneath the liners. According to the reviewed documents, E.C. Jordan/ABB performed soil testing before the liners were removed that indicated the presence of polycyclic aromatic hydrocarbons (PAHs) and metals (antimony, vanadium, lead, nickel, mercury, chromium) which exceeded Toxicity Characteristic Leaching Procedure (TCLP) limits for leachability, thereby classifying the waste as hazardous by RCRA and the MCP.

After E.C. Jordan/ABB removed the liners eight areas of surface stained soil were observed. E.C. Jordan/ABB excavated these areas and the soil was ultimately shipped offsite for disposal. E.C. Jordan/ABB collected one composite sample from the sidewalls and bottom of each excavated area. The composite samples were analyzed for semi-volatile organic compounds (SVOCs) and metals. Analytical results indicated that presence of beryllium, lead, and vanadium in the impoundment areas. In August 1990, ABB completed backfilling of the impoundment areas with a "crushed stone" cover material.

Between September and November 1990, ABB collected groundwater samples from wells installed as part of surface impoundment closure. Analytical results indicated the presence of arsenic, chromium, copper, lead, mercury, nickel, silver,and selenium. As result of the ongoing concentrations of metals in groundwater ABB recommended that BEC initiate a groundwater assessment program.

Based on the information presented by GeoInsight, these impoundments may be as close as 50 feet from the edge of the proposed DFC alignment (Figure 9-1).

Polishing Pond

A polishing pond south of the impoundment area was closed/filled in 2007. No specific information is available regarding soil and groundwater conditions at the time of closure. Based on historic photographs it appears that the polishing pond was located approximately 300 feet south of the current DFC alignment (Figure 9-1).

Sludge Accumulation Area

A former coal ash/fly ash/metal hydroxide sludge accumulation area was also located within the RCRA Impoundment area adjacent to East First Street, immediately west of the MBTA parcel adjacent to the proposed Buffer Open Space (Figure 9-1). No specific information was available to GeoInsight regarding closure of this area and a RCRA Facility Assessment Report in 2009 recommended further investigation of this area.

Based on historic photographs it appears the ash and sludge accumulation area was located along East First Street, just west of the proposed Buffer Open Space (Figure 9-1).

9.3.4 MBTA Property

The MBTA South Boston Power Complex gas turbines are located in the center of the parcel, an MBTA bus yard is located on the southwestern side of the parcel, an empty lot, which formerly contained the coal-burning power plant for the MBTA, is on the eastern side of the parcel.

The southern one-third of the parcel is part of original (pre-1630) land in South Boston; the remainder of the parcel is filled land, mostly created between approximately 1830 and 1852. The nature of the fill was most likely coal and coal ash from the nearby coal yard. Based on soil data from nearby borings, 15 to 20 feet of fill may be present on the northern portion of the property.

In the 19th century, the Suffolk County House of Correction was located on the western portion of the parcel and a boat building yard on the eastern portion. By 1911 the prison had been moved, and the Boston Elevated Railroad began operating a coal-fired power plant on the property. This power plant, located on the eastern side of the property, operated until 1982, when it was replaced by the current power plant. The old power plant was demolished in 2004.

There were three major RTNs associated with releases on the MBTA parcel, including one with an AUL. These releases along with other smaller releases are included in Appendix E. Information regarding the two releases which have a significant potential to affect the DFC and/or the Buffer Open Space are discussed below.

9.3.4.1 RTNs 3-15183 and 3-26021: Former South Boston Power Plant

The old power plant building was demolished in 2004. MBTA received a Beneficial Use Determination (BUD) from DEP allowing the MBTA to crush much of the of the old building demolition debris (brick, concrete) and to re-use the debris to fill in the basement of the power plant. Subsurface investigations in the area identified petroleum (including separate phase product), asbestos, and metals (arsenic, chromium, lead, nickel) in soil and groundwater. Sources of contamination (drums of oil, asbestos-impacted soil, and USTs) were removed from the MBTA parcel.

Remediation was completed in 2007 and a Method 3 Risk Characterization determined that a condition of No Significant Risk (NSR) existed for the site, with the restrictions included under an AUL. An AUL was prepared in 2008 and the site was closed with a Class A-3 RAO on June 13, 2008. On January 10, 2012, as the result of an October 14, 2011 DEP audit, that original AUL was terminated and a new AUL filed for the site (referred to as "Portion of the Property") on the same day. The current AUL prohibits the following:

- Use for residential development.
- Use of contaminated soils for growing consumable produce.
- Relocation of contaminated soil to a location outside the Portion of the Property, unless a Licensed Site Professional (LSP) renders an opinion which states that such relocation is consistent with maintaining a condition of NSR.
- Removal of low strength concrete from between the railroad tracks in the area of sample location S-55, as shown on Exhibit B, unless an LSP renders an opinion which states that such removal is consistent with maintaining a condition of NSR.
- Excavation work exceeding 50 days in Area B, shown on Exhibit B, unless an LSP renders an opinion which states that such work is consistent with maintaining a condition of NSR.

Obligations and Conditions set forth in the AUL include the following:

- A Soil Management Plan (SMP) shall be prepared by an LSP and implemented prior to the commencement of any activity that is likely to disturb contaminated soil.
- A Health and Safety Plan (HASP) shall be prepared and implemented prior to the commencement of any activity which involves the removal and/or disturbance of contaminated soil.
- Any new clean fill or topsoil applied within the Portion of the Property to increase surface grades shall be placed above a warning layer to distinguish between clean fill and contaminated soil beneath and stabilized in such a manner to prevent erosion, damage and exposure of contaminated soils beneath.

9.3.4.2 RTN 3-20661

This RTN is associated with the results of a 2002 subsurface investigation for a combined sewer overflow program on the northern DCR/MBTA parcel, which was not completed. Forty-eight shallow (0- to 6-inch deep) soil samples were collected and tested for OHM. The soil, described as "urban fill with brick, ash, shells and sand" contained extractable petroleum hydrocarbons (EPH), volatile petroleum hydrocarbons (VPH), volatile organic compounds (VOCs), arsenic, beryllium, lead, and trace (less than 1 percent) asbestos. Groundwater samples collected from monitoring wells on the property contained EPH and lead at low concentrations. Arsenic was identified in excess of the applicable MCP reportable concentrations. A

Phase I Initial Site Investigation (ISI) was submitted to DEP in 2002, but no other investigations or response actions have occurred since then.

9.3.5 Former Coastal Oil Site

The Coastal site predominantly stored No. 2 and No. 6 fuel oil; however, kerosene, jet fuel, gasoline, and molasses were also historically stored at the property. Petroleum receiving and distribution operations ceased in 2000 and all tanks associated with the Coastal site have been removed, and all associated piping has been removed.

Six RTNs, comprising three primary disposal sites, are located at the former Coastal Oil site. These releases along with other smaller releases are included in Appendix E. Information regarding RTN 3-257, which has a significant potential to affect the DFC, the Buffer Open Space, and/or the Conley Terminal expansion onto the Coastal site is discussed below.

9.3.5.1 RTN 3-257 On-Terminal: Former Coastal Oil Site

The former Coastal Oil site (RTN 3-257) is divided into two portions. The 900 East First Street property, referred to as the "On-Terminal" area comprises the northern portion of the disposal site. The remainder of the disposal site is referred to as the "Off-Terminal" area and is located to the south across the street at 935 East First Street. Massport has responsibility for the On-Terminal property and Coastal Oil of New England retains responsibility for the Off-Terminal property under the MCP.

Petroleum-contaminated soil and light non-aqueous phase liquid (LNAPL) consisting of No. 2 and No. 6 fuel oil is present beneath areas of the former Coastal Oil site, generally at a depth of 8 feet. Shallower soil, up to 3 feet deep, is generally urban fill and is not petroleum-contaminated. Metals, PAHs, and asbestos have been detected in the shallow soil. Surface soil, identified as containing more than 1 percent asbestos, has been covered or excavated and removed from the former Coastal Oil site. The areas that are covered are limited to a localized area on the eastern portion of the site in the Twenty Dike area as shown on Figure 9-1. These soils are covered with a minimum of 6 inches of gravel. In all other areas of the former Coastal Oil site, soils known to contain more than 1 percent asbestos have been removed.

The site is currently in Remedy Operations Status (ROS) and the following activities are ongoing by Massport:

- Operating an automatic LNAPL skimmer pump system to remove separate phase product;
- Performing manual LNAPL purging to remove separate phase product;
- Performing gauging of existing monitoring wells twice per year to monitor the relative thickness of LNAPL across the site;

- Maintaining biopiles which is soil that has undergone on-site aerobic microbial biodegradation pending its reuse on site; and
- Operating a bioventing system that aerates the soils which increases the biodegradation rate of petroleum contamination in the subsurface.

The purpose of the ROS activities is to remove residual LNAPL at the site to meet the current regulatory requirement achieving a permanent solution at the site by reducing the thickness of LNAPL in the formation to less than ½ inch of NAPL as measured in the monitoring well. No AULs are currently in place for the former Coastal Oil site.

9.3.6 Summary of Potential Sources of Contaminated Soil or Groundwater in the Study Area

Table 9-1 summarizes the disposal sites located on each of the parcels which have the potential to affect conditions within the Study Area. Almost all of the Study Area (with the exception of the bridge) traverses a portion of one or more DEP disposal sites (Figure 9-1). Table 9-1 summarizes the contaminants associated with the disposal sites and identifies whether or not they can be expected to affect conditions in the Study Area. In addition, the table also lists the RCRA Impoundment on the Exelon Site; although it is not a DEP disposal site, significant soil and groundwater contamination is associated with its former basins.

Table 9-1 Study Area Contaminants of Concern

		Contaminants of Concern (COC)		COC Likely Encountered in the
Property	Primary RTN	Soil	Groundwater	Project Area?
Exelon	3-4519	No. 6 Fuel Oil	No. 6 Fuel Oil	Yes
	3-17596	No. 2 Fuel Oil	No. 2 Fuel Oil	Yes
	MAD000845420 and MAR000010702	PAHs, metals--including TCLP failure for antimony, lead, chromium, mercury, nickel, vanadium, and PAHs	Arsenic, lead, mercury, selenium, PAHs	Yes
MBTA	3-15183	Asbestos, petroleum, & metals	Asbestos, petroleum, & metals	Yes
	3-19373 (This does not affect Dedicated Freight Corridor or Buffer Open Space)	EPH and PAHs	EPH and PAHs	Yes
	3-20661	EPH, PAHs, metals, and trace asbestos	EPH, PAHs, and lead	Yes
Coastal	3-0257	NAPL, metals and PAHs. Asbestos in the Twenty Dike Area	NAPL, metals and PAHs	Yes

Notes:
Primary RTN = Main release tracking number (RTN) used by DEP to track the status of investigations and response actions.
MAD000845420 = RCRA Facility ID number.
PAHs = polcyclic aromatic hydrocarbons.
TCLP = Toxicity Characteristic Leaching Procedure.
EPH = Extractable petroleum hydrocarbons.
NAPL = Non-aqueous phase liquid.

9.4 Environmental Consequences

This section discusses the potential for encountering contaminated soils or groundwater that may affect construction costs or schedule in the Conley Terminal Improvements, DFC, and/or the Buffer Open Space.

9.4.1 Conley Terminal Improvements

Improvements to Conley Terminal would include expanding container yard activities into the former Coastal Oil site which is an MCP site in its entirety (RTN-3-257) and would require compliance with the MCP. The primary potential contaminants of concern (COCs) at the Coastal site are petroleum, PAHs, asbestos, lead, and NAPL. Soil contamination would likely consist of:

- 0 to 8 feet: PAHs and lead associated with urban fill conditions.
- 8 to 12 feet or greater: NAPL and petroleum-saturated soils associated with historic releases.

Shallow excavation, up to 8 feet, would likely encounter urban fill. It is expected that excess soil can be re-used on other portions of the Coastal Oil site. If necessary, off-site disposal of urban fill would likely be at an unlined landfill.

Deep excavation, greater than 8 feet, would likely encounter oil-contaminated soil and possibly NAPL. Installation of deep foundations would likely encounter oil-contaminated soil and possibly NAPL. Displacement of oil-contaminated soils could be minimized with the installation of driven piles; however, if obstructions need to be removed by pre-auguring or excavation, oil-contaminated soils would likely be encountered. Oil-contaminated soil would be disposed off-site, likely at an asphalt batching facility. Additionally, excavations performed in the southern end of the Twenty Dike area may encounter soil with asbestos.

If dewatering is required for excavation, the dewatering effluent would likely be contaminated by oil and require treatment prior to discharge. Dewatering effluent could be discharged to the Reserved Channel under a NPDES Remediation General Permit (RGP) or recharged back into the ground on the site.

ASTs and USTs associated with the former bulk storage and transport operations have been removed from the former Coastal Oil site. Expansion of the Conley Terminal would likely require demolition of the concrete structures remaining on the property, including two dike areas and two concrete buildings. Miscellaneous sheds and trailers and piping associated with multi-phase extraction (MPE) system would also be removed. Prior to demolition, the structures should be tested for the presence of materials that require special handling/management (e.g. asbestos, lead-based paint, etc.) The demolished concrete structures could be crushed and used as backfill on the site.

The likely benefits of the Conley Terminal Improvements are:

- Re-use of soil on the former Coastal Oil site is a green remediation strategy limiting the number of trucks to transport soil off site and conserve landfill space; and,
- Work associated with the expansion may result in achieving a Permanent Solution for the site.

9.4.2 Conley Terminal Dedicated Freight Corridor

The DFC would be constructed across portions of the Exelon, MBTA, and former Coastal Oil properties. Construction of the DFC would require compliance with the MCP because it crosses MCP sites. Urban fill excavated from within the right-of-way could be re-used during construction within the right-of-way or at the former Coastal Oil site. It is expected that construction of the DFC would also generate excess soil contaminated with oil, metals, and/or asbestos that could not be re-used within the right-of-way or the former Coastal Oil site and would require off-site disposal.

Dewatering will likely be required as part of excavation for proposed bridge abutments on the Exelon parcel. Based on the review of available documents, dewatering effluent would likely be contaminated by oil and may require treatment prior to discharge. Dewatering effluent could be discharged to the Reserved Channel under a NPDES RGP or recharged back into the ground on the site.

9.4.2.1 Exelon Site

The DFC does not pass directly through the MCP disposal site on the Exelon Site; however, due to the close proximity to known subsurface releases and potential sources it is likely that contamination would be encountered during construction. The primary potential COCs at the Exelon Site are petroleum, PAHs, metals (antimony, lead, chromium, mercury, nickel, vanadium, and characteristic hazardous waste) due to exceedances of TCLP criteria and the presence of NAPL.

The DFC would pass directly through ASTs 1 and 2, which would need to be demolished. Although specific releases have not been reported to be associated with these ASTs, subsurface investigations have not been conducted beneath the ASTs and there is the potential for petroleum-contaminated soil beneath or in close proximity to the ASTs. Petroleum-contaminated soil in excess of the UCLs is located beneath Tank No. 3 and its secondary containment, and immediately north of the DFC right-of-way. Petroleum-contaminated soil (No. 6 oil associated with the bulk storage tanks may be encountered during construction in the DFC right-of-way. In addition to petroleum, the fill material contains PAHs and metals. NAPL and contaminated groundwater may also be located within the DFC right-of-way; however, assuming excavation is less than 8 feet, groundwater and NAPL would likely not be encountered.

Oil-contaminated soil would be disposed off-site, likely at an asphalt batching facility. Urban fill, which is not oil-contaminated, could be re-used within the DFC, re-used at the former Coastal Oil site if it is of similar characteristics, or disposed of off-site at a Massachusetts landfill.

The DFC right-of-way is north of the RCRA impoundments. Based on available groundwater analytical data significant metals contamination and Characteristic Hazardous Waste, as defined by RCRA and the MCP, could be encountered during construction in areas near the former impoundment.

Soils with significant concentrations of metals cannot be re-used within the right-of-way or the Coastal site, or disposed of at a Massachusetts landfill and must be disposed of at an out-of-state landfill. Soils that are classified as a characteristically hazardous waste must be disposed of at an out-of-state hazardous waste landfill.

Excavations on the Exelon Site associated with the construction of the DFC are expected to require dewatering. Dewatering will also likely be required for utility installation and bridge abutment construction and may require treatment prior to discharge. Dewatering effluent could be discharged to the Reserved Channel under a NPDES RGP or recharged back into the ground on the site.

9.4.2.2 MBTA Property

The DFC and ancillary facilities such as a relocated Conley Terminal security gate and truck processing facility would be constructed across the MBTA property and would cross two MCP sites (RTN 3-15183 and 3-20661). The primary potential COCs at the MBTA property are asbestos in soil, petroleum, PAHs, and metals (arsenic, beryllium, chromium, lead, and nickel).

The DFC passes directly through RTN 3-15183, which has an AUL. The requirements of the AUL are consistent with MCP compliance which includes preparation of a SMP and HASP. Construction of a roadway is consistent with allowable uses of the AUL.

The DFC also passes through RTN 3-20661. Only the surface soil of this disposal site has been characterized. Arsenic, beryllium, lead, PAHs, petroleum and trace levels of asbestos have been detected. The disposal site is currently out of compliance with the MCP and construction would require resolving the compliance status. A Phase II Comprehensive Site Assessment (CSA), Phase III Remedial Action Plan (RAP) and Phase IV Remedy Implementation Plan (RIP) are currently required by DEP to bring the site back into compliance with MCP.

Massport is currently planning to acquire portions of this disposal site as part of the DFC and Buffer Open Space. They are also redeveloping portions of the MBTA property for the Buffer Open Space that would remain under MBTA ownership. Before construction can begin on the roadway and buffer, it would be necessary to bring those portions of the disposal site back into compliance with the MCP.

Contaminated soil would be disposed of off-site, likely at a landfill, depending on its concentration; unless the fill contains asbestos, then it would be disposed of as special waste at an out-of-state landfill. High metal concentrations may also require that the soil be disposed of at an out-of-state landfill. Urban fill which is not oil- or asbestos-contaminated could be re-used within the corridor or at the former Coastal Oil site if it is of similar characteristics, or disposed of off-site at a Massachusetts landfill.

Excavations are not expected on the MBTA property associated with the construction of the DFC to require dewatering. However, if dewatering is required for utility installation, the dewatering effluent would likely be contaminated by oil and require treatment prior to discharge. Dewater effluent could be discharged to the Reserved Channel under a NPDES RGP would be required or recharged back into the ground on the site.

9.4.2.3 Former Coastal Oil Site

The DFC would be constructed across the former Coastal Oil site, which is an MCP site in its entirety (RTN-3-0257), potentially in advance of the Conley Terminal improvements. The primary potential COCs at the Coastal site are petroleum, PAHs, lead, and NAPL.

Petroleum contamination and NAPL are at located approximately 8 feet deep. Assuming construction of the DFC would not require excavation to a depth of 8 feet, it should not include excavation of oil-contaminated soils, only urban fill. It is expected that excess soil can be re-used within the DFC or re-used on other portions of the former Coastal Oil site.

Excavations on the Coastal site associated with the construction of the DFC are not expected to require dewatering. However, if dewatering is required for utility installation, the dewatering effluent would likely be contaminated by oil and require treatment prior to discharge. Dewater effluent could be discharged to the Reserved Channel under a NPDES RGP would be required or recharged back into the ground on the site.

9.4.3 Buffer Open Space

The Buffer Open Space would be constructed across the southern edge of the MBTA and former Coastal Oil site properties. Construction of the Buffer Open Space would require compliance with the MCP, since the Buffer Open Space crosses two MCP sites.

The Buffer Open Space crosses a portion of the MBTA property associated with an AUL, and this soil is unlikely to be suitable for parkland use. The soil in the Buffer Open Space on the other portion of the MBTA property (outside the AUL area) is not well characterized and also may not be suitable for parkland use. These soils additionally may not be appropriate to re-use at the former Coastal Oil site because they may not be consistent with the former Coastal Oil site soil, and therefore, would need to be disposed of off-site.

Based on the soil characterization conducted to date, it is likely that most of the soil within the Buffer Open Space across the Coastal site is appropriate for use as recreational or parkland. Excess soil associated with construction of the Buffer Open Space across the Coastal site or localized areas of soil not appropriate for use within the Buffer Open Space can be re-used on other portions of the former Coastal Oil site, avoiding the need for off-site disposal.

9.4.3.1 MBTA Property

The Buffer Open Space would be constructed across the southern portion of the MBTA property and would cross two MCP sites (RTN 3-15183 and 3-20661). Approximately one-quarter of the Buffer Open Space on the MBTA property is not within an MCP site.

An AUL is in place on the eastern half of the Buffer Open Space on the MBTA property (RTN 3-15183). The AUL prohibits residential and consumptive gardening on the site due to the presence of lead and asbestos. Although recreational and parkland use is not prohibited, it is not explicitly permitted and may not be an acceptable use given the type of soil contamination on the site. It is likely that the upper three feet of soil would need to be removed and replaced with clean fill or capped. Fill excavated from within the AUL area would likely not be able to be re-used at the former Coastal Oil site and would need to be disposed of off-site at an out of state landfill.

The Buffer Open Space also crosses the RTN 3-15183 disposal site at two locations: in the middle and western portion of the MBTA property. The soil in the southern portion of this disposal site is not well characterized, but may contain lead and asbestos at concentrations unacceptable for recreational and parkland use. If unacceptable for this use, the upper three feet of soil would need to be removed or capped.

The remaining one-quarter of the Buffer Open Space across the MBTA property is not on an MCP disposal site and the soils have not been characterized. It is likely that this soil would also be unacceptable for recreational and parkland use and the upper three feet would need to be removed or capped. It is also likely that once soil samples are tested DEP would likely need to be notified of a new reportable condition and a new RTN would be assigned.

Contaminated soil would be disposed of off-site, likely at a Massachusetts landfill, depending on its concentration; unless the fill contains asbestos, then it would be disposed of as special waste at an out-of-state landfill. High metal concentrations may also require that the soil be disposed of at an out of state landfill. Urban fill, which is not oil- or asbestos-contaminated, could be re-used within the corridor, disposed of at the Coastal site if it is of similar characteristics, or disposed of off-site at a Massachusetts landfill.

Excavations on the MBTA property associated with the construction of the Buffer Open Space are not expected to require dewatering. However, if dewatering becomes necessary, effluent generated by dewatering would require treatment prior to discharge. A NPDES RGP would be required to discharge dewatering effluent to the Reserved Channel.

9.4.3.2 Former Coastal Oil Site

The Buffer Open Space would be constructed across the southern portion of the former Coastal Oil site, which is an MCP site in its entirety (RTN 3-257). The primary potential COCs at the Coastal site are petroleum, PAHs, lead, and NAPL.

Petroleum contamination and NAPL are at approximately 8 feet in depth below the proposed DFC and Buffer Open Space alignment. LNAPL recovery trenches are proposed to continue ongoing removal of LNAPL from beneath the DFC and Buffer Open Space Zone.

Assuming construction of the Buffer Open Space would not require excavation to a depth of 8 feet, it should not include excavation of oil-contaminated soils, only urban fill. Based on the soil characterization conducted to date, it is likely that most of the soil within the Buffer Open Space is appropriate for use as recreational or parkland. Excess soil associated with construction of the Buffer Open Space or localized areas of soil not appropriate for use within the Buffer Open Space can be re-used on other portions of the Coastal site, avoiding the need for off-site disposal.

Excavations on the former Coastal Oil site associated with the construction of the Buffer Open Space are not expected to require dewatering. However, if dewatering becomes necessary, effluent generated by dewatering would require treatment prior to discharge. A NPDES RGP would be required to discharge dewatering effluent to the Reserved Channel.

The likely benefits of the Buffer Open Space are:

- Continued reduction of LNAPL in the subsurface.
- Returning a currently out of compliance MCP site (RTN 3-15183) back into compliance.
- Re-use of soil on the Coastal site is a green remediation strategy limiting the number of trucks to transport soil off site and conserve landfill space.

9.5 Mitigation

OHM may be encountered during construction of the Conley Terminal Improvements, the DFC, and the Buffer Open Space. Engineering controls would be put in place for the protection of human health and the surrounding environment, including the Reserved Channel. These controls would include air monitoring/dust control, stormwater runoff management, and erosion and turbidity controls (e.g., turbidity curtains/oil-absorbent booms). Equipment leaving the Project Area would be decontaminated.

Particulates and dust generated by construction activities would require mitigation. In addition, asbestos-contaminated soil would likely be excavated within the MBTA property. Dust and asbestos suppression/control measures, including, but not limited to, misting excavated and stockpiled materials with water, would be used as necessary to maintain airborne particulate levels below the action levels described below. Stockpiling of soil to be disposed of off-site would be minimized, with preference given to excavate, load, and haul. Soil that is stockpiled to be re-used within the right-of-ways or at the former Coastal Oil site would be covered and located in soil management areas. Erosion control, such as hay bales, would be used in the soil management area.

If soil that is classified as characteristically hazardous waste is encountered and excavated, it would be placed directly into drums or lined containers for off-site disposal. This soil would not be stockpiled.

Ambient air inside and outside the work area would be continuously monitored in real-time for particulates/dust during the course of the work. The perimeter and work zone would also be monitored for airborne asbestos fibers during excavation and loading of disposal containers within portions of the Project Area known to contain asbestos.

Prior to excavation and handling of fill materials, environmental and erosion control measures would be established. These measures would be in place for the duration of the work to protect nearby human and/or ecological receptors from exposure to site contaminants.

Equipment and vehicles would be decontaminated prior to exiting the site. Wash water would be collected and discharged through a 5-micron filter prior to discharge. If evidence of impacts are observed (e.g. sheen, suspect asbestos-containing material (ACM) fibers, or contaminant odor), decon fluids would be drummed for off-site disposal. Decontamination-derived soil and debris would be collected and disposed of as ACM in portions of the Project Area known to be asbestos contaminated.

9.5.1 Design Measures

Key components of the design process pertaining to OHM are pre-characterization of soil and risk characterization. Soil on the former Coastal Oil site is well understood due to the extensive site characterization that has been conducted throughout the MCP process and the pre-characterization sampling conducted within the DFC and Buffer Open Space right-of-ways. No chemical data are available for the DFC right-of-way across the Exelon Site and only limited data are available for the DFC and Buffer Open Space across the MBTA property.

Pre-characterization of the soils on the Exelon and MBTA properties would be conducted during design. The objectives of the pre-characterization investigation on the Exelon Site would also include confirming that the right-of-way and any associated excavation would not extend into the RCRA impoundment. Design measures to isolate the impoundment from the Project Area could potentially include sheet pile walls, or even moving the alignment further north.

Polychlorinated biphenyls (PCBs) are often found at urban disposal sites, particularly at power generating facilities. Site investigations conducted to date have not identified significant concentrations of PCBs. However, pre-characterization would include testing for PCBs, because their management and disposal can drive project costs.

Based on the pre-characterization investigations and risk characterization, a soil management strategy and plan would be developed and incorporated into the design. This management strategy would address the suitability for soils to be left in place, re-used, or disposed of off-site. Construction of the Conley Expansion, DFC and Buffer Open Space would require compliance with the MCP on multiple MCP sites. Release Abatement Measure (RAM) Plans would be prepared for the Project.

One of the disposal sites (RTN 3-20661) on the MBTA property is currently out of compliance with the MCP and construction would require resolving the compliance status. It is also likely that new reportable conditions pursuant to the MCP would be identified on the Exelon Site within the DFC area and on the MBTA property within the Buffer Open Space area.

9.5.2 Compliance

One of the disposal sites (RTN 3-20661) on the MBTA property is currently out of compliance with the MCP and construction would require resolving the compliance status. There are several options for returning the site to compliance:

- Negotiate with DEP for the roadway and Buffer Open Space construction to be conducted as Utility-Related Abatement Measure (URAM).
- On the portions of the property that become owned by Massport, redefine the boundaries of the disposal site with DEP's concurrence, and return those portions of the original disposal site to compliance using the White Knight provision of the MCP (310 CMR 40.0570), whereby the new Potentially Responsible Party has extended deadlines to meet its regulatory obligations.
- Depending on the results of the subsurface investigation, it may be possible for Massport to file an RAO-Partial for the portions of the disposal site it is acquiring. However, this would not work for portions of the disposal site that Massport is redeveloping, but which would remain with MBTA ownership.

It is also likely that new reportable conditions pursuant to the MCP would be identified on the Exelon Site within the DFC area and on the MBTA property within the Buffer Open Space area.

9.5.3 Health and Safety Protection

Consultants and contractors retained to perform the construction activities would be required to comply with all applicable federal, state, and local laws, and provide and implement their own HASPs. It is the consultant's and contractor's responsibility to ensure that the health, safety, and security of its employees are protected during the Project. Based on the proposed designs for the Conley Terminal Expansion, DFC, and Buffer Open Space, the following health and safety measures should be considered during construction activities:

- Developing site-specific action levels for contaminants that may be encountered during construction, such as petroleum, metals, and asbestos.
- Work Zone air monitoring consisting of equipment that can provide 15 minute time weighted averages (TWA) and maximum concentrations of particulates, VOCs, carbon dioxide, oxygen, lower explosive limit (LEL), and hydrogen sulfide.
- Perimeter air monitoring consisting of equipment that can provide 15 minute TWA and maximum concentrations for particulates and VOCs.

- Maintain materials on-site to manage spills, material releases, or conditions that exceed site-specific action levels.

9.6 Summary

The Study Area extends across properties which have been used for industrial purposes since the mid-19th century, and parts of which have been filled with coal, coal ash, and building debris. The current uses of the parcels are either active power generation, or the remediation of former industrial sites, in particular a former power generating plant and bulk oil storage facilities.

Consistent with the industrial history of the properties, there are five significant disposal sites which are expected to affect conditions in the Study Area:

- RTN 3-0257: Former Coastal Oil Site (and associated RTNs)
- RTN 3-15183: Former MBTA Power Plant (and associated RTNs)
- RTN 3-20661: MBTA/DCR Property
- RTN 3-4519: Bulk Oil terminal, Exelon Site (and associated RTNs)
- Former RCRA Impoundment, Exelon Site

These disposal sites all have soil and groundwater contamination at significant levels. Portions of the Project Area are located within the boundaries of these sites, or in the case of the RCRA Impoundment, the boundaries are not defined well enough to exclude their potential influence on the Project Area.

Construction of the Conley Expansion, DFC and Buffer Open Space would require compliance with the MCP on multiple MCP sites. RAM Plans would be prepared for the Project Area. One of the disposal sites (RTN 3-20661) on the MBTA property is currently out of compliance with the MCP and construction would require resolving the compliance status. It is also likely that new reportable conditions pursuant to the MCP would be identified on the Exelon Site within the DFC area and on the MBTA property within the Buffer Open Space area.

9.6.1 Conley Terminal Improvements

The Conley Terminal Improvements would expand container storage and handling operations onto the former Coastal Oil site at which the primary COCs are petroleum, PAHs, asbestos, lead and NAPL. Petroleum contamination and NAPL are located approximately 8 feet below the ground surface. Known surface soil identified as containing more than 1 percent asbestos has been removed except for a localized area on the eastern portion of the property which has been covered.

9.6.2 Dedicated Freight Corridor

The DFC crosses the Exelon, MBTA, and Coastal properties. The DFC does not pass directly through disposal sites on the Exelon Site; however, due to the right-of-way's

close proximity to known subsurface releases and potential sources it is likely that contamination would be encountered during construction. The primary potential COCs at the Exelon Site are petroleum, PAHs, metals, characteristic hazardous waste due to exceedances of TCLP criteria, and the presences of NAPL. Although the DFC is likely to not be located within the RCRA impoundment, which contains hazardous waste, this needs to be confirmed with subsurface investigations, since these materials are very expensive to dispose of.

The DFC across the MBTA property crosses two MCP sites (The primary potential COCs at the MBTA property are asbestos, petroleum, PAHs, and metals [arsenic, chromium, lead, and nickel]). One of the sites has an AUL which requires preparation of a SMP and HASP. Construction of a roadway and ancillary container terminal facilities is consistent with allowable uses of the AUL.

The DFC would be constructed across the former Coastal Oil site which is an MCP site in its entirety. The primary potential COCs at the former Coastal Oil site are petroleum, PAHs, lead, and NAPL. Petroleum contamination and NAPL are at approximately 8 feet in depth; therefore construction of the DFC should not include excavation of oil-contaminated soils, only urban fill.

The chemical characteristics of the soil across the Exelon Site are unknown; therefore, it is unknown if excess soil may be re-used or would need to be disposed of off-site. Excess soil from the MBTA property would likely need to be disposed of off-site and not re-used due to the presence of asbestos and metal. Excess soil from the former Coastal Oil site would likely be re-used within the right-of-way or on other portions of the Coastal site.

9.6.3 Buffer Open Space

Based on the soil characterization conducted to date, it is likely that most of the soil within the Buffer Open Space across the Coastal site is appropriate for use as recreational or parkland. Excess soil associated with construction of the Buffer Open Space or localized areas of soil not appropriate for use within the Buffer Open Space can be re-used on other portions of the Coastal site, avoiding the need for off-site disposal.

The Buffer Open Space crosses the MBTA and Coastal properties. The Buffer Open Space crosses a portion of the MBTA property that has an AUL on it, and this soil is unlikely to be suitable for parkland use. The soil in the Buffer Open Space on the other portion of the MBTA property (outside the AUL area) is not well characterized and also may not be suitable for parkland use. These soils also may not be appropriate to re-use at the former Coastal Oil site because they may not be consistent with the Coastal site soil and would need to be disposed of off-site.

10

Historical Resources

10.1 Introduction

This section describes the existing conditions and impacts to historical resources associated with the Conley Terminal Improvements, Dedicated Freight Corridor (DFC), and Buffer Open Space.

10.2 Key Findings

- Three resources located within the Project Area are recorded in the *Inventory of Historic and Archaeological Assets of the Commonwealth*, including two above-ground resources and one historical archaeological site. Two of these resources are no longer extant, including the South Boston Power Station and archaeological site BOS-HA-80.
- One previously recorded above-ground resource, the Boston Edison L Street Power Station, is located on the west side of the Project Area and the Massachusetts Historical Commission has issued an opinion that the property is eligible for listing in the National Register of Historic Places.
- A Project Notification Form was submitted to the Massachusetts Historical Commission in July 2012, in order to solicit comments under Section 106 of the National Historic Preservation Act (36 CFR 800). In a letter dated August 10, 2012, the Massachusetts Historical Commission issued a recommendation that the U.S. Army Corps of Engineers (USACE) make a finding of "no adverse effect" for this project.
- A copy of the Project Notification Form was submitted to the Massachusetts Board of Underwater Archaeological Resources on October 4, 2012. The Board of Underwater Archaeological Resources determined that the project was unlikely to impact submerged cultural resources (letter dated October 15, 2012).

10.3 Methodology

A site file was conducted online and at the Massachusetts Historical Commission (MHC) office in Boston on December 29, 2011. This search identified above-ground resources and archaeological sites listed in the National Register and State Register of Historic Places and/or the *Inventory of Historic and Archaeological Assets of the Commonwealth* that are located within the Project Area.

The online database for above-ground resources, MACRIS (http://mhc-macris.net), has basic location information for above-ground resources included in the *Inventory of Historic and Archaeological Assets of the Commonwealth*, which was used to compile a list of inventoried properties known to be located within the Project Area. The MACRIS database research was followed up by an in-person research visit to the MHC office in Boston, in order to access the associated inventory forms. The State Register of Historic Places was consulted as part of the MHC site file search, as was a check for inventoried archaeological sites within the Project Area. The listings in the National Register of Historic Places were consulted via the National Register online database (http://nrhp.focus.nps.gov) on December 29, 2011.

10.4 Affected Environment

There are two above-ground resources and one archaeological site are recorded in the *Inventory of Historic and Archaeological Assets of the Commonwealth* located within the Project Area. Figure 10-1 shows the locations of the two above-ground resources.

10.4.1 Boston Edison L Street Power Station, Summer Street and East First Street (BOS.12943)

This property lies east of Summer Street, bounded by the Reserved Channel to the north and East First Street to the south. There are three major features on the site: a large power plant complex, a fuel barge slip located in the Reserved Channel, and three fuel storage tanks. Other structures consist of two gate houses, an administrative building, and multiple water intake and outfall structures. The power plant, the largest feature on the site, was constructed in three main sections. The earliest portion consists of a three-story brick Romanesque style structure constructed in 1898. The remaining two sections, consisting of a boiler house and steam turbine/generator building, were designed by the Boston firm of Winslow and Bigelow and constructed from 1904 to 1908. Glazed tiles, arched windows, and tile plaques over the entrances decorate the steam turbine/generator building. Although the boiler house originally consisted of a seven-bay structure, extensive additions in 1922 and the large "New Boston" steam turbine plant built between 1962 and 1967 dramatically altered the original plan.

An inspection of the property in 2011 found that there have been numerous additions and alterations to the complex of structures that comprise this station. The original

Conley Terminal Improvements

Figure 10-1

Existing Historical Resources

massport

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section of the station was constructed in 1898; recent photographs show that several of the arched windows in this section have been infilled. A 1904-1908 boiler house addition to the southern and western sides of the original structure has been largely obscured by a 1922 addition covering the entire southern elevation along East First Street. The entire late 19th and early 20th century complex is dwarfed by the much larger 1962-1967 addition. Although parts of the station have been impacted by later additions and renovations which lessen its integrity of materials, design, and workmanship, the MHC noted in a letter dated August 10, 2012 that the plant retains significant architectural features associated with its evolution and technological innovations of the 20th century. Therefore, the MHC issued an opinion that the L Street Power Station is eligible for the National Register.

10.4.2 South Boston Power Station (BOS.6753)

This brick Renaissance Revival structure was recorded at 696 East First Street. Constructed in 1911, the building was noted to exhibit several of the characteristics associated with the "Powerhouse Renaissance" style, based on massive Classical building forms. The South Boston Power Station was deemed eligible by the MHC in 1985, and recommended eligible by a consultant 12 years later in 1997. The building was subsequently demolished and no longer exists.

10.4.3 BOS-HA-80

This historical archaeological site is located within the Project Area and was excavated in 1999. The site was recorded as destroyed, and was reported to lack the integrity to warrant further investigation.

10.5 Environmental Consequences

In July 2012, a Project Notification Form (PNF) was submitted to the MHC by Massport, in compliance with 950 CMR 71. In a letter dated August 10, 2012, the MHC recommended that the USACE make a finding of "no adverse effect" for this project based on the minimal impacts to cultural resources that would affect their integrity. A copy of the PNF was submitted to the Massachusetts Board of Underwater Archaeological Resources on October 4, 2012. The Board of Underwater Archaeological Resources determined that the project was unlikely to impact submerged cultural resources in a letter dated October 15, 2012. Please refer to *Appendix F: Historical Resources.*

10.5.1 Conley Terminal Improvements

It is anticipated there would be no adverse impacts to historic or archaeological resources associated with the Conley Terminal Improvements. No recorded cultural resources exist on the former Coastal Oil site.

10.5.2 Dedicated Freight Corridor

In a letter dated August 10, 2012, MHC recommended that the proposed work for the DFC, which requires removing two abandoned oil tanks and constructing a new bridge, would have no adverse effect on historic resources (Appendix F). The letter noted the MHC opinion that the Boston Edison L Street Power Station is eligible for the National Register, but states that the proposed DFC is not anticipated to affect the integrity of the building, Although the exact date of construction of the oil tanks is unknown, MHC research indicates that these oil tanks were likely constructed outside of the proposed period of significance for this site. The MHC noted that the construction of a new bridge over an existing fuel barge slip would not significantly affect the setting, feelings, or associations attributed to the industrial nature of the L Street Power Station. Therefore, no impacts to historic or archaeological resources associated with the DFC are anticipated.

10.5.3 Buffer Open Space

It is anticipated there would be no adverse impacts to historic or archaeological resources associated with the Buffer Open Space. No cultural resources are recorded in the proposed area of work for the Buffer Open Space.

11

Distribution List

Libraries

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Boston Public Library
South Boston Branch
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100 Cambridge Street, Suite 900
Boston, MA 02114

Department of Environmental Protection
Commissioner's Office
One Winter Street
Boston, MA 02108

DEP Northeast Regional Office
Attn: MEPA Coordinator
205B Lowell Street
Wilmington, MA 01887

Massachusetts Historical Commission
The MA Archives Building
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Coastal Zone Management
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Division of Marine Fisheries (North Shore)
Attn: Environmental Reviewer
30 Emerson Avenue
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Division of Marine Fisheries (South Shore)
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Massachusetts Water Resource Authority
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