October 17, 2013

Re: University of Massachusetts Boston
25 Year Master Plan
Comprehensive Written Determination
Application No. W11-4267-N
Transmittal X257343
Harborwalk Application

Dear Andrea:

Enclosed please find the application by the University of Massachusetts Boston for a waterways license for the construction of the Harborwalk to complete the segment between the John F. Kennedy Library and Old Harbor Park along Dorchester Bay on the northerly side of the UMass Boston campus. The proposed work also will stabilize the eroding shoreline in that area and cap the debris historically used as fill.

As you know, the Harborwalk is one of the UMass Boston 25 Year Master Plan Phase 1 projects that has been reviewed and completed review under MEPA, all as detailed within the enclosed application. It also is one of the projects included within the referenced, pending application to MassDEP by UMass Boston for the issuance of a Consolidated Written Determination (CWD) for all of the Master Plan projects that are within the Department’s jurisdiction under G.L. c.91 and are subject to Stat. 1969, c.898. An anticipated outcome of the issuance of the requested CWD would be the establishment of a special procedure for reviewing c.91 jurisdictional Master Plan projects.

As the CWD remains pending, but may soon be issued, this application seeks to satisfy both (1) the anticipated conditions and special procedure of the CWD and also (2) the standard requirements and procedures of G.L. c.91 and Stat. 1969, c.898. UMass Boston prefers for the Department to process the Harborwalk after issuing the requested CWD in the near term, but files in the alternative because its overriding objective is to receive approval for the Harborwalk in advance of the scheduled commencement of construction in November, 2013.

Thank you for your assistance.

Very truly yours,

[Signature]

Zehra Schneider Graham
Deputy Director, EHS
Enter your transmittal number: X257343

1. Please type or print. A separate Transmittal Form must be completed for each permit application.

2. Make your check payable to the Commonwealth of Massachusetts and mail it with a copy of this form to: DEP, P.O. Box 4062, Boston, MA 02211.

3. Three copies of this form will be needed.

   Copy 1 - the original must accompany your permit application.
   Copy 2 must accompany your fee payment.
   Copy 3 should be retained for your records.

4. Both fee-paying and exempt applicants must mail a copy of this form to MassDEP P.O. Box 4062 Boston, MA 02211

* Note: For BWSC Permits, enter the LSP.

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A. Permit Information

BRP WW 01b
1. Permit Code: 7 or 8 character code from permit instructions
   Shoreline Stabilization
   2. Name of Permit Category
   Water Dependent - General
   3. Type of Project or Activity

B. Applicant Information – Firm or Individual

University of Massachusetts Boston
1. Name of Firm - Or, if party needing this approval is an individual enter name below:

   2. Last Name of Individual
   100 Morrissey Boulevard
   3. First Name of Individual
   Boston
   4. MI
   6. City/Town
   Zehra Schneider-Graham
   7. State
   Zehra@umb.edu
   8. Zip Code
   9. Telephone #
   10. Ext. #

C. Facility, Site or Individual Requiring Approval

UMass Boston
1. Name of Facility, Site Or Individual
   100 Morrissey Boulevard
   2. Street Address
   Boston
   3. City/Town
   MA
   4. State
   02125
   5. Zip Code
   (617)287-5445
   6. Telephone #
   7. Ext. #

D. Application Prepared by (if different from Section B)*

Bourne Consulting Engineering, P.C.
1. Name of Firm Or Individual
   3 Bent Street
   2. Address
   Franklin
   3. City/Town
   MA
   4. State
   02038
   5. Zip Code
   (508)533-6666
   6. Telephone #
   7. Ext. #

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☑ yes ☐ no
   If yes, enter the project's EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit: 14623

F. Amount Due

Special Provisions:

1. ☑ Fee Exempt (city, town or municipal housing authority)(state agency if fee is $100 or less).
   There are no fee exemptions for BWSC permits, regardless of applicant status.

2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).

3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).

4. ☐ Homeowner (according to 310 CMR 4.02).

Reviewer:

Check Number

Dollar Amount

Date

tr-formw (3) • rev. 1/07
# A. Application Information (Check one)

NOTE: For Chapter 91 Simplified License application form and information see the Self Licensing Package for BRP WW06.

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B. Applicant Information Proposed Project/Use Information

1. Applicant:
   UMass Boston - Zehra Schneider Graham
   Name
   100 Morrissey Boulevard
   Mailing Address
   Boston
   City/Town
   6172875445
   Telephone Number
   MA
   State
   02125
   Zip Code
   zehra@umb.edu
   E-mail Address
   X
   Fax Number

2. Authorized Agent (if any):
   Seth Lattrel
   Name
   3 Bent Street
   Mailing Address
   Franklin
   City/Town
   5085336666
   Telephone Number
   MA
   State
   02038
   Zip Code
   SLattrell@Bournece.com
   E-mail Address
   X
   Fax Number

C. Proposed Project/Use Information

1. Property Information (all information must be provided):
   University of Massachusetts - Boston
   Owner Name (if different from applicant)
   1303400000
   Tax Assessor’s Map and Parcel Numbers
   100 Morrissey Boulevard
   Street Address and City/Town
   42.317427
   Latitude
   -71.036233
   Longitude
   MA
   State
   02125
   Zip Code

2. Registered Land
   ❑ Yes
   ❑ No

3. Name of the water body where the project site is located:
   Dorchester Bay

4. Description of the water body in which the project site is located (check all that apply):
   Type
   ❑ Nontidal river/stream
   ❑ Flowed tidelands
   ❑ Filled tidelands
   ❑ Great Pond
   ❑ Uncertain

   Nature
   ❑ Natural
   ❑ Enlarged/dammed
   ❑ Uncertain

   Designation
   ❑ Area of Critical Environmental Concern
   ❑ Designated Port Area
   ❑ Ocean Sanctuary
   ❑ Uncertain
C. Proposed Project/Use Information (cont.)

5. Proposed Use/Activity description
   Project involves installation of a formal revetment to stabilize eroding shoreline, and upgrades to the existing Harborwalk to provide a proper connection between the JFK Library and Old Harbor Park.

6. What is the estimated total cost of proposed work (including materials & labor)?
   $2.2 million

7. List the name & complete mailing address of each abutter (attach additional sheets, if necessary). An abutter is defined as the owner of land that shares a common boundary with the project site, as well as the owner of land that lies within 50' across a waterbody from the project.

   Please see attached
   Name | Address
   Name | Address
   Name | Address

D. Project Plans

1. I have attached plans for my project in accordance with the instructions contained in (check one):
   - [X] Appendix A (License plan)
   - [ ] Appendix B (Permit plan)

2. Other State and Local Approvals/Certifications
   - [X] 401 Water Quality Certificate
     [Pending]
     Date of Issuance
     #006-1342 - OOC issued
     3/27/13
   - [X] Wetlands
     [JD-]
     File Number
     14623
   - [ ] Jurisdictional Determination
     [Oct 15, 2010]
     Date
     3-1430, 3-4071 special project designation
   - [X] MEPA
   - [X] EOEA Secretary Certificate
   - [ ] 21E Waste Site Cleanup
E. Certification

All applicants, property owners and authorized agents must sign this page. All future application correspondence may be signed by the authorized agent alone.

"I hereby make application for a permit or license to authorize the activities I have described herein. Upon my signature, I agree to allow the duly authorized representatives of the Massachusetts Department of Environmental Protection and the Massachusetts Coastal Zone Management Program to enter upon the premises of the project site at reasonable times for the purpose of inspection."

"I hereby certify that the information submitted in this application is true and accurate to the best of my knowledge."

[Signature]
Applicant's signature

[Signature]
Property Owner's signature (if different than applicant)

[Signature]
Agent's signature (if applicable)

11/1/13
Date

8/27/13
Date
F. Waterways Dredging Addendum

1. Provide a description of the dredging project
   □ Maintenance Dredging (include last dredge date & permit no.)  □ Improvement Dredging
   Dredging in intertidal area necessary to anchor the toe of the revetment
   Purpose of Dredging

2. What is the volume (cubic yards) of material to be dredged?
   650

3. What method will be used to dredge?
   □ Hydraulic  ☑ Mechanical  □ Other

4. Describe disposal method and provide disposal location (include separate disposal site location map)
   All material will be reused on site for upland fill or disposed of at an approved offsite facility. Please see narrative for additional information.

5. Provide copy of grain size analysis. If grain size is compatible for beach nourishment purposes, the Department recommends that the dredged material be used as beach nourishment for public beaches. Note: In the event beach nourishment is proposed for private property, pursuant to 310 CMR 9.40(4)(a)1, public access easements below the existing high water mark shall be secured by applicant and submitted to the Department.
G. Municipal Zoning Certificate

UMass Boston- Zehra Schneider Graham
Name of Applicant
100 Morrissey Boulevard Boston Harbor
Project street address Waterway
Boston City/Town

Description of use or change in use:
UMass Boston is not subject to Municipal Zoning

To be completed by municipal clerk or appropriate municipal official:

"I hereby certify that the project described above and more fully detailed in the applicant's waterways license application and plans is not in violation of local zoning ordinances and bylaws."

Printed Name of Municipal Official

Date

Signature of Municipal Official

Title

City/Town
H. Municipal Planning Board Notification

University of Massachusetts Boston- Zehra Schneider Graham

Name of Applicant

100 Morrissey Boulevard Boston Harbor

Project street address Waterway Boston

City/Town

Description of use or change in use:

Project involves installation of a formal revetment to stabilize eroding shoreline, and upgrades to the existing Harborwalk to provide a proper connection between the JFK Library and Old Harbor Park.

To be completed by municipal clerk or appropriate municipal official:

"I hereby certify that the project described above and more fully detailed in the applicant's waterways license application and plans have been submitted by the applicant to the municipal planning board."

Printed Name of Municipal Official

Date

Signature of Municipal Official

Title

City/Town

Note: Any comments, including but not limited to written comments, by the general public, applicant, municipality, and/or an interested party submitted after the close of the public comment period pertaining to this Application shall not be considered, and shall not constitute a basis for standing in any further appeal pursuant to 310 CMR 9.13(4) and/or 310 CMR 9.17.
Project Narrative
UMASS-BOSTON HARBORWALK AND SHORELINE STABILIZATION PROJECT
UMBA Project #11-B1
October 2013

I. Introduction
The University of Massachusetts, through the University of Massachusetts Building Authority, is implementing improvements to the UMass-Boston Campus including upgrades to the Harborwalk and Shoreline Stabilization Project. This project falls within Phase 1 of the 25 year Master Plan for the UMass Boston Campus. The goals established by the Master Plan are to enhance public access to the waterfront and to improve links between the campus and the waterfront. This will be achieved by upgrading the unfinished section of the Boston Harborwalk to provide a proper public connection between the JFK library and Old Harbor Park.

The protection of this shoreline segment of the shoreline is needed to be provided to prevent further coastal erosion, stabilize the existing edge and eliminate the continued loss of debris into the harbor, and lastly to provide long-term protection of the infrastructure improvements to the Harborwalk.

II. Site History
The UMass Boston Campus is located on the Columbia Point Peninsula. Much of the Columbia Point Peninsula was formed by filling beginning in the early 1800s. Historical uses of the land now occupied by the UMass Boston Campus included a main drainage sewer that conveyed sanitary waste and storm water from much of Dorchester across Columbia Point (then known as Calf Pasture).

Approximately 50 to 80 acres of the approximately 110 acres of land that the UMass Boston Campus currently occupies were originally exposed tidal marshland. The remaining acreage for the UMass Boston Campus was created from extensive uncontrolled dumping and/or burning of refuse as part of a municipal landfill operated from the 1920s until the early 1960s. The landfill has previously been referred to as the Mile Road Dump, Mount Vernon Street Dump, Coleman Dump, Columbia Point Landfill, and Old Boston Landfill.
MEPA review has been performed of the 25 year Master Plan and the MEPA certificate concluded that no further MEPA review was required for the Phase 1 projects. A Special Review Procedure (SRP) has been established for the UMass 25 year Master Plan and any future project filings will need to comply with the SRP and include coordinated review under Stat. 1969, c. 898 (Chapter 898) and G.L. c. 91. As provided in the SRP, a Consolidated Written Determination (CWD) application has been submitted by UMass Boston and its project team, which upon acceptance by MassDEP will provide a determination of water dependency and licensing conditions for all Master Plan projects within Chapter 91 jurisdiction in order to streamline future Chapter 91 licensing.

III. Existing Site Features

The project site is located on Columbia Point as part of the UMass Boston Campus along its northern shoreline. The shoreline generally runs from the southeast, where it connects to the JFK Library site, to the northwest where it joins to DCR property and the Old Harbor Park Development site.

The property is now utilized as a pedestrian linkage between these two areas with a stone dust path, but is not in compliance with the Americans with Disabilities Act due to poor walkway conditions and grades that exceed maximum allowable slopes.

The property abuts Dorchester Bay and is exposed to wave action from the Northeast. The toe of slope of the shoreline embankment is at approximately high tide. The western end of the shoreline transitions into an informal beach area that is associated with the Old Harbor Park Development Project. The current shoreline has limited shore protection and has significant evidence of shoreline erosion above high tide.

IV. Site Investigation

A. Project Datum

The proposed project datum is Boston City Base (BCB) as currently used at the UMass Boston facility. Mean Low Water (MLW) is elevation (El.) +1.29' BCB and North American Vertical Datum 1988 (NAVD) is El. +6.46' BCB.

B. Still Water Flood Elevations and Sea Level Rise

The current FEMA Flood Insurance Rate Map (FIRM) for the area shows the site with various V zones with Base Flood Elevations of +13, +15, and +17 feet NAVD 1988 (+19.46, +21.46, +23.46 BCB respectively). The V zones increase west to east with the +23.46 BCB along the JFK Library coastline. The current FEMA Flood Insurance Study (FIS) for the area shows the site has a still water elevation of +9.9 NAVD 88 (+16.36 BCB) for the 1% (100yr) event inshore of the V zones.

An investigation of current methodologies for inclusion of future sea level rise was performed. On recent DCR Waterways Projects, the inclusion of an additional one foot to still water depths has been taken into account for future sea level rise anticipated within the next 50 years. This still water height is then utilized in the determination of anticipated wave height and load analysis.

Data developed by Ellen Douglas from UMass Boston’s Environmental, Earth and Ocean Sciences through The Boston Harbor Association’s “Preparing for the Rising Tide” presents information indicating the sea level rise in the next 50 years could be as high as 2.5 feet and 6 feet by the end of the century. The potential for significant sea level rise has been factored into the design of the shoreline stabilization structure and the placement of the Harborwalk as discussed in Section IV. F and Section V.
C. Shoreline Investigation and Assessment

The shoreline inspection consisted of visual inspection of the shoreline within the project limits and adjacent properties. The existing shoreline protection was found to be dumped rubble and blocks that have moved and degraded over time resulting in heavy erosion in shoreline areas. The alignment of the shoreline erosion is irregular with areas of deeper pockets created with vertical faces indicating significant continued erosion. Along most of the eroded shoreline, the toe of slope was located at the existing high water line. Photographs of the shoreline at the time of the inspection can be seen in Appendix B.

An existing gravel walkway is located along the north edge of the property adjacent to Dorchester Bay between the JFK Library and Old Harbor Park. The proposed project area is sandwiched between both developed sites, which have already installed revetment structures along their shoreline. To the east is the JFK library revetment, which extends from approximately EL +16.5 BCB, and then outshore at an approx. slope of 1.5:1 with stone sizes between 2-4 tons. To the west is the revetment at Old Harbor Park, which extends from approximately EL +16 BCB, and then outshore at an approximate slope of 2:1 with similar stone sizes of between 2-4 tons.

Along the existing walkway, a lower section exists that allows overflow from the federal wetland to discharge into the ocean. This low area has been incorporated into the Harborwalk design to maintain the existing hydrologic properties of this wetland area.

D. Geotechnical and Geo-Environmental Investigation

GEI performed a site geotechnical investigation through performance of a number of test pits to characterize the existing soil condition as well as sample the existing soils for determination of potential contaminants. On Thursday and Friday, April 26 and 27, 2012, GEI coordinated the program using a local contractor (Flett Construction) who used a track-mounted excavator to excavate seven test pits (TP-1 through TP-7) to depths ranging from 5.5 to 18 feet below the ground surface. The test pits were located at the approximate locations shown on the Base Plan (Exhibit III-A), all of which were along the existing or proposed pathway. GEI observed and coordinated the excavation of the test pits, collected soil samples for soil classification and chemical testing, and prepared logs for each of the test pits. The following was noted during excavation of the test pits:

- A layer of cover fill (i.e., sand and gravel about 2 feet in thickness) was observed in only one (TP-2) of the seven test pits. In all other test pits, construction and/or landfill debris was present from the ground surface down to the natural soil.
- The debris fill matrix was generally granular in nature and typically contained 15 to 35 percent fines (silt and clay size particles), except in the TP-6 and TP-7. In TP-6, the upper 3 feet of the debris fill encountered contained approximately 50 percent fines. In TP-7, the debris fill encountered contained approximately 50 to 70 percent fines. The debris fill exposed in the test pits appeared to contain primarily inorganic material; consequently, the debris fill is not expected to undergo much further biodegradation.
- In general, approximately 10 to 25 percent of the debris fill observed in the test pits consisted of concrete fragments, bricks, granite, and other debris.
- In five of the seven test pits, natural soil was encountered at between 8 and 12 feet below existing grade. The native soil generally consisted of lean clay or sandy clay.
- Concrete debris and granite blocks were present at the ground surface along the entire existing shoreline. The volume and size of this material was greater at the west end of the project site.
• A gasoline odor was detected in TP-7 from 4 to 12 feet below existing grade. No other visual or olfactory observations of contamination were noted during the test pit excavations.

• During excavation of the test pits, the excavated materials were field screened for volatile organic compounds (VOCs) using a photoionization detector. Except in TP-7, where a gasoline odor was observed, our field screening did not result in any obvious indication of VOC contamination.

• Select soil samples were collected from debris fill and natural soil in the test pits.

The chemical testing results of the geotechnical investigation, including test pit logs and a location plan, are presented in Appendix F.

E. Environmental Resource Area Identification

On January 30, 2012, LEC conducted a preliminary field investigation on the project site to identify and characterize Wetland Resources Areas protectable under Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40, the “Act”) and its implementing Regulations (310 CMR 10.00). A Vegetated Wetland dominated by common reed (Phragmites australis) was documented south of the Harborwalk and Shoreline Stabilization Project Area. Following the site visit, LEC reviewed the existing determinations previously issued on the project site:

According to a Negative Determination of Applicability issued by the Boston Conservation Commission on February 1, 2009, the previously flagged area (WF A1 - WF A-53) does not constitute inland wetland resource areas and is therefore not an area subject to protection under the Act. Through the Permit Extension Act, this Determination is valid until February 1, 2014.

On June 1, 2009, the US Army Corps of Engineers, New England District, determined that the flagged area is adjacent to a Traditional Navigable Water and therefore the Corps does have section 404 jurisdiction in this area under the Clean Water Act. The proposed work will have no impact within this wetland area.

Copies of both documents are presented in Appendix D.

Additional jurisdictional Wetland Resource Areas protected under the Act within or immediately proximate to the project area include Land Under the Ocean, Coastal Beach, Coastal Bank, and Land Subject to Coastal Storm Flowage (“LSCSF”). In particular, the boundary delineations for Coastal Beach and Coastal Bank are the important:

Coastal Beach is defined at 310 CMR 10.27(2), in part, to extend from the mean low water line landward to the dune line, coastal bankline or the seaward edge of existing man-made structures, when these structures replace one of the above lines, whichever is closest to the ocean. For this site, the beach extends landward to either a bankline (or toe of bank) or the seaward edge of the riprap.

Coastal Bank is defined at 310 CMR 10.30(2) as the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland. The ‘top of coastal bank’ is further clarified by policy (DWW Policy 92-1) with respect to inundation by the 100-year flood and slope criteria.

FEMA has mapped the floodplain along the shoreline of the site as containing several VE zones with different elevations (map number 25025C0083G, September 25, 2009) and is shown on a FIRM Map in Appendix A. There are no other flood zones mapped within the project area. For the entire stretch of shoreline, the top of bank is located where the slope becomes <4:1.

Previously, a Coastal Bank was delineated along a swale that is oriented perpendicular to the shore
and currently located between stations 16+00 and 17+00. Since this swale is not located in the floodplain, no Coastal Bank exists in this area. The resource areas as defined by the Massachusetts Wetlands Protection Act are delineated on the Project Base Plan shown in Appendix A.

Based on this information, the following regulatory applications are required for this project:

- USACE – Section 10 and 404 Approval – Category 2 Filing (permit received)
- DEP - Chapter 91 Waterways License Application (this application)
- DEP – 401 Water Quality Certificate Application (pending)
- Boston Conservation Commission – Notice of Intent (OOC received)

F. Wind and Wave Analysis

Wind data was taken from the analysis performed by a previous study performed by Bourne Consulting Engineering (BCE) for the Georges Island seawalls on behalf of MA-DCR. Predicted wind speeds from this study represent this general region and can be applied to this project. The wind conditions to be used for the wave analysis are as follows:

- 50 Year return period (2%) 52 knots
- 100 Year return period (1%) 56 knots

Wave analysis was performed based on available site information taken from NOAA Charts, aerial based site surveys, and the topographic and hydrographic surveys performed during the site investigation. A local fetch generated wave analysis was performed for waves generated by northeasterly winds in Boston Harbor and Dorchester Bay. The design parameters based on site conditions for the revetment were determined as follows:

- Still Water Elevation +16.4 feet BCB +6 foot sea level rise = +22.4 feet
- Significant Wave Height (Hs) 5.5 feet
- Design Wave Height (H10) 9.1 feet – for design of flexible coastal structures
- Wave Period 4.25 seconds

V. Shoreline Design and Alternative Analysis

A. Design Alternatives

The UMass Harborwalk site is a dynamic environment requiring shoreline protection. The design of the revetment is dependent on design wave as well as type of revetment and revetment slope. Alternative revetment types and slopes were developed using the results from wave and wind analysis. The options considered can be seen below with advantages and disadvantages.

 Dumped Stone 1.5:1 slope

This option provides a stone slope shoreline protection system with a slope of approximately 1.5:1. The dumped stone is easier to place and allows a quicker installation. The steeper slope will limit the material required as the slope length will be shorter and cover less area and creates less fill outshore of the high tide line. Due to the steeper slope larger stone sizes would be required to absorb the wave energy. Stone sizes would range between 1-4 tons. See Exhibit V-A.
Exhibit V-A – Dumped Rip Rap Revetment

Dumped Stone 2:1 slope

This alternative provides a stone slope shoreline protection system with a shallower slope of approximately 2:1. Similar to the dumped slope option above, the installation time is shorter than a placed slope. The shallower slope will increase the material needed, increasing the environmental impacts and fill outshore of the high tide line. Using a less steep slope allows smaller stones to be used to absorb the wave energy. Stone sizes would range between 1-3 tons.

Placed Smooth Stone 1.5:1 slope

This option provides a smooth faced stone slope shoreline protection system with a slope of approximately 1.5:1 which is consistent with the existing Old Harbor Park revetment construction. The smooth stone slope takes longer to install as the stones are selected to fit together. Stones are placed together with a flat face of the stone position up providing the smooth face. This option would best match into the adjacent revetments, as it is most similar in design and aesthetics. The steeper slope reduces the overall footprint therefore requiring less material and reducing costs. Due to the steeper slope compared to a 2:1 slope larger stone sizes will be required to absorb the wave energy. Stone sizes will range between 2-4 tons. See Exhibit V-B.

Exhibit V-B – Placed Rip Rap Revetment with 1.5 to 1 Slope

Placed Smooth Stone 2:1 slope

This alternative provides an approximate slope of 2:1 and a smooth faced stone slope. The placed slope similar to the option above, increases installation time. Stones are placed together with a flat face of the stone positioned up providing the smooth face. This option similar to the 1.5:1 Placed Slope would match into the adjacent revetments, as it is similar in design and aesthetics. The 2:1 slope increases the overall
footprint and requires more material and costs while allowing smaller stone sizes to absorb the wave energy similar to the dumped 2:1 slope. Stone sizes will range between 1-3 tons. This slope is flatter than the existing abutting properties and will result in a greater footprint and impact within the resource areas. See Exhibit V-C.

Exhibit V-C – Placed Rip Rap Revetment with 2 to 1 Slope

Vertical Bulkhead (Steel Pile Bulkhead or Concrete Seawall)

This option creates a vertical face that will be impacted by wave action. This will result in much stronger forces on the wall (versus sloped revetments) and also results in severe erosion conditions at the toe of these structures and would likely require revetment stone placed at the toe to prevent excessive scouring. Material of construction would be coated steel or concrete but would result in a structure life expectancy of 50 years or less. The costs associated with these structures normally are much greater than revetment structures and generally only used where vessel berthing is needed or where protection from wave overtopping is required to protect upland structures.

Given the adjacent properties having a smooth faced stone slope, the greater costs and the shore life expectancy, this option was not considered to be a good alternative and was not investigated any further.

B. Elevation and Sea Level Rise

There are competing theories on how much the sea level will rise within the next century, however the evidence is irrefutable that sea level is rising and will continue to do so. The Boston Harbor Associations recent report on sea level rise in Boston, titled “Preparing for the Rising Tide,” presents information suggesting the sea level rise in the next 50 years could be as high as 2.5 feet and 6 feet by the end of the century.

A six foot rise in sea level will produce deeper water outshore of the revetment enabling larger waves to transmit through Dorchester Bay. Despite increased wave height and sea level, increasing depths outshore by six feet will not generate waves large enough to be threaten the function and integrity of the three ton armor stone. In a 100 yr flood scenario with an additional six-foot rise in sea level, the shallow water within the bay and elevation of the revetment will cause waves to break prior to reaching the shoreline. The result would be an overtopping condition that is already present on the site as the current 100yr Flood Limit has a max elevation of 21.46' Boston City Base. The top of the existing revetment is below this elevation at the adjacent properties. The Harborwalk has been designed flush to grade on the inshore edge to prevent overtopping from scouring and potentially undermining the edge of the walkway.

The proposed revetment (and Harborwalk) elevation was based on matching the existing harborwalk elevations at each end of the project area; meeting the low point elevation in front of the federally protected wetland to maintain its current condition; and providing adequate height over the swale area to insure adequate drainage capacity for storm water flows.
C. Position

The revetment position within the existing shoreline was investigated to develop alternatives that result in reduction of impact to the resource areas. It is understood that significant filling will result in increased environmental concerns.

However, the moving of the revetment position inshore results in excess material that must be disposed of. The existing site is understood to be former landfill and has significant evidence of landfill debris and presumed to have some level of contamination. The cost of handling and disposal of this material also is a key issue in development of a preferred solution.

Site investigations have also determined that no cover currently exists on the existing soils and that a methodology will need to be developed to address environmental issues. This could include bringing in clean material to a depth of two feet for resolution of this issue that in turn may impact the excess material quantity.

Alternative Consideration

The alternatives for revetment alignment first included evaluation of a straight revetment face based on a baseline established by BCE that would be consistent with both the construction of the UMass/JFK Library shoreline as well as the construction at Old Harbor Park. Location of the revetment attempted to balance the impacts of filling outshore of existing High Tide Line and the removal, handling and disposal of existing historic landfill material subject to HASP, SMP, and MCP requirements.

Shifting the revetment outshore reduces the amount of fill generated during construction, while increasing impacts outshore of the High Tide Line. Different options were considered, as seen in the table below, which illustrate the volumes of excess material:

<table>
<thead>
<tr>
<th>Straight Alignment BCE Baseline</th>
<th>Cut (CY)</th>
<th>Fill (CY)</th>
<th>Revetment Fill (CY)</th>
<th>Fill outshore HTL (CY)</th>
<th>Net (CY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCE Offset 0’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCE Offset 5’</td>
<td>3503</td>
<td>41</td>
<td>4970</td>
<td>0</td>
<td>3463 excess</td>
</tr>
<tr>
<td>BCE Offset 10’</td>
<td>2239</td>
<td>286</td>
<td>4970</td>
<td>1395</td>
<td>1953 excess</td>
</tr>
<tr>
<td>BCE Offset 15’</td>
<td>1547</td>
<td>540</td>
<td>4970</td>
<td>Not Calculated</td>
<td>1007 excess</td>
</tr>
<tr>
<td>BCE Offset 20’</td>
<td>929</td>
<td>872</td>
<td>4970</td>
<td>Not Calculated</td>
<td>57 excess</td>
</tr>
</tbody>
</table>

In addition, a curved alignment of the shoreline was also investigated to follow the current shoreline changes created by erosion pockets. This allows for generation of less excess fill while minimizing the amount of material needing to be placed. Several alignments were considered to evaluate the impacts as the revetment sections are varied relative to a baseline established by Shadley Associates.

<table>
<thead>
<tr>
<th>Curved Alignment Shadley Baseline</th>
<th>Cut (CY)</th>
<th>Fill (CY)</th>
<th>Revetment Fill (CY)</th>
<th>Fill outshore HTL (CY)</th>
<th>Net (CY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shadley Offset 0’</td>
<td>3768</td>
<td>7</td>
<td>5072</td>
<td>139</td>
<td>3761 excess</td>
</tr>
<tr>
<td>Shadley Offset 10’</td>
<td>2197</td>
<td>279</td>
<td>5072</td>
<td>1362</td>
<td>1918 excess</td>
</tr>
<tr>
<td>Shadley Offset 15’</td>
<td>1408</td>
<td>771</td>
<td>5072</td>
<td>2636</td>
<td>637 excess</td>
</tr>
<tr>
<td>Shadley Offset 20’</td>
<td>968</td>
<td>1424</td>
<td>5072</td>
<td>4448</td>
<td>-456 short</td>
</tr>
</tbody>
</table>
Exhibit V-4 – Site Plan with Proposed Curvilinear path
D. Alternatives Review and Proposed Design

Different alternatives and design methods have been developed and analyzed to minimize impacts to the surrounding environment. The preferred option recommended attempts to balance the additional fill required for revetment installation with minimizing the burden of contaminated material handling and disposal. The preferred alternative is the Shadley 10’ Offset with a placed stone revetment with a face slope of 1.5 to 1 and stone sizes ranging from 2 to 4 tons.

The curved Shadley path moved offshore 10’ with placed stone revetment is the preferred option, given the adjacent sites and the location of the proposed Harborwalk. This option provides the best aesthetic appeal following the existing shape of the waterfront and minimizing the environmental impacts. Using a placed stone revetment with slope of 1.5:1 consisting of 2-4 ton stones, will match the two adjacent properties and minimize the impacts offshore with a shorter slope length. The steeper slope also reduces the amount of fill volume required. Moving the revetment offshore creates fill offshore of high tide however this option balances the overall excess fill generated and the volume of fill offshore of high tide line. In the case of a 100yr flood event and an overtopping condition the water will be dissipated via the land behind the new harbor walk.

In this option, the excess material is estimated to be about 1,500 cubic yards. This is proposed to be placed just inshore of the proposed Harborwalk between Station 13+00 and 16+50. This is estimated to raise the grade in this area by about four feet and is anticipated to require an additional two feet of cover material over the limits of the disturbed area.

VI. Material Handling and Excess Material Disposal

The project is located on a site that has a history of fill contamination and is regulated under the Massachusetts Contingency Plan (MCP), which requires special conditions in the handling and disposal of soils that are generated as part of a construction project on the site. The designated project work site will need to be covered with a 2-foot-thick cap comprised of clean uncontaminated fill free of debris or hardscape.

The proposed project will produce approximately 2,000 cubic yards of excess material. In addition to this volume will be excess material generated by the Harborwalk construction, which is estimated to be approximately 300 cubic yards. Three options have been developed for the disposal of this excess material as follows:

Reuse Within Project Area: In this option, all the excess material will be kept within the project area and stockpiled and covered in a manner acceptable to the requirements of the MCP. This includes the requirement of a two-foot clean cover layer installed over all disturbed areas. The proposed location for this stockpiling is a triangle area between Station 13+00 and 16+50 which would result in an area of approximately 16,000 square feet having 4 feet or more of excess material stockpile on top of it and then covered by the required two feet of clean capping material.

This option will be difficult to achieve due to the projects limited work area. The specific location for the excess material disposal will need to be used, to some degree, by the contractor in the partial staging of his equipment and material for installation of the shoreline revetment.

Disposal Off-Site: In this option, the material would be loaded into trucks that would take the excess material off the UMass-Boston site and dispose of it at an approved landfill or other site. This would provide the greatest benefit to the contractor as it would allow immediate removal of this material from the site but it would also be the most costly as it would require a “tipping” fee estimated to be about $65 per yard to be paid to the receiving facility to take the material.
If off-site disposal is necessary, these materials can likely be managed in the following manner:

- Reused as cover material at an in-state unlined landfill (debris fill in the vicinity of TP-7 and natural soil in the vicinity of TP-1 and TP-3).
- Reused as cover material at an in-state lined landfill (debris fill in vicinity of TP-1, TP-2, TP-5 and natural soil in the vicinity of TP-7).
- Recycled at an asphalt batch plant (debris fill in the vicinity of TP-6 and natural soil in the vicinity of TP-4 and TP-6).
- Disposed of at an out-of-state lined landfill (debris fill in the vicinity of TP-3 and TP-4).

**Disposal within UMass-Boston Site:** Currently UMass-Boston has a number of major construction projects that are generating and requiring significant amounts of fill. Under this option, the material would be trucked from the project area to an adjacent project, within the campus, where it would be deposited for use as fill as long as it is in areas with soils that have similar chemical characteristics. This alternative would be the least costly as it would not require the capping that is otherwise necessary but is dependent on the need for this type of fill within the UMass-Boston site.

Additional testing of the debris fill or natural soils will be necessary for complete characterization, if off-site disposal is necessary. The high concentrations of metals in some of the samples of debris fill and natural soil samples will require confirmation sampling to determine whether portions of these materials need to be categorized as hazardous and therefore disposal at a hazardous waste landfill. The results of that testing could change how these materials have to be managed as described above.

Chemical testing results indicate that some of the debris fill and natural soil on site contain concentrations of contaminants in excess of reportable concentrations pursuant to the Massachusetts Contingency Plan (MCP). Unless otherwise agreed upon between UMass Boston and the MassDEP, a Licensed Site Professional (LSP) will need to be engaged to provide MCP compliance services.

The preferred option for disposal would be to find a location within the UMass-Boston Campus where fill is required for one of the major construction projects that are underway or proposed. This provides the most economical method for removal of this material from the project area.

Excavation for the revetment toe is outshore of the HTL and MHW and will therefore be considered dredging. Discussion of additional testing requirements for dredged material are presented in Section VII. All excavated material, regardless of location, will be handled the same, however Mass DEP has required additional testing to establish that the dredged material is consistent with the upland soils.

**VII. Alternative Matrix Construction Cost and Comparison**

To illustrate the various components of the Harborwalk and the Shoreline Stabilization project element alternatives and their associated costs, a matrix table was developed and is shown in Exhibit XI-A. The matrix table illustrates the costs of the alternatives including:

- Shoreline Stabilization
- Harborwalk with Amenities
- Swale Crossing
- Excess Material Disposal
- Electrical Supply
The preferred combination of alternatives is illustrated in the shaded column to the far right, which represents the alternative that provides the best long-term durable alternative for the construction cost.

A comparison of alternatives was also developed in a matrix for reviewing each alternative in terms of constructability, durability, regulatory impacts, contaminated soil impacts and overall maintenance. This is shown in Exhibit XI-B below. It can be seen that the least expensive alternative was not chosen as the Harborwalk materials are not likely to be as durable as the preferred alternative. A summary of the review criteria is provided as follows:

**Constructability:** All alternatives do not have constructability issues that would result in significant project impacts. The single issue that does stand out will be the size and location of the contractor work and staging area. The ability to have adequate space for layout and construction will have an impact on overall costs as well as how much of the site will be disturbed and therefore require restoration and how the restored area will be treated relative to the need to install a two foot cover layer.

**Durability:** The revetment alternatives are all very durable with the use of a “placed” revetment being slightly more durable than a “dumped” as the revetment stones are less likely to be moved around during a major storm event. The Harborwalk components do have a variation of durability with Option C having timber elements that likely will not be as durable as the materials identified with Options A and B.

**Regulatory Impacts:** Although the regulatory impacts do not vary greatly between alternatives, it is felt that filling within the resource areas should be limited to the greatest extent feasible and therefore will look to alternatives that limit this filling. The project will also have to balance this desire with the minimization of excess fill that will be generated by the construction of the project and the high cost of its disposal.

**Contaminated Soils Impacts:** The alternatives will generate excess material that is to be handled as contaminated material. In addition, site areas without hardscape will require “capping” with two feet of clean material to meet MA DEP MCP requirements for public access. The biggest issue will be the amount of excess material generated as well as how this material is disposed of. If chosen to be an “on-site” disposal, then a greater site area is anticipated to be required and the additional cost of capping of this area will be needed.

**Maintainability:** The maintenance requirements of the proposed alternatives are modest and in keeping with the required maintenance of the existing Harborwalk elements under UMass-Boston’s facilities. The project limits are along a relative narrow corridor resulting in minimal lawn care and landscaping plants. The recommended construction materials are durable and long lasting in a public parking environment.
### Exhibit VII-A: Alternative Cost Matrix for Alternative Comparison

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Option A</th>
<th>Option B</th>
<th>Option C</th>
<th>Option D</th>
<th>Option E</th>
<th>Option F</th>
</tr>
</thead>
<tbody>
<tr>
<td>BORNE 1</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
</tr>
<tr>
<td>BORNE 2</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
</tr>
<tr>
<td>Bridge 1</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
</tr>
<tr>
<td>Bridge 2</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
</tr>
<tr>
<td>Bridge 3</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
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<tr>
<td>Electrical</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
</tr>
<tr>
<td>Total</td>
<td>544,000</td>
<td>944,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
<td>733,000</td>
</tr>
</tbody>
</table>

Exhibit VII-A: Alternative Cost Matrix for Alternative Comparison
### Exhibit VII-B: Alternative Attribute Comparison Matrix

**UMass Boston Harborwalk & Shoreline Protection**
May 5, 2012

<table>
<thead>
<tr>
<th>Alternative</th>
<th>SAII Option A</th>
<th>SAII Option B</th>
<th>SAII Option C</th>
<th>SAII Option A</th>
<th>SAII Option B</th>
<th>SAII Option C</th>
<th>SAII Option A</th>
<th>SAII Option B</th>
<th>SAII Option C</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Constrastability</strong></td>
<td>No Significant issues, staging area needs to be defined, excess contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, excess contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, reduced contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, reduced contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, reduced contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, reduced contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, reduced contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, reduced contract material handling and staging required</td>
<td>No Significant issues, staging area needs to be defined, reduced contract material handling and staging required</td>
</tr>
<tr>
<td><strong>Durability</strong></td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
<td>Revetment stone option provides long term durability, site features made of durable long lasting materials</td>
</tr>
<tr>
<td><strong>Permitting Constraints</strong></td>
<td>Increased material outshore HTL</td>
<td>Increased material outshore HTL</td>
<td>Increased material outshore HTL</td>
<td>Increased material outshore HTL</td>
<td>Increased material outshore HTL</td>
<td>Increased material outshore HTL</td>
<td>Limited material outshore HTL</td>
<td>Limited material outshore HTL</td>
<td>Limited material outshore HTL</td>
</tr>
<tr>
<td><strong>Soil Contamination / Management Considerations</strong></td>
<td>Greater material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Greater material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Greater material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Greater material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Greater material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Greater material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Reduced material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Reduced material subject to BMP and HASP requirements, final disposal determination required</td>
<td>Reduced material subject to BMP and HASP requirements, final disposal determination required</td>
</tr>
<tr>
<td><strong>Site Maintenance Cost Impacts</strong></td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
<td>Limited maintenance required for revetment, only after major storm events, general limited maintenance required for outdoor spaces</td>
</tr>
</tbody>
</table>
VIII. Design of Final Harborwalk and Shoreline Stabilization

A. 401 WQC Testing for Revetment Toe Dredging

The preferred alternative for the dredge footprint includes 1700 CY of excavation offshore of the HTL, which is considered dredging under the Corps of Engineers. This volume has been reduced from the 2000 CY in the alternative analysis through refinement of the revetment positioning.

Preliminary sampling and testing was performed on upland soils inshore of the revetment area for general characterization of the site as presented in Appendix F. DEP has since requested that additional sampling be performed on the material to be dredged to establish consistency between the upland soils and the dredged material. As previously discussed, all material generated during the toe excavation is proposed to be disposed of onsite and handled in accordance with the MCP.

Six samples were taken from 4 feet below the surface on February 21 2013 along the length of the proposed revetment toe. The samples were submitted for testing under 401 Water Quality parameters as established in 314 CMR 9.07(6), and as requested by DEP. Sediment contained a combination of sand, gravel, rock, clay, and construction materials such as brick and concrete.

Sample testing results indicate that the material chemical composition along the toe is similar to the upland material. A summary of results for the revetment toe and the upland area are contained within Appendix F for comparison.

B. Material Displacement and Impacts

Through the progression from conceptual design to preliminary design as presented in section V, the project design has been refined and modified to reflect greater detail. Specific changes that have been incorporated into the current design include:

- Design of the transitions at each end of the Harborwalk to reflect actual site conditions at the JFK Library and into Old Harbor Park.
- The establishment of a two-foot cap of clean material over all areas disturbed to comply with the MCP and to provide protection to the public.
  - This results in a two-foot increase in Harborwalk elevation and the corresponding increase in the revetment elevation and volume of revetment stone.
- Reduction of revetment toe (outshore of the slope) from the original 12feet to 8 feet to reduce the outshore encroachment
- Refinement of revetment positioning to match the existing shoreline elevations

With the greater level of the design, the impact and displacement values were recalculated. The following values represent the impacts outshore of the proposed walkway edge and does not reflect the upland filling created by the walkway construction and upland capping. Based on current preliminary design, the impacts of the proposed shoreline stabilization are as follows:
<table>
<thead>
<tr>
<th></th>
<th>Linear Feet</th>
<th>Square Feet</th>
<th>Cubic Yards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut-Total</td>
<td></td>
<td></td>
<td>3040</td>
</tr>
<tr>
<td>Fill-Total</td>
<td></td>
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<td>1560</td>
</tr>
<tr>
<td>Net Material Generated</td>
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<td>1500</td>
</tr>
<tr>
<td>Revetment Total</td>
<td>20,300</td>
<td></td>
<td>3940</td>
</tr>
<tr>
<td>Armor stone</td>
<td></td>
<td></td>
<td>2420</td>
</tr>
<tr>
<td>Underlayer</td>
<td></td>
<td></td>
<td>1520</td>
</tr>
<tr>
<td>Cut-Outshore of HTL</td>
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<td></td>
<td>1700</td>
</tr>
<tr>
<td>Cut-Outshore MHW</td>
<td></td>
<td></td>
<td>650</td>
</tr>
<tr>
<td>Fill-Outshore of HTL</td>
<td></td>
<td></td>
<td>156</td>
</tr>
<tr>
<td>Fill-Outshore MHW</td>
<td></td>
<td></td>
<td>0</td>
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<tr>
<td>LSCSF Impact (Elev. 21.46)</td>
<td>67,600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Bank Impact</td>
<td></td>
<td></td>
<td>815</td>
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<tr>
<td>Coastal Beach Impact</td>
<td></td>
<td></td>
<td>1,120</td>
</tr>
<tr>
<td>Intertidal Impact</td>
<td></td>
<td></td>
<td>2,800</td>
</tr>
</tbody>
</table>

According to Mass GIS shellfish suitability data, the Intertidal Area (outshore of MHW) is assumed to include razor clam, blue mussel, and soft-shell clam habitat. The project area is prohibited for shellfish growing and closed from shellfishing.

Shellfish impacts are anticipated to be minimal and temporary as the project will only impact the upper portion of the intertidal area. The majority of impacted area is scattered with existing rip rap and concrete rubble that is not suitable habitat for razor and soft-shell clams. Both species of clam prefer sandy or muddy bottoms that allow them to burrow into the sediment. Blue mussels will attach to rip rap and concrete rubble, however none have been observed in site investigations.

Site investigations with Massachusetts Division of Marine Fisheries (DMF) have determined that, assuming adequate containment of sediments during construction, the proposed work will not significantly impact shellfish or shellfish habitat. The upper intertidal area within the proposed project footprint offers poor habitat quality. No shellfish were observed during site surveys with DMF or on previous site investigations. Avoidance and minimization measures will be incorporated to contain sediments within the project area and prevent adverse impacts to mud flats outshore of the proposed work. Additional mitigation will also be employed to improve habitat quality as discussed further in Mitigation and Erosion Controls.

C. Mitigation and Erosion Controls

The project has been minimized to the greatest extent feasible through a thorough analysis of alternative design layouts and a preferred alternative that balances outshore encroachment and the generation of new fill that has been identified as contaminated. Structural and non-structural mitigation methodologies will be employed to reduce impacts to proximate resources including:
- Staked erosion control barrier at the top of the bank along the full extent of upland work
- All intertidal excavation will be performed in the dry.
- Intertidal work will be performed in sections. This allows the contractor to excavate and stabilize the work area within a single tidal cycle to prevent disturbed areas from being exposed to tidal action. This will be achieved by excavating the toe, laying geotextile and backfilling with coarse crushed stone underlayer before the tide rises to the disturbed area.
- Following shoreline stabilization and Harborwalk construction, upland areas will be stabilized with vegetation as soon as possible. Staked erosion controls will remain in place until soils are fully stabilized.
- Contaminated material will be handled in conformance with the Soil Management Plan (SMP) and the Health and Safety Plan (HASP) to ensure protection for resource areas as well as construction personnel and ultimate the general public.
- If it is found that excessive wet soils are generated during the shoreline stabilization excavation, the contractor will be required to provide a defined dewatering site to minimize moisture content within the sediment prior to reuse or upland disposal.

In addition to the above-mentioned mitigation, excess large stones and debris will be removed from the intertidal areas offshore of the project limits to improve and restore shellfish habitat. This additional mitigation was the result of a site meeting with DMF to investigate the quality of existing shellfish habitat in the project area.

Through containment of sediments, avoidance of in-water work, and stabilization of soils, impacts are anticipated to be minimal and temporary. Effective containment of sediments during intertidal work will minimize adverse impacts to shellfish habitat offshore of the revetment. As such, no additional compensatory mitigation is proposed at this time.
APPENDIX A

PLANS
I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE Registers OF DEEDS.
I CERTIFY THAT THIS PLAN AS PREPARED CONFORMS TO THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS.
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APPENDIX B

SITE PHOTOGRAPHS

Bourne Consulting Engineering
Site Photos - Existing Conditions
UMass-Boston Harborwalk and Shoreline Stabilization Project

Image 1 - Looking northwest from JFK Harborwalk toward the eastern extent of the proposed work

Image 2 - Looking northwest from along the existing gravel Harborwalk towards debris ridden and eroding shoreline of proposed work
Image 3- Looking northwest at the smooth faced revetment and paved Harborwalk along the JFK Library

Image 4- From western point of proposed work looking towards the existing transition between the JFK Library and the UMB Harborwalk
Image 5 - Looking west at low tide along the shoreline towards the JFK Library

Image 6 - Existing rip rap rubble along shoreline
APPENDIX C

REGULATORY APPROVALS

Order of Conditions #006-1342
March 27, 2013

Seth Lattrell
Bourne Consulting Engineering
3 Bent Street
Franklin, MA 02038

BY CERTIFIED MAIL: 7012 0470 0001 6967 2086

RE: DEP File No. 006-1342 Order of Conditions, University of Massachusetts Boston, Shoreline Stabilization and Harborwalk Upgrades, 100 Morrissey Boulevard, Dorchester, Dorchester Bay (Coastal Beaches, Land Containing Shellfish, Land Subject to Coastal Storm Flowage)

Dear Mr. Lattrell:

Pursuant to the Massachusetts Wetlands Protection Act, General Laws, Chapter 131, Section 40, I have enclosed the Order of Conditions ("the Order") for the above referenced project. Please arrange to have the Order recorded at the Suffolk County Registry of Deeds in accordance with General Condition 9. Work on the project may not begin until the Boston Conservation Commission receives the completed form on page 12 of the Order.

In accordance with General Condition 12 of the Order, upon completion of the project a Request for a Certificate of Compliance (WPA Form 8A), must be filed with the Commission stating that the work has been satisfactorily completed. If the project filing included plans stamped by a registered professional engineer, architect, landscape architect or land surveyor a written statement by such professional must accompany the Certificate request confirming that the project has been completed in substantial compliance with the plans and the conditions of the Order.

Please make certain that all contractors and workers involved in the project review the permit conditions as specified in Special Condition 23. Please also ensure that the pre-construction requirements of Special Conditions 34-40 are satisfied prior to the start of construction.

If you should have any questions regarding the enclosed Order of Conditions I may be reached at 617-635-4417.

For the Commission,

[Signature]
Stephanie Kruehl, Executive Secretary
Boston Conservation Commission

Enclosure: WPA Form 5

cc: Zehra Schneider Graham, UMass
A. General Information
1. Conservation Commission: BOSTON
2. Issuance: OOC
   a. □ OOC  b. □ Amended OOC

3. Applicant Details
   a. First Name: ZEHRA  b. Last Name: SCHNEIDER GRAHAM
   c. Organization: UNIVERSITY OF MASSACHUSETTS
   d. Mailing Address: 100 MORRISSEY BOULEVARD

4. Property Owner
   a. First Name: ZEHRA  b. Last Name: SCHNEIDER GRAHAM
   c. Organization: COMMONWEALTH OF MASSACHUSETTS
   d. Mailing Address: 24 BEACON STREET

5. Project Location
   a. Street Address: 100 MORRISSEY BOULEVARD
   d. Assessors Map/Plate#: 130  e. Parcel/Lot#: 3400000
   f. Latitude: 42.31738N  g. Longitude: 71.03647W

6. Property recorded at the Registry of Deed for:
   a. County: SUFFOLK  b. Certificate: N/A  c. Book: N/A  d. Page: N/A

7. Dates

8. Final Approved Plans and Other Documents
   a. Plan Title:  b. Plan Prepared by:  c. Plan Signed/Stamped by:  d. Revised Final Date:  e. Scale:
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 - Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

HARBORWALK & SHORELINE STABILIZATION PROJECT UMBA PROF. #11-B1 SHEETS C-100, C-101, C-200, C-201, C-300.

RONALD BOURNE 02/15/2013 AS SHOWN

HARBORWALK & SHORELINE STABILIZATION PROJECT UMBA PROF. #11-B1 SHEETS L-100, L-101, L-200, L-201, L-300, L-301, L-400.

PAMELA SHADLEY 02/30/2013 AS SHOWN

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act.

Check all that apply:

d. ☐ Private Water Supply  e. ☐ Fisheries  f. ☑ Protection of Wildlife Habitat
g. ☑ Ground Water Supply  h. ☑ Storm Damage Prevention  i. ☑ Flood Control

2. Commission hereby finds the project, as proposed, is:

A approved subject to:

a. ☑ The following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

Denied because:

b. ☐ The proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect interests of the Act, and a final Order of Conditions is issued. A description of the performance standards which the proposed work cannot meet is attached to this Order.

c. ☐ The information submitted by the applicant is not sufficient to describe the site, the work or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).
### Inland Resource Area Impacts

<table>
<thead>
<tr>
<th>Resource Area</th>
<th>Proposed Alteration</th>
<th>Permitted Alteration</th>
<th>Proposed Replacement</th>
<th>Permitted Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. □ Bank</td>
<td>a. linear feet</td>
<td>b. linear feet</td>
<td>c. linear feet</td>
<td>d. linear feet</td>
</tr>
<tr>
<td>5. □ Bordering Vegetated Wetland</td>
<td>a. square feet</td>
<td>b. square feet</td>
<td>c. square feet</td>
<td>d. square feet</td>
</tr>
<tr>
<td>6. □ Land under Waterbodies and Waterways</td>
<td>a. square feet</td>
<td>b. square feet</td>
<td>c. square feet</td>
<td>d. square feet</td>
</tr>
<tr>
<td></td>
<td>e. c/y dredged</td>
<td>f. c/y dredged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. □ Bordering Land Subject to Flooding</td>
<td>a. square feet</td>
<td>b. square feet</td>
<td>c. square feet</td>
<td>d. square feet</td>
</tr>
<tr>
<td>Cubic Feet Flood Storage</td>
<td>e. cubic feet</td>
<td>f. cubic feet</td>
<td>g. cubic feet</td>
<td>h. cubic feet</td>
</tr>
<tr>
<td>8. □ Isolated Land Subject to Flooding</td>
<td>a. square feet</td>
<td>b. square feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cubic Feet Flood Storage</td>
<td>e. cubic feet</td>
<td>d. cubic feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. □ Riverfront Area</td>
<td>a. total sq. feet</td>
<td>b. total sq. feet</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sq ft within 100 ft</td>
<td>c. square feet</td>
<td>d. square feet</td>
<td>e. square feet</td>
<td>i. square feet</td>
</tr>
<tr>
<td>Sq ft between 100-200 ft</td>
<td>g. square feet</td>
<td>h. square feet</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Coastal Resource Area Impacts

<table>
<thead>
<tr>
<th>Resource Area</th>
<th>Proposed Alteration</th>
<th>Permitted Alteration</th>
<th>Proposed Replacement</th>
<th>Permitted Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. □ Designated Port Areas</td>
<td>Indicate size under Land Under the Ocean, below</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. □ Land Under the Ocean</td>
<td>a. square feet</td>
<td>b. square feet</td>
<td>e. c/y dredged</td>
<td>d. c/y dredged</td>
</tr>
<tr>
<td>12. □ Barrier Beaches</td>
<td>Indicate size under Coastal Beaches and/or Coastal Dunes below</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
13. ☐ Coastal Beaches

14. ☐ Coastal Dunes

15. ☐ Coastal Banks

16. ☐ Rocky Intertidal Shores

17. ☐ Salt Marshes

18. ☐ Land Under Salt Ponds

19. ☐ Land Containing Shellfish

20. ☐ Fish Runs

21. ☐ Land Subject to Coastal Storm Flowage

22. ☐ Restoration/Enhancement (For Approvals Only)

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c & d or B.17.c & d above, please enter the additional amount here.

<table>
<thead>
<tr>
<th>a. square feet of BVW</th>
<th>b. square feet of Salt Marsh</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. ☐ Streams Crossing(s)

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

<table>
<thead>
<tr>
<th>a. number of new stream crossings</th>
<th>b. number of replacement stream crossings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.

2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.

3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, and local laws.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
   a. the work is a maintenance dredging project as provided for in the Act; or
   b. the time for completion has been extended to a specified date more than three years, but less than five
      years, from the date of issuance. If this Order is intended to be valid for more than three years, the
      extension date and the special circumstances warranting the extended time period are set forth as a
      special condition in this Order.

5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the
issuing authority at least 30 days prior to the expiration date of the Order.

6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not exceed the issuance
   date of the original Final Order of Conditions.

7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including
   but not limited to lumber, bricks, plaster, wire, latex, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of
   any of the foregoing.

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken,
   until all proceedings before the Department have been completed.

9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land
   Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land,
   the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the
   proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court
   Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted
   to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds,
   prior to the commencement of work.

10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,
    "Massachusetts Department of Environmental Protection"
    [or "MassDEP"]
    File Number: "006-1342"

11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission
    shall be a party to all agency proceedings and hearings before Mass DEP.

12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form
    8A) to the Conservation Commission.

13. The work shall conform to the plans and special conditions referenced in this order.

14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission
    in writing whether the change is significant enough to require the filing of a new Notice of Intent.

15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to
    enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this
    Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that
    evaluation.

16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and
to any contractor or other person performing work conditioned by this Order.

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the
    wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland
    boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.

18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or
    other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her
    designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed.
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 - Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls if deemed necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.

NOTICE OF STORMWATER CONTROL AND MAINTENANCE REQUIREMENTS

19. The work associated with this Order (the "Project") is (1) [ ] is not (2) [X] subject to the Massachusetts Stormwater Standards. If the work is subject to Stormwater Standards, then the project is subject to the following conditions:
   a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Construction General Permit as required by Stormwater Standard 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
   b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that: i. all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post-construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures; ii. as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized; iii. any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10; iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition; v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
   c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 19(c)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following: i) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and ii) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
   d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollutant Discharge Elimination System Multi-Sector General Permit.
   e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 19(f) through 19(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 19(f) through 19(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be served by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
   f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.
   g) The responsible party shall:
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 - Order of Conditions
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location); b) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.

2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.

3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.

j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.

k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.

l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions:

D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? ☑ Yes ☐ No

2. The Conservation Commission hereby (check one that applies):
   a. ☑ DENIES the proposed work which cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw specifically:
      1. Municipal Ordinance or Bylaw
      2. Citation
   Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order or Conditions is issued. Which are necessary to comply with a municipal ordinance or bylaw.

   b. ☐ APPROVES the proposed work, subject to the following additional conditions:
      1. Municipal Ordinance or Bylaw
      2. Citation

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows:
E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.

This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy must also be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

Signatures:

☐ by hand delivery on

☐ by certified mail, return receipt requested, on

Date

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request of Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
G. Recording Information

This Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

BOSTON
Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

BOSTON
Conservation Commission

Please be advised that the Order of Conditions for the Project at:

100 MORRISSEY BOULEVARD
Project Location

Has been recorded at the Registry of Deeds of:

County Book Page

for:

Property Owner ZEHRA SCHNEIDER GRAHAM

and has been noted in the chain of title of the affected property in:

Book Page

In accordance with the Order of Conditions issued on:

Date

If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant

Rev. 4/2/2010
20. The term "Applicant" as used in this Order of Conditions shall refer to the owner, any successor in interest or successor in control of the property referenced in the Notice of Intent, supporting documents and this Order of Conditions. The Commission shall be notified in writing within 30 days of all transfers of title of any portion of property that take place prior to the issuance of the Certificate of Compliance.

21. The property that is the subject of this Order and upon which the project is located shall be referred hereinafter as "the subject property" or the "project site".

22. A member of the Conservation Commission or its agent may enter and inspect the property and the activities that are the subjects of this Order of Conditions (OCC) at all reasonable times, with or without probably cause or prior notice, and until a Certificate of Compliance (COC) is issued, for the limited purpose of evaluating compliance with this OCC.

23. The Applicant is hereby instructed to review such conditions with all contractors and workers involved in on site operations prior to the commencement of construction on this project. Any contractors and workers arriving after construction commences shall also be apprised of these conditions.

24. The Applicant shall attach a copy of this Final Order of Conditions (hereinafter "the Order") to the contract documents associated with this project.

25. The Commission reserves the right to impose additional conditions or require the submittal of additional information as necessary to protect the interests of the Act.

26. If at any time during the implementation of the project a fish kill or significant water quality problem occurs in the vicinity of the project, all site related activities impacting the water shall cease until the source of the problem is identified and adequate mitigating measures employed to the satisfaction of the Boston Conservation Commission (hereinafter "the Commission").

27. Where relevant, all facilities and equipment will be continually operated and maintained so as to comply with the conditions and the Massachusetts Wetlands Protection Act (hereinafter "the Act"). The Applicant, owner, successor or assigns shall be responsible for maintaining all on-site drainage structures and outfalls, assuring the lasting integrity of the surface cover on the site and site activities so as to prevent erosion, siltation, sedimentation, chemical contamination or other detrimental impact to the on-site and/or off-site wetland resource areas. This condition shall be a maintenance condition, and shall not expire upon the issuance of a Certificate of Compliance.

28. A copy of the Order, including all referenced documents and plans, and all other subsequent approvals and directives issued by the Commission, shall be available for inspection at the work area.

29. There shall be no discharge or spillage of fuel, oil, or any other pollutant from this project into adjacent wetland resource areas or 100-foot Buffer Zone (hereinafter "buffer zone") associated with those resource areas. Any equipment used in any wetland resource area or buffer zone that uses fuel, oil or hydraulic fluid shall be inspected daily for leakage. Any equipment that requires repair shall be repaired outside of any wetland resource area or buffer zone. Any equipment that uses fuel, oil and/or hydraulic fluid shall be staffed at all times while operational within wetland resource areas or buffer zone. Equipment shall not be re-fueled within any wetland resource areas.

30. The Applicant and/or their contractor shall develop a spill management plan for any hazardous materials that may be employed during work in the buffer zone, resource area, or over the water. Specifically, the Applicant should prepare to effectively deal with spillage of fuel or hydraulic fluids from equipment. A quick-absorbent material, such as "Speedy Dry" or equivalent, shall be stored in a dry readily available area at the work site, and on any project related vessels, for use in the event petroleum-based fluids are spilled or leaked. The contractor shall have an oil sorbent boom at the project site and deploy the boom immediately upon observing any petroleum sheen on the watersheet. The spent material shall be containerized and disposed of properly.

31. The Applicant shall inform the Commission of any violation of this Order and any other project related spill or accident that may impact wetland resource areas as soon as possible and at least by the end
of the business day, and shall take appropriate action to mitigate impacts from such spill or accident. The Applicant or site supervisor shall notify the City of any emergency by calling Commission staff at 617-635-4417 from 9:00 AM - 5:00 PM, Monday - Friday and, at all other times, by calling the Mayor's Office's 24-hour Hotline at 617-635-4500 to contact the Director of the Environment Department. On the date of the issuance of this Order, the appropriate contact names are Stephanie Kruel (Executive Secretary, Boston Conservation Commission, stephanie.kruel@cityofboston.gov), and Bryan Glascock (Commissioner, Environment Department, bryan.glascock@cityofboston.gov).

32. Any mitigation measures required by federal, state, or other local agencies that shall impact wetlands resource areas shall be submitted to Commission staff for review to determine what level of

33. All project related correspondence and submittals to the Boston Conservation Commission regarding this Final Order shall indicate the DEP File number: 006-1342.

Prior To Construction

34. In advance of construction start-up on any section of this project, the Applicant shall notify the Commission and, at the request of the Commission, shall arrange an on-site conference of representatives of the Commission, the contractor, the project engineer and the Applicant to ensure that all the conditions of this Order are understood. The Commission shall be notified at least 48 hours in advance of the date upon which construction activities on the site are to proceed. All appropriate construction impact mitigation measures must be in place prior to initiation of work on the project site.

35. The Applicant and/or their contractor shall provide to the Commission written notification of the name, title, address and telephone numbers of the person or persons designated by the project proponent to be responsible for compliance with the Order on site. An emergency telephone number shall be provided in the event that action is required during non-working hours.

36. The project supervisor overseeing daily operations at the site shall read this Order and sign a copy of each page, indicating that each condition has been read and understood. These signed pages shall be submitted to Commission staff.

37. Prior to the commencement of construction and site clearing, an erosion and sediment control barrier shall be installed along the limit of activity between all work areas and wetland resource areas. Hay bales or straw bales shall be double staked with bales butted against each other. If straw wattles or filter sox are used, they shall be anchored in place. Geotextile siltation fence shall be installed no further than twelve (12) inches from the down-gradient side of the barrier. These barriers shall be inspected daily and after significant rain events (greater than 0.5 inches of precipitation) and maintained as necessary, including the removal of accumulated sediments. The contractor shall ensure that additional erosion and sediment control materials are available for immediate installation to replace those that are damaged or degraded. Erosion control measures shall be removed upon completion of work and after disturbed areas are stabilized. The geotextile fence shall constitute a limit-of-work line.

38. Before construction commences, the Applicant shall investigate the possibility of including additional amenities along the Harborwalk, including, but not limited to, stationary binocular viewers and public art.

39. Before construction commences, the Applicant shall submit a maintenance plan for all the public walkways, landscaped areas and signage on the subject property. The plan shall be a condition of this order by reference herein and shall not expire upon the issuance of a Certificate of Compliance. All signage shall be maintained by the property owner in perpetuity.

40. Prior to construction, and within 30 days of issuance of this Order, the applicant shall submit a report containing the results of a field investigation of the shellfish resource area conducted in coordination with the Division of Marine Fisheries to determine what, if any mitigation will be required related to
March 6, 2013 BCC PUBLIC HEARING
Attachment – Special Conditions
UMass, Harborwalk & Shoreline Stabilization Project
100 Morrissey Blvd, Dorchester, Dorchester Bay
DEP File No. 006-1342

temporary or permanent impacts to the shellfish resource and habitat and/or any permanent loss of
inter tidal habitat and habitat alteration. Any adverse impacts shall first be minimized.

During Construction

41. The Applicant, owner, successor or assigns shall regularly remove and dispose of debris on all
wetland resources areas on the project site. This is a perpetual maintenance condition that shall not
expire upon issuance of a Certificate of Compliance.

42. The Applicant shall maintain the project site free of trash and debris during any down time or hiatus in
the project during the term of this Order.

43. The Applicant and/or their contractor shall clean the work area at the end of each workday to prevent
wind deposition of fugitive dust and accumulation of debris in the buffer zone or wetland resource
areas. All stored excavate or fill shall be contained with appropriate best management practices when
not in use. Special attention shall be given by the contractor to securing covers on stored excavate,
fill, dumpsters and roll-off containers over the weekend or during down time.

44. Except when necessary for final fitting or precision cutting and during demolition, no timber or
construction materials shall be cut within the buffer zone or resource areas. All sawdust and debris
shall be collected and disposed of properly. Wood treated with creosote or Cuprinol shall not be
placed in the waters of Dorchester Bay.

45. Disposal of all construction materials, demolition debris and excess fill shall be done in accordance
with applicable federal, state, and local laws. Proof of proper disposal shall be provided in the form of
copies of bills of lading, disposal receipts or manifests to Commission staff upon request.

46. All project-related materials shall be contained from migration into wetland resource areas and all
practical precautions shall be used during construction work. The Applicant and/or their contractor
shall be responsible for the removal of any project-related debris, material, machinery or equipment
lost, dumped, thrown into, or otherwise entering any wetland resource area, regardless of whether it
is within or outside of the project limits. The proponent must seek Commission approval for any
remedial action involving substantial impacts to wetland resource areas.

47. The contractor shall have access to a boat for the collection and removal of project related trash and
debris within wetland resource areas and on the watershed. The contractor shall contain and collect
all floating debris that results from the project and collect it along with solid waste including trash.
The collected debris and trash shall be placed into containers and periodically removed for proper
disposal.

48. On-site discharge of untreated, decanted water from construction dewatering to resource areas is
prohibited. If on-site discharge becomes necessary, the Applicant must submit a plan indicating
dewatering methodology, water quality monitoring measures, and staging location of dewatering
equipment for Commission staff review and approval. Any approved dewatering must treat decanted
water according to additional conditions deemed necessary by Commission staff.

49. The Applicant, owner, successor or assigns shall ensure the cleanliness of all catch basins on the
project site or affected by project related activity. Catch basins shall be protected with hay bales and/or
silt sacks during the construction period. The proponent shall inspect and, as necessary, clean all
catch basins at least weekly during construction and more frequently after a significant rain event.
Upon completion of the project, the inspection and cleaning of catch basins on the subject property
shall occur twice a year: once between March 1st and April 30th and once between November 1st and
November 30th of each year, and more often if necessary. The Operations and Maintenance Plan of
the Stormwater Management Form referenced in this project's Notice of Intent is incorporated into this
maintenance condition by reference herein. This maintenance condition is perpetual and shall not
expire upon issuance of a Certificate of Compliance.

50. Repair or replacement of stormwater infrastructure shall not commence in advance of a forecasted
rain event.
51. All sheet flow from areas where vehicles drive or park shall be directed toward catch basins. Such basins and storm drains on site shall have hoods and sumps, and meet Boston Water and Sewer Specifications. Any new or reconstructed catch basins, or any new or replaced sections of sidewalk or pavement adjacent to surface drains on the project site, shall have a permanent plaque within one foot of the structure that states "Don't Dump - Drains to Boston Harbor."

52. Trucks entering and leaving the site shall have their loads completely covered in compliance with M.G.L. Chapter 85 § 36. Vehicles that accumulate soil or any unconsolidated material on their tires due to exposed ground conditions at the site shall be thoroughly washed to avoid tracking of material onto the public way.

53. The contractor shall have designated washout areas for concrete equipment. Concrete washout areas shall be comprised of impermeable material and sized to contain project concrete wastes and wash water. Washout areas shall not be located in the vicinity of storm drain inlets, stormwater conveyance, surface waters or wetlands.

54. Excavation equipment shall access the inter-tidal area only during periods of low tide and utilize rubber-tired vehicles.

55. There shall be no parking of contractor or laborer vehicles in any resource area or associated buffer zone without proper stormwater controls or best management practices installed.

56. Construction activity shall be confined within the limits of work as represented on the final plan of record. There shall be no staging of construction materials, storage of construction equipment, clearing or disturbance to land beyond the limit of work.

57. There shall be no overnight stockpiling or storage of construction material including unconsolidated material, piles, debris, petroleum products or hydraulic fluids within the buffer zone or 100-year flood plain without adequate controls including silt fence and hay bales, to ensure there is no impact on the resource area. Under no circumstances shall the project contractor store, stage or locate unconsolidated material or construction equipment not directly associated with the project and subject site within resource areas or the buffer zone.

58. The Applicant or their contractor must keep a daily log summarizing all construction and demolition activities of this project on every day that such activity occurs, noting turbidity conditions, occurrence of fish kills, debris removal from resource areas and evaluations of measures employed to reduce turbidity and other impacts to the water and wetland resources. The condition of all drainage, erosion controls and sedimentation structures shall be noted in the daily log, as well as the performance of maintenance activities on such structures. The contractor shall provide Commission staff with a draft construction inspection form prior to commencement of work on the project site. This log must be kept at the work area and made available upon demand by Commission staff.

59. All land-side areas disturbed during construction shall be stabilized as soon as possible upon completion of construction. Disturbed resource areas landward of the mean high water and buffer zone mark shall be secured by a biodegradable erosion control mats while vegetation establishes. If soils are disturbed for longer than 30 days, a temporary cover of rye or other grass shall be established. If the season is not appropriate for plant growth, then exposed surfaces shall be stabilized by straw, snow fence, or other U.S. Natural Resources Conservation Service recommended methods. The Applicant or their contractor shall ensure a mature cover of vegetation is established on previously disturbed or exposed areas.

60. The contractor shall conduct construction sequencing such that areas cleared of ground vegetation and earth materials are exposed for a minimum of time before they are covered, seeded, or otherwise stabilized to prevent erosion.

61. Any vegetation, shrubs and trees to be cut and cleared for the installation of the pathway shall be removed from the project site and shall not be stored or disposed of in wetland resource areas. Mature trees to be removed from the site shall be designated for removal with tape or paint.
62. The project contractor shall install protective measures to prevent disturbance or damage to existing mature trees that are to remain within the project area.

63. The applicant shall choose landscape plantings that are appropriate for rugged coastal conditions, as indicated on the Massachusetts Office of Coastal Zone Management's Coastal Landscaping Plant List (http://www.mass.gov/czm/coastal_landscaping/list.htm). The Commission recommends the use of native plantings wherever possible. Plants listed on the latest Massachusetts Department of Agricultural Resources Prohibited Plant List shall not be planted on the subject property.

64. All equipment and unconsolidated materials must be removed from the buffer zone and Land Subject to Coastal Storm Flowage (Special Flood Hazard Areas subject to inundation by the 1% annual chance flood) in advance of any forecasted coastal flooding event.

65. Exterior trash receptacles shall be secured to the ground and shall be covered or designed to prevent pollution of adjacent resource areas by vandalism or wind-blown litter. Trash receptacles shall be emptied daily from Memorial Day to Columbus Day, and at least weekly during all other months. This is a perpetual maintenance condition that shall not expire upon issuance of a Certificate of Compliance.

Project Description from NOI:

The goal of this project is to stabilize an approximately 800 linear foot section of shoreline to prevent further coastal erosion, eliminate loss of debris into the harbor and create a safer area for public access to the waterfront. This unfinished section of Harborwalk on UMass Boston property lies between the JFK Presidential Library and the Department of Conservation and Recreation’s Old Harbor Park.

The potential for significant sea level rise (6 feet) has been factored into the design of the shoreline stabilization structure and the placement of the Harborwalk. An alternatives analysis was performed with input from a wind and wave analysis. In addition, the low area associated with the Federally Designated Wetland has been incorporated into the Harborwalk design to maintain the existing hydrologic properties of the wetland area.

Through containment of sediments, avoidance of in-water work, and stabilization of soils, impacts are anticipated to be minimal and temporary. Mitigation and Erosion Controls include a staked erosion control barrier at the top of the bank along the extent of upland work; vegetated stabilization of upland areas immediately following work completion; intertidal excavation work performed in the dry and in sections, allowing for stabilization of the work area within a single tidal cycle; handling of contaminated materials in conformance with the SMP and HASP.
February 9, 2009

Ms. Alyssa Jacobs, PWS
Epsilon Associates
3 Clock Tower Place, Suite 250
Maynard, MA 01754
BY CERTIFIED MAIL: 7006 2150 0005 1151 8583

RE: Negative Determination of Applicability, Edward M. Kennedy Institute,
200 Morrissey Boulevard, Commercial Point, Dorchester

Dear Ms. Jacobs:

Enclosed please find the Determination of Applicability issued by the Conservation Commission on February 4, 2009, pursuant to Massachusetts Wetlands Protection Act, G.L. c. 131, §. 40 (the "Act"). The Determination is Negative as the flagged area (WF-A1 through WF A-53) represented within the Study Area on the Final Plans, does not constitute inland wetland resource areas and is therefore not an area subject to protection under the Act. The Determination shall be valid for three years from the date of issuance in accordance with 310 CMR 10.05 (3)(b)(1).

If you should have any questions regarding the determination I may be contacted at 617-635-4417.

For the Commission,

Chris Busch, Executive Secretary
Boston Conservation Commission

Enclosure

cc: Richard Tomczyk, DEP NERO
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 2 – Determination of Applicability
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

From: Boston Conservation Commission

To: Applicant

Edward M. Kennedy Institute
200 State Street, 5th Floor

Property Owner (if different from applicant):

Commonwealth of Massachusetts

Name

Mailing Address

Boston MA 02109

City/Town State Zip Code

1. Title and Date (or Revised Date if applicable) of Final Plans and Other Documents:

Partial Existing Conditions Plan - Proposed Edward M. Kennedy Institute, University of Massachusetts

January 2, 2009

Date

Title

Date

2. Date Request Filed:

January 21, 2009

B. Determination

Pursuant to the authority of M.G.L. c. 131, § 40, the Conservation Commission considered your Request for Determination of Applicability, with its supporting documentation, and made the following Determination.

Project Description (if applicable):

Request to determin whether an area adjacent to the John F. Kennedy Museum and Library is subject to the Massachusetts Wetlands Protection Act, Columbia Point, Dorchester.

Project Location:

Columbia Point, 200 William T. Morrissey Blvd.

Boston/Dorchester

Street Address

City/Town

Ward 13

3400

Assessors Map/Plat Number

Parcel/Lot Number
B. Determination (cont.)

The following Determination(s) is/are applicable to the proposed site and/or project relative to the Wetlands Protection Act and regulations:

Positive Determination
Note: No work within the jurisdiction of the Wetlands Protection Act may proceed until a final Order of Conditions (issued following submittal of a Notice of Intent or Abbreviated Notice of Intent) or Order of Resource Area Delineation (issued following submittal of Simplified Review ANRAD) has been received from the issuing authority (i.e., Conservation Commission or the Department of Environmental Protection).

☐ 1. The area described on the referenced plan(s) is an area subject to protection under the Act. Removing, filling, dredging, or altering of the area requires the filing of a Notice of Intent.

☐ 2a. The boundary delineations of the following resource areas described on the referenced plan(s) are confirmed as accurate. Therefore, the resource area boundaries confirmed in this Determination are binding as to all decisions rendered pursuant to the Wetlands Protection Act and its regulations regarding such boundaries for as long as this Determination is valid.

☐ 2b. The boundaries of resource areas listed below are not confirmed by this Determination, regardless of whether such boundaries are contained on the plans attached to this Determination or to the Request for Determination.

☐ 3. The work described on referenced plan(s) and document(s) is within an area subject to protection under the Act and will remove, fill, dredge, or alter that area. Therefore, said work requires the filing of a Notice of Intent.

☐ 4. The work described on referenced plan(s) and document(s) is within the Buffer Zone and will alter an Area subject to protection under the Act. Therefore, said work requires the filing of a Notice of Intent or ANRAD Simplified Review (if work is limited to the Buffer Zone).

☐ 5. The area and/or work described on referenced plan(s) and document(s) is subject to review and approval by:

Name of Municipality

Pursuant to the following municipal wetland ordinance or bylaw:

Name

Ordinance or Bylaw Citation
B. Determination (cont.)

☐ 6. The following area and/or work, if any, is subject to a municipal ordinance or bylaw but not subject to the Massachusetts Wetlands Protection Act:

☐ 7. If a Notice of Intent is filed for the work in the Riverfront Area described on referenced plan(s) and document(s), which includes all or part of the work described in the Request, the applicant must consider the following alternatives. (Refer to the wetland regulations at 10.56(4)c. for more information about the scope of alternatives requirements):

☐ Alternatives limited to the lot on which the project is located.

☐ Alternatives limited to the lot on which the project is located, the subdivided lots, and any adjacent lots formerly or presently owned by the same owner.

☐ Alternatives limited to the original parcel on which the project is located, the subdivided parcels, any adjacent parcels, and any other land which can reasonably be obtained within the municipality.

☐ Alternatives extend to any sites which can reasonably be obtained within the appropriate region of the state.

Negative Determination

Note: No further action under the Wetlands Protection Act is required by the applicant. However, if the Department is requested to issue a Superseding Determination of Applicability, work may not proceed on this project unless the Department fails to act on such request within 35 days of the date the request is post-marked for certified mail or hand delivered to the Department. Work may then proceed at the owner's risk only upon notice to the Department and to the Conservation Commission. Requirements for requests for Superseding Determinations are listed at the end of this document.

☒ 1. The area described in the Request is not an area subject to protection under the Act or the Buffer Zone.

☐ 2. The work described in the Request is within an area subject to protection under the Act, but will not remove, fill, dredge, or alter that area. Therefore, said work does not require the filing of a Notice of Intent.

☐ 3. The work described in the Request is within the Buffer Zone, as defined in the regulations, but will not alter an Area subject to protection under the Act. Therefore, said work does not require the filing of a Notice of Intent, subject to the following conditions (if any).

☐ 4. The work described in the Request is not within an Area subject to protection under the Act (including the Buffer Zone). Therefore, said work does not require the filing of a Notice of Intent, unless and until said work alters an Area subject to protection under the Act.
B. Determination (cont.)

☐ 5. The area described in the Request is subject to protection under the Act. Since the work described therein meets the requirements for the following exemption, as specified in the Act and the regulations, no Notice of Intent is required:

Exempt Activity (site applicable statutory/regulatory provisions)

☐ 6. The area and/or work described in the Request is not subject to review and approval by:

Name of Municipality

Pursuant to a municipal wetlands ordinance or bylaw.

Name

Ordinance or Bylaw Citation

C. Authorization

This Determination is issued to the applicant and delivered as follows:

☐ by hand delivery on
☐ by certified mail, return receipt requested on February 9, 2009

Date

Date

This Determination is valid for three years from the date of issuance (except Determinations for Vegetation Management Plans which are valid for the duration of the Plan). This Determination does not relieve the applicant from complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.

This Determination must be signed by a majority of the Conservation Commission. A copy must be sent to the appropriate DER Regional Office (see Attachment) and the property owner (if different from the applicant).

Signatures:

Charles B. Button

February 4, 2008

Date
D. Appeals

The applicant, owner, any person aggrieved by this Determination, any owner of land abutting the land upon which the proposed work is to be done, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate Department of Environmental Protection Regional Office (see Attachment) to issue a Superseding Determination of Applicability. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and Fee Transmittal Form (see Request for Departmental Action Fee Transmittal Form) as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Determination. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant if he/she is not the appellant. The request shall state clearly and concisely the objections to the Determination which is being appealed. To the extent that the Determination is based on a municipal ordinance or bylaw and not on the Massachusetts Wetlands Protection Act or regulations, the Department of Environmental Protection has no appellate jurisdiction.
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP Regional Addresses
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Mall transmittal forms and DEP payments, payable to:
Commonwealth of Massachusetts
Department of Environmental Protection
Box 4082
Boston, MA 02211

DEP Western Region
436 Dwight Street
Suite 402
Springfield, MA 01103
Phone: 413-784-1100
Fax: 413-784-1149

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DEP Central Region
827 Main Street
Worcester, MA 01608
Phone: 508-792-7650
Fax: 508-792-7621
TDD: 508-767-2788

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DEP Southeast Region
20 Riverside Drive
Lakeville, MA 02347
Phone: 508-946-2700
Fax: 508-946-6557
TDD: 508-946-2706

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DEP Northeast Region
1 Winter Street
Boston, MA 02108
Phone: 617-664-6500
Fax: 617-556-1049
TDD: 617-574-6868

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Wpform2.doc - DEP Addresses - rev. 10/064
A. Request Information

1. Person or party making request (if appropriate, name the citizen group’s representative):

   Name
   Mailing Address
   City/Town
   Phone Number
   Project Location
   Mailing Address
   City/Town
   Phone Number
   Fax Number (if applicable)

2. Applicant (as shown on Notice of Intent (Form 3), Abbreviated Notice of Resource Area Delineation (Form 4A); or Request for Determination of Applicability (Form 1)):

   Name
   Mailing Address
   City/Town
   Phone Number
   Fax Number (if applicable)

3. DEP File Number:

B. Instructions

1. When the Departmental action request is for (check one):

   □ Superseding Order of Conditions ($100 for individual single family homes with associated structures; $200 for all other projects)
   □ Superseding Determination of Applicability ($100)
   □ Superseding Order of Resource Area Delineation ($100)

Send this form and check or money order for the appropriate amount, payable to the Commonwealth of Massachusetts to:

Department of Environmental Protection
Box 4062
Boston, MA 02211
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
Request for Departmental Action Fee Transmittal Form
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Instructions (cont.)

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.

3. Send a copy of this form and a copy of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see Attachment A).

4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.
June 1, 2009

Edward M. Kennedy Institute
c/o Andrew Moore
200 State Street, 5th Floor
Boston, Massachusetts 02109

Dear Mr. Spohn:

This letter responds to your request for a determination of jurisdiction for wetlands areas located at an undeveloped parcel in close proximity to the Edward M. Kennedy Institute, Columbia Point, Boston, Massachusetts.

Richard C. Kristoff of our Regulatory Division conducted an office review of the site using the following information:

1. The area of concern is shown on the plan entitled “PARTIAL EXISTING CONDITIONS PLAN PROPOSED EDWARD M. KENNEDY INSTITUTE UNIVERSITY OF MASSACHUSETTS” on 1 sheet and dated “1/7/09.”

During this review, the area flagged WF on the plans was reviewed for potential jurisdiction. It has been determined that the area is adjacent to a Traditional Navigable Water and therefore the Corps does have section 404 jurisdiction under the Clean Water Act.

This letter contains a preliminary jurisdictional determination for your site. If you have any questions please contact Richard Kristoff, of my staff, at (978)-318-8171, (800) 343-4789, or (800) 362-4367 within Massachusetts.

Sincerely,

Karen Kirk Adams
Chief, Permits & Enforcement Branch
Regulatory Division

Attachments

Copied Furnished:

Alyssa Jacobs, Epsilon Associates, Inc., 3 Clock Tower Place, Suite 250, Maynard, Massachusetts 017
BACKGROUND INFORMATION

1. Report completion date for Preliminary Jurisdictional Determination (JD): April 21, 2009

2. Name and Address of Person Requesting Preliminary JD: Edward M. Kennedy Institute
   Columbia Point
   Boston, Massachusetts 02125

3. District office, file name and number: CENAE, Edward M. Kennedy Institute, NAE-2009-00485

4. Project location(s) and background information:

   See attached table of waters and wetlands

   State: MA    County: Suffolk    City: Boston
   Coordinates of site (lat/long in degree decimal format):
   Beginning  Lat. 42.31713 ° N, Long. -71.03742 ° W
   End        Lat. 42.31717 ° N, Long. -71.03500 ° W
   Universal Transverse Mercator: 18

   Name of nearest waterbody:
   Boston Harbor/Atlantic Ocean

   Identify (estimate) amount of waters in the review area:
   Non-wetland waters:  linear feet: width (ft) and/or acres.
   Cowardin Class:
   Stream Flow:
   Wetlands: 0.64 acre
   Cowardin Class: Palustrine

   Name of any water bodies on the site that have been identified as Section 10 waters:
   Tidal:
   Non-Tidal:

5. Review performed for site evaluation (check all that apply):
   ☒ Office (Desk) Determination. Date: April 1, 2009
   ☐ Field Determination. Date(s):

   a. The Corps of Engineers believes that there may be jurisdictional waters of the United States
      on the subject site, and the permit applicant or other affected party who requested this preliminary JD is
      hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD)
      for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has
      declined to exercise the option to obtain an approved JD in this instance and at this time.
b. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring “pre-construction notification” (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant’s acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

This preliminary JD finds that there “may be” waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

c. Supporting Data. Data reviewed for Preliminary JD - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Figure 1 USGS Locus Map
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters’ study:
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name:1:6000 Boston South Ma Quad
- USDA Natural Resources Conservation Service Soil Survey. Citation:
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): Boston, Massachusetts, United States 03 Apr 1995
or ☐ Other (Name & Date):
☐ Previous determination(s). File no. and date of response letter:
☐ Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

Richard C. Kristoff Jr.  Date
Regulatory Project Manager

NAME  Date
Edward M. Kennedy Institute
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MEMORANDUM

DATE: February 8, 2013
TO: Ron Bourne (Bourne Consulting Engineers)
FROM: Stan Humphries (LEC)
Re: UMass-Boston Harborwalk and Shoreline Stabilization Project Boston, MA

PROJECT #: BCE11-247.01

On January 30, 2012, LEC conducted a preliminary field investigation on the project site to identify and characterize Wetland Resources Areas protectable under Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40, the “Act”) and its implementing Regulations (310 CMR 10.00). A Vegetated Wetland dominated by common reed (Phragmites australis) was documented south of the Harborwalk and Shoreline Stabilization Project Area. Following the site visit, LEC reviewed the existing determinations previously issued on the project site:

According to a Negative Determination of Applicability issued by the Boston Conservation Commission on February 1, 2009, the previously flagged area (WF A1- WF A-53) does not constitute inland wetland resource areas and is therefore not an area subject to protection under the Act. Through the Permit Extension Act, this Determination is valid until February 1, 2014.

On June 1, 2009, the US Army Corps of Engineers, New England District, determined that the flagged area is adjacent to a Traditional Navigable Water and therefore the Corps does have section 404 jurisdiction under the Clean Water Act.

Additional jurisdictional Wetland Resource Areas protected under the Act within or immediately proximate to the project area include Land Under the Ocean, Coastal Beach, Coastal Bank, and Land Subject to Coastal Storm Flovage ("LSCSF"). In particular, the boundary delineations for Coastal Beach and Coastal Bank are the important.

Coastal Beach is defined at 310 CMR 10.27(2), in part, to extend from the mean low water line landward to the dune line, coastal bankline or the seaward edge of existing man-made structures, when these structures replace one of the above lines, whichever is closest to the ocean. For this site, the beach extends landward to either a bankline (or toe of bank) or the seaward edge of the riprap. The beach is narrowest along the rock revetment at the east end of the project area and widest at the opposite end. This low-sloping beach that fronts the project area is similar in its sediment composition for the entire length of shoreline. The upper beach is composed of coarse sand, gravel, small cobbles intermixed with pieces of brick. The lower beach is generally composed of small to large sized cobbles (2.5 to 10 inches in diameter) covered with a variety of macrophytic algae, crustaceans and molluscs. Without any naturally occurring rocky areas, such as bedrock or boulder-strwn areas between the mean high water line and the mean low water line, this site is not be defined as Rocky Intertidal Shores. These species include green sea lettuce (Ulva lactuca), brown rockweed (Fucus vesiculosus), brown filamentous (Polysiphonia), ribbed mussels (Modiola demississ), periwinkle (Littorina spp.), acorn barnacle (Balanus balanoides) and moon jelly (Aurelia aurita). According to shellfish suitability maps for the area, razor clam
(Ensis directus), blue mussel (Mytilus Edulis) and soft-shell clam (Mya arenaria) may be present seaward of mean high water within the project area.

Coastal Bank is defined at 310 CMR 10.30(2) as the seaward face or side of any elevated landform, other than a coastal dune, which lies at the landward edge of a coastal beach, land subject to tidal action, or other wetland. The ‘top of coastal bank’ is further clarified by policy (DWW Policy 92-1) with respect to inundation by the 100-year flood and slope criteria. FEMA has mapped the floodplain along the shoreline of the site as containing several VE zones with different elevations (map number 25025C0083G, September 25, 2009). There are no other flood zones mapped within the project area. For the entire stretch of shoreline, the top of bank is located where the slope becomes <4:1. Previously, a Coastal Bank was delineated along a swale that is oriented perpendicular to the shore and currently located between stations 16+00 and 17+00 (see Exhibit IV-B). Since this swale is not located in the floodplain, no Coastal Bank exists in this area.

LEC is pleased to provide this information. Should you have any questions or comments, feel free to contact us at 508-746-9491.
MEMORANDUM

DATE: June 11, 2012
TO: Ron Bourne (Bourne Consulting Engineers)
FROM: Stan Humphries (LEC)
Re: UMass-Boston Harborwalk and Shoreline Stabilization Project
Boston, MA

PROJECT #: BCE\11-247.01

LEC has reviewed the concept of creating a beach at the project site and recommends that beach nourishment would not be appropriate or suitable in this environment. This recommendation is based on the existing physical and biological conditions of the site, a review of Beach Nourishment (MassDEP’s Guide to Best Management Practices for Projects in Massachusetts, March 2007) and an understanding of the Wetland Protection Area Regulations.

A site evaluation was conducted on June 5, 2012 (within 1-hour of low tide which was predicted to be -0.4 feet mean low water) for the primary purpose of characterizing the variation in sediment grain sizes and documenting any observable biological characteristics that exist within the project area (see Figure 1). The beach is narrowest along the rock revetment at the east end of the project area and widest at the opposite end (see Photos 1 and 2). This low-sloping beach that fronts the project area is similar in its sediment composition for the entire length of shoreline. The upper beach is composed of coarse sand, gravel, small cobbles intermixed with pieces of brick (see Photos 3-5). The lower beach is generally composed of small to large sized cobbles (2.5 to 10 inches in diameter) covered with a variety of macrophytic algae, crustaceans and molluscs (see Photos 6-9). These species include green sea lettuce (Ulva lactuca), brown rockweed (Fucus vesiculosus), brown filamentous (Polysiphonia), ribbed mussels (Modiolus demissus), periwinkle (Littorina spp.), acorn barnacle (Balanus balanoides) and moon jelly ( Aurelia aurita).

The three most important considerations in creating a beach (i.e., beach nourishment) are grain size, design slope and the volume of proposed nourishment (MassDEP, 2007). Suitability and stability of sediment placed on a beach is directly related to grain size and, by regulation, must be compatible with that on the existing beach. At this site, sand that would be used for nourishment would not be compatible with the gravel and cobble composition of the existing beach. In addition, material that is finer than what is presently on the receiving beach may move quickly off the beach and into other areas, possibly causing adverse impacts on nearby natural resource areas. At this site, shallow submerged lands with high densities of marine biota are highly probable given the presence of algae, crustaceans and molluscs on the beach at low tide. The other two considerations of design slope and volume do not even become factors to evaluate. Strictly based on the incompatibility of grain size and impacts to marine biota, the beach stability determination fails.

In conclusion, creating a beach in this environment would not be an appropriate or suitable project to consider.

LEC is pleased to provide this information. Should you have any questions or comments, feel free to contact us at 508-746-9491.
Figure 1. The nautical chart for the site indicates a tidal flat environment exists above mean low water shown as a dotted line.

Photograph 1. Looking west from the existing stone revetment.
Photograph 2. Looking east at the project area.

Photograph 3. The upper beach sediment varies from coarse sand and gravel to small cobbles.
Photograph 4. The upper beach coarse sand and gravel is intermixed with brick (note 6 inch scale).

Photograph 5. The upper beach cobble ranges from 2.5 to 4.5 inches in diameter.
Photograph 6. The lower beach sediment is dominated by small to large cobbles with heavy amounts of macrophytic algae and some crustaceans and molluscs.

Photograph 7. Some lower beach cobbles are encrusted with barnacles and periwinkles.
Photograph 8. Brown algae, rockweed and green sea lettuce dominate the lower beach.

Photograph 9. Mussels and jelly fish were also observed in the lower beach.
APPENDIX E

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