One Cambridge Place, 50 Hampshire Street
Cambridge, Massachusetts 02139
tel: +1 617 452-6000
fax: +1 617 452-8000

August 4, 2010

Boston Conservation Commission
Boston City Hall
One City Plaza
Boston, MA 02021

Subject: Notice of Intent - Back Bay Fens Interim II Invasive Vegetation Control Plan
City of Boston Parks and Recreation Department - Applicant

Dear Commission Members:

On behalf of our client, the City of Boston Parks and Recreation Department (the BPRD), Camp Dresser & McKee Inc. (CDM) is pleased to submit this Notice of Intent (NOI) for the above-referenced project. The BPRD proposes to control *Phragmites* growth within a defined area between the Victory Gardens and the Muddy River in the Back Bay Fens.

This work is necessary to control *Phragmites* stands that are encroaching on public walkways near the Victory Gardens. The tall, dense vegetation is a public safety concern for park users and gardeners. As such, the BPRD is proposing an interim invasive vegetation control plan to address *Phragmites* growth within an approximate 86,400 square foot area which includes *Phragmites* cutting within the following resource areas: 5,400 square feet in Bordering Vegetated Wetland, 63,570 square feet in Land Under Water, 17,430 square feet (3,725 linear feet) along inland Bank, and 18,720 square feet within Riverfront Area and Bordering Land Subject to Flooding.

The vegetation control proposed by the BPRD consists solely of mechanical cutting (i.e. mowing). Removal will three to four times during the growing season, or when the vegetation reaches a height of 4 feet, whichever comes first, in a defined area within BVW, LUW and inland Bank. No herbicide use is proposed as part of this plan. The invasive vegetation control plan will remain in effect until final removal of vegetation is achieved with the implementation of the Muddy River Flood Control, Water Quality, Habitat Enhancement, and Historic Preservation Project (Muddy River Project). This plan is proposed as an ongoing interim measure to control invasive vegetation growth until that time.

Please call me at (617) 452-6601 if you would like to schedule a site visit or have any questions regarding this submittal. We look forward to working with you on this project.

Very truly yours,

Dwight R. Dunk
Environmental Scientist
Camp Dresser & McKee Inc.

cc: DEP-NERO
Margaret Dyson, Boston Parks and Recreation Department
Bruce Conklin, CDM

Contents

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

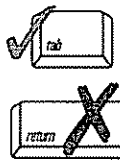
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

Back Bay Fens - Victory Gardens area
a. Street Address

Boston
b. City/Town

02215
c. Zip Code

Latitude and Longitude:

71°5' 35"
d. Latitude

42°20' 42"
e. Longitude

N/A
f. Assessors Map/Plat Number

0504175000 (north Agassiz Road)
g. Parcel /Lot Number

2. Applicant:

Margaret
a. First Name

Dyson
b. Last Name

Boston Parks and Recreation Department
c. Organization

1010 Massachusetts Ave.
d. Street Address

Boston
e. City/Town

MA
f. State

02118
g. Zip Code

617-961-3028
h. Phone Number

617-635-3173
i. Fax Number

margaret.dyson@cityofboston.gov
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name

b. Last Name

c. Organization

d. Street Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email address

4. Representative (if any):

Dwight
a. First Name

Dunk
b. Last Name

Camp Dresser & McKee, Inc
c. Company

50 Hampshire Street
d. Street Address

Cambridge
e. City/Town

MA
f. State

02139
g. Zip Code

617-452-6601
h. Phone Number

617-452-6601
i. Fax Number

dunkdr@cdm.com
j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

Fee Exempt (City of Boston)
a. Total Fee Paid

b. State Fee Paid

c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

Invasive vegetation control plan adjacent to Victory Gardens in the Back Bay Fens, consisting of cutting back invasive species 3-4 times during the growing season, or when the vegetation reaches a height of 4 feet, whichever comes first.

7a. Project Type Checklist:

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Limited Project Driveway Crossing
4. ☐ Commercial/Industrial
5. ☐ Dock/Pier
6. ☐ Utilities
7. ☐ Coastal Engineering Structure
8. ☐ Agriculture (e.g., cranberries, forestry)
9. ☐ Transportation
10. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

Suffolk	
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☒ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☒ Bank	approximately 3,725 (1. linear feet)	0 (2. linear feet)
b. ☒ Bordering Vegetated Wetland	approximately 5,400 (1. square feet)	0 (2. square feet)
c. ☒ Land Under Waterbodies and Waterways	approximately 63,570 (1. square feet) 0 (3. cubic yards dredged)	0 (2. square feet)

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☒ Bordering Land Subject to Flooding	approximately 18,720 (1. square feet)	0 (2. square feet)
	0 (3. cubic feet of flood storage lost)	0 (4. cubic feet replaced)
e. ☐ Isolated Land Subject to Flooding	(1. square feet)	
	(2. cubic feet of flood storage lost)	(3. cubic feet replaced)
f. ☒ Riverfront Area	Muddy River (1. Name of Waterway (if available))	

2. Width of Riverfront Area (check one):

☒ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 42,515 square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
18,720	18,720	0

5. Has an alternatives analysis been done and is it attached to this NOI? ☒ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☒ Yes ☐ No

3. ☐ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	(1. square feet)	
	(2. cubic yards dredged)	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	(1. square feet)	(2. cubic yards beach nourishment)
e. ☐ Coastal Dunes	(1. square feet)	(2. cubic yards dune nourishment)

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

		Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐	Coastal Banks	1. linear feet	
g. ☐	Rocky Intertidal Shores	1. square feet	
h. ☐	Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐	Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐	Land Containing Shellfish	1. square feet	
k. ☐	Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☐	Land Subject to Coastal Storm Flowage	1. square feet	

4. ☐ Restoration/Enhancement
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.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☐ Yes ☒ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

2008 Edition
b. Date of map

C. Other Applicable Standards and Requirements (cont'd)

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.C, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.1.d, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

1. c. Submit Supplemental Information for Endangered Species Review*

   1. ☐ Percentage/acreage of property to be altered:

      (a) within wetland Resource Area _____ percentage/acreage

      (b) outside Resource Area _____ percentage/acreage

   2. ☐ Assessor's Map or right-of-way plan of site

   3. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work ***

      (a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

      (b) ☐ Photographs representative of the site

      (c) ☐ MESA filing fee (fee information available at: http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

      *Projects altering **10 or more acres** of land, also submit:*

      (d) ☐ Vegetation cover type map of site

      (e) ☐ Project plans showing Priority & Estimated Habitat boundaries

   d. OR Check One of the Following

      1. ☐ Project is exempt from MESA review.
      Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

      2. ☐ Separate MESA review ongoing. _____ a. NHESP Tracking # _____ b. Date submitted to NHESP

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/dfwele/dfw/nhesp/nhesp.htm, regulatory review tab). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

C. Other Applicable Standards and Requirements (cont'd)

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

2. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☒ Not applicable – project is in inland resource area only

b. ☐ Yes ☐ No If yes, include proof of mailing or hand delivery of NOI to either:

South Shore - Cohasset to Rhode Island, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694

North Shore - Hull to New Hampshire:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

3. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

a. ☐ Yes ☒ No

5. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

a. ☐ Yes ☒ No

6. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

a. ☐ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

2. ☐ A portion of the site constitutes redevelopment

3. ☐ Proprietary BMPs are included in the Stormwater Management System.

b. ☒ No. Check why the project is exempt:

1. ☐ Single-family house

C. Other Applicable Standards and Requirements (cont'd)

2. ☐ Emergency road repair

3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

3. ☒ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

See Table of Contents
a. Plan Title

b. Prepared By

c. Signed and Stamped by

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☐ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

1. ☒ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

Fee Exempt - Applicant is City of Boston

2. Municipal Check Number | 3. Check date

4. State Check Number | 5. Check date

6. Payor name on check: First Name | 7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant | 2. Date

3. Signature of Property Owner (if different) | 4. Date

Andrew R Pappastas | 8/4/10

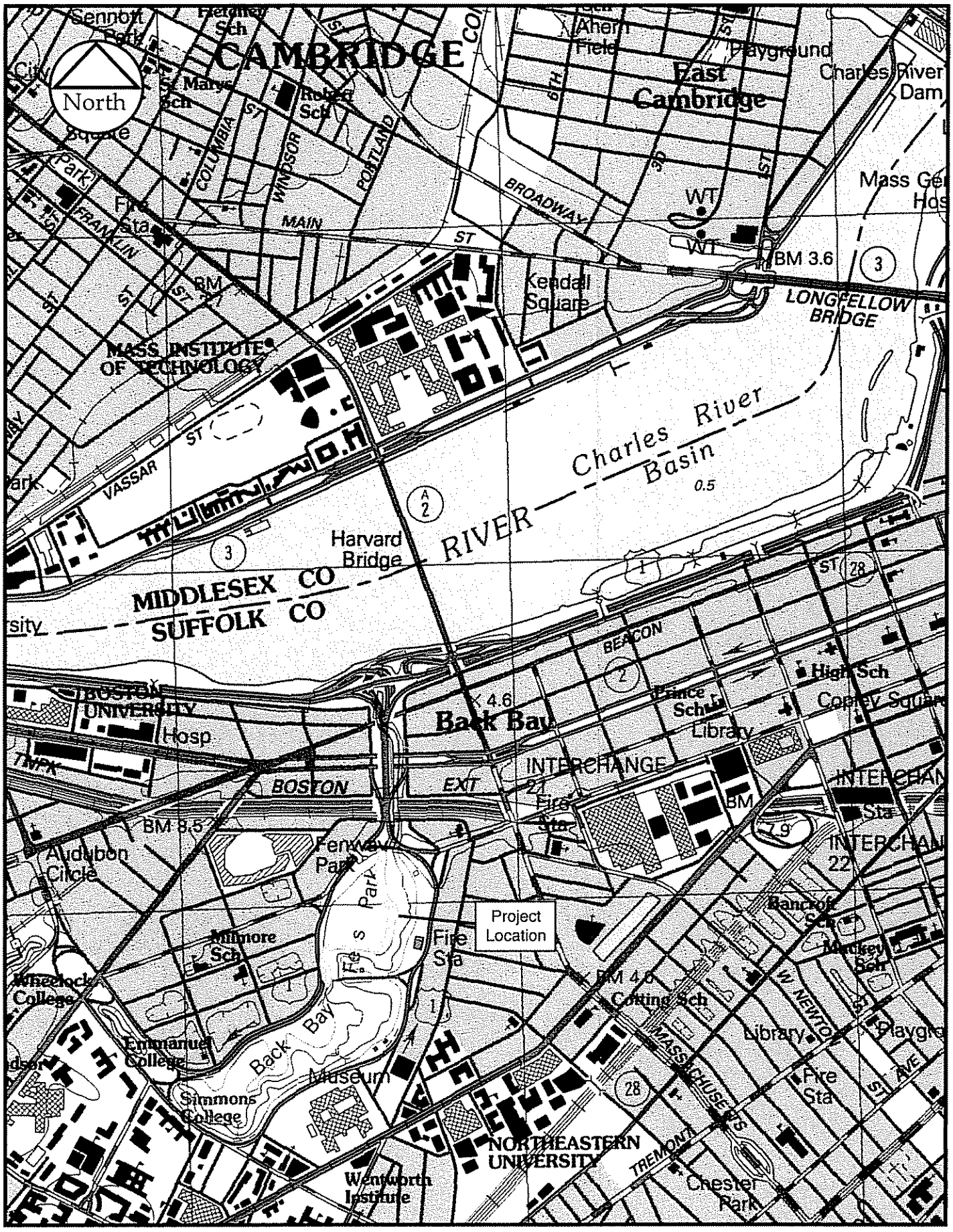
5. Signature of Representative (if any) | 6. Date

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

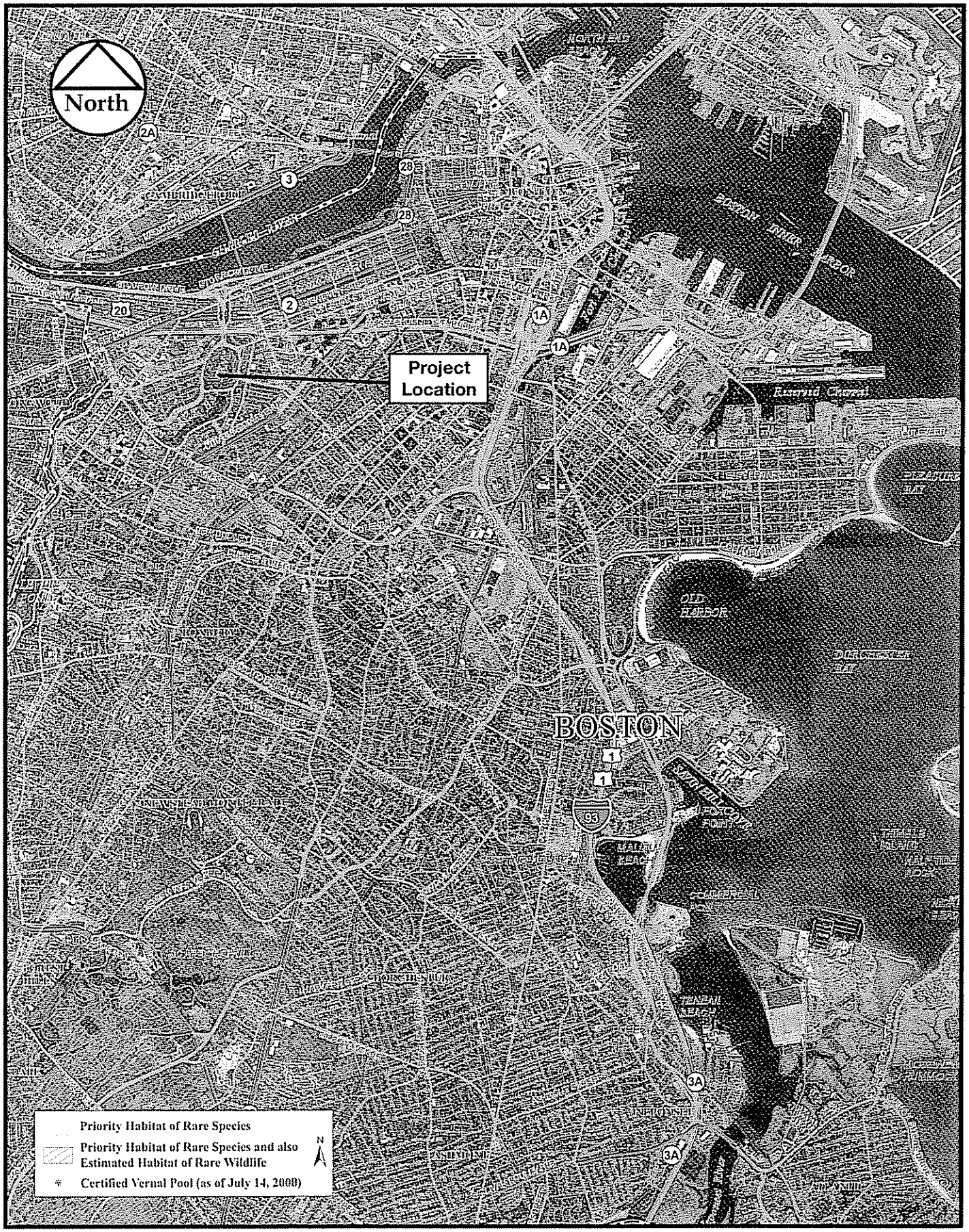
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.



Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

Figure 1
Project Locus Map

CDM

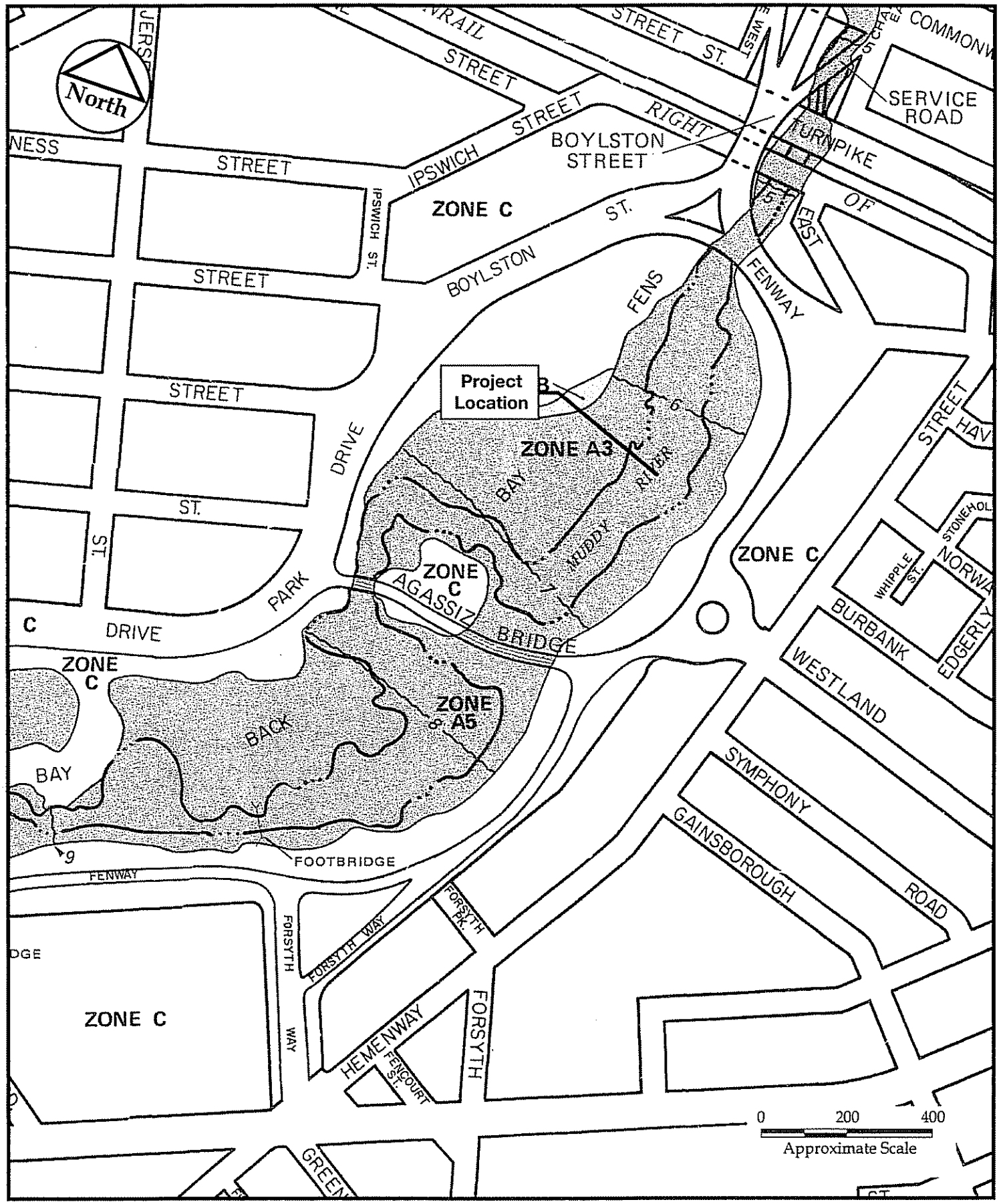


Source:
Massachusetts Natural Heritage Atlas
2008 Edition: Boston Quadrangle

Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

Figure 2
Estimated Habitats Map

CDM

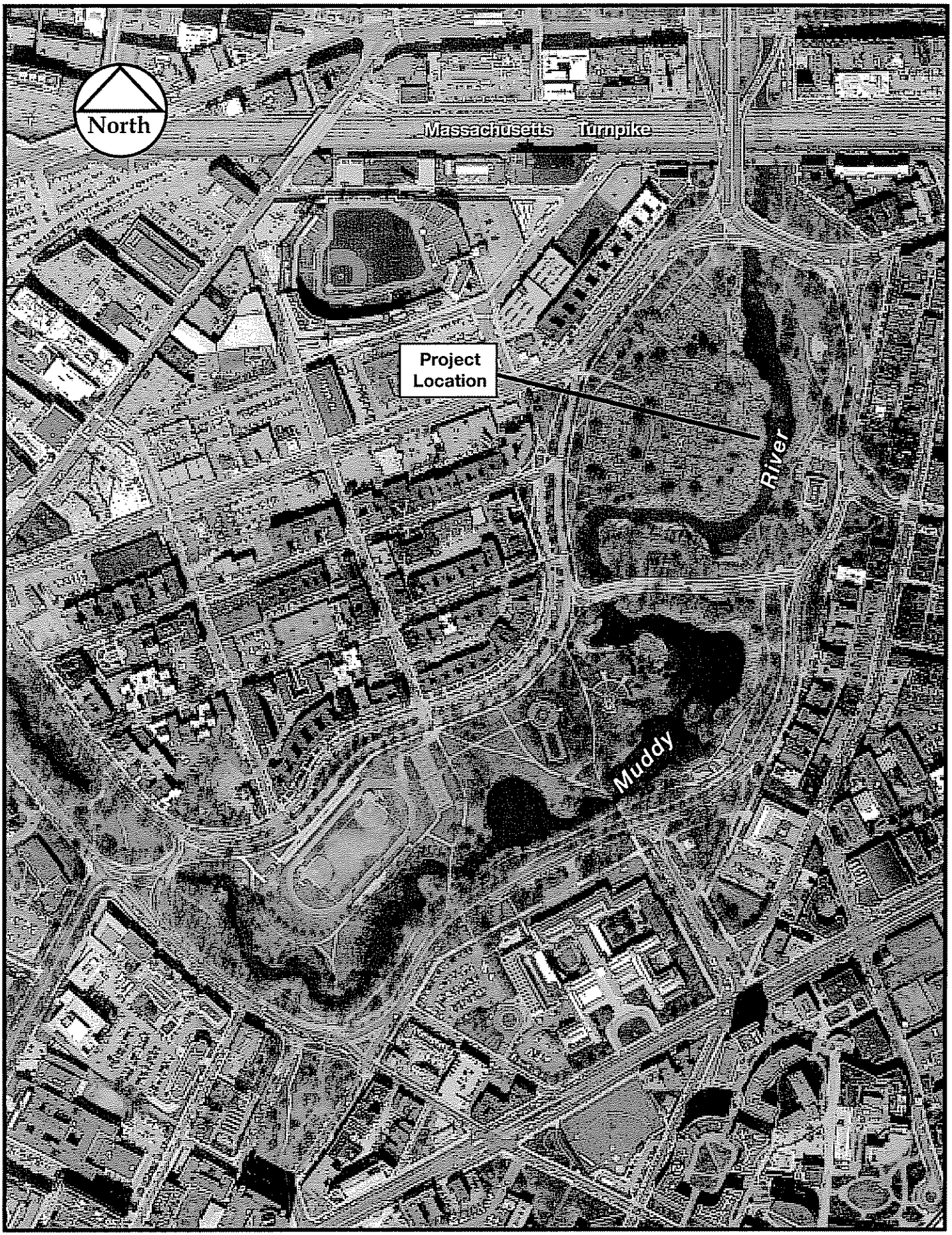


Source: FEMA Flood Insurance Rate Map Community Panel 250286 0010C

Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

CDM

Figure 3
Flood Insurance Rate Map



Source: MassGIS, Commonwealth of Massachusetts EOEA

Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

CDM

Figure 4
Aerial Photo of Project Site

Attachment A
Project Narrative

1.0 Introduction

The City of Boston Parks and Recreation Department (BPRD) is proposing mechanical control of common reed (*Phragmites australis*) near the Fenway Victory Gardens. Considered invasive nuisance plants, *Phragmites* have spread along the banks of the Muddy River to the periphery of the Victory Gardens, where they block views and present a fire risk creating a public safety concern for park users and gardeners. This Notice of Intent (NOI) proposes mechanical control of these invasives within portions of Bordering Vegetated Wetland (BVW), inland Bank, Land Under Water (LUW), Riverfront Area (RFA) and Bordering Land Subject to Flooding (BLSF) associated with the Muddy River.

1.1 Site History

The Victory Gardens are located in the Back Bay Fens area of the Emerald Necklace. The Victory Gardens were established during the 1940's and are divided into plots which are maintained by members of the public. Invasive vegetation has been a problem in the area for several years. *Phragmites* is dominant along much of this length of the river and throughout the project site, with the exception of an approximately 2,900 square-foot area near Boylston Street which is dominated by Japanese knotweed.

In June 1995, a Superseding Order of Conditions (DEP File No. 6-577) was issued by the Department of Environmental Protection (DEP) which allowed the investigation of techniques to control *Phragmites* in the Back Bay Fens. Control by application of Glyphosate herbicide was proposed as one experimental method in the original Notice of Intent submitted March 1994. This method was not used. The Superseding Order of Conditions did allow for the investigation of *Phragmites* cutting, followed by an application of black plastic liner over the cut plants to inhibit re-growth. As detailed in the Vegetation Monitoring Report prepared by Jason M. Cortell and Associates and issued November 1998, this method was investigated but deemed ineffective for controlling *Phragmites*. Instead, the report recommended that the *Phragmites* stand be excavated during the environmental dredging proposed as part of the larger Muddy River Flood Control, Water Quality, Habitat Enhancement, and Historic Preservation Project (The Muddy River Project), to remove the stalks, rhizomes, and seed bank associated with the *Phragmites* stands. The Superseding Order of Conditions for this investigation expired in June 1998. The stand of *Phragmites* spread to the immediate vicinity of the Victory Gardens and public walkways providing access to the gardens. *Phragmites* stands are currently dense and over 20 feet in height. The Japanese knotweed stand, while not as extensive as that of *Phragmites*, is about 10 feet in height and forms dense growth near the Boylston Street Bridge. Both areas pose public safety hazards for users of the park and gardens. In April of 2010 a dangerous and fast moving fire burned the reeds (see Photographs in

Attachment D). Nearby roadways, including Boylston Street, were closed in order to fight the fire. The City's Emergency Response center is housed in the Boston Fire Department building in the Fens. In December 2005, an Order of Conditions (OOC) (DEP File No. 006-1061) was issued by the Boston Conservation Commission which allowed the mechanical cutting (i.e. mowing) of invasives within 19,500 square feet of BLSF, 10,965 square feet of Riverfront Area, and 22,000 square feet in the 100-Foot Buffer Zone.

1.2 Existing Conditions

Five state jurisdictional wetland resources were delineated in the Victory Gardens area: LUW, inland Bank, BVW, BLSF, and RFA; all of which are associated with the Muddy River. The limits of the on-site resource areas have been reviewed and accepted by the Boston Conservation Commission, and an Order of Resource Area Delineation (ORAD) was issued for these delineations by the Boston Conservation Commission on February 21, 2001 (DEP File No. 6-867). The term of the ORAD was extended on April 21, 2010, and remains valid through February 21, 2013. A copy of the ORAD is included in Appendix C. Therefore, these boundaries are presumed accurate and are presented in the attached figures for this NOI. Note, RFA extends 25 feet from the top of inland Bank as depicted on the attached Figures 5 through 8, and the limit of BLSF varies from elevation 6 feet to elevation 7 feet NGVD in the project area as shown on Figure 3 (the flood elevations correspond to elevation 11.65 feet to 12.65 feet Boston City Base).

Phragmites is prevalent throughout the lower Back Bay Fens, dominating the shoreline and growing into the river channel. It occupies approximately 3.5 acres in the Back Bay Fens. *Phragmites* supports the physical functions of shoreline/sediment stabilization and sediment/toxicant/nutrient retention. However, the wildlife habitat value of wetlands dominated by common reed depends upon a number of factors. It is generally found to provide less nutritional value and often support a less diverse bird population than marshes dominated by native species.

A more comprehensive discussion of the functions and values of *Phragmites* along the Muddy River is presented in the EIR for the Muddy River Project, EOEA No. 11865.

2.0 Natural History and Wildlife Habitat Function of Phragmites

2.1 Natural History

Common reed is a tall perennial rhizomatous grass with world-wide distribution as it is found on every continent except Antarctica. It produces a large number of seeds per plant and also spreads vegetatively by a vigorous system of rhizomes and stolons. These reproductive strategies cause common reed to be an invasive plant forming dense stands of monospecific communities. Since common reed is invasive, there is some debate over whether it is native to this area. There is some evidence that common reed is indigenous to North America. Common reed was identified in cores

of 3000 year old peat from tidal marshes in Connecticut and common reed remains dating from 600 to 900 A.D. were found during archaeological investigations in southwestern Colorado (see review by Lapin and Randall, 1993). It has been considered a nuisance plant in the U.S. since the 1940's, and because of that there has been some discussion that a non-native strain of common reed may have been introduced from Europe in the early 1900s. The invasive growth form may be associated with this exotic type (Cronk and Fennessy, 2001).

Common reed typically inhabits freshwater and brackish wetlands throughout our area. It occurs in disturbed areas as well as pristine sites forming monospecific and near-monospecific stands by out-competing other plants. Human disturbance of sites may promote its growth. Increases in common reed are also thought to be promoted from increases in soil salinity from road deicing salts, increases in nutrient concentrations (in particular nitrates), alteration of natural hydrologic regimes, and dredging.

Common reed becomes established through dispersal of seeds or pieces of viable stems called rhizomes. Established stands grow mainly from sending up new shoots each spring from existing rhizomes, or from aboveground runners called stolons. The plants flower and set seed generally between July and September. In New England, seeds are dispersed between November and January by wind or via birds that nest in the reeds. Human disturbance may favor common reed seed establishment. During a construction activity in and around wetlands, sixty-nine (69) rhizome buds were removed from the treads of a tracked vehicle working in a common reed dominated community (M.S. Ailstock, *et al.*, 2001).

Wetland functions are self-sustaining properties of a wetland ecosystem and include all the processes necessary for the self maintenance of the wetland ecosystem such as production and nutrient cycling. Wetland values are based on the societal values of these wetland functions. The Army Corps of Engineers recognizes the following thirteen (13) wetland functions and values: Groundwater Recharge/Discharge, Floodflow Alteration, Fish and Shellfish Habitat, Sediment/Toxicant/Pathogen Retention, Nutrient Removal/Retention/ Transformation, Production Export, Sediment/Shoreline Stabilization, Wildlife Habitat, Recreation, Educational/Scientific Value/Uniqueness/Heritage, Visual Quality/Aesthetics, and Threatened or Endangered Species Habitat.

A literature review was conducted to identify the wetland functions and values of common reed dominated wetland communities. The following four functions/values were found to be associated with common reed dominated wetlands:

- Sediment/Toxicant Retention,
- Sediment/Shoreline Stabilization,
- Nutrient Removal/Retention/Transformation, and

- Wildlife Habitat

The four functions above will not be affected by the proposed project. A brief discussion of: Sediment/Toxicant Retention, Sediment/Shoreline Stabilization, and Nutrient Removal/Retention/Transformation is presented below. A more complete discussion of Wildlife Habitat follows.

Sediment/Toxicant Retention
This function reduces or prevents degradation of water quality (i.e. prevention of pollution). It relates to the effectiveness of the wetland to trap sediments, toxicants, or pathogens.

Studies have found that *Phragmites australis* can be an important soil stabilizer and may have an application as a nutrient sink for treating wastewater prior to release (Ailstock, *et al.*, 2001). *Phragmites australis* is commonly used for sediment trapping in subsurface flow wetlands in Europe (Cronk and Fennessy, 2001); however its invasive characteristics prevent its use in this fashion in North America. The dense stands of persistent stalks also aid in the trapping of sediment carried in water flowing through reed stands.

Sediment/Shoreline Stabilization
This function considers the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.

Phragmites plants develop dense tangles of roots and rhizomes that bind sediment/soils to protect shorelines from wave action and erosion.

Nutrient Removal/Retention/Transformation
This function considers the effectiveness of the wetland as a trap for nutrients in runoff water from surrounding uplands or contiguous wetlands and the ability of the wetland to process these nutrients into other forms or trophic levels. One aspect of this function is to prevent ill effects of nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers, or estuaries (i.e. prevention of pollution).

Emergent vegetation such as common reed has a large network of roots and rhizomes to store nutrients (nitrogen and phosphorus) in perennial tissues. Emergents take up nutrients from the soil pore water, establishing a gradient between the water column and the soil which improves overall nutrient retention. Common reed has high nutrient uptake capacity primarily due to its large size and high rate of primary productivity. Studies of uptake of metals, which are essential micronutrients for living organisms, found that common reed accumulates iron, lead, zinc, cadmium, and copper in the roots and rhizomes with some indication that the translocation of the metals to the shoots is impeded (Cronk and Fenessy, 2001).

Table 1. Summary of Wetlands Functions and Values

Location	Status	Groundwater Recharge/Discharge	Flood Flow Alteration	Fish & Shellfish Habitat	Sediment & Toxicant Retention	Nutrient Removal	Production Export	Sediment/Shoreline Stabilization	Wildlife Habitat	Recreation	Educational Scientific Value	Uniqueness/Heritage	Visual Quality/Aesthetics	Endangered Species Habitat
Back Bay Fens	Occurrence	N	Y	Y	Y	Y	N	Y	N	Y	N	N	N	N
	Principal Function/Value		Y	Y	Y	Y								
Riverway Area														
	Occurrence	N	Y	Y	Y	Y	N	Y	N	Y	N	N	N	N
	Principal Function/Value		Y		Y	Y								
Leverett Pond														
	Occurrence	N	N	Y	N	N	N	Y	N	Y	N	N	N	N
	Principal Function/Value			Y						Y				
Willow Pond														
	Occurrence	N	N	Y	N	N	N	Y	N	Y	N	N	N	Y
	Principal Function/Value			Y						Y				Y
Wards Pond														
	Occurrence	Y	N	Y	N	Y	Y	Y	Y	Y	N	N	Y	N
	Principal Function/Value								Y	Y				

2.2 Wildlife Habitat Function

Wetland functions and values were evaluated and presented in the EIR for the Muddy River Project (EOEA No. 11865). That evaluation utilized the methodology described in the Army Corps of Engineers New England District booklet entitled The Highway Methodology Workbook Supplement, Wetlands Functions and Values a Descriptive Approach (USACE, 1995). The Corps' method is a systematic presentation of best professional judgment with backup information to support the conclusions. It involves reviewing a number of parameters for each function or value to assess the ability of the wetland to perform that particular function or support that value. It involves reviewing a combination of field data and published data, to complete a questionnaire. Based on the responses to the questionnaire, one summarizes the results for each wetland to assess the suitability of a wetland to perform the identified functions and values. A summary of the functions and values assessment presented in the EIR is presented below in Table 1.

Wetland systems are likely to support most functions or values to a certain degree, but it is important to identify those functions and values that are most important or most strongly supported by a particular system, (i.e. Principal Function/Value). Table 1 shows that a number of functions or values are likely to occur in the Muddy River system (identified as "occurrence"), however, only a small subset are identified as a Principal Function/Value. The principal functions/values for the major river segments are identified in Table 1.

In the Back Bay Fens Victory Garden, the following functions were identified as principal functions: Flood Flow Alteration, Sediment & Toxicant Retention, and Nutrient Removal. The results of the U.S. Army Corps of Engineers (the Corps) functions and values assessment methodology, did not identify Wildlife Habitat as a principal function in this segment of the Muddy River. The Corps' methodology is comprehensive and the assessment of wildlife function is based on over 20 features of the subject area.

Wildlife Habitat – This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and migrating species are considered.

The literature is inconclusive on the wildlife habitat functions provided by *Phragmites* marshes, in general. Therefore, the ability of an individual *Phragmites* marsh to support this function should be evaluated on a case-by-case basis. The wildlife habitat of near mono-specific stands of common reed is commonly considered of little value by North American biologists. The U.S. Fish and Wildlife Service describes common reed as being high quality livestock forage during early growth stages but after maturity it becomes tough and unpalatable and is not an important wildlife food. Occasionally, however, seeds are eaten by waterfowl, and rhizomes and stems by muskrats. The USDA has documented that the common reed has low protein value (U.S.D.A., Forest Service, 2002).

A study of common reed on the distribution of birds in Connecticut tidal marshes concluded that homogenous stands of common reed do not provide suitable habitat for many species of wetland birds (Benoit & Askins, 1999). Marsh Wren (*Cistothorus palustris*), Red-winged Blackbird (*Agelaius phoeniceus*), Swamp Sparrow (*Melospiza georgiana*), and Tree (*Tachycineta bicolor*) and Barn Swallows (*Hirundo rustica*) dominated the bird community in *Phragmites* marshes. This study showed that stable, discrete patches or narrow bands of *Phragmites* around salt marshes may in fact increase the amount of "edge" habitat preferred for nesting by many marsh birds. These observations highlight the difference between monospecific *Phragmites* wetlands compared to native plant communities with inclusions of *Phragmites* stands or the presence of a narrow border of common reed.

Other studies have also shown that unbroken, monotypic stands of tall, emergent vegetation generally have lower quality breeding habitat than diverse vegetation stands with more "edge" habitat and openings. A study of a Danish marsh by Moller (in Lapin and Randall, 1993) showed that areas overgrown by *Phragmites* and tall *Scirpus* spp. had greatly reduced numbers of ducks and waders and entirely lacked gulls and terns.

Common reed is usually the dominant or co-dominant plant, sometimes existing with cattails (*Typha lattifolia*), bulrush (*Scirpus*), or salt marsh grass (*Spartina alterniflora*). It displaces other plants because it grows and spreads rapidly, shades other plants and accumulates a large amount of leaf litter that covers and shades the substrate. This domination results in notable differences in the physical environment. *Phragmites* has such a high evapotranspiration rate, that it can lower the local water table. Increased separation between the marsh surface and the ground water elevation can also result from the increased rate of accumulated leaf litter (peat) in *Phragmites* marshes, because *Phragmites* plants produce a significant mass of above ground growth its production rate exceeds decomposition rate in saturated environments. As peat dries out and the oxygen levels increase, however, enhanced decomposition of the peat occurs because bacterial populations can grow in the oxygenated environment and increase decomposition of the litter causing a physical depletion of the peat resulting in lower marsh elevations. Because *Phragmites* can dry out the substrate, it can damage habitat for organisms such as aquatic benthic invertebrates and crabs (Cronk and Fenessy, 2001)

A study conducted in 1999 on the population status and the habitat and area requirements of Golden-winged and Blue-winged Warblers by the Lab of Ornithology and Ithaca College found that many wetland sites that had been invaded by *Phragmites* had few nesting birds of any species and appeared to have no nesting Golden-winged Warblers. This study suggests that wetlands with natural vegetation are very important for survival of this particular species and that invasion by *Phragmites* may be very detrimental (Confer and Barker, 2000). Adverse impacts to benthic organisms can result from the increased sediment trapping around the base of the *Phragmites*, a reduction of species that are dependent upon water flow was reported by McInnch, Garbisch, and Salvaggio (1996).

Phragmites can be considered a wetland management problem due to its ability to rapidly colonize and dominate disturbed soils. In this capacity it is capable of invading adjacent areas and crowding out other wetland plant species, reducing the overall plant diversity of the affected system (Ailstock, *et al.*, 2001). Its domination may supplant other species considered to be more important as food and cover for wildlife.

In summary, the wildlife habitat value of common reed dominated wetlands is dependent upon a number of factors. It is generally found to provide less nutritional value than native marsh plants and often supports a less diverse bird population than marshes dominated by native species.

The Back Bay Fens/Victory Gardens
The expansive stands of common reed present in the Back Bay Fens and the associated upland parkland occupy approximately 3.5 acres, and are utilized by the birds and small mammals present in the Back Bay Fens. The river and park are located in an urban setting surrounded by dense urban and residential land uses. Based on the literature review presented previously and site inspections, common reed provide less than optimal habitat value and poor nutritional value for wildlife.

In conclusion, *Phragmites* is associated with four functions and values: sediment/toxicant retention, sediment shoreline stabilization, nutrient removal, and wildlife habitat. The cutting proposed by this NOI will not adversely affect the *Phragmites* capacity to provide the first three functions. The fourth function is wildlife habitat. The assessment of wetland functions and values completed for and presented in the Muddy River Project EIR, did not identify Wildlife Habitat as a principal function of the *Phragmites* dominated wetlands in the Back Bay Fens and Victory Garden area. Therefore, it is presumed that the *Phragmites* stands present within BVW, LUW, BLSF, inland Bank, and RFA in the project area are not significant to the protection of wildlife habitat.

3.0 Invasive Vegetation Control Plan

The BPRD is proposing the following Interim II Invasive Vegetation Control Plan. Areas of invasive vegetation, shown on Figures 5 through 8, will be mowed to ground level 3 to 4 times during the growing season or when the vegetation reaches a height of 4 feet, whichever occurs first. The cut materials will be mulched and retained in place. One cut will be scheduled when most of the *Phragmites* plants will have produced seeds but before these seeds have matured. Because the plants will have produced seeds, re-growth may be less aggressive, and any immature seeds left on the ground will not germinate. The final cutting will be performed in October to provide control over the winter. *Phragmites* will be mowed to approximately 6-inches above the ground surface to prevent scalping of the ground and to maintain soil stability. Any trees within the cutting area will be protected and left unaltered. The interim control plan will be an ongoing maintenance plan that will be implemented until such time as the invasive vegetation is removed permanently as part of the planned Muddy River Project.

4.0 Alternatives Analysis

Four alternatives were considered as part of this project:

- No Action Alternative
- Cutting with herbicide
- Cutting with black plastic
- Cutting only

No Action Alternative

The No Action Alternative would consist of leaving the invasive vegetation in place. Although there is an active Interim Invasive Vegetation Control Plan in place to currently control *Phragmites* growth in the 25-foot RFA, BLSF and 100-foot Buffer Zone (per an existing OOC, DEP File No. 006-1061) including the Victory Gardens area, the fire risk is substantial as demonstrated by the April fire and many gardeners continue to express to BPRD that they do not feel safe while tending their garden plots. In addition to being a steward of the natural resources contained within its parks, BPRD also has an obligation to protect the safety of the general public that uses the park. For these reasons, the No Action Alternative was rejected.

Cutting with Herbicide

This alternative would consist of cutting the vegetation, followed by application of glyphosate to the cut stems to discourage re-growth. This alternative was proposed as one experimental method in the original Interim Invasive Vegetation Control Plan Notice of Intent submitted March 1994 (DEP File No. 6-577), but BPRD is interested in limiting the use of herbicides where possible. Mechanical management (cutting) should be tried before other methods are considered.

Cutting with Black Plastic

This alternative would consist of cutting the invasive vegetation to ground level, then covering the cut stalks with black plastic to discourage re-growth. This strategy was allowed on a trial basis via the Superseding Order of Conditions issued in June 1995 (DEP File No. 6-577). A Vegetation Monitoring Report issued in November 1998 by Jason M. Cortell and Associates stated that "mechanical cutting and the subsequent application of black plastic did little to control" *Phragmites* growth near the Muddy River. To be effective, the plastic needed to remain on the ground surface for 70 to 120 days, and had to be reapplied to control *Phragmites* growth. The plastic did not kill the *Phragmites* rhizomes, and re-growth began as soon as the plastic was removed. In some cases the *phragmites* grew beneath the plastic, lifting it from the ground. Given the added expense of procuring, applying, and maintaining plastic ground covering; and the fact that this is an interim, not permanent, control program, this alternative was rejected from further consideration.

Cutting Only

This is the preferred alternative. The Cutting Only alternative will consist of cutting the *Phragmites* 3 to 4 times during the growing season, or when the vegetation reaches a height of 4 feet, whichever occurs first. *Phragmites* will be cut to approximately 6-inches above ground level consistent with the previously issued OOC (DEP File No. 006-1061). Cutting will occur within the defined area as depicted on Figures 5 through 8 (attached). This alternative will achieve interim control of invasive vegetation with minimum cost and effort.

5.0 Work Proposed Within Wetland Resource Areas

The proposed dredging of the Muddy River and final removal of the invasive vegetation along the river are part of a larger restoration project currently in design. Currently, areas located within portions of the 100-Foot Buffer Zone, BLSF and RFA are being mowed in accordance to the OOC (DEP File No. 006-1061). The invasive vegetation control plan proposed herein includes mowing tall and dense *Phragmites* stands near the Victory Gardens, located within BVW, LUW, inland Bank, RFA and BLSF, see photographs in Attachment D. The dense vegetation growth in these resource areas continues to threaten public safety. For this reason, the BPRD is proposing this interim mowing plan to clear and manage *Phragmites* growth within an approximate 86,400 square-foot area between the Muddy River and the Victory Gardens (shown on Figures 5 through 8). The invasive vegetation control plan is limited to cutting *Phragmites* in approximately 18,720 square feet of BLSF, 5,400 square feet in BVW, 63,570 square feet in LUW, 18,720 square feet in RFA and 17,430 square feet (3,725 linear feet) along inland Bank.

5.1 Review of Performance Standards

5.1.1 Bordering Vegetated Wetland Performance Standards

Work in BVW consists of cutting invasive vegetation to ground level. *Phragmites* will be mowed to approximately 6-inches above ground surface to prevent scalping of the ground and to maintain soil stability. The provisions 310 CMR 10.55(4) apply:

(b) Notwithstanding the provisions of 310 CMR 10.55(4)(a), the issuing authority may issue an Order of Conditions permitting work which results in the loss of up to 5000 square feet of Bordering Vegetated Wetland when said area is replaced in accordance with the following general conditions and any additional, specific conditions the issuing authority deems necessary to ensure that the replacement area will function in a manner similar to the area that will be lost:

1. *The surface of the replacement area to be created ("the replacement area") shall be equal to that of the area that will be lost ("the lost area");*

   The proposed Interim II Invasive Vegetation Control Plan involves mechanical cutting of approximately 5,400 square feet of *Phragmites* to an approximate height of 6-inches in height to manage invasive species until the final removal of vegetation is achieved with the implementation of the Muddy River Project.

The project is limited to cutting invasive species within BVW. No net loss of BVW will occur as part of the interim control project.

2. *The ground water and surface elevation of the replacement area shall be approximately equal to that of the lost area;*

   No area will be lost as part of the interim control project.

3. *The overall horizontal configuration and location of the replacement area with respect to the bank shall be similar to that of the lost area;*

   Work within bank is limited to mechanical cutting to control invasive species. No area will be lost as part of the interim control project.

4. *The replacement area shall have an unrestricted hydraulic connection to the same water body or waterway associated with the lost area;*

   No area will be lost as part of the interim control project.

5. *The replacement area shall be located within the same general area of the water body or reach of the waterway as the lost area;*

   No area will be lost as part of the interim control project.

6. *At least 75% of the surface of the replacement area shall be reestablished with indigenous wetland plant species within two growing seasons, and prior to said vegetative reestablishment any exposed soil in the replacement area shall be temporarily stabilized to prevent erosion in accordance with standard U.S. Soil Conservation Service methods; and*

   No area will be lost as part of the interim control project.

7. *The replacement area shall be provided in a manner which is consistent with all other General Performance Standards for each resource area in Part III of 310 CMR 10.00. In the exercise of this discretion, the issuing authority shall consider the magnitude of the alteration and the significance of the project site to the interests identified in M.G.L.c.131, § 40, the extent to which adverse impacts can be avoided, the extent to which adverse impacts are minimized, and the extent to which mitigation measures, including replication or restoration, are provided to contribute to the protection of the interests identified in M.G.L.c.131, § 40.*

   The proposed Interim II Invasive Vegetation Control Plan involves mechanical cutting of approximately 5,400 square feet of *Phragmites* to an approximate height of 6-inches four times a year to control invasive species until the final removal of invasive vegetation and replacement planting is achieved with the implementation of the Muddy River Project.

5.1.2 Performance Standards for Bordering Land Subject to Flooding

Work in BLSF consists of cutting invasive vegetation to ground level. No ground disturbance is proposed. The provisions 310 CMR 10.57(4) apply:

1. *Compensatory storage shall be provided for all flood storage volume that will be lost as the result of a proposed project within Bordering Land Subject to Flooding, when in the judgment of the issuing authority said loss will cause an increase or will contribute incrementally to an increase in the horizontal extent and level of flood waters during peak flows.*

   No flood storage will be lost as a result of this project;

2. *Work within Bordering Land Subject to Flooding, including that work required to provide the above specified compensatory storage, shall not restrict flows so as to cause an increase in flood stage or velocity.*

   Work within BLSF consists of cutting *Phragmites* stands to ground level. Invasive vegetation will be mowed to approximately 6-inches above ground surface to prevent scalping of the ground and to maintain soil stability. The project as proposed will not restrict flows in any way.

3. *Work in those portions of Bordering Land Subject to Flooding found to be significant to the protection of wildlife habitat shall not impair its capacity to provide important wildlife habitat functions. Except for work which would adversely affect vernal pool habitat, a project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold, or altering vernal pool habitat, may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

   As described above in Section 2.2, the wetland function and values assessment of the *Phragmites* dominated wetland resources associated with the Muddy River in the project area were not shown to be significant to the protection of wildlife habitat. Therefore, *Phragmites* mowing in the lower floodplain, is not considered to have an adverse effect on wildlife habitat.

5.1.3 Performance Standards for Inland Bank

Work in inland Bank consists of cutting invasive vegetation to ground surface level. No ground disturbance is proposed. The provisions 310 CMR 10.54(4) apply:

(a) Where the presumption set forth in 310 CMR 10.54(3) is not overcome, any proposed work on a Bank shall not impair the following:

1. *The physical stability of the Bank;*

   Work within inland Bank consists of cutting *Phragmites* to ground level. Vegetation will be mowed to an approximate height of 6-inches to prevent scalping of the ground and to maintain soil stability along the bank.

2. *The water carrying capacity of the existing channel within the Bank;*

   The proposed project will not decrease the carrying capacity of the Muddy River.

3. *Ground water and surface water quality;*

   Work in inland Bank consists of cutting *Phragmites* to ground level, leaving approximately 6-inches of vegetation and root systems in place. No ground disturbance is proposed.

4. *The capacity of the Bank to provide breeding habitat, escape cover and food for fisheries;*

   As discussed in Section 2.2 the *Phragmites* stands in the project area stands are presumed to not be significant to the protection of wildlife habitat.

5. *The capacity of the Bank to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of Intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 50 feet (whichever is less) of the length of the bank found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures contained in 310 CMR 10.60.*

   As discussed in Section 2.2, the *Phragmites* stands are presumed to not be significant to the protection of wildlife habitat.

5.1.4 Performance Standards for Land Under Water

Work in LUW consists of cutting invasive vegetation to ground level. No ground disturbance is proposed. The provisions 310 CMR 10.56(4) apply:

(a) Where the presumption set forth in 310 CMR 10.56(3) is not overcome, any proposed work within Land Under Water Bodies and Waterways shall not impair the following:

1. *The water carrying capacity within the defined channel, which is provided by said land in conjunction with the banks;*

   The proposed project will not decrease the carrying capacity of the Muddy River

2. *Ground and surface water quality;*

   Work in LUW consists of cutting invasive vegetation to ground level, leaving a minimum of 6-inches of vegetation and root systems in place. No ground disturbance is proposed.

3. *The capacity of said land to provide breeding habitat, escape cover and food for fisheries;*

   As discussed in Section 2.2 the *Phragmites* stands are presumed to not be significant to the protection of wildlife habitat. The capacity of LUW to provide breeding habitat, escape cover and food for fisheries is not expected to be impaired due to implementation of the proposed invasive vegetation management plan.

4. *The capacity of said land to provide important wildlife habitat functions. A project or projects on a single lot, for which Notice(s) of intent is filed on or after November 1, 1987, that (cumulatively) alter(s) up to 10% or 5,000 square feet (whichever is less) of land in this resource area found to be significant to the protection of wildlife habitat, shall not be deemed to impair its capacity to provide important wildlife habitat functions. Additional alterations beyond the above threshold may be permitted if they will have no adverse effects on wildlife habitat, as determined by procedures established under 310 CMR 10.60.*

   As discussed in Section 2.2, the *Phragmites* stands are presumed to not be significant to the protection of wildlife habitat.

(b) Notwithstanding the provisions of 310 CMR 10.56(4)(a), the issuing authority may issue an Order in accordance with M.G.L. c. 131, § 40 to maintain or improve boat channels within Land Under Water Bodies and Waterways when said work is designed and carried out using the best practical measures so as to minimize adverse effects such as the suspension or transport of pollutants, increases in turbidity, the smothering of bottom organisms, the accumulation of pollutants by organisms or the destruction of fisheries habitat or nutrient source areas.

Not applicable.

(c) Notwithstanding the provisions of 310 CMR 10.56(4)(a) or (b), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.59.

The project is not located in Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife as indicated in the 2008 Massachusetts Natural Heritage Atlas, see Figure 2.

5.1.5 Performance Standards for Riverfront Area

Work in RFA consists of cutting invasive vegetation to ground level. No ground disturbance is proposed. The provisions 310 CMR 10.58(4) a-d apply:

(a) Protection of Other Resource Areas

The work shall meet the performance standards for all other resource areas within the riverfront area, as identified in 310 CMR 10.30 (coastal bank), 10.32 (salt marsh), 10.55 (Bordering Vegetated Wetland), and 10.57 (Land Subject to Flooding). When work in the riverfront area is also within the buffer zone to another resource area, the performance standards for the riverfront area shall contribute to the protection of the interests of M.G.L. c. 131, § 40 in lieu of any additional requirements that might otherwise be imposed on work in the buffer zone within the riverfront area.

Cutting of *Phragmites* is proposed within BVW, inland Bank, LUW and BLSF associated with the Muddy River. *Phragmites* management as proposed herein will not adversely affect these resources areas. Cutting of the invasive vegetation along the river will improve visibility but more importantly, the management plan is necessary from a public safety standpoint.

(b) Protection of Rare Species

No project may be permitted within the riverfront area which will have any adverse effect on specified habitat sites of rare wetland or upland, vertebrate or invertebrate species, as identified by the procedures established under 310 CMR 10.59 or 10.37; or which will have any adverse effect on vernal pool habitat certified prior to the filing of the Notice of Intent.

No Estimated Habitat of Rare Species is located on or near the project site. Also, no potential or certified vernal pools have been observed within the designated cutting area.

(c) *Practicable and Substantially Equivalent Economic Alternatives*

There must be no practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests identified in M.G.L. c. 131 § 40.

An Alternatives Analysis is presented in Section 4.1.

(d) No Significant Adverse Impact

The work, including proposed mitigation measures, must have no significant adverse impact on the riverfront area to protect the interests identified in M.G.L. c. 131, § 40.

2. Within 25 foot riverfront areas, any proposed work shall cause no significant adverse impact by:

a. Limiting alteration to the maximum extent feasible, and at a minimum, *preserving or establishing a corridor of undisturbed vegetation of a maximum feasible width. Replication and compensatory storage required to meet other resource area performance standards are allowed within this area; structural stormwater management measures shall be allowed only when there is no practicable alternative;*

The dense stands of *Phragmites* within the RFA does not provide significant wildlife habitat, as described above, and blocks views of the river. Most importantly, the dense vegetation poses a fire risk and public safety concern to gardeners and the general public. The interim control plan presented herein will improve public safety while requiring no loss of resource areas within RFA.

b. *Providing stormwater management according to standards established by the Department;*

No ground disturbance or new impervious surface is planned as part of this project; therefore, stormwater management is not deemed necessary.

c. *Preserving the capacity of the riverfront area to provide important wildlife habitat functions. Work shall not result in an impairment of the capacity to provide vernal pool habitat when identified by evidence from a competent source but not yet certified;*

Phragmites within the Back Bay Fens/Victory Garden area do not provide significant wildlife habitat function as documented above and in the EIR for the Muddy River Project. No potential vernal pools have been identified in the proposed cutting area.

d. *Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to attenuate nonpoint source pollution.*

No ground disturbance or new impervious area is proposed as part of this project, therefore erosion and sedimentation controls are not deemed necessary.

5.1.6 Interests of Wetland Protection Act

The Interests of the Wetlands Protection Act (interests of the Act) include: protection of public and private water supply, protection of ground water supply, flood control, storm damage prevention, prevention of pollution, protection of land containing shellfish, protection of fisheries, and protection of wildlife habitat. Wetland functions, as described by the Army Corps of Engineers, correlate to the interests of the Act. As described above in Section 2 and presented in Table 1, the wetlands functions of Flood

Flow Alteration, Sediment and Toxicant Retention and Nutrient Removal are identified as "principal functions" supported by the wetlands. The functions of Sediment and Toxicant Retention, and Nutrient Removal are most closely related to the pollution prevention interest of the Act, while Flood Flow Alteration is related to Storm Damage Prevention and Flood Control.

The review of the performance standards for BVW, BLSF, Bank, LUW, and RFA, presented above, indicates that the project will not adversely affect the applicable interests of the Act.

6.0 Conclusion

The proposed work is necessary to protect the safety of people using the Victory Gardens and Back Bay Fens. Additionally, the control plan will provide interim control for invasive plants until planned dredging and restoration occurs as part of the Muddy River Project. Implementation of the plan proposed as part of this Notice of Intent will not result in the loss of any wetland resource areas.

References

Ailstock, S. M., M.C. Norman , and P.J. Bushmann. 2001. *Common Reed Phragmites australis: Control and Effects Upon Biodiversity in Freshwater Nontidal Wetlands.* Anne Arundel Community College, Arnold, MD.

Benoit, L. W. and R. A. Askins. 1999. Impact of the Spread of *Phragmites* on the Distribution of Birds in Connecticut Tidal Marshes. Wetlands 19:194-208.

Confer, J. and S. Barker. 2000. *Golden-winged Warblers.* Birdscope, Volume 14, Number 2: 7-8.

Cronk, J. K. and M. S. Fennessy. 2001. *Wetland Plants Biology and Ecology.* Lewis Publishers Boca Raton, FL.

Lapin, B. and J. Randall. 1993. *Phragmites australis (Phragmites communis).* Element Stewardship Abstract, The Nature Conservancy, Arlington, VA, USA.

McIninch, S.M., E.W. Garbisch, and G.J. Salvaggio. 1996. Control of *Phragmites australis* by Consecutive Cuttings and Flooding. Wet. J. 8: 18-20.

Ostendorp, W. 1989. 'Die-back' of Reeds in Europe – a Critical Review of the Literature. Aquatic Botany 35:5-26

USACE. 1995. The Highway Methodology Workbook Supplement, Wetlands Functions and Values a Descriptive Approach. NEDEP-360-1-30a. pp.32.

USDA Forest Service. 2002. www.fs.fed.us/database/feis/plants/graminoid/phraus/value_and_use.html

Attachment B
Abutter Notification Information

NOTIFICATION TO ABUTTERS UNDER THE
MASSACHUSETTS WETLANDS PROTECTION ACT

In accordance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following:

A. The name of the applicant is **the City of Boston Parks and Recreation Department.**

B. The applicant has filed a **Notice of Intent** with the **Boston Conservation Commission** seeking permission to remove, fill, dredge or alter an Area Subject to Protection Under the Wetlands Protection Act (MGL chp. 131, Sec. 40).*

C. The address of the lot(s) where the activity is proposed is **Back Bay Fens between the Victory Gardens and the Muddy River**

D. The **Notice of Intent** may be examined at the **Boston Conservation Commission** at the **Boston City Hall, One City Hall Plaza, 8th Floor, Boston, Massachusetts 02201** between the hours of **8:00 AM** and **4:00 PM** Monday through Friday.

E. Information about the Notice of Intent may be obtained from **Camp Dresser and McKee Inc., One Cambridge Place, Cambridge, MA 02139, Attn: Dwight Dunk** or by calling **(617) 452-6601** between **9 AM** and **4 PM** Monday through Friday.

F. **We understand that the hearing will be held on Wednesday, August 18 at 6:00 PM in Boston City Hall, Rm. 801.**

G. Notice of Public Hearing, including its date, time and place will also be published at least five (5) days in advance in **The Boston Globe and The Boston Herald**. You may also contact your local Conservation Commission or the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetlands Protection Act. To contact the **Boston Conservation Commission**, call **617-635-3850**. To contact the Department of Environmental Protection, call the **Northeast Regional Office at (617) 292-5500.**

* This project involves work in the Bordering Land Subject to Flooding, Bordering Vegetated Wetland, Inland Bank, and Land Under Water. The project is limited to mowing invasive vegetation 3-4 times during the growing season or when the vegetation reaches 4 feet in height, whichever comes first, in the parkland to improve visibility and promote public safety.

REM ACCT NUMBER	REM OWNER NAME	REM PRCL LOCATION	MAILING ADDRESS
			FENWAY CIVIC ASSOCIATION 231 PARK DRIVE #31 BOSTON, MA 02215
			FENWAY GARDEN SOCIETY PO BOX 230038 ASTOR STATION BOSTON, MA 02123
			BOSTON FIRE DEPARTMENT 115 SOUTHAMPTON STREET BOSTON, MA 02118-2713
0401716000	FENWAY BUTTRICK LLC	84 FENWAY ST	FENWAY BUTTRICK LLC 180 LINCOLN ST, SUITE 3 BOSTON, MA 02111
0401774000	FIFTY-NINE HEMENWAY ST	59 HEMENWAY ST	FIFTY-NINE HEMENWAY ST CONDO MAIN BUILDING 59 HEMENWAY ST BOSTON, MA, 02115
0401791000	MALCOLM COTTON BROWN	28 FENWAY ST	MALCOML COTTON BROWN 61 CHESTNUT ST BOSTON, MA 02108
0401715000	NORTHEASTERN UNIVERSITY	FENWAY ST	NORTHEASTERN UNIVERSITY FENWAY BOSTON, MA 02115
0401785000	BOSTON CONSERVATORY OF MUSIC	40 FENWAY ST	BOSTON CONSERVATORY OF MUSIC 40 FENWAY BOSTON, MA 02115
0401720000	BOSTON REHAB ASSOCS I LPS	66 FENWAY ST	BOSTON REHAB ASSOCS I LPS 66 FENWAY BOSTON, MA 02115
0401728000	NORTHEASTERN UNIV MASS	125 HEMENWAY ST	NORTHEASTER UNIV MASS 125 HEMENWAY BOSTON, MA 02115
0401793000	BOSTON CONSERVATORY	24 FENWAY ST	BOSTON CONSERVATORY 24 FENWAY BOSTON, MA 02115
2100002000	PRESIDENT & FELLOWS	PARK DR	PRESEDENT & FELLOWS PARK DR BOSTON, MA 02215
0401705000	CITY OF BOSTON	HEMENWAY ST	CITY OF BOSTON HEMENWAY ST BOSTON, MA 02115
0504212000	PAPOULIDIS KOSTA TRST	1250 BOYLSTON ST	PAPOULIDIS KOSTA TRST 1801 MARKET ST PHILADELPHIA, MA 19103

0401722000	HEMENWAY APARTMENTS CO LPS	97 HEMENWAY ST	HEMENWAY APARTMENTS CO LPS 97 HEMENWAY BOSTON, MA 02115
0401725000	SHAWMUT BANK NATIONAL ASSN	115 HEMENWAY ST	SHAWMUT BANK NATIONAL ASSN 360 HUNTINGTON AV BOSTON, MA 02115
0504238000	MOSKOW ABRAHAM	31 PARK DR	MOSKOW ABRAHAM 2 PARK SQ, STE 407 BOSTON, MA 02116
0504181000	BOYLSTON 1163-1191 ASSOC LLC	1175 BOYLSTON ST	BOYLSTON 1163-1191 ASSOC LLC 1 WASHINGTON ST #400 WELLESLEY, MA 02481
0504239000	LEVENSON NORMAN A TS	35 PARK DR	LEVENSON NORMAN A TS 896 BEACON ST BOSTON, MA 02215
0401795000	BOSTON CONSERVATRY MUSIC	8 FENWAY ST	BOSTON CONSERVATRY MUSIC 8 FENWAY BOSTON, MA 02115
0401784000	FORTY 2 FENWAY CONDO TR	42 FENWAY ST	FORTY 2 FENWAY CONDO TR 42 FENWAY BOSTON, MA 02115
0401792000	BOSTON CONSERVATORY	26 FENWAY ST	BOSTON CONSERVATORY 26 FENWAY BOSTON, MA 02115
0504184000	BOYLSTON 1163-1191	1191 BOYLSTON ST	BOYLSTON 1163-1191 1 WASHINGTON ST #400 WELLESLEY, MA 02481
0401787000	BOGOCH SAMUEL	36 FENWAY ST	BOGOCH SAMUEL 36 FENWAY BOSTON, MA 02215
0401790000	THIRTY FENWAY CONDO TR	30 FENWAY ST	THIRTY FENWAY CONDO TR 30 FENWAY BOSTON, MA 02215
0401786000	BOGOCH ELENORE S	38 FENWAY ST	BOGOCH ELENORE S 38 FENWAY ST BOSTON, MA 02215
0504188000	PATRA FENWAY LLC	200 IPSWICH ST	PATRA FENWAY LLC 200 202 IPSWICH ST BOSTON, MA 02215
0401713000	NORTHEASTERN UNIVERSITY	FENWAY ST	NORTHEASTERN UNIVERSITY FENWAY BOSTON, MA 02115
0401557000	BERKLEE SCHOOL OF MUSIC INC	98 HEMENWAY ST	BERKLEE SCHOOL OF MUSIC INC 1140 BOYLSTON ST – MS 168 A BOSTON, MA 02215
0504240000	ROBERT TREAT PAINE HOUSE	41 PARK DR	ROBERT TREAT PAINE HOUSE 41 PARK DRIVE

			BOSTON, MA 02215
0401794000	BERKLEE COLLEGE OF MUSIC INC	22 FENWAY ST	BERKLEE COLLEGE OF MUSIC INC 1140 BOYLSTON ST – MS 168 AX BOSTON, MA 02215
0401777000	FENSGATE ASSOCS LP	73 HEMENWAY ST	FENSGATE ASSOCS LP 7 HARVARD ST BROOKLINE, MA 02445
0401778000	BOSTON CONSERV OF MUSIC	54 FENWAY ST	BOSTON CONSERV OF MUSIC 54 FENWAY BOSTON, MA 02115
0504214000	WAIT STREET ASSOCS LPS	1 PETERSBOROUGH ST	WAIT STREET ASSOCS LPS 1 PETERSBOROUGH BOSTON, MA 02215
0401474000	PARKSIDE TOWER LLC	91 WESTLAND AV	PARKSIDE TOWER LLC 19 NEEDHAM ST NEWTON, MA 02461
0504252000	FENS DRIVE CONDO TR	61 PARK DR	FENS DRIVE CONDO TR 61 PARK DRIVE BOSTON, MA 02215
0401788000	X1 CHAPTER SIGMA ALPHA	34 FENWAY ST	X1 CHAPTER SIGMA ALPHA 34 THE FENWAY BOSTON, MA 02215
0401789000	BOSTON CONSERVATORY	32 FENWAY ST	BOSTON CONSERVATORY 32 FENWAY BOSTON, MA 02115
0504179000	BOYLSTON 1163-1191 ASSOC	1167 BOYLSTON ST	BOYLSTON 1163-1191 ASSOC 1 WASHINGTON ST #400 WELLESLEY, MA 02481
0401783000	FOURTY 4 THE FENWAY CONDO TR	44 FENWAY ST	FOURTY 4 THE FENWAY CONDO TR 44 FENWAY BOSTON, MA 02215
0401556000	MITCHELL ROBERT S TS	104 HEMENWAY ST	MITCHELL ROBERT S TS 4 COPLEY PL #110 BOSTON, MA 02116
0504180000	BOYLSTON 1163-1191 ASSOC LLC	1171 BOYLSTON ST	BOYLSTON 1163-1191 ASSOC LLC 1 WASHINGTON ST #400 WELLESLEY, MA 02481
0401555000	MITCHELL ROBERT S TS	108 HEMENWAY ST	MITCHELL ROBERT S TS 4 COPLEY PL 110 BOSTON, MA 02116
0401711000	NORTHEASTERN UNIVERSITY	102 FENWAY ST	NORTHEASTER UNIVERSITY 102 FENWAY BOSTON, MA 02115
0401712000	NORTHEASTERN UNIVERSITY	96 FENWAY ST	NORTHEASTERN UNIVERSITY 96 FENWAY BOSTON, MA 02115
0504182000	BOYLSTON 1163-1191	1179 BOYLSTON ST	BOYLSTON 1163-1191 ASSOCS

	ASSOCS		1 WASHINGTON ST WELLESLEY, MA 02481
0504186000	BOYLSTON STREET LLC	1203 BOYLSTON ST	BOYLSTON STREET LLC 1203 BOYLSTON ST BOSTON, MA 02215
0504205000	DILLON WILLIAM H	1249 BOYLSTON ST	DILLON WILLIAM H 333 NEWBURY ST BOSTON, MA 02115
0504213000	LINCOLN HALLS AT PARK DR	11 PARK DR	LINCOLN HALLS AT PARK DR 11 PARK DR BOSTON, MA 02215
0504251000	NADER ANTHONY M	55 PARK DR	NADER ANTHONY M 895 HUNTINGTON AV #1 BOSTON, MA 02115
0504175006	CITY OF BOSTON	59 FENWAY ST	CITY OF BOSTON 59 FENWAY BOSTON, MA 02115
0401723000	ONE 03 HEMENWAY ST CONDO TR	103 HEMENWAY ST	ONE 03 HEMENWAY ST CONDO TR 105 PETERBOROUGH ST #2 BOSTON, MA 02215
0504183000	BOYLSTON 1163-1191	1185 BOYLSTON ST	BOYSLTON 1163-1191 1 WASHINGTON ST #400 WELLESLEY, MA 02481
0401721000	PIZZI SALVATORE TRSTS	60 FENWAY ST	PIZZI SALVATORE TRSTS 38 LAWRENCE LN LEXINGTON, MA 02421
0401775000	SR MINC LLC	61 HEMENWAY ST	SR MINC LLC 779 WASHINGTON ST BROOKLINE, MA 02446
0504187000	BOYLSTON STREEET LLC	1209 BOYLSTON ST	BOYLSTON STREET LLC 1203 BOYLSTON ST BOSTON, MA 02215
0401782000	FOURTY 6 THE FENWAY CONDO TR	46 FENWAY ST	FOURTY 6 THE FENWAY CONDO TR PO BOX 736 WELLESLEY SQ, MA 02182
0401780000	FIFTEY THE FENWAY CONDO TR	50 FENWAY ST	FIFTY THE FENWAY CONDO TR 50 FENWAY BOSTON, MA 02215
0504250074	STRAUSS ANTHONY TS	51 PARK DR	STRAUSS ANTHONY TS 686 ALGER ST WINCHENDON MA, 01475
0504175002	METROPOLITAN DIST COMM	4 BOYLSTON ST	METROPOLITAN DIST COMM 4 BOYLSTON BOSTON, MA 02116
0401719000	ON THE FENS CONDO TR	74 FENWAY ST	ON THE FENS CONDO TR 74 FENWAY BOSTON, MA 02115

0401724000	NORTHEASTERN UNIVERSITY	109 HEMENWAY ST	NORTHEASTERN UNIVERSITY 360 HUNTINGTON AV BOSTON, MA 02199
0504215000	MITCHELL JAMES H	11 PETERBOROUGH ST	MITCHELL JAMES H 4 COPLEY PL #110 BOSTON, MA 02116
0401781000	DWYER JOHN TS	48 FENWAY ST	DWYER JOHN TS 48 FENWAY BOSTON, MA 02115
0401506000	KOUTOUNIDIS STYLIANOS	94 HEMENWAY ST	KOUTOUNIDIS STYLIANOS 39 DONNA RD NEWTON, MA 02459
0504185000	BOYLSTON STREET LLC	1197 BOYLSTON ST	BOYLSTON STREET LLC 1203 BOYLSTON ST BOSTON, MA 02215
0401779000	FIFTY TWO FENWAY CONDO TR	52 FENWAY ST	FIFTY TWO FENWAY CONDO TR 52 FENWAY BOSTON, MA 02215

Attachment C
Order of Resource Area Delineation

CITY OF BOSTON
THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 805 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435

April 21, 2010

Mr. Dwight R. Dunk, PWS
Camp Dresser & McKee Inc.
One Cambridge Place
50 Hampshire St.
Cambridge, MA 02139

RE: **DEP File No. 006-0867**, Extension Permit, Boston Parks and Recreation Department, Muddy River Restoration Project

Dear Mr. Dunk:

The Boston Conservation Commission voted at its April 14, 2010 public hearing to extend the above referenced Order of Conditions until February 21, 2013. I have enclosed the Extension Permit, which you must arrange to have recorded in accordance with Section C of the permit.

If there are any future changes to the project plans or designs that are on file with the Commission, please contact me at (617) 635-4417.

For the Commission,

Chris H. Busch, Executive Secretary
Boston Conservation Commission

Enclosure

cc: Margaret Dyson, BPRD

COPY

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

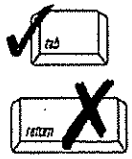
WPA Form 7 – Extension Permit for Orders of Conditions

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

DEP File Number: 006-0867 Provided by DEP

A. General Information

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. Applicant:

City of Boston Parks and Recreation Department
Name

1010 Massachusetts Avenue
Mailing Address

Boston | MA | 02118
City/Town | State | Zip Code

2. Property Owner (if different):

same
Name

Mailing Address

City/Town | State | Zip Code

B. Authorization

The Order of Conditions (or Extension Permit) issued to the applicant or property owner listed above on:

February 21, 2001 (Date) Issued by: Boston Conservation Commission (Conservation Commission)

for work at: Muddy River (Street Address) | N/A (Assessor's Map/Plat Number) | N/A (Parcel/Lot Number)

recorded at the Registry of Deeds for:

Suffolk (County) | 41914 (Book) | 322 (Page)

Certificate (if registered land)

is hereby extended until: February 21, 2013 (Date) February 21, 2007 (Date the Order was last extended (if applicable))

This date can be no more than 3 years from the expiration date of the Order of Conditions or the latest extension. Only unexpired Orders of Conditions or Extension may be extended.

This Extension Permit must be signed by a majority of the Conservation Commission and a copy sent to the applicant and the appropriate DEP Regional Office (http://www.mass.gov/dep/about/region/findyour.htm)

Signatures: Charles Button | April 14, 2010 (Date)

C. Recording Confirmation

The applicant shall record this document in accordance with General Condition 8 of the Order of Conditions (see below), complete the form attached to this Extension Permit, have it stamped by the Registry of Deeds, and return it to the Conservation Commission.

Note: General Condition 8 of the Order of Conditions requires the applicant, prior to commencement of work, to record the final Order (or in this case, the Extension Permit for the Order of Conditions) 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, it shall be noted in the Registry's Granter Index under the name of the owner of the land upon which the proposed work is to be done. In the case of registered land, it shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done.

Detach this page and submit it to the Conservation Commission prior to the expiration of the Order of Conditions subject to this Extension Permit.

To:

Boston Conservation Commission
Conservation Commission

Please be advised that the Extension Permit to the Order of Conditions for the project at:

Project Location _____ DEP File Number _____

has been recorded at the Registry of Deeds of:

County _____

for:

Property Owner _____

and has been noted in the chain of title of the affected property in accordance with General Condition 8 of the original Order of Conditions on:

Date _____ Book _____ Page _____

If recorded land the instrument number which identifies this transaction is:

Instrument Number _____

If registered land, the document number which identifies this transaction is:

Document Number _____

Signature of Applicant _____

Attachment D
Site Photographs

Project Area Photographs on June 18, 2010

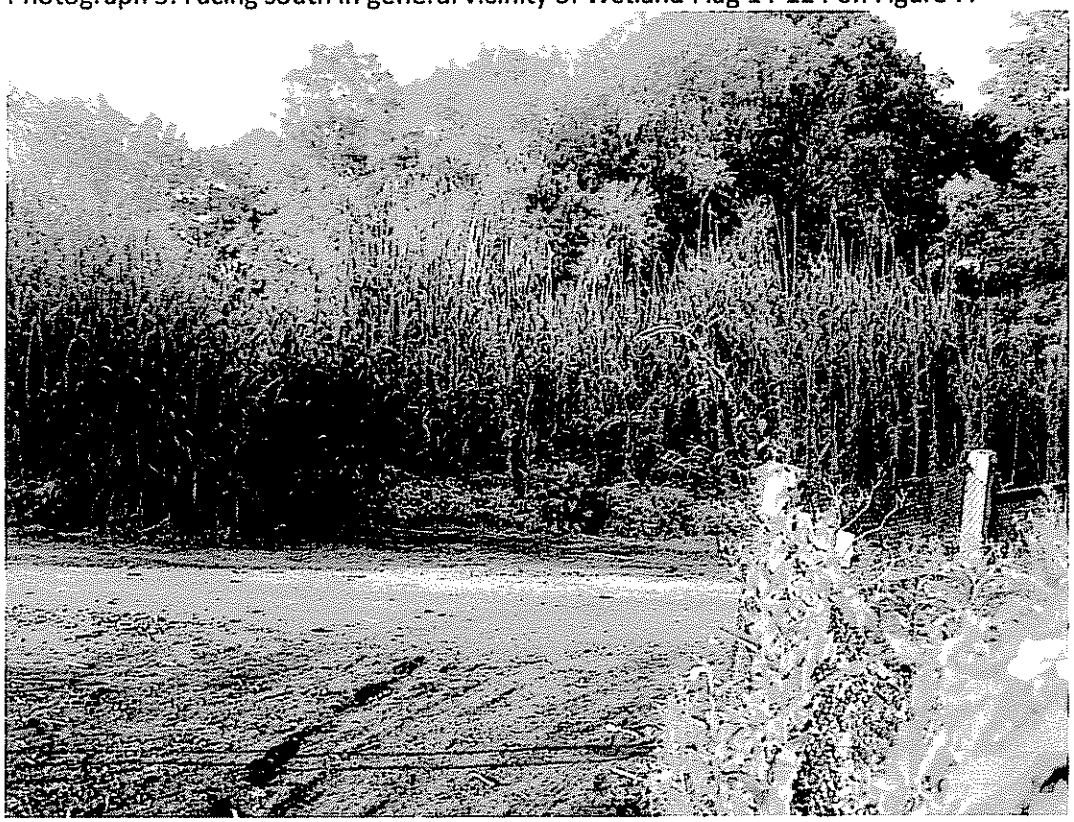
Photograph 1: Facing north in general vicinity of Wetland Flag 14-101 on Figure 5.

Photograph 2: Facing east in general vicinity of Wetland Flag 14-110 on Figure 6.

Photograph 3: Facing east in general vicinity of Wetland Flag 14-120 on Figure 6.

Photograph 4: Facing south in general vicinity of Wetland Flags 14-122 on Figure 7.

Photograph 5: Facing south in general vicinity of Wetland Flag 14-124 on Figure 7.

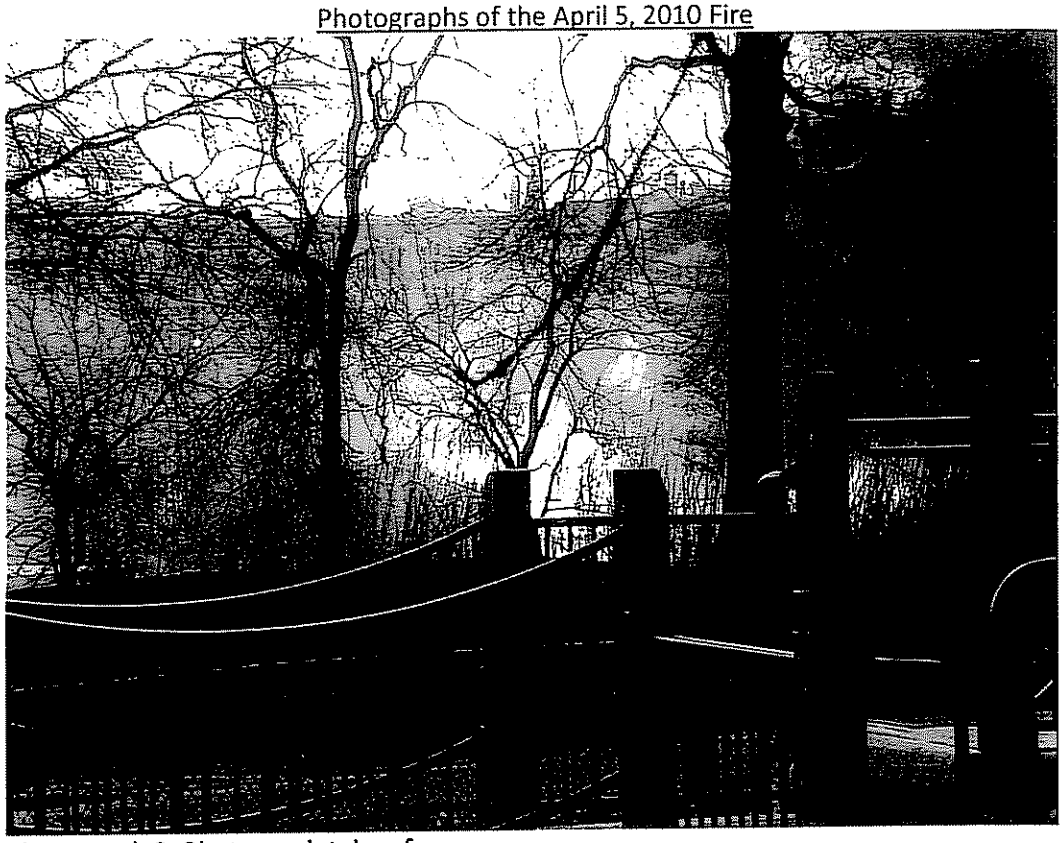


Photograph 6: Facing south in general vicinity of Wetland Flag 14-125 on Figure 7. Note the *Phragmites* encroaching the public walkway and location of the garden plot on the right side of the photograph.

Photograph 7: Facing south in general vicinity of Wetland Flag 14-128 Figure 7, taken from adjacent public walkway.

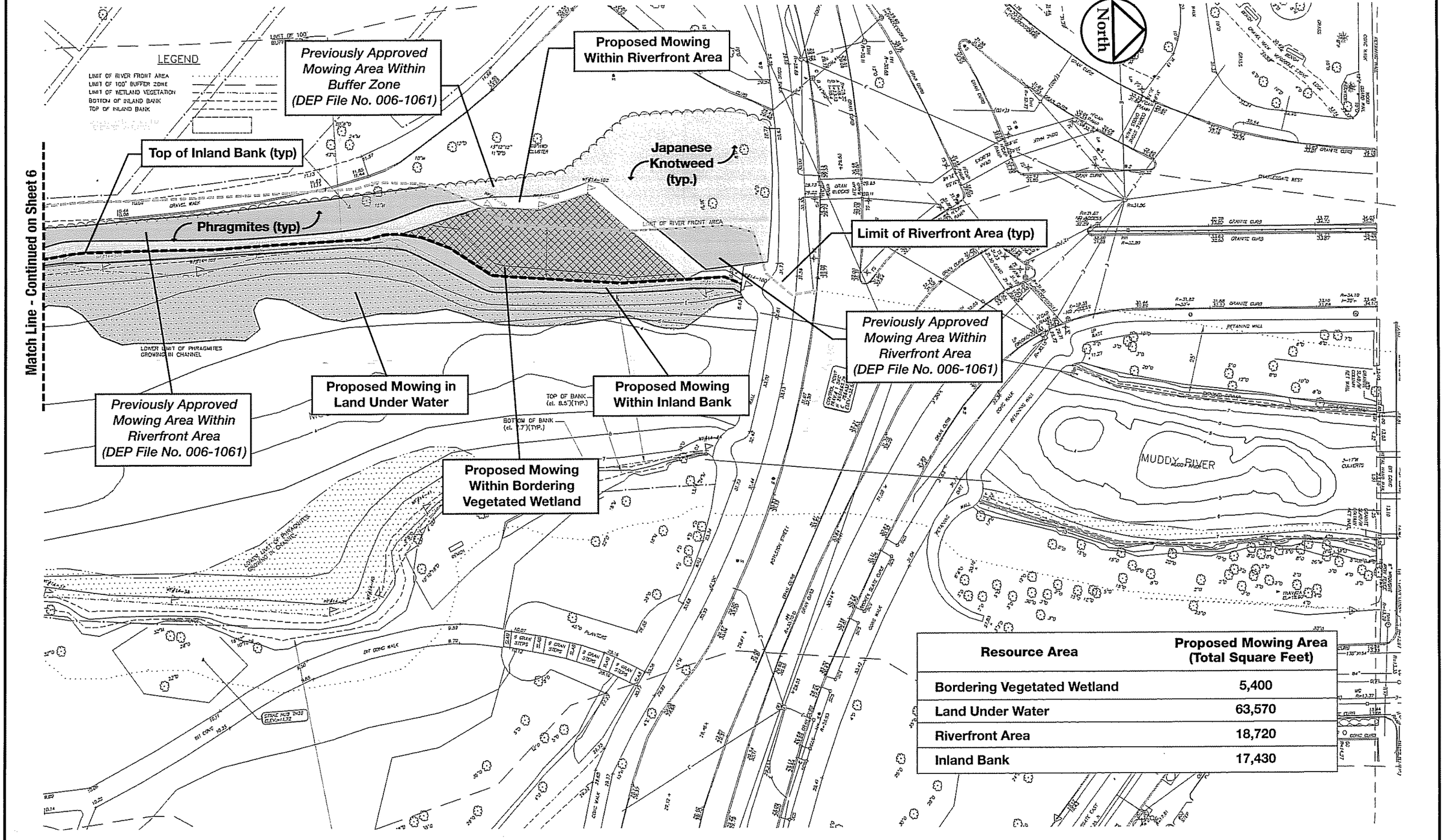
Photograph 8: Facing south in general vicinity of Wetland Flag 14-129 on Figure 8, taken from adjacent public walkway.

Photographs of the April 5, 2010 Fire



Photograph 9: Photograph taken from
http://www.freddychurchville.files.wordpress.com/2010/04/004.jpg

Photograph 10: Photograph taken from
http://www.google.com/imgres?imgurl=http://www.intotheweeds.com/fire1.jpg&imgrefurl=http://www.intotheweeds.com/&usg=__uYcWmM2EPckrTjrXov3plB-PFbM=&h=1800&w=1350&sz=875&hl=en&start=10&um=1&itbs=1&tbnid=byjqqcroHmZQDM:&tbnh=150&tbnw=113&prev=/images%3Fq%3Dback%2Bbay%2Bfens%2Bfire%2Bin%2Bboston%26um%3D1%26hl%3Den%26sa%3DN%26tbs%3Disch:1



Resource Area	Proposed Mowing Area (Total Square Feet)
Bordering Vegetated Wetland	5,400
Land Under Water	63,570
Riverfront Area	18,720
Inland Bank	17,430

Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

Figure 5
Areas of Mowing

CDM

Match Line - Continued on Sheet 7

Match Line - Continued on Sheet 5

Limit of Riverfront Area (typ)

Previously Approved Mowing Area Within Buffer Zone (DEP File No. 006-1061)

Previously Approved Mowing Area Within Riverfront Area (DEP File No. 006-1061)

Phragmites (typ)

Top of Inland Bank (typ)

Proposed Mowing in Riverfront Area

Proposed Mowing Within Inland Bank

Proposed Mowing in Land Under Water

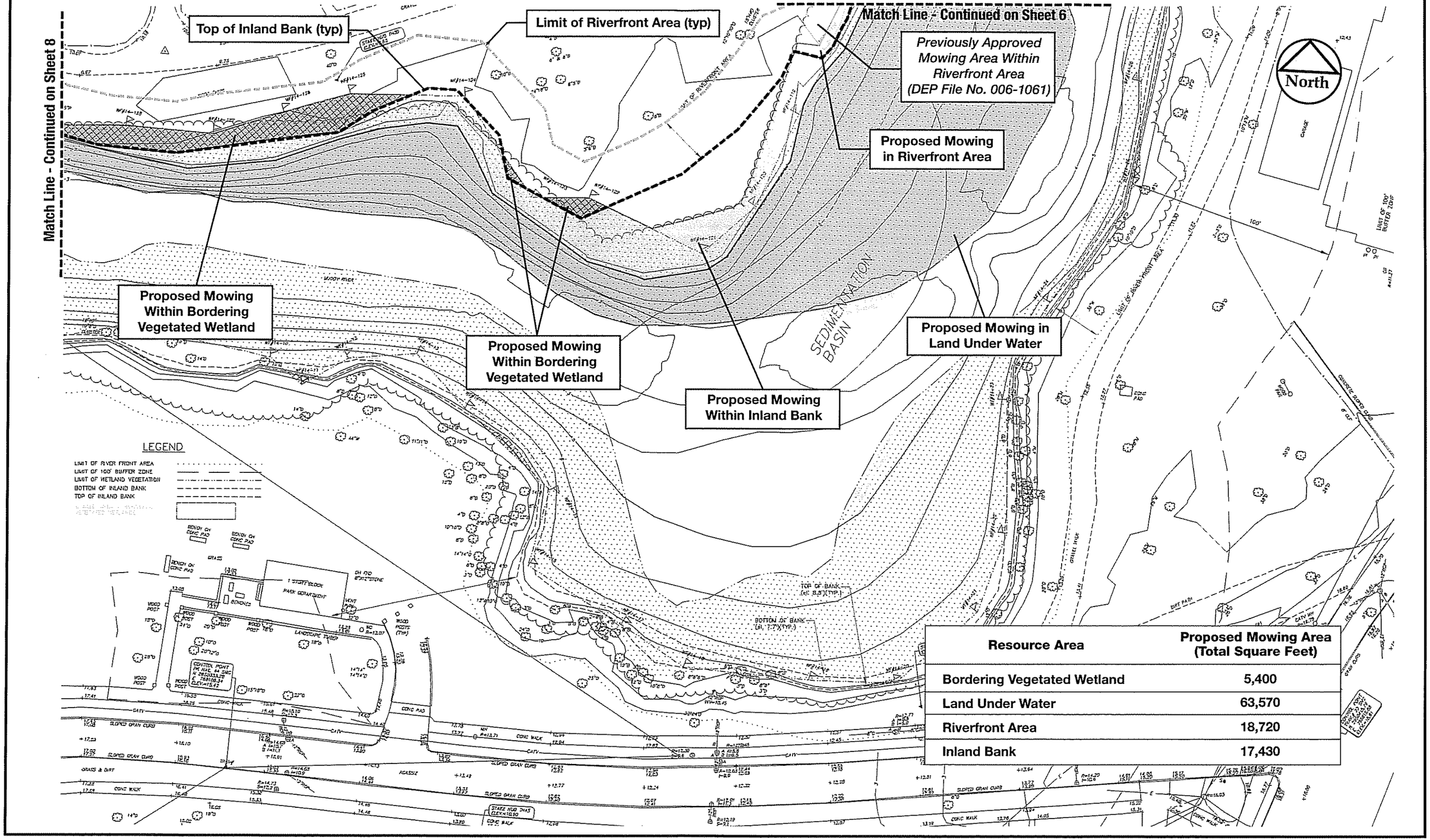
North

Resource Area	Proposed Mowing Area (Total Square Feet)
Bordering Vegetated Wetland	5,400
Land Under Water	63,570
Riverfront Area	18,720
Inland Bank	17,430

Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

Figure 6
Areas of Mowing

CDM

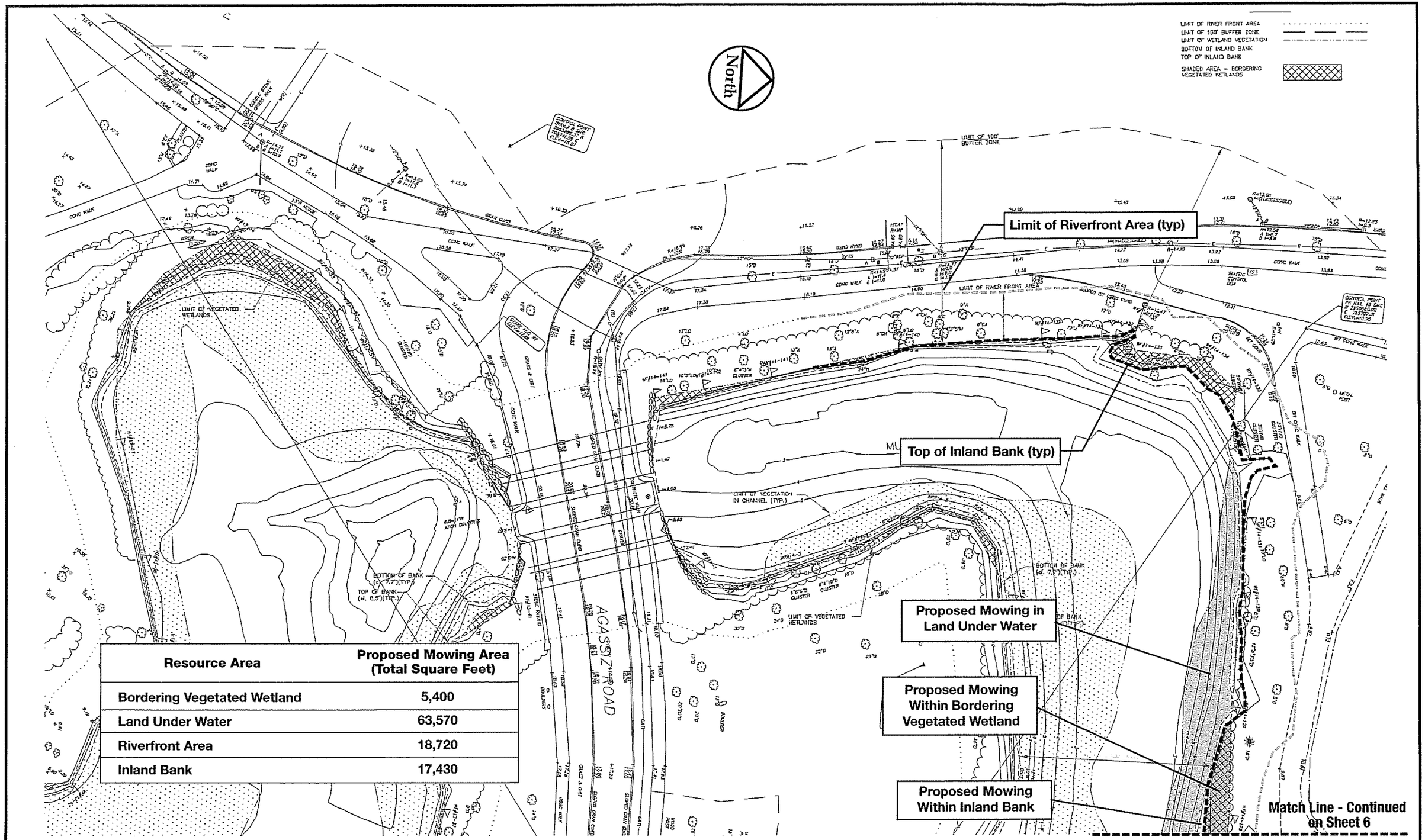


Resource Area	Proposed Mowing Area (Total Square Feet)
Bordering Vegetated Wetland	5,400
Land Under Water	63,570
Riverfront Area	18,720
Inland Bank	17,430

Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

CDM

Figure 7
Areas of Mowing



Resource Area	Proposed Mowing Area (Total Square Feet)
Bordering Vegetated Wetland	5,400
Land Under Water	63,570
Riverfront Area	18,720
Inland Bank	17,430

Boston Parks and Recreation Department
Back Bay Fens Interim II Invasive Vegetation Control Plan

Figure 8
Areas of Mowing

CDM