FORT POINT ASSOCIATES, INC.
Union Street, 3rd floor . Boston, MA 02108

# Boston East

## East Boston, Massachusetts

### PROJECT NOTIFICATION FORM
### ENVIRONMENTAL NOTIFICATION FORM

October 19, 2007

*submitted to:*

**Boston Redevelopment Authority**

**Executive Office of Energy and Environmental Affairs**
**MEPA Office**

*prepared by:*

**Fort Point Associates, Inc.**

*in association with:*

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McPhail Associates, Inc.
Nitsch Engineering
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Childs Engineering Corporation
WilmerHale

*submitted by:*

**Trinity Border Street, LLC**
a partnership between Trinity Financial, Inc. and
the East Boston Community Development Corporation

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# Chapter 1

# Project Summary

# *1.0 PROJECT SUMMARY*

## 1.1 PROJECT IDENTIFICATION

Project Name: Boston East
Address/Location: 102 – 148 Border Street, East Boston, MA

## 1.2 PROJECT SITE

Trinity Border Street, LLC ("the proponent") is proposing to redevelop the approximately 14.2-acre property ("the site") located at 102 – 148 Border Street along the East Boston waterfront on Boston Inner Harbor. The project is bound by Border Street to the east, the Atlantic Works, Wigglesworth Machinery, and Boston Towing and Transportation properties to the south, Boston Inner Harbor to the west, and the property at 170 Border Street to the north (see Figure 1-1, Locus Plan). The project is located near Central Square to the north and Maverick Square and the MBTA Maverick Transit Station to the east.

The landside portion of the site is currently vacant. There are several structures including footings of former buildings, entrance posts, and bulkheads in disrepair on the site. On the waterside, there are two dilapidated marine railways and approximately 25,000 square feet (sf) of dilapidated timber piling areas.

The site has historically been used for commercial and industrial purposes including ship building, ship and engine repair, dry docks, coal storage, and a carriage factory. It is currently inaccessible to both vehicles and pedestrians as it is surrounded on the landside by a fence.

## 1.3 PROJECT SUMMARY

The project is comprised of two proposed development areas: one on the non-Designated Port Area (DPA) with a residential building, a facility of public accommodation, and open space areas on the north side of the site, and a second area located within a DPA on the south side of the site that includes a two-story marine industrial facility and a marine travel lift with a maritime interpretive area (see Figure 1-2, Project Site Plan).

The residential building will have 196 units and will range from five to seven stories. It will sit along Border Street, north of Decatur Street. The building has two wings, placed as long, wharf-like fingers reaching towards the Harbor (see Figure 1-3, View of Project from the East and Figure 1-4, View of Project from the North). Along Border Street, an archway will frame views and an access way to the Harbor (see Figure 1-5, Border Street Entrance).

Thirteen percent of the units will be affordable and available to households that meet the Boston Redevelopment Authority's (BRA's) affordable housing income limits.

A maritime interpretive area will be at the center of the site and within the Designated Port Area (DPA). This area will be along the view corridor extending from Decatur Street and provide access to the waterfront. It is designed as an interpretive landscape with exhibits that extend into the Harbor including the historic maritime railway.

On the southern side of the site and within the DPA will be building that will support a marine-related business or activity. The proponent is currently evaluating potential economically viable and programmatically appropriate tenants that would fit within the eligible uses of the DPA and within the site.

The project will provide 165 parking spaces to accommodate project residents and the general public visiting the site. Below the residential building, 139 spaces will be designated for the residents, providing 0.7 spaces per residential unit. Twenty-six spaces will be located in the parking area on the south side of the site and designated for visitors and employees of the maritime building.

The proposed marine travel lift, if required by the tenant of the marine facility, will support uses at this facility. It will be located along the bulkhead near the front of the marine facility, which is in the DPA, on two finger piers.

## 1.4 PUBLIC AND COMMUNITY BENEFITS

Completion of the proposed Boston East project will help revitalize this important part of the East Boston waterfront. The project will restore an area of the City that has been underutilized and inaccessible to the public for three decades, and will eliminate a blighted area. The public benefits of the project will make the area more appealing to both residents and visitors. The project will provide substantial direct benefits for the City of Boston and the region, as noted below.

### ENVIRONMENT

- By adopting the City of Boston's Green Building standards and guidelines, the project will decrease the adverse effects of air pollution and minimize emissions and demand for fossil fuel energy.
- The project will minimize vehicle trips, mileage, and emissions by encouraging use of public transportation, alternative vehicles, and car sharing options, and providing educational and informational signage about transit options.
- The residential development will be certifiable under the City's Green Buildings program.

- Stormwater controls will significantly decrease pollution and runoff to Boston Harbor as well as improve the Harbor's habitat.
- Cleaning up brownfield site
- Removing piles; fixing water sheet

### HOUSING

- The proponent will work with the City to implement the City's affordable housing policies; proposing 13% of the units or 26 units of affordable housing.
- The project will create 196 new housing units, thereby expanding a constrained housing market and contributing to the City's housing goals.

### JOB CREATION

- Contributing to the area's economy, the project will create construction phase employment opportunities and new permanent jobs at the facilities of public accommodation, the residential units, and the marine facility.

### PUBLIC ACCESS

- The project will redevelop and revitalize a 3.4-acre parcel along East Boston's waterfront that has never been accessible to the public.
- The project will build an approximately 750-foot long Harborwalk along the entire waterfront side of the site. It will connect to the planned Harborwalk to the north with the emerging East Boston Harborwalk being developed to the southeast and will ultimately extend 2.4 miles from the Harborside Hyatt Hotel to Border Street.
- The project will provide new public access to and along the water, enhancing the East Boston waterfront public realm.
- The project will create three points of access to the Harborwalk from Border Street.
- Community gallery space, visible and accessible from interpretive area between Border Street and the Harborwalk, will become an integrated community asset for the surrounding neighborhood.

### REVENUES

- The project will increase state and local tax revenues through additional commercial and residential uses.
- The project will invest approximately $90 million in development costs.
- The project will generate over $385,000 annually in new property tax revenues.
- Property values in the neighborhood will be improved.

**TRANSPORTATION**

- Transit-oriented development will be within an eight minute walk of Maverick Station.
- The project will support transportation through the provision of Transportation Demand measures including bicycle racks, potential car-sharing options, and participation in Transportation Demand Management associations.
- The project will address the potential for a car sharing service such as Zipcar.

**VIEW CORRIDORS**

- The project will enhance the Decatur Street view corridor from Border Street through the middle of the site to the water and allow for expansive views of Boston Inner Harbor.
- The view corridor will be enhanced with landscaping and other public amenities.

## 1.5 CONSISTENCY WITH REGULATORY APPROVALS

The site is subject to land use controls contained in the City of Boston zoning code and the state Chapter 91 Waterways licensing program. The proposed uses will require zoning relief from the City and an amendment to the East Boston Municipal Harbor Plan. A portion of the site is further constrained by the Designated Port Area (DPA) designation under Chapter 91.

The entire property is zoned Waterfront Commercial. The purposes of the Waterfront Commercial ("WC") Subdistrict are to ensure that the commercial areas located near the waterfront develop in a manner that is sensitive to and compatible with the goals for the waterfront expressed in the East Boston Neighborhood Plan and applicable state policy. Multifamily residential is allowed on upper floors and as a conditional use on the ground floor. As there will be some residential use on the ground floor, a conditional use permit will be required from the Board of Appeal. Accessory parking is an allowable use when, as proposed, it is located on the first floor or below grade. General retail business space and community uses are allowed under the zoning. The project also includes a marine facility. The proposed uses may include facilities for vessel construction, servicing, and repair, or other similar marine uses which are allowed or conditional uses within the Waterfront Commercial district. Depending on the outcome of the harbor planning process and final project configuration, zoning relief in the form of variances or a Planned Development Area may be sought to obtain zoning compliance.

The proposed project has been designed to be generally consistent with the East Boston Master Plan and the recently adopted East Boston Municipal Harbor Plan (EBMHP) (see Section 3.7, Consistency with Plans for the Area). Nevertheless, as described in Section

4.0, Tidelands, a Municipal Harbor Plan amendment is being sought to provide flexibility on building height, waterfront setback, and ground floor use.

Under Chapter 91, there are a number of restrictions that apply to both the DPA and non-DPA portions of the site. The site is constrained by a Designated Port Area (DPA) on both the north and south sides. The proponent, under a separate regulatory process from this ENF/PNF and in concert with the City of Boston Department of Neighborhood Development and the Boston Redevelopment Authority, has proposed a reconfiguration to consolidate the DPA area into the southern portion of the site in order to create better development parcels for both marine and residential uses. This process is explained in Section 4, Tidelands. With the reconfiguration, the marine facility will be located wholly within the DPA boundaries. The proposed uses are "allowed uses" within a DPA.

## 1.6 SUMMARY OF REQUIRED PERMITS AND APPROVALS

The project expects to secure many local, state, and federal permits and approvals prior to commencement of construction. The following is a list of the anticipated federal, state, and local permits/approvals:

| AGENCY | PERMIT/APPROVAL |
|---|---|
| **Federal** | |
| Environmental Protection Agency | NPDES Notice of Intent for Construction Dewatering |
| | NPDES Stormwater Management Notice of Intent |
| United States Army Corps of Engineers | Section 10/Section 404 Permit |
| Federal Aviation Administration | Notice of Proposed Construction – Crane |
| | Notice of Proposed Construction – Building |
| **State** | |
| MEPA Office | Environmental Impact Review |
| Massachusetts Coastal Zone Management | Federal Consistency Review |
| Massachusetts Historical Commission | Determination of No Adverse Effect |
| Department of Environmental Protection | Notification of Construction/Demolition |
| | Water Quality Certification |
| | Chapter 91 Waterways License |
| | Massachusetts Contingency Plan (if necessary) |
| **Local** | |
| Boston Redevelopment Authority | Article 80 Large Project Review |
| | Cooperation Agreement |
| | Fair Marketing Plan |
| | Affordable Housing Agreement |
| Zoning Board of Appeals | Variance or Planned Development Area |

| | |
|---|---|
| Boston Civic Design Commission | Recommendation Pursuant to Article 80 Review |
| Boston Transportation Department | Transportation Access Plan Agreement |
| | Construction Management Plan |
| Boston Conservation Commission | Order of Conditions |
| Boston Water & Sewer Commission | Site Plan Approval |
| | General Service Application |
| | Sewer Connection Permit |
| Boston Inspectional Services Department | Building Permit |
| Public Improvements Commission | Various permits for work in public ways |
| Boston Public Works Department | Street Opening Permit. |

## 1.7 PROJECT TEAM

The project team is identified below:

**Developer:**

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**Planning Consultant:**

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**Development Counsel:**

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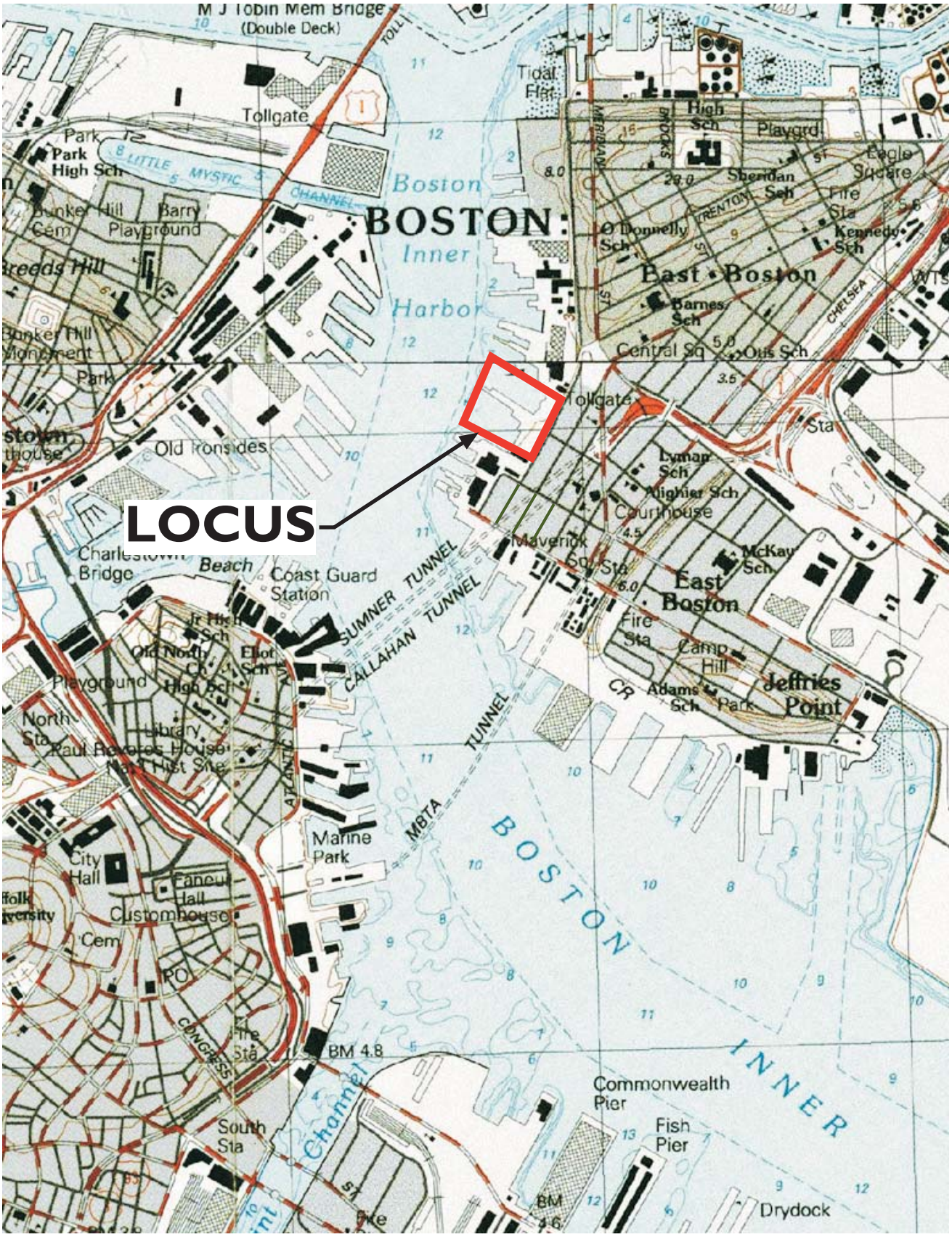
| | |
|---|---|
| **Architects:** | **ICON architecture, inc.**<br>38 Chauncy Street, Suite 1401<br>Boston, MA 02111<br>(617) 451-3333<br>Contact: Nancy Ludwig / Kendra Halliwell |
| **Transportation:** | **Woodland Design Group**<br>**5 Dartmouth Drive, Suite 301**<br>Auburn, NH 03032<br>(603) 641-9500<br>Contact: Rob Woodland |
| **Civil/Survey:** | **Nitsch Engineering**<br>186 Lincoln Street, Suite 200<br>Boston, MA 02111<br>(617) 338-0063<br>Contact: Paul LeBaron Sr. / John Schmid |
| **Marine:** | **Childs Engineering Corporation**<br>541 Main Street, Box 333<br>Medfield, MA 02052<br>(508) 359-8945<br>Contact: David Porter |
| **Geotechnical:** | **McPhail Associates, Inc.**<br>30 Norfolk Street<br>Cambridge, MA 02139<br>(617) 868-1420<br>Contact: Peter DeChaves / Ambrose Donovan |
| **Wind Consultant:** | **Frank Durgin**<br>19 Payson Road<br>Belmont, MA 02478<br>(727) 581-6267<br>Contact: Frank Durgin |
| **Landscape Architect:** | **Copley Wolff Design Group**<br>160 Boylston Street, 3rd Floor<br>Boston, MA 02116<br>(617) 654-9000<br>Contact: Lynn Wolff / John Copley |




**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 1-1*
**Locus Plan**
*source: USGS*


COPLEY WOLFF DESIGN GROUP
Landscape Architects & Planners
160 Boylston Street, Boston, MA

# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and East Boston CDC
October 10, 2007

**Figure 1-2:**

## Project Site Plan

BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC

**Figure 1-3:**

View of Project from the South

BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC

**Figure 1-4:**

View of Project from the North

BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC

**Figure 1-5:**

Border Street Entrance

# Chapter 2

# Project Description

# *2.0 PROJECT DESCRIPTION*

## 2.1 PROJECT LOCATION

The Boston East project is located at 102 - 148 Border Street in East Boston. The project site is 14.2 acres, of which 10.8 acres are watersheet. The project is bound by Border Street to the east, Atlantic Works, Wigglesworth Machinery, and Boston Towing and Transportation properties to the south, Boston Inner Harbor to the west, and the property at 170 Border Street to the north.

## 2.2 PROJECT CONTEXT

The project site occupies a prime location on Boston Inner Harbor. It has panoramic views of Charlestown, the Tobin and Zakim bridges, and portions of the Boston skyline. The site has been vacant for over three decades. Recent revitalization efforts in this area of East Boston have focused on specific areas: expansion of open space, as well as public access to and along the waterfront with such projects as the Massport-owned Piers Park, Carlton's Wharf, and the East Boston Greenway. In the neighborhood to the southeast, three sites are currently being proposed for mainly residential development, with some mixed-use components, including Clippership Wharf, Hodge Boiler Works, New Street, and Pier One. Maverick Landing to the southeast was recently rebuilt with 426 units of affordable and market-rate housing (see Figure 2-1, Neighborhood Context Plan – Existing Conditions).

The site is comprised of land under water and filled tidelands (see Figure 2-2, Existing Conditions Plan and Figure 2-3, Existing Conditions Photos). Although the landside portion of the site is currently vacant of buildings, there remain several structures including footings of former buildings, entrance posts, an outfall pipe, and bulkheads in disrepair. On the waterside, there are two dilapidated marine railways and approximately 25,000 square feet (sf) of dilapidated timber piling areas that extend over 250 feet beyond the high water mark.

Historically, the site was used for industrial activities including shipbuilding, ship and engine repair, dry docks, coal storage, and a carriage factory. It is currently inaccessible to both vehicles and pedestrians as it is surrounded on the landside by a fence.

## 2.3 PROJECT OVERVIEW

The project is comprised of two proposed development areas. The first area will be a residential building with 196 housing units, a facility of public accommodation, and open space areas on the west side of the site (see Figure 2-4. Project Site Plan). The second area

will be a marine facility, with a marine travel lift if needed, and with a maritime interpretive area on the south side of the site.

**Residential Area**

The residential building will sit north of Decatur Street allowing a visual corridor from Decatur Street to the waterfront. The massing of the building is split into two wings, placed as long, wharf-like fingers towards the Harbor. Along Border Street, an archway will frame views and encourage access to the Harborwalk. The brick and cast stone stepped building will range from five to seven stories and will consist of one and two-bedroom residential units. At the ground or upper floors, many units will have balconies and decks with waterfront views. Thirteen percent of the units will be affordable and available to households that meet the Boston Redevelopment Authority's (BRA's) affordable housing income limits.

**Marine Facility**

On the southern side of the site and within the Designated Port Area (DPA) will be a marine facility that will support a marine-related business or activity. The proponent is currently evaluating potential economically viable and programmatically appropriate tenants that would fit within the eligible uses of the DPA and the zoning. As proposed, the facility will include a two-story building, clad primarily in cementitious clapboard with a masonry brick façade on Border Street. Perpendicular to Border Street will be a long "boatshed" structure. Windows will allow pedestrians on the Harborwalk a view into the facility if the chosen use is spectator worthy. Final building program is subject to the needs of the DPA tenant.

A public maritime interpretive area will be created at the center of the site and within the DPA. This area will be along the view corridor extending from Decatur Street and will provide access to the waterfront. It is designed as an interpretive landscape with exhibits that extend into the Harbor including remnants of the historic marine railway.

**Parking and Circulation**

A parking program has been designed in response to long-standing community desires for sufficient parking to be provided in new development projects. The project will provide parking to accommodate project residents and the general public visiting the site, so as to avoid overburdening the surrounding neighborhood streets. There will be a total of 165 parking spaces on the site. Below the residential building, 139 spaces will be designated for the residents, providing 0.7 spaces per residential unit. On the south side of the site in the parking area, 26 spaces will be designated for visitors and employees of the marine building. The proponent will work with a car-sharing operation such as Zipcar to analyze whether such a service will work at this site. Access to the surface and the subsurface parking areas will be from two separate locations along Border Street. Access to the below grade parking will require a new curb cut while access to the parking area near the marine building will use an existing curb cut. There will be approximately 26 street parking spaces along the project side of Border Street.

**Waterside Facilities**

The proposed marine travel lift will support the marine-related uses at the marine building. If the lift is needed by the tenant, it will be located in the DPA and will be supported by two finger piers.

**Building Program**

The total gross floor area for the project is 241,859 sf with a total floor-area-ratio (FAR) of approximately 1.7 (see Table 2-1, Building Program). The combined building footprint is 50,800, which occupies approximately 34% of the site. There will be 165 parking spaces on the site.

**Table 2-1: Building Program**

| Location | Bldg Footprint (sf) | GSF | Lot Area (sf) | FAR | Building Height | Lot Coverage | Garage Parking Spaces | Parking On-Site |
|---|---|---|---|---|---|---|---|---|
| Residential | 36,800 | 221,859 | 87,118 | 2.55 | 85′ | 43% | 139 | 0 |
| Marine | 14,000 | 20,000 | 61,111 | 0.33 | 36′ | 23% | 0 | 26 |
| Total | 50,800 | 241,859 | 148,229 | 1.63 | N/A | 38% | 139 | 26 |

## 2.3.1 FACILITIES OF PUBLIC ACCOMMODATION AND WATER-DEPENDENT USES

The project is designed to welcome and encourage public access through the site, both to and along the waterfront and from Border Street. The project includes Facilities of Public Accommodation (FPA) space on the first floor of the residential building to attract the general public to the waterfront. A community gallery, located along the Harborwalk and the maritime interpretive area, will create an exciting venue for art exhibitions and community events. This FPA will be named the McKay Gallery in honor of East Boston's premier shipbuilder, Donald McKay. This use will help activate the area and encourage the public to take advantage of the site's historic waterfront location and amenities.

The watersheet within the project is approximately 10.8 acres. The southern half of the watersheet is in the DPA while the northern side is not. Currently, there are no structures or uses programmed for the non-DPA watersheet. The program for the DPA watersheet includes two finger piers that will support a marine travel lift. Both watersheets constrict vessel use due to the varied and limited water depths. A more detailed program of uses of the DPA watersheet is being explored at this time in order to help activate the waterfront and support water-dependent uses.

### 2.3.2 PUBLIC ACCESS AND OPEN SPACE

#### PUBLIC ACCESS

The site is designed to provide substantial public access to and along Boston Inner Harbor. Public access to the site will be through sidewalks from Border Street and through the large archway opening in the ground floor of the residential building. A 12-foot wide Harborwalk will extend along the site's entire waterfront. The Harborwalk is designed to connect to a planned Harborwalk on the north side of the site and Atlantic Works via a sidewalk to the Waterfront Way, the inland portion of the East Boston Pedestrian Network, on the south side of the site that was recommended in the EBMHP. The Harborwalk, along with the open space areas, will provide excellent viewing, walking, and sitting areas along the waterfront.

#### OPEN SPACE

Open space landward of the Harborwalk will provide spectacular viewing areas for pedestrians to view Charlestown, the Zakim and Tobin bridges, and vessel activity on Boston Inner Harbor. To encourage public use and enjoyment of the waterfront, a maritime interpretive area will be created to commemorate the site's extensive maritime history. Near the center of this area, the former marine railway and cradles will remain as historic relics of the shipbuilding industry. Interpretive displays will inform readers about this historic activity and role in development of the East Boston community. There will also be terraced open space on the waterside of the residential building connecting through the archway to Border Street. All of these open space areas will be open and accessible to the public. Refer to Chapter 4 for additional discussion of Open Space and Public Access in relation to the Chapter 91 program.

## 2.4 PROJECT ALTERNATIVES

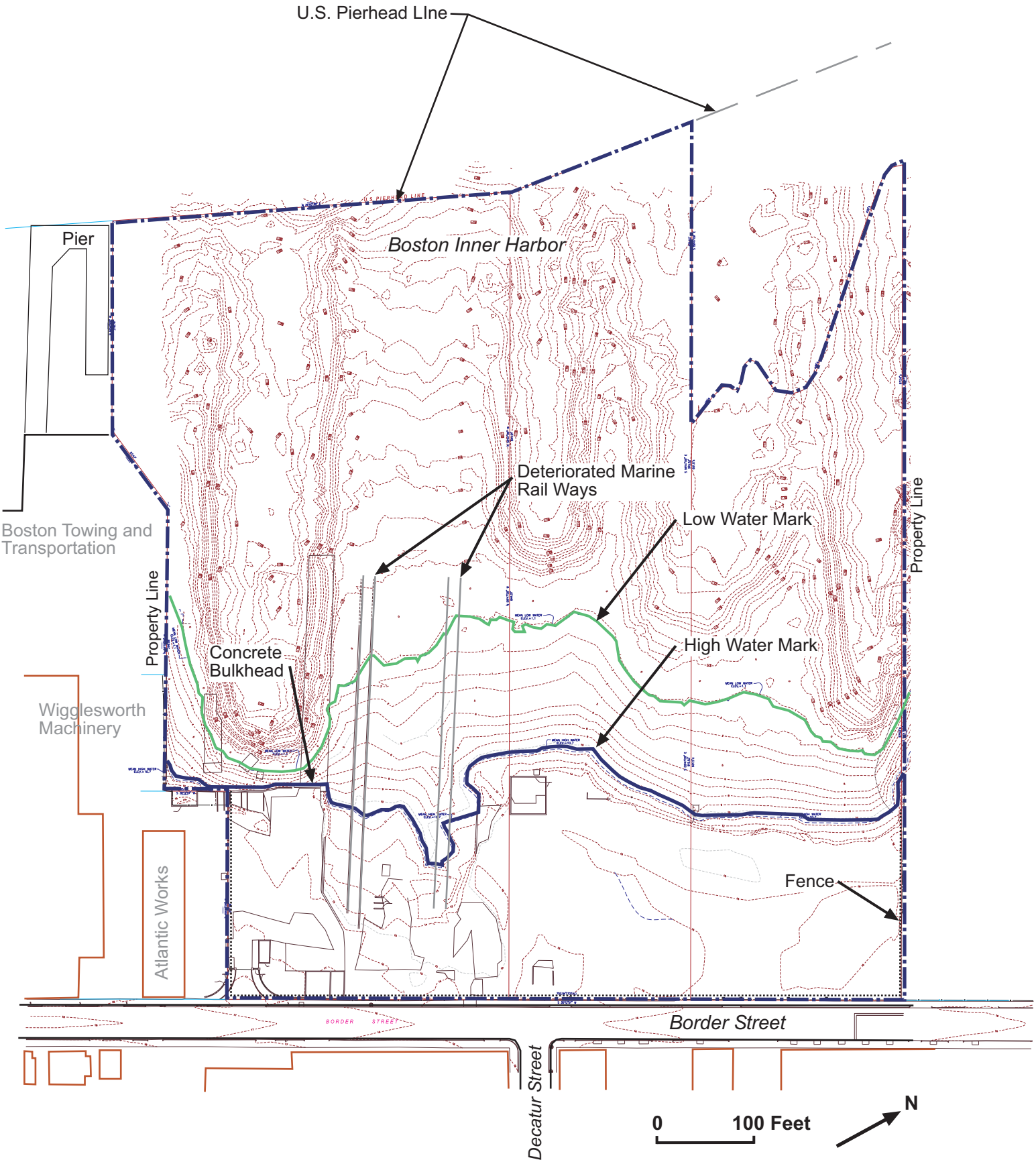
The proponent addressed one alternative for the project site. A No Action Alternative was considered undesirable.

#### NO ACTION ALTERNATIVE

If the No Action alternative was implemented, the vacant property at 102 - 148 Border Street would continue to be vacant, underutilized, and a hazard to anyone who tries to access the waterfront. It would remain in blighted condition with deteriorated marine structures including pilings and bulkheads as well as a place that would be difficult to be kept clean and free of debris and unsightly vegetation. The site would not be improved, and the site's waterfront would continue to be unavailable to the public. The No Action alternative would preclude activation of the site with 24-hour residential use, marine activity, and enhanced open space and public access. The No Action alternative would also leave the DPA watersheet un-restored to potential industrial uses.


**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 2-1*
**Neighborhood Context Plan - Existing Conditions**
*source: Boston Redevelopment Authority*




**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 2-2*
**Existing Condtions Plan**
*source: Nitsch Engineering*


View of project site looking north

View of project site looking north

View of piers looking west

**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 2-3*
**Existing Conditions Photos**
*source: Fort Point Associates*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# BOSTON EAST

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**Figure 2-4:**

## Project Site Plan

# Chapter 3

# Urban Design

# *3.0 URBAN DESIGN*

The design of the Boston East project will create a vibrant public realm in the East Boston community where public access has never been available in the past. The following sections describe the existing urban setting, define the project's design principles, and demonstrate how these principles are met.

## 3.1 SURROUNDING URBAN FABRIC

The Boston East site is located on the waterside of Border Street on the western edge of East Boston. To the north of the site is the Central Square and the Liberty Plaza shopping area, and to the south are the new Maverick Landing mixed-income development and LoPresti Park. The 80 Border Street Artist Groups and Shining Star Daycare are in the recently renovated 5-story masonry building to the immediate south. To the immediate north of the site are several industrial buildings. Decatur Street terminates perpendicular to Border Street, with a large industrial building to the southern face, and retail/office along Border Street to the northern side of Decatur Street.

The site is currently a vacant tract of land. While historically utilized for marine industrial uses, only a few concrete footprints exist in ruin along the water's edge. There are two dilapidated heavy lumber marine railways and hundreds of rotting timber piles along the water's edge. Views from the site across the water focus towards Charlestown and downtown Boston.

The neighborhood currently consists of a mix of housing types, retail and storage uses, mixed-use buildings, and industrial uses. The MBTA is renovating Maverick Station, just blocks from the site, to enhance transit services in the neighborhood that is only a five minute ride from downtown Boston and to Logan Airport. Several parcels in the East Boston waterfront near the project are being redeveloped into new residential and mixed-use projects, including Clippership Wharf (400 units), Portside at Pier One (550 units), and Hodge Boiler Works (119 units). A number of development proposals are currently underway or being evaluated for future use in the vicinity, including the industrial buildings on New Street and a new development on Orleans Street.

## 3.2 DESIGN RESPONSE TO URBAN FABRIC

The project's design response to the principles outlined in the previous section is described in the following paragraphs.

### 3.2.1 DESIGN CONCEPT

The fundamental urban design concept is to reconnect the site to the surrounding neighborhood, providing improved physical and visual connections to its magnificent waterfront. The terminus of Decatur Street provides a separation between the residential and maritime uses, as well as an opportunity to highlight the vital link between the city and the Inner Harbor. On the axis of Decatur Street will be a large, open area with interpretive historical displays and landscaping to the water's edge. This public space will maintain the open views of Charlestown and the Tobin Bridge from the street, as well as provide pedestrian access to the waterfront and Harborwalk. The East Boston Harborwalk will extend along the entire length of the parcels, providing an inviting pathway along the water's edge. The two new buildings' architectural styles are designed to reflect historic wharf building proportions and materials, stepping back from the street and water's edge with a layering of masonry, cast-stone, and paneling.

### 3.2.2 SITE DESIGN AND PUBLIC REALM

A maritime interpretive area will be created in the center of the site for the community. This area will be between the two new buildings and will connect Border Street to the Harbor's edge (see Figure 3-1, Project Site Plan). Designed as an interpretive landscape commemorating the site's extensive maritime history, the main entrance to this area will be at the end of Decatur Street, with a gateway framing the view of the water. Interpretive exhibits and displays will extend into the Harbor and integrate remnants of one of the marine railways and cradles. Pedestrians on the Harborwalk will walk across a wooden bridge over the marine railway, where the remains will be exposed in a tide pool. Seating and activity areas will be located along the water's edge. Interpretive elements will be incorporated as focal stopping points to highlight the ship building and maritime history of the site. Utilizing seawall stone and extant rail lines and pylons along a built up seawall edge, the maritime interpretive area will be industrial in character.

The proposed residential building will be incorporated into the site with sensitive grading and landscaping. A wide arching terrace following the curve of the shoreline will be fully accessible. This terrace will provide an attractive overlook and common area open to the public. The terrace and landscape will provide privacy for the residents, but will also allow views to the water and provide a common area for gathering and events. The shoreline in the residential "cove" will be stabilized with rip-rap placed to create a gentle slope to the water.

Sustainable elements of the site include the utilization of existing and recycled materials and native plant species, the reclamation of surface run-off into rain gardens, interpretive elements, public access and seating, and low-level and shielded lighting.

## 3.3 ARCHITECTURE MASSING AND FORM

The marine facility will sit perpendicular to Border Street, abut the sidewalk, and emulate the conventional urban industrial form of a maritime structure. This approximately 20,000 square foot building will have a presence on Border Street with a two-story main entrance. This long two-story "boatshed" structure will be highlighted with a masonry façade and a large arched door on Border Street (see Figure 3-2, Marine Facility Elevations). Work vehicles, loading, and employee parking for 26 cars will be on the southernmost end of the site, separated from the Atlantic Works property with a generous planted buffer. The existing brick pillar gateway will be refurbished and re-used at the entry to the parking and marine facility area.

The residential building has been designed to fit into the scale of the existing and proposed buildings in the neighborhood near the waterfront, which range from 25 to 125 feet high. The architectural style of the proposed residential building has been designed to reflect a traditional waterfront massing of "fingers" reaching out and stepping down in height and materials to the water (see Figure 3-3, Residential Building Elevations). A seven-story volume will link the two "fingers" along the Border Street side. The intersections of these three volumes will be designed as anchoring elements, which will frame a large archway opening. This archway entrance will provide excellent views of the Boston Inner Harbor and Charlestown, and will create access to the courtyard and waterfront from Border Street. The majority of the Border Street façade of the residential building will sit six feet back from the sidewalk, with buffer plantings.

The new brick, cast-stone, and paneled residential building will range from five to seven stories. At the ground level near the waterfront and opening onto the maritime interpretive area, the new 1,840 square-foot McKay Community Gallery will be an active and vibrant public space (see Figures 3-4 and 3-5, Residential Building Floor Plans). The remaining portion of the ground level and all of the upper levels will consist of one hundred ninety-six (196) one and two-bedroom residential units, with units varying in size from 650 to 1,200 square feet. At the ground or upper floors, residential units may have balconies or decks with waterfront views. All resident parking will be a half-level underground, accessed by a garage entry off Border Street. One hundred and thirty-nine (139) parking spaces will be available in the garage, providing 0.7 spaces per residential unit in keeping with transit-oriented development standards and local zoning requirements.

## 3.4 CONSISTENCY WITH PLANS FOR THE AREA

Over the past decade, the Boston Redevelopment Authority has undertaken several planning studies, which recommend the development of housing and other uses to activate and reconnect the East Boston waterfront to adjacent neighborhoods. In response to the favorable economic climate and the planning focus in this area, several residential

development proposals for waterfront sites are currently under local and state review. These proposals include various site amenities for residents and the public at large including significant public access to and along the waterfront. The redevelopment of the project site will add to the exciting transformation of the East Boston waterfront.

### 3.4.1 EAST BOSTON MASTER PLAN

In 2000, the Boston Redevelopment Authority (BRA) completed the East Boston Master Plan (EBMP). The EBMP provides a framework for new growth and development in the community's commercial districts and waterfront area, while preserving and enhancing the quality of life in the community's residential neighborhoods. The intensive one-year planning process involved widespread community participation. In addition to citizen involvement, the planning process included extensive coordination among departments (such as the Department of Neighborhood Development, Department of Parks and Recreation, the Boston Transportation Department, and the Boston Housing Authority). The EBMP is organized around four focus areas:

1. Reviving the East Boston Waterfront;
2. Enhancing the Neighborhood's Commercial Centers;
3. Strengthening the Residential Neighborhoods; and,
4. Shoring up the Airport Edge.

For each focus area, the plan provides recommendations regarding land use, open space, public environment, historic resources, heritage, transportation, and parking. The Boston East site was specifically mentioned in the EBMP. It specifically recommended that the Designated Port Area be removed from the site and that housing be developed on it. The Harborwalk for the Boston East site was also recommended by the EBMP.

Issued in conjunction with an Implementation Strategy, the plan established a set of goals and objectives that reflect the community's desire to maintain East Boston's identity and culture, while looking into its future development. The project complies with the provisions of the plan by providing much needed housing, critical open space connections, public access, and views through and from the site.

### 3.4.2 EAST BOSTON MUNICIPAL HARBOR PLAN

The East Boston Municipal Harbor Plan (EBMHP) is a land use plan prepared by the City under the Commonwealth's statewide licensing regulations for waterfront projects. This document details a harbor plan tailored to the characteristics of the East Boston waterfront and reflects the planning goals of the community. To assist in preparing the plan, the BRA convened an Advisory Committee that included a broad range of individuals with interest in and knowledge about waterfront issues in East

Boston and the City as a whole. The BRA also coordinated the planning process with state agencies, property owners, developers and interested community residents. To implement many of the provisions of the East Boston Master Plan, the BRA submitted the EBMHP for the East Boston waterfront to the Executive Office of Environmental Affairs' (EOEA) Office of Coastal Zone Management on March 12, 2002. On July 15, 2002, the Secretary of EOEA issued a decision approving the EBMHP.

The Boston East site complies with the guidance policies of the EBMHP. The project will provide critical public realm improvements including expansive open space and a Harborwalk that would connect to both the planned Harborwalk on the north side of the site and the planned Waterfront Way on the south side of the site. The open space will provide a direct visual and physical link to the proposed portions of the Harborwalk along the East Boston waterfront. The public will also be able to access the Harborwalk and open space area through sidewalks within the site from Border Street. The proposed maritime interpretive area will provide historical and interpretive displays and signage that commemorate the site's extensive maritime history. Additional waterfront amenities, watersheet activation, and programming opportunities will be discussed as part of the municipal harbor plan amendment process. Further site-specific zoning modifications will also be required to establish conformance with the future EBMHP amendment and to provide additional zoning relief for the project.


COPLEY WOLFF DESIGN GROUP
Landscape Architects & Planners
160 Boylston Street, Boston, MA

# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and East Boston CDC
October 10, 2007

**Figure 3-1:**

## Project Site Plan




# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
October 16, 2007

**Figure 3-2:**

## Maritime Facility Elevations




ICON ARCHITECTURE

# BOSTON EAST

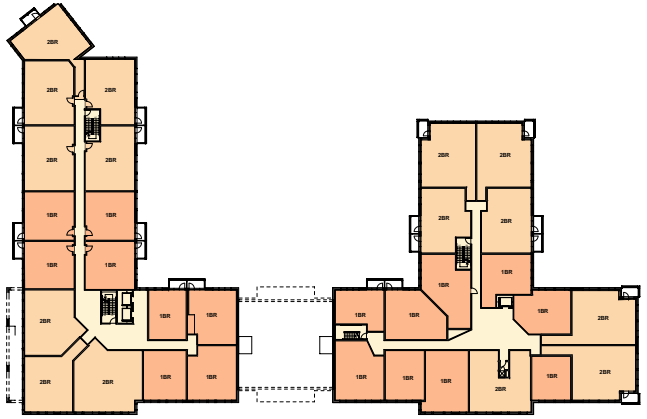
East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
October 12, 2007

**Figure 3-3:**

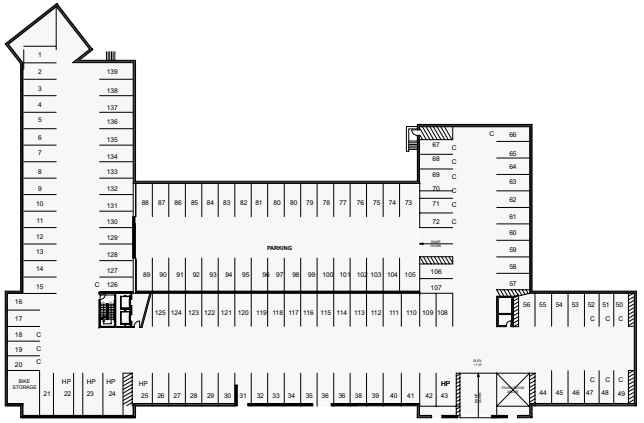
## Residential Building Elevations

4 THIRD FLOOR
SCALE: 1/32" = 1'-0"


2 GROUND FLOOR
SCALE: 1/32" = 1'-0"



3 SECOND FLOOR
SCALE: 1/32" = 1'-0"




1 GARAGE
SCALE: 1/32" = 1'-0"

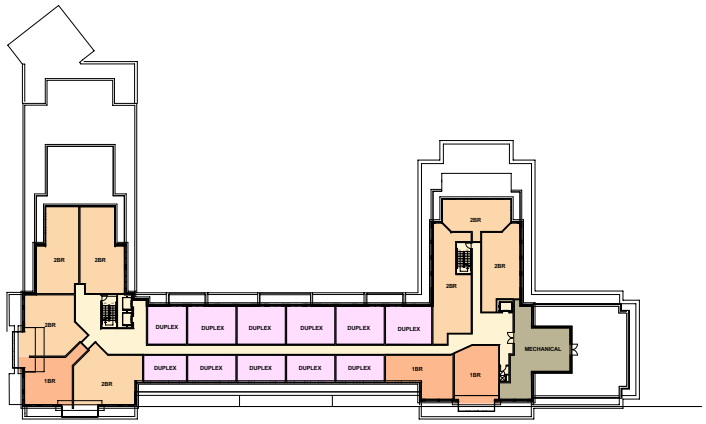
ICON architecture

# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
October 9, 2007

Figure 3-4:

## Residential Floor Plans




8 SEVENTH FLOOR
SCALE: 1/32" = 1'-0"


6 FIFTH FLOOR
SCALE: 1/32" = 1'-0"


7 SIXTH FLOOR
SCALE: 1/32" = 1'-0"


5 FOURTH FLOOR
SCALE: 1/32" = 1'-0"

# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
October 9, 2007

Figure 3-5:

## Residential Floor Plans

# Chapter 4

# Tidelands

# *4.0 TIDELANDS*

## 4.1 INTRODUCTION

The Boston East site is approximately 14.2 acres and located at 102 – 148 Border Street along Boston Inner Harbor in East Boston. The entire site is located within Chapter 91 jurisdiction and thus the Chapter 91 regulations, as modified by the East Boston Municipal Harbor Plan (EBMHP), apply to the proposed development. Under the state Waterways Regulations, certain use and dimensional requirements outlined in the Chapter 91 regulations may be altered if a local municipality has developed and received state approval of a municipal harbor plan. The applicable Chapter 91 standards, as modified by the EBMHP are described in Section 4.3 below. The proponent will be seeking an amendment to the EBMHP as described in Section 4.5.2, Compliance with the Proposed Amendment to the East Boston Municipal Harbor Plan.

## 4.2 PROJECT DESCRIPTION

The project includes a new seven-story residential building, a marine use building, a water-dependent activity, and substantial public access to and along the Boston Inner Harbor. The proposed residential building varies in height from five to seven stories and contains 196 housing units consisting of one and two-bedroom units. A one-level subsurface parking structure accommodating 139 cars is provided beneath the building footprint. The project includes a 1,840 square-foot (sf) space on the ground floor of the residential building that is programmed as a facility of public accommodation to be known as the McKay Community Gallery. On the south side of the residential building is an approximately 20,000 sf building that is dedicated for marine related uses and two piers to support a travel lift. An at-grade parking area with 26 spaces will support the proposed marine activities. The project will provide substantial public access to and along the Harbor with the addition of a Harborwalk along the entire waterfront of the site as well as additional connections to the existing and proposed sections of the Harborwalk in East Boston.

## 4.3 TIDELANDS JURISDICTION

The entire site is in Chapter 91 Jurisdiction. The project site is comprised of flowed tidelands and filled (formerly flowed) tidelands. Since the site is owned by a public entity, the City of Boston, it is considered Commonwealth tidelands. Based on the Chesbrough map of 1852, the original shoreline is landward of the site. The original low water line lies approximately 75 to 250 feet seaward of the existing high water mark (see Figure 4-1, Chapter 91 Jurisdiction).

All of the existing piers and fill were previously licensed. State authorizations to extend the Harbor Commissioners Line, and for structures and fill were provided between 1885 and 1937 (see Table 4-1, Authorizations at the Boston East Site). These licenses permitted the property owner to maintain, repair, dredge, construct walls, foundations, and piers, and railways, and fill in and over the tidewaters of Boston Harbor.

**Table 4-1. Authorizations at the Boston East Site**

| License No. | Authorization | Date |
|---|---|---|
| 868 | Harbor and Lands Commissioners | May 6, 1885 |
| 1399 | Harbor and Lands Commissioners | October 16, 1891 |
| 1634 | Harbor and Lands Commissioners | June 28, 1894 |
| 1993 | Harbor and Lands Commissioners | March 4, 1897 |
| 2028 | Harbor and Lands Commissioners | July 8, 1897 |
| 2388 | Harbor and Lands Commissioners | June 26, 1900 |
| 2548 | Harbor and Lands Commissioners | October 10, 1901 |
| 158 | Directors of the Port of Boston | November 10, 1915 |
| 162 | Directors of the Port of Boston | December 1, 1915 |
| 170 | Directors of the Port of Boston | February 9, 1916 |
| 152 | Commission Waterways and Public Lands | December 6, 1917 |
| 1246 | Department of Public Works | December 31, 1930 |
| 1814 | Department of Public Works | December 3, 1936 |
| 1890 | Department of Public Works | September 18, 1937 |

Source: DEP, Boston, 2007

## 4.4 COMPLIANCE WITH DESIGNATED PORT AREA

Under Chapter 91, there are a number of restrictions that apply to both the Designated Port Area (DPA) and non-DPA portions of the site. Currently, the site is constrained by a DPA on both the north and south sides. The proponent, under a separate regulatory process from this ENF/PNF, has proposed a reconfiguration to consolidate the DPA area into the southern portion of the site in order to create better development parcels for maritime and residential use (see Figure 4-2, Consolidated DPA Boundary Plan).

With the reconfiguration, the marine facility will be located wholly within the DPA boundaries. The proposed uses are "allowed uses" within a DPA. The project within this ENF/PNF is predicated on the reconfiguration of the DPA.

## 4.5 COMPLIANCE WITH CHAPTER 91 STANDARDS

The project is nonwater-dependent pursuant to 310 CMR 9.12(4) of the Waterways regulations because it consists of a residential and mixed-use development. As stated in

M.G.L. Chapter 91 Section 18, "no structure or fill for a nonwater-dependent use of tidelands may be authorized unless a written determination by the Department [of Environmental Protection] is made following a public hearing that said structures or fill shall serve a proper public purpose and that said purpose shall provide a greater public benefit than detriment to the rights of the public in said tidelands..." Pursuant to 310 CMR 9.31(2)(b) of the Waterways regulations, DEP presumes that the referenced requirement is met if the project complies with the nonwater-dependent use standards of 310 CMR 9.51 - 9.53, and is consistent with the policies of the Massachusetts Office of Coastal Zone Management (CZM).

For the non-DPA portion of the site, the proponent will be seeking relief through an MHP amendment from certain dimensional constraints including height, the water dependent use zone, and facilities of public accommodation. Section 4.5.1 below describes the project compliance with the existing, applicable Chapter 91 standards outlined in 310 CMR 9.00. Section 4.5.2 describes the how the project will comply with the proposed substitutions being requested through an amendment to the EBMHP.

## 4.5.1 COMPLIANCE WITH CHAPTER 91 REGULATIONS

The project complies with the following standards of the existing Chapter 91 regulations.

### 310 CMR 9.51(3)(d) - Open Space

In accordance with 310 CMR 9.51(3)(d), no more than 50% of the project site may be occupied by nonwater-dependent use buildings. The regulations require that, at a minimum, one square foot of open space be provided on the project site for each square foot of tidelands occupied by the footprint of buildings containing nonwater-dependent uses.

The non-DPA portion of the project site consists of 87,118 sf[1] of filled tidelands. The residential building footprint will occupy 36,800 sf or 42.2% of this jurisdiction area, thereby keeping much more than half of the project site free from nonwater-dependent buildings. Furthermore, there is extensive additional open space being provided within the DPA portion of the project.

### 310 CMR 9.52(1)(a) – Water-Dependent Activity Facilities

The standard 310 CMR 9.52(1)(a) requires that projects with a water dependent use zone (WDUZ) include at least one facility that generates a water-dependent use activity. The proposed Harborwalk enables the project to meet this standard. This Harborwalk will promote an active use of the shoreline. It will connect to the future Harborwalk on the north side of the site and to the planned maritime development

[1] As measured to the Project Shoreline

and activities that are proposed in the south side of the site as well as the inland portion of the Harborwalk. Also, active maritime uses will be on the southern part of the site.

### 310 CMR 9.53 - COMMONWEALTH TIDELANDS

The site is publicly owned and contains both filled and flowed tideland. Under the Chapter 91 regulations, the site is classified as Commonwealth tidelands, and therefore, the provisions of 310 CMR 9.53 pertaining to water-dependent activity and exterior open space apply, except in the DPA. The proponent will promote public use and enjoyment of such lands to a degree that is fully commensurate with the proprietary rights of the Commonwealth.

Pursuant to 310 CMR 9.53(2)(a), the project is required to promote a water-based public activity that is appropriate for the site, given the nature of the project and the condition of the waterbody on which it is located. The watersheet in front of the site is extremely shallow and not conducive to providing access for vessels such as water taxis, while at the same time being in proximity to a deep draft shipping channel raising concerns over conflicts with small recreational craft. Therefore, the public water based activity which would be appropriate for the site would be shore based recreational fishing. During the review process, the proponent will refine the elements of the project design around this concept.

Pursuant to 310 CMR 9.53(2)(b), at least half of the non-DPA portion of the site will be open space. Furthermore, the project will attract and maintain substantial public activity on a year round basis by creating open space for public use including a Harborwalk that runs along the whole waterfront of the site. These areas will include benches, lighting, trash receptacles, and similar amenities to support its use.

## 4.5.2 COMPLIANCE WITH THE PROPOSED AMENDMENT TO THE EAST BOSTON MUNICIPAL HARBOR PLAN

The project will be applying for relief to the following standards as part of the Amendment to the East Boston Municipal Harbor Plan:

### 310 CMR 9.51(3)(C) – WATER-DEPENDENT USE ZONE

In accordance with 310 CMR 9.51(3)(c), the project must preserve the site's capacity to serve water-dependent uses. This standard is met by ensuring that new or expanded non-water dependent buildings and at or above grade parking facilities are set back from the waterfront. The setback or WDUZ extends landward from the project shoreline 25% of the depth of the lot, with a minimum of 25 feet and a maximum of 100 feet, and along the sides of piers 15% of the lot width, with a minimum of 10 feet and a maximum of 50 feet.

The non-DPA portion of the site has an average lot depth of 212 feet and does not have any piers or wharves on it. As a result of this lot depth, the depth of the WDUZ is 53 feet from the project shoreline and has a total area of 23,382 sf. Two parts of the residential building are within the WDUZ and contain a total of 3,292 sf (see Figure 4-3, Chapter 91 Compliance – WDUZ and FPA).

The proponent is seeking relief, through an EBMHP amendment, to reconfigure the WDUZ to allow minimum building setback of 25 feet while maintaining the same overall size (23,382 sf) in a different area of the site. The reconfigured WDUZ will be devoted exclusively to water-dependent activity and public access.

### 310 CMR 9.53(2)(c) - Facilities of Public Accommodation

Under the Chapter 91 regulations, Facilities of Public Accommodation (FPAs) are required on the ground floor of all buildings containing facilities of private tenancy on Commonwealth tidelands. Allowances are made for upper floor accessory services for up to 25% of the required area. The entire project site is defined as Commonwealth tidelands because of the City of Boston ownership.

The entire ground floor of the proposed 36,800 sf building should be programmed for FPAs. Since the ground floor has approximately 25% (9,160 sf) upper floor accessory services, the required FPA area is 75% (27,640 sf). The project, as designed, provides more than 14% FPAs (5,290 sf) on the ground floor of the residential building (see Figure 4-3). These FPAs include 1,840 sf for the McKay Community Gallery and 3,450 sf of open area within the archway of the building between Border Street and the terraced open space on the waterfront.

Since the ground floor uses will be primarily residential, the proponent will be seeking relief through an amendment to the EBMHP for the reduction of the required FPA space. The relief will be through allowance of a qualified financial expenditure for each square foot of private tenancy on the ground floor to be applied toward activating the DPA portion of the site.

### 310 CMR 9.51(3)(e) - Height

In accordance with 310 CMR 9.51(3)(e), the building heights are required to be 55 feet or less when located within 100 feet of the high water mark. Landward of the 100-foot line to the Chapter 91 jurisdiction line, buildings can be stepped up on a 1:2 slope.

Under a Chapter 91 compliant scheme, the north and south wings of the building would be 55 feet high within 100 feet from the HWM (see Figure 4-4, Chapter 91 Compliance - Building Massing). The building would be stepped up at a 1:2 slope to a maximum height of 95 to 115 feet high along Border Street.

In the proposed project, the south and north wings of the residential building, which range from five to seven stories, will be 52 feet high (lower than Chapter 91 compliant scheme) at the waterside of the building and then will step up to 63 feet, step again to 74 feet, and again to 85 feet. Along Border Street, the building would reach a maximum height of 85 feet, and step down twice, to 74 feet and 63 feet. The gross square footage of the building would be comparable to the Chapter 91 compliant scheme.

Through the amendment, the proponent will be seeking a uniform height requirement of 85 feet across the site in order to ensure that buildings for non-water dependent uses are modest in size, making more of the ground level environment available to water-dependent activity and public access. This layout allows for more efficient and economical use of the land as well as an increase the total amount of open space on the site to more than 57%. The building wings would step down towards the waters edge.

The EBMHP requires projects with a height substitute provisions to demonstrate that they result in comparable wind, shadow, and other conditions at the ground level. A qualitative wind analysis shows that the project meets the BRA wind criteria at key ground level pedestrian areas (see Appendix 2, Qualitative Wind Analysis).

To offset any net new shadow impacts caused by the project, the proponent will provide an additional square foot of exterior public open space for every two square feet of new net shadow from the increased building heights allowed by the EBMHP, as compared to what is allowed under a Chapter 91 compliant design. A shadow analysis was conducted and shows a net increase of shadow impacts in the amount of 7,801 sf of the proposed project over a Chapter 91 compliant design (see Section 6.2, Shadow and Appendix 4, Shadow Studies). As a result, the project will include an offset of 3,901 sf of open space within Chapter 91 jurisdiction of the site (see Figure 4-5, Shadow Impact Open Space Offset).

### 4.5.3 SUMMARY OF CHAPTER 91 COMPLIANCE

As the foregoing discussion demonstrates, the project complies with the state Chapter 91 regulations except for three provisions that are proposed to be part of the amendment to the EBMHP. The site design and program will substantially enhance the waterfront environment along this vacant, dilapidated section of the East Boston waterfront. Consistent with goals of Chapter 91 and the EBMHP, the public will benefit from public realm improvements that not only provide views and access to and from the waterfront, but also activate the waterfront with community, interpretive, and water-dependent uses.

# 4.6 PROJECT COMPLIANCE WITH THE MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT POLICIES

The project is consistent with the Massachusetts Coastal Zone Management (CZM) Program Policies. The Massachusetts CZM Program was established to protect and manage the development and use of the coastal zone under the provisions of the Federal Coastal Zone Management Act of 1972. This is accomplished by reviewing proposed developments in the coastal zone in terms of consistency with the CZM Coastal Policies and Management Principles. The project's consistency with relevant policies/principles is described below.

## STORMWATER MANAGEMENT

### WATER QUALITY POLICY #2

*"Ensure that nonpoint pollution controls promote the attainment of state surface water quality standards in the coastal zone."*

The project has developed a stormwater strategy for the construction term and post construction activities. During construction, the proponent and the contractor will be filing for an EPA NPDES Permit and implementing the Stormwater Pollution Prevention Plan during construction to mitigate erosion and pollution. All stormwater generated from the surfaces used for vehicular traffic during construction will be treated for the removal of suspended solids and potential contaminants in accordance with the Massachusetts DEP stormwater management policies. Best Management Practices (BMPs) will also be implemented to ensure that erosion and sedimentation are minimized. As deemed necessary, erosion and sedimentation controls, such as hay bales and siltation fences, will be used.

## HABITAT PROTECTION

### HABITAT POLICY #1

*"Protect coastal areas including salt marshes, shellfish beds, dunes, beaches, barrier beaches, salt ponds, eelgrass beds, and fresh water wetlands for their important role as natural habitats."*

The project includes a small amount of fill to straighten the shoreline that will affect the coastal beach and land subject to coastal storm flowage resource areas in Boston Inner Harbor. BMPs will be implemented during construction of both the landside and waterside developments to minimize any potential impacts to the resources of the Harbor.

## COASTAL HAZARDS

### COASTAL HAZARD POLICY #1

*"Preserve, protect, restore, and enhance the beneficial functions of storm damage prevention and flood control provided by natural coastal landforms, such as dunes,*

*beaches, barrier beaches, coastal banks, land subject to coastal storm flow, salt marshes, and land under the ocean."*

**COASTAL HAZARD POLICY #2**

*"Ensure construction in water bodies and contiguous land areas will minimize interference with water circulation and sediment transport. Approve permits for flood or erosion control projects only when it has been determined that there will be no significant adverse effects on the project site or adjacent or downcoast areas."*

There are no natural coastal landforms such as dunes, beaches, barrier beaches, coastal banks, or salt marshes that provide storm damage prevention and flood control. Although there is coastal beach land and subject to coastal storm flowage resources on the project site, project activities will not create an adverse impact on these resource areas. The water quality will be improved and hazards to vessels navigating the local waters will be reduced by removing the abandoned pilings and loose timber structures that were part of the marine railways at the site.

## PUBLIC ACCESS

**PUBLIC ACCESS POLICY #1**

*"Ensure that developments proposed near existing public recreation sites minimize their adverse effects. "*

**PUBLIC ACCESS MANAGEMENT PRINCIPLE #1**

*Improve public access to coastal recreation facilities and alleviate auto traffic and parking problems through improvements in public transportation. Link existing coastal recreation sites to each other or to nearby coastal inland facilities via trails for bicyclists, hikers, and equestrians, and via rivers for boaters.*

**PUBLIC ACCESS MANAGEMENT PRINCIPLE #2**

*Increase capacity of existing recreation areas by facilitating multiple use and by improving management, maintenance and public support facilities. Resolve conflicting uses whenever possible through improved management rather than through exclusion of uses.*

The project creates public access to the waterfront at the project site where it is currently prohibited. The project also provides public access along the waterfront and will link a new Harborwalk with other planned Harborwalks and waterfront access ways along the East Boston Inner Harbor. The proposed community gallery, a facility of public accommodation, landscaped open space, and interpretive displays will be managed to draw residents and visitors to this waterfront location.

## COASTAL HAZARDS

**GROWTH MANAGEMENT PRINCIPLE #1**

*"Encourage, through technical assistance and review of publicly funded development, compatibility of proposed development with local community character and scenic resources."*

The project creates excellent affordable housing opportunities. The project is consistent with the East Boston Master Plan and the East Boston Municipal Harbor Plan. This Boston East site was specifically recommended in the EBMP as a location for housing.

**GROWTH MANAGEMENT PRINCIPLE #3**

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

The site is in proximity to the MBTA Blue Line subway and bus station at Maverick Square, as well as a densely developed residential neighborhood. The project involves the redevelopment of a vacant, industrial urban site located on Boston Inner Harbor in East Boston. It also involves redevelopment of dilapidated shoreline structures in order to support recreational, commercial, and water-dependent industrial uses.

**PORTS POLICY #3**

*"Preserve and enhance the capacity of Designated Port Areas (DPAs) to accommodate water-dependent industrial uses, and prevent the exclusion of such uses from tidelands and any other DPA lands over which a state agency exerts control by virtue of ownership, regulatory authority, or other legal jurisdiction."*

This project encourages the location of water-dependent uses within the proposed DPA portion the project site. Landside access for DPA uses will be substantially improved by removing a fence and creating a new parking area. Dilapidated timber pilings and removal of one of two marine railways will clean up the site and create a better shoreline to access the water-dependent uses in the DPA watersheet.

**PORTS MANAGEMENT PRINCIPAL #1**

*"Encourage, through technical and financial assistance, expansion of water dependent uses in designated ports and developed harbors, re-development of urban waterfronts, and expansion of visual access."*

This Plan proposes water-dependent uses in the DPA portions of the project site. It also supports redevelopment of this urbanized waterfront as well as expansion of visual access.

*Expansion of Water-dependent Uses*

Activities that support expansion of water-dependent uses include:

- Removal of all the deteriorated timber pilings within watersheet of the project site.
- Construction of two piers to support a marine travel lift; if required by DPA permit.

*Re-development of Urban Waterfronts*

The project will substantially redevelop this urban waterfront with new public access and uses including a Harborwalk, maritime interpretive area, and outdoor seating. It will redevelop an existing vacant waterfront parcel into residential and mixed uses that will help activate this part of East Boston as well as create a vibrant place for residents to visit and enjoy.

*Expansion of Visual Access*

In addition to the Harborwalk that is proposed along the edge of the waterfront, viewing areas from the maritime interpretive area will expand visual access for pedestrians to enjoy the views of Boston, Charlestown, and vessel activities on the Harbor. Viewing areas, benches, and other amenities would also support public use of the Harborwalk. Visual access will be enhanced by the improvement of the view corridor along Decatur Street.

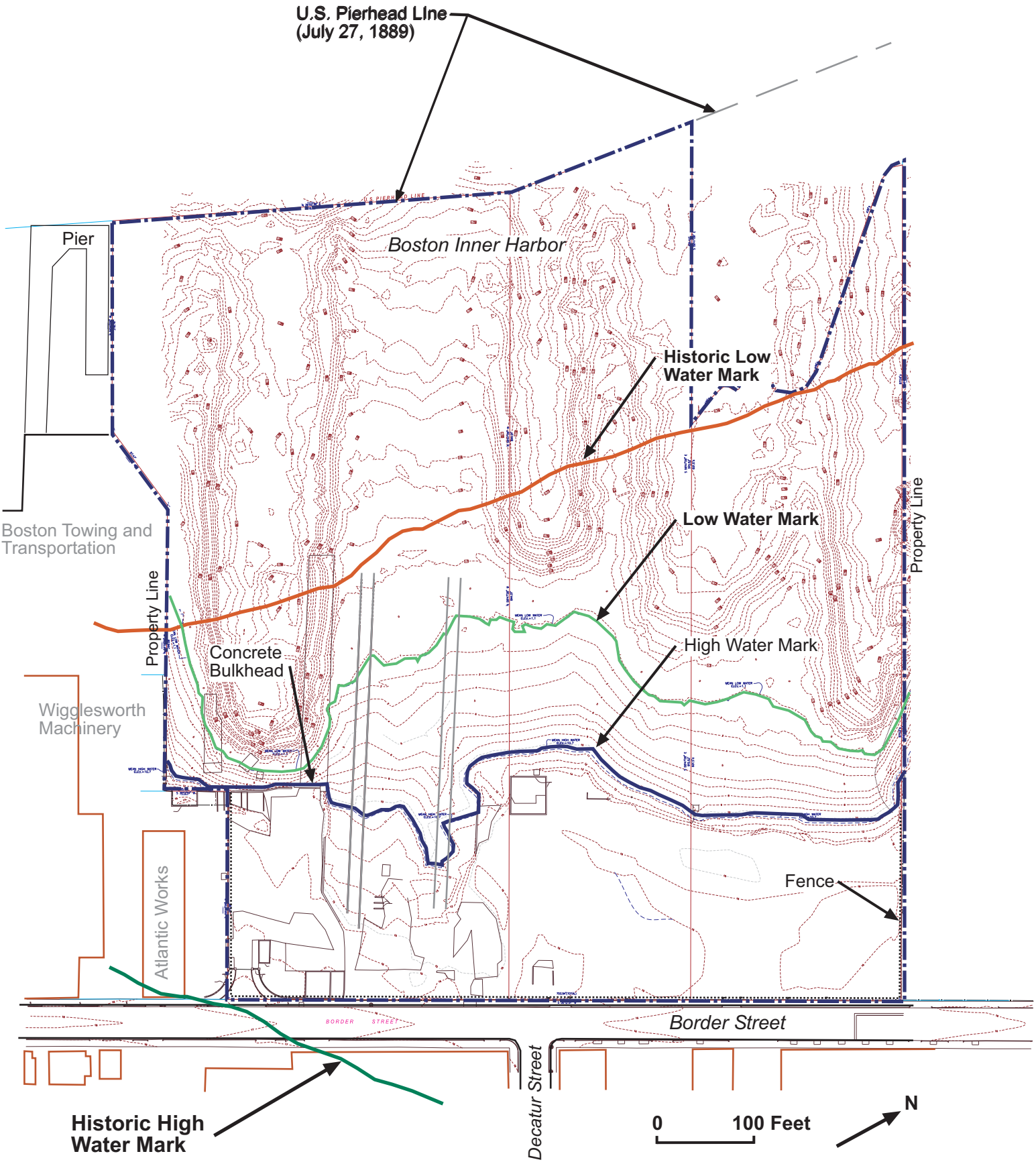



*Figure 4-1*

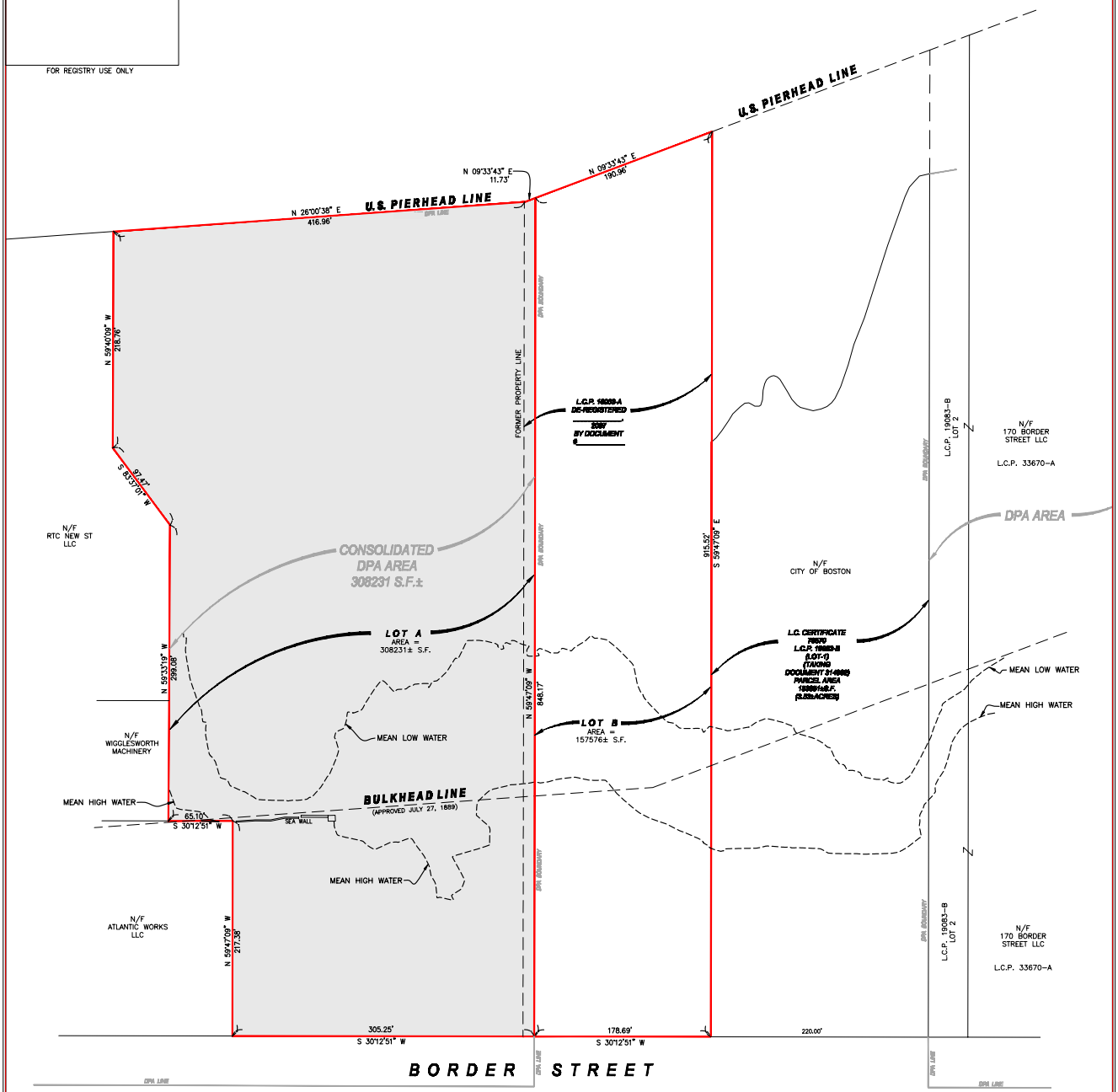
**Chapter 91 Jurisidiction Area**

*sources: Nitsch Engineering; Chesbrough, 1852*

**BOSTON EAST**

EAST BOSTON, MASSACHUSETTS

FOR REGISTRY USE ONLY




## PLAN REFERENCES

LAND COURT PLAN 16003-A
LAND COURT PLAN 19083-B
LAND COURT PLAN 33670-A
BOOK 6833, PAGE 394

## DEED REFERENCES

BOOK 8243, PAGE 53
BOOK 8639, PAGE 5
LAND COURT CERTIFICATE 78569
LAND COURT CERTIFICATE 78570

## GRAPHIC SCALE

50 25 0 50 100 150
SCALE: 1"=50'

## NOTES

1. THE PURPOSE OF THIS PLAN IS TO SUBDIVIDE CITY OF BOSTON PARCELS 5412-3 AND 5413 AND SHOW THE LIMITS OF THE CONSOLIDATED DPA AREA.
2. THE CONSOLIDATED DPA AREA EQUALS 308231 SQUARE FEET, MORE OR LESS.

## CERTIFICATION

I HERBY CERTIFY THAT THIS PLAN CONFORMS WITH THE RULES AND REGULATIONS OF THE REGISTRY OF DEEDS.

PAUL S. LEBARON JR., P.L.S. DATE

# SUBDIVISION & CONSOLIDATED DPA BOUNDARY PLAN

**BOSTON EAST**
**BORDER STREET, BOSTON, MASSACHUSETTS**

PREPARED FOR:
**TRINITY FINANCIAL**
**40 COURT STREET, BOSTON MA 02110**

EX-1
SHEET
OF 1
REV.

PROJECT # 6374
FILE: 6374_DPA_EXHB_5.dwg
SCALE: 1"=50'
DATE: 10/16/07
DES./CORR.: PSL
FIELD BOOK:
DRAFTED BY: DEA
CHECKED BY: PSL

REV. COMMENTS DATE

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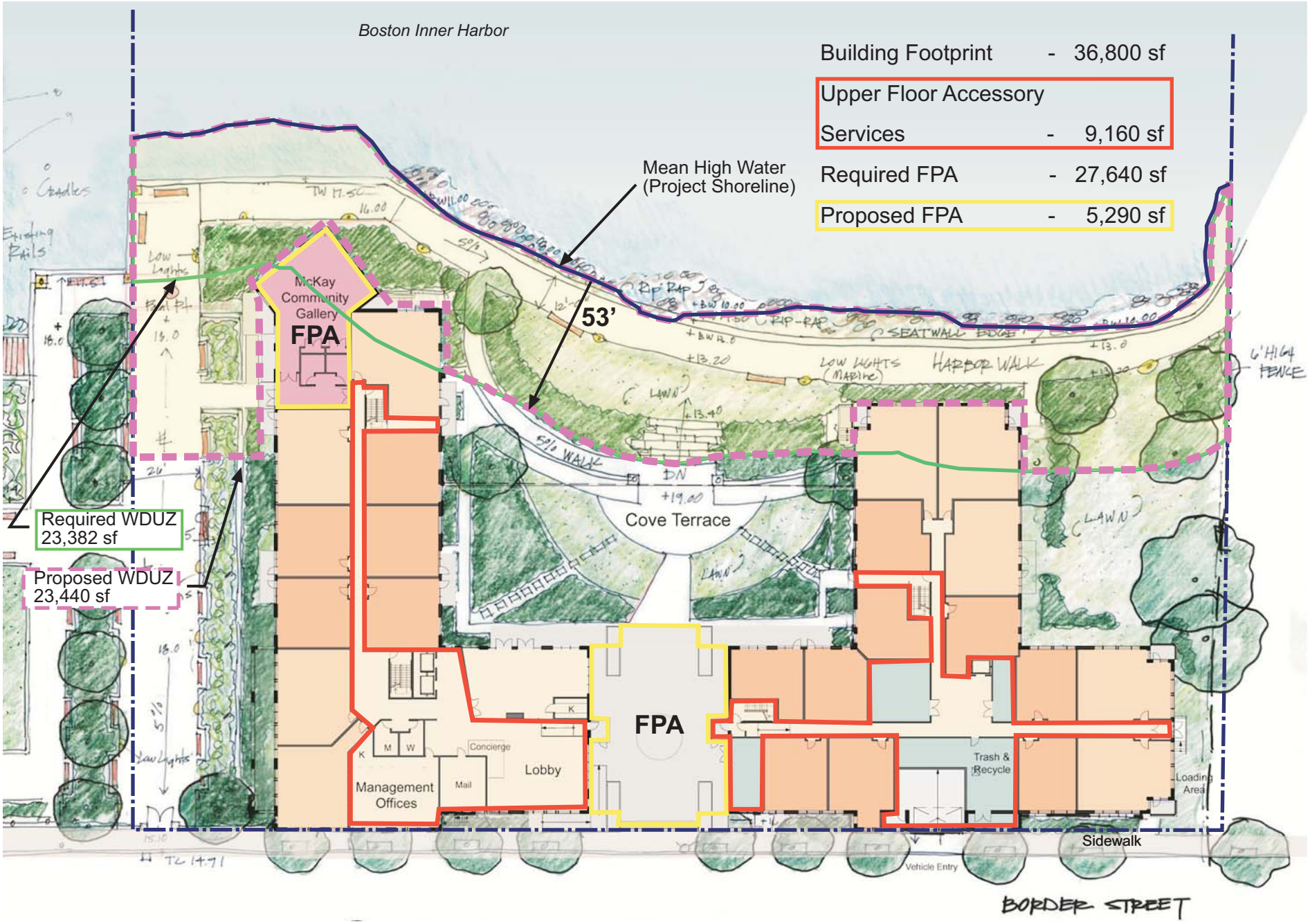
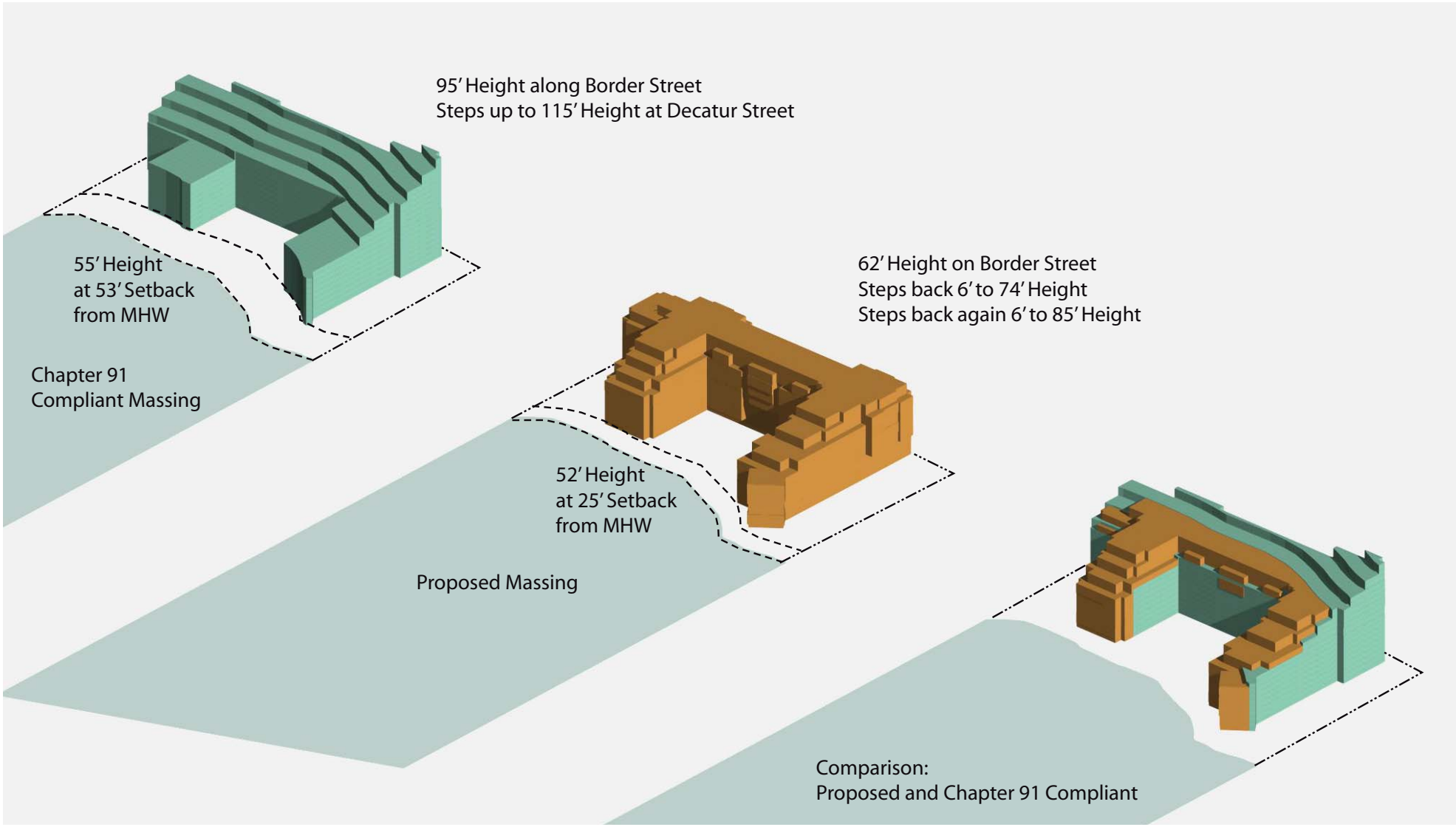
Figure 4-2. Consolidated DPA Boundary Plan




**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 4-3*
**Chapter 91 Compliance - WDUZ and FPA**
*source: Copley Wolff Design Group; Fort Point Associates*

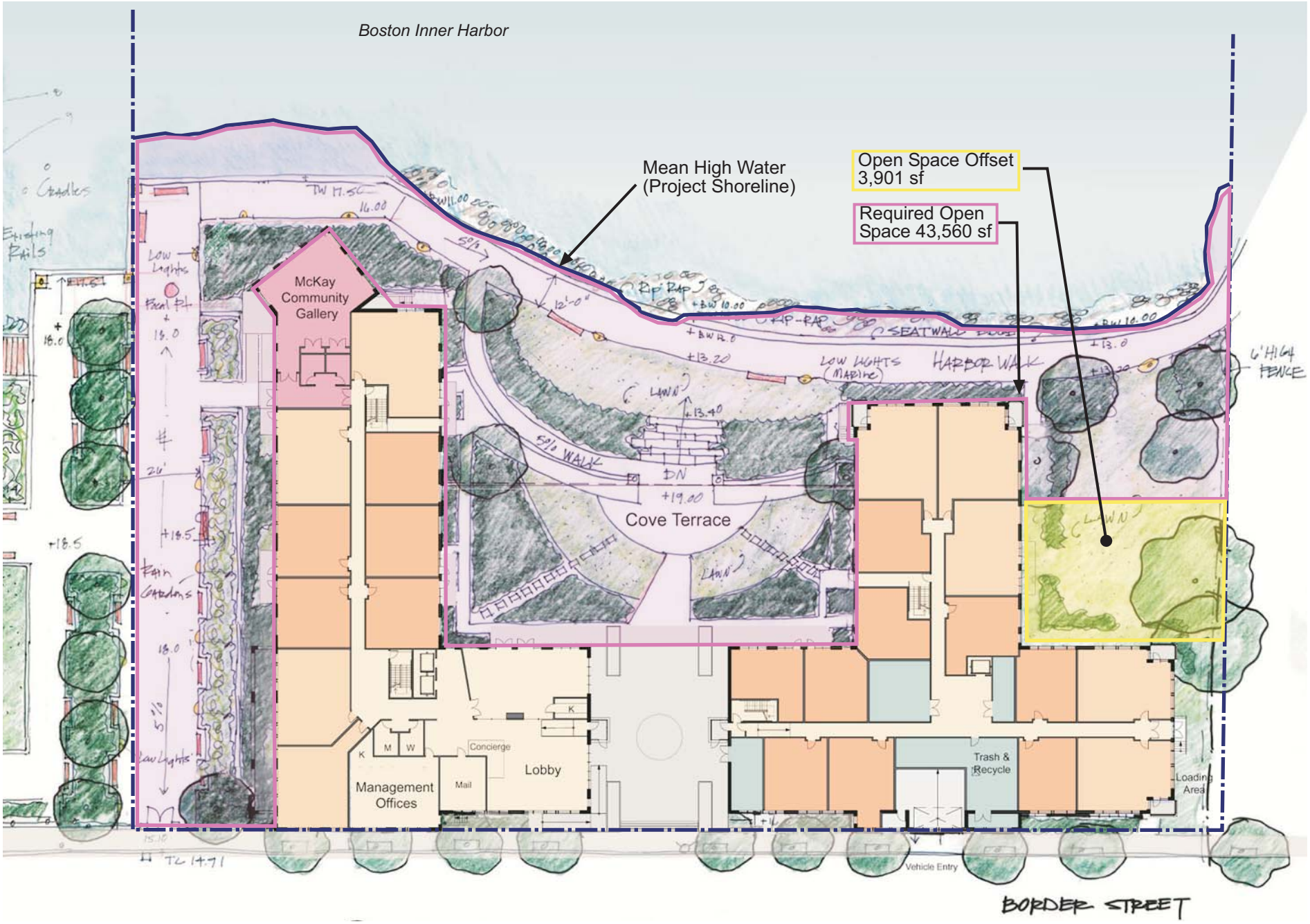



BOSTON EAST
East Boston, Massachusetts

Figure 4-4:

Trinity Border Street LLC and EBCDC
October 10, 2007

# Chapter 91 Compliance - Building Massing




**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 4-5*
**Shadow Impact Open Space Offset**
*source: Copley Wolff Design Group; Fort Point Associates*

# Chapter 5

# Transportation

# *5.0 TRANSPORTATION*

## 5.1 INTRODUCTION

The proposed Boston East mixed-use development will contribute to the revitalization of East Boston's Inner Harbor Waterfront and will enhance public access. The project consists of 196 residential units and approximately 20,000 square feet of marine-related space, with waterfront public accommodations. The project will include 139 parking spaces in an underground garage for the residential condominiums and an additional 26 off-street surface parking spaces for the marine related use.

The residential component of the project will also generate significant new pedestrian traffic that will enliven the area streets and the waterfront open spaces. The project will also provide public amenities, including a waterfront pedestrian plaza, a Harborwalk connection, and a community gallery.

The project will be a transit-oriented development, by virtue of its location, its land use type, and the support of the proponent. The project site is approximately 2,000 feet (about an eight-minute walk) from Maverick Square; a major transit hub with subway connections to downtown Boston and Logan International Airport, and bus connections to East Boston, Chelsea, and Revere. The proximity to this major transit hub, coupled with the existing pedestrian accommodations on the surrounding area roadways, makes transit connections to the site via Maverick Square very convenient.

The project is principally a residential development; a land use that has significantly lower peak period traffic impacts than other common urban uses, such as office and retail development. The proponent will also implement travel demand management (TDM) measures in order to minimize automobile reliance among project residents. These measures are expected to include: pedestrian and streetscape improvements along Border Street, secure bicycle storage, and dissemination of public transit information to future residents and employees. The project will minimize traffic impacts by taking advantage of the excellent public transit near the site; developing a residential project that spreads out trips over time; generating a minimum number of trips during commuter peak hours; and, implementing appropriate measures to reduce traffic demand.

The transportation access plan for the project will describe the existing transportation conditions in the vicinity of the project site, evaluate the anticipated transportation impacts of the project and implement measures to reduce and/or mitigate any transportation impacts of the project. The transportation access plan will also take into account planning efforts, including the BRA's April 2000 *East Boston Master Plan* and January 2000 *Boston Inner Harbor Passenger Water Transportation Plan*, and Boston Transportation Department's

(BTDs) January 2007 *East Boston Transportation Action Plan* as well as major transportation projects in the area: the Central Artery/Tunnel Project (CA/T), the Logan Airport modernization, and the Blue Line upgrade and improvements to Maverick Station and Maverick Square. It will also account for other development projects in the area, including 6-26 New Street, Barnes School, Hodge Boiler Works, Clippership Wharf, and Portside at Pier One/Boston Harbor Shipyard & Marina. The public review for this project will include ample opportunity for community input on transportation impacts and improvements.

## 5.2 PROJECT CONTEXT AND LOCAL TRANSPORTATION SYSTEM

The project site is located on the west side of Border Street (between Maverick Street to the south and Central Square to the north) along East Boston's Inner Harbor waterfront. Central Square, which is located one block north of the project site, is the nearest commercial district. Maverick Square, another local commercial district located five blocks east of the project site, is the site of the MBTA Blue Line subway station and MBTA bus connections. The Jeffries Point residential neighborhood is farther east beyond Maverick Square and Logan Airport lies north and east of Jeffries Point. The recently completed Maverick Landing housing development (formerly Maverick Gardens) is located southeast of the project site. To the north of Maverick Landing are residential streets and beyond these streets are Central Square and the Sumner Tunnel/Callahan Tunnel/Route 1A portal and toll plaza. The project context and surrounding transportation system are shown in Figure 5-1, Project Site and Existing Roadway System.

The project will be impacted by several major development projects that are proposed for in the immediate vicinity of the project site. The Portside at Pier One project, currently under construction, will add approximately 550 residential units, as well as ground floor public uses. The approved Clippership Wharf project will add approximately 400 residential units along with ground floor public uses. The approved Hodge Boiler Works project will add approximately 119 condominiums, five bed & breakfast units, marina, and approximately 156 underground parking spaces. These projects are shown in Figure 5-2, East Boston Area Projects.

### 5.2.1 ROADWAY NETWORK AND VEHICULAR CONNECTIONS

The project site is located on the west side of Border Street along East Boston's Inner Harbor Waterfront. The project site lies between Boston Harbor to the west and Border Street to the east in the vicinity of Decatur Street. Due to the project site's location adjacent to Boston Harbor, the adjacent streets do not provide significant regional connectivity. As a result, the streets near the project site carry mainly local traffic and very little through-traffic. Since the land uses near the project site are

mainly residential with some limited industrial uses, there are no major traffic generators and traffic volumes on the streets in the study area are relatively low.

Vehicular access to the project site will be provided by three proposed driveways to be located on the west side of Border Street. The residential complex will be served by one principal driveway leading to the proposed residential parking garage and a second driveway providing access to a designated residential off-street loading area to be located on the north side of the residential complex. The marine-related space will be provided access by a single driveway serving the off-street surface parking lot and loading area designated for the marine-related space.

Border Street is a local neighborhood street which runs in a roughly north south orientation from Sumner Street through Central Square to Condor Street. Border Street is a two-lane, two-way local residential street for most of its length, with the exception of the one block section, which is designated as one-way southbound from Maverick Street to Sumner. To the east of Border Street, Liverpool Street, London Street, and Havre Street are arranged in alternating one-way north and south designations, providing access to and from other destinations in and around East Boston, access to and from downtown Boston and the regional highway system via Route 1A and the Sumner/Callahan Tunnels.

The study area for the project will include the roadways that will provide the principal access to and egress from the site. Consequently, it is proposed that the project study area include the following intersections, as shown in Figure 5-3, Study Area Intersections.

- Central Square
- Border Street/Decatur Street
- Border Street/Maverick Street
- Border Street/Sumner Street.

### 5.2.2 PUBLIC TRANSPORTATION

The project site is located in a neighborhood that enjoys excellent public transportation service. The MBTA Blue Line rapid transit to and from downtown Boston is the core of the transit service to the neighborhood. This subway service is supplemented by MBTA bus service to other destinations in East Boston and to neighboring Chelsea and Revere. The following are detailed descriptions of the public transportation modes serving the project neighborhood. The public transportation system in the vicinity of the project site is shown in Figure 5-4, Public Transportation.

### BLUE LINE RAPID TRANSIT

The MBTA Blue Line subway, with a station at nearby Maverick Square, provides direct rapid transit service to both the north and south of the Square: south service leads to downtown Boston's densest employment centers including the Financial District (at Aquarium Station and State Street Station) and the concentration of City, State and Federal government offices (at Government Center Station and Bowdoin Station) while northbound service leads to the Logan International Airport and terminates at the Wonderland Station in Revere. It also provides connections to the Green Line (at Government Center Station) and Orange Line (at State Street Station), and with it access to the rest of downtown Boston and Back Bay.

Blue Line service operates with high frequency: weekday peak-hour headways of four minutes, midday headways of nine minutes, weekend headways of 10-11 minutes and late night headways of 13 minutes.

Blue Line service to the project area will also be significantly enhanced by two MBTA initiatives. The ongoing Blue Line Modernization project, which is a CA/T-related public transit commitment, will enable six-car train service throughout the Blue Line. This will relieve crowding on the Blue Line and is expected to be complete by 2008.

The MBTA is currently conducting a major reconstruction of Maverick Station. This transportation project will improve the aesthetics of the station headhouse and will enable circulation and pedestrian access improvements at Maverick Square. These improvements to Maverick Station will enhance transit access and the pedestrian experience in Maverick Square. The stations improvements will also include a new dedicated busway and additional parking. These improvements are expected to be complete by the spring of 2008.

### LOCAL BUSES

Maverick Station is served by five MBTA local bus routes:

- Route 114: Maverick Square – Bellingham Square, Chelsea
- Route 116: Maverick Square – Wonderland Station via Revere Street
- Route 117: Maverick Square – Wonderland Station via Beach Street
- Route 120: Jeffries Point – Orient Heights via Maverick Square, Bennington Street
- Route 121: Maverick Square – Wood Island Station.

Route 121 operates only during weekday commuter peak periods and it operates on 35-minute headways. The other routes all operate on 20-minute headways during weekday commuter peak periods. During weekday off-peak periods, they operate on

20 – 30 minute headways; on Saturdays they operate on 30-minutes headways; and on weekday nights and Sundays they operate on 50 – 60 minute headways.

#### WATER TRANSPORTATION

The Boston Inner Harbor provides opportunities for water-borne connections between the East Boston waterfront and other points on Boston Harbor. Currently, water transportation services on the East Boston waterfront are limited to water taxis and airport ferries that connect the Logan South water terminal to downtown Boston. Lewis Mall, at the southern end of Lewis Street, was previously the site of water transportation services, although the floating dock that was in use at this location has been lent to the National Park Service for use at Little Brewster Island, one of the Boston Harbor Islands. The developer of the Portside at Pier One/Boston Harbor Shipyard & Marina project has proposed re-instituting water transportation service between the Lewis Mall terminal and downtown Boston.

### 5.2.3 PEDESTRIAN CONNECTIONS

The public streets in the vicinity of the project site provide good pedestrian access in general. All public streets have continuous sidewalks and pedestrian crossings, which accommodate pedestrian access. Commercial uses and transportation connections at Maverick Square provide residents and visitors with walking destinations. LoPresti Park provides pedestrian destinations and recreational opportunities.

The recent completion of the Maverick Landing residential development has also greatly improved pedestrian access in the vicinity of the project site by breaking up the former super block (previously occupied by the former Maverick Gardens building complex) into smaller blocks that are consistent with the scale of the surrounding East Boston neighborhood.

Further to the east, the pedestrian system in East Boston is also undergoing major enhancement as a result of open space improvements. Piers Park (Phase I) provides a pleasant pedestrian environment and an attractive destination on the waterfront less than half a mile from the project site. Piers Park (Phase II) will provide another new waterfront open space even closer to the project site. The East Boston Greenway provides a pedestrian connection through East Boston to the waterfront and the Bremen Street Park will extend this connection further into East Boston when it is complete. All of these projects, along with the creation of a continuous Harborwalk, will dramatically improve pedestrian amenities in East Boston.

# 5.3 PROJECT IMPACT ASSESSMENT

## 5.3.1 PROJECT CHARACTERISTICS

The Boston East project will add 196 residential units and approximately 20,000 square feet of marine-related space, with waterfront public accommodations including plaza space and Harborwalk connections. The project will include 139 parking spaces in an underground garage for the residential units and an additional 26 off-street surface parking spaces for the marine-related use.

## 5.3.2 IMPACT ASSESSMENT METHODOLOGY

As part of the MEPA and BRA Article 80 Large Project Review processes, the proponent will prepare a Draft Project Impact Report/Draft Environmental Impact Report (DPIR/DEIR). This will include a transportation component that will thoroughly assess the transportation impacts associated with the project, in accordance with accepted engineering standards and with the requirements issued by MEPA and by the BRA/BTD. The following is the basic procedure that will be followed in assessing these transportation impacts.

### CONDITIONS TO BE ANALYZED

The transportation impacts of the project will be placed in the context of the following conditions:

#### EXISTING CONDITIONS

The Existing Conditions analysis will describe the current status of the transportation system within the study area.

#### FUTURE NO-BUILD CONDITION

This condition will establish a baseline for assessing the impacts of the project. This condition will take into account all known effects on transportation conditions that will be felt in the horizon year of 2012. These effects include background travel growth (general increase in travel due to population growth, greater trip-making and other demographic factors), travel generated by other new development in the vicinity (e.g. Maverick Landing, Clippership Wharf and Portside at Pier 1) and changes to travel patterns associated with infrastructure changes (e.g. CA/T, Logan Modernization).

#### FUTURE BUILD CONDITION

This condition will be predicted by adding the anticipated impacts of the project itself to the transportation system as described in the Future No-Build Condition. The Future Build Condition will therefore illustrate the effects of the project relative to the Future No-Build Condition.

## TRANSPORTATION IMPACT COMPONENTS

The Transportation Component of the DPIR/DEIR and the Project Impact Report (PIR) will provide a comprehensive evaluation of the potential transportation impacts associated with the project including pedestrian, transit and vehicular traffic, parking and loading activity. The final scope will be developed in close association with the BTD and input from the surrounding community. The DPIR/DEIR will include a thorough quantitative and qualitative review of the project's transportation impacts, as described by the following components:

### TRIP GENERATION

The new travel demand associated with the project will be predicted through Person-Trip Generation and Mode Split. The incremental new "person-trips" resulting from the project will be determined based on trip generation from the Institute of Transportation Engineers *Trip Generation Manual, 7th Edition* (2003), supplemented by other sources as appropriate. These total "person-trips" will be apportioned to different transportation modes (automobile, public transit, bicycling, walking) based on BTD travel mode data for East Boston, data from the Central Transportation Planning Staff (CTPS) and data from comparable developments.

### TRIP DISTRIBUTION

The trips will be distributed to their appropriate destinations based primarily on BTD Geographical Distribution data, in accordance with BTD transportation access plan guidelines. Other information, such as U.S. Census data and information on prevailing travel patterns may be used where necessary.

### TRIP ASSIGNMENT

The trips will be assigned to their specific routes based on the geographic distribution (see Figure 5-5, Vehicle Trip Distribution).

### TRAFFIC

The DPIR/DEIR will include a qualitative discussion of the roadway network in the study area and a quantitative assessment of the traffic operations at the intersections in the study area. This quantitative assessment will utilize Synchro capacity analysis software, which is based on the procedures of the Highway Capacity Manual, 2000 edition.

### PUBLIC TRANSIT

The demand for each public transit mode (subway, bus, water transportation) will be projected, based on the mode split analysis.

### PEDESTRIAN SYSTEM

The DPIR/DEIR will describe the pedestrian demand generated by the project, as well as the project's benefits in terms of new green spaces, plazas and connections,

especially connections to the waterfront, Maverick Square, LoPresti Park, and other pedestrian destinations.

**BICYCLE AMENITIES**

The DPIR/DEIR will describe the project's benefits in terms of bicycle accommodation, including provision of bicycle storage.

**PARKING**

The proposed parking plan will be described in detail, including number of parking spaces, parking ratio, and parking operations and circulation.

**SERVICE AND LOADING**

Service and loading requirements for the project will be described, including design vehicle, projected level of demand and schedule of usage. The site access design will accommodate the appropriate design vehicle.

**MITIGATION AND TRAVEL DEMAND MANAGEMENT (TDM)**

The DPIR/DEIR will identify any transportation impacts of the project that require mitigation, as well as opportunities for implementing such mitigation measures.

### 5.3.3 ANTICIPATED PROJECT IMPACTS AND BENEFITS

The following is a preliminary discussion of the transportation impacts and benefits that will result from the Boston East mixed-use development. All of these issues will be addressed in detail in the DPIR/DEIR.

**TRIP GENERATION**

Trip generation estimates for the project were developed based on data presented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 7th Edition (2003). The project will consist of two components including 196 residential units and 20,000 square feet of marine-related light industrial. Trips estimates for the 196 residential units were based on the ITE trip rates for Land Use 232 (High-Rise Residential Condominium/Townhouse), which provide higher and more conservative peak hour trip estimates than the corresponding ITE trip rates for Land Use Code 222 (High Rise Apartment). Trips estimates for the 20,000 square foot marine-related use were based on ITE Land Use 110 (General Light Industrial).

The ITE trip estimates were then converted into person trips based on the anticipated vehicle occupancy rate (VOR) and were based on a variety of sources, depending upon the land use type. The VOR for the residential units is assumed to be 1.18 persons per vehicle based on 2000 U.S. Census Journey-to-Work survey data. The VOR for the marine-related use is assumed to be 1.2 based on data from the Central Transportation Planning Staff (CTPS).

Table 5-1 provides a preliminary projection of the person trips that the project is expected to generate.

### MODAL CHOICE

The project is well-situated to take advantage of alternative transportation modes and to reduce automobile mode share. Blue Line subway connections to downtown Boston and local bus connections are available at the Maverick Square public transportation hub; approximately 2,000 feet from the project site, equivalent to about an eight-minute walk. As a result, the public transportation mode will be very attractive to residents and visitors of the Boston East Development.

**Table 5-1: Site Generated Person-Trip Generation**

| | | Daily | AM Peak Hour | | | PM Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Land Use Type** | **Land Use Size** | **Total Person-Trips** | **Person-Trips Entering** | **Person-Trips Exiting** | **Total Person-Trips** | **Person-Trips Entering** | **Person-Trips Exiting** | **Total Person-Trips** | **Vehicle Occupancy Rate** |
| **Condominiums** | 196 (units) | 1,136 | 19 | 83 | 102 | 60 | 37 | 97 | 1.18 (U.S. Census) |
| **Industrial Building** | 20,000 (sq ft) | 167 | 19 | 2 | 21 | 2 | 22 | 24 | 1.2 (CTPS) |
| **Total** | | 1,303 | 38 | 85 | 123 | 62 | 59 | 121 | |

Land Use Assumptions: Condominium -- ITE # 232, High-Rise Residential Condominium/Townhouse
Industrial Building – ITE # 110, General Light Industrial

East Boston is a dense urban neighborhood, with a mix of residential and commercial land uses and concentrated destinations. These neighborhood conditions make walking and bicycling convenient modes of travel, especially for short errands. Boston East residents and visitors will also travel by automobile, but the auto mode is not expected to dominate travel for the project. Automobile travel will be a less attractive mode than public transit for residents who work downtown. Parking in downtown Boston is expensive and driving through any of the harbor tunnels during commuter peak times will be more time-consuming than taking the train for Boston East residents.

These expectations are borne out by the BTD mode split data for East Boston (Travel Zone 7). The trips associated with the industrial component of the project were assumed to follow BTD's mode splits for work related trips. The trips associated with

the residential component were assumed to follow BTD's mode splits for home related trips. Table 5-2 summarizes the mode split assumptions for each component.

**Table 5-2: Anticipated Travel Mode Characteristic (per BTD mode split data)**

| Time Period | Auto | Transit | Walk/Bicycle |
|---|---|---|---|
| ***Industrial Component*** | | | |
| | | | |
| **Weekday Daily** | 74% | 21% | 5% |
| **Weekday Morning Peak Hour** | | | |
| Enter | 75% | 19% | 6% |
| Exit | 63% | 32% | 5% |
| **Weekday Evening Peak Hour** | | | |
| Enter | 63% | 32% | 5% |
| Exit | 75% | 19% | 6% |
| | | | |
| ***Residential Component*** | | | |
| | | | |
| **Weekday Daily** | 54% | 17% | 29% |
| **Weekday Morning Peak Hour** | | | |
| Enter | 51% | 15% | 34% |
| Exit | 45% | 25% | 30% |
| **Weekday Evening Peak Hour** | | | |
| Enter | 45% | 25% | 30% |
| Exit | 51% | 15% | 34% |

The BTD travel mode splits presented in Table 5-2 were then applied to the Total Person Trips, presented in Table 5-1, to the number of trips by each mode. The resulting transit, bicycle/walking and auto trips are presented in Tables 5-3 and 5-4.

**Table 5-3: Non-Auto Site-Generated Trips (per BTD mode split data)**

| Weekday Daily | Transit Trips | | | Walk/Bicycle Trips | | | Total Non-Auto Trips |
|---|---|---|---|---|---|---|---|
| | Home | Industrial | Total | Home | Industrial | Total | |
| Enter | 96 | 18 | 114 | 165 | 4 | 169 | 283 |
| Exit | 97 | 17 | 114 | 165 | 4 | 169 | 283 |
| **Total** | 193 | 35 | 228 | 330 | 8 | 338 | 566 |
| **Weekday Morning Peak Hour** | | | | | | | |
| Enter | 3 | 4 | 7 | 6 | 1 | 7 | 14 |
| Exit | 21 | 1 | 22 | 25 | 0 | 25 | 47 |
| **Total** | 24 | 5 | 29 | 31 | 1 | 32 | 61 |
| **Weekday Evening Peak Hour** | | | | | | | |
| Enter | 15 | 1 | 16 | 18 | 0 | 18 | 34 |
| Exit | 5 | 4 | 9 | 12 | 1 | 13 | 22 |
| **Total** | 20 | 5 | 25 | 30 | 1 | 31 | 56 |

**Table 5-4: Auto Site-Generated Trips (per BTD mode split data)**

| Weekday Daily | Auto Trips | | Total Auto Trips |
|---|---|---|---|
| | Residential | Industrial | |
| Enter | 260 | 51 | 311 |
| Exit | 260 | 52 | 312 |
| **Total** | 520 | 103 | 623 |
| **Weekday Morning Peak Hour** | | | |
| Enter | 8 | 12 | 20 |
| Exit | 32 | 1 | 33 |
| **Total** | 40 | 13 | 53 |
| **Weekday Evening Peak Hour** | | | |
| Enter | 23 | 1 | 24 |
| Exit | 16 | 14 | 30 |
| **Total** | 39 | 15 | 54 |

## TRAFFIC IMPACTS

With the number of vehicle trips established through the mode split analysis, these vehicle trips will be distributed on the traffic network and their impacts will be assessed. Although the majority of trips during commuter peak periods are expected to be via public transit, walking, or bicycling, automobile travel will still be important for the project. The traffic impacts of the project will be concentrated on the streets providing access to and from the project site. The study area will include the following intersections:

- Central Square
- Border Street/Decatur Street
- Border Street/Maverick Street
- Border Street/Sumner Street.

The existing traffic volumes at these intersections will be increased to a projected future no-build condition that reflects new traffic from proposed new development projects in the area, as well as general future traffic growth. The traffic impact analyses for the other new developments in the area, including 6-26 New Street, Hodge Boiler Works, Clippership Wharf, and Portside at Pier One/Boston Harbor Shipyard & Marina, will all be reviewed to ensure that the Boston East no-build condition properly reflects the impacts of these projects. The new traffic generated by the project will then be added to the projected future no-build traffic at these intersections. The traffic operations at the study area intersections will be assessed for

all three conditions and the traffic impacts that are specific to the Boston East project will be identified.

### PUBLIC TRANSIT

The Project site is expected to add approximately 228 transit trips per day, with 29 trips (7 entering trips and 22 exiting trips) during the weekday morning commuter peak hour and 25 trips (16 entering trips and 9 exiting trips) during the weekday evening commuter peak hour.

The majority of public transit trips to and from the project will be via the Blue Line. This reflects the concentration of employment in downtown Boston, the attractiveness of living at Boston East for people who work downtown, the speed of travel to downtown Boston via the Blue Line and the low cost of subway travel versus parking in downtown Boston. The Blue Line currently has high ridership, especially at its peak loading segment between Maverick Station and Aquarium Station. The ongoing project to upgrade all the Blue Line stations to accommodate six-car trains will significantly improve capacity. MBTA bus service can supplement Blue Line subway service for destinations in other parts of East Boston and in Chelsea. The developer of the Portside at Pier One project has also proposed reinstituting water transportation service from the Lewis Mall water terminal. This terminal is a short walk from the project site and the water transportation service available there could supplement the Blue Line connection to downtown Boston.

### PEDESTRIAN SYSTEM

The Project site is expected to add approximately 338 walking trips per day, with 32 trips (7 entering trips and 25 exiting trips) during the weekday morning commuter peak hour and 31 trips (18 entering trips and 13 exiting trips) during the weekday evening commuter peak hour. In addition, it is anticipated that all transit riders will walk to and from the Maverick Station and nearby bus stops.

Pedestrian accommodations in the vicinity of the project site and surrounding neighborhoods are generally good, with curbed sidewalks provided on both sides of the street, and crosswalks provided at most intersections. As part of the Boston East project, streetscape and lighting improvements will be made to create a safe and attractive environment for existing pedestrian activity and new pedestrian trips associated with the project. The project will also provide public pedestrian access to the waterfront, via the proposed continuation of the Harborwalk. It is also anticipated that the introduction of 24-hour residential activity at the site associated with the proposed development will increase the vitality of the surrounding neighborhood and should improve public safety for those currently using the area sidewalks.

### BICYCLE AMENITIES

Ample bicycle storage will be provided; both secure interior storage for project residents and publicly-accessible storage for visitors to the waterfront public space.

### PARKING ACCOMMODATIONS

The Boston East proposal includes 139 parking spaces in a one-level underground parking garage for the residential units and 26 additional spaces in a surface lot for the marine-related use.

### SERVICE AND LOADING

Service and loading requirements for the project will be modest since most will be limited to trash pickup and infrequent move-in/move-out activity associated with the Boston East residents. Residential trash will be collected in a trash room and the building management will contract a hauling company to pick up the trash daily, or every other day, depending upon project needs. Infrequent move-in/move-out activity associated with the residents will be accommodated in an off-street residential loading area to be located on the north side of the residential complex and to the extent possible the residential parking garage. The loading requirements for the marine-related space will be accommodated within the proposed on-site surface parking lot and designated loading area to be located directly adjacent and to the south of the marine-related building. The proponent will also work with and BTD and the local residents to develop appropriate truck routes and delivery schedules to minimize impacts to the surrounding neighborhood. Additional information regarding the anticipated loading requirements for the proposed development will by provided in the DPIR/DEIR Project Impact Report (PIR).

### TRAVEL DEMAND MANAGEMENT (TDM)

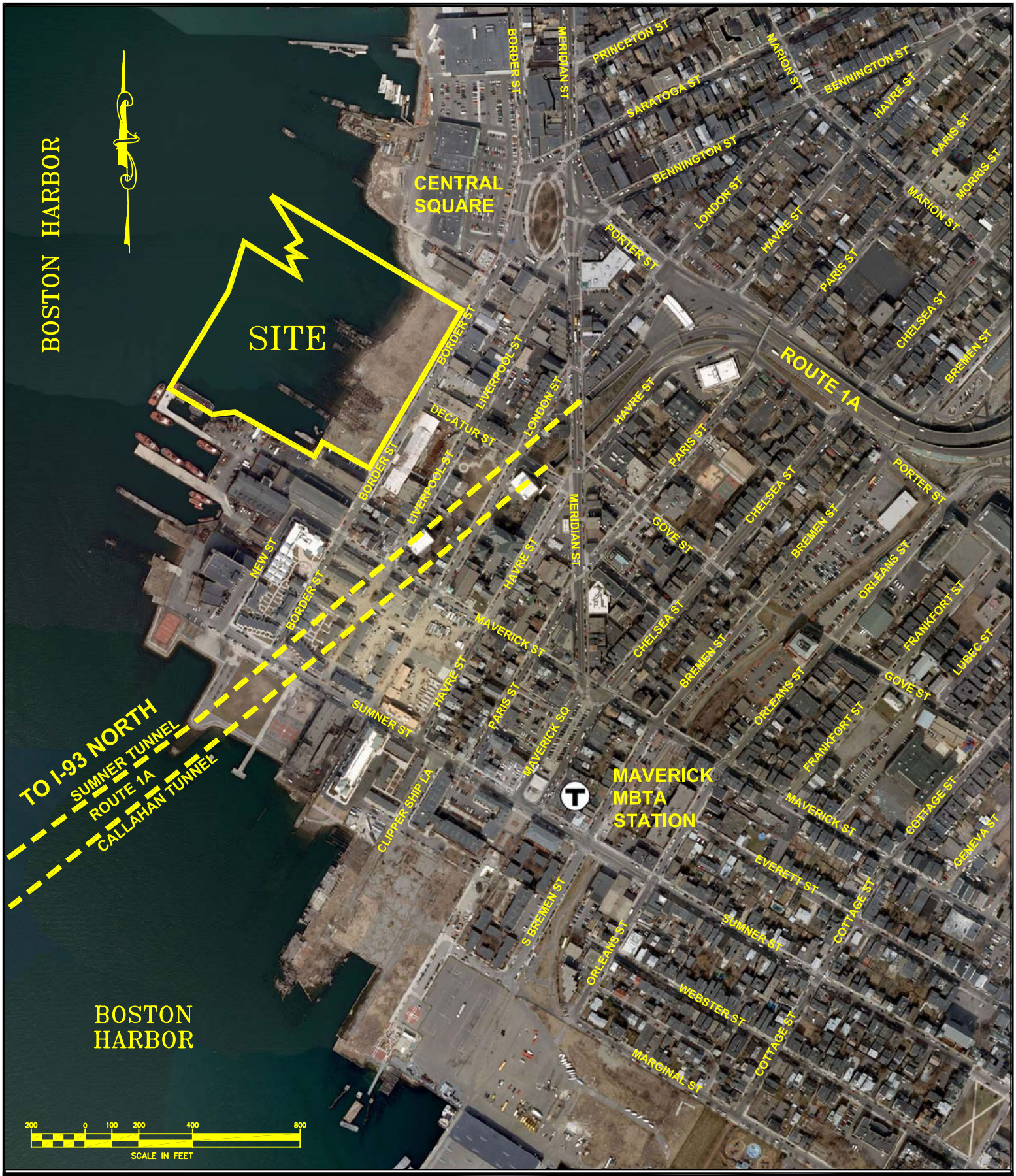
The project proponent will implement a travel demand management (TDM) program in order to reduce automobile travel, automobile ownership and traffic impacts associated with the project and encourage the use of alternative modes of transportation. As part of this effort, the proponent will take full advantage of the excellent transit access to the site in the marketing of the Project to prospective residents. The proponent will also provide an on-site transportation coordinator during sale of the residential units and as part of the ongoing management of the site. The transportation coordinator will work with the Project residents to raise awareness of public transportation alternatives and ridesharing opportunities and provide transit information in the building lobby. The proponent will also provide bicycle storage areas in highly visible and secure areas on site to encourage the use of this alternative mode of transportation.

The proponent will explore participation in existing Transportation Demand Management Associations. There are a number of new developments and proposed

projects in the vicinity of the site and the Project's management team is committed cooperatively with area developers and residents in developing TDM services. The TDM measures to be implemented by the Boston East project will include:

- Promotion of public transit and dissemination of transit information;
- Potential access to car-sharing through Zipcar.com;
- Secure, internal bicycle storage for project residents and publicly accessible bicycle storage for project visitors; and
- Participation in Transportation Demand Management associations.

The proponent will work with BTD to determine an appropriate TDM program and will formalize this program in a Transportation Access Plan Agreement (TAPA).




Woodland Design Group Inc.
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Civil Engineering - Land Planning - Transportation Engineering
Phone 603-641-9500 Fax 603-641-9550

FIGURE 5–1

PROJECT SITE & EXISTING ROADWAY SYSTEM
BOSTON EAST MIXED–USE DEVELOPMENT
EAST BOSTON, MASSACHUSETTS


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FIGURE 5–2

EAST BOSTON AREA PROJECTS
BOSTON EAST MIXED–USE DEVELOPMENT
EAST BOSTON, MASSACHUSETTS

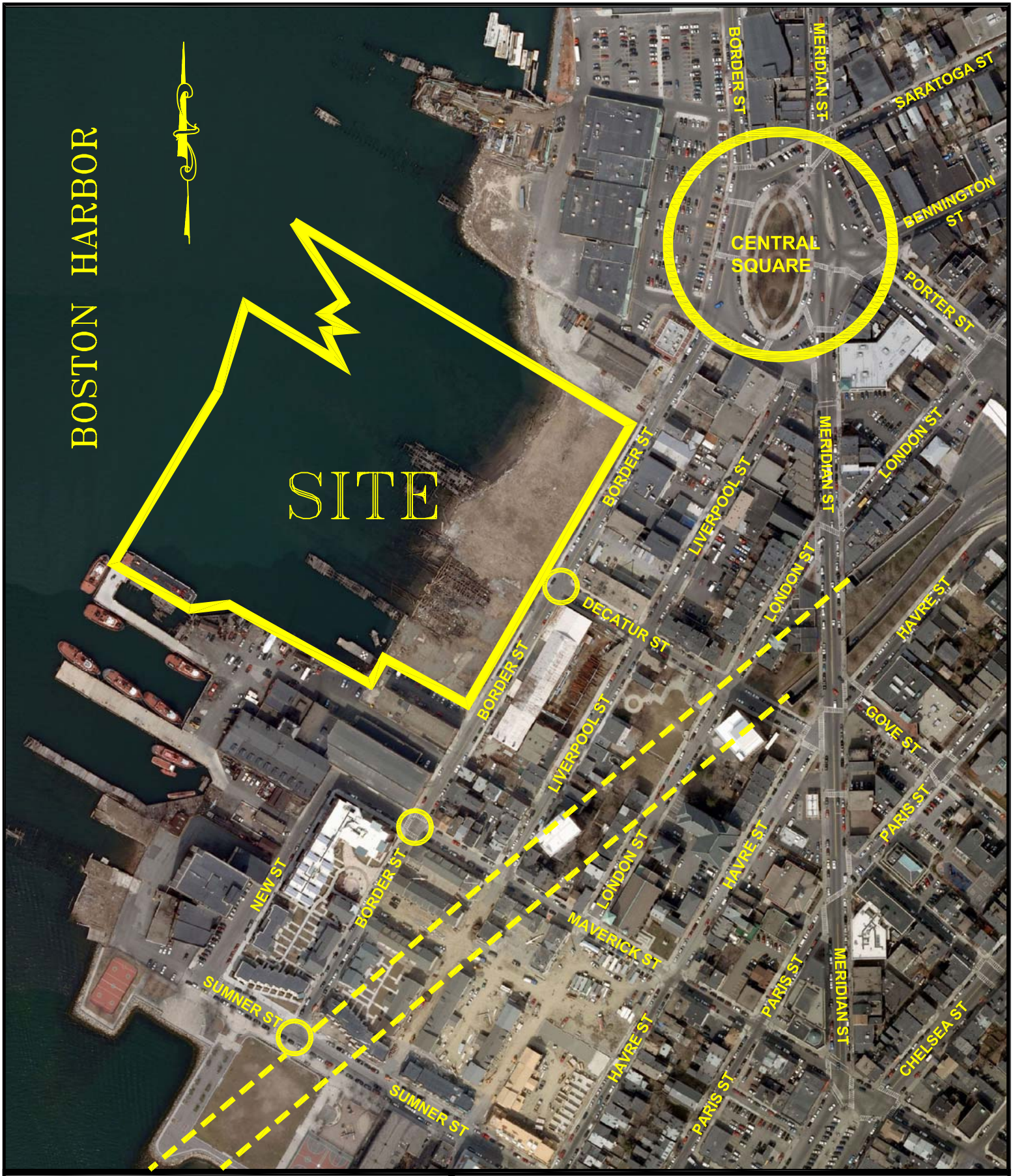


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FIGURE 5–3

STUDY AREA INTERSECTIONS
BOSTON EAST MIXED–USE DEVELOPMENT
EAST BOSTON, MASSACHUSETTS

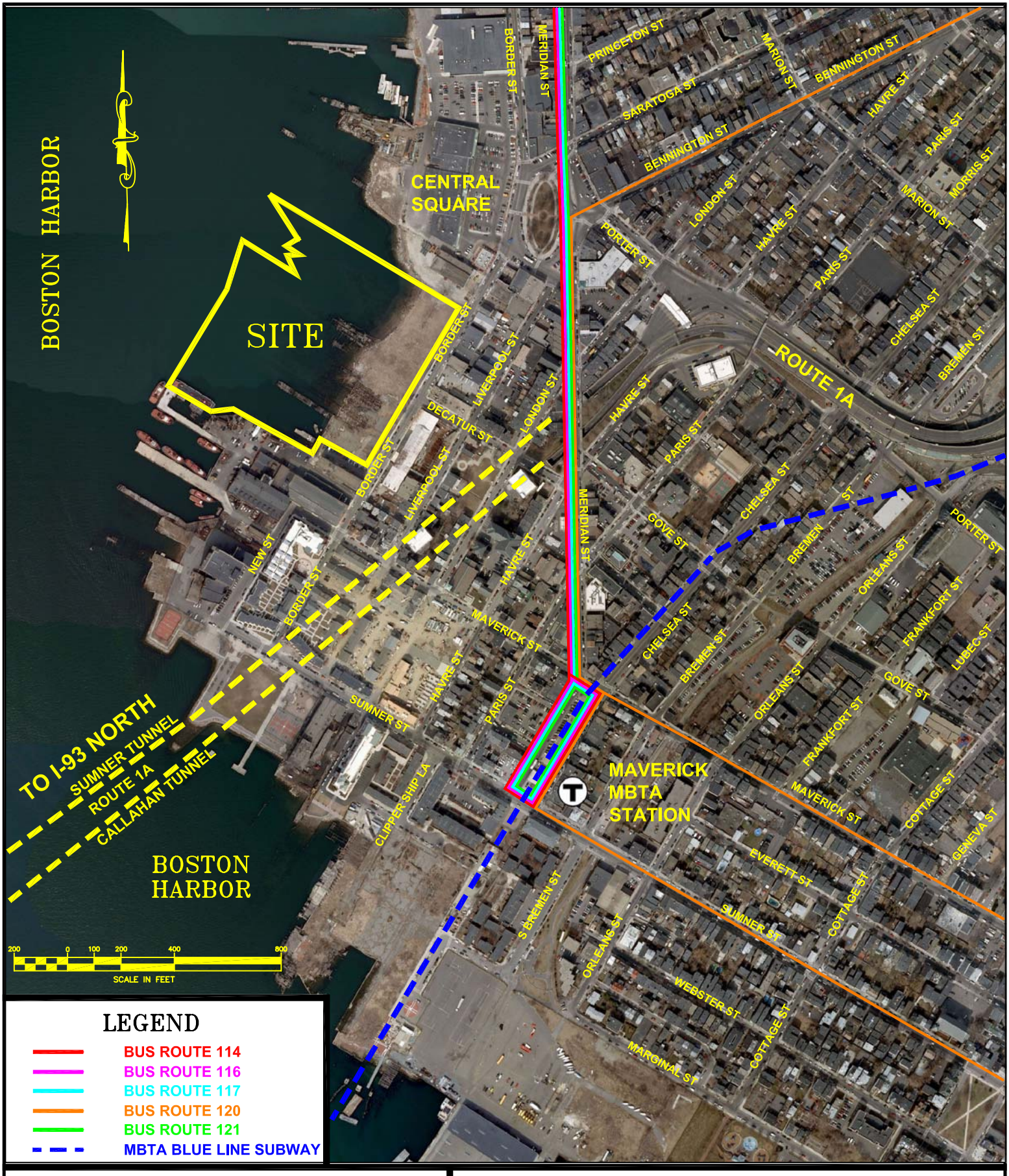


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FIGURE 5–4

PUBLIC TRANSPORTATION
BOSTON EAST MIXED–USE DEVELOPMENT
EAST BOSTON, MASSACHUSETTS


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FIGURE 5–5

VEHICLE TRIP DISTRIBUTION
BOSTON EAST MIXED–USE DEVELOPMENT
EAST BOSTON, MASSACHUSETTS

# Chapter 6

# Environmental

# *6.0 ENVIRONMENTAL PROTECTION COMPONENT*

The redevelopment of 102 – 148 Border Street will substantially improve the environmental qualities of the site. The current conditions include dilapidated wharves, uncontrolled runoff into Boston Inner Harbor, and a mix of impervious surfaces and open fields. This section describes the proposed project and its impacts regarding wind, shadow, daylight, solar glare, air quality, geotechnical, water quality, wetlands and flood zones, ground water, soil and hazardous waste, noise, rodent control, construction impacts, sustainable design, and historic resources.

The development proposed on the site will be built in full compliance with the State's Chapter 91 use and dimensional limitations as modified by an amendment to the East Boston Municipal Harbor Plan (EBMHP) and other applicable design guidelines and environmental regulations.

## 6.1 WIND

A qualitative assessment has been made to determine the effect on pedestrian level winds (PLWs) of the proposed Boston East development in East Boston, Massachusetts. Results are obtained for both existing and build conditions for NW (winter), SW (summer), easterly storm, and annual winds.

None of the 46 locations considered for either existing or build conditions is estimated to have PLWs that exceed the Boston Redevelopment Authority (BRA) guideline wind speed of 31 mph one percent of the time. In fact, no location is predicted to have PLWs higher than Category 3 (comfortable for walking) for either existing or build conditions for any of the wind conditions considered.

Detailed results are presented in Appendix 2, Qualitative Wind Analysis. For this assessment, it has been assumed that there is no landscaping for existing conditions and none associated with the new buildings.

## 6.2 SHADOW

As is typically required by the BRA, a shadow impact analysis was conducted to investigate shadow impacts from the proposed Project. The study tracked the sun and resulting shadow at hourly intervals between the hours of 9 o'clock am and 4 o'clock pm on October 23rd.

The shadow analysis presents net new shadow from the buildings, as well as existing shadows and illustrates the incremental impact of the project (see Appendix 4, Shadow

Studies). The analysis focuses on public spaces and major pedestrian areas adjacent to and in the vicinity of the site.

The site is oriented along Border Street, which runs on a diagonal North-South axis. The shoreline correspondingly runs approximately parallel to Border Street. In the morning on October 23rd, the new shadow will remain on the project site, reaching out onto the water's surface. As the day progresses, the shadow from the residential building will angle around the northern edge of the site; at noon it will touch the corner of the industrial ("Blue") building on the adjacent lot to the north. At 2 o'clock pm, the shadow will reach the sidewalk on the eastern side of Border Street, and at 4 o'clock, the shadow will cover the facades of the 3 to 4-story buildings on the far side of Border Street. By 5 o'clock, the sun is below the horizon and has no resulting shadow.

The proposed Project creates less substantial shadow in the afternoon on Border Street than would a Chapter 91 compliant volume, while the Project would create a slightly longer shadow on the water side of the project in the morning hours. The shadow analysis for the whole day resulted in a new net shadow impact of 7,801 square feet (sf) within the site as shown in the following tables.

**Shadow Impact Comparison**

| | **Total Shadow Area (sf)** | |
|---|---|---|
| **Time of Day EST/EDT** | **Chapter 91 Envelope** | **Proposed Project** |
| | | |
| 8:00 am / 9:00 am | 52,614 | 60,415 |
| 11:00 am /12:00 noon | 33,365 | 33,839 |
| 2:00 pm / 3:00 pm | 18,667 | 23,280 |
| 4:00 pm / 5:00 pm | 10,205 | 15,368 |
| | | |
| Cumulative Shadow Impact* | 114,851 | 132,902 |
| Average Shadow Impact per Period** | 28,713 | 33,226 |

*Summation of shadow impacts from each of the four measurement times.

**Average of shadow impact from each of the four measurement times.

| | **Net Increase in Shadow Area (sf)** | |
|---|---|---|
| **Time of Day (EST/EDT)** | **Chapter 91 Envelope** | **Proposed Project** |
| 8:00 am / 9:00 am | 19,249 | 26,576 |
| 11:00 am /12:00 noon | 14,698 | 10,559 |
| 2:00 pm / 3:00 pm | 8,462 | 7,912 |
| 4:00 pm / 5:00 pm | 10,205 | 15,368 |
| **Total Net Increase** | **52,614** | **60,415** |
| **Difference** | **7,801** | |

## 6.3 DAYLIGHT

A daylight analysis will be conducted as part of the DPIR/DEIR.

## 6.4 SOLAR GLARE

The BRA often requires a solar glare analysis should the design of a proposed project incorporate substantial glass facades as part of the design. The solar glare analysis is intended to measure potential reflective glare from the buildings onto potentially affected streets and public open spaces and sidewalk areas in order to determine the potential for visual impairment or discomfort due to reflective spot glare, as well as heat build-up on adjacent buildings.

As a result of the design and use of generally non-reflective materials, it is not anticipated that the project will have adverse solar glare impacts or create solar heat buildup in nearby buildings. Reflective glass will not be used in order to reduce potential impacts associated with solar glare.

## 6.5 AIR QUALITY

Potential long-term air quality impacts associated with the project will be limited to pollutant emissions from vehicular traffic generated by the project. As discussed in Chapter 5, the proposed project will add 623 daily vehicle trips, 53 morning peak hour vehicle trips, and 54 pm evening peak hour vehicle trips. These are modest traffic volumes; therefore, no air quality exceedances are expected as a result of this project. The DPIR/DEIR will include a full traffic operations analysis of all study area intersections for existing, future no-build, and future build conditions.

Short-term air quality impacts from fugitive dust may be expected during the early phases of construction from site preparation activities. The construction contract will provide for a number of strictly enforced measures to be utilized by contractors to reduce potential emissions and minimize air quality impacts. Mitigation measures will include using wetting agents to control dust where needed on a scheduled basis; using covered trucks; minimizing exposed storage debris on site; monitoring construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized; locating aggregate storage piles away from areas having the greatest pedestrian activity, where and when possible; and periodically cleaning streets and sidewalks to minimize dust accumulations. Given the limited amount of such activities, air emissions are not expected to be substantial.

## 6.6 WATER QUALITY

The site is vacant and covered with mostly scrub brush and a few trees. Stormwater runoff from the site discharges as sheet flow directly into Boston Inner Harbor. There is also a 60-inch Boston Water and Sewer Commission (BWSC) combined sewerage overflow that cuts across the middle of the site and outlets into the Harbor. The BWSC is in the process of separating the combined sewage system in the area and constructing a separate stormwater system within Border Street. The existing combined sewage overflow will be abandoned, and a new 60-inch stormwater outlet to the Harbor will be constructed as part of this development.

All stormwater runoff from the proposed development will be collected and treated using Best Management Practices prior to discharging into the Harbor.

## 6.7 GEOTECHNICAL AND FOUNDATION

Fronting onto Border Street to the southeast, the subject property is bounded by a day-care center and commercial property to the southwest, commercial/industrial property to the northeast, and the Boston Inner Harbor to the north-northwest. Currently, the subject property is undeveloped. Site ground surface elevations range from approximately El. 18 to approximately El. 14.5 Boston City Base (BCB) datum.

The proposed scope of development will consist of a 7-story multi-unit residential building with one level of parking below grade, and a two-story waterfront commercial building with no below grade space. The proposed residential building footprint reportedly will occupy approximately 36,800 square feet, and the commercial building footprint will occupy approximately 14,000 square feet.

Based upon our review of historical boring information from our files and our local foundation and construction experience in East Boston, it is anticipated that the existing ground surface is underlain by a thickness of miscellaneous fill material associated with historic site filling. The fill material is anticipated to extend to depths ranging from approximately 8 to 16 feet below ground surface. The fill material likely contains ash and cinders, and the below grade remains of former structures, including wood piles. The fill is anticipated to be underlain by an organic deposit consisting of very soft organic silt and peat. The thickness of the organic deposit is estimated to range from 5 to 10 feet. Underlying the fill material and/or organic deposit, we anticipate a natural sand deposit that extends to depths ranging from approximately 15 feet to 20 feet below ground surface. Beneath the sand deposit, we anticipate a marine clay deposit that may extend to a depth of 100 feet below ground surface overlying a dense glacial till deposit that is plastered on the bedrock surface. Groundwater is anticipated to be present within a depth of 4 to 10 feet below ground surface.

Based upon the anticipated subsurface conditions underlying the subject site, foundation support will be provided by a pile foundation system with the lowest level slab being structurally supported. Below-grade space will have waterproofed slabs and foundation walls. The perimeter foundation walls will be designed to resist the design groundwater levels. The lowest level floor will be designed with an underslab drainage system.

Construction of one level of underground parking will require excavation to approximately 15 feet below grade. A temporary excavation support system is likely to be required around the perimeter of the proposed below-grade level of the residential building to retain adjacent soils, control groundwater, and to protect adjacent roadways and utilities. The earth support system will be installed into or through the marine clay to reduce seepage of groundwater and harbor water into the excavation and will allow foundation construction to proceed in the dry.

## 6.8 GROUNDWATER

Given that groundwater is anticipated to be present within a depth of 10 feet below-ground surface, dewatering is anticipated to be required for foundation construction. Potential adverse impacts of temporarily lowering groundwater levels on adjacent buildings and utilities will be mitigated by the use of a relatively watertight excavation support system. Dewatering effluent generated during temporary construction dewatering will be discharged in compliance with applicable regulations and discharge permits. Groundwater levels outside the excavation will be monitored and measures undertaken if impacts exceed contract requirements. Groundwater quality will also be monitored during construction as part of the discharge permit requirements.

Construction of the proposed development is not expected to have adverse short or long-term impact on groundwater conditions.

Subsurface explorations, consisting of borings and test pits, will be conducted to provide information on the subsurface soil and groundwater conditions for geotechnical and geo-environmental purposes.

## 6.9 FLOOD HAZARD DISTRICTS AND WETLANDS

### 6.9.1 FLOOD HAZARD DISTRICTS

The Boston East site is relatively flat and located on filled tideland. Its upland portions (above mean high water) range from approximately 5.0 feet (NGVD) to 11.8 feet. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates the FEMA Flood Zone Designations for the site areas (City of Boston,

Community-Panel Number 250286 0005 D, November 2, 1990). Approximately one-third of the upland portion of the site is within Zone C (see Figure 6-1, Overlay of FEMA Flood Zones and Wetlands). The remaining portion of the site is in Zone A2 (Elevation 10.0.), an area of 100-year floods.

### 6.9.2 WETLANDS

The project site contains the following wetland resources (see Figure 6-1):

- Land Under Ocean (LUO)- located under the flowed portions of the site,
- Coastal Beach (CB) – areas that extend from mean high water or seawalls/banks to mean low water,
- Land Subject to Coastal Storm Flowage (LSCSF) – areas that are located within the 100-year flood zone described above, and
- Designated Port Area (DPA) – LUO areas within the area designated by the state where maritime industrial uses are protected and other uses are restricted.

The project proposes activities in these resource areas. In LUO and CB, piles will be driven to support the marine travel lift. Repairs to the existing bulkhead and minor filling will affect the LSCSF and CB resource areas. Construction of the residential and marine buildings and landscaping will affect the LSCSF resource area. Site activities in the LUO portion of the DPA area include installation and removal of pilings. Impacts to each of these areas include: CB – 19,670 sf, DPA – 100 sf, LSCSF – 69,650 sf, and LUO – 100 sf.

## 6.10 SOLID AND HAZARDOUS WASTE

### 6.10.1 SITE HISTORY AND COMPLIANCE WITH MASSACHUSETTS CONTINGENCY PLAN

The site was formerly used since at least 1888 by the East Boston Dry Dock Company. In 1888 the site was utilized as a boat building shop, locksmith, paint shop, wagon shop, tin shop, and bowling alley. In 1927 portions of the property were utilized by the Burton Furber Coal Co. and Federal Lumber Co. The majority of the subject site was vacant by 1950. Previous environmental assessments indicated records of underground storage tanks (USTs), the storage of up to 100,000 barrels of oil, and the storage of coal on the subject site.

A plan to conduct a program of soil and groundwater quality testing prior to construction to determine the options for reuse, recycling, disposal or treatment of contaminated soil is to be implemented. Groundwater testing will be conducted in support of obtaining temporary construction dewatering permits and to assess the need for on-site treatment to remove contaminants.

Conditions at the site will likely trigger regulatory notification under the Massachusetts Contingency Plan (MCP). Excavated soil will require characterization to assess its disposition for off-site reuse, disposal, treatment or recycling in accordance with DEP policy and the MCP. The construction contractor will be responsible for proper off-site removal of contaminated soil, and disposal of solid waste and debris.

## 6.11 NOISE

The proponent does not anticipate a substantial increase in noise impacts associated with the residential and marine-related uses at the project site. The Boston Air Pollution Control Commission regulates noise in the City of Boston based on zoning and land use classification. The regulations establish a maximum sound level for a residential /industrial zone, such as the project area, of 65 dBA during the day and 55 dBA at night. These limits do not apply to construction noise or motor vehicle traffic. The City of Boston has also established noise limits that apply to nine, octave band center frequencies.

The primary sources of external mechanical noise will include the make-up air units and the compressors. The project may also include emergency generators, which would also contribute to external mechanical noise. It is not anticipated that the rooftop equipment will exceed maximum sound levels, and thus no mitigation is proposed. At this time, only visual screens are planned for the rooftop equipment, which will provide minimal noise mitigation. During the design of the project, appropriate low-noise mechanical equipment and noise control measures will be selected for all sensitive locations, as necessary, to ensure compliance with the City of Boston Zoning District Noise Standards and Massachusetts DEP Noise Policy regulations.

## 6.12 RODENT CONTROL

A rodent control program will be implemented prior to, during, and after construction. The construction contractor will file a rodent extermination certificate, along with the building permit application, with the City of Boston. Rodent inspection, monitoring, and treatment will be conducted before, during, and at the completion of all construction work for the proposed project in compliance with the City's requirements. Rodent extermination prior to the start-up of work may consist of treatment of areas throughout the project site, including the building interior. During the construction process, regular service visits will be made in order to maintain effective rodent control levels.

# 6.13 CONSTRUCTION IMPACTS

A Construction Management Plan (CMP) will be prepared and submitted to the Boston Transportation Department (BTD) for review prior to the start of construction once final plans are developed and the construction schedule is fixed. The proponent intends to follow the guidelines of the City of Boston and the Massachusetts DEP that direct the evaluation and mitigation of construction impacts. The CMP will include detailed information on demolition, removal, construction activities, specific construction mitigation measures, and construction materials access and staging area plans to minimize impacts to the local community. Demolition and construction methodologies that ensure public safety and protect nearby residences will be employed.

## 6.13.1 PUBLIC SAFETY AND PEDESTRIAN ACCESS

Proper pre-planning with the city and neighborhood will be essential to the successful construction of the project. As the design of the Project progresses, the Proponent and its construction team will meet with BTD to discuss the specific locations of barricades, the need for lane closures, pedestrian walkways, and truck queuing areas. Construction methodologies, which ensure public safety and protect nearby residences, will be employed. Techniques such as barricades, walkways, and signage will be used, if necessary.

During the construction phase of the project, the developer will provide the name, telephone number, and address of a contact person to communicate with on issues related to construction. This contact person will be solely responsible for responding to questions, comments, and complaints of the neighborhood residents.

Periodic meetings will also be held with neighborhood groups to describe the ongoing works and to discuss measures that will be taken to minimize impacts on the community. The Project superintendent will contact abutters and close neighbors at least once a week during new phases on work.

## 6.13.2 CONSTRUCTION METHODOLOGY

Construction activities include sheathing, shoring, and excavation for building foundations, below grade garage, utility trenches, building construction, paving, and other site improvements. After additional site and geotechnical studies are completed, the construction methods will be identified.

Although specific construction and staging details have not been generated, the proponent will work with the construction contractor and the City of Boston to ensure that the staging areas will be located to minimize impact to pedestrian and vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic within the site. In addition, sidewalk areas within and near

construction activities will be well marked and lighted to protect pedestrians and ensure their safety. As required by the Boston Police Department, police details will be provided to facilitate traffic flow. All construction procedures will be designed to meet all OSHA safety standards for specific construction activities.

### 6.13.3 CONSTRUCTION WASTE

Trinity Border Street, LLC will take an active role with regard to the reprocessing and recycling of construction and building demolition waste. All demolition materials from site materials will be removed from the site.

The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse, and recycling of materials. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per DEP's Regulations for Solid Waste Facilities, 310 CMR 16.00 This requirement will be specified in the disposal contract. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility.

### 6.13.4 CONSTRUCTION PHASING, SCHEDULE, AND HOURS

The project does not anticipate closure of Border Street during construction. Occupancy of portions of Border Street may be required during site preparation and construction of buildings. The project will be sequenced: first the residential building will be built with staging at the DPA portion of the site. After the residential building is constructed, the DPA portion of the site will be completed. In addition, fill from the residential building is required to be used for filling and grading of the DPA site.

Construction is expected to commence in the spring of 2009 and will be completed in the spring of 2011. The normal hours for construction activity are planned to be from 7:00 am to 4:00 pm Monday through Friday, although extended hours may be requested. The project office storage trailers, material stockpiles, and project management parking will be located within the site.

### 6.13.5 CONSTRUCTION STAGING AREAS AND WORKER PARKING

As noted above, the residential building and site work will be constructed in the north side of the site first with its staging area in the DPA portion of the site. Marine facilities and site work in the DPA will then be constructed with the staging area located within the DPA.

It is expected that most construction activities can be accommodated within the current site boundaries. The construction staging areas will be designed to isolate the construction while provide safe access for pedestrians and vehicles during normal

day-to-day activities and emergencies. The staging areas will be secured with chain-link fences to protect pedestrians and from entering those areas. Limited on--site parking will be provided for certain key workers.

The number of workers required for the construction of the project will vary depending upon the stage of construction. Construction workers will typically arrive and depart prior to peak traffic conditions and the construction trips are not expected to substantially impact traffic conditions.

The general contractor will be responsible for educating all construction workers about public transit options and encouraging the use of High Occupancy Vehicles (HOVs). All construction workers will be encouraged to utilize mass transit and ridesharing options to access the construction site and to minimize vehicle traffic and parking on the local streets. As part of the program to promote public transportation, the following will be implemented:

- Providing on-site secured space for workers' tool storage;
- Posting transit schedules and maps at the jobsite;
- Distributing informational brochures regarding public transportation; and
- Notifying all subcontractors and suppliers of the worker access/parking limitations and options.

The proponent will submit a Boston Residents Construction Employment Plan in accordance with the Boston Jobs Policy. The Plan will provide that the proponent make good faith efforts to employ local trades people from the City of Boston. In this effort, the proponent will meet with local agencies prior to the start of construction to establish a community outreach program.

### 6.13.6 CONSTRUCTION TRUCK TRAFFIC AND ACCESS ROUTES

Designated truck routes will be established to govern where construction trucks access and egress the site. The primary construction truck access and egress to and from East Boston will be via Route 1A. Truck traffic to and from the north will use Route 1A South, while truck traffic to and from the west and south will use the Ted Williams Tunnel (I-90) via Logan Airport and Route 1A. Construction trucks will avoid the Sumner and Callahan Tunnels due to congestion and height restrictions. Emergency truck routes will also use these main highways to access and egress the site.

Within East Boston, the suggested primary truck route to the project site is Route 1A southbound to the Porter Street exit, through Central Square, and south on Border Street to the project site. The suggested primary truck egress route is north on Border

Street, through Central Square to Meridian Street, south on Meridian Street, and north on Havre Street to Route 1A northbound, and continue on Route 1A north or exit to I-90 west. These truck routes are shown in Figure 6-2, Construction Truck Routes.

Truck traffic will be heaviest during the excavation and concrete foundation work. During this period, it is expected that approximately 10 to 12 trucks, varying in size from small delivery trucks to 18-wheelers, will arrive and leave the site each construction day. Thereafter, truck traffic will vary throughout the construction period, depending upon the activity.

The project will work closely with the BTD in developing a Construction Management Plan that will include more detail on construction phasing, number of trips, haul routes, and hours of operation.

### 6.13.7 AIR POLLUTION EMISSIONS AND MITIGATION

Since short-term air quality impacts from fugitive dust may be expected, the CMP will include plans for controlling fugitive dust during demolition and construction. The construction contract will provide for a number of strictly enforced measures to be utilized by contractors to reduce potential emissions and minimize air quality impacts.

The proponent and its construction team will evaluate mitigation methods employed by the Commonwealth's Clean Air Construction Initiative. Mitigation measures will be employed as necessary to minimize the potential impact of air pollution emissions from project construction operations. Dust mitigation measures will minimize the generation of fugitive dust and will include, as necessary:

- Wet suppression to minimize the generation of dust from excavation operations and on-site vehicle traffic, with provisions for any runoff control;
- Spraying any piles of excavation materials with soil cement or calcium chloride overnight and on weekends and covering of long-term material stock piles;
- Compacting of the soil or the use of gravel to stabilize the site access points;
- Washing the wheels of vehicles before they leave the site, as necessary, with provisions for runoff control;
- Periodic cleaning of paved streets near the entrances to the site to minimize vehicle mud/dirt carryout;
- Installing fencing around the perimeter of the site to assist in containing wind blown dust; and
- Requiring trucks hauling excavate from the site to install secure covers over their loads.

### 6.13.8 WATER QUALITY AND BEST MANAGEMENT PRACTICES

During construction, best management practices (BMPs) will be used to limit the transportation of sediment off site. Groundwater wells will be established prior to the start of construction and will be monitored throughout the construction process to maintain water levels. Groundwater encountered during excavation will be recharged back into the soil. The Contractor will obtain a NPDES stormwater permit and implement BMPs to minimize pollutant runoff. The Contractor will also use the following water quality related measures:

- Complying with all federal, state and city codes, ordinances and regulations governing the on-site discharge of construction dewatering effluent;
- Using hay bales and silt fencing to prevent silt or soil from entering existing catch basins;
- Using temporary wheel wash areas within the site;
- Using temporary gravel entrance berms at the main exits from the site;
- Isolating and protecting stockpiled materials;
- Monitoring the proper use of tarpaulin covered trucks;
- Preventing/controlling truck spillage; and
- Cleaning the adjacent portions of city streets entering and exiting the project.

### 6.13.9 NOISE GENERATION AND MITIGATION

Intermittent increases in noise levels will occur in the short-term during construction. The peak noise impacts estimated for the project will only occur for brief periods during the excavation period of the project, when it is conservatively estimated that heavy-duty vehicles will be operating on the site, and when pile driving occurs after excavation.

Construction work will comply with the requirements of the City of Boston noise ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities. Mitigation measures are expected to include:

- Using appropriate mufflers on all equipment and providing ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously operating equipment, such as air compressors, and welding generators with outdoor exposure;
- Replacing specific construction operations and techniques by less noisy ones where feasible;
- Selecting the quietest of alternate equipment items;
- Scheduling equipment operations to keep average levels low, to synchronize noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels; and

- Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

The project will be constructed in a manner that complies with the Massachusetts DEP and City of Boston noise regulations.

## 6.14 SUSTAINABLE DESIGN

As the design plans develop, Trinity Border Street, LLC will evaluate the feasibility of incorporating sustainable design measures into both the residential and the manufacturing component of the project. These will include measures related to building energy management systems, lighting, recycling, conservation measures, local building materials, and clean construction vehicles.

### 6.14.1 SMART GROWTH/SUSTAINABLE DEVELOPMENT

The Boston East development incorporates a variety of sustainable development principles aimed promoting Smart Growth in the Commonwealth by drawing attention and resources to restoring community vitality to city centers. The smart growth and sustainable development principles that are embodied as part of the planning of the project include:

- Reusing and rehabilitating existing infrastructure;
- Concentrating development that is compact, integrates uses, and fosters a sense of place;
- Expands housing opportunities by locating housing adjacent to a variety of public transportation options;
- Providing transportation choices;
- Increasing job opportunities near transportation options; and
- Planning regionally through the development of a project with regional benefits.

The project will include Transportation Demand Management (TDM) measures designed to reduce the dependence on single occupancy vehicles. These measures will include:

- Encouraging use of the public transit system;
- Providing a bike storage space in the garage; and
- Working with a car-sharing service (such as ZipCar) to see whether such a service will work at this site.

### 6.14.2 LEED RATINGS SYSTEM

Trinity Border Street, LLC has reviewed the Leadership in Energy and Environmental Design (LEED) ratings system checklist[1] (see Appendix 5). The residential portion of the project will comply with it in a number of ways. As the design and engineering of the project progress, these measures will be investigated further.

The Project intends to meet the following LEED criteria on the residential building:

- Develop a sediment and erosion control plan in conformance with US Environmental Protection Agency guidelines;
- Increase localized density;
- Locate people close to public transportation;
- Size the parking capacity not to exceed the minimum local zoning requirements;
- Place a minimum of 50% of the parking spaces underground;
- Implement fundamental best practice commissioning procedures;
- Design the residential buildings to comply with ASHRAE/IESNA 90.1-1999 or the local energy code, whichever is more stringent;
- Exclude CFC-based refrigerants in the base HVAC systems;
- Optimize energy performance;
- Install continuous metering equipment for lighting systems and controls, chiller efficiency, and cooling loads;
- Provide an easily accessible area that serves the entire building for the separation, collection, and storage of recyclable materials;
- Develop and implement a construction period waste management plan;
- Use construction materials with recycled content;
- Use construction materials that are manufactured regionally;
- Meet the minimum requirements of voluntary consensus standards for ASHRAE 62-2001, Ventilation for Acceptable Indoor Air Quality;
- Prohibit smoking in the public areas of the buildings;
- Develop and implement an Indoor Air Quality Management Plan for the construction and pre-occupancy phases of the building;
- Use low emitting materials, including adhesives and sealants, paints, and carpet systems;
- Minimize cross-contamination of regularly occupied areas by chemical pollutants;
- Provide a minimum of one operable window and one lighting control zone per 200 square feet for all occupied areas within 15 feet of the perimeter wall;
- Achieve direct line of sight to vision glazing for building occupants in 90% of all regularly occupied areas; and
- Include at least one LEED Accredited Professional.

[1] U.S. Green Building Council, Leadership in Energy & Environmental Design Rating System, Version 2.1, May 2003.

### 6.14.3 HUD HEALTHY HOMES

The proponent is familiar with the US Department of Housing and Urban Development's (HUD) Healthy Homes Initiative (HHI), which is a nationwide effort to protect children and their families from housing-related health and safety hazards The proponent will incorporate HHI's principles by striving to provide this project with the best indoor air quality. The residential building will:

- Maintain good practices during construction with respect to ventilation, moisture control, dust control, and waste removal;
- Clean and flush out building and systems before occupancy;
- Air seal to minimize transfer of contaminants (including ETS) from one unit to another;
- Provide operable windows and effective ventilation to allow for adequate air change and removal of contaminants;
- Select smooth and cleanable surfaces to minimize moisture absorption and mold growth;
- Detail finishes to minimize harboring of pests and to allow for easy cleaning by occupants;
- Use Low or No VOC paints, carpets, adhesives, and other low-emitting materials;
- Implement an integrated pest management program; and
- Implement C02 Monitoring in spaces immediately adjacent to gas fired devices and in the garage.

### 6.14.4 ENERGY STAR

The proposed Project is more than three stories in height, and therefore, Energy Star qualifications are not applicable in this case. The proponent has reviewed Energy Star guidelines set by the EPA and intends to incorporate the following energy efficient measures in the residential portion of the project:

- Energy efficient building envelope;
- High performance windows;
- High efficiency heating and cooling systems and controls; and
- Energy Star rated residential appliances and light fixtures.

## 6.15 HISTORIC RESOURCES

In 1989, the Boston Landmarks Commission (BLC) conducted an extensive field survey of all industrial properties in East Boston. These inventories, based in part on information taken from the Inventory of Historic and Archaeological Assets of the Commonwealth, were

used to identify the historic resources within the vicinity of the project site. This site is identified on the Survey.

The site has historically been used for industrial purposes. The site was formerly used since at least 1888 by the East Boston Dry Dock Company. In 1888, the site was utilized as a boat building shop, locksmith, paint shop, wagon shop, tin shop, and bowling alley. In 1927 portions of the property were utilized by the Burton Furber Coal Co. and Federal Lumber Co. The site had several piers that extended over 250 feet into the Harbor. The only structures that remain on the site are the pilings from some of these piers and portions of the marine railways and cradles. The majority of the subject site was vacant by 1950.

Historic resources within approximately one kilometer of the study area are described in Table 6-1 and shown on Figure 6-3, Historic Resources. There are several historic resources located within 500 feet of the project site (Nos. 8, 15, 21, 22, 23, 24, 25, 27, 28, and 29).

The project is proposing residential and water-dependent uses. No adverse impacts to the historic structures in the surrounding area will result from the proposed project.

**Table 6-1: Inventory of Historic Resources within One Kilometer of the 102 – 148 Border Street**

| R# | Name | Location | Description of Resource | Impact of Project on Resource |
|---|---|---|---|---|
| 1 | John Briggs and Co. Paint Factory | 266 Border Street | Paint Factory | No Impact |
| 2 | Welding and Eng. Co. of Boston | 279 Border Street | Industrial building | No Impact |
| 3 | West End Street Railway Car House | 285 Border Street | Railway use | No Impact |
| 4 | Soldani Building | 326-328 Sumner Street | Well-preserved mixed-use block, with one of the few intact historic storefronts observed in East Boston. Constructed in 1929. | No Impact |
| 5 | Immigrants Home | 72-74 Marginal Street | The home was founded in 1881 at Jeffries Point for East Boston's arriving immigrants | No Impact |
| 6 | Engine 40 | 260 Sumner Street | Constructed between 1923 and 1924 for use as an engine house by Engine Co. 40, which served the area from 1891 to 1977. | No Impact |
| 7 | Gove Street National Register District | | | |
| | Donald McKay School | 122 Cottage Street | Colonial Revival style brick school built between 1905 and 1915. The school is located within the potential Gove Street National Register district and is recommended for inclusion. | No Impact |
| | Gove Street | 117-194 Cottage Street | Six blocks comprising the largest district of brick residential buildings in East Boston. Built between 1905 and 1915. Recommended for inclusion in Gove Street National Register district. | No Impact |
| | 115-146 Gove Street | 115-146 Gove Street | Brick residential buildings constructed between 1905 and 1915. Recommended for inclusion in Gove Street National Register district. | No Impact |
| | Our Lady of Mt. Carmel Church | 120 Gove Street | Recommended for inclusion in Gove Street National Register district. | No Impact |
| | 55-85 Lubec Street | 55-85 Lubec Street | A one-block street containing a variety of multi-family brick blocks constructed between 1905 and 1915. Recommended for inclusion in Gove Street National Register district. | No Impact |
| | Frankfort Street | 36-71 Frankfort Street | One and one half blocks of brick residential buildings constructed between 1905 and 1915. Recommended for inclusion in Gove Street National Register district. | No Impact |
| 8 | G.E. East Boston Lamp Works | 156-200 Porter Street | Three-story brick building constructed in 1913, with an expansion in 1917, used for the production of lamps. | No Impact |
| 9 | Eagle-Cone Shoe Company | 183 Orleans Street | Constructed between 1911 and 1912, this industrial building was among the first new structures constructed during East Boston's last major period of industrial expansion (1912-1918). | No Impact |
| 10 | Cox Confectionary Co. | 150 Orleans Street | Eight story brick industrial building. Represents the last phase of industrial expansion in East Boston. | No Impact |

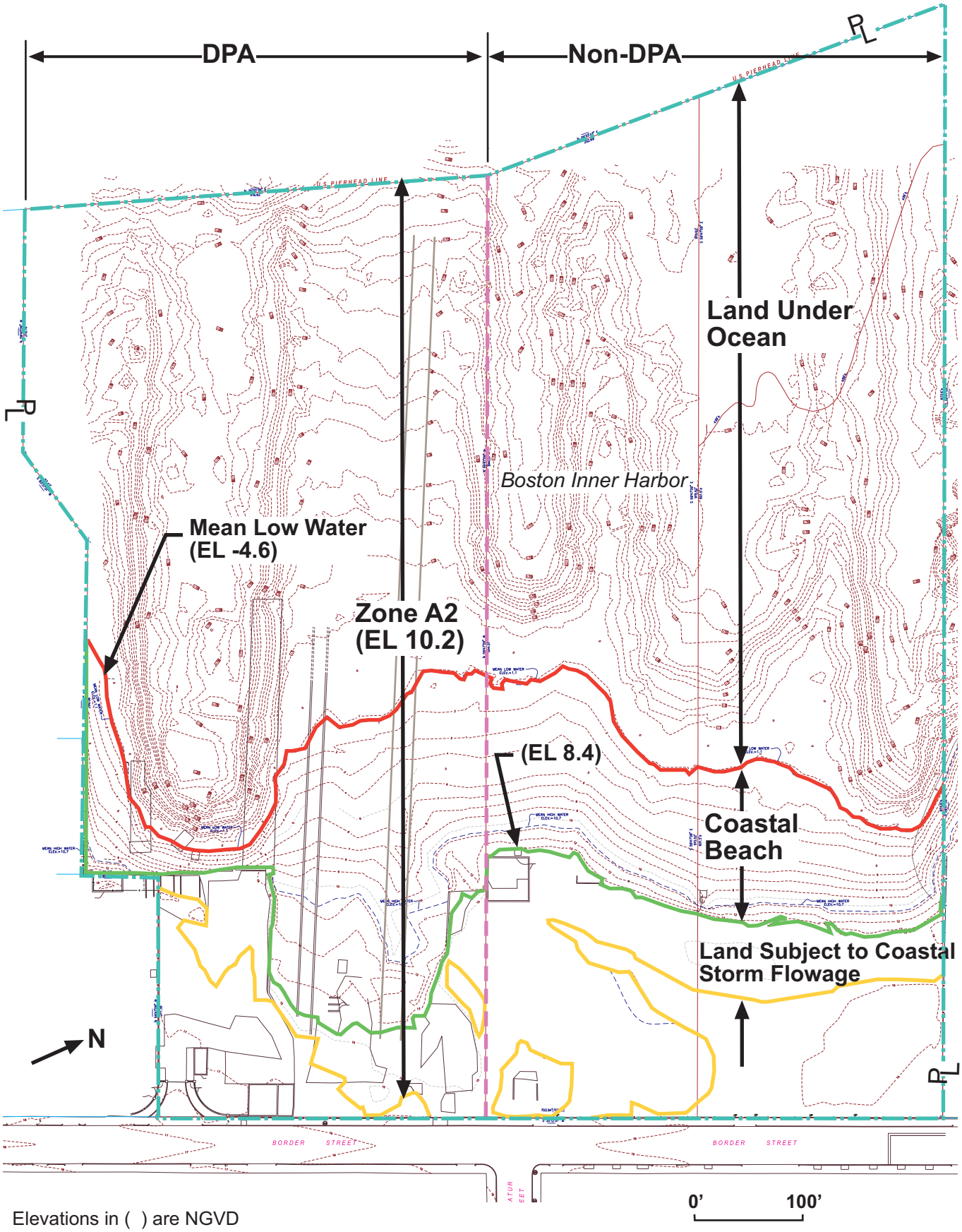
| | | | | |
|---|---|---|---|---|
| 11 | Maverick Square | | | |
| | Maverick Square | 1-75 Maverick Square, 191-201 Sumner St | The oldest commercial focus in East Boston and the site of major commercial and institutional construction of both local and regional significance, although little remains today. The Maverick Square open space survives from the original 1833 plan of East Boston. | No Impact |
| | Maverick Station | Maverick Square | An underground station was constructed in 1921-1924. In 1951 the Blue Line extension to Wonderland was constructed. | No Impact |
| | Woodbury Building | 191-201 Sumner Street | The oldest commercial building in East Boston and an important visual anchor for Maverick Square. Constructed between 1841 and 1844. | No Impact |
| | Winthrop Block | 32-44 Maverick Street | Granite-faced commercial block constructed around 1873. Was a prominent element of the streetwall at Maverick Square. | No Impact |
| 12 | Paris Street National Register District | | | |
| | 8-18 Henry Street, 9-28 Paris Street | 8-18 Henry Street, 9-28 Paris Street | Pocket of primarily residential construction located immediately west of Maverick Square. Built in the 1940's. Recommended for Paris Street National Register. | No Impact |
| 13 | Meridian Street Bank National Register and Architectural Conservation District | | | |
| | First Ward National Bank | 2-8 Meridian Street | Brick structure with a stone façade constructed in 1913. Recommended for inclusion in the Meridian Street Bank National Register and Architectural Conservation District. | No Impact |
| | East Boston Savings Bank | 10-16 Meridian Street | Constructed in 1913. The bank is the oldest financial institution in East Boston. | No Impact |
| | Columbia Trust Building | 18-20 Meridian Street | Fireproof building constructed for the Columbia Trust Co. in 1895. | No Impact |
| 14 | Engine 9/Ladder 2 | 60 Paris Street | The oldest engine house existing in East Boston. Constructed between 1890 and 1891. | No Impact |
| 15 | Church of the Most Holy Redeemer | 70 Maverick Street | The oldest church and the oldest stone building existing in East Boston. Recommended for National Register Individual listing. | No Impact |
| 16 | East Boston Police Station | 35-39 Meridian St | Major institutional building constructed around 1912 and located on the Meridian Street corridor between Maverick and Central Squares. | No Impact |
| 17 | George White Health Unit | 75 Paris Street | Three-story brick building constructed by the City in 1925 as a health unit. | No Impact |
| 18 | Lyman School | 10 Gove Street | This Italianate style school house was rebuilt after a fire in 1871 and was converted to elderly housing in 1984. | No Impact |
| 19 | Paris Street Gym & Public Bath | 112-130 Paris Street | The second municipal gymnasium to occupy this site. Constructed between 1909- 1910. | No Impact |
| 20 | Central Square National Register District | | | |
| | Central Square | 1-37&44 Bennington St, 3-35 Central Sq., 112-134&135-249 Meridian St, 2-19 Porter St, 2-8 Saratoga St | Oval park from the original 1833 plan for East Boston, with a combination of residential, institutional and commercial buildings lining the square. Recommended for Central Square National Register District. | No Impact |
| | 35 Central Square | 35 Central Square | Built between 1899 and 1902 as a combination dwelling and a store. Recommended for inclusion in the Central Square National Register District. | No Impact |

**Table 6-1: Inventory of Historic Resources (cont'd)**

| R# | Name | Location | Description of Resource | Impact of Project on Resource |
|---|---|---|---|---|
| 20 | Central Square National Register District | | | |
| | East Boston Relief Station | 14 Porter Street | Example of Craftsman-style building and one of the two important institutional buildings in Central Square. Recommended for inclusion in the Central Square National Register District. | No Impact |
| | First Presbyterian Church | 130 London Street | Victorian Gothic church constructed between 1870 and 1871. Recommended for inclusion in the Central Square National Register District. | No Impact |
| | Stevenson Block | 232-236 Meridian Street | Remnant of a large Panel Brick commercial building that once dominated the north side of Central Square. Construction in 1883 and recommended for inclusion in the Central Square National Register District. | No Impact |
| 21 | 170 Border Street | 170 Border Street | Site consists of two separate buildings, both of which were constructed in the mid 20th century. Both buildings are undistinguished. | No Impact |
| 22 | Chase's Carpentry Shop | 161-163 Border Street | One of the few wood-frame industrial buildings of its era extant in East Boston. The building was constructed around 1871 and was associated with the woodworking trade. | No Impact |
| 23 | Sturtevant Saw and Planing Mill | 143-153 Border Street | Three-story brick utilitarian building constructed at some time between 1851 and 1874. Originally used for a steam saw and planing mill. | No Impact |
| 24 | McLaren Shop and Sawmill | 139 Border Street | One of the several structures in the Border Street-Liverpool Street vicinity associated with the woodworking trades in the second half of the 19th century. Constructed around 1873. | No Impact |
| 25 | 129 Border Street | 129 Border Street | Brick and concrete block manufacturing structure. The building was constructed in the early to mid 20th century. However, it has been highly altered and is architecturally undistinguished. It is currently in use and is in fair condition. | No Impact |
| 26 | Boston East Site | | This site is the largest vacant waterfront parcel in the Inner Harbor Area and is associated with 19th and 20th century shipbuilding. | No Impact |
| 27 | American Architectural Iron Company | 80 Liverpool Street | This site is dominated by a series of connected steel-frame sheds constructed post 1950. The complex appears to be in use and is in fair to poor condition. | No Impact |
| 28 | Atlantic Works Boiler Shop | 40 New Street, 60-80 Border Street | Brick walled manufacturing building constructed in 1930. This building is typical of the long, narrow, open-floor workshop associated with East Boston ship building. Attached to the Wiggleworth/Atlantic Boiler Works office building at 60 Border Street. The Atlantic Boiler Works office building is notable as one of the largest timber-frame structures still standing on the East Boston waterfront. Recommended for National Register individual listing. | No Impact |
| 29 | Building No. 8, Boston Cold Storage Company | 10-16 New Street | A series of brick and reinforced concrete buildings erected in 1908 and a nine-story cold storage building constructed in 1912. | No Impact |
| 30 | Hodge Boiler Works Shop & Office | 111 Sumner Street | Two-story industrial building constructed around 1863. The office building was constructed around 1902. | No impact –the buildings were demolished in 2006. |

**Table 6-1: Inventory of Historic Resources (cont'd)**

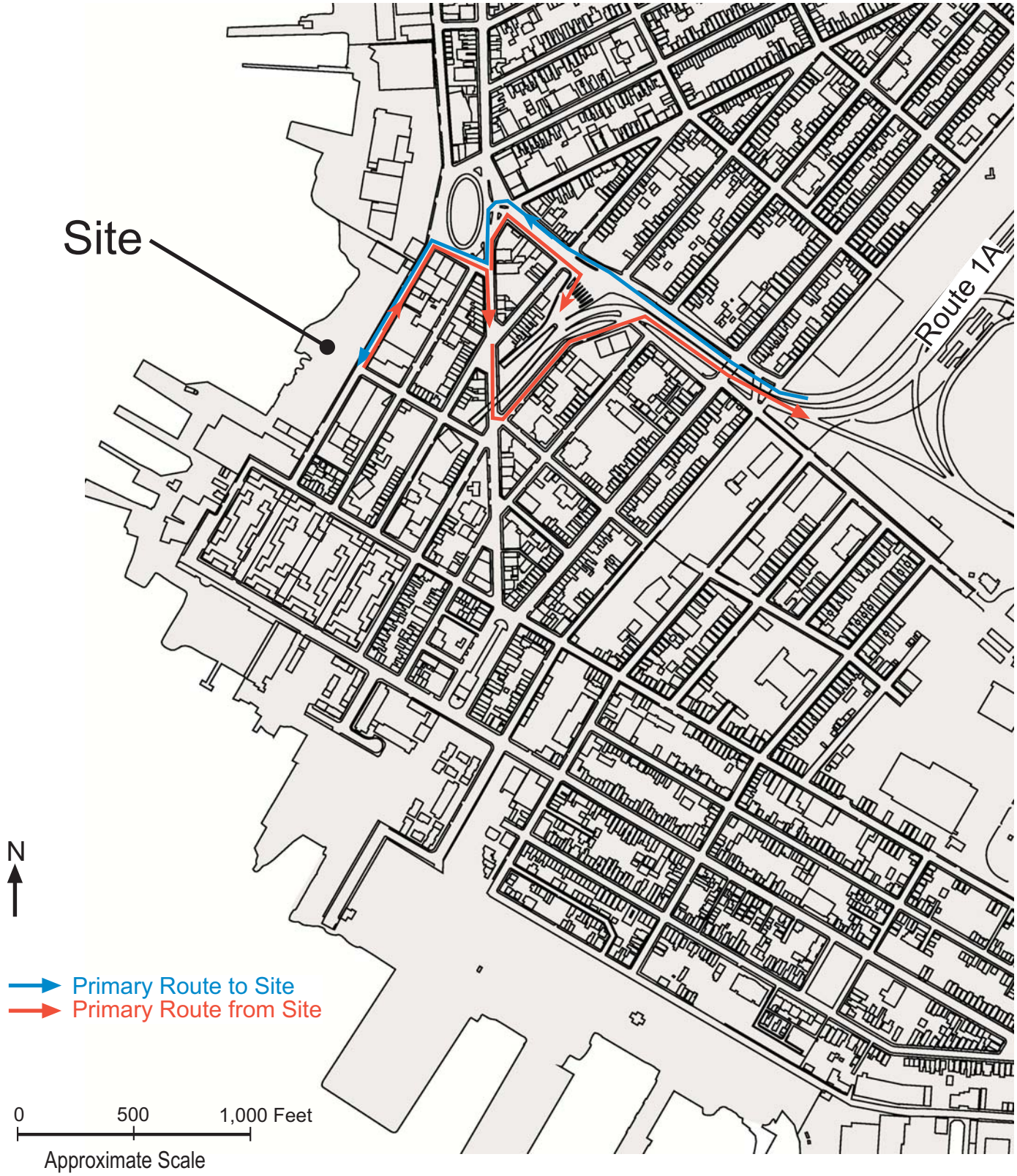
| R# | Name | Location | Description of Resource | Impact of Project on Resource |
|---|---|---|---|---|
| 31 | Westerbeke Marine Industries Supplies | 400 Border Street | Industrial building constructed c. 1935 in the Eagle Hill neighborhood. | No Impact |
| 32 | Boston Public Library | 276-282 Meridian Street | Classical Revival structure. The East Boston Branch of the Boston Public Library was constructed in 1913 | No Impact |
| 33 | George J. Bailey House | 299-303 Meridian Street | A classical revival house constructed in 1898. | No Impact |
| 34 | Logan International Airport | Off Route 1A | One of the earliest municipal airports in the country | No Impact |




Elevations in ( ) are NGVD

**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 6-1*
**Flood Zones and Wetlands**
*source: FEMA, FIRM*




**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 6-2*
**Construction Truck Routes**
*source: BRA*


**BOSTON EAST**
EAST BOSTON, MASSACHUSETTS

*Figure 6-3*
**Historic Resources**
*source: Massachusetts Historical Commission*

# Chapter 7

# Infrastructure

# *7.0 INFRASTRUCTURE*

The existing water, drainage, and utility infrastructure within Border Street will service the site. All appropriate permits and approvals will be acquired prior to construction. Utility connections will be designed to minimize impacts to the surrounding area. Based on the analysis there is adequate sewage capacity in the area. The results of the pending Boston Water and Sewer Commission (BWSC) flow test will determine if there is sufficient water supply.

## 7.1 WATER SYSTEM

Water consumption on the site is expected to be 37,224 gallons per day (gpd), based on the project's estimated sewage generation. A factor of 1.1 (conservative) is applied to the average daily wastewater flows to estimate average daily water use.

There are existing 12-inch and 20-inch low services in Border Street. Both water mains are owned and maintained by the BWSC. The size of the proposed service and location of the connection to the existing main in Border Street will be determined in consultation with the BWSC.

## 7.2 SANITARY SEWAGE

The project's sewage generation rates were estimated using the Massachusetts State Environmental Code (Title 5) 310 CMR 15.203. The proposed development will consist of a seven-story, 294-bedroom (98 one-bedroom units and 98 two-bedroom units) residential building. Other project elements include a 20,000 square foot building for water-dependent uses. A summary of the anticipated sewage flow is listed below in Table 7-1.

**Table 7-1: Estimated Sewage Discharges**

| Proposed Use | Use Description | Unit Flow (gpd) | Sewage Flow (gpd) |
|---|---|---|---|
| Residential Units | 294 Bedrooms | 110 gpd/Bedroom | 32,340 |
| Marine building | 20,000 sf | 75 gpd/1,000 sf | 1,500 |
| **Total** | | | **33,840** |

There is an existing BWSC combined sewer system within Border Street that varies in size from 32″ X 48″ to 20″ X 34″. This system connects directly in front of the site to a 15-inch Massachusetts Water Resource Authority (MWRA) sewer also located within Border Street.

Based on the peak sewage flow estimate there is sufficient capacity in the existing MWRA sewer main. The estimated sewage generation from the proposed development will trigger a certification statement with the Massachusetts Department of Environmental Protection.

## 7.3 STORMWATER

### 7.3.1 EXISTING DRAINAGE CONDITIONS

The current site soils consists of Udorthents as classified by the National Resource Conservation Service (NRCS) soil survey. This soil is described as an area previous excavated and filled with a sandy/gravelly material. All stormwater runoff from the scrub covered site sheet flows into Boston Inner Harbor. A 60-inch combined sewer overflow from Border Street discharges through a tide gate and directly into the Harbor.

### 7.3.2 PROPOSED DRAINAGE CONDITIONS

The project plans include constructing a new 60-inch stormwater outlet from the Border Street separated stormwater system to the Harbor. It will be constructed by the BWSC. All stormwater run-off from the proposed building, marina, walkways, etc, will be collected via a closed drainage system, treated for sediment removal utilizing BMPs, and discharged into the Harbor. No stormwater rate mitigation is required given that the proposed stormwater outlet will be into the tidal waters of the Harbor.

## 7.4 STORMWATER MANAGEMENT PLAN

The DEP Stormwater Management Policy requires projects that fall under the jurisdiction of the Massachusetts Wetlands Protection Act (WPA) to meet performance standards with regard to stormwater discharges to wetland resource areas. Due to its location in proximity to Boston Harbor, the project is subject to the WPA and stormwater BMPs have been designed in conformance with the DEP performance standards. BMPs and mitigation measures may include deep sump hooded catch basins, and mechanical separators. The following paragraphs present how the project conforms to the DEP Stormwater Management Standards:

**Standard #1:** No new untreated stormwater will discharge into, or cause erosion to, wetlands or waters.

**Compliance:** The proposed development shall collect stormwater via a closed drainage system, treat the stormwater utilizing BMPs, and discharge via outlet pipe into the Harbor.

**Standard #2:** Post-development peak discharge rates do not exceed pre-development rates on the site either at the point of discharge or down-gradient of the property boundary for the 2- and 10-year 24-hour design storms. The project's stormwater design will not increase flooding impacts offsite for the 100-year design storm.

**Compliance:** Receiving waters subject to tidal action need not meet this requirement.

**Standard #3:** The annual groundwater recharge for the post-development site must approximate the annual recharge from existing site conditions, based on soil type.

**Compliance:** This standard is not applicable given that the site's close proximity to the Harbor precludes providing onsite groundwater recharge

**Standard #4:** For new development, the proposed stormwater management system must achieve an 80% removal rate for the site's average annual load of TSS.

**Compliance:** The stormwater management system for the project will incorporate several BMPs so as to achieve at least 80% total suspended solid removal (TSS).

**Standard #5:** If the site contains an area with Higher Potential Pollutant Loads (as prescribed by the Policy), BMPs must be used to prevent the recharge of untreated stormwater.

**Compliance:** Activities at the site are limited to residences a marina and accessory uses. The project does not include marine service or dispensing of fuels. The project will not be considered a land use with higher pollutant load.

**Standard #6:** If the site contains areas of Sensitive Resources (as prescribed by the Policy), such as rare/endangered wildlife habitats, ACECs, etc., a larger volume of runoff from the "first flush" must be treated (1 inch of runoff from impervious area vs. the standard ½ inch).

**Compliance:** The project will not discharge to or affect any critical areas

**Standard #7:** Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable.

**Compliance:** Although the site is vacant with vegetated cover, the pier remains and soil type are evidence of its former use as a shipyard and should be considered a redevelopment project. The proposed development will comply with all applicable Stormwater Management Standards.

**Standard #8:** Erosion and sediment controls must be designed into the project to minimize adverse environmental effects.

**Compliance:** The erosion control measures incorporated into the project include the placement of haybale/siltation barriers and the installation of silt sacks in catch basins during the construction period. Erosion control measures will be placed around stockpiles of loose materials. The measures will be inspected and maintained until the disturbed areas are stabilized.

**Standard #9:** A long-term BMP operation and maintenance plan is required to ensure proper maintenance and functioning of the SWM system.

**Compliance:** An Operations and Maintenance Plan including long-term BMP operation requirements will be prepared to ensure proper maintenance and functioning of the system. The Operations and Maintenance Plan will ensure that the facility provides adequate preventative maintenance to minimize discharge of contaminants to Boston Harbor. Facility personnel will inspect the stormwater management system on a routine basis not less than once per month for the first six months of operation and annually thereafter. A typical maintenance schedule is provided below:

1. Catch Basins and Manholes shall be inspected for accumulation of silt, sediment or debris on a monthly basis. Cleaning will be performed whenever the sediment level rises to within one foot of invert elevation of the outlet pipe. Removed sediment will be disposed off site by a qualified waste disposal contractor in accordance with state and federal regulations.

2. Mechanical Separators shall be inspected and maintained in accordance with the manufacturer's recommendations. During the first year of operation, the units shall be inspected monthly to determine an appropriate maintenance schedule based on actual site conditions. Mechanical Separators shall be inspected annually at the end of the winter season and cleaned as necessary. Accumulated sediment will be removed by means of a vacuum truck and disposed off site by a qualified waste disposal contractor in accordance with state and federal regulations.

3. Street sweeping of the project site shall be performed on an as-needed basis. At a minimum, street sweeping will be performed once per year during the spring to remove salt and sand from snow removal and de-icing.

## 7.5 ENERGY AND TELECOMMUNICATIONS

The site is serviceable with electric, telephone, cable, and gas services. All proposed utility connections will be coordinated with each respective utility provider.

# Appendix 1

# ENF FORM

***Commonwealth of Massachusetts***
***Executive Office of Environmental Affairs ■ MEPA Office***

# ENF Environmental Notification Form

| *For Office Use Only*<br>*Executive Office of Environmental Affairs* |
|---|
| EOEA No.:<br>MEPA Analyst:<br>Phone: 617-626- |

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

| | | |
|---|---|---|
| Project Name: Boston East | | |
| Street: 102 – 148 Border Street | | |
| Municipality: East Boston | Watershed: | |
| Universal Tranverse Mercator Coordinates:<br>Easting: 331857<br>Northing: 4693012 | Latitude: 42° 22’ 23”<br>Longitude: 71° 02’ 32” | |
| Estimated commencement date: 4/2009 | Estimated completion date: 4/2011 | |
| Approximate cost: $90,000,000 | Status of project design: 10 %complete | |
| Proponent: Trinity Border Street, LLC | | |
| Street: 40 Court Street, 8th Floor | | |
| Municipality: Boston | State: MA | Zip Code: 02108 |
| Name of Contact Person From Whom Copies of this ENF May Be Obtained:<br>Richard Jabba | | |
| Firm/Agency: Fort Point Associates, Inc. | Street: 33 Union Street, 3rd Floor | |
| Municipality: Boston | State: MA | Zip Code: 02108 |
| Phone: 617.357.7044 | Fax: 617.357.9135 | E-mail: rjabba@fpa-inc.com |

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

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

Has any project on this site been filed with MEPA before?
☐Yes (EOEA No._____) ☒No

Is this an Expanded ENF (see 301 CMR 11.05(7)) 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 |

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 City of Boston as current owner of the site has received a commitment of approximately $2,000,000 in funds from MassDevelopment to support site remediation.*

Are you requesting coordinated review with any other federal, state, regional, or local agency?
☒Yes(Specify: Boston Redevelopment Agency) ☐No

List Local or Federal Permits and Approvals: NPDES NOI; FAA Notice of Construction; Army Corps of Engineers Section 10/404; Boston Transportation Department (Transportation Access Plan); Boston Water and Sewer Commission (Water and Sewer Connection Permits and Site Plan approval); Bosto

Conservation Commission; Boston Public Works Department (Street Opening/Occupancy permits); Boston ISD (Building Permit), Boston Redevelopment Authority (Adequacy Determination), and Boston Public Improvement Commission.

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

| | | |
|---|---|---|
| ☐ Land | ☐ Rare Species | ☒ Wetlands, Waterways, & Tidelands |
| ☐ Water | ☐ Wastewater | ☐ Transportation |
| ☐ Energy | ☐ Air | ☐ Solid & Hazardous Waste |
| ☐ ACEC | ☐ Regulations | ☐ Historical & Archaeological Resources |

| Summary of Project Size & Environmental Impacts | Existing | Change | Total | State Permits & Approvals |
|---|---|---|---|---|
| **LAND** | | | | ☒ Order of Conditions<br>☐ Superseding Order of Conditions<br>☒ Chapter 91 License<br>☒ 401 Water Quality Certification<br>☐ MHD or MDC Access Permit<br>☐ Water Management Act Permit<br>☐ New Source Approval<br>☐ DEP or MWRA Sewer Connection/ Extension Permit<br>☒ Other Permits (*including Legislative Approvals*) – Specify:<br><br>DEP Notification of Construction and Demolition<br>CZM – Consistency Determination,<br>DEP Dewatering Discharge. |
| Total site acreage | 3.4 | | | |
| New acres of land altered | | 0 | | |
| Acres of impervious area | 1.0 | 0.4 | 1.4 | |
| Square feet of new bordering vegetated wetlands alteration | | 0 | | |
| Square feet of new other wetland alteration | | 200 | | |
| Acres of new non-water dependent use of tidelands or waterways | | 1.5 | | |
| **STRUCTURES** | | | | |
| Gross square footage | 0 | 241,859 | 241,859 | |
| Number of housing units | 0 | 196 | 196 | |
| Maximum height (in feet) | 0 | 85 | 85 | |
| **TRANSPORTATION** | | | | |
| Vehicle trips per day | 0 | 1,102 | 1,102 | |
| Parking spaces | 0 | 165 | 165 | |
| **WATER/WASTEWATER** | | | | |
| Gallons/day (GPD) of water use | 0 | 37,224 | 37,224 | |
| GPD water withdrawal | 0 | 0 | 0 | |
| GPD wastewater generation/ treatment | 0 | 33,840 | 33,840 | |
| Length of water/sewer mains (in miles) | 0 | Service connection only | Service connection only | |

**CONSERVATION LAND:** Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

☐Yes (Specify_____ ) ☒No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

☐Yes (Specify_____ ) ☒No

**RARE SPECIES:** Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

☐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__ ) ☒No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?

☐Yes (Specify__ _____ ) ☐No

**AREAS OF CRITICAL ENVIRONMENTAL CONCERN:** Is the project in or adjacent to an Area of Critical Environmental Concern?

☐Yes (Specify_____) ☒No

**PROJECT DESCRIPTION:** The project description should include **(a)** a description of the project site, **(b)** a description of both on-site and off-site alternatives and the impacts associated with each alternative, and **(c)** potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary*.)

(a) Project Site - The Boston East site is a 14.2-acre, vacant parcel that is located at 102-148 Border Street in East Boston along Boston Inner Harbor. The site is bound by Border Street to the east, the Atlantic Works, Wigglesworth Machinery, and the Boston Towing and Transportation properties to the south, Boston Inner Harbor to the west, and the property at 170 Border Street to the north.

The project is comprised of two proposed development areas: one on the non-Designated Port Area (DPA) with a residential building, a facility of public accommodation, and open space areas on the north side of the site, and a second area located within a DPA on the south side of the site that includes a two-story marine industrial facility, a marine travel lift, and a maritime interpretive area. The building will have 196, one and two-bedroom residential units, and will range from five to seven stories. A 1,840 sf facility of public accommodation will be used as a community gallery. The maritime interpretive area will be at the center of the site and within the DPA. This public space will be along the view corridor extending from Decatur Street and provide access to the waterfront. The marine industrial building will support a marine-related business or activity. Two finger piers will be constructed to support a marine travel lift.

The project will provide 165 parking spaces: 139 spaces below the residential building will be designated for the residents, providing 0.7 spaces per unit. Twenty-six spaces will be located in the parking area on the south side of the site and designated for visitors and employees of the maritime building. Both parking areas will be accessed through separate curb cuts along Border Street.

(b) Alternatives – Other than additional design refinements, there is one project alternative: a No Build Alternative. Under the No Build Alternative, the site would remain vacant and in a deteriorated condition. The site would remain inaccessible to the public.

(c) On and Off-site Mitigation Measures - The project provides substantial public access both to and along Boston Harbor. The building heights and massing were designed to provide views of the water and an open space view corridor along the waterfront as well as a maritime park adjacent to the harborfront. The project has been carefully designed to be consistent with the East Boston Master Plan and East Boston Municipal Harbor Plan.

## 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 | 0.0 | 1.2 | 1.2 |
| Roadways, parking, and other paved areas | 1.0 | -0.8 | 0.2 |
| Other altered areas (describe) | 2.4 | -0.4 | 2.0* |
| Undeveloped areas | 0 | 0 | 0 |

*landscaping, walkways, terrace

B. Has any part of the project site been in active agricultural use in the last three years?
___ Yes _X__ No; if yes, how many acres of land in agricultural use (with agricultural soils) will be converted to nonagricultural use?

C. 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 DEM-approved forest management plan:

D. 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:

E. 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:

F. 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:

G. 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:

H. Describe the project's stormwater impacts and, if applicable, measures that the project will take to comply with the standards found in DEP's Stormwater Management Policy:

*The project is a redevelopment project and will comply with the relevant provisions of DEP's Stormwater Management Policy. The project will not impose any adverse impacts associated with stormwater and will include stormwater pretreatment prior to discharge.*

I. Is the project site currently being regulated under M.G.L.c.21E or the Massachusetts Contingency Plan? Yes ___ No _X__ ; if yes, what is the Release Tracking Number (RTN)?

J. If the project is site is within the Chicopee or Nashua watershed, is it within the Quabbin, Ware, or Wachusett subwatershed? ___ Yes __X_ No; if yes, is the project site subject to regulation under the Watershed Protection Act? ___ Yes ___ No

K. Describe the project's other impacts on land:

*The project will redevelop existing, previously developed, waterfront land for housing, water-dependent uses, and public access.*

**III. Consistency**

A. Identify the current municipal comprehensive land use plan and the open space plan and describe the consistency of the project and its impacts with that plan(s):

*The proposed use and building design is consistent with uses permitted under the East Boston Master Plan and the approved East Boston Municipal Harbor Plan. Refer to Chapter 3.0 of the ENF/PNF.*

B. Identify the current Regional Policy Plan of the applicable Regional Planning Agency and describe the consistency of the project and its impacts with that plan:

*The proposed project constitutes a waterfront redevelopment project and is therefore presumed to be consistent with the Regional Policy Plan of the Metropolitan Area Planning Council. The proposed residential development is consistent with housing goals presented in the agency's Metroplan 2000.*

C. Will the project require any approvals under the local zoning by-law or ordinance (i.e. text or map amendment, special permit, or variance)? Yes _X_ No ___; if yes, describe:

*The project will require zoning relief in the form of a zoning modification or a planned development area.*

D. Will the project require local site plan or project impact review? __X_ Yes ___ No; if yes, describe:

*The project will require design review by the Boston Redevelopment Authority and the Boston Civic Design Commission.*

## 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. If you answered "No" to both questions A and B, 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.

## 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 includes new nonwater-dependent use of filled tidelands and new water-dependent use of flowed tidelands. The new nonwater-dependent use of tidelands exceeds one acre and, therefore the project is categorically required to prepare an EIR.*

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:

*A Waterways (Chapter 91) license is required for all nonwater-dependent and water-dependent activities pursuant to 310 CMR 9.00 and an Order of Conditions from the Boston Conservation Commission will be required for alteration of wetland resource areas and associated 100-foot buffer zone in accordance with 301 CMR 10.00.*

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. Describe any wetland resource areas currently existing on the project site and indicate them on the site plan:

*The project site is vacant. Portions of the site are considered filled tidelands. The southern half of the site is in a Designated Port Area. Land Under Ocean contains dilapidated pilings and two marine railways. Portions of it have been dredged. The Coastal Beach contains a mix of rocks, broken cement and bricks, dilapidated timber pilings, and remnants of two marine railways. The Land Subject to Coastal Storm Flowage resource area is relatively flat and contains a mix of grassland, a few trees and shrubs, cement and bituminous areas, and foundations of former buildings.*

B. 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 (in square feet) or Length (in linear feet) |
|---|---|
| Land Under the Ocean | _____100 sf _____ |
| Designated Port Areas | _____100 sf _____ |
| Coastal Beaches | _____19,670 sf _____ |
| Coastal Dunes | _____ |
| Barrier Beaches | _____ |
| Coastal Banks | _____ |
| Rocky Intertidal Shores | _____ |
| Salt Marshes | _____ |
| Land Under Salt Ponds | _____ |
| Land Containing Shellfish | _____ |
| Fish Runs | _____ _____ |
| Land Subject to Coastal Storm Flowage | _____69,650 sf _____ |

| Inland Wetlands | |
|---|---|
| Bank | _____ |
| Bordering Vegetated Wetlands | _____ |
| Land under Water | _____ |
| Isolated Land Subject to Flooding | _____ |
| Bordering Land Subject to Flooding | _____ |
| Riverfront Area | _____ |

C. Is any part of the project

1. a limited project? ___ Yes _X__ No
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? _X__ Yes ___ 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 Outstanding Resource Waters? ___ Yes _X__ No
6. subject to a wetlands restriction order? ___ Yes _X__ No; if yes, identify the area (in

square feet):

D. 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 or a local Order of Conditions issued? ___ Yes _X__ No; if yes, list the date and DEP file number:_____. Was the Order of Conditions appealed? ___ Yes ___ No. Will the project require a variance from the Wetlands regulations? ___ Yes _X__ No.

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 or local law? ___ Yes _X__ No; if yes, what is the area (in s.f.)?

F. Describe the project's other impacts on wetlands (including new shading of wetland areas or removal of tree canopy from forested wetlands):

*No wetland impacts other than those identified in paragraph B above are expected.*

**III. Waterways and Tidelands Impacts and Permits**

A. Is any part of the project site waterways or tidelands (including filled former tidelands) that are subject to the Waterways Act, M.G.L.c.91? _X__ Yes ___ No; if yes, is there a current Chapter 91 license or permit affecting the project site? _X__ Yes ___ No; if yes, list the date and number:

*(See Chapter 4.0 of the ENF/PNF)*

B. Does the project require a new or modified license under M.G.L.c.91? _X__ Yes___ 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 _0.0__ Change __2.0_ Total _2.0_

C. Is any part of the project

1. a roadway, bridge, or utility line to or on a barrier beach? ___ Yes ___X___ No; if yes, describe:
2. dredging or disposal of dredged material? ___ Yes __X_ No; if yes, volume of dredged material _____
3. a solid fill, pile-supported, or bottom-anchored structure in flowed tidelands or other waterways? _X__ Yes ___ No; if yes, what is the base area? __ To be determined_____
4. within a Designated Port Area? _X__ Yes ___ No

D. Describe the project's other impacts on waterways and tidelands:

*The project site includes activities on filled and flowed tidelands along Boston Inner Harbor in East Boston. The filled tidelands will be redeveloped with a 196-unit, residential building and a facility of public accommodation, and another building for a water-dependent use. A maritime interpretive area is proposed to improve public waterfront access. The project will create views through the site toward Boston Harbor and open up an area on the waterfront that has been closed to the public. The project will further improve the emerging public realm along this portion of the East Boston waterfront and includes public access along the entire water's edge, which will connect to the proposed Harborwalk on the north side and to the inland portion of the Harborwalk on the south side of the site. Within the flowed tidelands will be two finger piers to support a marine travel lift.*

**IV. Consistency**:

A. Is the project located within the Coastal Zone? _X__ Yes ___ No; if yes, describe the project's consistency with policies of the Office of Coastal Zone Management:

*The project complies with and supports the policies of the Massachusetts Office of Coastal Zone Management. In particular, the provision of public access, activation of the shoreline for maritime uses, and creation of a maritime park and a water-dependent use, achieve the goals of the program*

*(See Section 4.6 in the ENF/PNF).*

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 project site was included in the East Boston Municipal Harbor Plan. It was anticipated in this Plan that that the property would be developed for residential uses, which would be consistent with the provisions of the Plan. See Chapter 3 of the ENF/PNF.*

## 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.

## 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.

## TRANSPORTATION -- TRAFFIC GENERATION SECTION

**I. Thresholds / Permits**

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:

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.

## ROADWAYS AND OTHER TRANSPORTATION FACILITIES SECTION

**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.

## 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.

## 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.

## 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.

## HISTORICAL AND ARCHAEOLOGICAL RESOURCES SECTION

**I. Thresholds / Impacts**

A. 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? ___ Yes _ X __ No; 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:

B. 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:

C. If you answered "No" to all parts of both questions A and B, 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.

## ATTACHMENTS:

1. Plan, at an appropriate scale, of existing conditions of the project site and its immediate context, showing all known structures, roadways and parking lots, rail rights-of-way, wetlands and water bodies, wooded areas, farmland, steep slopes, public open spaces, and major utilities.
   *(Note: See Figure 2-2, in Chapter 2 of the ENF/PNF.)*

2. Plan 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).
   *(Note: See Figure 3-1, Site Plan in Chapter 3 of the ENF/PNF.)*

**3.** **Original** U.S.G.S. map or good quality **color** copy (8-½ x 11 inches or larger) indicating the project location and boundaries.
*(Note: See Figure 1-1, Project Locus in Chapter 1 of the ENF/PNF.)*

4 List of all agencies and persons to whom the proponent circulated the ENF, in accordance with 301 CMR 11.16(2).
*(Note: See Appendix 3, Distribution List in the ENF/PNF.)*

5. Other: *None*

## 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) October 19, 2007

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

| | |
|---|---|
| Date Signature of Responsible Officer or Proponent | Date Signature of person preparing ENF (if different from above) |
| James G. Keefe<br>Name (print or type) | Richard Jabba<br>Name (print or type) |
| Trinity Border Street, LLC<br>Firm/Agency | Fort Point Associates, Inc.<br>Firm/Agency |
| 40 Court Street, 8th Floor<br>Street | 33 Union Street, 3rdh Floor<br>Street |
| Boston, MA 02108<br>Municipality/State/Zip | Boston, MA 02108<br>Municipality/State/Zip |
| (617) 720-8400<br>Phone | 617) 357-7044<br>Phone |

# Appendix 2

# Qualitative Wind Analysis

# A QUALITATIVE ASSESSMENT OF PEDESTRIAN LEVEL WINDS FOR THE PROPOSED SEVEN-STORY BUILDING AND A MARINA AT 108-148 BORDER STREET IN EAST BOSTON, MASSACHUSETTS

**BY FRANK H. DURGIN, P.E.**

## 1.0 SUMMARY

A qualitative assessment has been made to determine the effect on pedestrian level winds (PLWs) of a proposed one-story Marina building and a seven-story residence building along the harbor side of Border Street in East Boston, Massachusetts. Results are obtained for both existing and build conditions for NW (winter), SW (summer), easterly storm, and annual winds.

None of the forty-six locations considered for either existing or build conditions is estimated to have PLWs that exceed the Boston Redevelopment Authority (BRA) guideline wind speed. No location is predicted to have dangerous winds as often as once a year. In fact, no location is predicted to have PLWs higher than Category 3 (comfortable for walking) for either existing or build conditions for any of the wind conditions considered.

Overall, the addition of the proposed buildings tends to reduce PLWs in the vicinity of the two buildings due to their sheltering affects, although winds are increased somewhat near the corners of the 80-foot building.

Detailed results are presented in Figures 12-19 and Table 1 and are summarized in Table 2. For this assessment, it has been assumed that there is no landscaping for existing conditions and none associated with the new building.

## 2.0 INTRODUCTION

This is an assessment of the effect of a proposed one-story Marina building and a seven-story residence building along the harbor side of Border Street in East Boston, Massachusetts, on PLWs in its vicinity. The assessment is based on:

1 A set of elevations and a site plan of the proposed buildings dated June 4 and 15 received June 20, 2007, from Fort Point Associates, Inc. (FPA);

2 A second updated site plan (no date) received from FPA July 24, 2007;

3 Heights of several tall buildings obtained from other studies done by the author for sites S of this site;

4 Twenty photographs taken during a site visit;

5 An evaluation of the urban context of the proposed project site;

6 A review of the Boston wind climate; and

7 The author's 36 years of experience dealing with PLWs.

The interaction of the wind with buildings and structures is very complicated and, at times, difficult to predict, especially for an urban area with a mixture of low-rise, and mid-rise buildings. Thus this evaluation provides a qualitative assessment of PLWs.

# 3.0 LOCATION AND DESCRIPTION OF THE PROJECT AND SURROUNDING AREA

## 3.1 DESCRIPTION OF EXISTING CONDITIONS (Figure 1)

The site is at 102-148 along the west side of Border Street in East Boston. Currently the site is empty except for shrubs and a few trees. .

The locations at which PLWs will be estimated are at the rectangles with numbers shown in Figure 1. These locations were chosen to be in areas of expected pedestrian activity.

## 3.2 DESCRIPTION OF BUILD CONDITIONS (Figure 2)

For build conditions, there will be an 80-foot, seven-story building near the NE end of the site, and a 24-foot one-story marina building near the SW end of the site (Figure 2). Again, the locations at which the PLW Categories will be estimated are at the numbered rectangles. Location 16 is in a pedestrian walkway under the seven-story building. It provides access to a terrace and the Harbor Walk from Border Street.

## 3.3 THE SURROUNDING AREA (Figures 1 and 2)

The area near this site has mostly one- to three-story buildings, although there are a few four-story buildings. The exceptions are the 65 foot Sumner Tunnel vent tower at the corner of London and Decatur Streets; the 65-foot building at the corner of Maverick and New Streets, and the 120-foot building on New Street. There is the permitted 95-foot Hodge Boiler Building on Sumner Street next to Lo Presti Park, but that is too far away to have a significant effect on PLWs at the site.

# 4.0 THE WIND CLIMATE

## 4.1 THE VARIATION OF WIND SPEED WITH HEIGHT

In general, the natural wind is unsteady (*i.e.,* it is gusty) and its average speed increases with height above the ground [1]. Figure 3 depicts how the average wind speed varies with height for different types of terrain. While generally it does not happen, when one puts up any building, the possibility exists that the building will bring the higher speed winds at the top of the building down to ground level.

Figure 4 shows schematically how an isolated building interacts with the wind. Because the wind speed increases with height, as the wind is forced to a stop at the upwind façade, the pressure recovered on that façade is higher near the top than at the bottom of the façade. As a result, the wind flows down the windward façade and forms the vortex upwind of the building shown in the figure. This vortex is stretched and accelerated as it goes around the two upwind lower corners, causing the accelerated flow in areas (A) shown on the left hand side of Figure 4. Similar accelerated areas also occur for winds blowing at the corners of the building (B in Figure 4). The proposed seven-story building is not strictly rectangular, but the wind near the exposed corners of the three wings will be accelerated in ways similar to that shown in figure 4.

Monolithic buildings (*i.e.,* those that do not change shape with height), if they are significantly taller than most of the surrounding buildings, almost invariably will be windy at their bases.

## 4.2 STATISTICAL DESCRIPTION OF THE BOSTON WIND CLIMATE

The project site is located about one mile W of Logan Airfield. Thus, the wind data from Logan Airfield usually used to define the winds for the Boston area is applicable. Figure 5 depicts a wind rose for Boston. The wind speeds are estimated at pedestrian level at the airport. The length of each line radiating from the center of the figure to the outermost crossing line is proportional to the total time the wind comes from that direction. The other lines crossing the radial lines indicate the frequency of winds less than 7, 10, and 15 mph. As noted in the figure, the wind rose is based on surface wind data from Logan Airfield taken from 1945 to 1965. Data from 1965 to 2005 is also available, but it is not believed to be as representative of the true winds in Boston. Many 25- to 40-story buildings have been built in the financial district of Boston since 1965. The financial district is just one mile SSW of Logan Airfield.

Figure 5 shows that the winds in Boston come primarily from the NW, W, and SW. Figures 6 through 9 show pedestrian level wind roses for Boston for winter (Dec., Jan., and Feb.), spring (Mar., Apr., and May), summer (Jun., Jul., and Aug.), and fall (Sept., Oct., and Nov.). These figures show that NW winds tend to occur during the colder months and SW winds during the warmer months. Spring and fall are transitional, but winds are stronger in the spring than in the fall. Strong easterly winds usually occur during storms when there is precipitation.

The average wind speed at Logan Airfield at 58 feet (the average height at which the data was taken) is 12.9 mph. At pedestrian height (*i.e.,* at chest height, 4.5 feet) it is about 8.6 mph. The average wind speeds at 58 and 4.5 feet at Logan Airfield for each month are shown in Figure 10. Seasonally, the average wind speed at pedestrian level is 9.4 mph in the winter, 9.2 mph in the spring, 7.4 mph in the summer, and 8.2 mph in the fall.

## 5.0 CRITERIA

Since the early 1980s, the BRA has used a guideline criterion for acceptable winds of not exceeding a 31 mph effective gust more often than once in one hundred hours. The effective gust is defined as the average wind speed plus 1.5 times the root mean square variation about the average. The effective gust can be shown to be about the fastest one-minute gust in an hour. When many locations are considered, the effective gust averages about 1.4 times the average hourly wind speed [3]. However, that ratio can vary widely from 1.4 for individual locations.

In 1978, Melbourne [2] developed probabilistic criteria for average and peak PLWs, which accounted for different types of pedestrian activity as well as the safety aspects of such winds. Durgin [3] suggested the use of an Equivalent Average which combines the effects of average, gusting, and peak winds and later [4 and 5] reinterpreted Melbourne's criteria to apply to Equivalent Average winds (Figure 11). The Equivalent Average used in this figure is similar to an hourly average, but combines the effects of steady and gusting winds. Five categories of PLWs are defined:

1) Comfortable for Long Periods of Standing or Sitting;[1]
2) Comfortable for Short Periods of Standing and Sitting;
3) Comfortable for Walking;
4) Uncomfortable for Walking;
5) Dangerous and Unacceptable.

It is now generally agreed that while unacceptable can be defined at a higher probability, (in this case 1% of the time), dangerous winds should be defined as a once a year event, that is, at the 0.01% level of probability. That criteria was investigated in this study and no location was estimated to have dangerous winds.

These criteria are not absolute (any location can have dangerous winds in a major storm or hurricane). Rather, they imply that the location would have wind speeds such that the activity suggested could be undertaken comfortably most of the time, and would be perceived[2] as such, by most people who frequent the location. For example, the PLWs at Logan Airfield are in Category 4 (uncomfortable for walking) but near the dividing line between Category 4 and Category 3 (comfortable for walking) (see Figure 11). But they are well under the BRA 31 mph effective gust wind speed guideline (converted to an equivalent average wind), which is high in Category 4. Therefore, most people would probably perceive conditions in the open at Logan Airfield as marginally comfortable for walking.

## 6.0 PEDESTRIAN LEVEL WINDS AT THE SITE

[1] The numbering system for the Categories was reversed in December, 1999. Before December, 1999, the slowest winds were in Category 5 and the fastest in Category 1. Since the December, 1999, the slowest are in Category 1 and the fastest in Category 5.

[2] On a somewhat windy day, a person familiar with the location would choose not to go there for the specified activity.

## 6.1 INTRODUCTION

The objective of this study was to examine the effect of a proposed one-story Marina building and a seven-story residence building along the harbor side of Border Street on PLWs about the site and at nearby buildings.

In the following sections, the effects of NW winter winds, SW summer winds, and easterly storm winds will be discussed for existing and build conditions. The results from NW, SW, and storm directions will be summarized by an estimated prediction of the annual PLW category at each location considered. When a PLW Category does not change, it does not mean the PLWs did not increase or decrease, but only that they did not change sufficiently for the PLW Category to change. Typically a Category covers 4 or 5 mph at the 1% probability level. Thus, when a PLW Category does change, it may be caused by just a small (1 mph or less) change in predicted PLW speed.

The estimated categories for all locations, wind directions, and annual winds for both existing and build conditions are shown in Figures 12 to 19. The results for all locations, wind directions, and annual winds are tabulated in Table 1 and summarized in Table 2. Table 2 indicates both the number of locations that will not change category and those that will change up or down one or two categories.

For the most part, the weather in New England is dominated by either large coastal storms (fall, winter, and spring) or the Bermuda High (summer). Typically, when a coastal storm occurs, it rains or snows for 4 to 12 hours, then it clears, and, as the storm moves to the NE, the winds blow from the NW for three or four days until the next weather system arrives. These storms and the NW winds following them occur mostly in the fall, winter, and spring. NW winds are particularly uncomfortable in the winter, when typically they occur on cold days. The Bermuda High is generally responsible for the SW winds that occur in the summer.

### 6.2.1 Northwest (Winter) Winds (Figures 12 & 13)

NW winds blow directly off the Inner Harbor at the Harbor Walk along the shoreline of the site Figure 13). The results for NW winds include the effects of all winds blowing from W to N. The estimated categories for all locations for existing and build conditions for NW winds are shown in Figures 12 and 13 (also see Tables 1 & 2).

For NW winds, the PLW Category at thirty-two of the forty-six locations considered does not change. The PLW Category did not increase at any location. The PLW Category decreased by one Category at 10 locations (12, 15, 17, 20, 23-25, 33, 36, and 40) due to these locations being sheltered by one or the other of the proposed buildings. At locations 21, 28, 41 and 43 the PLW

Category decreased by two because for N and W winds these locations are completely sheltered by the new buildings.

### 6.2.2 Southwest (Summer) Winds (Figures 14 & 15)

The prevailing winds in the summer are from the SW. SW winds blow nearly parallel to Border Street from Maverick to Decatur Street. The results for SW winds include effects of all winds blowing from S to W. The estimated categories for all locations for existing and build conditions are shown in Figures 14 and 15 (also see Tables 1 & 2).

For SW winds, the PLW Category does not change at twenty-nine of the forty-six locations considered. The PLW Category does not increase at any location considered. It decreases by one at fourteen locations (7, 9-13, 15, 20, 23, 31, 33, 40, 41, and 43), and by two at four locations (17, 21, 34, and 38). In every case the decrease is due to sheltering by one of the two proposed buildings.

### 6.2.3 Easterly Storm Winds (Figures 16 & 17)

Easterly winds occur about one third of the time. Light easterly winds occur as a storm starts or in the summer as a sea breeze. During the first four to twelve hours of a typical coastal storm, it rains or snows depending on the temperature. The wind is from the NE or SE depending on whether the center of the storm passes to the east or west of the city. The results for easterly storm winds includes the effects of all winds blowing from N to E to S (i.e., from the eastern side of the compass).

Since for strong easterly winds, it will generally be raining or snowing, and people expect it to be windy, the emphasis in evaluating the effect of the proposed added stories should be on entering or exiting buildings. The Categories for all easterly wind directions from N-E-S were estimated and have been combined to obtain a single result for easterly winds. Bear in mind that the total time the winds come from all of these easterly directions is about the same as the time the wind comes from either the NW or SW quadrants.

The estimated Categories for all locations for existing and build conditions are shown in Figures 16 and 17 (See Tables 1 & 2).

For easterly winds, PLW Categories at all twenty of the forty-six locations considered are estimated to remain unchanged. At five (10, 12, 23, 30, and 41), the PLW Category increases by one. Except for location 10 at the NE corner of the 80-foot building, these increases are due to the PLWs being accelerated along Border Street by the 80-foot building. For these easterly winds the PLW Category at 15 locations (11, 14, 16, 17, 22, 26, 27, 31, 34, 35, 37, 38, and 43-45) decreases by one and at six locations (13, 15, 21, 24, 25, and 40) the PLW

Category decreases by two. In every case, these decreases are due to sheltering of one of the two new buildings.

### 6.2.4 Annual Winds

In the above discussion, only winds from three general wind directions are discussed. While those are important directions related to seasons and storms, one cannot infer the overall annual windiness at any location from those results. PLW Categories were estimated at each location for the eight major wind directions (i.e., from the NE, E, SE, S, SW, W, NW, and N directions). Those estimated categories were then used with an eight compass point statistical description of the Boston wind climate to estimate the overall annual category for each of the forty locations considered. The resulting estimated categories for each location for existing and build conditions are listed in the last two columns in Table 1. In comparing these annual estimates with those for the five specific directions, one must remember that the total occurrence of winds from the easterly directions is roughly equal to that for either the NW or SW direction. These annual estimates are qualitative and must be treated as such.

For annual winds, thirty-two of the forty-six locations considered are estimated not to change PLW Category. The PLW Category is estimated to increase by one at location 28 at the S corner of the 80-foot building. At 13 locations (13, 15, 17, 20, 21, 23, 30, 33, 38, 40, 41, 43, and 44), the estimated PLW Category decreased by one.

## 7.0 SUMMARY AND CONCLUSIONS

A qualitative assessment has been made to determine the effect on PLWs of a proposed one-story Marina building and a seven-story residence building along the harbor side of Border Street in East Boston, Massachusetts. Results are obtained for both existing and build conditions for NW (winter), SW (summer), easterly storm, and annual winds.

None of the forty-six locations considered for either existing or build conditions is estimated to have PLWs that exceed the BRA guideline wind speed. No location is predicted to have dangerous winds as often as once a year. In fact, no location is predicted to have PLWs higher than Category 3 (comfortable for walking) for either existing or build conditions for any of the wind conditions considered.

Overall, the addition of the proposed buildings tends to reduce PLWs in the vicinity of the two buildings due to their sheltering affects, although winds are increased somewhat near the corners of the 80-foot building.

Detailed results are presented in Figures 12-19 and Table 1 and are summarized in Table 2. For this assessment, it has been assumed that there is no landscaping for existing conditions and none associated with the new building.

## 8.0 REFERENCES

1) Davenport, A.G., and Isyumov, N., "The Application of the Boundary Layer Wind Tunnel to the Prediction of Wind Loading", Proceedings of Intl. Seminar on Wind Effects on Buildings and Structures, Ottawa, Canada, September, 1967.

2) Melbourne, W.H., "Criteria for Environmental Wind Conditions", *Journal of Industrial Aerodynamics*, Vol.3, 1978, pp. 241-249.

3) Durgin, F.H., "Use of the Equivalent Average for Evaluating Pedestrian Level Winds", Presented at the Sixth U.S National Conf. On Wind Engineering, University of Houston, Houston, Texas, March 7-10, 1989, *Journal of Wind Engineering and Industrial Aerodynamics*, Vol. 36, pp. 817-828, 1990.

4) Durgin, F.H., "Pedestrian Level Wind Studies at the Wright Brothers Facility", Progress in Wind Engineering (Proc. of the 8th International Conference on Wind Engineering), New York, Elsevier, Part 4, 1992, pp. 2253-2264.

5) Durgin, F.H., "Pedestrian Level Wind Criteria Using the Equivalent Average", *Journal of Wind Engineering and Industrial Aerodynamics*, Vol. 66 (1997), pp. 215-226.

# TABLE 1

## ESTIMATED CATEGORIES FOR NW, SW, EASTERLY STORM, AND ANNUAL WINDS FOR EXISTING (Ex) AND BUILD (Bld) CONDITIONS

| Loc | NW | | SW | | STORM | | ANNUAL | | Loc |
|---|---|---|---|---|---|---|---|---|---|
| No. | Ex | Bld | Ex | Bld | Ex | Bld | Ex | Bld | No. |
| 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 |
| 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 2 |
| 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 3 |
| 4 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 4 |
| 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 5 |
| 6 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 6 |
| 7 | 3 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 7 |
| 8 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 8 |
| 9 | 2 | 2 | 3 | 2 | 1 | 1 | 2 | 2 | 9 |
| 10 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 10 |
| 11 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 11 |
| 12 | 2 | 1 | 3 | 2 | 1 | 2 | 2 | 2 | 12 |
| 13 | 3 | 3 | 3 | 2 | 3 | 1 | 3 | 2 | 13 |
| 14 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 14 |
| 15 | 3 | 2 | 3 | 2 | 3 | 1 | 3 | 2 | 15 |
| 16 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 16 |
| 17 | 3 | 2 | 3 | 1 | 3 | 2 | 3 | 2 | 17 |
| 18 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 18 |
| 19 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 19 |
| 20 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 20 |
| 21 | 3 | 1 | 3 | 1 | 3 | 1 | 3 | 2 | 21 |
| 22 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 22 |
| 23 | 3 | 2 | 3 | 2 | 1 | 2 | 3 | 2 | 23 |
| 24 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 3 | 24 |
| 25 | 3 | 2 | 3 | 3 | 3 | 1 | 3 | 3 | 25 |
| 26 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 26 |
| 27 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 27 |
| 28 | 3 | 1 | 3 | 3 | 2 | 2 | 2 | 3 | 28 |
| 29 | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 | 29 |
| 30 | 3 | 2 | 3 | 3 | 1 | 2 | 3 | 2 | 30 |

# TABLE 1 (Contd)

## ESTIMATED CATEGORIES FOR NW, SW, EASTERLY STORM, AND ANNUAL WINDS FOR EXISTING (Ex) AND BUILD (Bld) CONDITIONS

| Loc | NW | | SW | | STORM | | ANNUAL | | Loc |
|---|---|---|---|---|---|---|---|---|---|
| No. | Ex | Bld | Ex | Bld | Ex | Bld | Ex | Bld | No. |
| 31 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 31 |
| 32 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 32 |
| 33 | 3 | 2 | 3 | 2 | 2 | 2 | 3 | 2 | 33 |
| 34 | 3 | 3 | 3 | 1 | 3 | 2 | 3 | 3 | 34 |
| 35 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 35 |
| 36 | 2 | 1 | 2 | 2 | 2 | 2 | 2 | 2 | 36 |
| 37 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 37 |
| 38 | 3 | 3 | 3 | 1 | 3 | 2 | 3 | 2 | 38 |
| 39 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 39 |
| 40 | 3 | 2 | 3 | 2 | 3 | 1 | 3 | 2 | 40 |
| 41 | 3 | 1 | 3 | 2 | 2 | 3 | 3 | 2 | 41 |
| 42 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 42 |
| 43 | 3 | 1 | 3 | 2 | 2 | 1 | 3 | 2 | 43 |
| 44 | 3 | 3 | 2 | 2 | 3 | 2 | 3 | 2 | 44 |
| 45 | 3 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 45 |
| 46 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 2 | 46 |

# TABLE 2

## SUMMARY OF LOCATIONS THAT CHANGED CATEGORY BETWEEN EXISTING AND BUILD CONDITIONS

| Direction | NW | SW | Storm | Annual |
|---|---|---|---|---|
| Up 2 Cat. | 0 | 0 | 0 | 0 |
| Up 1 Cat | 0 | 0 | 5 | 1 |
| No Change. | 32 | 28 | 20 | 32 |
| Down 1 Cat. | 10 | 14 | 15 | 13 |
| Down 2 Cat. | 4 | 4 | 6 | 0 |

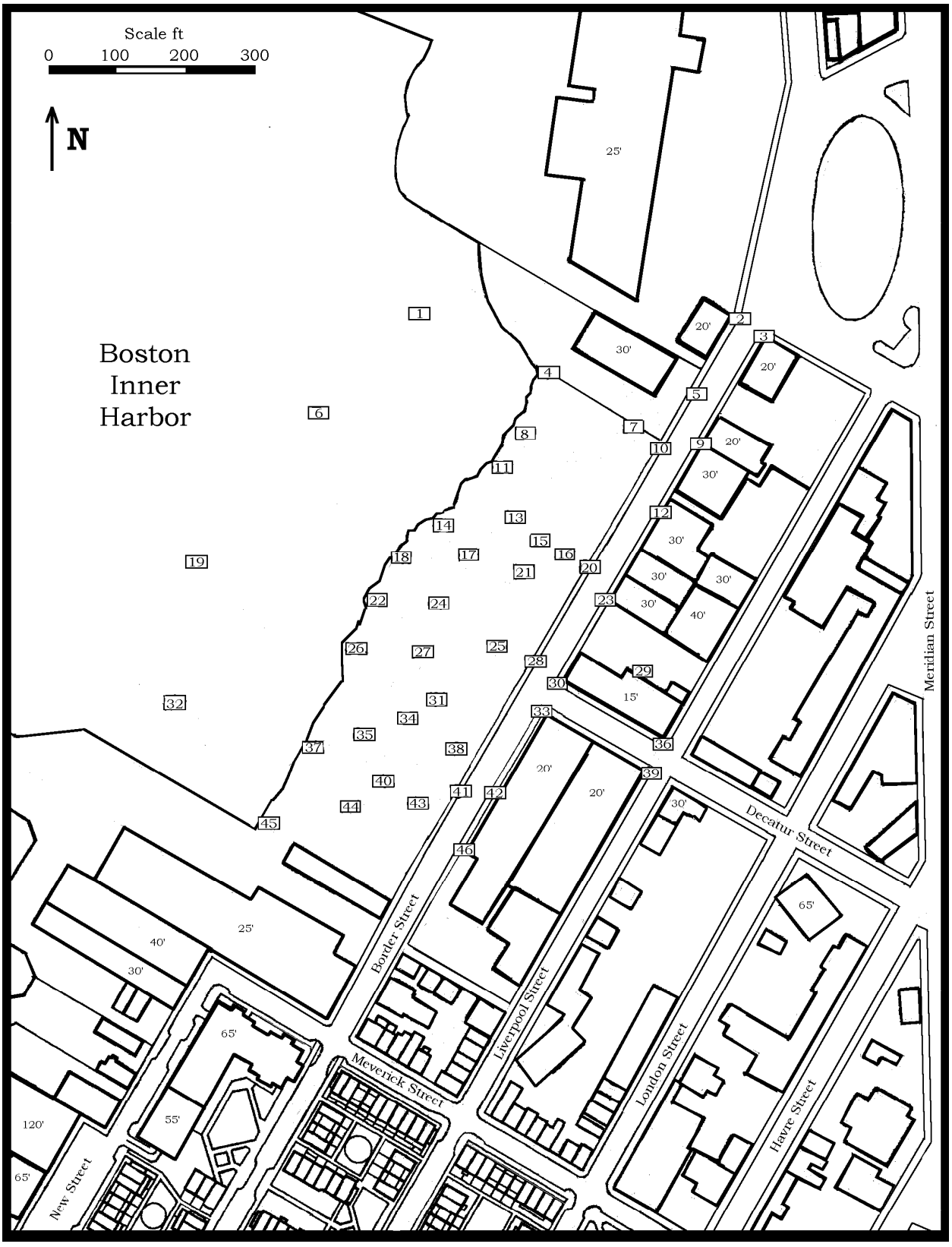



Figure 1. Map of Existing Conditions with Building Heights and Location Numbers

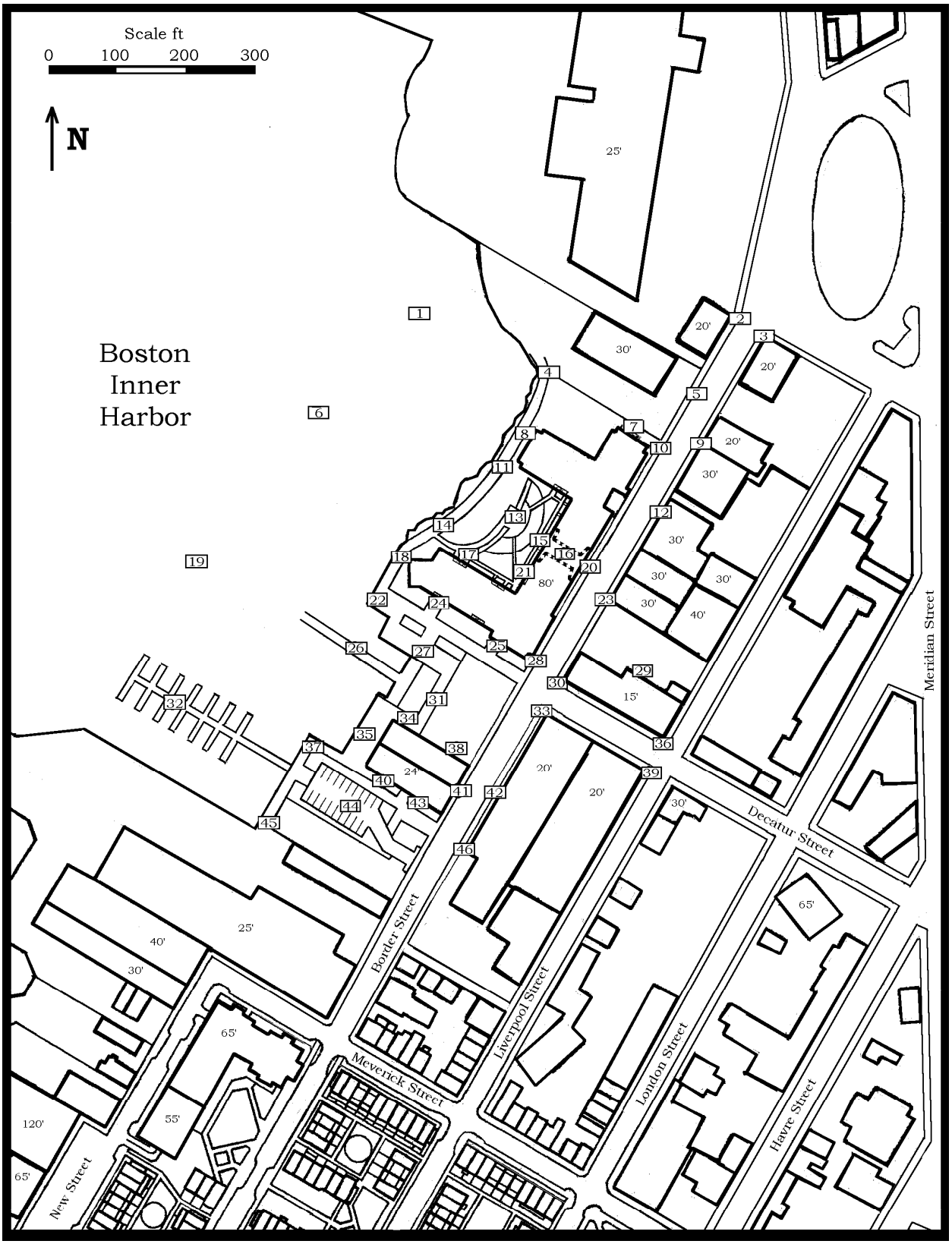



Figure 2. Map of Build Conditions with Building Heights and PLW Location Numbers

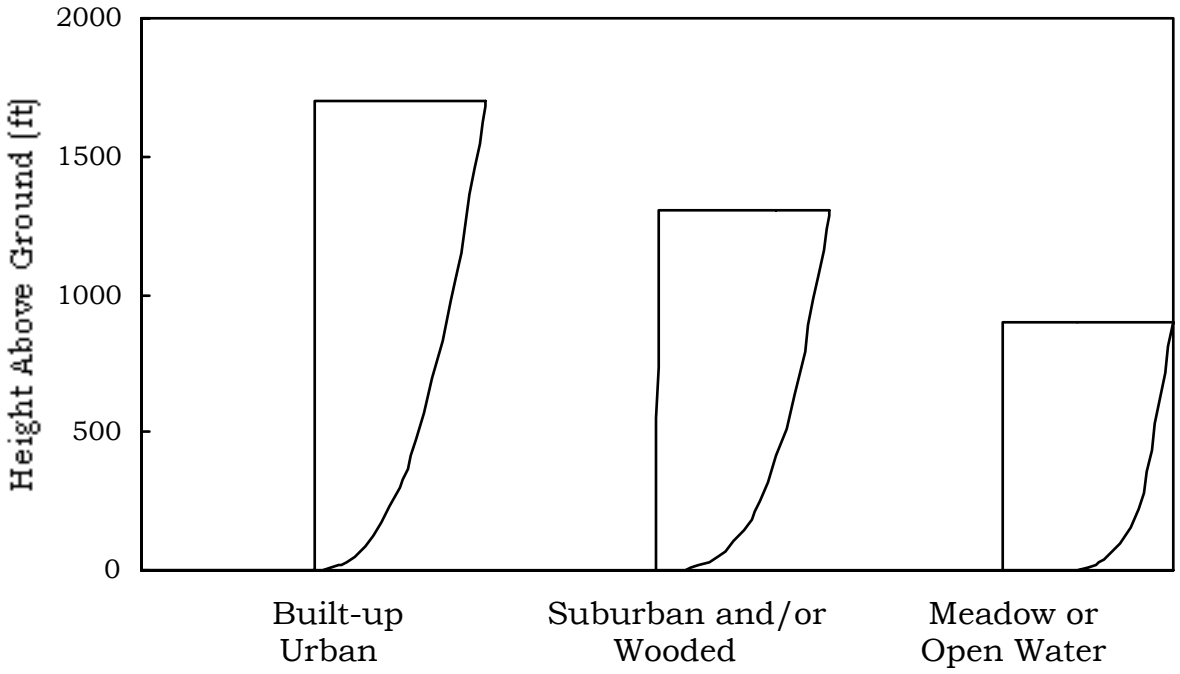



Figure 3 Types of Earth's Boundary Layers After Davenport

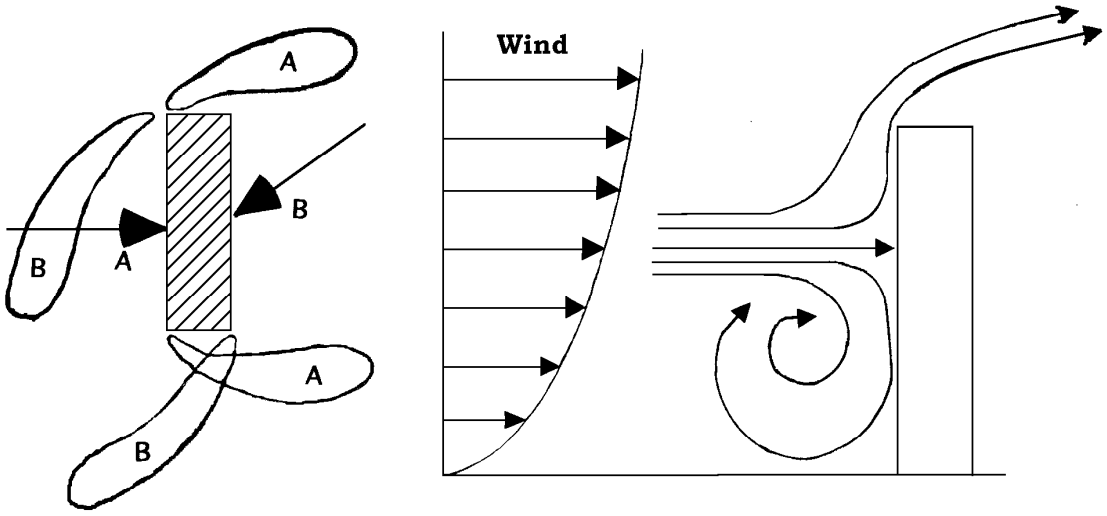



**Figure 4 Schematic of How the Wind Interacts With an Isolated Building**

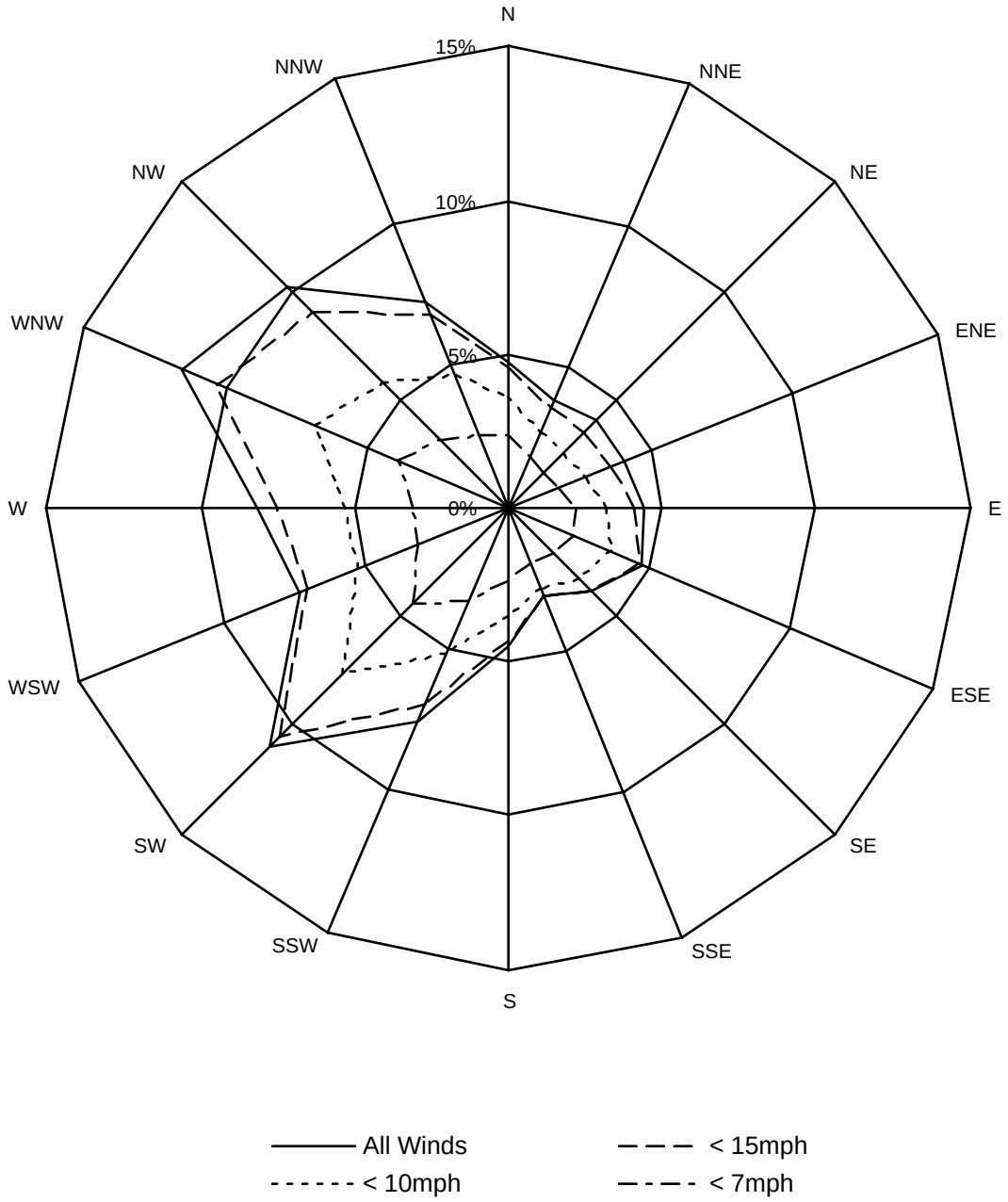



Figure 5 Annual Pedestrian Level Wind Rose for Boston Based on Surface Data from Logan Airfield 1945-1965

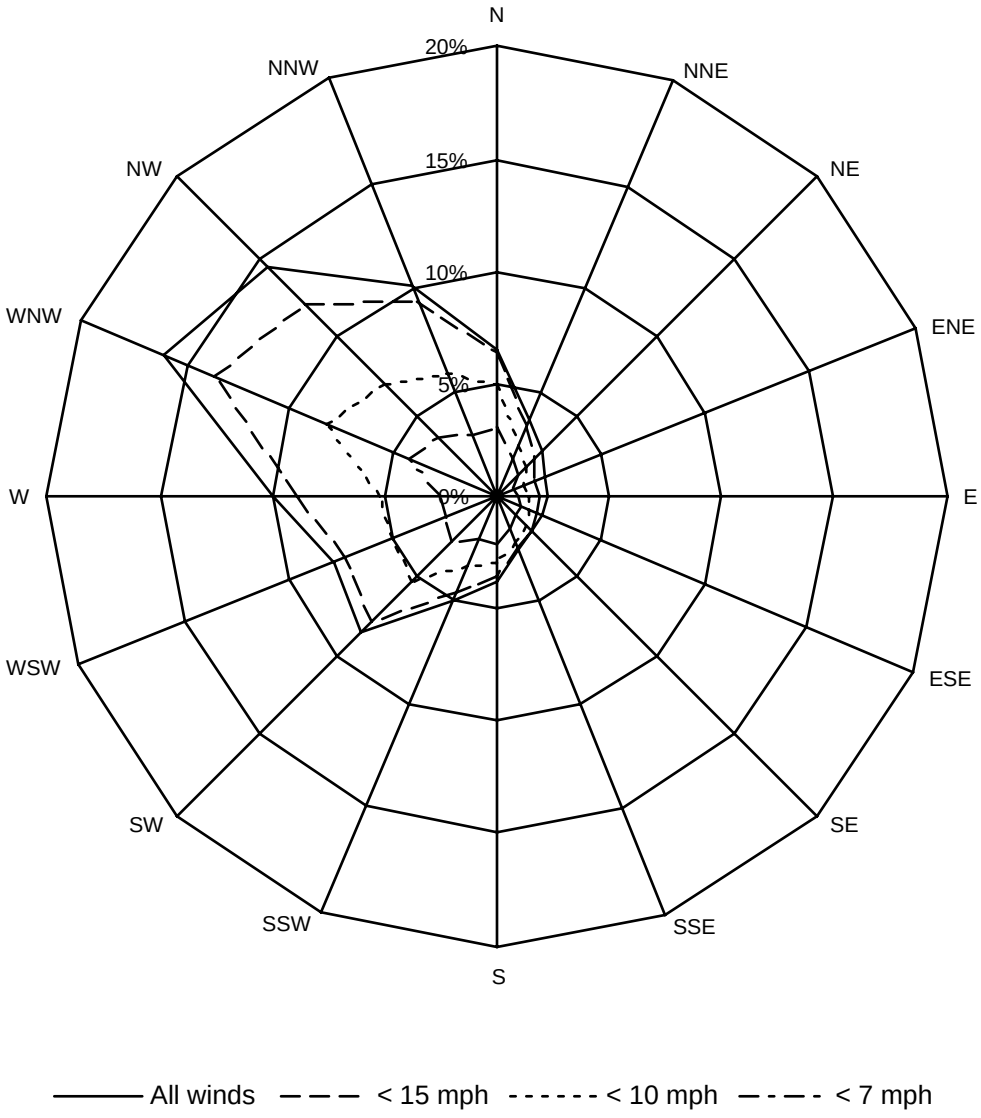



Figure 6 Winter (December, January, February) Pedestrian Level Wind Rose for Boston Based on Surface Data from Logan Air Field 1945-1965

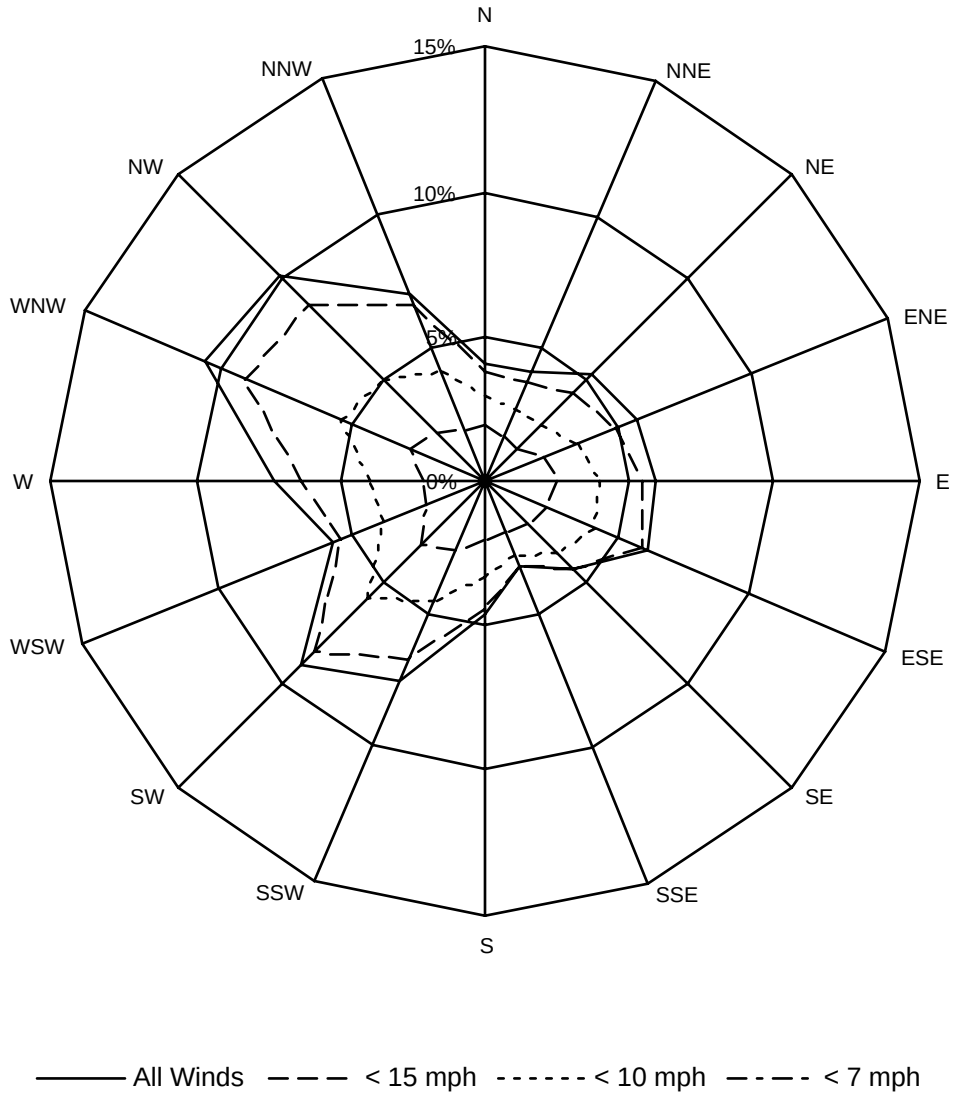



Figure 7 Spring (March, April, May) Pedestrian Level Wind Rose for Boston based on Surface Data from Logan Air Field 1945-1965

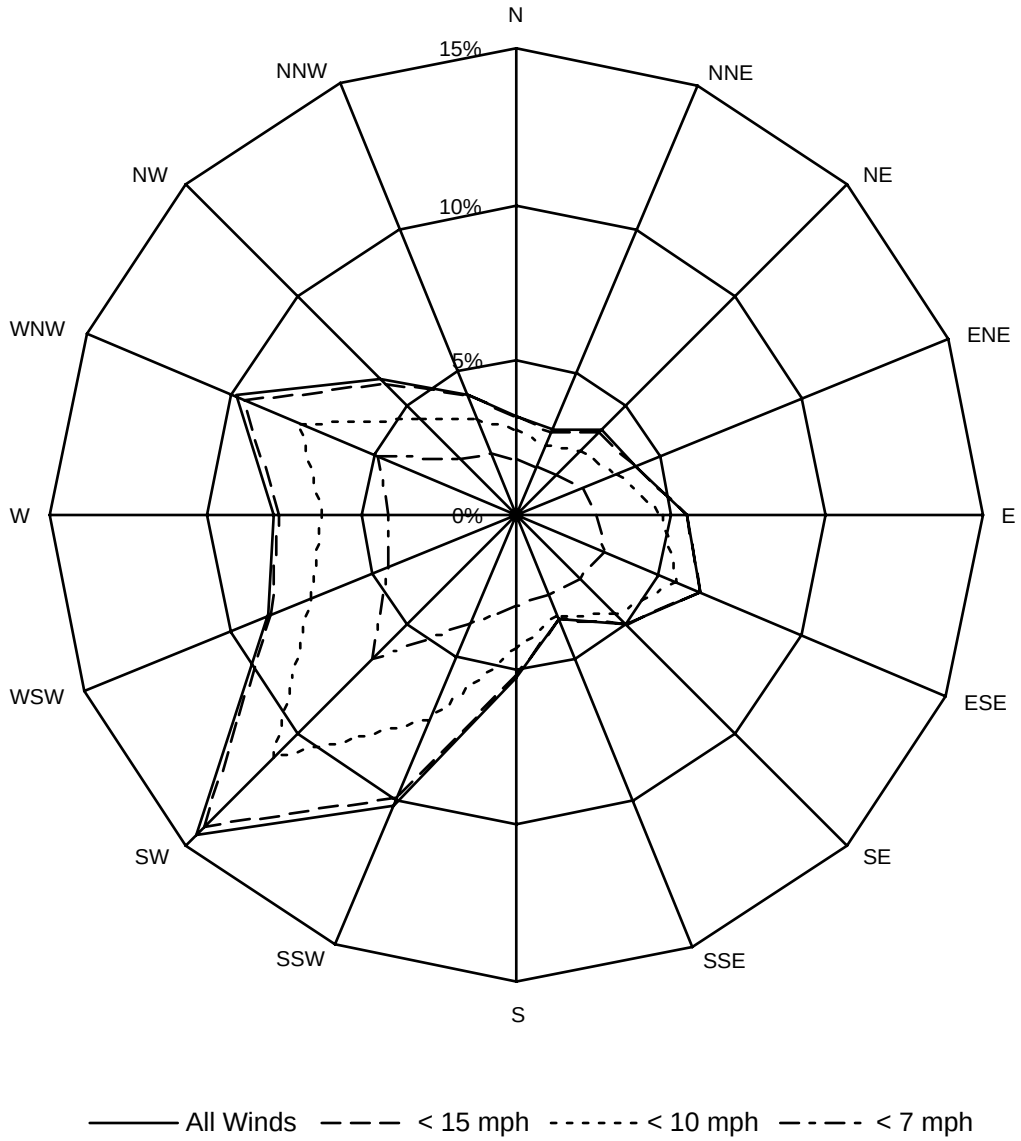



Figure 8 Summer (June, July, August) Pedestrian Level Wind Rose for Boston based on Surface Data from Logan Air Field 1945-1965

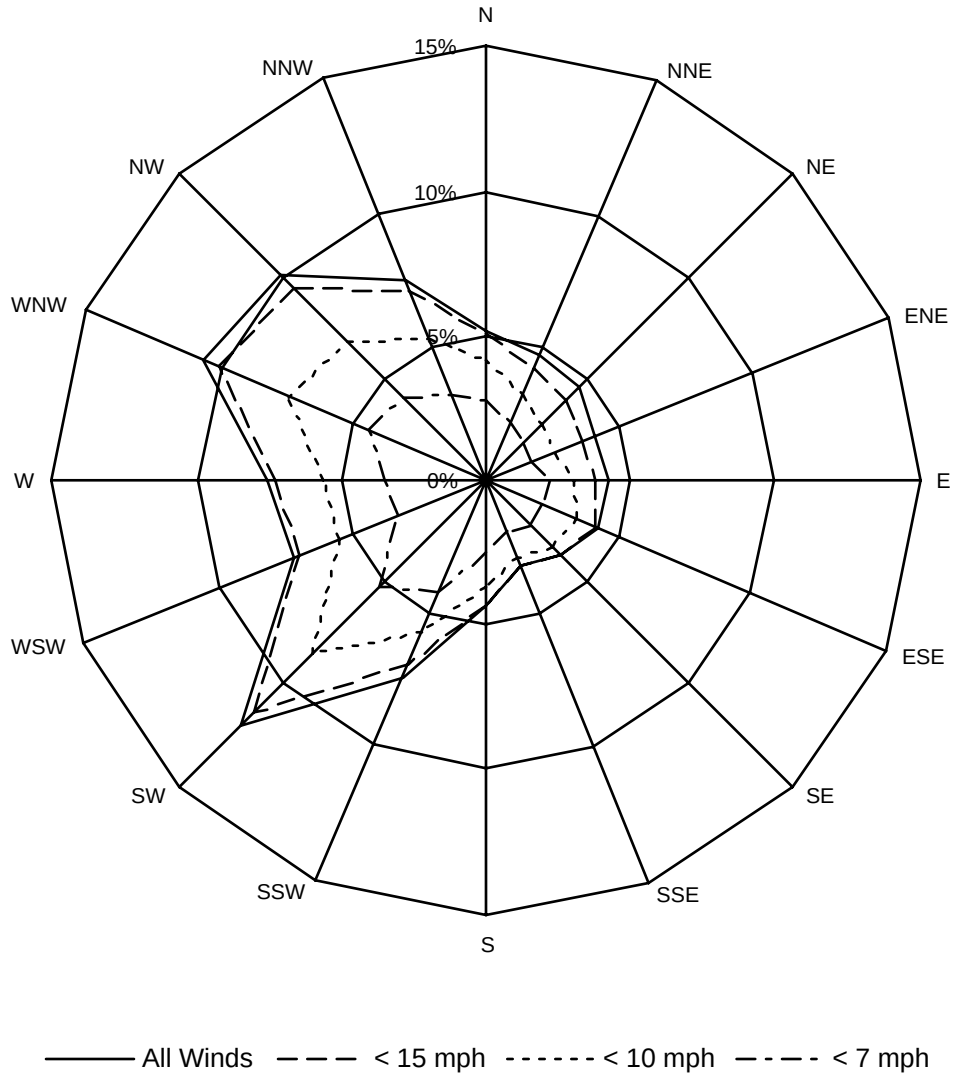
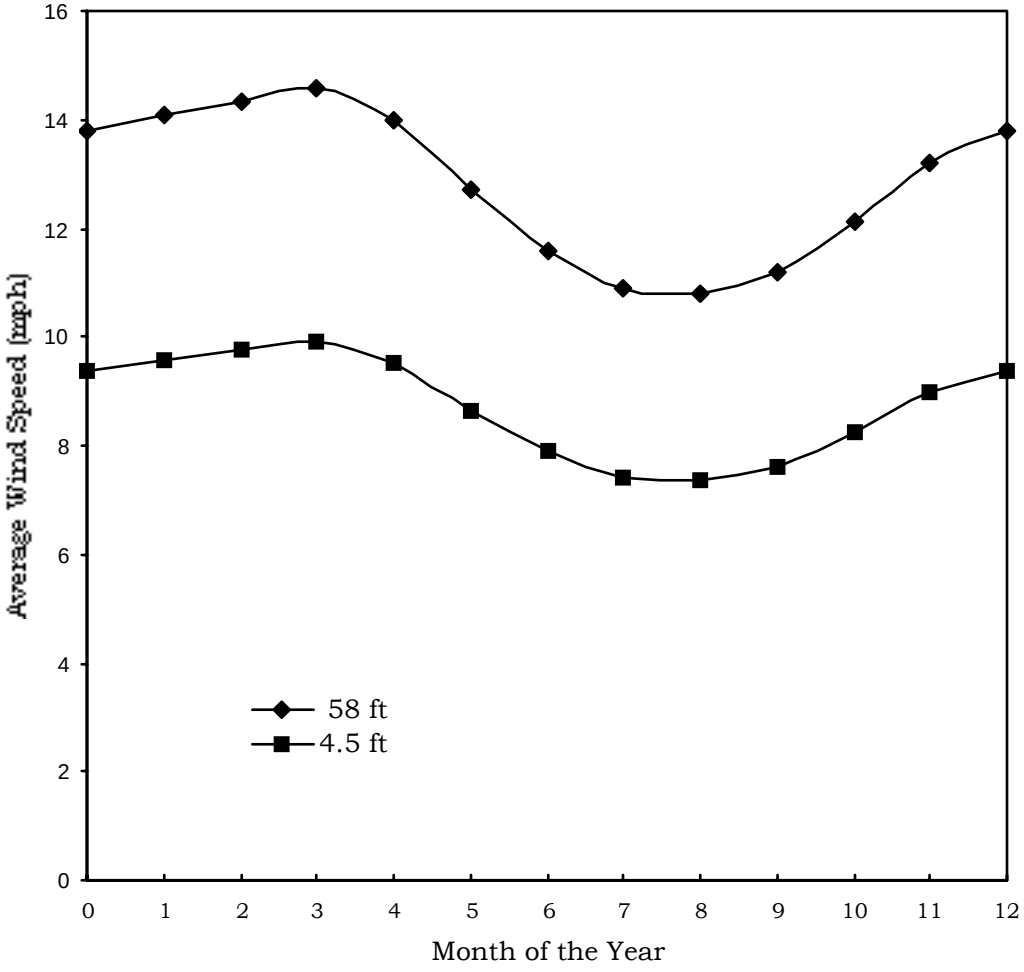



Figure 9 Fall (September, October, November) Pedestrian Level Wind Rose for Boston based on Surface Data from Logan Air Field 1945-1965




Yearly Average is 12.9 mph at 58 feet

Figure 10 Average Wind Speed at Logan Airfield Based on Surface Data from 1945-1965

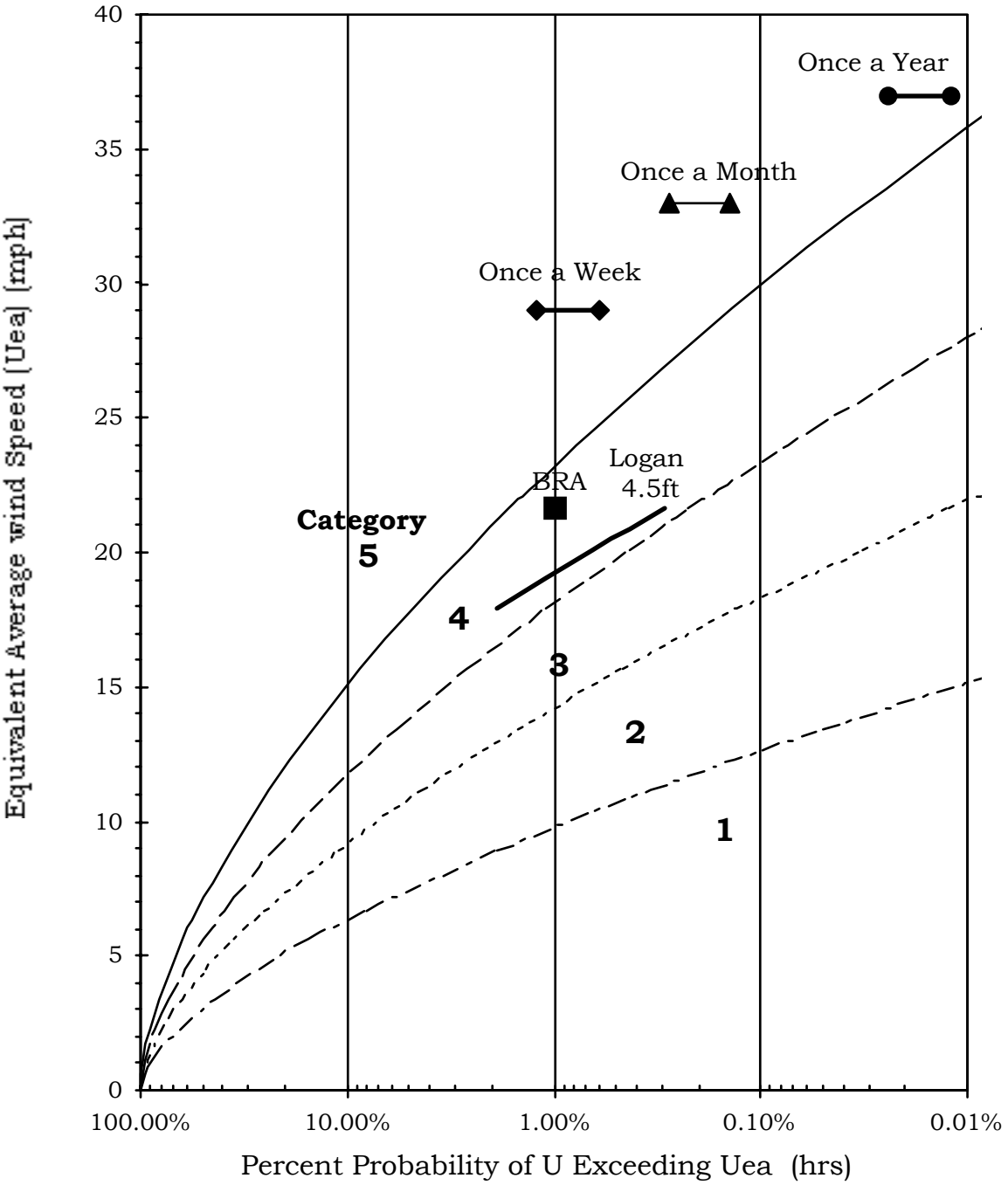



Figure 11 Pedestrian Level Wind Criteria for Equivalent Average Winds

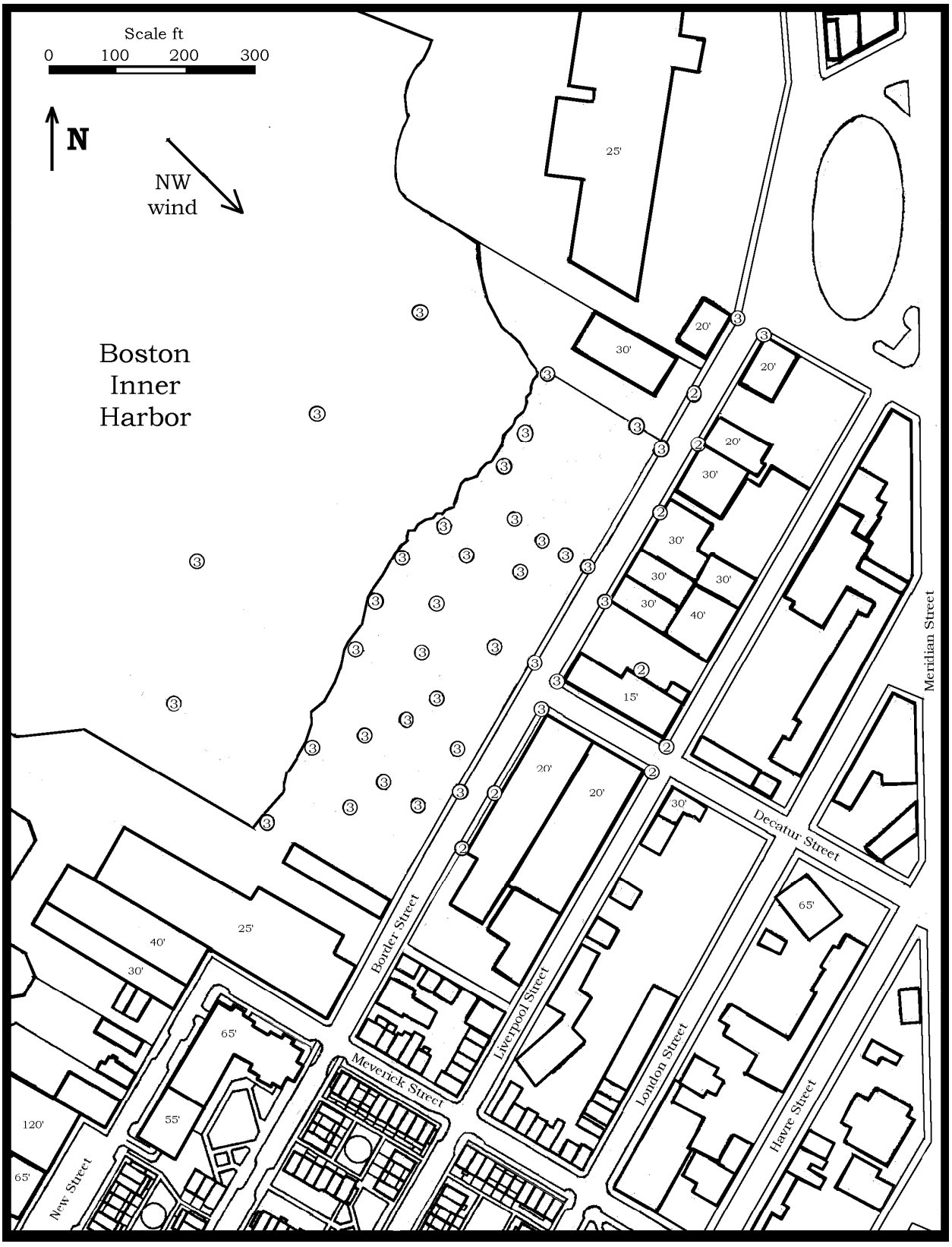



Figure 12. Map of Existing Conditions with PLW Categories for NW winds

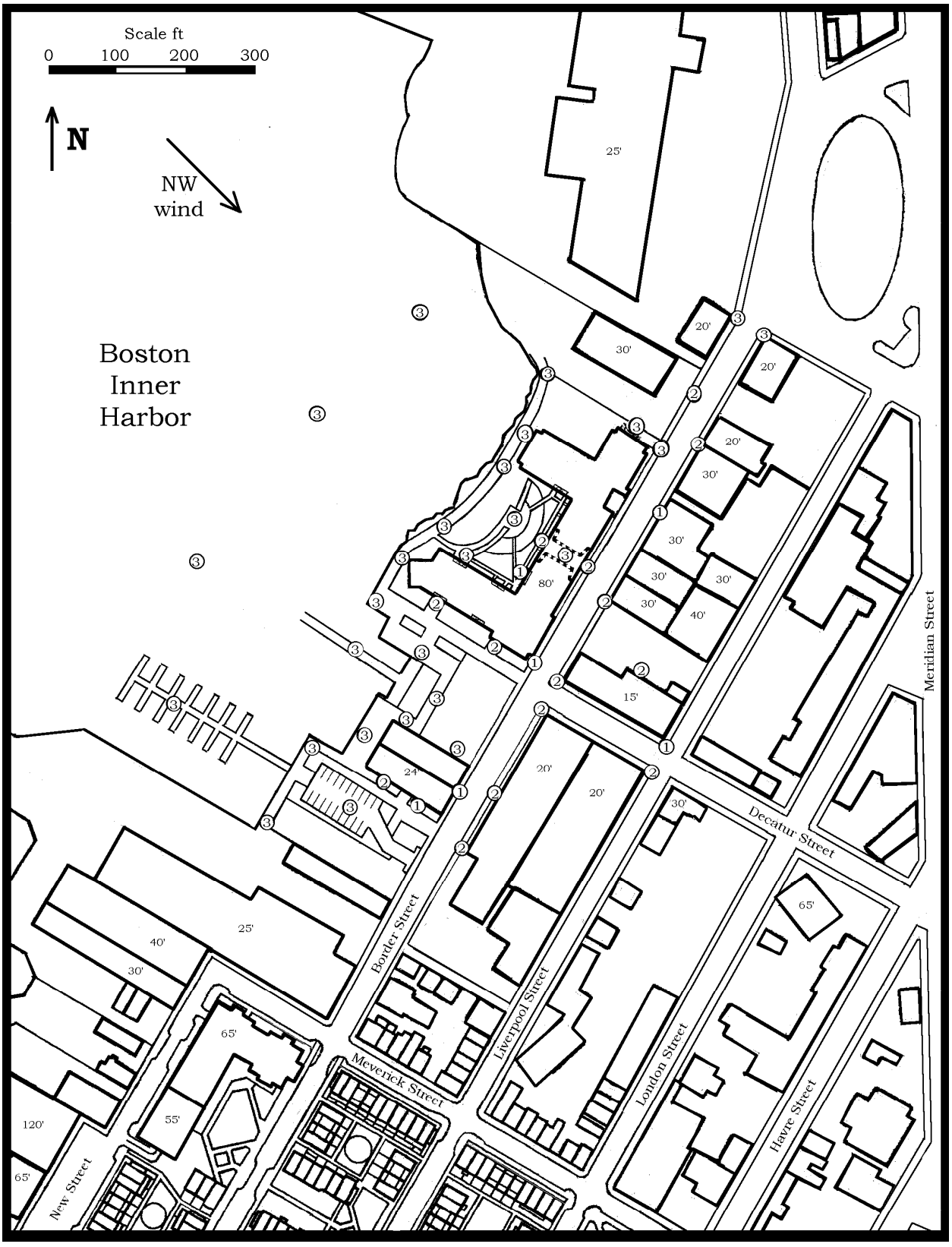



Figure 13. Map of Build Conditions with PLW Categories for NW Winds

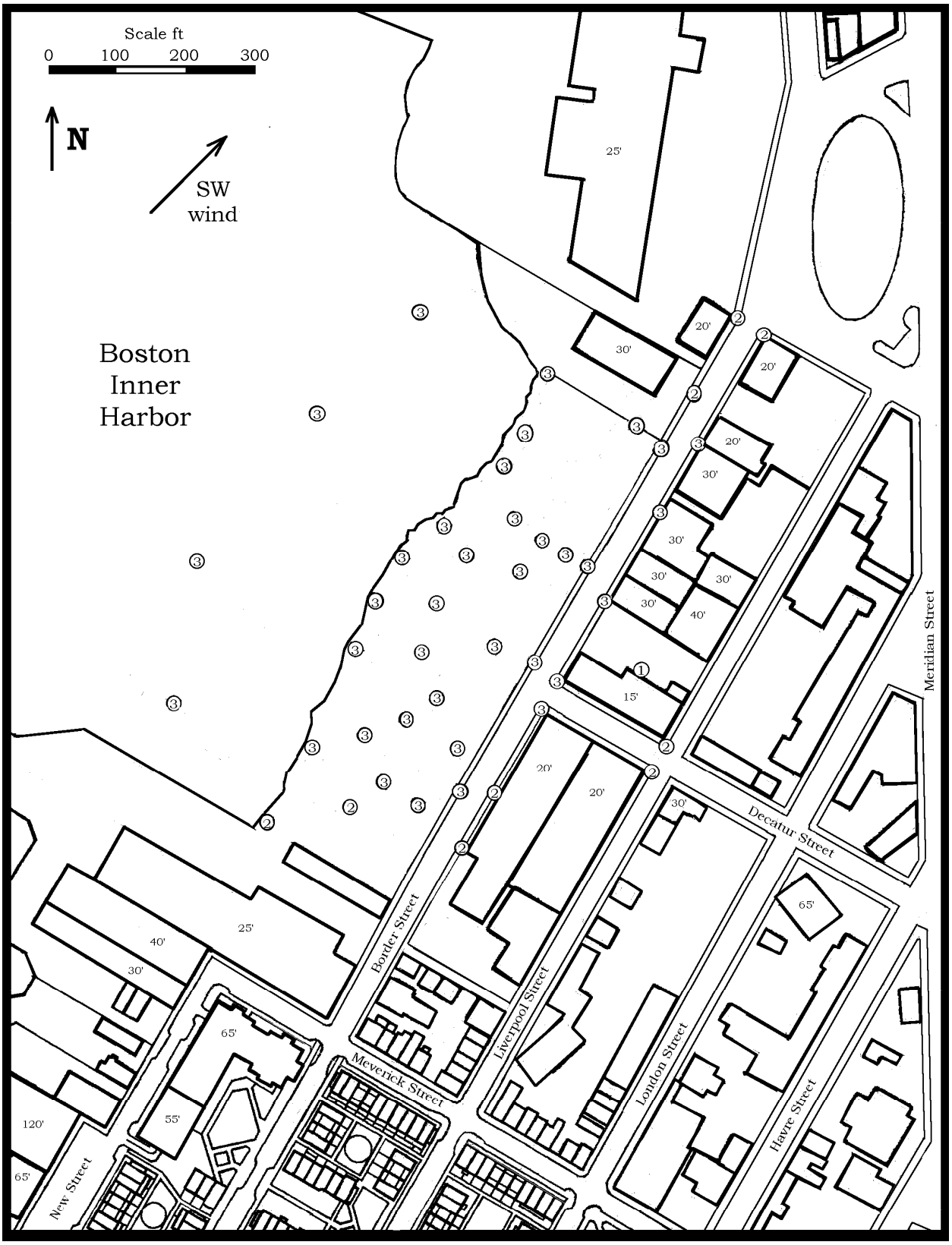



Figure 14. Map of Existing Conditions with PLW Categories for SW Winds

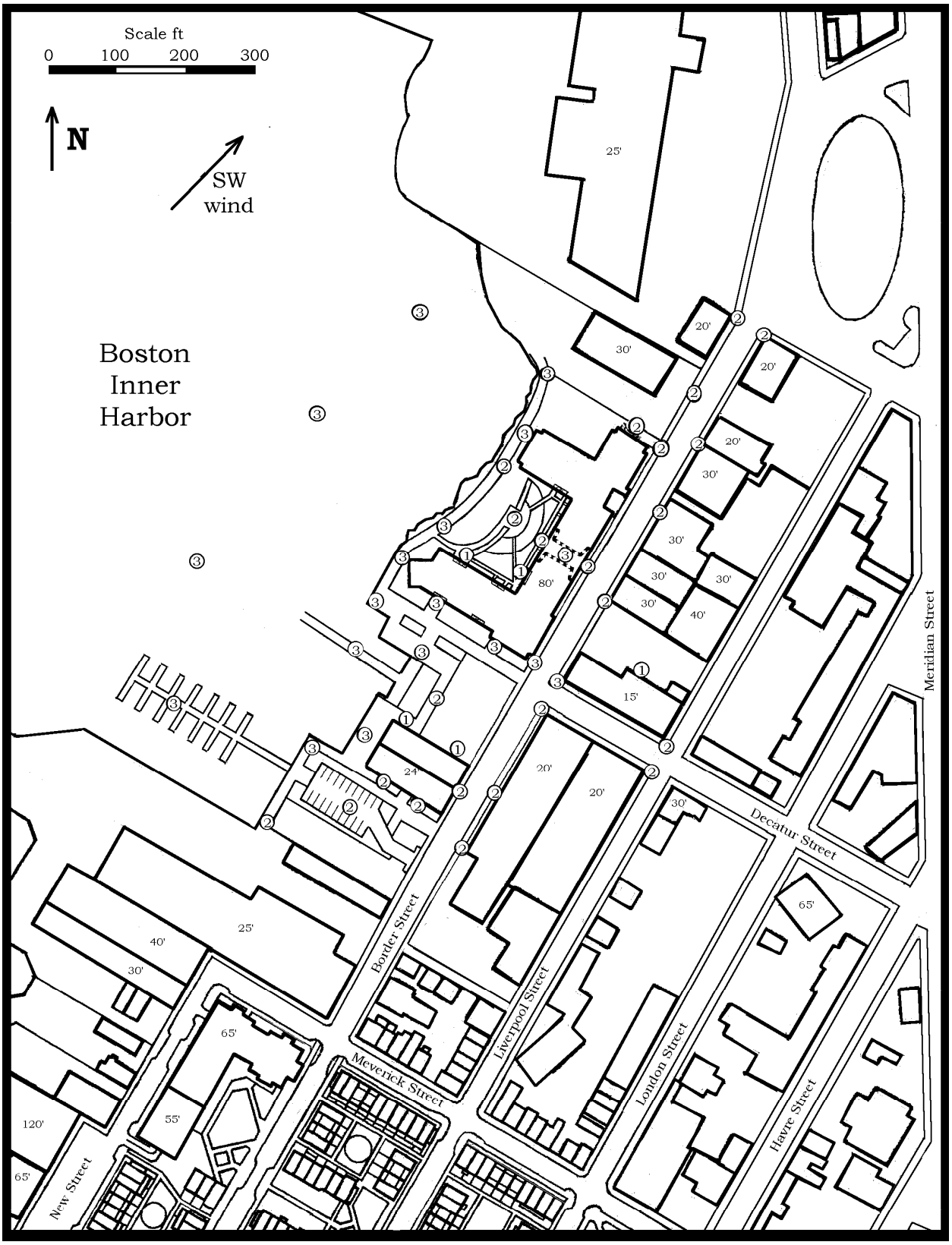



Figure 15. Map of Build Conditions with PLW Categories for SW Winds

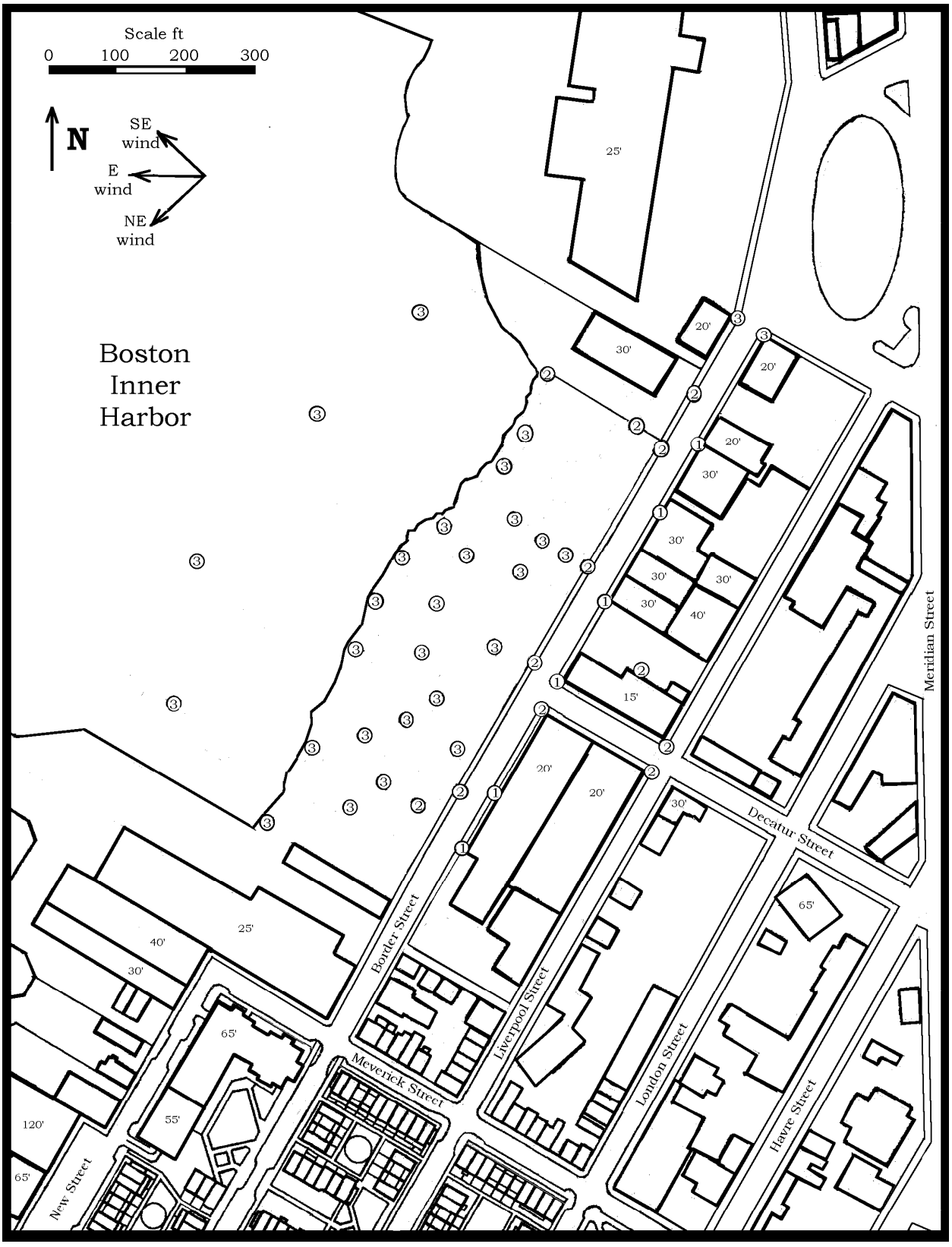



Figure 16. Map of Existing Conditions with PLW Categories for Easterly Storm Winds

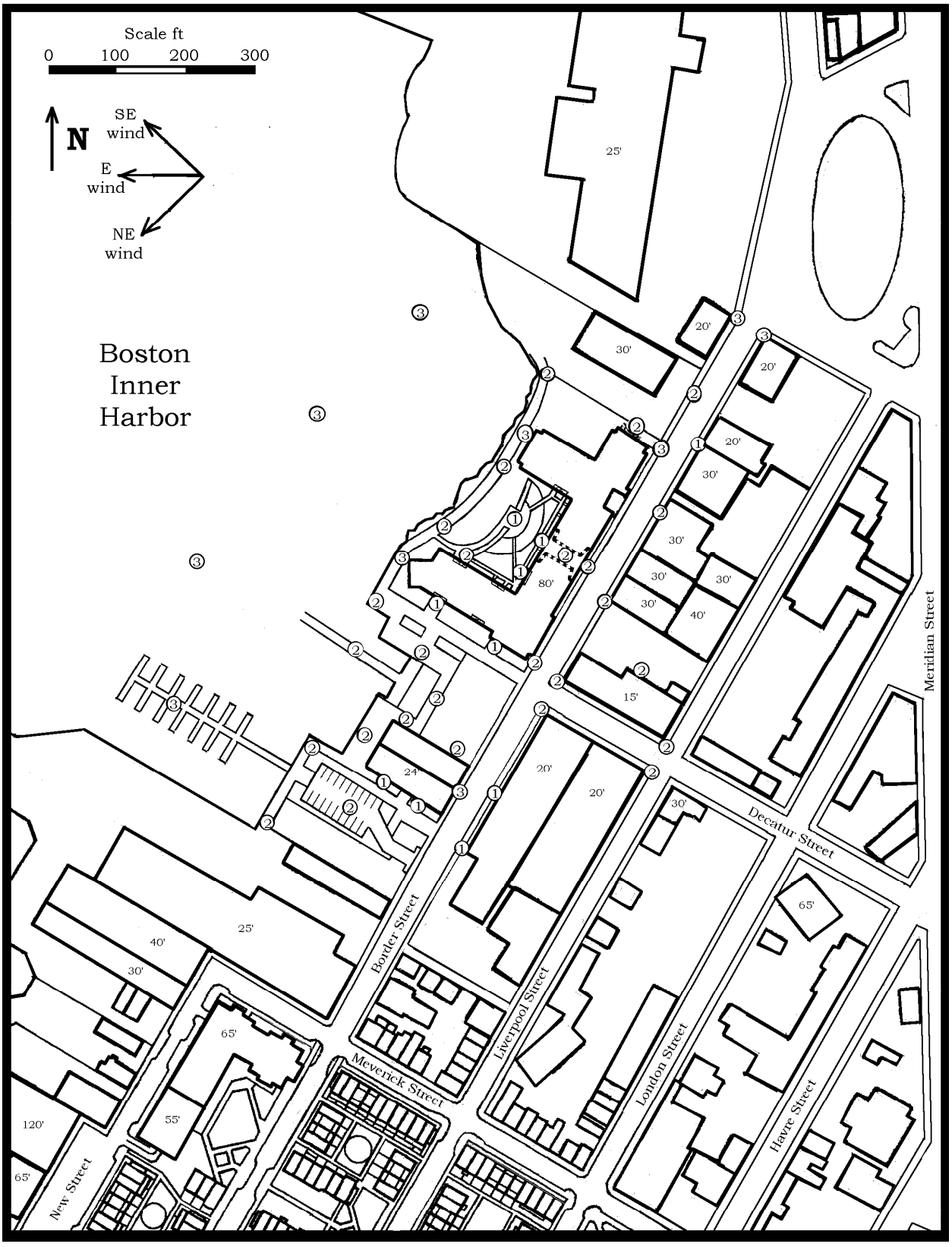



Figure 17. Map of Build Conditions with PLW Categories for Easterly Storm Winds

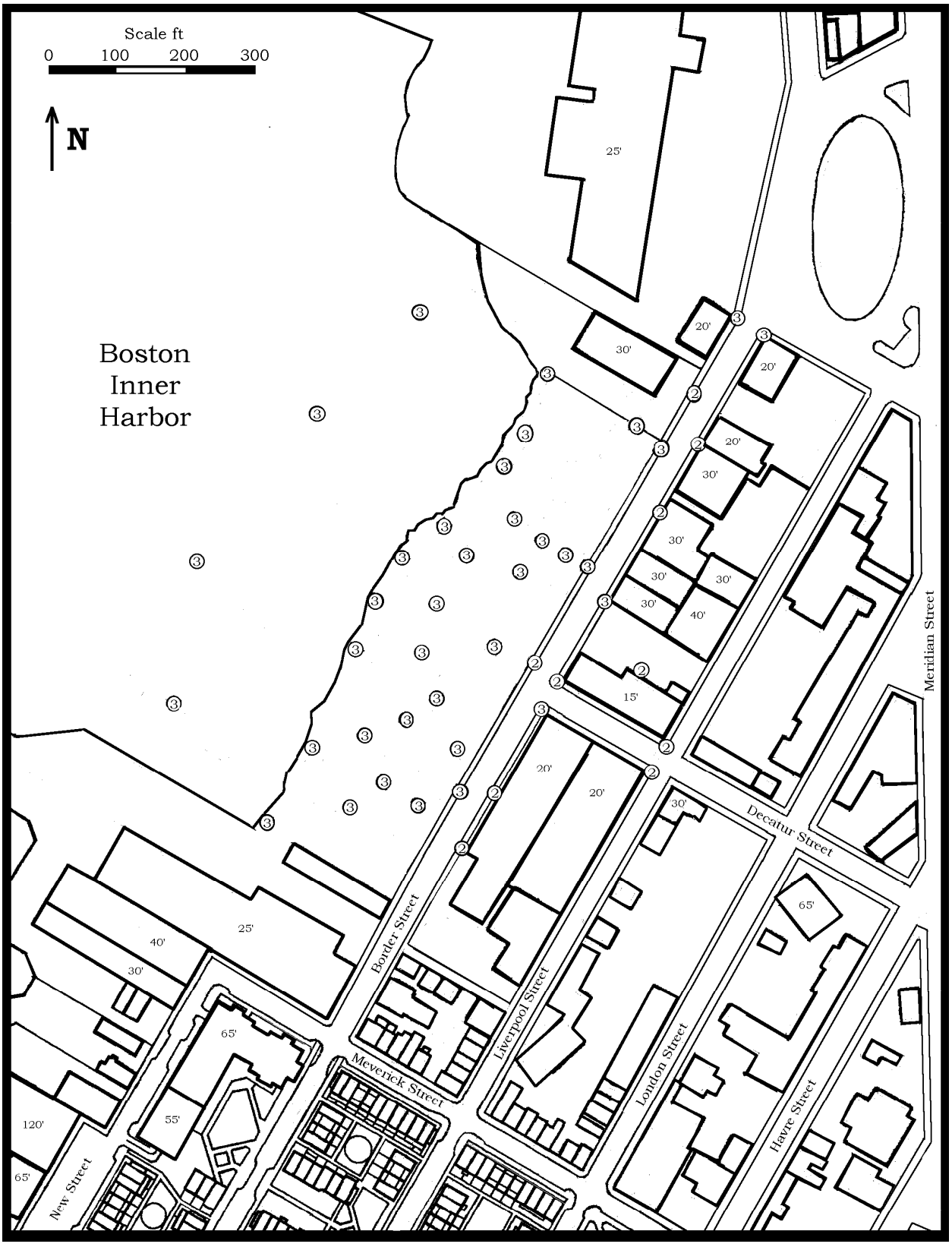



Figure 18. Map of Existing Conditions with PLW Categories for Annual Winds

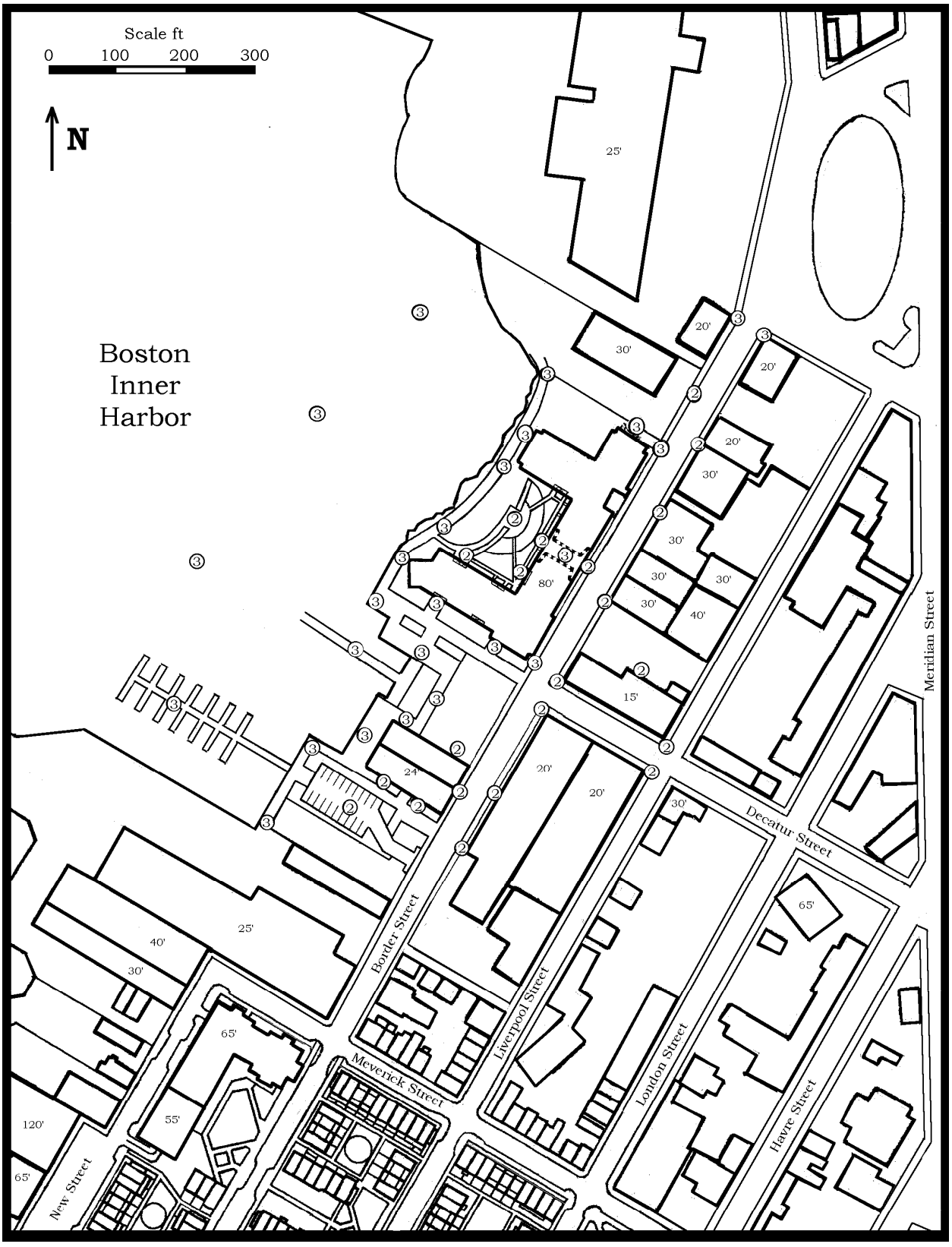



Figure 19. Map of Build Conditions with PLW Categories for Annual Winds

# Appendix 3

## Distribution list

## STATE GOVERNMENT

### Elected Officials

Senator Anthony W. Petruccelli
Room 413-B
State House
Boston, MA 02133

Representative (Vacant, 1st Suffolk District)
State House
Boston, MA 02133

### Executive Office of Energy and Environmental Affairs

Secretary Ian A. Bowles
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

### MEPA Office

Undersecretary for Policy
Executive Office of Energy and Environmental Affairs
Attn: MEPA Office
100 Cambridge Street, Suite 900
Boston, MA 02114

### Department of Environmental Protection (DEP)

Laurie Burt, Commissioner
Commissioner's Office
Department of Environmental Protection
One Winter Street
Boston, MA 02108

Nancy Baker, MEPA Coordinator
DEP/Northeast Regional Office
205-B Lowell Street
Wilmington, MA 01887

Richard Tomczyk, Section Chief
DEP/Northeast Regional Office
Wetlands and Waterways
205B Lowell Street
Wilmington, MA 01887

Ben Lynch
Department of Environmental Protection
Division of Wetlands and Waterways
One Winter Street
Boston, MA 02108

### Executive Office of Transportation

Attn: Environmental Reviewer
Ten Park Plaza, Room 3510
Boston, MA 02116

**Massachusetts Aeronautics Commission**
MEPA Coordinator
Ten Park Plaza, Room 3510
Boston, MA 02116

**Massachusetts Bay Transportation Authority (MBTA)**

MEPA Coordinator
Ten Park Plaza, 6th Floor
Boston, MA 02216

**Massachusetts Coastal Zone Management**

Massachusetts Coastal Zone Management
Attn: Project Review Coordinator
251 Causeway Street, Suite 800
Boston MA 02114

**Massachusetts Department of Conservation and Recreation**

Division of Urban Parks
Attn: MEPA Coordinator
251 Causeway Street, Suite 600
Boston MA 02114

**Massachusetts Department of Fish & Game**

Attn: MEPA Coordinator
251 Causeway Street, Suite 400
Boston, MA 02114

**Massachusetts Department of Public Health (DPH)**

Director of Environmental Health
250 Washington Street
Boston, MA 02115

**Massachusetts Division of Fisheries & Wildlife**

Attn: Environmental Reviewer
251 Causeway Street, Suite 400
Boston, MA 02114

**Massachusetts Division of Marine Fisheries**

Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

**Massachusetts Highway Department**
Public/Private Development Unit
10 Park Plaza
Boston, MA 02116

Connie Raphael, MEPA Coordinator
Massachusetts Highway Department, District #4
519 Appleton Street
Arlington, MA 02476

**Massachusetts Historical Commission**

Brona Simon, Executive Director
Massachusetts Archives Building
220 Morrissey Boulevard
Dorchester, MA 02125

**Massachusetts Water Resource Authority**

Marianne Connolly, MEPA Coordinator
Charlestown Navy Yard
100 First Avenue, Building 34-2
Charlestown, MA 02129

**Metropolitan Area Planning Council**

60 Temple Place, 6th Floor
Boston, MA 02111

## CITY OF BOSTON

**Mayor's Office**

Honorable Thomas M. Menino, Mayor
Boston City Hall
One City Hall Square
Boston, MA 02201

Jay Walsh, Director
Mayor's Office of Neighborhood Services
One City Hall Square, Room 708
Boston, MA 02201

Judith Kurland, Chief of Staff, Mayor's Office
Boston City Hall
One City Hall Square, 5th Floor
Boston, MA 02201

**Boston City Council**

Maureen Feeney, President
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor Felix Arroyo
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor Salvatore LaMattina
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor Stephen J. Murphy
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

Councilor Sam Yoon
Boston City Council
One City Hall Plaza, 5th Floor
Boston, MA 02201

**Boston Environment Department**

Bryan Glascock, Directory
Boston Environment Department
One City Hall Square, Room 805
Boston, MA 02201

Ellen Lipsey, Executive Director
Boston Landmarks Commission
One City Hall Square, Room 805
Boston, MA 02201

Chris Busch, Executive Secretary
Boston Conservation Commission
One City Hall Square, Room 805
Boston, MA 02201

**Boston Public Health Commission**

1010 Massachusetts Avenue
Boston, MA 02118

**Boston Redevelopment Authority**

Acting Director, Paul McCann
One City Hall Square, 9th Floor
Boston, MA 02201
Attn: Kristin Kara, Project Manager

Richard McGuinness, Waterfront Planner
One City Hall Square, 9th Floor
Boston, MA 02201

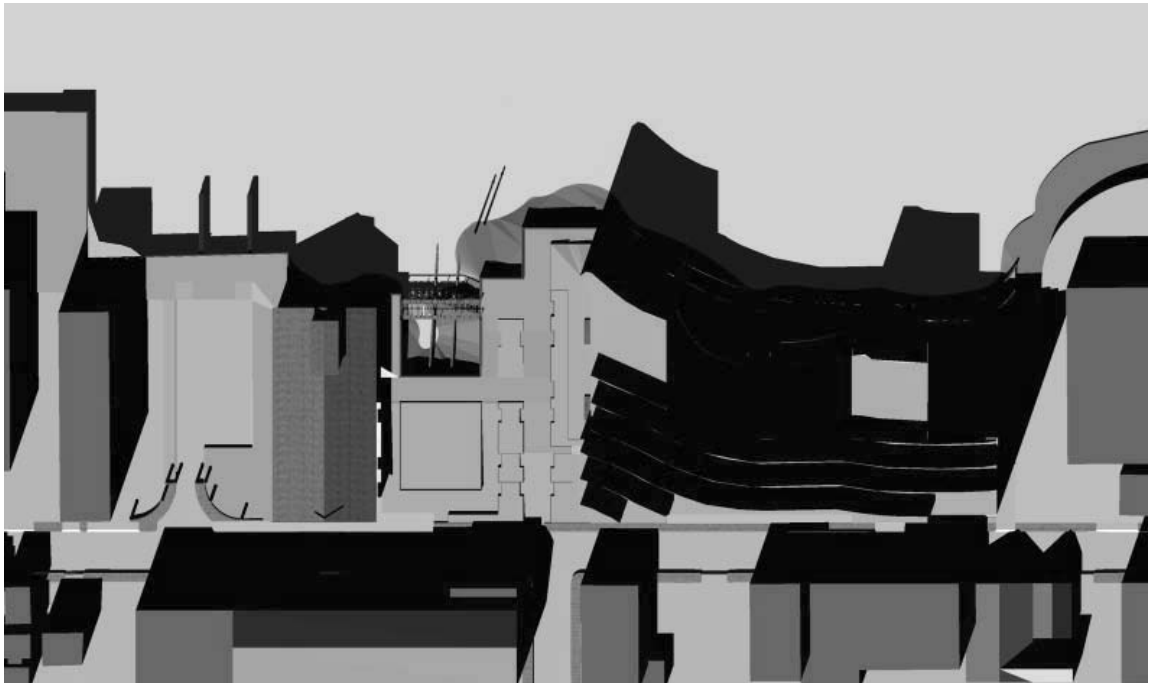
## LIBRARY

**Boston Public Library**

East Boston Branch
276 Meridian Street
East Boston, MA 02128

# Appendix 4

## Shadow Studies



Chapter 91 Compliant Massing

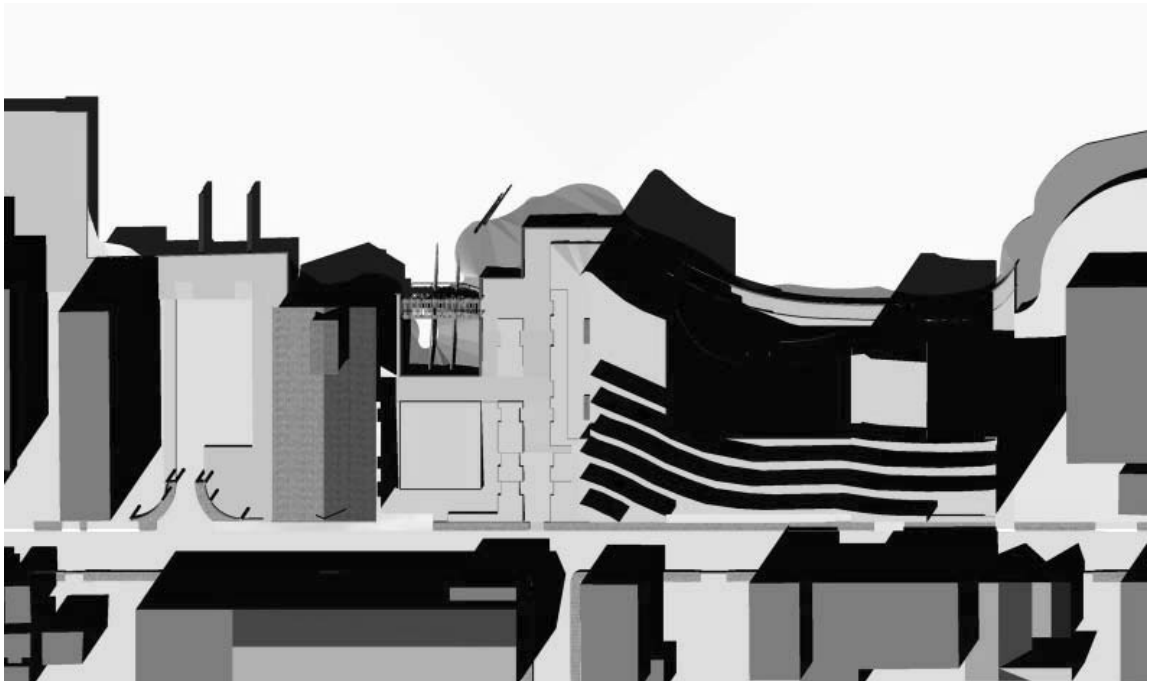
Proposed Massing of Project

# BOSTON EAST

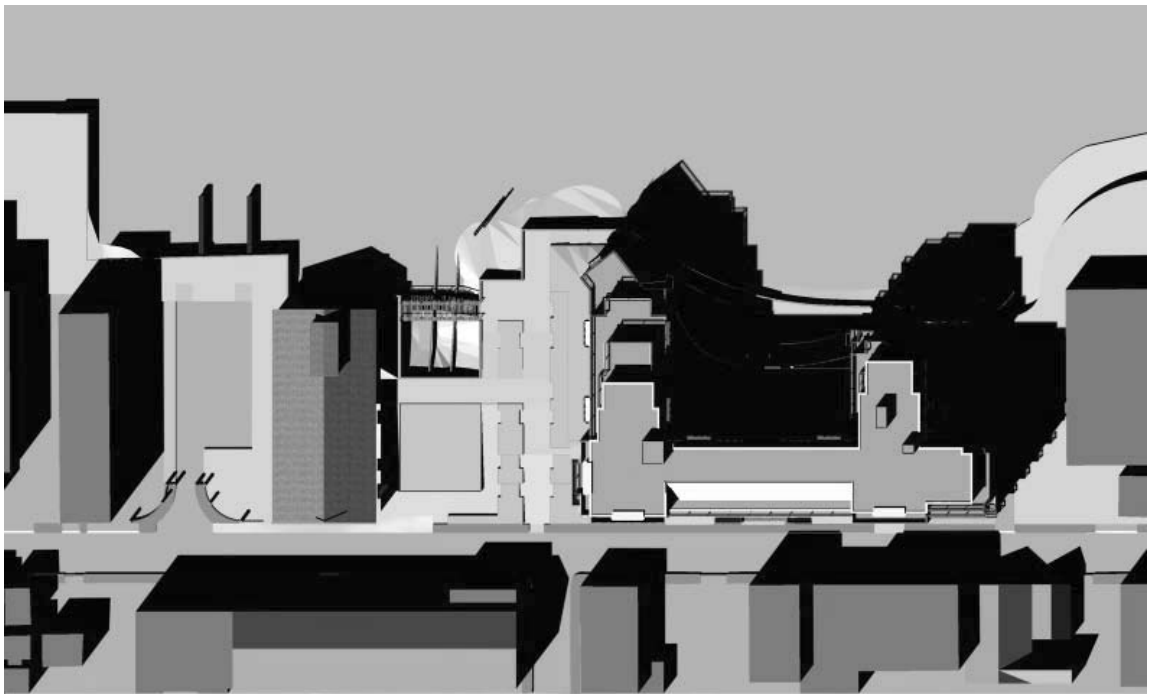
East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
September 10, 2007 ENF / PNF DRAFT

## October 23, 9 am

## Shadow Analysis



Chapter 91 Compliant Massing



Proposed Massing of Project

ICON

# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
September 10, 2007 ENF / PNF DRAFT

## October 23, 10 am

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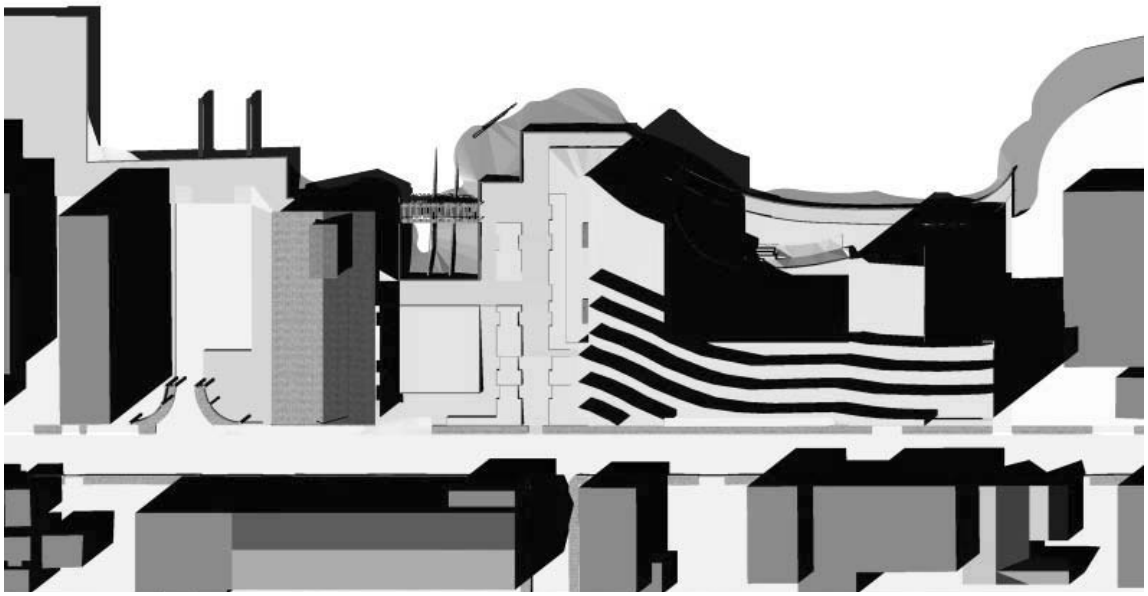


Chapter 91 Compliant Massing

Proposed Massing of Project

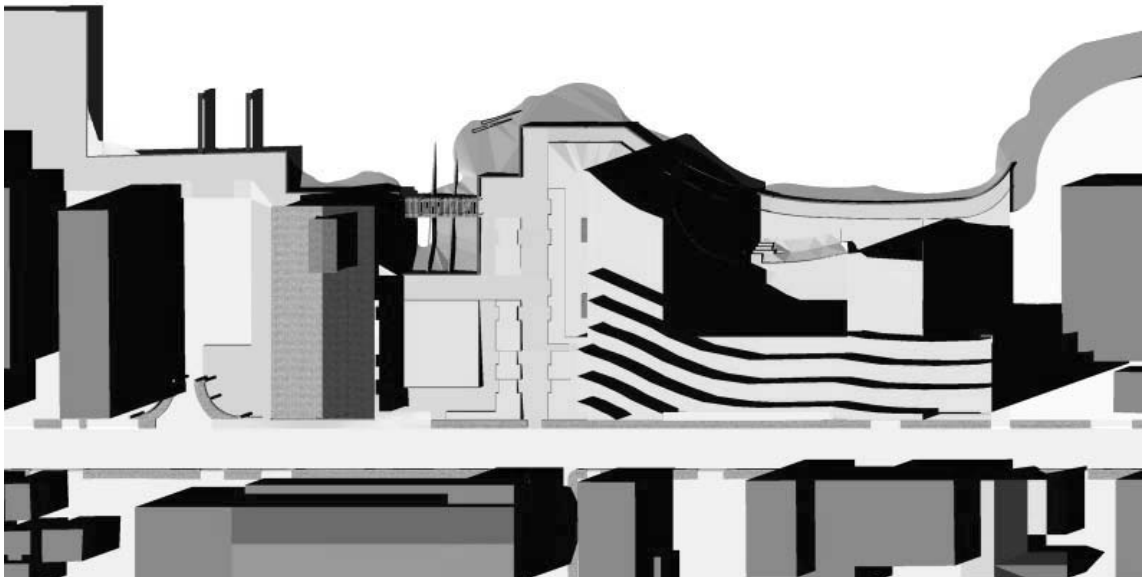
ICON architecture

# BOSTON EAST

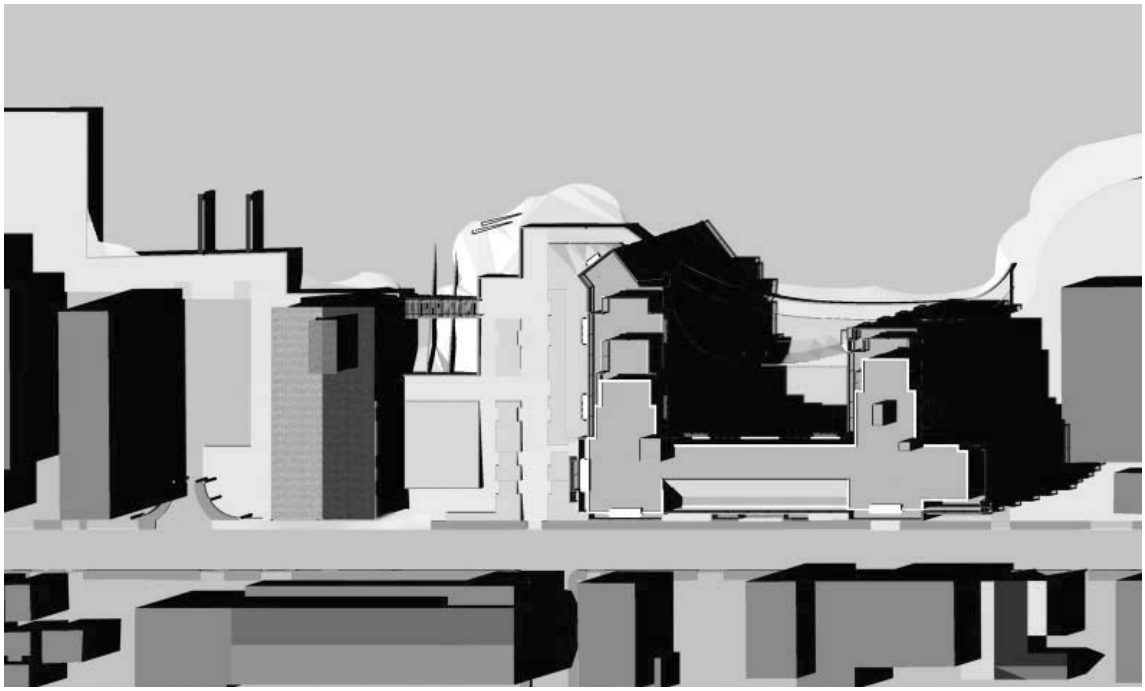
East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
September 10, 2007 ENF / PNF DRAFT

## October 23, 11 am

## Shadow Analysis



Chapter 91 Compliant Massing



Proposed Massing of Project

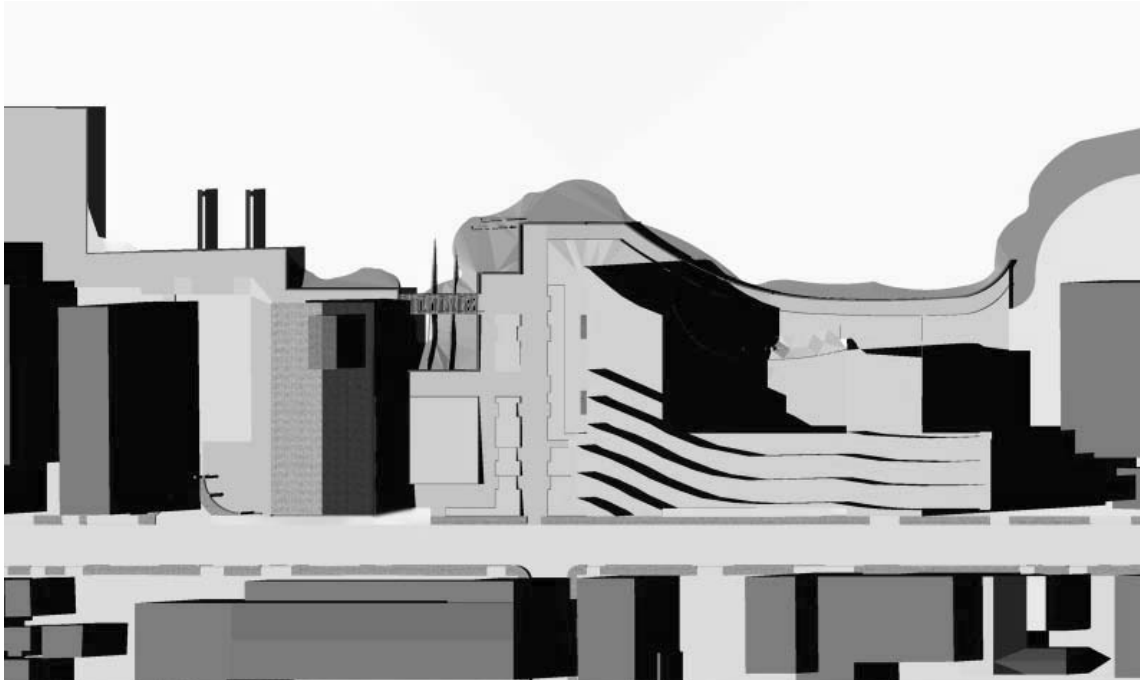
ICON architecture

# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
September 10, 2007 ENF / PNF DRAFT

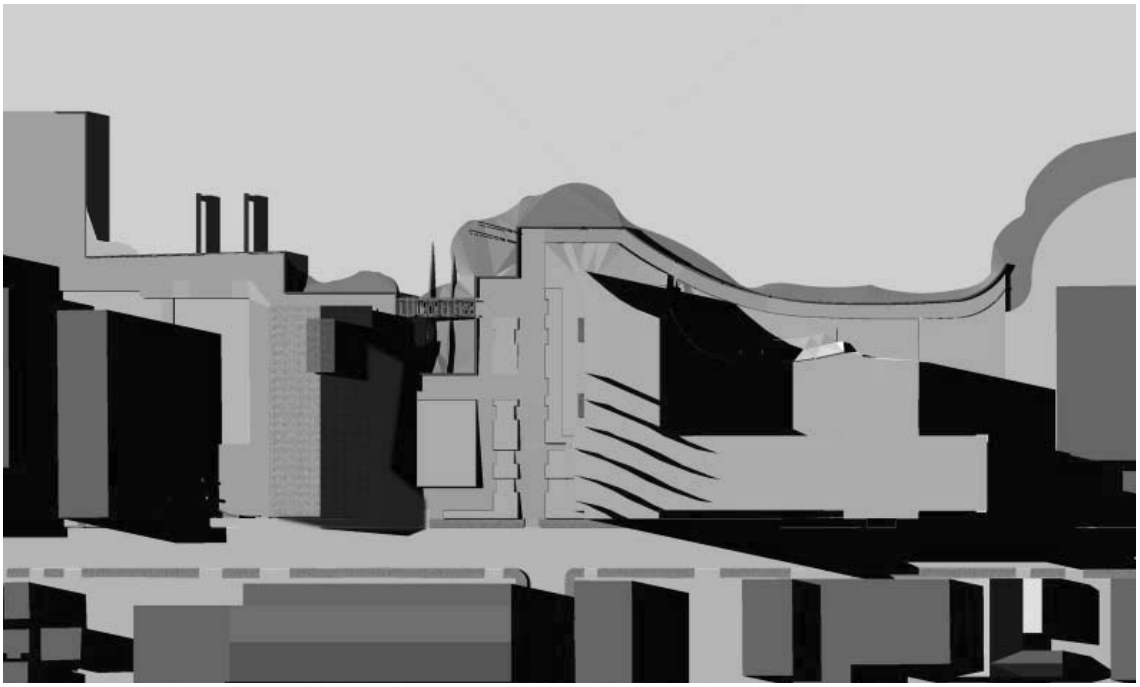
## October 23, 12 Noon

## Shadow Analysis

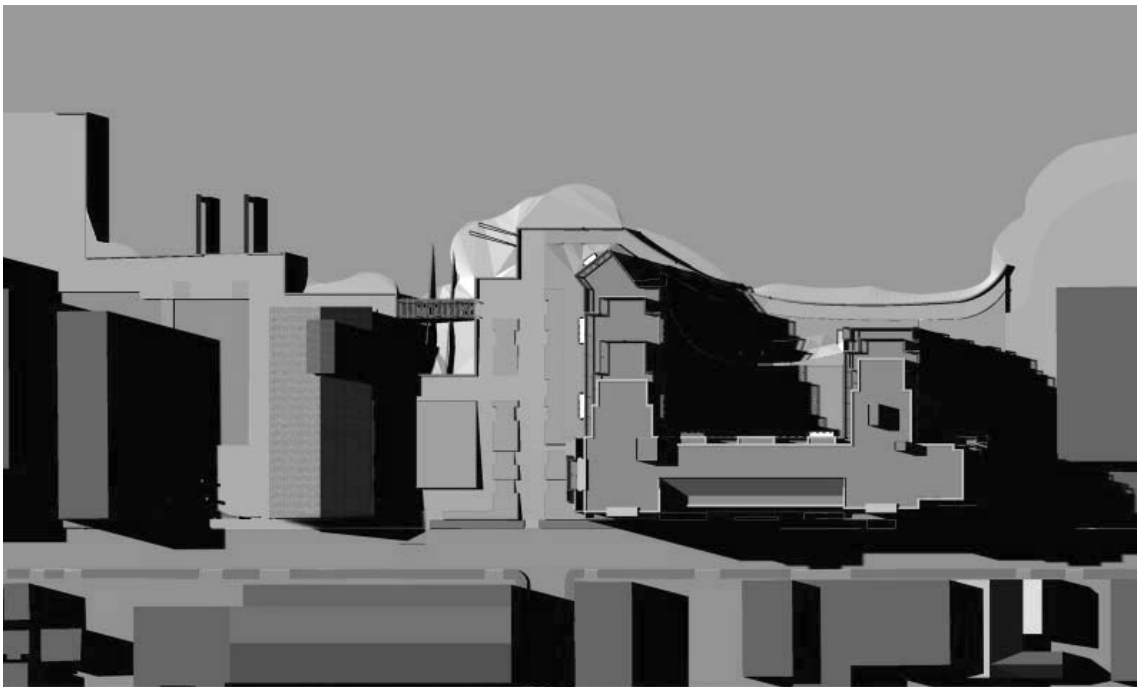


Chapter 91 Compliant Massing

Proposed Massing of Project



Chapter 91 Compliant Massing



Proposed Massing of Project

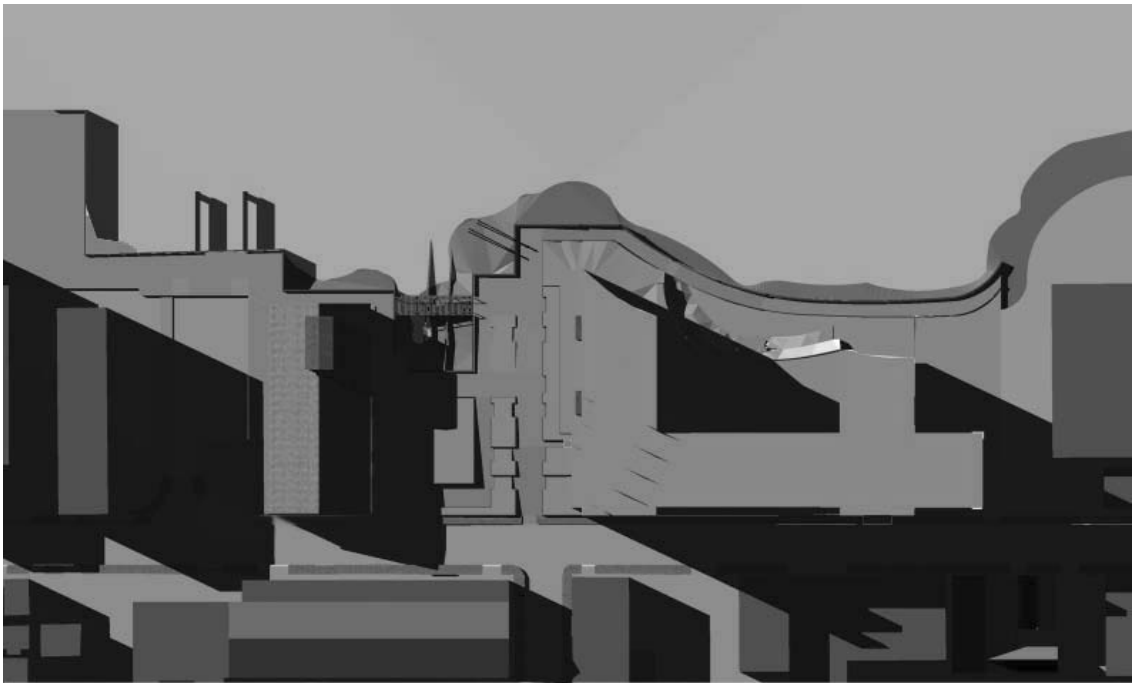
ICON architecture

# BOSTON EAST

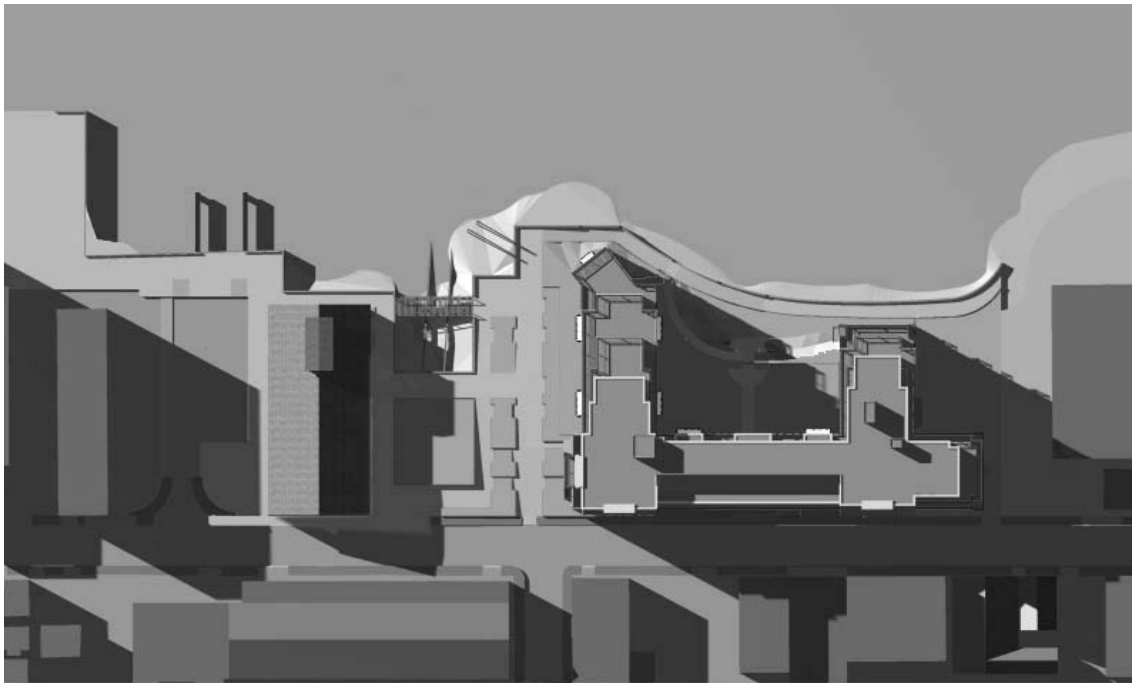
East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
September 10, 2007 ENF / PNF DRAFT

## October 23, 2 pm

## Shadow Analysis



Chapter 91 Compliant Massing



Proposed Massing of Project

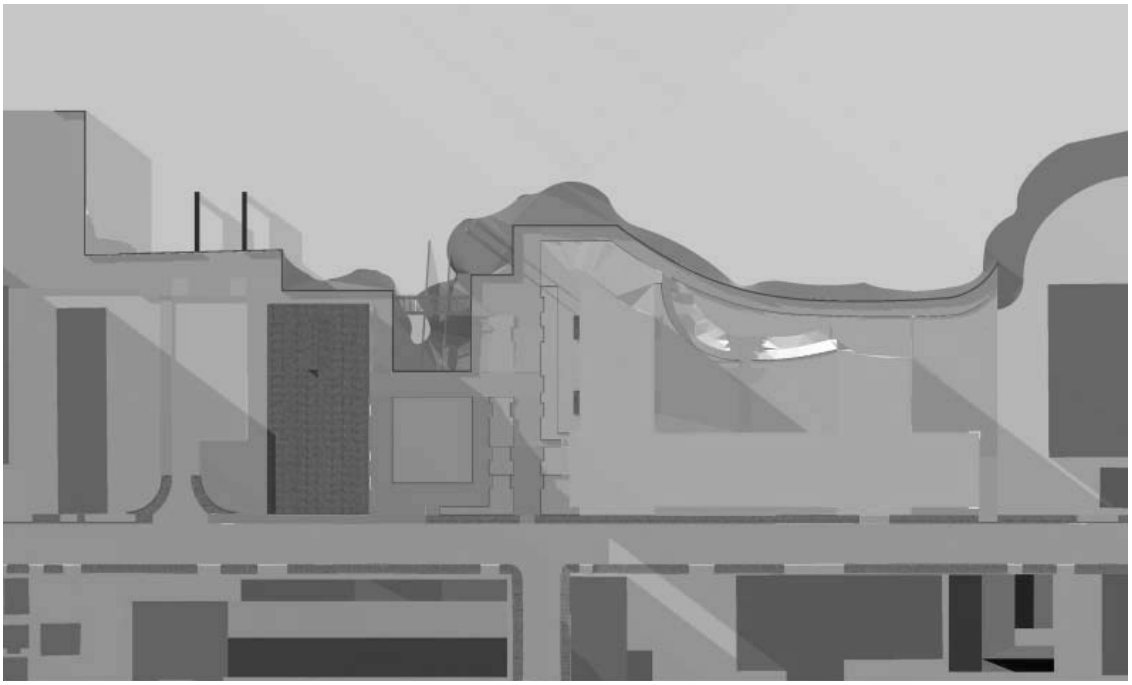
ICON architecture

# BOSTON EAST

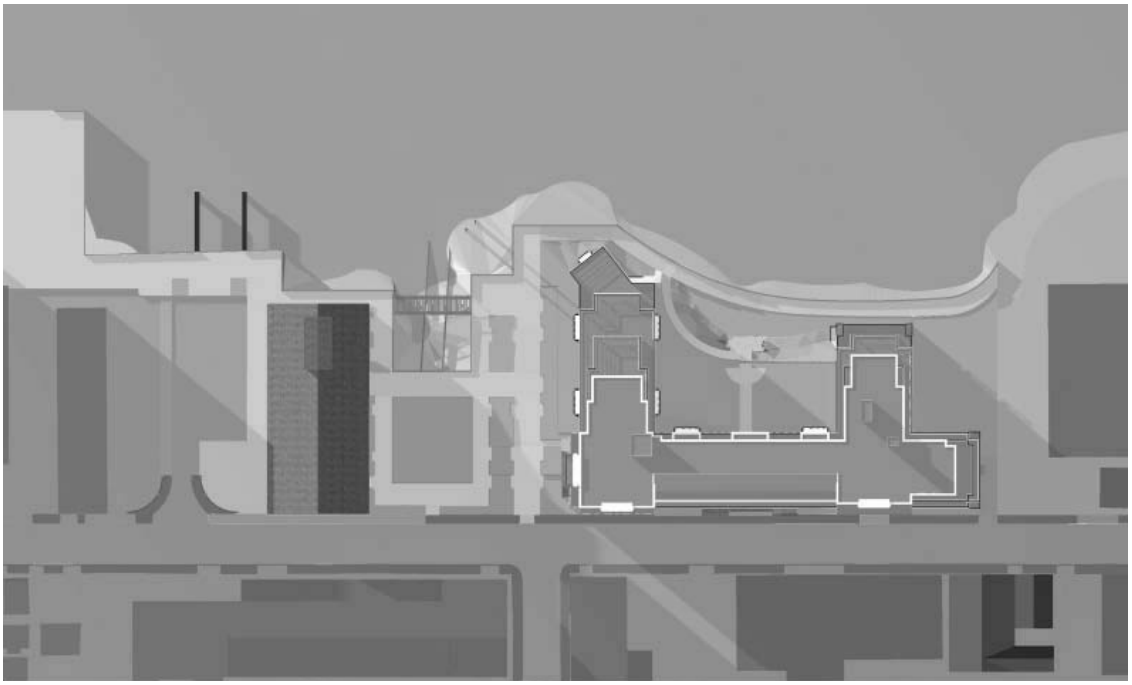
East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
September 10, 2007 ENF / PNF DRAFT

## October 23, 3 pm

## Shadow Analysis



Chapter 91 Compliant Massing



Proposed Massing of Project

ICON architecture

# BOSTON EAST

East Boston, Massachusetts
Trinity Border Street LLC and EBCDC
September 10, 2007 ENF / PNF DRAFT

## October 23, 4 pm

## Shadow Analysis

# Appendix 5

# LEED CHECKLIST

# LEED for New Construction v2.2
# Registered Project Checklist

Boston East
East Boston, Massachusetts

| Yes | ? | No | | | |
|---|---|---|---|---|---|
| **11** | | **3** | **Sustainable Sites** | | **14** Points |
| **Y** | | | Prereq 1 | **Construction Activity Pollution Prevention** | Required |
| **1** | | | Credit 1 | **Site Selection** | 1 |
| **1** | | | Credit 2 | **Development Density & Community Connectivity** | 1 |
| **1** | | | Credit 3 | **Brownfield Redevelopment** | 1 |
| **1** | | | Credit 4.1 | **Alternative Transportation**, Public Transportation Access | 1 |
| **1** | | | Credit 4.2 | **Alternative Transportation**, Bicycle Storage & Changing Rooms | 1 |
| | | **1** | Credit 4.3 | **Alternative Transportation**, Low-Emitting & Fuel-Efficient Vehicles | 1 |
| **1** | | | Credit 4.4 | **Alternative Transportation**, Parking Capacity | 1 |
| | | **1** | Credit 5.1 | **Site Development,** Protect or Restore Habitat | 1 |
| **1** | | | Credit 5.2 | **Site Development,** Maximize Open Space | 1 |
| **1** | | | Credit 6.1 | **Stormwater Design,** Quantity Control | 1 |
| | | **1** | Credit 6.2 | **Stormwater Design,** Quality Control | 1 |
| **1** | | | Credit 7.1 | **Heat Island Effect,** Non-Roof | 1 |
| **1** | | | Credit 7.2 | **Heat Island Effect,** Roof | 1 |
| **1** | | | Credit 8 | **Light Pollution Reduction** | 1 |

| Yes | ? | No | | | |
|---|---|---|---|---|---|
| **1** | **1** | **3** | **Water Efficiency** | | **5** Points |
| **1** | | | Credit 1.1 | **Water Efficient Landscaping**, Reduce by 50% | 1 |
| | **1** | | Credit 1.2 | **Water Efficient Landscaping**, No Potable Use or No Irrigation | 1 |
| | | **1** | Credit 2 | **Innovative Wastewater Technologies** | 1 |
| | | **1** | Credit 3.1 | **Water Use Reduction**, 20% Reduction | 1 |
| | | **1** | Credit 3.2 | **Water Use Reduction**, 30% Reduction | 1 |

| | | | | | |
|---|---|---|---|---|---|
| **6** | **1** | **3** | **Energy & Atmosphere** | | **17** Points |
| **Y** | | | Prereq 1 | **Fundamental Commissioning of the Building Energy Systems** | Required |
| **Y** | | | Prereq 2 | **Minimum Energy Performance** | Required |
| **Y** | | | Prereq 3 | **Fundamental Refrigerant Management** | Required |

***Note for EAc1**: All LEED for New Construction projects registered after June 26th, 2007 are required to achieve at least two (2) points under EAc1.

| | | | | | |
|---|---|---|---|---|---|
| **5** | | | Credit 1 | **Optimize Energy Performance** | 1 to 10 |
| | | | | 10.5% New Buildings or 3.5% Existing Building Renovations | 1 |
| | | | | 14% New Buildings or 7% Existing Building Renovations | 2 |
| | | | | 17.5% New Buildings or 10.5% Existing Building Renovations | 3 |
| | | | | 21% New Buildings or 14% Existing Building Renovations | 4 |
| | | | | **5** 24.5% New Buildings or 17.5% Existing Building Renovations | 5 |
| | | | | 28% New Buildings or 21% Existing Building Renovations | 6 |
| | | | | 31.5% New Buildings or 24.5% Existing Building Renovations | 7 |
| | | | | 35% New Buildings or 28% Existing Building Renovations | 8 |
| | | | | 38.5% New Buildings or 31.5% Existing Building Renovations | 9 |
| | | | | 42% New Buildings or 35% Existing Building Renovations | 10 |
| | | **1** | Credit 2 | **On-Site Renewable Energy** | 1 to 3 |
| | | | | 2.5% Renewable Energy | 1 |
| | | | | 7.5% Renewable Energy | 2 |
| | | | | 12.5% Renewable Energy | 3 |
| | **1** | | Credit 3 | **Enhanced Commissioning** | 1 |
| **1** | | | Credit 4 | **Enhanced Refrigerant Management** | 1 |
| | | **1** | Credit 5 | **Measurement & Verification** | 1 |
| | | **1** | Credit 6 | **Green Power** | 1 |

| Yes | ? | No | | | |
|---|---|---|---|---|---|
| **3** | **3** | **7** | **Materials & Resources** | | **13** Points |
| **Y** | | | Prereq 1 | **Storage & Collection of Recyclables** | Required |
| | | **1** | Credit 1.1 | **Building Reuse**, Maintain 75% of Existing Walls, Floors & Roof | 1 |
| | | **1** | Credit 1.2 | **Building Reuse**, Maintain 100% of Existing Walls, Floors & Roof | 1 |
| | | **1** | Credit 1.3 | **Building Reuse**, Maintain 50% of Interior Non-Structural Elements | 1 |
| | **1** | | Credit 2.1 | **Construction Waste Management**, Divert 50% from Disposal | 1 |
| | **1** | | Credit 2.2 | **Construction Waste Management**, Divert 75% from Disposal | 1 |
| | | **1** | Credit 3.1 | **Materials Reuse**, 5% | 1 |
| | | **1** | Credit 3.2 | **Materials Reuse**,10% | 1 |
| **1** | | | Credit 4.1 | **Recycled Content**, 10% (post-consumer + ½ pre-consumer) | 1 |
| **1** | | | Credit 4.2 | **Recycled Content**, 20% (post-consumer + ½ pre-consumer) | 1 |
| **1** | | | Credit 5.1 | **Regional Materials**, 10% Extracted, Processed & Manufactured Regional | 1 |
| | **1** | | Credit 5.2 | **Regional Materials**, 20% Extracted, Processed & Manufactured Regional | 1 |
| | | **1** | Credit 6 | **Rapidly Renewable Materials** | 1 |
| | | **1** | Credit 7 | **Certified Wood** | 1 |

| Yes | ? | No | | | |
|---|---|---|---|---|---|
| **9** | **4** | **2** | **Indoor Environmental Quality** | | **15** Points |
| **Y** | | | Prereq 1 | **Minimum IAQ Performance** | Required |
| **Y** | | | Prereq 2 | **Environmental Tobacco Smoke** (ETS) **Control** | Required |
| | | **1** | Credit 1 | **Outdoor Air Delivery Monitoring** | 1 |
| | **1** | | Credit 2 | **Increased Ventilation** | 1 |
| | **1** | | Credit 3.1 | **Construction IAQ Management Plan**, During Construction | 1 |
| | **1** | | Credit 3.2 | **Construction IAQ Management Plan**, Before Occupancy | 1 |
| **1** | | | Credit 4.1 | **Low-Emitting Materials**, Adhesives & Sealants | 1 |
| **1** | | | Credit 4.2 | **Low-Emitting Materials**, Paints & Coatings | 1 |
| **1** | | | Credit 4.3 | **Low-Emitting Materials**, Carpet Systems | 1 |
| **1** | | | Credit 4.4 | **Low-Emitting Materials**, Composite Wood & Agrifiber Products | 1 |
| **1** | | | Credit 5 | **Indoor Chemical & Pollutant Source Control** | 1 |
| **1** | | | Credit 6.1 | **Controllability of Systems**, Lighting | 1 |
| **1** | | | Credit 6.2 | **Controllability of Systems**, Thermal Comfort | 1 |
| | **1** | | Credit 7.1 | **Thermal Comfort**, Design | 1 |
| | | **1** | Credit 7.2 | **Thermal Comfort**, Verification | 1 |
| **1** | | | Credit 8.1 | **Daylight & Views**, Daylight 75% of Spaces | 1 |
| **1** | | | Credit 8.2 | **Daylight & Views**, Views for 90% of Spaces | 1 |

| Yes | ? | No | | | |
|---|---|---|---|---|---|
| **1** | | **4** | **Innovation & Design Process** | | **5** Points |
| | | **1** | Credit 1.1 | **Innovation in Design**: Provide Specific Title | 1 |
| | | **1** | Credit 1.2 | **Innovation in Design**: Provide Specific Title | 1 |
| | | **1** | Credit 1.3 | **Innovation in Design**: Provide Specific Title | 1 |
| | | **1** | Credit 1.4 | **Innovation in Design**: Provide Specific Title | 1 |
| **1** | | | Credit 2 | **LEED® Accredited Professional** | 1 |

| Yes | ? | No | | |
|---|---|---|---|---|
| **31** | **9** | **22** | **Project Totals (pre-certification estimates)** | **69** Points |

**Certified:** 26-32 points, **Silver:** 33-38 points, **Gold:** 39-51 points, **Platinum:** 52-69 points