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FOSTER WHEELER ENVIRONMENTAL CORPORATION

USACE CONTRACT NO. DACW33-94-D-0002
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FINAL
WETLAND DELINEATION AND FUNCTIONS AND VALUES REPORT FOR RESTORATION DESIGN NEW BEDFORD HARBOR SUPERFUND SITE

New Bedford, Massachusetts

April 2002

Prepared for

U.S. Army Corps of Engineers
New England District
Concord, Massachusetts

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LIST OF ACRONYMS AND ABBREVIATIONS

DFWELE	MA Dept. of Fisheries, Wildlife and Environmental Law Enforcement
DMF	MA Division of Marine Fisheries
DSGA	designated shellfish growing areas
EA	early action
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
Foster Wheeler	Foster Wheeler Environmental Corporation
GIS	geographical information system
GPS	global positioning system
HM	high marsh
LM	low marsh
MHW	mean high water
MHHW	mean high high water
MLW	mean low water
MLLW	mean low low water
NHESP	MA Natural Heritage and Endangered Species Program
PCB	polychlorinated biphenyl
PPE	personal protective equipment
PEM	palustrine emergent
PFO	palustrine forested
PM	*Phragmites* marsh
PSS	palustrine shrub-shrub
SES	Sanford Ecological Services, Inc.
SS	scrub-shrub marsh
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

This Wetland Delineation and Functions and Values Report of the Acushnet River Estuary has been prepared by Foster Wheeler Environmental (Foster Wheeler) in accordance with U. S. Army Corps of Engineers New England Division (USACE) Contract No. DACW33-94-D-0002, Task Order No. 017 to provide a baseline for restoration associated with New Bedford Harbor Superfund Site remedial activities. Under direction of the USACE contract, Foster Wheeler conducted a wetland delineation of the Acushnet River Estuary using protocols identified in the *Corps of Engineers Wetland Delineation Manual (on-line edition)* (Environmental Laboratory, 1987), and a Wetland Functions and Values Assessment employing the USACE Highway Methodology, Wetland Functions and Values, Descriptive Approach (USACE, 1995).

2.0 SITE DESCRIPTION

The study site encompasses the intertidal zone associated with the Acushnet River extending from the Tarkiln Hill Road/North Main Street crossing in Acushnet, Massachusetts south to Interstate 195 in New Bedford and Fairhaven, Massachusetts (see Appendix A, Figure 1). This area includes the Upper New Bedford Harbor, associated coves, creeks, mudflats, beaches and coastal and inland wetlands that are within or adjacent to known Polychlorinated Biphenyl (PCB) contaminated sediment. The Acushnet River is tidally influenced, located within the Buzzards Bay Coastal Drainage Basin and the Cape Cod Watershed (EPA, 2001). Tides within the study area are mixed to semi-diurnal with a mean range of 3.8 feet and a spring tidal range of 4.7 feet (IEP, 1988). Bedrock geology within the Acushnet River drainage basin is composed of plutonic intrusive and metamorphic rocks of Proterozoic age. Glacial sediments up to 50 feet thick, overlie this granitic/gneissic bedrock consisting of kame delta deposits, outwash deposits and till (IEP, 1988).

The eastern shoreline of the Acushnet River supports a large well established salt marsh ecosystem, bordered by a mix of residential, commercial and industrial land uses. In contrast, the western shoreline consists of fringe salt marsh, except for King Philip Cove where a more substantive salt marsh community has developed. The western shoreline is primarily surrounded by industrial facilities. The northern most study area located between Tarkiln Hill Road/ North Main Street and the Wood Street Bridge is composed of a diverse brackish estuarine marsh community. The majority of land use north of Wood Street is residential. Mixed scrub-shrub, maintained lawn, and forest dominate the upland vegetative communities within this area.

3.0 METHODS

The landward upland/wetland boundary was field delineated by Foster Wheeler between August 22, and October 9, 2001. Estuarine wetland vegetation zones and the lower vegetated wetland boundary were delineated using orthophotos and field verification techniques. Mudflat boundaries were determined though a combination of elevation, orthophoto interpretation and field verification. All collected data including surveyed upland/wetland flags and digitized orthophoto boundaries were compiled into ArcView® to create a map presentation of the wetlands within the Acushnet River Estuary. After data was collected and analyzed a wetland Functions and Values Assessment was performed.

3.1 Field Delineation

Vegetated wetland boundaries were delineated using the USACE routine on-site method (Environmental Laboratory, 1987) and the USACE New England District's supplemental guidance (USACE, 2000). The area covered by the delineation included wetlands within the intertidal zone of the Acushnet River and any additional wetlands within 100-feet of proposed access roadways and known dredging/excavation areas provided by the USACE on June 1, 2001. Personal protective equipment (PPE) consisting of Tyvek®, chemical sock boots, inner and outer protective gloves, safety glasses and hard hats were utilized during the wetland investigations. Decontamination zones were set up and all relevant health and safety procedures were followed (Foster Wheeler, 1999). Wetland locations were initially identified through visual assessment of vegetation and hydrology. A minimum of two sampling stations, one on either side of the wetland boundary, were sampled. Additional stations were sampled as necessary to determine the wetland boundary (see Appendix B, Wetland Data Sheets).

Vegetation, soil, and hydrology indicators were examined at each station. Dominant plant species and estimated cover were recorded by stratum. Data from tree, vine, sapling (0.4 to 5 dbh, 20 feet tall or greater), shrubs (at least 3 feet tall but less than 20 feet tall), and seedling/herb strata were collected, by species, at each sampling plot according to supplemental guidance provided by the USACE New England District (USACE, 2000). The Soil Survey of Bristol County Massachusetts (USDA, 1981) was referenced as a baseline for soil identification and confirmed in the field (see Appendix A, Figure 2). Soil borings were taken to a depth of 18 to 24 inches with a Dutch auger, and observations were recorded in standard soil log format. Hydrologic modifiers defined in Cowardin et. al. (1979) were used to characterize wetland hydrology (see Table 4.1.2). In addition, Federal Emergency Management Agency (FEMA) maps were reviewed to determine the extent of the 100- and 500-year flood zones within each wetland system (see Appendix A, Figure 3).

Wetland boundaries were marked with pink WETLAND DELINEATION survey flagging or pin flags. A Trimble™ Pathfinder Pro-XRS survey grade real time differential data collection Global Positioning System (GPS) was utilized to locate each wetland flag and sample station. This GPS unit was operated within Trimble™ standards for sub-meter data collection. Rarely, wetland boundary points were offset or taken with no physical hanging of the WETLAND DELINEATION flags due to sensitive landowners, lack of access and/or tides. Copies of photographs taken during the field effort are provided in Appendix C.

3.2 Orthophoto Delineation

Color orthophotos (scale 1"=100') were used to delineate the lower vegetated wetland boundary, creeks, beaches and wetland vegetative types located within the field delineated wetland boundaries. The orthophotos were taken into the field and the entire wetland area was simultaneously mapped and photoverified. The smallest wetland type unit delineated on the orthophotos was approximately

55 square feet. Wetland types were classified according to the U. S. Department of the Interior Fish and Wildlife Service (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al., 1979). Estuarine wetlands were further classified into distinct vegetation zones according to Miller and Egler, (1950). See Table 4.1.1, for USFWS wetland classifications and mapped estuarine vegetation zones within the Acushnet River Estuary.

3.3 Mudflat Delineation

The upper limits of mudflat, or the boundary between mudflat and vegetated wetlands, or mudflat and beach, was determined by orthophoto interpretation and field verification. For this study, no attempt was made to delineate the lower limits of mudflats. Instead, and to be consistent with the definition of mudflat currently in use by the project, the lower limit of mudflat was defined by the MLLW line elevation 1.44 feet (USACE, 1999).

3.4 Wetland Delineation Maps

The Wetland Delineation Map developed within the geographical information system (GIS) software ArcView® (Version 3.2a) includes the GPS wetland delineation boundary flag locations and sample stations overlying color aerial photography (1998 orthophotos, 0.5-foot resolution, meets National Mapping Accuracy Standards for 1"=40' with 1-foot contours). Wetland types, creeks and beaches photo-interpreted and field verified were digitized on the orthophoto at a scale no greater than 1:1200. Federally protected resources including mudflats as defined in Section 404 of the Federal Clean Water Act (33 USC s/s1251 et. seq. 1977) were also identified on the map (see Appendix D, Wetland Cover Type Map).

For the purpose of this report, numbers assigned to each wetland were revised from those assigned during the delineation, to provide a continuous linear sequence commencing on the eastern shoreline and ending on the western shoreline at the Tarkiln Hill Road/North Main Street Bridge. The actual wetland delineation was not conducted in this same sequence due to delays in survey permission acquisition and tides. Fourteen (14) wetland systems were grouped and identified with respect to geographical location and similar functions and values. Table B-1 in Appendix B lists the wetland identification designations used in this report, and the wetland identification designations assigned during the field delineation. Both wetland identifiers are recorded in ArcView® tabular data. For clarification purposes, a Wetland Identification Map is located in Appendix D.

3.5 Wetland Functions and Values Assessment

The wetland functions and values assessment was performed in October of 2001 using the USACE Highway Methodology Workbook Supplement (USACE, 1995). The Highway Methodology is a descriptive approach that considers eight (8) functions and five (5) values that are commonly associated with wetlands. A data form provided by the USACE was prepared for each wetland system to record the occurrence of a particular function or value as well as rationale for determining its occurrence (see Appendix E, Wetland Functions and Values Forms). Wetland systems with similar functions and values have been grouped accordingly on the same data sheet. A list of potential wetland-dependent mammals, reptiles and amphibian species that may occur in the different habitat types within these wetlands was generated utilizing WEThings (wetland habitat indicators for non-game species) (Whitlock, 1994) (see Appendix F, Table F-3).

4.0 WETLAND DELINEATION RESULTS

4.1 Wetlands

Fourteen (14) wetland systems and thirteen (13) intertidal creeks were delineated within the study area along the Acushnet River. The locations of the wetlands and creeks are indicated on the Wetland Cover Type and Wetland Identification Maps provided as Appendix D. Wetland vegetation zones identified within the 14 wetland systems are listed in Table 4.1.1. Vegetation zones within salt marsh systems are primarily a function of elevation and frequency of tidal influence. Four vegetation zones were observed and delineated in the Acushnet River Estuary marshes: low marsh (LM), high marsh (HM), scrub-shrub marsh (SS) and Phragmites marsh (PM) (see Table 4.1.1).

LM is located between mean low water (MLW) elevation 1.32 feet and mean high water (MHW) elevation 2.45 feet (USACE, 1999), and is dominated by salt marsh cordgrass (*Spartina alterniflora*). HM is located between MHW and mean high-high water (MHHW) elevation 2.72 (USACE, 1999) and is dominated by a greater variety of species such as salt meadow cordgrass (*Spartina patens*), spike grass (*Distichlis spicata*), black grass (*Juncus gerardii*) and pannes of the short form of salt marsh cordgrass. For the purpose of this study, the HM designation is also used to classify areas supporting a mixture of typical HM communities as previously described and additional brackish vegetative species like three-square (*Scirpus americanus*), freshwater cordgrass (*Spartina pectinata*) and switch grass (*Panicum virgatum*). SS marsh and PM are usually situated further inland at the edge of the salt marsh border at a higher elevation than LM and HM. SS marsh is often dominated by high-tide bush (*Iva frutescens*). PM marshes are dominated by the common reed (*Phragmites australis*) and frequently indicate the boundary where freshwater intrusion occurs and formerly disturbed areas.

Table 4-1
Wetland Classifications
New Bedford Harbor Wetland Delineation 2001

Wetland Identification	USFWS Wetland Classification[1]	Corresponding Estuarine Vegetation Zones[2]	Approximate Acreage
Early Action Wetlands	E2EM5	LM	0.19
	E2EM5	HM	0.18
		TOTAL:	**0.37**
Wetland 1	E2EM5	LM	0.19
	E2EM1	PM	0.19
		TOTAL:	**0.38**
Wetland 2	E2EM5	LM	0.08
	E2EM1	PM	0.03
		TOTAL:	**0.11**
Wetland 3	E2EM5	LM	2.02
	E2EM5	HM	2.14
	E2SS1	SS	0.35
	E2EM1	PM	4.99
	PEM1, PEM4	----	0.39
	PSS1	----	0.74
	PFO1	----	0.03
		TOTAL:	**10.66**
Wetland 4	E2EM5	LM	8.11
	E2EM5	HM	18.53
	E2SS1	SS	11.22
	E2EM1	PM	0.48
		TOTAL:	**38.34**
Wetland 5	E2EM5	LM	0.71
	E2EM5	HM	0.16
		TOTAL:	**0.87**
Wetland 6	E2EM5	LM	0.27
		TOTAL:	**0.27**
Wetland 7	E2EM5	LM	0.09
	E2EM1	PM	0.30
		TOTAL:	**0.39**
Wetland 8	E2EM5	LM	0.14
		TOTAL:	**0.14**
Wetland 9	E2EM5	LM	1.76
	E2EM5	HM	0.32
	E2SS1	SS	0.10
	E2EM1	PM	0.30
		TOTAL:	**2.48**
Wetland 10	PEM1	----	0.06
		TOTAL:	**0.06**
Wetland 11	PEM1	----	0.04
		TOTAL:	**0.04**
Wetland 12	E2EM5	LM	2.29
	E2SS1	SS	0.14
	E2EM1	PM	0.04
		TOTAL:	**2.47**
Wetland 13	E2EM5	LM	0.21
	E2EM5	HM	0.24
	E2EM1	PM	0.17
		TOTAL:	**0.62**
		TOTAL WETLAND ACREAGE DELINEATED:	**57.2**

[1]**E2EM5** = Estuarine, intertidal, emergent, narrow-leaved persistent; **E2EM1** = Estuarine, intertidal, emergent, persistent
E2SS1 = Estuarine, intertidal, scrub-shrub, broad-leaved deciduous; **PEM1** = Palustrine, emergent, persistent
PEM4 = Palustrine, emergent, broad-leaved non-persistent; **PSS1** = Palustrine, scrub-shrub, broad-leaved deciduous
PFO1 = Palustrine, forested, broad-leaved deciduous; ---- = Not Applicable
[2]**LM** = Low Marsh, **HM** = High Marsh, SS = Scrub-shrub Marsh, **PM** = Phragmites Marsh

Each of the 14 wetland systems identified is described below with respect to dominant vegetative communities, soils and hydrology.

Table 4-2
Observed Water Regimes
New Bedford Harbor Wetland Delineation 2001

System	Water Chemistry	Water Regime
Tidal	Hyperhaline (>40 ppt)	***Irregularly exposed***: The land surface is exposed by tides less often than daily.
Tidal	Euhaline (30-40 ppt) Mixohaline (0.5-30 ppt)	***Regularly flooded:*** Tidal water alternately floods and exposes the land surface at least once daily.
Tidal	Euhaline (30-40 ppt) Mixohaline (0.5-30 ppt)	***Irregularly flooded:*** Tidal water floods the land surface less often than daily.
Nontidal	Fresh (<0.5 ppt)	***Semipermanently flooded:*** Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.
Nontidal	Fresh (<0.5 ppt)	***Temporarily flooded:*** Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface

ppt = parts per thousand of NaCl based on Cowardin et. al., 1979

4.1.1 Early Action

The early action (EA) wetlands are located along the eastern shoreline of the Acushnet River, south of the Tarkiln Hill Road/North Main Street Bridge. The EA wetlands were delineated in May of 2000 prior to remedial activities associated with the New Bedford Harbor Superfund Site. A mixed upland forest, residential homes and dirt access road characterize the area bordering the wetlands. See the Restoration Plan for Early Action Sediment Removal, dated December 2000 for further detail of the EA wetlands (Foster Wheeler, 2000). Restoration activities took place in May of 2001. Approximately 0.37 acres of wetland were disturbed and restored. Vegetation observed in October of 2001 within the restored EA wetlands is characterized by salt marsh cordgrass, dwarf spike-rush (*Eleocharis parvula*), Baltic rush (*Juncus balticus*), three-way sedge and Cyperus (*Cyperus* sp.). Post-restoration soils were recorded as loamy sands showing evidence of developing soil horizon formation. According to the FEMA Map this wetland is within the 100-year flood zone.

4.1.2 Wetland 1

Wetland 1 is located on the eastern shoreline of the Acushnet River, north of the Wood Street Bridge in Acushnet, Massachusetts. A parking lot, residential subdivision road, public-park and mixed forest border this estuarine emergent wetland complex. The surrounding upland forest consists of black cherry (*Prunus serotina*) and red maple (*Acer rubrum*) trees. Understory species observed include multiflora rose (*Rosa multiflora*), bittersweet (*Celastrus scandens*), viburnum (*Viburnum recognitum*), winged sumac (*Rhus copallina*), fox grape (*Vitis labrusca*) and rough-stemmed goldenrod (*Solidago rugosa*). LM and PM are the two vegetation zones observed in this wetland. Additional species observed within LM are curly dock (*Rumex crispus*), high-tide bush, common reed and reed canary grass (*Phalaris arundinacea*). Additional species observed within the PM are fox grape and bittersweet.

According to the FEMA Map this wetland is within the 100 and 500-year flood zones. LM is regularly flooded as confirmed by the distinct watermarks noted on the vegetation and the recorded mean high water line. A portion of the PM is regularly flooded, while the remainder is irregularly flooded. Soils

show evidence of saturation within the top 12 inches of the mineral soil surface within the irregularly flooded PM. LM wetland soil samples consist of greater than 18 inches of organic material. The soils observed during the field survey for the PM, are similar to those mapped as Deerfield and Scarboro soils characterized in the county soil survey.

4.1.3 Wetland 2

Wetland 2 is located on the eastern shoreline of the Acushnet River, south of the Wood Street Bridge and west of the Titleist property in Acushnet, Massachusetts. Rip-rap bank associated with the Titleist industrial facility and disturbed vegetated upland, border this estuarine emergent wetland complex. The surrounding upland vegetation is primarily dominated by white ash (*Fraxinus americana*), box elder (*Acer negundo*), multiflora rose, Tartarian honeysuckle (*Lonicera tatarica*), poison ivy (*Toxicodendron radicans*) and Virginia creeper (*Parthenocissus quinquefolia*). LM and PM are the two vegetation zones observed in this wetland. According to the FEMA Map Wetland 2 is within the 100-year flood zone. Both vegetation zones are regularly flooded and highly eroded from the Acushnet River. Due to the high erosion associated with the location of Wetland 2, these wetlands form a fringe wetland, characterized by a narrow strip of vegetated wetland along the periphery of the upland shore. Soils within this area are disturbed and are consistent with the urban land soil series classification within the soil survey.

4.1.4 Wetland 3

4.1.4.1 Estuarine Wetlands

Wetland 3 is located on the eastern shoreline of the Acushnet River, southeast of Wetland 2 and north of the substation in Acushnet, Massachusetts. Upland scrub-shrub, fallow fields and mixed forests, the Titleist facility and associated parking lot, power lines, and residential land surround this large wetland complex. The most common species observed within the adjacent uplands are white oak (*Quercus alba*), red oak (*Quercus rubra*), juniper (*Juniperus virginiana*), black cherry, black highbush blueberry (*Vaccinium atrococcum*), winged sumac, bayberry (*Myrica penslyvanica*), common green brier (*Smilax rotundifolia*), bitter sweet, bramble (*Rubus* sp.) and seaside golden rod (*Solidago sempervirens*). One upland island situated on the southern tip of the Robichaud Cove and a small linear strip of sand/cobble-gravel beach were identified. Wetland 3 is associated with six (6) intertidal creeks and two (2) coves and supports a mosaic of estuarine vegetation zones including LM, HM, SS and PM as well as palustrine forested, scrub-shrub and emergent wetlands along its mixohaline borders. According to the FEMA Map this wetland is within the 100 and 500-year flood zones.

Wetland 3 LM vegetation zones are supported within regularly flooded zones adjacent to the Acushnet River, associated intertidal creeks and mosquito ditches. Soils found within LM are loamy sands, intermixed with gravel and organics and often with a sulfur smell. HM grows within the irregularly flooded zones. Species observed within Wetland 3 HM are salt meadow grass, spike grass, sea lavender (*Limonium nashii*) and marsh orach (*Atriplex patula*). HM soil samples taken are consistent with the Pawcatuck and Ipswich peats described in the soil survey. SS marsh is primarily dominated by high-tide bush, black grass and lesser amounts of salt meadow grass, Virginia rye (*Elymus virginicus*) and seaside goldenrod. Since SS is located at a higher elevation than HM, SS soils have less accumulation of organic matter and hence are more mineral in nature. Oxidized rhizospheres were noted in these loamy sandy soils.

Most of this wetland complex consists of an extensive PM extending from the Titleist facility to the Robichaud Cove. A portion of the PM within this wetland complex is regularly flooded, however as the wetland boundary encroaches further inland, salinity levels drop and freshwater intrusion occurs creating

a boundary where the estuarine Acushnet River is no longer the driving hydrological source for these wetlands.

4.1.4.2 Palustrine Wetlands

According to USFWS the boundary between fresh and hyperhaline water is continuous and any boundary is artificial (Cowardin et. al., 1979). Since differences in salinity have been reflected in observed species composition changes, vegetation was the primary rational used to identify the boundary between on-site estuarine and palustrine environments. For the purposes of this study, a combination of topography and a change in vegetative species composition from a brackish vegetative community to a more freshwater dominated plant community were adopted as the determining factors for distinguishing predominantly freshwater wetland systems from predominantly saline wetland systems. The highest observed tide suggests that at or above elevation 4.19' (USACE, 1999) the wetland hydrology would no longer be tidally influenced by the Acushnet River. This elevation was recorded post construction of the hurricane barrier, therefore tides may have exceeded this elevation prior to 1966. Overall, this elevation corresponds with observed changes in wetland plant community composition.

A total of three (3) palustrine emergent (PEM), five (5) palustrine scrub-shrub and two (2) small palustrine forested (PFO) wetlands were identified within Wetland 3. A temporarily flooded water regime exists within these palustrine wetlands. The palustrine emergent wetland boundary begins where the vegetation within the PM located between the Titleist facility and the Robichaud Cove, supports a preponderance of freshwater species, specifically silky dogwood (*Cornus amomum*), jewelweed (*Impatients capensis*), and sensitive fern (*Onoclea sensibilis*). The two PFO wetlands were finger wetlands along the perimeter of the wetland boundary north of the Robichaud Cove. Vegetation within these small wetlands, approximately 0.03 acres total, is dominated by red maple, black gum (*Nyssa sylvatica*), viburnum and poison ivy. Soil profiles within PFO wetlands have a plowed A horizon to a depth of 10-12 inches on top of a gleyed B-horizon.

Four (4) PSS and 2 PEM wetlands are located north of the substation. An additional PSS is located along the perimeter of the wetland boundary within the vicinity of the PFO wetlands. Vegetation within the PSS wetlands primarily consists of viburnum, gray birch (*Betula populifolia*), black chokeberry (*Pyrus melanocarpa*), highbush blueberry (*Vaccinium corymbosum*), black gum, cinnamon fern (*Osmunda cinnamomea*) and poison ivy. The PEM is dominated by Eastern Joe-pye-weed (*Eupatorium dubium*), Spotted Joe-pye-weed (*Eupatorium maculatum*) and arrow-leaved tearthumb (*Polygonium sagittatum*). Mapped soil survey series of Walpole and Pits-Udorthents complex accurately characterize the soils within this area.

4.1.5 Wetland 4

Wetland 4 is located on the eastern shoreline of the Acushnet River, south of Wetland 3 and north of the bus station off of Sycamore Street in Acushnet, and Fairhaven, Massachusetts. Upland scrub-shrub, fallow fields and mixed forest, and commercial and residential areas dominate the land use bordering this wetland. This is the largest salt marsh complex identified within the Acushnet River Estuary associated with four (4) intertidal creeks, a myriad of mosquito ditches, one cove and a diverse salt marsh community. The most common species observed within the adjacent uplands (including the seven identified upland islands within the salt marsh), are juniper, scrub oak (*Quercus ilicifolia*), black cherry, black highbush blueberry, winged sumac, beach rose (*Rosa rugosa*), bayberry, bitter sweet, switch grass and poison ivy. Two sand/cobble-gravel beaches were delineated west of the substation. According to the FEMA Map the majority of this wetland is within the 100-year flood zone.

Wetland 4 LM vegetation zones occur within regularly flooded zones adjacent to the Acushnet River, associated intertidal creeks and mosquito ditches. Soils found within LM are loamy sands, with about 4 to 6 inches of organic material at the surface and a gleyed B-horizon. HM grows within the irregularly flooded zones. Species observed within Wetland 4 HM are salt meadow grass, spike grass, sea lavender, marsh orach, switch grass, perennial salt marsh aster (*Aster tenuifolius*), seaside plantain (*Plantago maritima*) and sea blite (*Suaeda linearis*). Various pannes or depressions within the HM, were observed throughout this wetland series, and were dominated by common glasswort (*Salicornia europaea*) and the short form of salt marsh cordgrass. HM soil samples taken are consistent with the Pawcatuck and Ipswich peats described in the soil survey. SS marsh is primarily dominated by high-tide bush, black grass, groundsel tree (*Baccharis halimifolia*) and spike grass. SS marsh soils were extremely sandy and determined hydric due to the streaking of organics within the transition zone between the A and B soil horizons.

4.1.6 Wetland 5

Wetland 5 is located on the eastern shoreline of the Acushnet River, north of the Coggeshall Street Bridge and south/southwest of the bus station in Fairhaven, Massachusetts. An industrial facility and disturbed scrub-shrub upland border this estuarine emergent wetland complex. The surrounding upland vegetation consists of box elder, beach plum (*Prunus maritima*), poison ivy, evening primrose (*Oenothera* sp.), milkweed (*Asclepias syriaca*) and red clover (*Trifolium pratense*). LM and HM are the two vegetation zones observed in this wetland. LM is regularly flooded as confirmed by the distinct watermarks noted on the vegetation and the recorded mean high water line. Species observed within the irregularly flooded HM are salt meadow grass, spike grass and sea lavender. HM wetland soil samples consist of greater than 16 inches of organic material. There is a cobble-gravel beach associated with this wetland. According to the FEMA Map this wetland is within the 100- and 500-year flood zones

4.1.7 Wetland 6

Wetland 6 is located on the eastern shoreline of the Acushnet River, south of the Coggeshall Street Bridge and north of interstate 195 in Fairhaven, Massachusetts. Residential homes and maintained lawn border this estuarine emergent wetland. Because access to this area had not been granted by the landowner, wetland boundaries and cover types were photo-interpreted on the orthophotos as observed from a distance. LM is regularly flooded and highly eroded from the high current created by the two bridges during tidal fluctuations. Due to the high erosion associated with the location of Wetland 6, the LM vegetation forms a fringe wetland, characterized by a narrow strip of vegetated wetland along the periphery of the upland shore. According to the FEMA Map this wetland is within the 100-year flood zone.

4.1.8 Wetland 7

Wetland 7 is located on the western shoreline of the Acushnet River, south of the Coggeshall Street Bridge and north of interstate 195 in New Bedford, Massachusetts. Interstate 195 exit and entrance ramps and maintained grass field border this estuarine emergent wetland supporting PM and LM vegetation zones. The wetland boundaries and cover types in this wetland were also photo-interpreted on the orthophotos. LM is regularly flooded and extends along a culverted creek associated with the stormwater management facilities of the interstate highway. A cobble-gravel/glass beach is located within this wetland system. According to the FEMA Map Wetland 7 is within the 100-year flood zone.

4.1.9 Wetland 8

Wetland 8 is located on the western shoreline of the Acushnet River, north of the Coggeshall Street Bridge and south of the New Bedford Harbor Superfund Site headquarters in New Bedford, Massachusetts. An abandoned industrial factory, parking lot and disturbed overgrown field border this estuarine emergent wetland. Dominant vegetation surrounding Wetland 8 consists of an upland stand of common reed, common milkweed, pokeweed (*Phytolacca americana*), bindweed (*Convolvulus* sp.) and rough-stemmed goldenrod. The vegetation zone classified within Wetland 8 is LM. According to the FEMA Map this wetland is within the 100-year flood zone. There is a cobble-gravel beach associated with this wetland. Recorded soils were disturbed loamy sands with gravel showing evidence of hydric soil formation, specifically high organic matter and anaerobic soil chroma within the upper 12 inches of these highly eroded and disturbed soils.

4.1.10 Wetland 9

Wetland 9 is located on the western shoreline of the Acushnet River in King Philip Cove, northwest of Wetland 8 in New Bedford, Massachusetts. An abandoned open area covered with remnants of demolished buildings, a public recreational park and disturbed scrub-shrub upland border this estuarine emergent wetland complex. The surrounding upland vegetation is dominated by Autumn olive (*Elaeagnus umbellata*), box elder, multiflora rose, bittersweet, mugwort (*Ambrosia vulgaris*), golden rods, Queen Anne's lace, yarrow (*Achillea millefolium*) and fescue (*Fescue* sp.). LM, HM, SS and PM are the vegetation zones observed in this wetland. Species observed within the irregularly flooded HM are salt meadow grass, spike grass, salicornia and perennial salt marsh aster. Irregularly flooded SS marsh is primarily dominated by bayberry, high-tide bush, steeplebush (*Spirea tomentosa*), switch grass and poison ivy. Soils observed within LM and HM had over 18 inches of organic material. PM and SS soils show evidence of hydrology within the upper 12 inches of the soil profile. According to the FEMA Map Wetland 9 is within the 100-year flood zone. There is a small cobble-gravel beach located on the outer peninsula of this wetland and an upland island supporting black cherry and winged sumac.

4.1.11 Wetlands 10 and 11

Wetlands 10 and 11 are located on the western shoreline of the Acushnet River west of Wetland 9 in the vicinity of the open area covered with remnants of demolished buildings. These wetlands are discussed together in this report because both wetlands are isolated palustrine emergent wetlands located within approximately 30-feet of each other. Wetland 10 is dominated by cattail (*Typha* sp.), fox sedge (*Carex vulpinoidea*), water plantain (*Alisma plantago-aquatica*) and smartweed (*Polygonum* sp.). The water regime has been classified by this study as semi-permanently flooded due to the presence of standing water late in the growing season, lack of significant precipitation events during a two-week observation period, and the surrounding vegetation like water plantain which often grows in semi-permanently flooded areas. Soils are disturbed, but show evidence of hydric soil conditions. Wetland 11 consists of creeping bent grass (*Agrositis stolonifera*), switch grass, common reed and Canada rush (*Juncus canadensis*). The water regime is classified as temporarily flooded due to the presence of redoximorphic features within the gleyed B-horizon in the upper 6 inches of the soil profile. Wetland 11 water regime was not classified as semi-permanently flooded because there was no evidence of ponded water (i.e., watermarks or standing water) at the surface of the wetland. According to the FEMA Map these wetlands are within 500-year flood zone.

4.1.12 Wetland 12

Wetland 12 extends along the western shoreline of the Acushnet River, from Wetland 9 to the Wood Street Bridge in New Bedford, Massachusetts. Numerous industrial facilities, associated rip-rap bank and disturbed vegetated upland, border this fringe estuarine wetland system. The surrounding upland vegetation is primarily dominated by box elder, bayberry, common tansy (*Tanacetum vulgare*), golden rods and poison ivy. Because access to some properties along this area had not been granted by the landowner, a portion of the wetland boundaries and cover types were photo-interpreted using the orthophotos and field verified from a distance. LM, PM and SS are the three vegetation zones observed in this wetland. SS is dominated by high-tide bush and saltwort (*Salsola kali*). One (1) intertidal creek and several scattered cobble/gravel beaches are associated with Wetland 12. According to the FEMA Map this wetland is within the 100-year flood zone. Soils within this area are highly disturbed, but show evidence of hydric soil formation and are consistent with the urban land soils series classification within the soil survey.

4.1.13 Wetland 13

Wetland 13 is located on the western shoreline of the Acushnet River, north of the Wood Street Bridge in New Bedford, Massachusetts. Mixed forest, residential and commercial land uses border this brackish estuarine emergent wetland complex. The surrounding upland forest consists of black cherry (*Prunus serotina*) and red maple (*Acer rubrum*) trees. Understory species observed include multiflora rose (*Rosa multiflora*), bittersweet (*Celastrus scandens*), winged sumac (*Rhus copallina*), Japanese knotweed (*Polygonum cuspidatum*), poison ivy and Virginia creeper. Wetland 13 is associated with one intertidal creek, (a combined sewage outflow) and supports LM, HM and PM vegetation zones. As a result of decreased salinity levels from freshwater intrusion, a diverse brackish HM community was identified within this wetland series supporting salt meadow grass, spike grass, switch grass, reed canary grass, three square, narrow-leaved cattail (*Typha angustifolia*), broad-leaved cattail (*Typha latifolia*), and creeping bent grass.

According to the FEMA Map this wetland is within the 100-year flood zone. LM is regularly flooded as confirmed by the distinct watermarks noted on the vegetation and the recorded mean high water line. HM soils consist of greater than 16 inches of organic material. A portion of the PM is regularly flooded, while the remainder is irregularly flooded. Soils show evidence of saturation within the top 12 inches of the mineral soil surface within the irregularly flooded PM. LM wetland soil samples recorded show greater than 18 inches of organic material.

4.2 Mudflat

Approximately 43.5 acres of mudflat occurs within the Acushnet River Estuary study area. Mudflat was documented along both the eastern and western intertidal zones of the Acushnet River south of the Tarkiln Hill Road/North Main Street Bridge and north of the Interstate 195 crossing. The mud flat substrate is composed of a myriad of fine sand, silt, clays gravel and cobble intermixed with organics. A thin layer of organic film and mats of sea lettuce (*Ulva lactuca*) were observed on the surface of the mudflat at low tides.

5.0 WETLAND FUNCTIONS AND VALUES

This wetland functions and values assessment includes a discussion of the principal functions and values associated with the 14 wetland systems identified within the Acushnet River Estuary. Principal functions and values were determined using a combination of wetland science, human judgement and the considerations/qualifiers outlined in Appendix A of the Highway Methodology Workbook Supplement (USACE, 1995). The functions and values discussed below are considered the most important components of these wetlands systems. Refer to Appendix E, Wetland Functions and Values Forms for further detail.

5.1 Fish and Shellfish Habitat

Principal function: *Wetlands EA, 1, 2, 3 (excluding Palustrine wetlands), 4, 5, 6, 7, 8, 9, 12, 13 & Mudflat*

5.1.1 Fish Habitat

The Acushnet River is classified as an anadromous fish run for the blue-back herring (*Alosa aestivalis*) according to the Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement (DFWELE) GIS Program compiled data for all known coastal anadromous fish runs and spawning habitats within Massachusetts (see Appendix A, Figure 4). The intertidal creeks, mudflat and LM associated with these wetland systems provide food for estuarine fish that migrate into these habitats during high tides to feed.

Approximately sixteen (16) fish species were observed within the Acushnet River and its associated creeks during a study performed by IEP, Inc. For a detailed description of the qualitative fish population study performed and a list of species observed within the Acushnet River Estuary refer to *Wetland Study Report for the New Bedford Superfund Site*, Final Report dated June of 1988 (IEP,1988). In addition, Normandeau Associates, Inc. conducted a more recent fish resource study within the Lower New Bedford Harbor that includes a discussion of additional fish species that may be present within the Upper Harbor. The study indicated that despite the degraded environment within New Bedford Harbor, it supports a fish fauna that is similar to that found in nearby, less disturbed estuaries (Normandeau, 1999).

5.1.2 Shellfish Habitat

During the 2001 Wetland Delineation, ribbed mussels (*Geukensia demissa*) were observed within the LM adjacent to the mudflat in each estuarine wetland. Additional species observed in lesser numbers below the Wood Street Bridge in 2001 were northern quahog (*Mercenaria mercenaria*), eastern oyster (*Crassostrea virginica*) and soft-shelled clam (*Mya arenaria*). Common periwinkles (*Littorina littorea*) were observed near the wetlands directly north of the Coggeshall Street Bridge and fiddler crabs (*Uca pugnax*) were abundant in the LM areas of Wetland 4. Past studies have also recorded these shellfish and gastropod populations within the Acushnet River mudflat and Wetland 4 tidal creeks and LM (IEP, 1988). Refer to *Wetland Study Report for the New Bedford Superfund Site*, Final Report dated June of 1988 for a detailed description of the qualitative shellfish population studies performed on the Acushnet River Estuary (IEP,1988).

According to the Massachusetts Division of Marine Fisheries (DMF) Designated Shellfish Growing Areas (DSGA) Map (October 2000), the Acushnet River and associated mud flats and coves from the Tarkiln Hill Road/North Main Street Bridge south to the Interstate 195 crossing are DSGA (see Appendix A, Figure 4). DMF defines a DSGA as an area of potential shellfish habitat as determined by DMF shellfish project biologists. Due to the presence of potentially harmful contaminants like PCBs,

heavy metals and coliform, the DSGA within the Acushnet River have been classified by the DMF as closed for the harvesting of shellfish. Since many shellfish spawn offshore or upstream and as juveniles, migrate to the edge of the salt marsh, which offers an abundant food supply, the shellfish habitat for this study area extends from the mudflat to the LM marsh edges and intertidal creeks of the Acushnet River Estuary (Mitsch and Gosselink, 1993).

Although shellfish populations within the Acushnet River are contaminated through the bioaccumulation of toxins, and therefore no longer function as a commercial and economic commodity, they possess integral functions within the salt marsh and are considered a principal function of the Estuarine salt marshes of this study. Ribbed mussels have been reported to have a mutualistic relationship with salt marsh cordgrass in which the salt marsh cordgrass provides an attachment surface for the ribbed mussel and the ribbed mussel provides a nitrogen source via fecal deposition (IEP, 1988). In addition, shellfish reduce erosion to salt marshes by producing aggregates that help stabilize the sediment, and are a significant food source for avian and crab species (SES, 1988).

5.2 Toxicant Retention

Principal function: *Wetlands EA, 1, 2, 3, 4, 5, 6, 8, 9, 12, 13 & Mudflat*

Sediments within the Acushnet River wetlands are retaining PCB's and heavy metals as documented by results of the numerous sediment sampling studies performed under direction of the USACE. Wetlands are presumed to remove toxic substances transported within the water column via soil water chemical reactions including immobilization of heavy metals. Salt marshes particularly immobilize heavy metals and attenuate PCB's due to high organic content and sulfides present within the soil (SES, 1988). The analysis conducted by Sanford Ecological Services, Inc. (1988) on the Acushnet River wetlands noted that the retention of metals within wetland soils could decrease under eutrophic conditions caused by enriched nitrogen and phosphorus contents within the river. As a result of eutrophic conditions, particularly during the growing season, vegetative growth increases and a more oxidizing atmosphere is created decreasing the sulfide content within the sediment and increasing heavy metal solubility back into the water column. It is highly unlikely that toxin attenuation in the sediment is entirely stable due to the ever-changing physical and chemical environment (i.e., tides creating anaerobic/aerobic conditions, growing season, nature of soil and water chemical reactions, etc.). However, toxin retention remains a principal function of these wetlands that generally provide some continuous form of toxin retention.

5.3 Nutrient Removal/Retention/Transformation

Principal function: *Wetlands EA, 1, 2, 3, 4, 5, 6, 7, 8, 9, 12, 13*

Abundant nitrogen and phosphorus concentrations have been documented within the Acushnet River estuarine system primarily resulting from sewage disposal (Vanasse Hangen Brustlin, Inc., 1996). In general, nitrogen is the limiting nutrient within estuarine wetland ecosystems, particularly within the LM where the primary available form of nitrogen-ammonium- is absorbed at a high rate. Studies have determined that phosphorus tends to accumulate in high concentrations without inhibiting plant growth within the salt marsh vegetation (Mitsch and Gosselink, 1993). Studies have also shown that the actively growing LM keeps ammonium along the creek bank in intertidal ecosystems at low levels, and at high levels in HM (Mitsch and Gosselink, 1993). It appears that nitrogen is retained within the HM due to longer anaerobic conditions than LM that absorbs and transforms available nitrogen for growth. In addition, PM vegetation zones also contribute to nitrogen processes within the wetland systems by carrying out denitrification and nitrification. As a result of this attribute, PM marshes have been used in wastewater treatment operations to facilitate nitrogen transformations. In conclusion, nutrient removal,

retention and transformation is a principal function of these wetland systems due to the high nutrient concentrations within the Acushnet River and the absorption and retention abilities of the wetlands.

5.4 Sediment/Shoreline Stabilization

Principal function: *Wetlands EA, 1, 2, 3, 4, 5, 6, 7, 8, 9, 12 & 13*

Since the installation of the hurricane barrier in 1965, shoreline erosion and sedimentation within the Upper Acushnet River has lessened, however, tides and wave action still remain as the primary sources of shoreline erosion and sedimentation. Studies of New Bedford Harbor and its approaches have shown that the primary source of sediments to the harbor is the transport of near bottom suspensions of silt and clay carried in from Buzzards Bay by flood tide currents (Vanasse Hangen Brustlin, Inc., 1996). Studies have recorded suspended particulate material estimates from 1 to 4 milligrams per liter in the Inner Harbor (Farrington et al., 1985 as referenced in SES, 1988 and Vanasse Hangen Brustlin, Inc.,1996).

Salt marshes within the Acushnet River Estuary contribute greatly to the protection of shoreline stabilization by supporting vegetation that reduces shoreline erosion. The salt marsh vegetation creates a resistance to wave energy and significantly decreases tidal water flow. This reduction in wave energy and water flow minimizes erosion along the Acushnet River banks. Studies have shown that salt marsh cordgrass may reduce wave heights by as much as 71 percent and wave energy by as much as 92 percent (SES, 1988). In addition, the decreased flow of water allows for suspended sediments to be released and trapped in the marsh.

5.5 Wildlife Habitat

Principal function: Wetlands 3, 4, 13 & Mudflat

Wildlife habitat is primarily a function of open water and vegetative composition. Food, shelter, migratory and breeding/nesting habitat are the significant wildlife resources that these wetlands provide. In general, the more diverse and interspersed the wetland vegetation zones are within a system, the greater the potential for wildlife diversity. In particular, transition zones or edges such as the upland/wetland and saline/freshwater edges of Wetlands 3, 4 & 13, as well as their upland islands or upland inclusions, exhibit some of the most diverse vegetative communities. The intermixing of vegetation in the transition zones results in high plant heterogeneity and hence, high wildlife species diversity. In addition, the interspersion of vegetation zones within Wetlands 3, 4 & 13 (i.e., LM, HM) also contributes to increased wildlife habitat value.

Specifically, the dominant plant species within LM, HM and SS provide foraging habitat for species such as the red winged black bird (*Agelaius pheoniceus*), European starling (*Sternus vulgaris*), northern mocking bird (*Mimus polyglottos*), Eastern cottontail (*Sylvilagus floridanus*), muskrat (*Ondatra zibethicus*) and meadow vole (*Microtus pensylvanicus*) (IEP, 1988). Food sources within the salt marsh include vegetation, fish, shellfish, snails, insects, birds and small mammals. Previous wildlife studies performed along the Acushnet River Estuary have recorded red winged black birds breeding in the HM upland/wetland edges and song sparrows (*Melospiza melodia*) were observed nesting in hightide bush at the marsh borders. HM and LM vegetation also provide suitable habitat for the meadow vole that nests and feeds on saltmeadow cordgrass and salt marsh cordgrass in the estuary. Additionally, nests of the obligate wetland species the sharp tail sparrow (*Ammodramus caudacutus*) have been found in the salt marsh. Hightide bush has been used by woodchucks (*Marmota monax*) that build their burrows in this shrub habitat for shelter. Many additional wildlife species or their signs have been observed within the Acushnet River Estuary wetlands. For further detail of the qualitative wildlife population and habitat

studies performed within the Acushnet River Estuary refer to Wetland Study Report for the New Bedford Superfund Site, Final Report (IEP, 1988).

Open water and the associated mudflats of the Acushnet River also function as a principal wildlife habitat, because they provide prime foraging and resting habitat particularly for wading and migratory avian species. The mudflat substrate supports a number of wildlife food sources including algae, insects, fish and shellfish. Herring gulls (*Larus argentatus*), greater yellow legs (*Tringa melanoleuca*), snowy egrets (*Egretta thula*), spotted sand pipers (*Actitis macularia*), black ducks (*Anas rubripes*), great blue heron (*Ardea herodias*), and double-crested cormorant (*Phalacrocorax auritus*) are a few of the many avian species that forage on the mudflats of the Acushnet River. For further detail of the qualitative avian population and habitat studies performed within the Acushnet River Estuary refer to Wetland Study Report for the New Bedford Superfund Site, Final Report (IEP, 1988).

5.6 Endangered Species Habitat

Principal function: *Mudflat*

No federally or state protected endangered or threatened species were observed within the Acushnet River Estuary during the 2001 Wetland Delineation study period. However, a Federally and state protected peregrine falcon (*Falco peregrinus*) was observed near Wetland 3 by Sanford Ecological Services, Inc. on February 22, 1985 (IEP, 1988). The USFWS will be consulted to confirm the findings that the study area is not within any federally listed or proposed, threatened or endangered species or designated critical habitats of the peregrine falcon. Review of the Massachusetts Natural Heritage and Endangered Species Program (NHESP) Atlas (2000-2001 Edition) indicates that no estimated habitats of rare wildlife or certified vernal pools exist within the study area. However, 1 designated Massachusetts endangered species and 2 designated species of special concern were identified within the Acushnet River Estuary. The endangered least bittern (*Ixobrychus exilis*) was observed in the water adjacent to Wetland 1. Massachusetts designated species of special concern, least tern (*Sterna antillarum*) was observed in the open water adjacent to Wetlands 3 and 4, and a common tern (*Sterna hyrundo*) was observed in Wetland 4 (IEP, 1988). The NHESP will also be consulted to confirm that the study areas is not within state protected species habitat.

5.7 Production Export

Principal Function: *Wetland 4*

In general, tidal marshes are one of the most productive wetland ecosystems. Several studies have demonstrated that tidal marshes export a substantial portion (usually 20-45 percent) of their net primary productivity to adjacent estuaries (Mitsch and Gosselink, 1993). A previous study conducted by IEP of the Acushnet River on Wetlands 3 and 4 (identified as Wetlands 3 and 1, respectively, in IEP study), concluded that export is a function of marsh age, wetland vegetation zone and tidal flow. Theoretically, if tidal flow is restricted due to culverts, dikes etc., large scale production export will be inhibited. In contrast a free flowing tidal marsh similar to Wetland 4 provides a means for export to occur. It has been found that younger marshes (LM) have a greater accretion rate, and usually import carbon, while older marshes (HM) tend to export carbon through the creek system (IEP, 1988). Wetland 4 supports approximately 18.47 acres of HM that appears to contribute, via free flowing tidal influence, a significant amount of its production into the Acushnet River Estuarine system. In contrast, Wetland 3 consists of approximately 2.02 acres of HM, therefore resulting in a significantly lower production export than Wetland 4.

6.0 CONCLUSION

Fourteen wetland systems totally approximately 57.2 acres of vegetated wetland were delineated within the intertidal zone associated with the Acushnet River extending from the Tarkiln Hill Road/North Main Street crossing in Acushnet, Massachusetts south to Interstate 195 in New Bedford and Fairhaven, Massachusetts. Additional resources identified include 13 intertidal creeks, approximately 43.5 acres of mudflat, and sand and gravel beaches. The vegetated wetlands and mudflat affiliated with the Acushnet River exhibit functions (i.e., sediment shoreline stabilization, fish and shellfish habitat, and wildlife) that are typical of estuarine wetlands despite the presence of PCBs, heavy metals and high nutrient loads. In fact, functions such as toxicant removal, and nutrient removal/retention/transformation are more apparent in this polluted estuarine wetland system than in unpolluted systems. These specific functions in an unpolluted estuarine system may not be considered principal functions due to the lack of function performance (i.e., lack of pollution). In contrast, principal values that may be attributed to estuarine systems, specifically recreation and uniqueness/heritage are not effective values of the Acushnet River estuarine wetlands. Fishing and shellfishing are prohibited within the area due to PCB and coliform contamination resulting in a public health and safety concern with respect to recreational (i.e., boating, fishing/shellfishing) and educational activities. If the contaminants within the estuary were removed, these values would become important components of the Acushnet River Estuarine system.

7.0 LITERATURE CITED

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APPENDIX A

Figures

General Project Area

April 2002

Map compiled by Foster Wheeler Environmental Corporation, November 2001.
Digital New Bedford North and New Bedford South USGS 7.5 Minute Topographic Quadrangles produced by the Massachusetts Executive Office of Environmental Affairs, MassGIS, from USGS paper quadrangles published between 1967 and 1969.

Figure 1

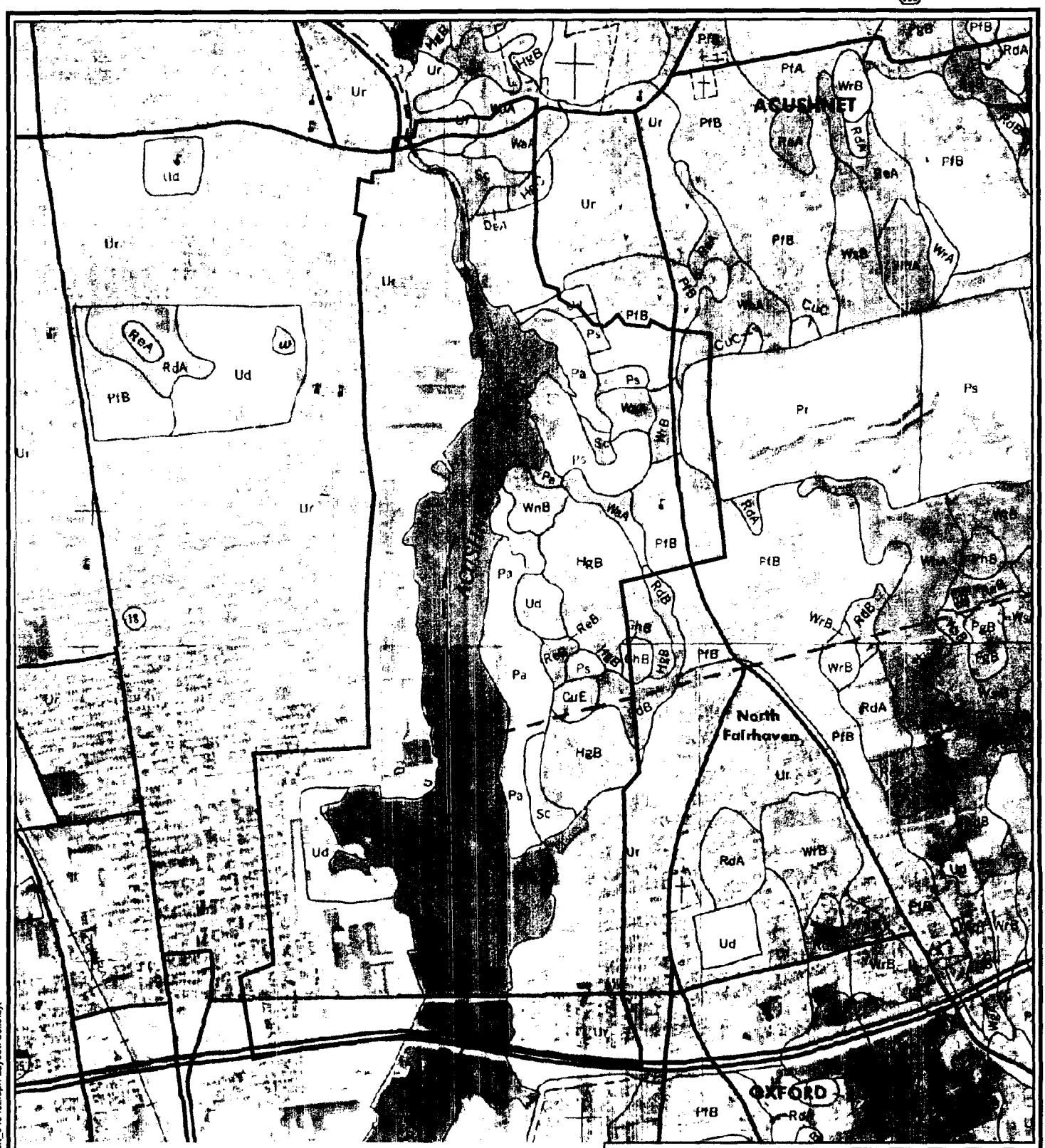
NEW BEDFORD HARBOR SUPERFUND SITE

Final Wetland Delineation and Functions and Values Report
April 2002

Site Location Map

1500 0 1500
FEET

ArcView Project: P:\gisin\bh\workdir\wetlandreport_040402.apr; Layout: SiteLocus.Lyt



General Project Area

April 2002

CuE - Charlton-Rock outcrop-Paxton complex, 15 to 35 % slopes
DeA - Deerfield loamy sand, 0 to 5 % slopes
GhB - Gloucester-Hinckley complex
HgB - Hinckley gravelly fine sandy loam, 3 to 8 % slopes
HgC - Hinckley gravelly fine sandy loam, 8 to 15 % slopes
Pa - Pawcatuck and Ipswich peats
PfB - Paxton fine sandy loam, 3 to 8 % slopes
Pr - Pits, quarry
Ps - Pits-Udorthents complex, gravelly
ReB - Ridgebury extremely stony fine sandy loam, 3 to 8 % slope
RdB - Ridgebury fine sandy loam, 3 to 8 % slopes
Sc - Scarboro muck
Ud - Udorthents, smoothed
Ur - Urban land
WaA - Walpole fine sandy loam, 0 to 3 % slopes
WnA - Windsor loamy sand, 0 to 3 % slopes
WnB - Windsor loamy sand, 3 to 8 % slopes
WrB - Woodbridge fine sandy loam, 3 to 8 % slopes

Soils map was reproduced by Foster Wheeler Environmental Corporation, November 2001, from the NRCS Soil Survey of Bristol County, Massachusetts Southern Part, issued October 1981 and is intended to be used for planning purposes only.

Figure 2

NEW BEDFORD HARBOR SUPERFUND SITE

Final Wetland Delineation and Functions and Values Report
April 2002

NRCS Soil Map

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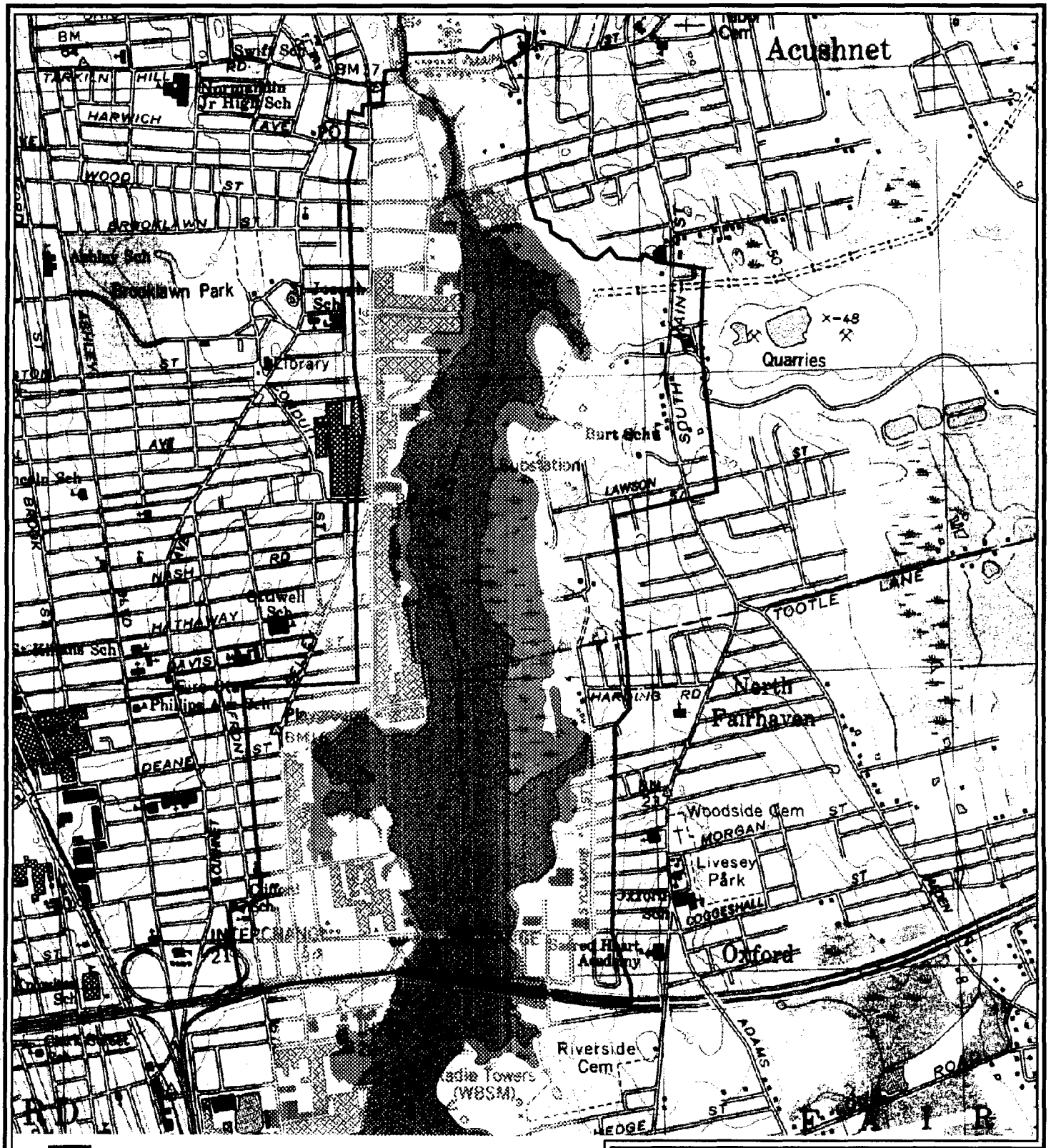


General Project Area

100 Year Flood Zone

500 Year Flood Zone

April 2002

Figure 3

NEW BEDFORD HARBOR SUPERFUND SITE

Final Wetland Delineation and Functions and Values Report
April 2002

FEMA Flood Map

1500 0 1500
FEET

Map compiled by Foster Wheeler Environmental Corporation, November 2001, from base data supplied By the Executive Office Of Environmental Affairs, MassGIS. Digital FIRM Panels 0048-2500480007B, 5216-2552160007B, 5216-2552160009B, and 0054-2500540004C supplied by the Massachusetts Executive Office of Environmental Affairs, MassGIS, July 1997.

ArcView Project: P:\gisvnb\workdir\wetlandreport_040402.apr; Layout: FEMA.Lyt

General Project Area

Commonwealth of Massachusetts
Coastal Zone Management
Designated Shellfish Growing Area

Anadromous Fish Runs

April 2002

Map compiled by Foster Wheeler Environmental Corporation, November 2001, from base data supplied by the Massachusetts Executive Office of Environmental Affairs, MassGIS. Designated Shellfish Growing Areas prepared by the Division of Marine Fisheries, October 2000. Anadromous Fish Runs from the Division of Fisheries Wildlife and Environmental Law Enforcement, March 1997.

Figure 4

NEW BEDFORD HARBOR SUPERFUND SITE

Final Wetland Delineation and Functions and Values Report
April 2002

Fish and Shellfish Habitat Map

2000 0 2000
FEET

ArcView Project: P:\plainbh\workdir\wetlandreport_040402.apr: Layout: Shellfish.Lyt

APPENDIX B

Field Data Sheets

Table B-1
Wetland Identification
New Bedford Harbor

Report Wetland Identification	Corresponding Wetland Identification from Field Data Sheets
Early Action	Upper and Lower Wetlands
Wetland 1	W12
Wetland 2	W3, W4
Wetland 3	W5, W8-31 to W8-353, W8B, W8C, W8E
UP1- Wetland 3	W8D
Wetland 4	W8-1 to W8-31, W7, W7B, W6
UP1- Wetland 4	W8A
UP 2- Wetland 4	W7A
UP 3- Wetland 4	W7D
UP 4- Wetland 4	W7C
UP 5- Wetland 4	W7E
UP 6- Wetland 4	W7F
UP 7- Wetland 4	W7G
Wetland 5	W2, W1
Wetland 6	W22
Wetland 7	W21
Wetland 8	W9, W9A, W10
Wetland 9	W11, W28
UP 1- Wetland 9	W11A
Wetland 10	W15
Wetland 11	W16
Wetland 12	W27, W25, W24, W17, W17A, W26, W20, W19B, W19A, W19, W23
Wetland 13	W13, W14

UP = Upland Island

PROJECT TITLE: Port Wellington Harbor TRANSECT: W1-T1 PLOT: Wetland (HM)

DELINEATOR(S): P. Golding, P. Dougherty DATE: 3/20/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs	98/98	100	X	OBL
Spartina alterniflora				
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100%

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification:

Aerial photography Identification: Mean High Water

Other Identification:

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: 1"

Depth to Saturation (including capillary fringe):

Altered Hydrology (explain):

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☑ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-4"	A	10YR 4/1	none	LS
4-16"	C_g	10YR 5/2	none	LS
>16"	—	—	—	100% saturation

HYDRIC SOIL INDICATOR(S): H.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W1 PLOT: W1-T1

PROJECT TITLE: New Bedford Harbor TRANSECT: W1-T1 PLOT: Upland

DELINEATOR(S): P. Johring, R. Delahunty DATE: 8/22/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs	98.0/110	89		
Fescue sp.	3.0/110	3	x	FACU
Rumex crispus	3.0/110	3		
Cichorium intybus	3.0/110	3	x	FACU
Ambrosia artemisiifolia	3.0/110	3	x	UPL
Plantago lanceolata	3.0/110	3		
Daucus carota				
Ø Saplings, Shrubs, Trees, Vines.				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	Ø	Ø	Ø

Hydrophytes Subtotal (A): Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	2	1

Non-hydrophytes Subtotal (B): 3

PERCENT HYDROPHYTES (100A/A+B): 0

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

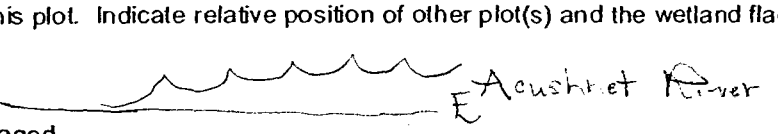
☑ NO RECORDED DATA

☐ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan view: looking North



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-21"	A	10YR 3/2	none	- SL fill material
>21"				- hit rip-rap

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W01-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W2-T1 PLOT: Upland

DELINEATOR(S): P. Johnson, R. Delaney DATE: 8/22/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Lonicera [illegible]	20.5/83.5	25	X	FACU
Toxicodendron radicans	63.0/83.5	75	X	FAC
Shrubs				
Toxicodendron radicans	98/108.5	90	X	FAC
Juniperus virginiana	10.5/108.5	10		———
Ø Vine, Tree				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	2	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 3

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: _____
- Aerial photography Identification: _____
- Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:
- Depth to Free Water: _____
- Depth to Saturation (including capillary fringe): _____
- Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E — W2-T1 — Reach of River — W

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-12"	A	10YR 3/2	None	SI
12-24"	Bw	10YR 5/4	None	LS

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	[illegible]
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: [illegible] TRANSECT: W2-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W2-T1 PLOT: Wetland (HM)

DELINEATOR(S): P. Schroeder, R. Delahurty DATE: 8/22/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina patens	63/126	50	X	FACW
Distichlis spicata	63/126	50	X	FACW
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

Ø	2	Ø	Ø
OBL	FACW	FAC	*OTHER

NON-HYDROPHYTES

Ø	Ø	Ø
FAC-	FACU	UPL

Hydrophytes Subtotal (A): 2

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification:

Aerial photography Identification: Mean High Water

Other Identification:

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water:

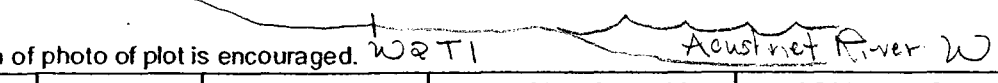
Depth to Saturation (including capillary fringe): at surface

Altered Hydrology (explain):

☐ Inundated ☑ Saturated in upper 12" ☑ Water Marks ☑ Drift Lines ☐ Sediment Deposits ☑ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-16"	Oe	10YR 2/1	None	SL, sulfur smell

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): 1 12 I WPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W2-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W2-T2 PLOT: Wetland (2M)

DELINEATOR(S): P. Johnson & R. Delaney DATE: 8/22/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina alterniflora	98/98	100	X	OBL
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification:

Aerial photography Identification: Mean High Water

Other Identification:

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: Surface

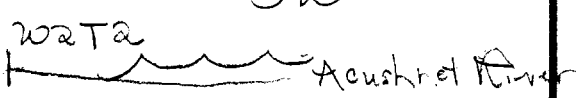
Depth to Saturation (including capillary fringe):

Altered Hydrology (explain):

☐ Inundated ☐ Saturated in upper 12" ☑ Water Marks ☐ Drift Lines ☑ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0.5"-0"	Oa	10YR2/1	Typic	
0-16"	A/B	10YR4/2	None	S, streaking organics, - soil completely saturated - newly developed soil

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

N/A

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

REFERENCE(S):

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W2-T2 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: WB-T1 PLOT: Wetland (LM)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 8/23/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina alterniflora	98.0/98.0	100	x	OBL
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification:

Aerial photography Identification: Mean High Water

Other Identification:

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: at surface

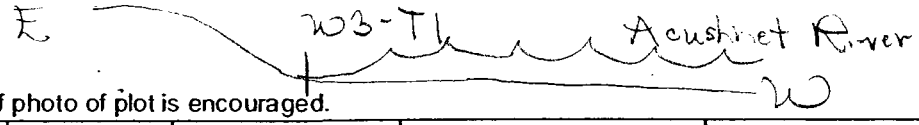
Depth to Saturation (including capillary fringe):

Altered Hydrology (explain):

☑ Inundated ☐ Saturated in upper 12" ☑ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-8"	A	10YR 2/1	None	ls
8-16"	Bg	10YR 4/2	None	ls
>16"				saturated

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA
N/A

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

REFERENCE(S):

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☑	☐
Hydric soils criterion met?	☑	☐
Wetland hydrology criterion met?	☑	☐
IS THIS DATAPOINT IN A WETLAND?	☑	☐

REMARKS: W3-T1 (wetland) is representative of W4 and W5 low marsh wetland communities.

PROJECT TITLE: New Bedford Harbor TRANSECT: W3-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: WB-T1 PLOT: Upland

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 8/23/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Saplings and Herbs				
Asclepias syriaca	3.0/44	7		—
Toxicodendron radicans	38.0/44	86	x	FAC
Oenothera biennis	3.0/44	7		—
Shrubs				
Rosa multiflora	38.0/86.5	44	x	FACU
Acer negundo	38.0/86.5	44	x	FAC
Lonicera tatarica	10.5/86.5	12		
Saplings				
Fraxinus [illegible]	10.5/21	50		FACU
Catalpa sp.	10.5/21	50		—
Vines				
Toxicodendron radicans	10.5/21	50		FAC
Parthenocissus quinquefolia	10.5/21	50		FACU
Ø Trees				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	Ø	3	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	3	Ø

Hydrophytes Subtotal (A): 3

Non-hydrophytes Subtotal (B): 3

PERCENT HYDROPHYTES (100A/A+B): 50

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:

Depth to Free Water: _____

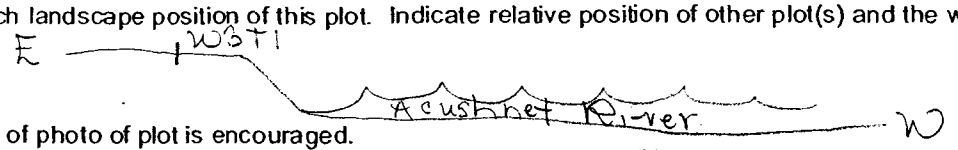
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-14"	A_p	10YR 3/2	None	SL
>14"	—	—	—	Refusal of auger fill material

HYDRIC SOIL INDICATOR(S): REFERENCE(S):

n/A

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W03T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W5-T1 PLOT: Upland

DELINEATOR(S): P. Gohring, K. Delaney DATE: 8/28/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Toxicodendron radicans	20.5/26.5	77	x	FAC
Vaccinium corymbosum	3.0/26.5	11		
Cornus amomum	3.0/26.5	11		
Shrubs				
Viburnum recognitum	20.5/63	33	x	FACW
Cornus amomum	20.5/63	33	x	FACW
Vaccinium corymbosum	20.5/63	33	x	FACW
Trees				
Nyssa sylvatica	20.5/23.5	87	x	FAC
Acer rubrum	3.0/23.5	13		
Ø Saplings				

HYDROPHYTES

Ø	3	2	Ø
OBL	FACW	FAC	*OTHER

Hydrophytes Subtotal (A): 5

NON-HYDROPHYTES

Ø	Ø	Ø
FAC-	FACU	UPL

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

SW — WB-T1 — NE

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-7"	A_p	10YR 3/2	None	SL
7-12"	B_1	10YR 4/3	None	SL
12-18"	B_2	10YR 4/3	None	SL, gravel present stones ≈ 1cm - 4cm diameter

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: WB-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: 205 T1 PLOT: Wetland (PM)

DELINEATOR(S): P. Gohring, R. Delaney DATE: 8/23/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Phragmites australis	85.5/85.5	100	X	FACW
Shrubs				
Cornus amomum	20.5/20.5	100	X	FACW
Ø Saplings, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 2

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: Bristol County Soil Survey, 1981 – deep to very poorly drained soils

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

Depth to Saturation (including capillary fringe): at 6" from surface

Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-7"	A	10YR 2/1	None	SL
7-20"	Bg	10YR 5/2	7.5YR 6/3 c (>10%), d.	SL

HYDRIC SOIL INDICATOR(S): M. D.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W5T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W5-T2 PLOT: Upland

DELINEATOR(S): P. Gohring, [illegible] DATE: 8/23/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Daucus carota	3.0/101	3		
Cichorium intybus	3.0/101	3		
Fescue sp.	98.0/101	89	X	—
Shrubs				
Rhus copallinum	38.0/48.5	78	X	N.I
Juniperus virginiana	10.5/48.5	22	X	FACU
Ø Saplings, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	1	Ø

Hydrophytes Subtotal (A): Ø

Non-hydrophytes Subtotal (B): 1

PERCENT HYDROPHYTES (100A/A+B): Ø

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:

Depth to Free Water: _____

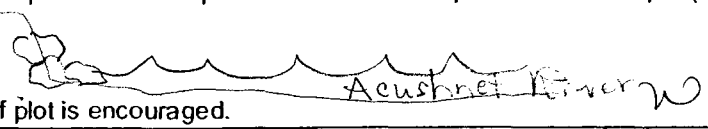
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-8"	Ap	10YR 3/3	None	SL,
8-12"	Bw	10YR 5/3	None	SL
>12"	—	—	—	fill material ≈ 1cm to 4cm diameter stones

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W5 T2 PLOT: Upland

PROJECT TITLE: [illegible] Harbor TRANSECT: W5-T2 PLOT: Wetland (HM)

DELINEATOR(S): R. [illegible] & A. Gohring DATE:

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings & Herbs				
Spartina patens	63.0/101	62	X	FACW
Distichlis spicata	38.0/101	34	X	FACW
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 2

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: Mean High Water

Aerial photography Identification:

Other Identification:

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: 12"

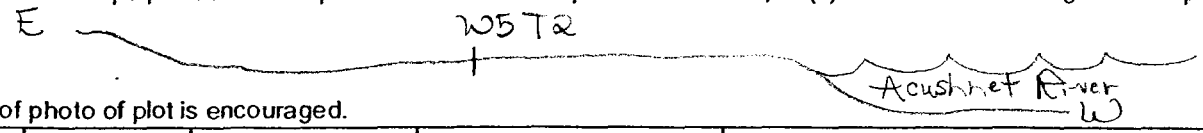
Depth to Saturation (including capillary fringe): Surface

Altered Hydrology (explain):

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): water deposited debris / intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
24+ - 0"	O_i	N/A	none	Sulfuric smell ≈ 12" depth to free water

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: WE-T2 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: WG-T1 PLOT: Upland

DELINEATOR(S): P. Gohring, J. Scott DATE: 8/28/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Phragmites australis	10.5/19.5	54	X	FACW
Daucus carota	3.0/19.5	15		
Glyceria obtusa	3.0/19.5	15		
Solidago sp.	3.0/19.5	15		
Shrubs				
Salix sp.	20.5/29.5	69	X	
Rosa multiflora	3.0/29.5			
Myrica pensylvanica	3.0/29.5			
Toxicodendron radicans	3.0/29.5			
Ø Saplings, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER

Hydrophytes Subtotal (A): ___

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: ___
- Aerial photography Identification: ___
- Other Identification: ___

☑ NO RECORDED DATA

☐ OBSERVATIONS:
- Depth to Free Water: ___
- Depth to Saturation (including capillary fringe): ___
- Altered Hydrology (explain): ___

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-8"	A	10YR4/4	None	ls
8-720"	B	10YR7/4	None	ls

HYDRIC SOIL INDICATOR(S): n/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W6-T1 PLOT: Upland

PROJECT TITLE: Mass Bedford Harbor TRANSECT: W6-T1 PLOT: Wetland (HM)

DELINEATOR(S): P. Gohring, J. Scott DATE: 8/28/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM X	NWI Status
Seedling and Herb				
Spartina patens	38.0/105.5	36	X	FACW
Distichlis spicata	38.0/105.5	36	X	FACW
Juncus gerardii	20.5/105.5	19		
Salicornia europaea	3.0/105.5	3		
Aster tenuifolius	3.0/105.5	3		
	3.0/105.5	3		
Ø Shrubs, Saplings, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 2 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA
- Stream, lake, or tidal gage Identification:
- Aerial photography Identification: Mean High Water
- Other Identification:

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water:

Depth to Saturation (including capillary fringe): 10"

Altered Hydrology (explain):

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☑ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, water deposited debris

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E upland residential — W6-T1 — Acushnet River — W

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
4+ - 0"	O_i			
0 - 16"	A	10YR 4/1	None	Sulfuric Smell
16 - 20"	Bg	10YR 6/1	None	LS
			None	LS

HYDRIC SOIL INDICATOR(S): M.

REFERENCE(S): NEIWPCC. July 1998 Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W6-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T1 PLOT: Wetland (SE)

DELINEATOR(S): P. Gohring, R. Delahanty DATE: 8/29/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs	63.0/101	62	x	FACW
Iva frutescens	38.0/101	38	x	FACW
Distichlis spicata				
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	Ø	Ø

Hydrophytes Subtotal (A): 2

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): 6"
Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, water deposited debris

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E — W1-T1 — W

Submission of photo of plot is encouraged.

Acushnet R.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-18"	A	10YR3/2		ls
18-724"	Bg	10YR4/2	10YR 6/6 5%, distinct	ls

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W1-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T2 PLOT: Wetland (HM)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 8/29/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina patens	63.0/101	62	X	FACW
Distichlis spicata	38.0/101	38	X	FACW
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 2 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: Mean High Water

☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: 8"
Depth to Saturation (including capillary fringe): Surface
Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☑ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, water deposited debris

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
18+ - 0"	Oi		None	Sulfuric smell
0 - 6"	Oe		None	Sulfuric smell

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC July 1998 Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T2 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T3 PLOT: Wetland (LM)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 8/29/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM X	NWI Status
Seedlings and Herbs	85.5/94.5	90	X	OBL
Spartina alterniflora	3.0/94.5	3		
Aster tenuifolius	3.0/94.5	3		
Distichlis spicata	3.0/94.5	3		
Salicornia europaea				
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA
- Stream, lake, or tidal gage Identification:
- Aerial photography Identification: Mean High Water
- Other Identification:

☐ NO RECORDED DATA

☑ OBSERVATIONS:
- Depth to Free Water: 6"
- Depth to Saturation (including capillary fringe): Surface
- Altered Hydrology (explain):

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☑ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, water deposited debris

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E upland — W7-T3 Acushnet River — W

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+4-0"	Oe		None	Sulfuric smell
0-720"	A	10YR4/1	None	ls

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T3 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T4 PLOT: Wetland (PFM)

DELINEATOR(S): A. Gohringer, R. Delahunty DATE: 8/30/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM X	NWI Status
Seedling and Herb				
Phragmites australis	98.0/108.5	90	X	FACW
Toxicodendron radicans	10.5/108.5	10		
Ø Saplings, Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: _____
- Aerial photography Identification: _____
- Other Identification: _____

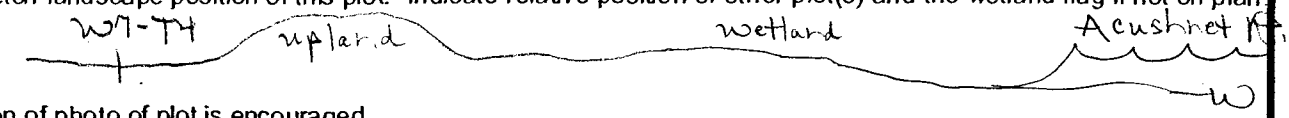
☐ NO RECORDED DATA

☑ OBSERVATIONS:
- Depth to Free Water: _____
- Depth to Saturation (including capillary fringe): 10
- Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-6"	A	10YR 2/1	None	SL
6-10"	B_1	10YR 6/1	None	LS, potentially disturbed soil
10-24"	B_2	10YR 4/2	None	LS

HYDRIC SOIL INDICATOR(S): III. D

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T4 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W7-T4 PLOT: Upland

DELINEATOR(S): P. Johnson, R. Delahunty DATE: 8/30/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herb				
Myrica pensylvanica	38.0/41.0	93	x	FAC
Iva frutescens	3.0/41.0	7		
Shrubs				
Myrica pensylvanica	85.5/97.5	88	x	FAC
Iva frutescens	3.0/97.5	3		
Acer rubrum	3.0/97.5	3		
Rhus copallinum	3.0/97.5	3		
Quercus ilicifolia	3.0/97.5	3		
Saplings				
Acer rubrum	3.0/6.0	50	x	FAC
Juniperus virginiana	3.0/6.0	50	x	FACU
Vines				
Toxicodendron radicans	85.5/85.5	100	x	FAC
Ø Trees				

HYDROPHYTES

Ø	Ø	4	Ø
OBL	FACW	FAC	*OTHER

NON-HYDROPHYTES

Ø	1	Ø
FAC-	FACU	UPL

Hydrophytes Subtotal (A): 4

Non-hydrophytes Subtotal (B): 1

PERCENT HYDROPHYTES (100A/A+B): 80

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: _____
- Aerial photography Identification: _____
- Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:
- Depth to Free Water: _____
- Depth to Saturation (including capillary fringe): _____
- Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E — * — W07-T4 — * — W

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-8"	Ap	10YR4/2	None	LS
8-24"	Bw	10YR5/4	None	LS

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	Mostly FAC species
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W07-T4 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W7A-T1 PLOT: Wetland (SS)

DELINEATOR(S): R. Gohring, R. Delahunty DATE: 9/14/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Iva frutescens	63.0/159	40	X	FACW
Juncus gerardii	85.5/159	54	X	FACW
Distichlis spicata	10.5/159	7		
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 2 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☑ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, streaking organics, water deposited debris (trash)

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E — W/A-T1 — Acushnet River — W

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+1-0"	O1	not recorded	None	
0-5"	A	10YR 3/1	None	LS
5-7/8"	B	10YR 5/4	None	LS, streaking organics.

HYDRIC SOIL INDICATOR(S): A.

REFERENCE(S): NEIWPCC July 1998 Field Indicators for Identifying Hydric Soils of New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W/A-T1 PLOT: 2 Dethard

PROJECT TITLE: New Bedford Harbor TRANSECT: W7A-T1 PLOT: Upland

DELINEATOR(S): P. Bohning, R. Doherty DATE: 9/14/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Solidago gigantea	10.5/31	34		FACW
Parthenocissus quinquefolia	20.5/31	66	x	FACU
Shrubs				
Rhus copallina	38.0/61.5	62	x	NI
Viburnum recognitum	38.0/61.5	62	x	FACW
Myrica pensylvanica	20.5/61.5	33	x	FAC
Vines				
Toxicodendron radicans	38.0/58.5	65	x	FAC
Celastrus scandens	20.5/58.5	35	x	FACU

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	2	Ø

Hydrophytes Subtotal (A): 4

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	2	Ø

Non-hydrophytes Subtotal (B): 2

PERCENT HYDROPHYTES (100A/A+B): 67

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: _____
- Aerial photography Identification: _____
- Other Identification: _____

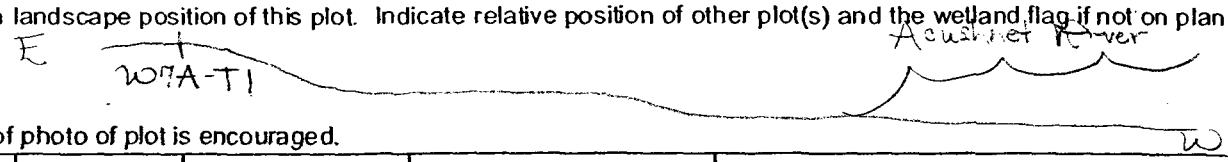
☑ NO RECORDED DATA

☐ OBSERVATIONS:
- Depth to Free Water: _____
- Depth to Saturation (including capillary fringe): _____
- Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+0.5-0	O_1	none recorded	None	—
0-8"	Ap	10YR3/2	None	ls
8-18"	Bw	10YR5/4	None	ls

HYDRIC SOIL INDICATOR(S): REFERENCE(S):

N/A

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W7A-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W7B-T1 PLOT: Wetland (PM)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 10/10/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herb				
Phragmites australis	98.0/98.0	100	x	FACW
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

Hydrophytes Subtotal (A): 1

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

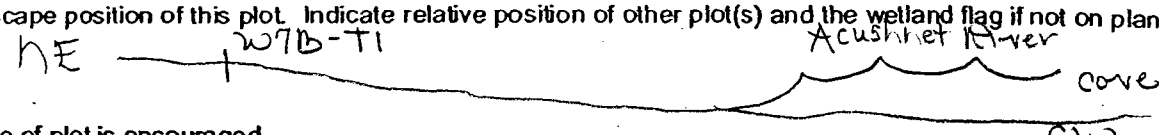
☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: 9"
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+10-+9	Oi	not recorded	None	—
+9-0"	Oe	not recorded	None	—
0-3"	A	10YR2/1	None	sl
3-11"	Bg	10YR4/1	None	ls

HYDRIC SOIL INDICATOR(S): II

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: WTB-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: 208-T1 PLOT: Upland

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 8/30/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Rhus copallinum	98.0/101	97	x	nI
Rubus sp.	3.0/101	3		
Saplings				
Juniperus virginiana	3.0/3.0	100	x	FACU
Ø Shrubs, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	1	Ø

Hydrophytes Subtotal (A): Ø

Non-hydrophytes Subtotal (B): 1

PERCENT HYDROPHYTES (100A/A+B): 0

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:

Depth to Free Water: _____

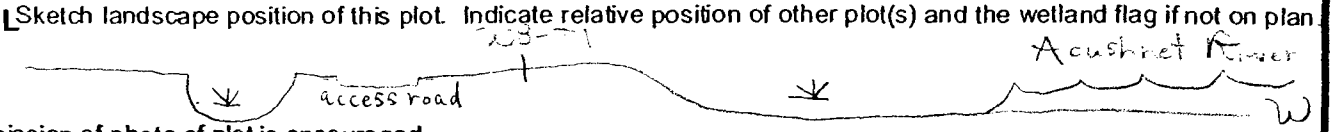
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-10"	A	10YR 2/4	None	Sil, fill, disturbed soil
10-718"	B	10YR 4/6	None	Sil, fill, disturbed soil

HYDRIC SOIL INDICATOR(S): n/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☐	☑
Hydric soils criterion met?	☐	☑
Wetland hydrology criterion met?	☐	☑
IS THIS DATAPOINT IN A WETLAND?	☐	☑

REMARKS: W8-T1 (Upland) represents upland plot for W8A-T1 (Wetland).

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T1 PLOT: Wetland (PEM)

DELINEATOR(S): P. Gohring, R. Delaharty DATE: 8/31/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Phragmites australis	63.0/133.5	47	x	FACW
Eupatorium dubium	38.0/133.5	28	x	
Eupatorium maculatum	20.5/133.5	15		
Impatiens capensis	3.0/133.5	2		
Polygonum sagittatum	3.0/133.5	2		
Galium sp.	3.0/133.5	2		
Cyperus strigosus	3.0/133.5	2		
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☑ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

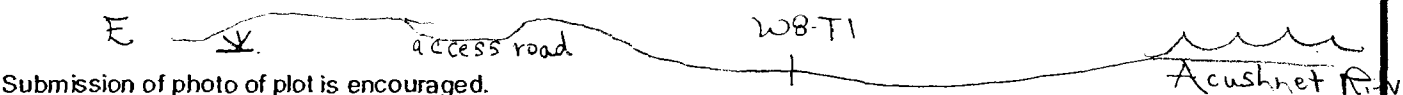
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☑ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): topography, redox-features w/in 4" of soil surface, evidence of a fluctuating water table

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-4"	A	10YR 4/2	None	SL
4-7/8"	Bg	10YR 4/2	10YR 7/6, f, <10%	SL

HYDRIC SOIL INDICATOR(S): III. D.

REFERENCE(S): NEIWPCC. July 1998. Feild Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T2 PLOT: Upland

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 10/9/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedings and Herbs				
Prunus serotina	3.0/6.0	50	x	FACU
Myrica pensylvanica	3.0/6.0	50	x	FAC
Smilax rotundifolia	<1%			
Shrubs				
Vaccinium corymbosum	85.5/99	86	x	FACW
Viburnum recognitum	10.5/99	11		
Prunus serotina	3.0/99	3		
Juniperus virginiana	<1%			
Trees				
Quercus alba	38.0/76	50	x	FACU
Quercus rubra	38.0/76	50	x	FACU
Ø Saplings/Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	1	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	3	Ø

Hydrophytes Subtotal (A): 2 Non-hydrophytes Subtotal (B): 3

PERCENT HYDROPHYTES (100A/A+B): 40

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

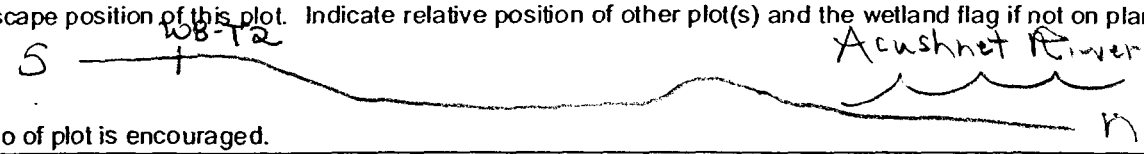
☑ NO RECORDED DATA

☐ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+1-0"	Oi	none recorded	none	detritus layer
0-6"	A	10YR 2/2	none	sl
6-12"	AB	10YR 3/3	none	sl
12-718"	Bw	10YR 4/6	none	ls

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T2 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: WB-T2 PLOT: Wetland (HM)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 10/9/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina patens	98.0/98.0	100	x	FACW
Iva frutescens	<1%			
Atriplex patula	<1%			
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: mean high water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

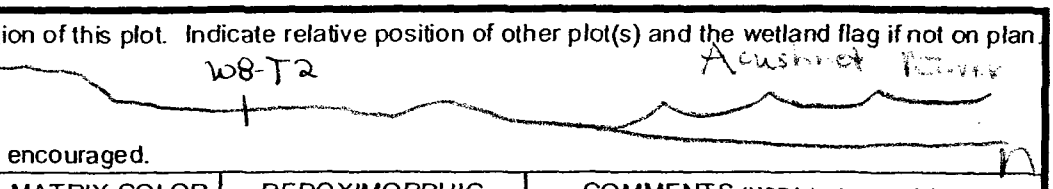
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, water deposited debris

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-3"	O_i	10YR 3/2	None	Sulfer smell
3-720"	O_e	10YR 2/1	None	Sulfer smell

HYDRIC SOIL INDICATOR(S): H.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T2 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T3 PLOT: Wetland (SS)

DELINEATOR(S): P. Gohring, R. Delatwitz DATE: 10/9/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Juncus gerardi	98.0/114.5	86	x	FACW
Iva frutescens	10.5/114.5	9		
Spartina patens	3.0/114.5	3		
Solidago sempervirens	3.0/114.5	3		
Elymus virginicus	<1%			
Shrubs				
Iva frutescens	85.5/85.5	100	x	FACW
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

Ø	2	Ø	Ø
OBL	FACW	FAC	*OTHER

NON-HYDROPHYTES

Ø	Ø	Ø
FAC-	FACU	UPL

Hydrophytes Subtotal (A): 2 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: mean high water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

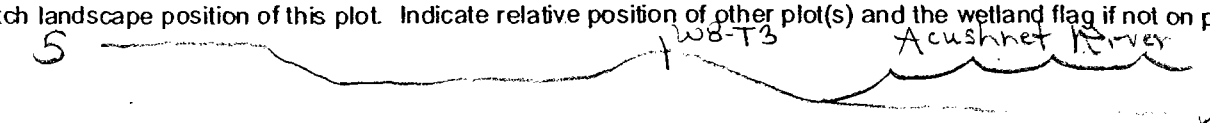
Depth to Saturation (including capillary fringe): @ 7"

Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, water transported debris

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+2-0"	O1	none recorded	none	
0-12"	A1	10YR 2/1	oxidized rhizospheres 7.5YR 5/8 75%	SL
12-+18"	A2	10YR 2/2		SL

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEI WPCC, July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T3 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T4 PLOT: Wetland (LRN)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 10/9/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina alterniflora	98.0/98.0	100	x	OBL
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: mean high water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: 2" @ surface

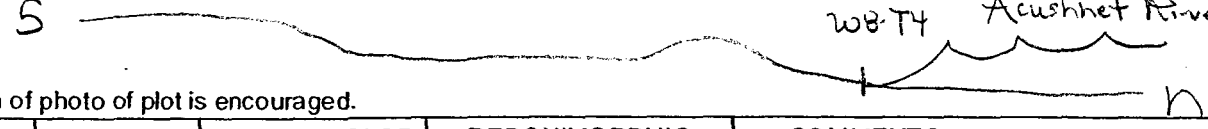
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☑ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+2-0"	O:	None recorded	None	ribbed mussels
0-7/8"	A	10YR3/1	None	LS, w/ gravel strong sulfer smell

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC, July 1998, Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: WB-T4 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T5 PLOT: Wetland (PFO)

DELINEATOR(S): P. Gohring DATE: 10/9/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Trees				
Acer rubrum	38.0/76	50	x	FAC
Nyssa sylvatica	38.0/76	50	x	FAC
Shrubs				
Viburnum recognitum	85.5/85.5	100	x	FACW
Vines				
Toxicodendron radicans	3.0/3.0	100	x	FAC

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	3	Ø

Hydrophytes Subtotal (A): 4

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

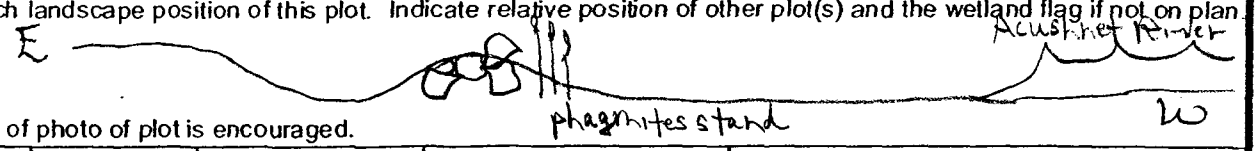
☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): 12"
Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): water stained leaves

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-12"	Ap	10YR2/1	None	SL
12-718"	Bg	10YR5/2	None	SL

HYDRIC SOIL INDICATOR(S): III. D.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W8C-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T6 PLOT: Wetland (PM)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 10/9/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Phragmites australis	98.0/183.5	53	x	FACW
Distichlis spicata	85.5/183.5	47	x	FACW
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	Ø	Ø

Hydrophytes Subtotal (A): 2

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: _____
- Aerial photography Identification: _____
- Other Identification: _____

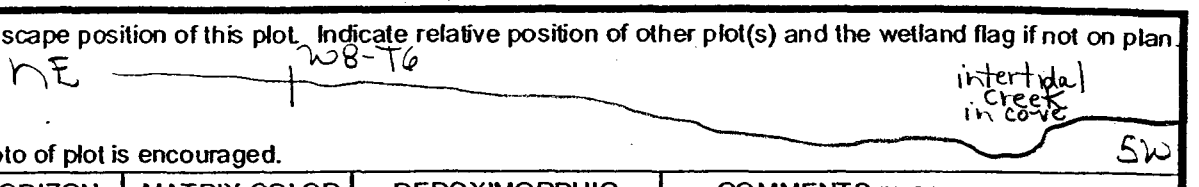
☐ NO RECORDED DATA

☑ OBSERVATIONS:
- Depth to Free Water: _____
- Depth to Saturation (including capillary fringe): _____
- Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): Intertidal, sulfer smell

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
+2 - 0"	O_i	none recorded	none	Sulfer smell
0-14"	A_1	10YR3/1	none	
14-718"	A_2	10YR3/1	none	fibric, oxidized rhizosphere

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC, July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W8-T6 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8B-T1 PLOT: Wetland (PSS)

DELINEATOR(S): P. Gohring, R. Delahunty DATE: 8/31/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Osmunda cinnamomea	10.5/16.5	64	X	FACW
Viburnum dentatum	3.0/16.5	18		
Parthenocissus quinquefolia	3.0/16.5	18		
Shrubs				
Vaccinium corymbosum	38.0/48.5	78	X	FACW
Viburnum dentatum	10.5/48.5	22	X	FAC
Vines				
Toxicodendron radicans	10.5/10.5	100	X	FAC
Ø Trees, Saplings				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	2	2	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 4

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): Access road creates drainage barrier to River

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): water stained leaves

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-4"	A_1	10YR 2/2	None	SL
4-6"	A_2	10YR 4/2	None	SL
6-7/8"	B	10YR 5/3	10YR 5/6, f >10%	SL

HYDRIC SOIL INDICATOR(S): III.D

REFERENCE(S): NEIWPCC. 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☑	☐
Hydric soils criterion met?	☑	☐
Wetland hydrology criterion met?	☑	☐
IS THIS DATAPOINT IN A WETLAND?	☑	☐

REMARKS: W8-T1 (Wetland) is representative of W8C, W8D, W8E communities.

PROJECT TITLE: New Bedford Harbor TRANSECT: W8B T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W8C-T1 PLOT: Wetland (PSS)

DELINEATOR(S): P. Gohring DATE: 9/19/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Kalmia angustifolia	38.0/126.5	30	x	FAC
Vaccinium macrocarpon	85.5/126.5	68	x	OBL
Pyrus melanocarpa	3.0/126.5	2		
Moss				
Polytrichum juniperinum	20.5/20.5	100	x	nl
Shrubs				
Pyrus melanocarpa	38.0/99.5	38	x	FAC
Nyssa sylvatica	20.5/99.5	20	x	FACW
Acer rubrum	3.0/99.5	3		
Vaccinium atrococcum	38.0/99.5	38	x	nl
Saplings				
Betula populifolia	3.0/3.0	100	x	FAC
Ø Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	1	3	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 5 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): 8"
Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): redoxomorphic features w/in top 6" of soil profile

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E — W8C-T1 — access road — Acushnet River — W

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-3"	A	10YR 3/2	None	ls
3-18"	Bg	10YR 6/2	10YR 6/8, d >5%	sl

HYDRIC SOIL INDICATOR(S): III. G. 2.

REFERENCE(S): NEIWPCC July 1998 Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☑	☐
Hydric soils criterion met?	☑	☐
Wetland hydrology criterion met?	☑	☐
IS THIS DATAPOINT IN A WETLAND?	☑	☐

REMARKS: W8C-T1 (wetland) is representative of W8E palustrine scrub-shrub wetland communities

PROJECT TITLE: New Bedford Harbor TRANSECT: W8C-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W9-T1 PLOT: Upland

DELINEATOR(S): P. Gohring DATE: 9/10/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Phragmites australis	38.0/100.5	38	x	FACW
Asclepias syriaca	20.5/100.5	20	x	NL
Convolvulus sp.	38.0/100.5	38	x	———
Solidago rugosa	10.5/100.5	10		FAC
Phytolacca americana	20.5/100.5	20	x	FACU
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	OTHER
Ø	1	1	Ø

Hydrophytes Subtotal (A): 2

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	1	Ø

Non-hydrophytes Subtotal (B): 1

PERCENT HYDROPHYTES (100A/A+B): 67

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: ____
Aerial photography Identification: ____
Other Identification: ____

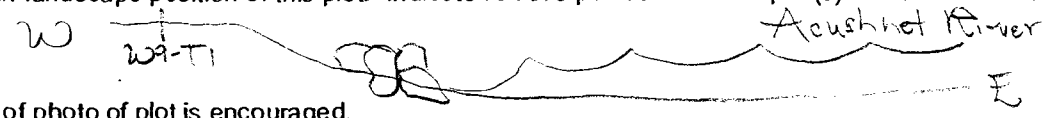
☑ NO RECORDED DATA

☐ OBSERVATIONS:
Depth to Free Water: ____
Depth to Saturation (including capillary fringe): ____
Altered Hydrology (explain): ____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-18"	A1	7.5YR 2.5/2	None	Sil w/ gravel fill
18-722"	A2	7.5YR 3/2	None	Sil, disturbed fill soil

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☑	☐
Hydric soils criterion met?	☐	☑
Wetland hydrology criterion met?	☐	☑
IS THIS DATAPOINT IN A WETLAND?	☐	☑

REMARKS: W9-T1 (upland) is representative of W10 upland community

PROJECT TITLE: New Bedford Harbor TRANSECT: W9-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W9-T1 PLOT: Wetland (LM)

DELINEATOR(S): P. Gohring DATE: 9/5/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina alterniflora	98.0/98.0	100	x	OBL
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA
Stream, lake, or tidal gage Identification:
Aerial photography Identification:
Other Identification: Mean High Water

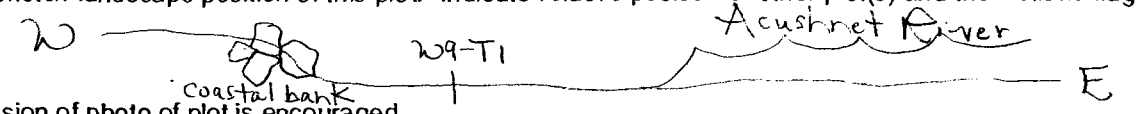
☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: 6"
Depth to Saturation (including capillary fringe): Surface
Altered Hydrology (explain):

☐ Inundated ☑ Saturated in upper 12" ☑ Water Marks ☐ Drift Lines ☑ Sediment Deposits ☑ Drainage Patterns within Wetland

☑ OTHER (explain): Intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-6"	A_1	5YR 6/1	None	LS
6-18"	A_2	10YR 2/1	None	LS, beginning of hydric soil development - sandy soil w/ high organic matter content

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☑	☐
Hydric soils criterion met?	☑	☐
Wetland hydrology criterion met?	☑	☐
IS THIS DATAPOINT IN A WETLAND?	☑	☐

REMARKS: W9-T1 (wetland) is representative of W10 wetland community

PROJECT TITLE: New Bedford Harbor TRANSECT: W9-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T1 PLOT: Wetland (HTn)

DELINEATOR(S): P. Gonring DATE: 9/6/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina patens	98.0/98.0	100	x	FACW
Salicornia europaea	<1%	----		
Aster tenuifolius	<1%	----		
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: Mean High Water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: 8"

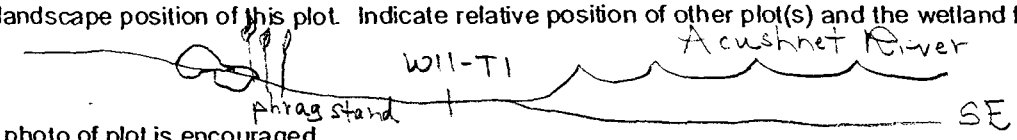
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): Intertidal, sulfer smell

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-7/8"	O_i			Sulfer smell

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998 Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T1 PLOT: Upland

DELINEATOR(S): P. Gohring DATE: 9/7/01

VEGETATION Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Daucus carota	3.0/9.0	33	x	NL
Phytolacca americana	3.0/9.0	33	x	FACU
Solidago rugosa	3.0/9.0	33	x	FAC
Shrub				
Acer negundo	38.0/58.5	65	x	FAC
Rosa multiflora	20.5/58.5	35	x	FACU
Sapling				
Acer negundo	38.0/38.0	100	x	FAC
Vine				
Celastrus scandens	38.0/38.0	100	x	FACU
Ø Trees				

*NL = not listed.

HYDROPHYTES

Ø	Ø	3	Ø
OBL	FACW	FAC	*OTHER

NON-HYDROPHYTES

Ø	3	Ø
FAC-	FACU	UPL

Hydrophytes Subtotal (A): 3 Non-hydrophytes Subtotal (B): 3

PERCENT HYDROPHYTES (100A/A+B): 50

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

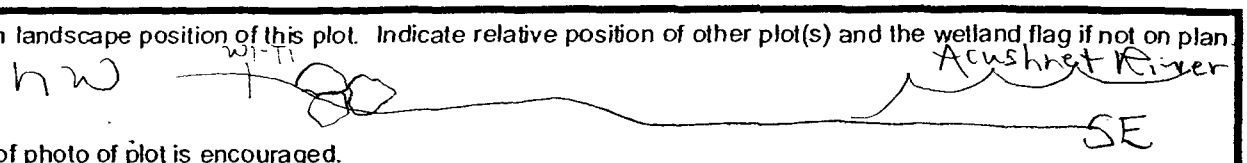
☑ NO RECORDED DATA

☐ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-8"	A	7.5YR3/3	None	Sil.
>8"	fill		None	refusal of auger

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T2 PLOT: Wetland (2m)

DELINEATOR(S): P. Gohring DATE: 9/7/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina alterniflora	98.0/98.0	100	x	OBL
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: mean high water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

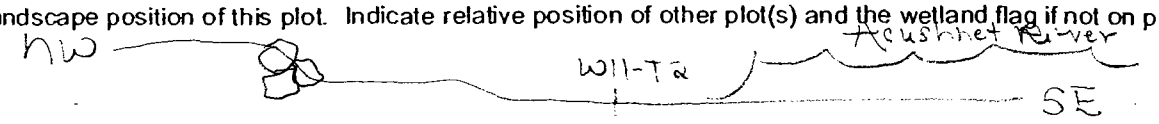
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal, sulfer smell

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-7 24"	Oe	None recorded	None	Sulfur smell

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T2 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T3 PLOT: Wetland (SS)

DELINEATOR(S): P. Gohring DATE: 9/12/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spirea tomentosa	38.0/122	31	+	FACW
Myrica pensylvanica	10.5/122	9		
Phragmites australis	10.5/122	9		
Toxicodendron radicans	63.0/122	52	X	FAC
Shrubs				
Myrica pensylvanica	85.5/855	100	X	FAC
Ø Trees, Saplings, Vines				

HYDROPHYTES

Ø	1	2	Ø
OBL	FACW	FAC	*OTHER

NON-HYDROPHYTES

Ø	Ø	Ø
FAC-	FACU	UPL

Hydrophytes Subtotal (A): 3 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

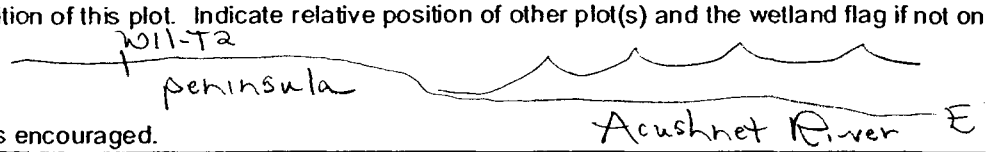
☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): streaking organics, intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-7	A	10YR 1/3	None	LS
7-718"	Bg	10YR 5/3	10YR 5/8, d 20%	LS

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W11-T3 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W12-T1 PLOT: Wetland (PM)

DELINEATOR(S): P. Gohring DATE: 9/6/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Phragmites australis	98.0/98.0	100	x	FACW
Vines				
Vitus labrusca	<1%	----		
Ø Trees, Saplings, Shrubs				

HYDROPHYTES

Ø	1	Ø	Ø
OBL	FACW	FAC	*OTHER

NON-HYDROPHYTES

Ø	Ø	Ø
FAC-	FACU	UPL

Hydrophytes Subtotal (A): 1 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA
Stream, lake, or tidal gage Identification: _____
Aerial photography Identification: _____
Other Identification: _____

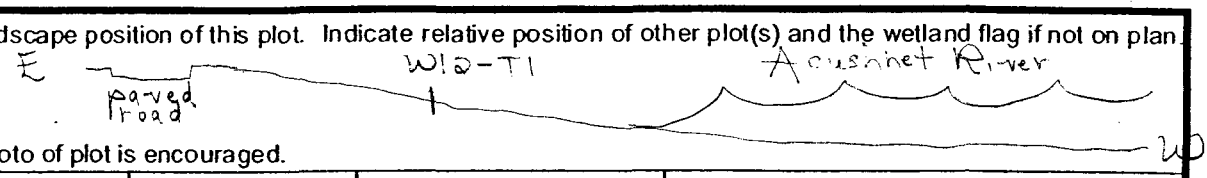
☐ NO RECORDED DATA

☑ OBSERVATIONS:
Depth to Free Water: _____
Depth to Saturation (including capillary fringe): _____
Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☑ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): Intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-11"	Ap	10YR 3/1	None	LS
11-720"	Bg	10YR 4/2	10YR 5/8, d >20%	LS

HYDRIC SOIL INDICATOR(S): II.*

REFERENCE(S): NEIWPCC, July 1998 Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W12-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W12-T1 PLOT: Upland

DELINEATOR(S): P. Gohring DATE: 9/6/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs	3.0/3.0	100	x	FAC
Solidago rugosa	<1%	----		
Rubus sp.				
Shrub				
Rosa multiflora	38.0/61.5	62	x	FACU
Rhus copallinum	20.5/61.5	33	x	NI
Viburnum recognitum	3.0/61.5	5		
Trees				
Acer rubrum	10.5/13.5	78	x	FAC
Prunus serotina	3.0/13.5	22.	x	FACU
Vines				
Vitis labrusca	85.5/88.5	97	x	FACU
Celastrus scandens	3.0/88.5	3		
Ø Saplings				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	Ø	2	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	3	Ø

Hydrophytes Subtotal (A): 2

Non-hydrophytes Subtotal (B): 3

PERCENT HYDROPHYTES (100A/A+B): 40

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: _____
- Aerial photography Identification: _____
- Other Identification: _____

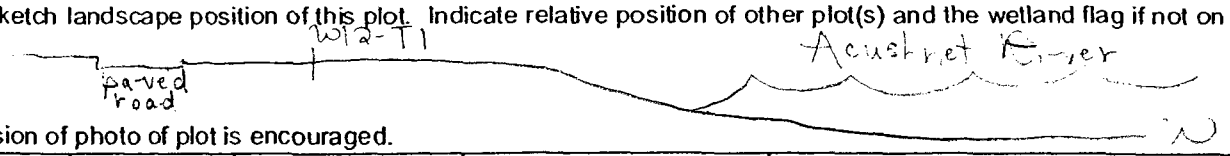
☑ NO RECORDED DATA

☐ OBSERVATIONS:
- Depth to Free Water: _____
- Depth to Saturation (including capillary fringe): _____
- Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-12"	Ap	10YR 4/2	None	SL, disturbed soil
12-20"	Bw	10YR 5/6	None	SL

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W12-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W12-T2 PLOT: Wetland (2m)

DELINEATOR(S): P. Gohring DATE: 9/6/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina alterniflora	98.0/104	94	X	OBL
Iva frutescens	3.0/104	3		
Rumex crispus	3.0/104	3		
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1 Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification:

Aerial photography Identification: Mean High Water

Other Identification:

☐ NO RECORDED DATA

☐ OBSERVATIONS:

Depth to Free Water:

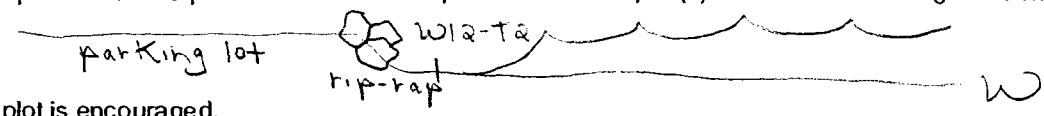
Depth to Saturation (including capillary fringe):

Altered Hydrology (explain):

☐ Inundated ☐ Saturated in upper 12" ☑ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): Intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0->18"	Oe	10YR 2/1	None	

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998 Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W12-T2 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W14-T1 PLOT: Wetland

DELINEATOR(S): P. Gotring DATE: 9/10/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Distichlis spicata	98.0/125	78	X	FACW
Typha latifolia	10.5/125	8		
Typha angustifolia	10.5/125	8		
Scirpus americanus	3.0/125	2		
Iva frutescens	3.0/125	2		
Aster sp.	<1	----		
Solidago sp.	<1	----		

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: mean high water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

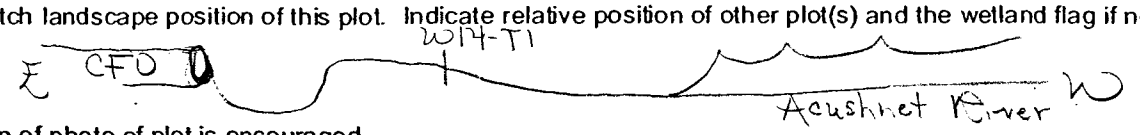
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal / brackish

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-724"	Oe	none recorded	none	Sulfer smell

HYDRIC SOIL INDICATOR(S): II

REFERENCE(S): NEIWPCC. July 1998 Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☑	☐
Hydric soils criterion met?	☑	☐
Wetland hydrology criterion met?	☑	☐
IS THIS DATAPOINT IN A WETLAND?	☑	☐

REMARKS: W14-T1 (wetland) is representative of W13 wetland community

PROJECT TITLE: New Bedford Harbor TRANSECT: W14-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W14-T1 PLOT: Upland

DELINEATOR(S): P. Gohring DATE: 9/10/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Phalaris arundinacea	63.0/101	62	x	FACW
Lilium sp	38.0/101	38	x	———
Shrub				
Acer negundo	38.0/76	50	x	FAC
Rhus copallina	38.0/76	50	x	NI
Sapling				
Gleditsia triacanthos	20.5/20.5	100	x	FAC-
Vine				
Parthenocissus quinquefolia	38.0/38.0	100	x	FACU

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	1	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
1	1	Ø

Hydrophytes Subtotal (A): 2

Non-hydrophytes Subtotal (B): 2

PERCENT HYDROPHYTES (100A/A+B): 50

HYDROLOGY

☐ RECORDED DATA
- Stream, lake, or tidal gage Identification: ____
- Aerial photography Identification: ____
- Other Identification: ____

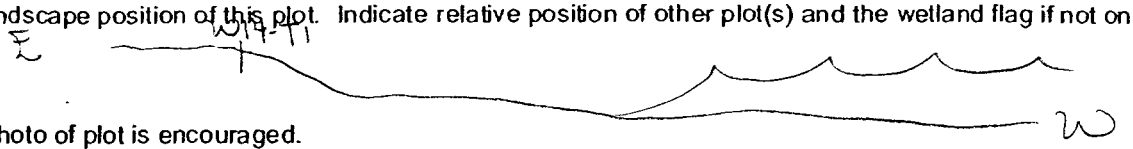
☑ NO RECORDED DATA

☐ OBSERVATIONS:
- Depth to Free Water: ____
- Depth to Saturation (including capillary fringe): ____
- Altered Hydrology (explain): ____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-16"	A	2.5Y3/2	None	Sil
7|6"	fill	—	None	refusal of auger x 3

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	W14-T1 (upland) is representative of W13 upland community
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W14-T1 PLOT: Upland.

PROJECT TITLE: New Bedford Harbor TRANSECT: W15-T1 PLOT: Wetland (PEM) isolated

DELINEATOR(S): P. Gohring DATE: 9/13/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Typha sp.	10.5/19.5	54	X	FACW
Polygonum pensylvanicum	3.0/19.5	15		
Alisma plantago.	3.0/19.5	15		
Carex vulpinoidea	3.0/19.5	15		
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

Ø	1	Ø	Ø
OBL	FACW	FAC	*OTHER

NON-HYDROPHYTES

Ø	Ø	Ø
FAC-	FACU	UPL

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

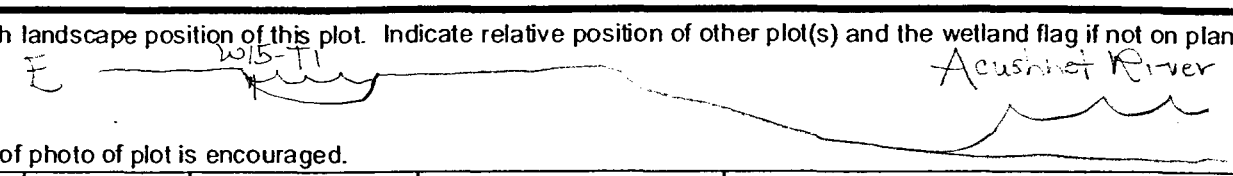
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☑ Inundated ☐ Saturated in upper 12" ☑ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): ponded water (elevation) disturbed area

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-7/8"	A	10YR2/1	None	LS, w/gravel extremely disturbed & new hydric soil development high organic matter in top 1/2" of soil

HYDRIC SOIL INDICATOR(S): I,

REFERENCE(S): NEIWPCC, July 1998 Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W15-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W15-T1 W16-T1 PLOT: Upland

DELINEATOR(S): P Gohring DATE: 9/13/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Festuca sp.	10.5/55	19		
Solidago sp.	10.5/55	19		
Achillea millefolium	3.0/55	5		
Daucus carota	10.5/55	19		
Ambrosia trifaaims				
Trifolium pratense	20.5/55	37	x	FACU
Shrubs				
Elaeagnus umbellata	3.0/3.0	100	x	FAC
Ø Saplings, Trees, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	1	Ø

Hydrophytes Subtotal (A): Ø

Non-hydrophytes Subtotal (B): 1

PERCENT HYDROPHYTES (100A/A+B): 0

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:

Depth to Free Water: _____

Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

E — W15-T1 (W16-T1) — Acushnet River

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-4"	A	10YR2/1	None	SL, disturbed
4-7/8"	B	10YR3/3	None	SL, disturbed

HYDRIC SOIL INDICATOR(S): N/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☐	☑	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W15-T1 W16-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W16-T1 PLOT: Wetland (PEM) isolated

DELINEATOR(S): P. Johring DATE: 9/13/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Agrostis stolonifera	63.0/117.5	54	X	FACW
Panicum virgatum	20.5/117.5	17		
Pragmites australis	20.5/117.5	17		
Juncus canadensis	10.5/117.5	9		
Polygonum pensylvanicum	3.0/117.5	3		
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

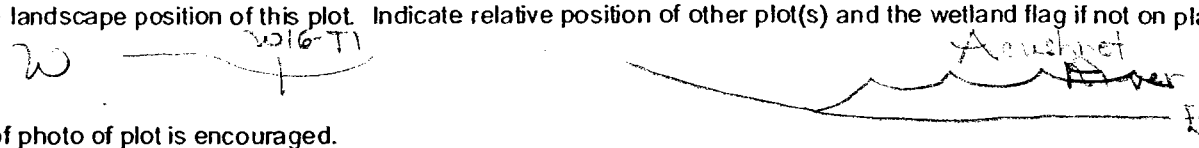
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): redoxomorphic features w/in top 6"

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-5	A	10YR 2/2	None	SL
5-7/12"	Bg	10YR 5/2	10YR 5/8, d >10%	SL

HYDRIC SOIL INDICATOR(S): M1. H. 1.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England.

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W16-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W20-T1 PLOT: Upland

DELINEATOR(S): P. Gohring DATE: 9/20/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Myrica pensylvanica	20.5/44	47	x	FAC
Toxicodendron radicans	20.5/44	47	x	FAC
Tanacetum vulgare	3.0/44	7		
Shrubs				
Myrica pensylvanica	20.5/26.5	77	x	FAC
Acer negundo	3.0/26.5	77	x	FAC
Prunus persica	3.0/26.5	11		
Vines				
Celastrus scandens	3.0/6.0	50	x	FACU
Toxicodendron radicans	3.0/6.0	50	x	FAC
Ø Trees, Saplings				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	Ø	5	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	1	Ø

Hydrophytes Subtotal (A): 5

Non-hydrophytes Subtotal (B): 1

PERCENT HYDROPHYTES (100A/A+B): 83

HYDROLOGY

☐ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: _____

☑ NO RECORDED DATA

☐ OBSERVATIONS:

Depth to Free Water: _____

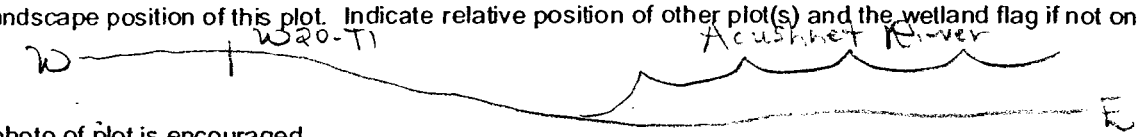
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☐ OTHER (explain):

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-10"	A	7.5YR3/3	None	SL, fill, 730% glass
710"				refusal of auger x 3

HYDRIC SOIL INDICATOR(S): n/A

REFERENCE(S):

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☐	☑	
Wetland hydrology criterion met?	☐	☑	
IS THIS DATAPOINT IN A WETLAND?	☐	☑	

PROJECT TITLE: New Bedford Harbor TRANSECT: W20-T1 PLOT: Upland

PROJECT TITLE: New Bedford Harbor TRANSECT: W20-T1 PLOT: Wetland (LM)

DELINEATOR(S): P. Gohring DATE: 9/19/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Spartina alterniflora	98.0	100	x	OBL
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
1	Ø	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification:

Aerial photography Identification:

Other Identification: Mean High Water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water:

Depth to Saturation (including capillary fringe): at surface

Altered Hydrology (explain):

☐ Inundated ☑ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.

W — W20-T1 — Acushnet River — W

Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-718"	Oe	10YR2/1	None	S

HYDRIC SOIL INDICATOR(S): H.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO
Hydrophytic vegetation criterion met?	☑	☐
Hydric soils criterion met?	☑	☐
Wetland hydrology criterion met?	☑	☐
IS THIS DATAPOINT IN A WETLAND?	☑	☐

REMARKS: W20-T1 (wetland) is representative of W27, W25, W24, W17, W17A, W26, W20, W19B, W19A, W19, W23 wetland community

PROJECT TITLE: New Bedford Harbor TRANSECT: W20-T1 PLOT: Wetland

PROJECT TITLE: New Bedford Harbor TRANSECT: W20-T2 PLOT: Wetland (SS)

DELINEATOR(S): P. Gohring DATE: 9/20/01

VEGETATION

Stratum and Species	Dominance Ratio	Percent Dominance	DOM	NWI Status
Seedlings and Herbs				
Iva frutescens	85.5/106	81	x	FACW
Salsola Kali	20.5/106	19		
Ø Trees, Saplings, Shrubs, Vines				

HYDROPHYTES

OBL	FACW	FAC	*OTHER
Ø	1	Ø	Ø

NON-HYDROPHYTES

FAC-	FACU	UPL
Ø	Ø	Ø

Hydrophytes Subtotal (A): 1

Non-hydrophytes Subtotal (B): Ø

PERCENT HYDROPHYTES (100A/A+B): 100

HYDROLOGY

☑ RECORDED DATA

Stream, lake, or tidal gage Identification: _____

Aerial photography Identification: _____

Other Identification: mean high water

☐ NO RECORDED DATA

☑ OBSERVATIONS:

Depth to Free Water: _____

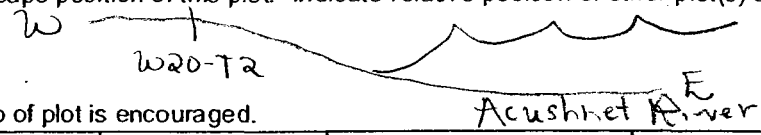
Depth to Saturation (including capillary fringe): _____

Altered Hydrology (explain): _____

☐ Inundated ☐ Saturated in upper 12" ☐ Water Marks ☐ Drift Lines ☐ Sediment Deposits ☐ Drainage Patterns within Wetland

☑ OTHER (explain): intertidal

SOIL Sketch landscape position of this plot. Indicate relative position of other plot(s) and the wetland flag if not on plan.



Submission of photo of plot is encouraged.

DEPTH	HORIZON	MATRIX COLOR	REDOXIMORPHIC FEATURES (color, abundance, size, contrast)	COMMENTS (USDA texture, nodules, concretions, masses, pore linings, restrictive layers, root distribution, soil water, etc.)
0-7"	A	10YR2/1	None	LS
7-716"	B	10YR3/2	7.5YR5/8, P <10%.	LS, w/ 1/2"-1" stones

HYDRIC SOIL INDICATOR(S): II.

REFERENCE(S): NEIWPCC. July 1998. Field Indicators for Identifying Hydric Soils in New England

OPTIONAL SOIL DATA

REFERENCE(S):

Taxonomic subgroup:
Soil drainage class:
Depth to active water table:
NTCHS hydric soil criterion:

CONCLUSIONS

	YES	NO	REMARKS:
Hydrophytic vegetation criterion met?	☑	☐	
Hydric soils criterion met?	☑	☐	
Wetland hydrology criterion met?	☑	☐	
IS THIS DATAPOINT IN A WETLAND?	☑	☐	

PROJECT TITLE: New Bedford Harbor TRANSECT: W20-T2 PLOT: Wetland

APPENDIX C

Site Photographs

PHOTO 1
Early Action Restoration Wetlands.
LM fenced for protection from avian disturbance.

PHOTO 2
Looking southeast at Early Action Restored Wetlands.

2002-017-0124
4/29/02

PHOTO 3
Background: Looking northeast at Wetland 1.
Foreground: Wetland 13 located on western shoreline, north of the Wood St. Bridge.

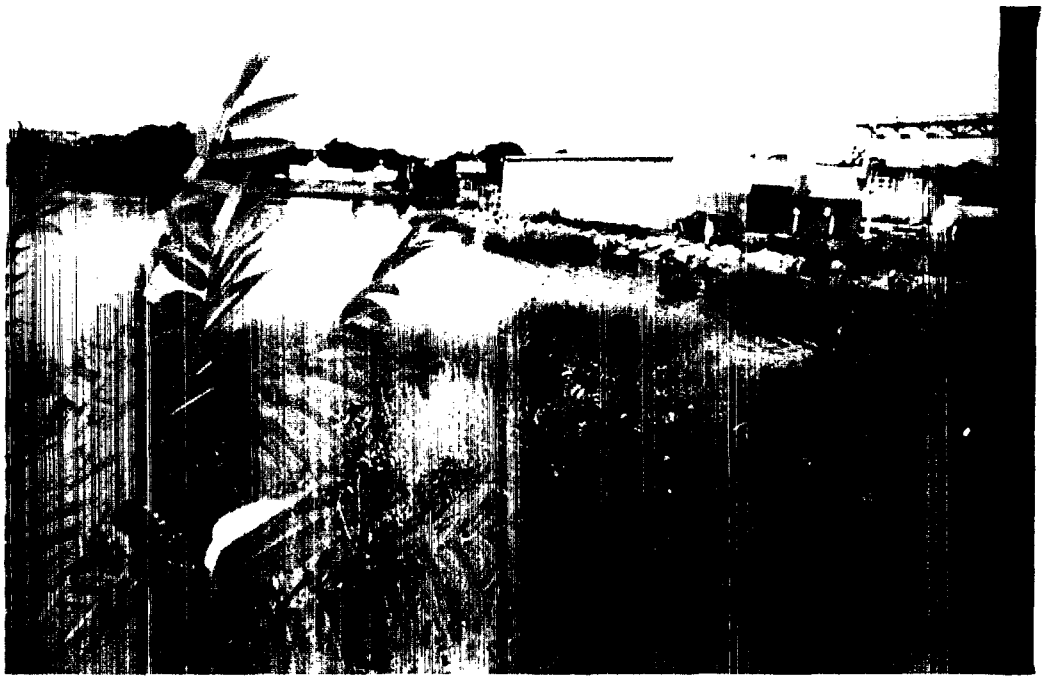


PHOTO 4
Wetland 2 looking west at salt marsh cordgrass wetland fringe.

PHOTO 5
Wetland 3 taken from southeastern point in Robachaud Cove looking north toward Titleist Facility and PM.

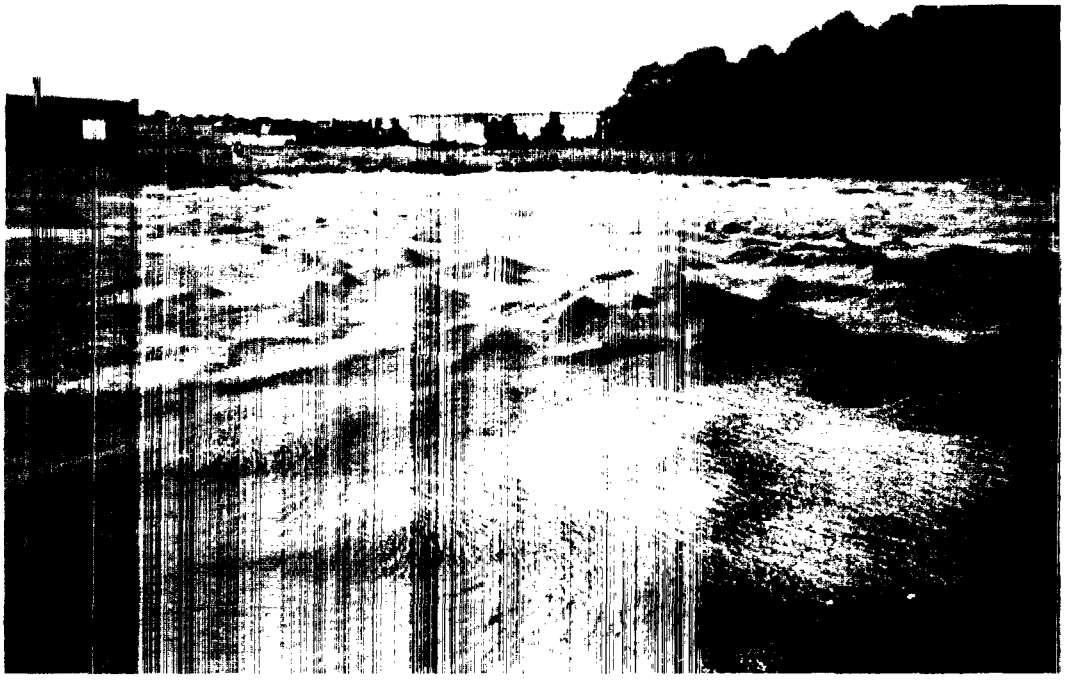


PHOTO 6
Wetland 4 facing northwest south of cable replacement project. Notice HM cowlicks.

PHOTO 7
Looking west at Wetland 4 and the Acushnet River.

PHOTO 8
Looking southwest at Wetland 4, UP2-Wetland 4 and Wetland 4- ST2. Notice vegetation zones HM, LM along creek border, and SS.

PHOTO 9
Looking southwest at Wetland 5.
Notice water transported debris.

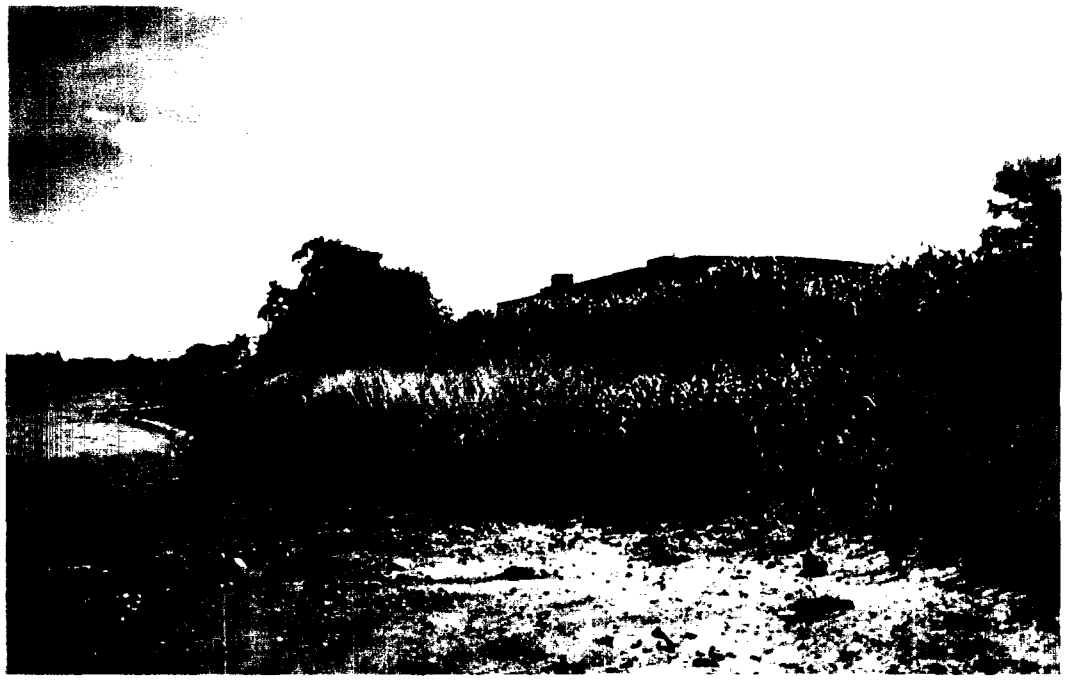


PHOTO 10
Looking southerly at Wetland 8
and associated cobble/gravel/sand beach.

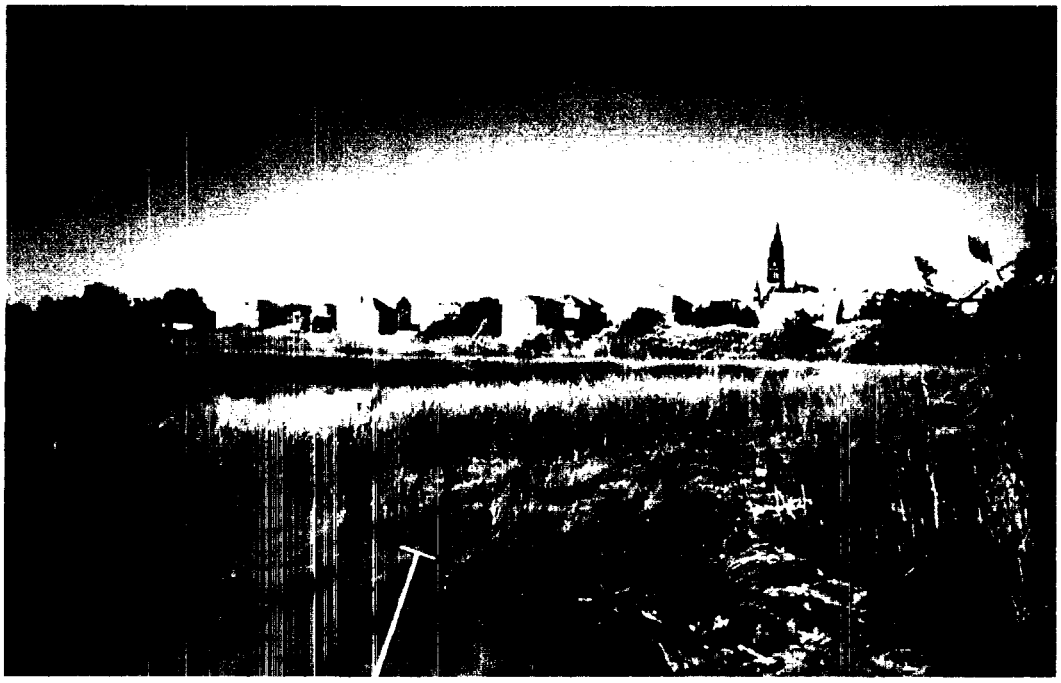


PHOTO 11
Looking southwest at Wetland 9 in
King Philip Cove.

PHOTO 12
Looking east at isolated vegetated Wetland 10.

PHOTO 13
Looking east at isolated vegetated Wetland 11
in abandoned lot.

PHOTO 14
Looking southwest at Wetland 12 fringe salt marsh.

APPENDIX D

Wetland Delineation Maps

APPENDIX E

Wetland Functions and Values Forms

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Wetland I.D. EA, 1,13 .

Total area of wetland (acres) see table 4.1.1 Human made? No Is wetland part of a wildlife corridor or a "habitat island"? yes

Latitude _____ Longitude _____

Adjacent land use Forested/Residential Distance to nearest roadway or other development <50'

Prepared by P.Gohring Date 10/29/01

Dominant wetland systems present EEM, PEM Contiguous undeveloped buffer zone present No

Wetland Impact: Not Applicable
Type _____ Area _____

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

Evaluation based on:

How many tributaries contribute to the wetland? 1 (Acushnet River) EA ST-1 & W13-ST1.

Wildlife and vegetation diversity/abundance (see Appendix F).

Office X Field X

Corps manual delineation completed? Y X N ___

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		X	4,7,16		Potential for groundwater discharge although no evidence was observed
Floodflow Alteration	X		4,11,12,13,18		Potential in the 100-year flood zone
Fish and Shellfish Habitat	X		1,2,3,4,5	X	Shellfish observed in low marsh (LM). Shriners observed at low tide
Sediment/Toxicant Retention	X		1,2,4,7,9,10,16	X	Known PCB sediment contamination retention
Nutrient Removal	X		3,4,6,7,8,9,11,13	X	Presence of confined sewage outflow pipe adjacent to Wetland 13
Production Export	X		1,2,4,5,6,7,8,10,13		Production export primarily a function of HM
Sediment/Shoreline Stabilization	X		1,3,4,6,8,11,12,13,15	X	Dense persistent vegetation along banks
Wildlife Habitat	X		6,8,11,14,21	W13	Diversity in plant community and interspersion of vegetation types
Recreation		X	9		Contaminated area
Educational Scientific Value	X		1,5,16		PCB research and data collection
Uniqueness/Heritage	X		5,7,22,25		Brackish community, high species diversity. Health and safety concern.
Visual Quality/Aesthetics	X		8		Park located directly across River from Wetland 13. Health and safety concern.
Endangered Species Habitat		X	None		Least bittern, MA listed endangered species observed adjacent to Wetland 1 in 1985, by IEP
Other					

Note: * Refer to back up list of numbered considerations
2002-017-0124
4/29/02

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Total area of wetland (acres) see table 4.1.1 Human made? No Is wetland part of a wildlife corridor or a "habitat island"? No

Adjacent land use Industrial Distance to nearest roadway or other development <50'

Dominant wetland systems present EEM, ESS Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? Acushnet River W7-ST1 & W12-ST1
Wildlife and vegetation diversity/abundance (see Appendix F).

Wetland I.D 2, 6, 7 ,8 ,12

Latitude _____ Longitude _____

Prepared by P. Gohring Date 10/29/01

Wetland Impact: Not Applicable
Type _____ Area _____

Evaluation based on:

Office X Field X

Corps manual delineation completed? Y X N ___

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		X	4,7,16		No visible signs of discharge observed.
Floodflow Alteration		X	2,4,11,12		Small fringe wetland provides little to no floodflow alteration
Fish and Shellfish Habitat	X		1,2,3,4,5	X	Shellfish observed and documented
Sediment/Toxicant Retention	X		2,4,7,10,15	X	Known polychlorinated biphenyl (PCB) contamination retention
Nutrient Removal		X	5,9,13	X	Abundant nitrogen concentration recorded in Acushnet River
Production Export	X		5,6,13		Primarily a function of high marsh
Sediment/Shoreline Stabilization	X		1,3,4,7,8,9,11,13,15	X	Persistent vegetation along banks
Wildlife Habitat		X	11		
Recreation		X	8,9		Contaminated area (except for Phragmites marsh)
Educational Scientific Value		X	16		PCB research and data collection within marsh
Uniqueness/Heritage		X	1,4,5,6,22,23		Fringe wetland
Visual Quality/Aesthetics		X	None		Public Health and Safety Concern
Endangered Species Habitat		X	None		None recorded
Other					

Note: * Refer to back up list of numbered considerations
2002-017-0124
4/29/02

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Wetland I.D. 3, 4

Total area of wetland (acres) see table 4.1.1 Human made? No Is wetland part of a wildlife corridor or a "habitat island"? Yes

Latitude _____ Longitude _____

Adjacent land use Forested/Residential Distance to nearest roadway or other development >50'

Prepared by P.Gohring Date 10/29/01

Dominant wetland systems present EEM, EES, PEM, PSS, PFO Contiguous undeveloped buffer zone present Yes (for the most part)

Wetland Impact: Not Applicable
Type _____ Area _____

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

Evaluation based on:

How many tributaries contribute to the wetland? Acushnet River, W3-ST1-6, W4-ST 1-4
Wildlife and vegetation diversity/abundance (see Appendix F).

Office X Field X

Corps manual delineation completed? Y X N ___

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		X	4,7,16		No visible signs of discharge observed
Floodflow Alteration	X		4,5,6,8,9,10,11,12,13,16,17,18		Potentially within the 100-year flood zone
Fish and Shellfish Habitat	X		1,2,3,4,5	X	Fish and shellfish habitat closed. Low marsh (LM) only and intertidal creeks
Sediment/Toxicant Retention	X		1, 2,3,4,5,7,8,10,12,14,15,16	X	Known PCB sediment contamination retention
Nutrient Removal	X		3,4,6,7,8,9,11,13	X	High nitrogen and phosphorus concentrations recorded in Acushnet River
Production Export	X		1,2,4,5,6,7,8,10,11,13	W4	Production export primarily a function of HM
Sediment/Shoreline Stabilization	X		1,3,4,6,7,8,11,12,13,15	X	Persistent vegetation along banks
Wildlife Habitat	X		3,5,6,8,9,10,11,12,13,14,17,18,21	X	Diversity in plant community and interspersion of vegetation types
Recreation		X	5,7		Contaminated area
Educational Scientific Value	X		16		PCB research
Uniqueness/Heritage	X		2,3,5,6,7,19,22,23,25,27,28,29		Public health and safety concern
Visual Quality/Aesthetics	X		1,8		Aesthetic quality is inhibited by the presence of trash and debris
Endangered Species Habitat		X	None		Least tern and common tern, MA listed species of special concern observed in 1985 by IEP adjacent to wetlands
Other					

Note: * Refer to back up list of numbered considerations
2002-017-0124
4/29/02

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Total area of wetland (acres) see table 4.1.1 Human made? No Is wetland part of a wildlife corridor or a "habitat island"? Yes

Adjacent land use Forested Distance to nearest roadway or other development <50'

Dominant wetland systems present PSS, PEM Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? mid

How many tributaries contribute to the wetland? 1 (not delineated) Wildlife and vegetation diversity/abundance (see Appendix F).

Wetland I.D 3 (Palustrine wetlands)

Latitude _____ Longitude _____

Prepared by P. Gohring Date 10/29/01

Wetland Impact: Not Applicable
Type _____ Area _____

Evaluation based on:
Office X Field X

Corps manual delineation completed? Y X N ___

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge	X		4,7,15,16		Evidence of groundwater discharge based on water stained leaves and presence of standing water
Floodflow Alteration	X		4,5,7,10,13,15		
Fish and Shellfish Habitat		X	None		
Sediment/Toxicant Retention	X		1,2,4,9,10,12,16	X	Known polychlorinated biphenyl (PCB) contamination retention
Nutrient Removal	X		4,8,9,11		
Production Export		X	1,4,7		
Sediment/Shoreline Stabilization		X	8,13		
Wildlife Habitat	X		3,6,8,13	X	Diversity in plant community structure
Recreation		X	None		
Educational Scientific Value		X	None		
Uniqueness/Heritage		X	4,5,23		
Visual Quality/Aesthetics		X	None		
Endangered Species Habitat		X	None		
Other					

Note: * Refer to back up list of numbered considerations
2002-017-0124
4/29/02

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Wetland I.D 5, 9

Total area of wetland (acres) see table 4.1.1 Human made? No Is wetland part of a wildlife corridor or a "habitat island"? Yes

Latitude _____ Longitude _____

Adjacent land use Industrial Distance to nearest roadway or other development <50'

Prepared by P. Gohring Date 10/29/01

Dominant wetland systems present EEM, ESS Contiguous undeveloped buffer zone present No

Wetland Impact Type _____ Not Applicable Area _____

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

Evaluation based on: Office X Field X

How many tributaries contribute to the wetland? Acushnet River Wildlife and vegetation diversity/abundance (see Appendix F).

Corps manual delineation completed? Y X N ___

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		X	4,7,16		No visible signs of discharge observed
Floodflow Alteration	X		4,11,12,18		Potentially within the 100-year flood zone
Fish and Shellfish Habitat	X		1,2,3,4,5	X	Shellfish observed and documented
Sediment/Toxicant Retention	X		1,2,3,7,9,10,16	X	Known polychlorinated biphenyl (PCB) contamination retention
Nutrient Removal	X		4,6,7,8,9,11,13	X	High nitrogen and phosphorus concentrations recorded in Acushnet River
Production Export	X		1,2,4,5,6,7,10,13		Primarily a function of HM
Sediment/Shoreline Stabilization	X		1,3,4,6,7,8,11,12,13,15	X	Dense persistent vegetation along banks
Wildlife Habitat	X		6,8,11,13,21		Surrounding area is industrial
Recreation		X	9		Contaminated area
Educational Scientific Value	X		16		PCB research and data collection
Uniqueness/Heritage		X	1,5,7,22,23,25		Public health and safety concern
Visual Quality/Aesthetics		X	None		Aesthetic quality is inhibited by the presence of trash and debris
Endangered Species Habitat		X	None		None recorded
Other					

Note: * Refer to back up list of numbered considerations

2002-017-0124

4/29/02

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Total area of wetland (acres) see table 4.1.1 Human made? Yes Is wetland part of a wildlife corridor or a "habitat island"? No

Adjacent land use Industrial, distrurbed Distance to nearest roadway or other development >50'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? None Wildlife and vegetation diversity/abundance (see Appendix F).

Wetland I.D. 10

Latitude _____ Longitude _____

Prepared by P.Gohring Date 10/29/01

Wetland Impact: Not Applicable
Type _____ Area _____

Evaluation based on:
Office X Field X

Corps manual delineation completed? Y X N

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge	X		4, 14, 16	X	Discharge
Floodflow Alteration		X	4, 12		
Fish and Shellfish Habitat		X	None		
Sediment/Toxicant Retention	X	X	1, 2, 4, 5, 9		Oil film located in wetland
Nutrient Removal	X		4, 5, 7, 11		
Production Export		X	2, 3		
Sediment/Shoreline Stabilization		X	None		
Wildlife Habitat	X		8,11,19,21	X	Water bugs, dragonflies, and water fowl observed
Recreation		X	None		
Educational Scientific Value		X	None		
Uniqueness/Heritage		X	1, 5		
Visual Quality/Aesthetics		X	None		Trash, tires, shopping cart present
Endangered Species Habitat		X	None		
Other					

Note: * Refer to back up list of numbered considerations
2002-017-0124
4/29/02

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Total area of wetland (acres) see table 4.1.1 Human made? Yes Is wetland part of a wildlife corridor or a "habitat island"? No

Adjacent land use Industrial, distrurbed Distance to nearest roadway or other development >50'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? None Wildlife and vegetation diversity/abundance (see Appendix F).

Wetland I.D. 11

Latitude _____ Longitude _____

Prepared by P.Gohring Date 10/29/01

Wetland Impact: Not Applicable
Type _____ Area _____

Evaluation based on:
Office X Field X

Corps manual delineation completed? Y X N

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		X	4, 16		
Floodflow Alteration		X	4		
Fish and Shellfish Habitat		X	None		
Sediment/Toxicant Retention		X	1,2,4 ,9		
Nutrient Removal	X		4, 7		
Production Export		X	3		
Sediment/Shoreline Stabilization		X	None		
Wildlife Habitat		X	8		
Recreation		X	None		
Educational Scientific Value		X	None		
Uniqueness/Heritage		X	1		
Visual Quality/Aesthetics		X	None		
Endangered Species Habitat		X	None		
Other					

Note: * Refer to back up list of numbered considerations
2002-017-0124
4/29/02

WETLAND FUNCTIONS & VALUES EVALUATION FORM

Total area of wetland see table 4.1.1 Human made? Yes Is wetland part of a wildlife corridor or a "habitat island"? Yes

Adjacent land use Industrial, disturbed Distance to nearest roadway or other development <50'

Dominant wetland systems present Not Applicable Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Mid

How many tributaries contribute to the wetland? 13 Wildlife and vegetation diversity/abundance (see attached Appendix F).

Wetland I.D. Mudflat

Latitude _____ Longitude _____

Prepared by P.Gohring Date 10/29/01

Wetland Impact: Not Applicable
Type _____ Area _____

Evaluation based on:
Office X Field X

Corps manual delineation completed? Y X N ___

Function/Value	Occurrence		Rational (Reference #)*	Principal Function(s)/ Value(s)	Comments
	Y	N			
Groundwater Recharge/Discharge		X	4,7,16		
Floodflow Alteration		X	4,11,12		
Fish and Shellfish Habitat	X		1,3,4,5	X	Shellfish observed and documented
Sediment/Toxicant Retention	X		1,2,4,8,10	X	Known PCB sediment contamination retention
Nutrient Removal		X	4,5,7		
Production Export	X		1,2,4,5,6,10		
Sediment/Shoreline Stabilization		X	3,7,8,11		
Wildlife Habitat	X		6,8,12,18,21	X	Diverse habitat for waterfowl
Recreation		X	5,9		Contaminated area
Educational Scientific Value	X		5,16		PCB research and data collection
Uniqueness/Heritage		X	3,25		
Visual Quality/Aesthetics		X	8		
Endangered Species Habitat		X	None	X	Least bittern, MA endangered species observed in 1985 by IEP
Other					

Note: * Refer to back up list of numbered considerations
2002-017-0124
4/29/02

APPENDIX F

Flora and Fauna Lists

Table F-1
Observed Flora
NBH 2001 Wetland Delineation

Scientific Name	Common Name	Wetland Indicator Status
MACROALGAE		
Fucus vesiculosus	Rockweed	NL
Ulva lactuca	Sea lettuce	NL
EMERGENT AND TERRESTRIAL		
Acer negundo	Box elder	FAC
Acer rubrum	Red maple	FAC
Acer saccharum	Sugar maple	FACU
Achillea millefolium	Yarrow	FACU
Agalinis maritima	Seaside gerardia	FACW
Agrostis stolonifera	Creeping bent grass	FACW
Alisma plantago-aquatica	Water plantain	OBL
Alnus sp.	Alder	NA
Ambrosia artemisiifolia	Common ragweed	FACU
Ambrosia vulgaris	Common mugwort	NL
Ammophila breviligulata	Beach grass	FACU
Asclepias syriaca	Common milkweed	NL
Aster tenuifolius	Perennial salt marsh aster	OBL
Atriplex patula	Marsh Orach	FACW
Betula populifolia	Gray birch	FAC
Baccharis halimifolia	Groundsel tree	FACW
Carex vulpinoidea	Fox sedge	OBL
Carpinus caroliniana	American hornbeam	FAC
Catalpa sp.	Catalpa	NA
Celastrus scandens	Climbing bittersweet	FACU
Centaurea sp.	Knapweed	NA
Cladina rangifera	Reindeer moss	NL
Cichorium intybus	Chicory	NL
Convolvulus sp.	Bindweed	NA
Cornus amomum	Silky dogwood	FACW
Cyperus sp.	Cyperus	NA
Cyperus strigosus	Umbrella sedge	FACW
Daucus carota	Queen Anne's lace	NL
Distichlis spicata	Spike grass	FACW
Dulichium arundinaceum	Threeway sedge	OBL
Elaeagnus umbellata	Autumn olive	NL
Eleocharis parvula	Dwarf spike-rush	OBL
Elymus virginicus	Virginia rye grass	FACW
Eupatorium dubium	Eastern Joe-pye-weed	FACW

NL = Not Listed
NI = No Indicator
OBL = Obligate Wetland
FACW = Facultative Wetland
FAC = Facultative
FACU = Facultative Upland
UPL = Obligate Upland

Table F-1
Observed Flora
NBH 2001 Wetland Delineation – *Cont'd*

Scientific Name	Common Name	Wetland Indicator Status
Eupatorium maculatum	Spotted-Joe-pye weed	FACW
Fescue sp.	Fescue	NA
Fraxinus americana	White ash	FAC
Galium sp.	Bedstraw	NA
Gleditsia triacanthos	Honey locust	FAC
Glyceria sp.	Mannagrass	NA
Impatiens capensis	Jewelweed	FACW
Iva frutescens	High-tide bush	FACW
Juncus candensis	Canada rush	OBL
Juncus balticus	Baltic rush	FACW
Juncus gerardii	Black grass	FACW
Juniperus virginiana	Red Cedar	FACU
Kalmia angustifolia	Sheep laurel	FAC
Lepidium virginicum	Peppergrass	FACU
Limonium nashii	Sea lavender	OBL
Linaria vulgaris	Butter and eggs	NL
Lonicera tatarica	Tartarian honeysuckle	FACU
Lycopus virginicus	Water horehound	OBL
Lysimachia nummularia	Creeping jenny	OBL
Melilotus alba	White sweet clover	FACU
Myrica pensyvanica	Bayberry	FAC
Nyssa sylvatica	Black gum	FAC
Oenothera biennis	Common evening primrose	FACU
Onoclea sensibilis	Sensitive fern	FACW
Osmunda cinnamomiea	Cinnamon fern	FACW
Panicum virgatum	Switchgrass	FAC
Parthenocissus quinquefolia	Virginia creeper	FACU
Phalaris arundinacea	Reed canary grass	FACW
Phragmites australis	Common reed	FACW
Phytolacca americana	Pokeweed	FACU
Pinus rigida	Pitch pine	FACU
Plantago maritima	Seaside plantain	FACW
Polygonium sagittatum	Arrow-leaved tearthumb	OBL
Polygonum cuspidatum	Japanese knotweed	FACU
Polygonum pensylvanica.	Smartweed	FACW
Polytrichm juniperinum	Haircap moss	NL
Prunus maritima	Beach plum	NL
Prunus persica	Peach tree	NL
Prunus serotina	Black cherry	FACU
Pyrus melanocarpa	Black chokeberry	NL
Quercus alba	White oak	FACU

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UPL = Obligate Upland

Table F-1
Observed Flora
NBH 2001 Wetland Delineation – *Cont'd*

Scientific Name	Common Name	Wetland Indicator Status
Quercus ilicifolia	Scrub oak	NL
Quercus robur	English oak	NL
Quercus rubra	Red oak	FACU
Rhus copallina	Winged sumac	NI
Rosa multiflora	Multiflora rose	FACU
Rosa rugosa	Beach rose	FACU
Rubus. sp.	Bramble	NA
Rumex crispus	Curly dock	FACU
Salicornia europaea	Common glasswort	OBL
Salix discolor	Pussy willow	FACW
Salix sp.	Willow	NA
Salsola kali	Saltwort	FACU
Scirpus americanus/pungens	Three-square	OBL/FACW
Scirpus cyperinus	Wool grass	FACW
Smilax rotundifolia	Common greenbrier	FAC
Solidago gigantea	Late goldenrod	FACW
Solidago graminifolia	Grass-leaved goldenrod	NL
Solidago rugosa	Rough-stemmed goldenrod	FAC
Solidago sempervirens	Seaside goldenrod	FACW
Solidago sp.	Golendrod	NA
Spartina alterniflora	Smooth cordgrass	OBL
Spartina patens	Saltmeadow grass	FACW
Spartina pectinata	Freshwater cordgrass	OBL
Spirea tomentosa	Steeplebush	FACW
Suaeda linearis	Sea blite	OBL
Tanacetum vulgare	Common tansy	NL
Toxicodendron radicans	Poison ivy	FAC
Trifolium pratense	Red clover	FACU
Typha angustifolia	Narrow-leaved cattail	OBL
Typha latifolia	Broad-leaved cattail	OBL
Vaccinium atrococcum	Black highbush blueberry	NA
Vaccinium corymbosum	Highbush blueberry	FACW
Vaccinium macrocarpon	Large cranberry	OBL
Verbascum thapsus	Mullein	NA
Viburnum recognitum	Northern arrowwood	FACW
Vitus labrusca	Fox grape	FACU

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Table F-2
Observed Fauna
NBH 2001 Wetland Delineation

Scientific Name	Common Name
FISH	
Morone saxatilis	Striped bass
MAMMALS	
Marmota monax	Woodchuck
BIRDS	
Agelaius phoeniceus	Red-winged blackbird
Anas platyrhynchos	Mallard
Ardea alba	Great egret
Ardea herodias	Great blue heron
Anas platyrhynchos	Mallard
Anas rubripes	American black duck
Branta canadensis	Canada goose
Butorides virescens	Green heron
Caldris sp.	Unidentified peeps
Cardinalis cardinalis	Northern cardinal
Cathartes aura	Turkey vulture
Ceryle alcyon	Belted kingfisher
Corvus brachyrhynchos	American crow
Cyanocitta cristata	Blue jay
Cygnus olor	Mute swan
Dumetella carolinensis	Gray catbird
Egretta thula	Snowy egret
Larus argentatus	Herring gull
Larus atricilla	Laughing gull
Larus delawarensis	Ring-billed gull
Larus marinus	Great Black-backed gull
Mimus polyglottos	Northern mockingbird
Pandion haliaetus	Osprey
Phalacrocorax auritus	Double-crested cormorant
Sturnus vulgaris	European starlings
Tringa melanoleuca	Greater yellowlegs
Zenaida macroura	Mourning dove
	Unidentified sparrow
INVERTEBRATES	
Acrosternum hilare	Green stink bug
Adalia bipunctata	Two-spotted lady beetle
Agelenopsis naeria	Funnel-web grass spider
Argiope aurantia	Black-and-yellow garden spider
Crassotrea virginica	Eastern oyster
Geukensia demissa	Ribbed mussel
Gryllus pennsylvanicus	Field cricket
Limulus polyphemus	Atlantic horseshoe crab
Littorina littorea	Common periwinkle
Mantis religiosa	Praying mantis
Mercenaria mercenaria	Northern quahog
Mya arenaria	Soft-shelled clam
Philaenus spumaris	Meadow spittlebug
Uca pugilator	Sand fiddler (crab)

Table F-3

Preliminary Potential Wetland Dependent Species Occurring in the Project Area Based on WEThings Assessment (Whitlock et al., 1994)

Common Name	Scientific Name
MAMMALS	
Star-nosed mole	*Condylura cristata*
Common muskrat	*Ondatra zibethicus*
Mink	*Mustela vison*
Masked shrew	*Sorex cinereus*
Smoky shrew	*Sorex fumeus*
Southern bog lemming	*Synaptomys cooperi*
Meadow jumping mouse	*Zapus hudsonius*
Raccon	*Procyon lotor*
Ermine	*Mustela erminea*
White-tailed deer	*Odocoileus virginianus*
REPTILES	
Spotted turtle	*Clemmys guttata*
Painted turtle	*Chrysemys picta picta + C. p. marginata*
Common snapping turtle	*Chelydra serpentina serpentina*
Northern diamonback terrapin	*Malaclemys terrapin terrapin*
AMPHIBIANS	
Blue-spotted salamander complex	*Ambystoma laterale + A. platineum*
Red-spotted newt	*Notophthalmus viridescens viridescens*
Eastern spadefoot toad	*Scaphiopus holbrookii*
Northern spring peeper	*Pseudacris crucifer crucifer*
Pickerel frog	*Rana palustris*

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