## Appendix C

### **Natural Resources Report Supporting Documentation**

This appendix contains the previous natural resources assessment for the Charleston Mixed Use Development Site, the 2013 wetland delineation report, and agency correspondence that were referenced in Chapter 4.8 Natural Resources. Materials within this appendix consist of following three attachments:

- Attachment A Final Report: Natural Resources Assessment at Charleston, Staten Island
- Attachment B Wetland Delineation Report
- Attachment C Vernal Pool Survey
- Attachment D Agency Correspondence

#### ATTACHMENT A

FINAL REPORT: NATURAL RESOURCES ASSESSMENT AT CHARLESTON, STATEN ISLAND

ATTACHMENT B

WETLAND DELINEATION REPORT

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## Charleston Mixed Use Development Site Wetland Delineation Report

# July 2013



**Prepared For** 

New York City Economic Development Corporation

Prepared by



November 7, 2012 20 Exchange Place

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#### 1.0 Introduction

#### 1.1 Purpose of Study

The purpose of this investigation was to provide data regarding an identification of the extent of US Army Corps of Engineers (Corps) jurisdiction ("waters of the United States") for the Charleston Mixed-Use Development Site in Staten Island (Richmond County), New York (**Figure C-1**). The wetland delineation was performed as part of a larger site-wide investigation for the project proposed by the New York City Economic Development Corporation (EDC).

The determination of the extent of waters of the United States was conducted in accordance with the requirements of the Corps wetlands delineation method contained in the 1987 *Corps of Engineers Wetlands Delineation Manual* (1987). As per the guidelines set forth in the 1987 Manual, a 'routine' wetland delineation was conducted in July 2012. Also, adjacent to the project site, there are areas mapped by New York State Department of Environmental Conservation's (NYSDEC) as jurisdictional wetlands. The NYSDEC investigated these wetlands and confirmed their delineation in December 2012.

#### 1.1 Site Identification

The Development Area is located in southwest Staten Island. The area is bordered to the west by Arthur Kill Road and commercial developments, to the south by commercial developments and Bricktown Way/Mohr Street. The east border of the area consists of parking lots associated with a shopping center, although the northeast portion of the area borders an environmental Conservation Area (part of the Project Area). The northern portion of the Development Area is bordered by Englewood Avenue. In the extreme northeast portion of the Development Area, the area encompasses a small dirt road (hereafter referred to as the corridor road) that separates the Conservation Area to the south and Clay Pit Ponds State Park Preserve to the north.

The Development Area is generally wooded, with several open grassy areas. No permanent surface water features occur in the area; although the remnants of two man-made reflecting ponds occur in the area. Mill Creek a north-south flowing waterbody occurs in the Conservation Area.

#### 1.2 Regulatory Agency Mapped Wetlands

Preliminary investigations to determine the extent of freshwater wetlands in the area included review of the following:

- USFWS National Wetlands Inventory (NWI) Online Mapper; and
- NYSDEC Regulatory Freshwater Wetlands Maps.

#### 1.3.1 National Wetland Inventory Maps

National Wetland Inventory (NWI) maps, prepared by the US Fish and Wildlife Service (USFWS), show the approximate configuration, location, and type of wetlands found within a given area of coverage. The NWI maps are prepared primarily by conventional aerial photo interpretation (stereoscopic analysis) of high-altitude aerial photography (1:80,000 black and white). The map notes state:

"... there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed, on-theground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation... No attempt was made to define the limits of proprietary jurisdiction of any federal, state or local government ..."

The User Notes for National Wetlands Inventory Maps (US Department of the Interior, 1994) caution: "Maps should therefore be used to locate the presence of wetlands and <u>not</u> [emphasis added] to identify precise boundaries between wetlands and uplands."

Because the NWI maps are limited in precision by their scale (1:24,000) and the identification method used, the boundaries of wetlands shown on the NWI maps need to be more precisely determined in the field. Commonly, small wetland areas, and, less frequently, large wetland areas are not shown on NWI maps.

As per the USFWS' National Wetland Inventory online mapper, two palustrine wetlands occur on or adjacent to the Development Area (**Figure C-2**). Palustrine wetlands include all non-tidal wetlands that are dominated by trees, shrubs, persistent emergent, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 percent Cowardin et. al., 1979).

The wetland polygons mapped on and/or immediately adjacent to the area are as the following:

- PFO1B Palustrine Forested, broad-leafed deciduous, Saturated
- PUBH Palustrine Unconsolidated Bottom, Permanently Flooded.

#### 1.3.2 New York State Wetland Maps

#### 1.3.2.1 NYSDEC Tidal Wetland Maps

The NYSDEC has mapped tidal wetlands adjacent to the tidal waters of the Atlantic Ocean, as portions of the Hudson River. New York State tidal wetland maps are based on aerial photography taken in 1974. Each tidal wetland map is given a six digit code that corresponds to its geographical position. The maps that cover the relevant portions of Staten Island's west shore were reviewed to determine the extent of mapped tidal wetlands within the project area. No tidal wetlands occur within and/or adjacent to the Development Area.



Figure C-1 Project Site Location



Figure C-2 NWI and NYSDEC Mapped Wetlands

#### 1.3.2.2 NYSDEC Freshwater Wetlands

NYSDEC regulates certain activities that occur in freshwater wetlands that are 12.4 ac (5 ha) or greater in size, or of significant local importance. NYSDEC classifies these significant local wetlands as Class I through IV, depending on their ecological value. Class I wetlands are the most valuable as they may provide habitat for threatened and endangered species, or are the source of or are adjacent to drinking water sources. Only two NYSDEC classified freshwater wetlands were identified near the Development Area:

- Wetland AR-11 is a Class II wetland located along Englewood Avenue in the northeast portion of the Development Area.
- Wetland AR-27 is a Class I wetland located along Mill Creek south of the corridor road where Englewood Avenue is to be extended eastward to Veterans Road West.

Delineated Wetlands B and C (see next chapter) identify the boundaries of Wetland AR-11and AR-27 in and near the corridor road. The wetland delineation was field reviewed by NYSDEC in September 2012 and approved by NYSDEC in a letter dated December 5, 2012.

#### 1.4 Topography, Geology, and Soils

#### 1.4.1 Topography

Elevations in the area vary between 38 and 127 feet above mean sea level (AMSL). The highest elevations occur in the west-central portions of the Development Area. Most slopes in the area are less than 2 percent; although steep slopes are encountered along the periphery of the area. Evidence of previous earthmoving activities is present in the area. Artificially created reflecting ponds, temporary roadways, pathways, etc. were documented in the area.

#### 1.4.2 Geology

The geology of the Development Area is largely dominated by materials deposited during the last Ice Age. During the last Ice Age, the southern boundary of the glacier is represented by the terminal moraine, a line of undulating hills with minor steep slopes. The moraine crosses through Staten Island. After deglaciation, the moraine was covered by glacial till depositions – a layer of loose unconsolidated, poorly sorted material. No outcrops of bedrock were observed on site.

#### 1.4.3 Soils

The New York City Reconnaissance Soil Survey was reviewed to determine the mapped soils within the site. Review of the soil survey indicates that four mapped soil series occur on site (**Figure C-3**).

Foresthills-Greenbelt-Pavement & buildings complex, 0 to 8 percent slopes: Nearly level to gently sloping areas that have been filled with natural soil materials; a mixture of anthropogenic soils that vary in depth of fill, with more than 15 percent impervious pavement and buildings covering the surface. This soil type was mapped only on a small portion of the southern boundary of the Development Area.

Wethersfield-Foresthills-Pavement & buildings complex, 8 to 15 percent slopes: Strongly sloping areas of till plains and hills that have been partially filled for residential use and cemeteries; a mixture of red till soils and anthropogenic soils, with more than 15 percent impervious pavement and buildings covering the surface; located in Staten Island. This soil series was mapped as occurring in the northwest and west portion of the Development Area.

Wethersfield-Ludlow complex, 8 to 15 percent slopes: Strongly sloping to moderately steep areas of till plains and hills, relatively undisturbed and mostly wooded; a mixture of well drained and moderately well drained soils developed in red till; located in Staten Island. This soil type was mapped only along the eastern boundary of the Development Area.

Wethersfield-Ludlow-Wilbraham complex, 0 to 8 percent slopes: Nearly level to gently sloping areas of till plains, relatively undisturbed and mostly wooded; a mixture of well drained, moderately well drained, and poorly drained soils developed in red till; located in Staten Island. This soil type occurs throughout the overwhelming majority of the Development Area.

A wide variety of soil types were observed in the Development Area (e.g., silty sand, silty clay loam, clay, etc.). Immediately north of the site is Clay Pit Ponds State Park Preserve, a site of former clay excavation for brick and earthen wares. As the name suggests, the soils in the area can have a high clay content. During the wetland delineation (See subchapter 3.2), soil texture and color varied considerably. Soils had high clay content and were influenced by red parent material. Often the wetlands formed in low depressions that allowed for the collection and retention of rainwater.

#### Figure C-3 Mapped Soils



#### 2.0 Wetlands Delineation

The Corps regulates "waters of the United States", pursuant to Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344) (hereinafter referred to as Section 404). The term "waters of the United States" includes navigable lakes, rivers, streams, tributaries to navigable waters, all waters which are subject to the ebb and flow of the tide, interstate waters and tributaries. Waters of the United States also include wetlands adjacent to any of the above and <u>all</u> other waters of the US not identified above, such as isolated wetlands and lakes, intermittent streams and other waters, the destruction of which could affect interstate or foreign commerce.

The interpretation of interstate commerce is broad and extends to waters that are presently used, or have been used in the past, or may be susceptible for use by interstate or foreign travelers for recreation, waters from which fish or shellfish are or could be taken and sold in interstate commerce or foreign commerce, waters which are or could be used by industries in interstate commerce and waters which are or could be used by industries in interstate commerce and waters which are or could be used by migratory birds or waterfowl. While the determination of wetlands is the focus of this report, it must be emphasized that waters in general are subject to regulation, since in all likelihood such waters would be considered "waters of the United States."

The Corps (Federal Register 1982) and the US Environmental Protection Agency (Federal Register 1980) jointly define wetlands as: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

From this definition of wetlands, the Corps developed a three-parameter method to evaluate areas of land for the existence of wetlands, based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. This method is described in the 1987 *Corps of Engineers Wetlands Delineation Manual* (Federal Manual). Generally, an area must exhibit all three parameters in order to be considered a jurisdictional wetland. A detailed field sampling methodology was developed and published in the Federal Manual, based on the following definitions of the three parameters:

<u>Hydrophytic Vegetation</u> - The sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present.

<u>Hydric Soil</u> - A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation.

<u>Wetland Hydrology</u> - Encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively.

A detailed description of these three parameters is provided in the following sections.

#### 2.1 Hydrophytic Vegetation

Hydrophytic vegetation is adapted to life in permanently or periodically inundated or saturated soils. There are five main plant indicator status categories, based on the plant species' frequency of occurrence in wetlands:

 Obligate wetland plants (OBL) occur almost always (estimated probability >99 percent) in wetlands under natural conditions, but may also occur rarely (estimated probability <1 percent) in nonwetland areas;

- Facultative wetland plants (FACW) usually occur in wetlands (estimated probability >67-99 percent), but occasionally are found in nonwetlands (estimated probability 1-33 percent);
- Facultative plants (FAC) are equally likely to occur in wetlands or nonwetlands (estimated probability 33-67 percent);
- Facultative upland plants (FACU) usually occur in nonwetlands (estimated probability >67-99 percent), but occasionally are found in wetlands (estimated probability 1-<33 percent); and
- Upland plants (UPL) occur rarely (estimated probability <1 percent) in wetlands, but occur almost always (estimated probability >99 percent) in nonwetlands.

The three facultative categories are subdivided by "+" and "-" modifiers. FAC+ species, for example, have a greater probability of occurring in wetlands than FAC species, while FAC- species have a lower estimated probability of occurring in wetlands than FAC species.

An area is considered to have hydrophytic vegetation when, under normal circumstances, more than 50 percent of the dominant species are OBL, FACW, or FAC species. For this report a specific species indicator status was based upon the "United State Department of Agriculture's Natural Resource Conservation Services Plant Data Base, 2003." Additional indicators of wetland vegetation include:

- Observation of plant species growing in areas of prolonged inundation and/or soil saturation;
- Morphological adaptations;
- Information from technical literature;
- Physiological adaptations; and
- Reproductive adaptations.

The dominant species in the plant community at the site were determined and categorized as to their likelyhood to occur in wetlands (e.g., OBL, FACW, etc.).

Observation points were selected to be representative of the plant communities present in the wetland and adjacent upland area. At each observation point, dominant plant species were identified and their relative abundance was estimated. Dominant plant species were recorded for each of the observation points. The criteria used to determine dominance were basal area and/or estimated percent areal cover for trees, and percent areal cover for saplings/shrubs, herbs, and vines.

#### 2.2 Hydric Soils

Indicators of hydric soils can be placed into two categories: 1) soil series and phases on the national and state hydric soils lists; and 2) field indicators of hydric soils. In addition, direct evidence can be used such as the observation of ponding, flooding and saturation, taking into account factors such as the time of year and likely duration. Direct evidence may be the only indication in newly developing soils or in areas of recent change. The US Department of Agriculture (USDA), Soil Conservation Service (SCS), in conjunction with the National Technical Committee for Hydric Soils has developed national and state lists of hydric soils (NTCHS, 1991).

The Federal Manual has identified that the presence of any one of the following field identifiable factors may indicate that hydric soils are present:

Organic Soils contain a high amount of organic matter and water content;

**Histic Epipedon** is a layer of a mineral hydric soil between 8 to 16 inches in depth at or near the surface that is saturated for 30 consecutive days or more in most years and contains a minimum of 20 percent of organic matter when no clay is present or a minimum of 30 percent of organic matter when 60 percent or greater clay is present;

**Sulfidic materials** in mineral soils emit an odor of rotten eggs. The odor is produced by the presence of hydrogen sulfide. These odors are present in permanently saturated water logged soils with sulfidic material only a few inches from the soil surface. Sulfides are produced only in a reducing environment;

Aquic or peraquic moisture regimes in soils that are almost completely free of dissolved oxygen due to the presence and/or saturation of groundwater at the soil surface i.e., soils of tidal marshes and soils of closed, landlocked depressions that are fed by permanent streams;

**Reducing soil conditions** (e.g. black anoxic soil) occur when soils have been saturated for long or very long durations of time;

**Gleyed, low chroma or low chroma mottled soils** refer to the coloration of hydric soils. The colors of various soil components are often the most diagnostic indicator of soils. Gleyed soils or gray-colored soils develop when anaerobic conditions result in pronounced chemical reduction of iron, manganese, and other elements, thereby producing a gray soil colors. Mottled means "marked with spots of contrasting color." Soils that have brightly colored mottles and a low matrix chroma are indicative of a fluctuating water table;

**Iron and/or manganese concretions** less than 0.07 in (2 mm) in diameter occurring within 3 in (7.5 cm) of the surface are evidence that the soil is saturated for long periods near the surface; and

Coarse textured soils with:

- a) High organic matter content in the surface horizon,
- b) Dark vertical streaking of subsurface horizons by organic matter; and/or
- c) Wet spodosols.

Detailed investigations were made at each observation point to determine if hydric soils were present. Soil pits were dug to depths ranging from 11 in to 20 in. The field analysis included the evaluation of soil colors, stratification and textures. In addition, particular attention was also given to those properties that identify soils as hydric. At a depth of 10 inches, the soil color was analyzed (using the Munsell color chart). The use of the color chart is employed to determine the chroma of the soil. The presence of gleyed or mottled soil coloring below a depth of 10 inchesor the A horizon (whichever is shallower) indicates the presence of hydric conditions. Additional soil investigations were made between observation points as necessary to assist in locating the wetland/upland boundary.

#### 2.3 Hydrology

Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. The Federal Manual discusses hydrology in terms of a percent of the growing season when an area is wet. Generally speaking, areas which are seasonally inundated and/or saturated to the surface for more than 12.5 percent of the growing season are wetlands. Areas saturated to the surface between 5 percent and 12 percent of the growing season are sometimes wetlands and sometimes uplands. Areas saturated to the surface for less than 5 percent of the growing season are non-wetlands. The length of time an area is wet for the hydrology criterion is based on consecutive days during the growing season.

The hydrology parameter may be quite evident (i.e., overbank flooding), or it can be difficult to observe. In contrast to the vegetation and soil parameters, the hydrology parameter has much more spatial and temporal variation, making the determination of wetland boundaries generally impracticable on the basis of the hydrology parameter alone. Hydrologic indicators are useful in confirming that a site with hydrophytic vegetation and hydric soils still exhibits hydrological conditions typically associated with such vegetation and soils.

Hydrologic indicators associated with wetlands can be based on recorded data and/or field data. Recorded data can be obtained from tide gauges, stream gauges, flood predictions, historical data (i.e., aerial photographs and soil surveys) and piezometers. Field data include the following characteristics:

- Visual observation of inundation;
- Visual observation of soil saturation;
- Water marks;
- Drift lines;
- Sediment deposits;
- Surface scouring; and,
- Wetland drainage patterns.

In addition, the March 1992 guidance issued by the Office of the Chief of Engineers allows use of two or more secondary indicators, including: oxidized root channels; water-stained leaves; local soil survey data; the FAC-neutral test; and "other" (to be explained by the delineator).

The presence or absence of wetland hydrology was assessed at each observation point and at several additional points along each of the wetland boundaries. Any evidence of hydrological modifications was noted. Features observed include inundation, depth to saturated soil, matted and stained leaf litter, drift lines, buttressed tree trunks, shallow rooting, surface scour and sediment deposition.

#### 2.4 US Army Corps of Engineers Jurisdiction

The Corps has federal jurisdiction of tidal wetlands pursuant to Section 10 of the Rivers and Harbors Act (hereinafter referred to as Section 10). Section 10 was enacted March 3, 1899 (33 USC 403). Section 10 prohibits the unauthorized obstruction or alteration of any navigable water of the United States. Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

As defined in 33 CFR 329.12(a)(2), in coastal areas, the shoreward limits of the Corps' jurisdiction under Section 10 extends to the line on the shore reached by the plane of the mean (average) high water. Jurisdiction extends to the edge of all US tidal waterbodies, even though portions of the waterbody may be extremely shallow, or obstructed by shoals, vegetation, or other barriers. Marshlands and similar areas are thus considered "navigable in law", but only so far as these areas are subject to inundation by the mean high waters.

As defined in 33 CFR 328.4(b), under Section 404 of the Clean Water Act (hereinafter referred to as Section 404), the landward limit of the Corps' jurisdiction in tidal waters extends to the high tide line. The term "high tide line" means the line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm (33 CFR 328.3(d)). When adjacent non-tidal waters of the US are present, the Corps' jurisdiction under Section 404 extends to beyond the line of spring high tide line (SHTL).

#### 3.0 Results and Discussion

#### 3.1 Identified Species

**Table C-1** below identifies the species that were identified in the wetlands and uplands during the wetland delineation. The table identifies the species per vegetative strata and provides the wetland indicator status. Plants and their indicator status were identified per the United States Department of Agriculture (USDA) Plants Database (USDA, 2012).

Strata	Common Name	Scientific Name	Indicator
Т	Red maple	Acer rubrum	FAC
Т	River birch	Betula nigra	FACW
Т	Gray birch	Betula populifolia	FAC
Т	Green ash	Fraxinus pennsylvanica	FACW
Т	Sweetgum	Liquidambar styraciflua	FAC
Т	Cottonwood	Populus deltoides	FAC
Т	Pin oak	Quercus palustris	FACW
Т	Willow	Salix sp.	NI
Т	Sassafras	Sassafras albidum	FACU-
S/S	Baccharis	Baccharis halmnifolia	FACW
S/S	Buttonbush	Cephalanthus occidentalis	OBL
S/S	Russian olive	Elaeagnus angustifolia	FACU
S/S	Lowbush blueberry	Vaccinium angustifolium	FACW-
S/S	Highbush blueberry	Vaccinium corymbosum	FACW-
S/S	Southern arrowwood	Viburnum dentatum	FAC
V	Virginia creeper	Parthenocissus quinquefolia	FACU
V	Fox grape	Vitis labrusca	FACU
V	Wisteria	Wisteria sp.	NIS
Н	Red top grass	Agrostis gigantea	NI
Н	Water plantain	Alisma subcordatum	OBL
Н	Dogbane	Apocynum androsaemifolium	NL
Н	Mugwort	Artemisia vulgaris	NL
Н	Brome	Bromus sp.	NIS
Н	Broom sedge	Carex scoparia	FACW
Н	Wool grass	Cirpus cyperinus	FACW+
Н	Umbrella sedge	Cyperus	NL
Н	Water purslane	Didiplis diandra	OBL
Н	Spikerush	Eleocharis obtusa	OBL
Н	Fuscue grass	Gramineae Family	NIS
Н	Timothy grass	Gramineae Family	NIS
Н	Canadian rush	Juncus canadensis	FACW
Н	Soft rush	Juncus effusus	FACW+
Н	Path rush	Juncus tenuis	FAC-
Н	Rice cutgrass	Leersia oryzoides	OBL
Н	Birdfoot trefoil Lotus corniculatus		FACU
Н	Common reed	Phragmites australis	FACW
Н	Reed canary grass Phalaris arundinacea		FACW+
Н	English plantain	Plantago major	NL

# Table C-1Species Identified in the Area

Strata	Common Name	Scientific Name	Indicator
Н	Pennsylvania smartweed	Polygonum pensylvanicum L	FACW
Н	Curly dock	Rumex crispus	FACU
Н	Bull rush	Scirpus atrovirens	OBL
Н	Green Brier	Smilax rotundifoloa	FAC
Н	Canada goldenrod	Solidago canadensis	FACU
Н	Rough leaf goldenrod	Solidago rugosa	FAC
Н	Goldenrod	Solidago sp.	NIS
Н	Slender leaf goldenrod	Solidago tenuifolia	FAC
H/V	Poison ivy	Toxicodendron radicans	FAC
Notes:			
T – tree, S/S – shrub/scrub, V – vine, H – herbaceous, and H/V – herbaceous/vine			

#### **Delineated Wetlands**

Larger wetlands on site are labeled as wetlands A through HA are Wetlands that start with the letter "N" Are very small parcels that often formed within the tire ruts and other small depression within on onsite trails and access ways. Many of the wetlands on site were delineated under atypical conditions due to previous anthropogenic disturbance and/or the presence of red parent material in the soils.

Many of the delineated wetlands are less than 0.01 acres in size. **Table C-2** identifies each wetland's acreage and species that were identified in each wetland and the surrounding upland. **Figure C-4** identifies the locations of the delineated wetlands on site. Wetland Data Sheets are provided in **Attachment C-1**.



Figure C-4 Delineated Wetlands

#### Table 2

Wetland	Acreage	Species Identified in Wetland	Species in Adjacent Upland
А	0.136	rice cut grass Pennsylvania smartweed water purslane	sassafras pin oak grey birch smilax
В*	0.239	red maple sweet gum pin oak river birch green brier	green brier goldenrod
C*	0.239	red maple green ash Pennsylvania smartweed	green brier goldenrod
D	0.024	soft rush common reed flat top goldenrod umbrella sedge spike rush path rush	Canada goldenrod path rush grasses slender leaf goldenrod broom sedge flat top goldenrod
E	0.126	soft rush water purslane path rush slender leaf goldenrod rough stem goldenrod spike rush plantain common reed	English plantain red top clover grasses path rush birdsfoot trefoil chicory
F	0.030	green brier gray birch pin oak highbush blueberry	green brier pin oak gray birch
G	0.017	gray birch pin oak highbush blueberry slender leafed goldenrod dark green bulrush	gray birch greenbrier low bush blueberry grasses (Andropogon sp.) path rush
н	0.035	soft rush common reed wool grass path rush willow	brome mugwort cottonwood seedlings
НА	0.006	soft rush common reed wool grass path rush flat top goldenrod	mugwort brome flat top goldenrod cottonwood (seedlings)
NA**	0.040	pin oak green brier arrowwood soft rush willow	pin oak maple green brier
NB	0.009	smilax pin oak soft rush arrowwood	grasses goldenrod mugwort

#### Species Identified in Wetland and Upland Observation Points

Wetland	Acreage	Species Identified in Wetland	Species in Adjacent Upland
		willow	
NC	0.009	poison ivy Pennsylvania smartweed smilax pin oak	wisteria Virginia creeper smilax pin oak
ND	0.004	soft rush common reed	grasses goldenrod mugwort
NE	0.002	curly dock soft rush broom sedge	grasses Canada goldenrod
NF	0.004	soft rush common reed spike rush	gray birch goldenrod mugwort
NG	0.008	pin oak red top soft rush	pin oak green brier grases
NH	0.018	rough stem goldenrod lance leaf goldenrod umbrella sedge sweetgum (seedlings) wool grass gray birch sedges spike rush red top green brier common reed	gray birch green brier path rush lance leaf goldenrod broom sedge cinquefoil
NI**	0.008	arrowood highbush blueberry willow pin oak aspen button bush green brier	path rush green brier goldenrods
NJ	0.009	umbrella sedge common reed soft rush spike rush	smilax sumac
NK	0.005	spike rush umbrella sedge	path rush
NL	0.002	soft rush spike rush umbrella sedge path rush	path rush Canada goldenrod grasses
NM	0.023	soft rush umbrella sedge spike rush slender leaf goldenrod sycamore	smilax gray birch slender leaf goldenrod rough stemmed goldenrod
NN	0.008	soft rush	plantain grasses
NO	0.036	soft rush wool grass goldenrods	English plantain red top clover grasses path rush birdsfoot trefoil gray birch

Wetland	Acreage	Species Identified in Wetland	Species in Adjacent Upland
NP**	0.007	soft rush	path rush
NQ**	0.007	dark green bulrush path rush	path rush solidago sp grasses.
NR	0.007	gray birch soft rush goldenrod woolgrass	grey birch path rush
NS	0.011	dark green bulrush wool grass soft rush common reed	
NT	0.007	greenbrier gray birch pin oak	greenbrier gray birch sassafras
NU	0.004	wool grass soft rush goldenrod	path rush
NV	0.002	dark green bulrush soft rush	path rush
NW	0.017	soft rush dog bane reed canary grass wool grass common reed	brome path rush timothy grass goldenrod

Bold text indicates dominant species

Notes: Wetland continues outside of the project area.

\*Species identified for a portion of the wetland line adjacent to road embankment.

\*\* At the time of the delineation, the wetland consisted of over 85 percent bare saturated ground. The wetland was located in an access trail or road and vegetation only grew along the edge of the wetlands

Wetland A- Wetland is located within a man-made pond (Photo 1). The wetland is dominated by rice cutgrass and Pennsylvania smartweed. Soils consisted of matrix colors of 7.5YR4/1 and 2.5Y5/2 with mottles of 10YR5/2 present at a depth of 5-12 inches. Additionally, oxidized rhizospheres were present from 10-15 inches. Texture was mainly silty sand. Indicators of hydrology consisted of evidence of a high water table, saturation, and the presence of oxidized rhizospheres on living roots.

Wetland B – Wetland is located at the south edge of a NYSDEC-regulated wetland located in Clay Pits Pond Park (Photo 2). Wetland boundary is demarcated by increase in elevation associated with a road embankment. Wetland B is dominated by red maple, sweetgum, pin oak, river birch, and smilax. Soils consisted of matrix color 2.5YR3/1, 3/4, and 4/2, as well as 7.5YR5/6 at deepest depths (16+ inches). Redoximorphic features of 2.5YR3/4 were only present from 7 to 16 inches. Texture was generally a loam or sandy loam. Red parent material was evident throughout the profile. Indicators of wetland hydrology included saturation at 2 inches, water table present at 16 inches, sparsely vegetated concave surface, as well at micro-topographic relief, and meeting the FAC-Neutral Test criteria. The transition area for the NYSDEC regulated freshwater wetland designated as AR-11 extends along the northern side of Englewood Avenue but does not extend into the Project Area according to the NYSDEC freshwater wetlands map for the Arthur Kill Quadrangle.

Wetland C – The wetland line demarcates the northern line of a NYSDEC-regulated wetland in the Conservation Area (Photo 3). This wetland is dominated by red maple and green ash. Sporadically in the wetland, small patches of Pennsylvania smartweed are present. The soil profile consisted of a matrix that varied with depth and included 7.5YR3/3, 2.5YR4/3, 5YR4/3, 4/2, and 3/2. Redoximorphic features were present at depths of 5-17 inches. Texture was primarily a silt loam. The presence of red parent material

was evident throughout the profile. Indicators of wetland hydrology present included saturation at 2 inches, sparsely vegetated concave surface, water-stained leaves and micro-topographic relief.

Wetland D – This wetland is a small depression at the base of a slope dominated by soft rush and wool grass and a small narrow linear drainage way dominated by common reed (Photo 4). The soil profile revealed matrix colors that varied from 10YR4/1, 7.5YR5/6, to 7.5YR4/4 at increasing depth. Redoximorphic features were present at depths of 2 through 12 inches. Soil texture was silty clay loam throughout. Oxidized rhizospheres were present within the first 2 inches. Indicators of wetland hydrology included micro-topographic relief, a positive FAC-Neutral Test, as well as the presence of oxidized rhizospheres on living roots.

Wetland E – Wetland is a large emergent wetland located adjacent to a horse pasture (Photo 5). The wetland is dominated by soft rush. Other species included spike rush, common reed Pennsylvania smartweed, water purslane, and goldenrods. Soil matrix color varied between 7.5YR3/2, 4/1 and 5/1. Redoximorphic features were present from 2 to 14 inches. Soil texture was silty clay loam throughout. Indicators of wetland hydrology included water-stained leaves, oxidized rhizospheres on living roots, surface soil cracks, and drainage patterns.

Wetland F – Located within the wooded portion of the site, this wetland is dominated by dense growths of smilax, which covers approximately 95 percent of the wetland (Photo 6). Other species in the wetland include gray birch, pin oak, and high bush blueberry. The soil profile consisted of matrix colors that varied between 10YR2/1, 4/1, and 7.5YR5/1. Redoximorphic features were present from 1 to 16 inches. Soil texture was generally a silt loam or silty clay loam. Soils were saturated in the upper 10 inches and water stained leaves.

Wetland G – Small wetland associated with depression in a horse trail (Photo 7). Dominant vegetation is pin oak, grey birch, and highbush blueberry. The soil profile consisted of matrix colors varying between 7.5YR4/3, 4/4, and 5/3. Redoximorphic features were present throughout the profile. Texture was silt loam throughout. Indicators of wetland hydrology included surface water present at 1-2 inches, water-stained leaves, and drainage patterns.

Wetland H – Wetland is located within a man-made drainage feature (Photo 8). Wetland is dominated by soft rush and common reed. The soil profile consisted of matrix colors of 10YR3/2, 5YR3/2, and 7.5YR3/6. Redoximorphic features were present from 6 to 16 inches. Soil texture was generally a silt loam. Red parent material was evident throughout. Indicators of wetland hydrology included the presence of water-stained leaves, drainage patterns, and micro-topographic relief.

Wetland HA – Wetland is located within the same man-made drainage feature as wetland H (Photo 8). Wetland is dominated by soft rush and common reed. The soil profile within the wetland consisted of matrix colors of 5YR3/2 and 7.5YR3/2. Redoxiporphic features were present beyond 6 inches. The soil texture was silt loam with gravel and red parent material. Indicators of wetland hydrology included micro-topographic relief as well as a positive FAC-Neutral Test.

Wetland NA – Wetland is located within the remnants of an old gravel road (Photo 9). Wetland is very sparsely vegetated with pin oak, smilax, arrowwood, soft rush, and willow.

Wetland NB – This wetland consists of a low area in a former drainage way (Photo 10). Wetland vegetated and dominated by smilax, soft rush and poison ivy.

Wetland NC – Wetland is a small depression located in the corner of a junction of two onsite roads (Photo 11). Wetland is sparsely vegetated with Pennsylvania smartweed and smilax. The wetland is surrounded by large coniferous trees.

Wetland ND – Wetland is a small roadside drainage swale dominated by soft rush and common reed (Photo 12).

Wetland NE – Wetland is a small pit receiving runoff from an adjacent dirt road, wetland is sparsely vegetated with soft rush (photo 13).

Wetland NF – Wetland is a small depression within an on-site path dominated by soft rush (Photo 14).

Wetland NG – Located at the base of a slope, the wetland is confined by tire ruts and dominated by pin oak, Canada rush and soft rush (Photo 15).

Wetland NH – The wetland is an isolated depression located with a successional wooded area (Photo 16). The wetland is dominated by rough leaf goldenrod, arrowwood, umbrella sedge, and gray birch.

Wetland NI – Wetland is a bare depression ringed by arrowwood, highbush blueberry, willow, pin oak buttonbush, and smilax (photo 17).

Wetland NJ – Wetland is a small depression that is largely unvegetated. Observed species included umbrella sedge, common reed, soft rush, and spikerush (Photo 18).

Wetlands NK, NL, NM, NN, and NO occur in a parcel of land that is now a horse pasture. The site has been historically graded and cleared. Soils within the parcel vary considerably from 7.5YR 4/4 silty sands to 10YR 6/1 clays. These wetlands typically formed in shallow depressions.

Wetland NK – Wetland is a small depression within and access trail dominated by spikerush (Photo 19)

Wetland NL – Wetland consists of several tire ruts within a field. The wetland is dominated by soft rush, umbrella sedge, and slender leaf goldenrod (Photo 20).

Wetland NM – Located within the middle of a horse pasture, wetland NM is an emergent wetland dominated by soft rush, spike rush, slender leaf goldenrod and path rush (Photo 21).

Wetland NN – This is a small isolated wetland within a small depression adjacent to a horse pasture. The wetland was vegetated with soft rush and Pennsylvania smartweed (Photo 22).

Wetland NO – Wetland NO is similar to wetland E. The wetlands are separated by a small rise. No hydrologic connection between wetland NO and Wetland E was observed (Photo 23).

Wetland NP - This wetland is a small depression within a horse trail. Wetland sparsely vegetated with soft rush (Photo 24).

Wetland NQ – Wetland consists of tire ruts within a horse trail. Wetland sparsely vegetated with dark green bulrush (Photo 25).

Wetland NR – This isolated wetland is located in an access way. Wetland vegetated with gray birch, wool grass, and soft rush (Photo 26).

Wetland NS – Wetland largely consists of a series of deep ruts in access trail dominated by dark green bull rush, wool grass, soft rush, and common reed (Photo 27).

Wetland NT – Wetland is a small linear depression within a wooded area on site. Dominant vegetation included pin oak, gray birch, and smilax (Photo 28).

Wetland NU – Wetland NU is a small depression in an access trail delineated with only five wetland flags. Dominant vegetation was wool grass and soft rush (Photo 29).

Wetland NW - Wetland consists of a confined depression and is dominated by soft rush, dog bane, and reed canary grass (Photo 30).

AECOM			PHOTOGRAPHIC LOG
Photo No. 1	Date: July, 2012		
Descrip	tion:		
Wetland A – a man made pond that is periodically flooded with up to one foot of water.			

Photo No. 2	Date: July, 2012	
Description: Wetland B – A forested wetland parcel located in Clay Pit Ponds State Park Preserve.		

	AECO	MC	PHOTOGRAPHIC LOG
Photo No. 3	Date: July, 2012		
Descrip Wetland just sou Wetland forested the Con Area.	tion: I C – The is located th of I B. A I wetland in servation		

Photo No. 4	Date: July, 2012	
Descrip Wetlanc emerge located the nort of the D Area.	tion: d D – An nt wetland in a field in hern portion vevelopment	

AECOM		M	PHOTOGRAPHIC LOG
Photo No. 5 Descripti	Date: July, 2012		
Description: Wetland E – A large emergent wetland located in the northern portion of the Development Area. The wetland is approximately one foot lower in elevation than the surrounding uplands.			

Photo No. 6	Date: July, 2012	
Descript	ion:	
Wetland F – Located in the central portion of the Development Area, the emergent wetland was created by surface by drainage impounded by the presence of small berm and hummocks less than two feet in elevation.		

	AECO	PHOTOGRAPHIC LOG
Photo No. 7Date: July, 2012Description:Wetland G – Immediately south of the Wetland F, Wetland G largely consists of a depressional area within an unofficial internal path.		
Photo No. 8Date: December, 2012Description:Wetlands H and HA – located within a rip-rap lined drainage easement. Wetland H and HA are two discontinuous depressions dominated by hydrophytic vegetation.		<image/>



		PHOTOGRAPHIC LOG
Photo	Date:	
No.	December,	
10	2012	
Descrip	tion:	
Matlese a		
	INB - IS	
depress	ion within	
and imm	nediately	
adiacen	t to an	
onsite a	ccess way.	
	2	
1		

AECOM		MC	PHOTOGRAPHIC LOG
Photo No. 11 Descrip Wetland Small is depress at the in of two o	Date: July, 2012 tion: NC – olated ion located tersection nsite trails.		

Photo No. 12	Date: July, 2012	THE REAL
Description:		
Wetlanc small de located an onsit way.	I ND is a epression adjacent to e access	

AECOM		M	PHOTOGRAPHIC LOG
Photo No. 13 Descrip Wetland wetland small co trench. approxi wetland bounda	Date: July, 2012 tion: d NE – The is within a onfined The red line mates the ries.		
Photo No. 14 Descrip Wetland isolated within a access	Date: July, 2012 tion: d NF – small depression former road.		

AECOM		MC	PHOTOGRAPHIC LOG
Photo No. 15 Descrip Wetlanc small de located onsite h and a si wooded	Date: July, 2012 tion: NG – epression between an orse trail mall slope.		

Photo No. 16	Date: July, 2012	MARK SHE
Descrip	tion:	
Wetland isolated within a access	depression former road.	

AECOM			PHOTOGRAPHIC LOG
Photo No. 17 Descrip	Date: July, 2012 tion:		
isolated depression located at the junction of two onsite trails.			

Photo No. 18	Date: July, 2012			
Descript	tion: I NJ – ts of a small ade g pond.			
	AECO	MC	PHOTOGRAPHI	C LOG
--	--	----	-------------	-------
Photo No. 19 Descript	Date: July, 2012 tion:			
Wetlanc small de an on-si red line photogra identifie approxir boundar wetland	NK – A epression in te trail. The in the aph s the mate ries of the			



	AECO	MC	PHOTOGRAPHIC LOG
Photo No. 21 Descript	Date: July, 2012 tion:		
emerger confined artificial	nt wetland d by an berm.		



	AECO	MC	PHOTOGRAPHIC L	<u>.</u> OG
Photo No. 23 Descript	Date: July, 2012 tion:		1. 1.	
Wetlanc Confine wetland south of Wetlanc separate berm.	l NO – d emergent located Wetland E. ls are ed by a			

Photo No. 24	Date: July, 2012	
Descript Wetland a wet de within a trail.	tion: I NP - consists of epression n onsite	

	AECO	MC	PHOTOGRAPHIC LOG
Photo No. 25	Date: July, 2012		
Descrip Wetland a wet de within a (wetland to Wetla	tion: CONSISTS OF Pression n onsite trail d is similar and NP).		

Photo No. 26	Date: July, 2012	
Descrip Wetland small de wetland an onsit	tion: I NR – a epressional located in e access	
road.		

	AECO	MC	PHOTOGRAPHIC LOG
Photo No. 27	Date: July, 2012		
Descrip	tion:	the attack	T 14
Wetland wetland within th depress onsite tr artificial berm.	d NS - is confined ne sion of an rail and an ly created		

Photo No. 28	Date: July, 2012	
Descrip Wetland wetland betweer hummo several	tion: I NT – A epressional located n the cks of trees.	

	AECO	MC	PHOTOGRAPHIC LOG
Photo No. 29 Descrip Wetland depress ditch ad onsite tr	Date: July, 2012 tion: A NU – d is a small sion within a ljacent to an rail.		



### 3.2 Jurisdictional Determination

In January 2013, AECOM met with officials form the USACE for a jurisdictional determination of the delineated wetland lines. AECOM is currently awaiting the official correspondence from USACE; however, it is anticipated only Wetlands B, C, H, and HA will be determined as jurisdictional wetlands.

In September 2012, AECOM personnel met with an official from the NYSDEC for an inspection of the delineated wetland lines on site. In written correspondence, the NYSDEC indicated that Wetlands B and C are regulated by the state.

### 4.0 References

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National Technical Committee for Hydric Soils. 1991. *Hydric Soils of the United States,* (3rd edition). Misc. Publ. No. 1491. USDA. Soil Conservation Service. Washington, D.C.

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Attachment C-1

Wetland Data Sheets

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Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/10/12
Applicant/Owner:NYCEDC	State:	NY Sampling Point: A
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):Fla	t land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NWI	PUBh classification:
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u></u> (If no, ex	plain in Remarks.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal Circumst	ances" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain an	y answers in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> No Yes <u>X</u> No Yes XNo	Is the Sampled Area within a Wetland? Yes X No
Remarks: (Explain alternative proced	ures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
<u>x</u> High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
x Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
10	
Water Table Present? Yes X No Depth (inches): 10	
Water Table Present?       Yes X       No       Depth (inches):       10         Saturation Present?       Yes X       No       Depth (inches):       0	Wetland Hydrology Present? Yes <u>x</u> No
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       No Depth (inches): 0	Wetland Hydrology Present? Yes <u>x</u> No
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       0         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes X No Depth (inches): 10         Saturation Present?       Yes X No Depth (inches): 0         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:

Trop Stratum (Blot size: 30 feet )	Absolute	Dominant I	ndicator	Dominance Test worksheet:
<u>Thee Stratum</u> (Plot size. <u>60 1000</u> )	% Cover	<u>Species?</u>	Status	Number of Dominant Species
1		· ·		That Are OBL, FACW, or FAC: (A)
2		· ·		Total Number of Dominant
3		· ·		Species Across All Strata. (B)
4		·		Percent of Dominant Species 100 (A/B)
5		·		
6		· ·		Prevalence Index worksheet:
7		· ·		Total % Cover of:Multiply by:
		= Total Cove	r	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 feet )				FACW species x 2 =
1				FAC species x 3 =
2				FACU species X 4 =
3				$\begin{array}{c} \text{OPL species} \\ \text{Column Totals:} \\ \text{Column Totals:} \\ \text{(A)} \\ \text{(B)} \\ \end{array}$
4				
5.				Prevalence Index = B/A =
6.				Hydrophytic Vegetation Indicators:
7		·		1 - Rapid Test for Hydrophytic Vegetation
/:		- Total Cava		X 2 - Dominance Test is >50%
5 feet			1	3 - Prevalence Index is ≤3.0 <sup>1</sup>
<u>Herb Stratum</u> (Plot size: <u> </u>	80	D	OBL	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2 Polygonum pennsylcanicum	10	N	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3 Ludwigia palustris	1	N	OBL	<sup>1</sup> Indicators of hydric soil and wotland hydrology must
<u>.</u>	<u>.</u>			be present, unless disturbed or problematic.
4		· ·		Definitions of Vegetation Strata:
5		·		
6		·		<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
7				
8				and greater than or equal to 3.28 ft (1 m) tall.
9				Harb All herbaccous (non-woody) plants, recordlass of
10		. <u> </u>		size, and woody plants less than 3.28 ft tall.
11				Woody vines All woody vines greater than 3.28 ft in
12				height.
	91	= Total Cove	r	
Woody Vine Stratum (Plot size:)				
1				
2.				Hydrophytic Versetation
3.				Present? Yes <u>X</u> No
4				
		= Total Cove	r	
Remarks: (Include photo numbers here or on a separate	sheet.)		·	
	,			

SOIL	
------	--

Profile Desc	ription: (Describe	to the dep	th needed to docu	ment the i	ndicator	or confirm	the absence o	f indicators.)	
Depth	Matrix		Red	ox Feature	<u>s</u>				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks	
<u> </u>	7.5YR4/1	90	10YR5/2	10					
10.12	2.5Y5/2 2.5Y5/2	90	10YR5/2	10		 M	silty cand	ovidized rhizospheres present	
12-15	7.5VD4/1	100	1011(3/2				silty_cond		
	7.31K4/1							oxidized mizospheres present	
				·					
		<u> </u>							
				·					
				·					
<sup>1</sup> Type: C=Co	oncentration, D=Dep	eletion, RM	=Reduced Matrix, N	IS=Masked	Sand Gra	ains.	<sup>2</sup> Location:	PL=Pore Lining, M=Matrix.	
				o (	(0.0) (1.85				
Histosol	(A1)		Polyvalue Belo	ow Surface	(S8) ( <b>LR</b> F	RR,	2 cm Mu	ick (A10) ( <b>LRR K, L, MLRA 149B</b> )	
Black Hi	$A_2$		Thin Dark Surf	) iaco (SQ) (I		PA 1498)	5 cm Mu	alle Redux (A10) (LRR R, L, R)	
<u> </u>	en Sulfide (A4)		Loamy Mucky	Mineral (F	1) (I RR K	I)	5 cm Mucky Peat of Peat (S3) (LRR K, L, R) Dark Surface (S7) (LRR K L M)		
Stratified	d Lavers (A5)		Loamy Gleved	Matrix (F2	)	, _/	Dark Surface (S7) (LRR K, L, M) Polyvalue Below Surface (S8) (LRR K, L)		
Depleted	d Below Dark Surfac	e (A11)	X Depleted Matr	ix (F3)	,		Thin Dar	k Surface (S9) ( <b>LRR K. L</b> )	
Thick Da	ark Surface (A12)	- ()	Redox Dark S	urface (F6)			Iron-Mar	nganese Masses (F12) (LRR K. L. R)	
Sandy M	luckv Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmont Floodplain Soils (F12) ( <b>LRR K, L, R</b> )		
Sandy C	Gleved Matrix (S4)		Redox Depres	sions (F8)	.,		Mesic Sr	podic (TA6) ( <b>MLRA 144A. 145. 149B</b> )	
Sandy R	Redox (S5)			( )			Red Par	ent Material (F21)	
Stripped	Matrix (S6)						Very Sha	allow Dark Surface (TF12)	
Dark Su	rface (S7) (LRR R, I	MLRA 149	<b>B</b> )				Other (E	xplain in Remarks)	
<sup>3</sup> Indicators o	f hydrophytic vegeta	tion and we	etland hydrology mu	ist be prese	ent, unless	disturbed	or problematic.		
Restrictive I	Layer (if observed):	:							
Type: Depth (in	ches).						Hydric Soil P	resent? Yes X No	
Bomarke:									

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/9/12
Applicant/Owner: NYCEDC	State:	NY Sampling Point: <u>A (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Flat la	and Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex	NWI d	classification:n/a
Are climatic / hydrologic conditions on the site typical for this time c	of year? Yes <u>x</u> No <u>(</u> (If no, exp	lain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circumsta	nces" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If needed, explain any	answers in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No YesNo_x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes No x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	res here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?     Yes     No     x     Depth (inches):       Saturation Present?     Yes     No     x     Depth (inches):       (includes capillary fringe)     Yes     No     x     Depth (inches):	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Ves       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present?         Yes         No x           tions), if available:
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Ves       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Image: No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x

· ·	Absolute	Dominant	Indicator		•	
Tree Stratum (Plot size: <u>30'</u> )	<u>% Cover</u>	Species?	Status	Dominance Test worksheet:		
1. <u>Sassafras albidum</u>	15	D	FACU	That Are OBL, FACW, or FAC	3	(A)
2. Quercus palustris	10	D	FACW	Total Number of Dominant		
3. Betual populifolia	10	D	FAC	Species Across All Strata:	4	(B)
4				Percent of Dominant Species		
5.				That Are OBL, FACW, or FAC	75	(A/B)
6.						
7.				Total % Cover of:	: Multiply by:	
	35	= Total (	Cover	OBL species	<u>v 1 =</u>	
Sapling/Shrub Stratum (Plot size: 15)		- 101010	00001	FACW species	x 2 =	-
				FAC species	x 3 =	_
1				FACU species	x 4 =	-
2				UPL species	x 5 =	_
3				Column Totals:	(A)	(B)
4	<u> </u>			Prevalence Index = B/A	=	
5						
6				Hydrophytic Vegetation Indi	cators:	
7				1 - Rapid Test for Hydroph	nytic Vegetation	
		= Total Co	/er	<u>x</u> 2 - Dominance Test is >5	00%	
Herb Stratum (Plot size: 5' )				3 - Prevalence index is so	ions <sup>1</sup> (Provido supr	orting
1				data in Remarks or on	a separate sheet)	orung
2				Problematic Hydrophytic V	/egetation <sup>1</sup> (Explair	ו)
3				<sup>1</sup> Indicators of hydric soil and w	etland hydrology m	ust
4				be present, unless disturbed o	r problematic.	
5				Definitions of Vegetation Str	ata:	
6				Tree – Woody plants 3 in. (7.6	cm) or more in dia	meter
7				at breast height (DBH), regard	less of height.	
8				Sapling/shrub – Woody plants	s less than 3 in. DB	н
9			- <u></u>	and greater than or equal to 3.	.28 ft (1 m) tall.	
10				Herb – All herbaceous (non-woo	dy) plants, regardless	of
10				size, and woody plants less than 3	3.28 ft tall.	
10			- <u></u>	Woody vines – All woody vines	greater than 3.28 ft ir	l
12				height.		
		= Total Cov	ver			
Woody Vine Stratum (Plot size: 15' )						
1. <u>Smilax rotundifolia</u>	50	D	FAC	Hydrophytic		
2				Vegetation		
3				Present? Yes <u>x</u>	No	
4						
	50	= Total (	Cover			
Remarks: (Include photo numbers here or on a separate	sheet.)			•		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redo	x Features	<u>i</u> ,			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	7.5YR3/2	100	,	<u> </u>			Loam	
6-12	10YR4/4	100					Loam	
12+								Auger refusal, unidentified odor.
		· ·						
		· ·			·			
					<u> </u>			
		· ·		·				
		· ·			<u> </u>			
		· ·			<u> </u>			
<sup>1</sup> Type: C=Co	ncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location	n: PL=Pore Lining, M=Matrix.
Hydric Soil Ir	ndicators:						Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histosol (	(A1)		Polyvalue Belov	v Surface	(S8) ( <b>LRF</b>	RR,	2 cm N	Muck (A10) (LRR K, L, MLRA 149B)
Black His	tic (A3)		Thin Dark Surfa	ce (S9) (I	RR R MI	RA 149R)	Coast	Mucky Peat or Peat (S3) (IRR K, L, R)
Hydroger	n Sulfide (A4)		Loamy Mucky N	lineral (F1	) (LRR K	, L)	Dark S	Surface (S7) ( <b>LRR K, L, M</b> )
Stratified	Layers (A5)		Loamy Gleyed I	Matrix (F2)	)	. ,	Polyva	alue Below Surface (S8) (LRR K, L)
Depleted	Below Dark Surface	e (A11)	Depleted Matri	x (F3)			Thin	Dark Surface (S9) (LRR K, L)
Thick Dai	rk Surface (A12)		Redox Dark Sui	face (F6)	7)		Iron-M	Anganese Masses (F12) (LRR K, L, R)
Sandy Mi	leved Matrix (S4)		Depleted Dark 3	ions (F8)	/)		Pleam Mesic	Spodic (TA6) ( <b>MI RA 144A 145 149B</b> )
Sandy Re	edox (S5)						Red P	Parent Material (F21)
Stripped	Matrix (S6)						Very S	Shallow Dark Surface (TF12)
Dark Surf	face (S7) ( <b>LRR R, N</b>	ILRA 149B	5)				Other	(Explain in Remarks)
<sup>3</sup> Indicators of	hydrophytic vegetat	tion and we	tland hydrology mus	t he prese	nt unless	disturbed	or problematic	c
Restrictive L	ayer (if observed):		and Hydrology mae					
Type:								
Depth (inc	hes):						Hydric Soil	I Present? Yes No_ X
Remarks:								

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Ric	hmond Sampling	Date: 7/10/12
Applicant/Owner: NYCEDC		State: <u>NY</u> Samplin	ng Point: <u>B</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Cha</u>	arleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none	e):	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex		NWI classification: PF	01
Are climatic / hydrologic conditions on the site typical for this time c	of year? Yes <u>x</u> No <u></u>	(If no, explain in Remarks.)	1
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal	Circumstances" present?	Yes <u>x</u> No
Are Vegetation, Soil , or Hydrology natural	ly problematic? (If needed, e	explain any answers in Ren	narks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks: (Explain alternative proced	Yes X Yes X Yes X dures here or in a se	No No No eparate report.)	Is the Sampled Area within a Wetland? If yes, optional Wetland S Problematic hydric soil indica	Yes X No te ID: or/Red parent material.	
HYDROLOGY					
Wetland Hydrology Indicators:			<u>S</u> (	econdary Indicators (minimum of	two required)
Primary Indicators (minimum of one is	s required; check al	ll that apply)		Surface Soil Cracks (B6)	

Finally indicators (initiation of one is required, check an triat apply)	
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
<u>x</u> Saturation (A3) <u>Marl Deposits (B15)</u>	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Livin	ng Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled	Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	<u>x</u> Microtopographic Relief (D4)
<u>x</u> Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Yes X No Depth (inches): 16	
	Watered Hydrology Present? Yes y No
Saturation Present? Yes X No 2 Depth (inches):	wettand Hydrology Present? fes <u>x</u> No
Saturation Present? Yes X No Z Depth (inches): (includes capillary fringe)	Weiland Hydrology Present? Tes <u>x</u> No
Saturation Present? Yes X No Z Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp	pections), if available:
Saturation Present? Yes X No 2 Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp	pections), if available:
Saturation Present?       Yes X No Z Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:
Saturation Present? Yes X No Z Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp Remarks:	pections), if available:
Saturation Present?       Yes X No Z Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:
Saturation Present?       Yes X No Z Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:
Saturation Present?       Yes X No Z Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:
Saturation Present?       Yes X No Z Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:
Saturation Present?       Yes X No 2 Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:
Saturation Present?       Yes X No 2 Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:
Saturation Present? Yes X No Z Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp Remarks:	pections), if available:
Saturation Present? Yes X No Z Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp Remarks:	pections), if available:
Saturation Present?       Yes X No 2 Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	pections), if available:

20 foot	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>50 leet</u> )	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of Dominant Species
1. Acer rubrum	35		FAC	That Are OBL, FACW, or FAC: (A)
2. Liquidambar styraciflua	25	D	FAC	Total Number of Dominant
<sub>3.</sub> Betula nigra	5	Ν	FACW	Species Across All Strata: (B)
4				Demont of Dominant Species
				That Are OBL, FACW, or FAC: 100 (A/B)
5				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	65	= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 feet )				FACW species x 2 =
1				FAC species x 3 =
	·			FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				
5.				Prevalence Index = B/A =
6	·			Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
/				$X_2$ - Dominance Test is >50%
		= Total Cov	er	$\frac{1}{2} = \frac{1}{2} = \frac{1}$
Herb Stratum (Plot size: 5 feet )				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1	<u> </u>			data in Remarks or on a separate sheet)
2				
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5.				Definitions of Vegetation Strata:
6				<b>Tree</b> – Woody plants 3 in (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
/				<b>C</b> entre (should be also to be a them 0 in DDU
8				and greater than or equal to 3.28 ft (1 m) tall.
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
11.				size, and woody plants less than 5.26 it tail.
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in
12				neight.
		= Total Cov	er	
Woody Vine Stratum (Plot size:)	-			
1. Smilax rotundifolia	2	<u>N</u>	FAC	
2				Hydrophytic Vogetation
3.				Present? Yes X No
1				
4	2			
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			

JUIL	S	Ο		
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Profile Desc	ription: (Describe	to the dep	oth needed to docum	nent the i	indicator	or confirm	the absence of	of indicato	rs.)	
Depth	Matrix		Redo	x Feature	s					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-2	2.5YR3/1	100					organic			
	2.5YR3/4	100					sandy loar	n		
7-16	2.5YR4/2	60	2.5YR3/4	40		Μ	loam			
16+	7.5YR5/6	100					silty sand	saturat	ed	
		·				<u> </u>				
		·				<u> </u>				
						. <u> </u>				
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM	=Reduced Matrix, MS	S=Masked	d Sand Gra	ains.	<sup>2</sup> Location:	PL=Pore L	ining, M=Ma	trix.
Hydric Soil	Indicators:		Dali valiva Dalav				Indicators 1	for Problem	natic Hydric	Soils":
Histosol Histic Er	(AT) Dipedon (A2)		Polyvalue Belov MLRA 149B)	v Surrace	(58) ( <b>LRF</b>	К К,	Coast F	uck (Ато) ( Prairie Redo	LRR R, L, MI 0x (A16) (LRF	LRA 149B) R K. L. R)
Black Hi	stic (A3)		Thin Dark Surfa	ice (S9) ( <b>I</b>	LRR R, MI	RA 149B)	5 cm M	ucky Peat c	or Peat (S3) (	LRR K, L, R)
Hydroge	en Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR K, L)			Dark Surface (S7) (LRR K, L, M)				
Stratified	d Layers (A5) d Bolow Dork Surfoo	o (A11)	Loamy Gleyed Matrix (F2)			Polyvalue Below Surface (S8) (LRR K, L)				
Thick Da	ark Surface (A12)	e (ATT)	<u>x</u> Depleted Matrix (F3) Redox Dark Surface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)				
Sandy M	lucky Mineral (S1)		Depleted Dark Surface (F7)				Piedmont Floodplain Soils (F19) (MLRA 149B)			
Sandy G	Bleyed Matrix (S4)		Redox Depress	ions (F8)			Mesic S	Spodic (TA6	) (MLRA 144	A, 145, 149B)
Sandy R	Redox (S5)						<u>x</u> Red P	arent Mater	ial (F21)	
Stripped	Matrix (S6)		-				Very Sł	hallow Dark	Surface (TF1	12)
Dark Su	rface (S7) (LRR R, N	MLRA 149	B)				Other (I	Explain in R	emarks)	
<sup>3</sup> Indicators o	f hydrophytic vegeta	tion and we	etland hydrology mus	t be prese	ent, unless	disturbed	or problematic.			
Restrictive I	Layer (if observed):									
Туре:									X	
Depth (ind	ches):						Hydric Soil I	Present?	Yes <u>^</u>	No
Remarks:										

Project/Site: Charleston Mixed Use Development	City/County: _	Richmond	Sampling D	July 2012 Date:
Applicant/Owner: NYCEDC		St	ate: Sampling	g Point: B Upland
Investigator(s): Rollino J	Section, Tow	nship, Range:		
Landform (hillslope, terrace, etc.):	Local relief (cond	ave, convex, none):	Flat Land	_ Slope (%):
Subregion (LRR or MLRA): MLRA 149B Lat:		Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex			n/a NWI classification:	
Are climatic / hydrologic conditions on the site typical for this time o	of year? Yes <u>x</u>	No (If no	o, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significat	ntly disturbed?	Are "Normal Circ	cumstances" present? Ye	es NoX
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, expla	in any answers in Remark	<s.)< td=""></s.)<>

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No x No x No x	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID:
Remarks: (Explain alternative proce	dures here or in a	separate repo	rt.)
Upland is a road embankment. Ve	rgetation has FAC	C species, no	evidence of hydrology.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled S	Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Yes <u> </u>	
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No X
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	ctions), if available:
-	
Remarks:	

	Absolute	Dominant I	ndicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)	<u>% Cover</u>	<u>Species?</u>	Status FAC	Number of Dominant Species
1Liguidambar strvaciflua	40	·	FACU	That Are OBL, FACW, or FAC: (A)
2. Populus grandidentata	25	·	FACU-	Total Number of Dominant 4
3				Species Across All Strata: (B)
4		·		Percent of Dominant Species 50
5		<u> </u>		That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	100+	= Total Cove	r	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 100 sq ft )				FACW species x 2 =
no trees				FAC species x 3 =
2				FACU species x 4 =
2	·			UPL species x 5 =
3	·			Column Totals: (A) (B)
4				Prevalence Index = B/A =
5				
6		·		Hydrophytic Vegetation Indicators:
7		·		1 - Rapid Test for Hydrophytic Vegetation
		= Total Cove	r	$^{-\infty}$ 2 - Dominance Test is >50%
Herb Stratum (Plot size: <u>1 m</u> )				$3 - \text{Prevalence index is } \leq 3.0$
1. Glechoma hedercea	4	D	FACU	data in Remarks or on a separate sheet)
2				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4.				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree Meedy plants 2 in (7.6 cm) or more in diameter
0				at breast height (DBH), regardless of height.
/		·		Continue Woods plants loss than 2 in DDU
8				and greater than or equal to 3.28 ft (1 m) tall.
9				Howh All hashaacous (non woody) plants recordlass of
10		·		size, and woody plants less than 3.28 ft tall.
11				Wardy rings All woods vince greater than 2.29 ft in
12				height.
	2	= Total Cove	r	
Woody Vine Stratum (Plot size: 10 sq ft )				
1 Smilax rotundifolia	10	D	FAC	
2				Hydrophytic
2				Vegetation Present? Yes <sup>X</sup> No
3				
4	10			
		= Total Cove	r	
	sneet.)			
Hydric vegetation are all FAC				

Profile Desc	cription: (Describe to	o the dept	h needed to docu	ment the i	ndicator	or confirn	m the absence of indicators.)
Depth	Matrix		Redo	x Features	<u>s</u>		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks
0-2	5YR 3/3						silt loam w/ organic material
2-11	5YR 3/4						Silty sand w/ gravel -historic fill
11-14	2.5YR						Sandy loam
		<u> </u>		<u> </u>			
'Type: C=Co	oncentration, D=Deple	etion, RM=I	Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soll			Debaselus Deba	0			Indicators for Problematic Hydric Solis :
HISTOSOI	(A1) Dipodon (A2)	-	Polyvalue Belo	w Surface	(58) ( <b>LRF</b>	КК,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Black Hi	istic (A3)		Thin Dark Surf	) ace (S9) (I		RA 149B	5  cm Mucky Peat or Peat (S3) (LRR K, L, R)
Hydroge	en Sulfide (A4)	-	Loamy Mucky I	Mineral (F1	1) (LRR K	, L)	Dark Surface (S7) (LRR K, L, M)
Stratified	d Layers (A5)	-	Loamy Gleyed	Matrix (F2	)	, ,	Polyvalue Below Surface (S8) (LRR K, L)
Depleted	d Below Dark Surface	(A11)	Depleted Matrix	x (F3)			Thin Dark Surface (S9) (LRR K, L)
Thick Da	ark Surface (A12)	-	Redox Dark Su	rface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R
Sandy M	Aucky Mineral (S1)	-	Depleted Dark	Surface (F	7)		Piedmont Floodplain Soils (F19) (MLRA 149
Sandy G	Bleyed Matrix (S4)	-	Redox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B
Sanuy R	(euux (SS)   Matrix (S6)						<u>A</u> Red Parent Material (F21) Very Shallow Dark Surface (TE12)
Dark Su	rface (S7) (I RR R. M	I RA 1498	)				Other (Explain in Remarks)
			/				
<sup>3</sup> Indicators o	f hydrophytic vegetati	on and wet	land hydrology mu	st be prese	ent, unless	disturbed	d or problematic.
Restrictive	Layer (if observed):						
Type:							
Depth (in	ches):						Hydric Soil Present? Yes No _X
Remarks:							

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/9/12
Applicant/Owner: NYCEDC	State:	NY Sampling Point: C
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Flat	land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NWI	classification:PFO1
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>X</u> N <u>o</u> (If no, ex	plain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circumst	ances" present? Yes <u>X</u> N <u>o</u>
Are Vegetation, Soil _ x, or Hydrology natural	ly problematic? (If needed, explain a	וץ answers in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>x</u> No
Wetland Hydrology Present?	Yes <u>x</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ires here or in a separate report.) P	roblematic soil/red parent material.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)X Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Lable (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
<u>X</u> Saturation (A3) <u>Main Deposits (B15)</u>	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living P	Cools (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted of Stressed Plants (D1)
Algai Mat of Crust (B4) Recent from Reduction in Tilled So	lis (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aenal Imagery (B7) Other (Explain In Remarks)	<u>A</u> Microlopographic Relief (D4)
<u>X</u> Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Surface Water Present? Yes <u>No x</u> Depth (inches):	
water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Yes No Depth (inches):	Wetland Hydrology Present? Yes <u>x</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         Cincludes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches): 2         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes x No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches): 2         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:

Sampling Point: C

	Absolute	Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u> )	% Cover	<u>Species?</u> Status	Number of Dominant Species
1. <u>Acer rubrum</u>	40	D FAC	That Are OBL, FACW, or FAC: (A)
2. Fraxinus pennsylvanica	5	N FACW	Total Number of Dominant
3			Species Across All Strata: (B)
4			Percent of Dominant Species
5			That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6			Prevalence Index worksheet:
7			Total % Cover of: Multiply by:
	45	= Total Cover	$\frac{1}{OBI} \text{ species} \qquad x 1 =$
Sanling/Shruh Stratum (Plot size: 15' )			FACW species x 2 =
<u> </u>			FAC species x 3 =
1		·	FACU species x 4 =
2			UPL species x 5 =
3			Column Totals: (A) (B)
4			
5			Prevalence Index = B/A =
6			Hydrophytic Vegetation Indicators:
7			1 - Rapid Test for Hydrophytic Vegetation
		= Total Cover	<u>x</u> 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5' )			3 - Prevalence Index is ≤3.0 <sup>1</sup>
1			4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2.			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4			be present, unless disturbed or problematic.
т. <u></u>			Definitions of Vegetation Strata:
5		·	
0			Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
7		·	
8			and greater than or equal to 3.28 ft (1 m) tall.
9			
10			<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11			
12			<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
		= Total Cover	
Woody Vine Stratum (Plot size: 15')			
1			
			Hydrophytic
2			Vegetation
3			Present? fes <u>x</u> No
4			
		= Total Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)		

Profile Desc	cription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirr	m the absence of indicators.)	
Depth	Matrix	0/	Red	ox Feature	<u>es</u> 1	. 2		
(inches)	Color (moist)	%	Color (moist)	%	l ype	Loc	Iexture Remarks	
<u>0-1</u>	<u>7.5YR3/3</u>	<u>    100                               </u>	10/02/4/150/ > 2	EVD2/4/4/	= 0()			
<u>1-5</u>	<u>2.51R4/3</u>	00	<u>101R3/4(15%), 2.</u>	5 <u>1R3/1(1</u> :	<u>2%)</u>	<u> </u>		
<u>5-12</u>	<u>5YR4/3</u>	0	<u>2.5YR3/4</u>	20	·	<u>IVI</u>		
12-17	5YR4/2		<u>5YR4/4</u>	<u>40</u>	<u> </u>	<u>M</u>		—
	5YR3/2	80	<u>5YR4/4</u>	20	<u> </u>	M	Silt loam	
				·				
				·				—
·				·			··	
17	D_D_						<sup>2</sup> leasting DL Deve Lining M Matrix	
Hydric Soil	oncentration, D=Dep Indicators:	pletion, RI	A=Reduced Matrix, N	IS=Maske	d Sand Gra	ains.	Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol	(A1)		Polyvalue Belo	w Surface	e (S8) ( <b>LRF</b>	RR,	2 cm Muck (A10) (LRR K, L, MLRA 149B)	
Histic Ep	pipedon (A2)		MLRA 149E	<b>3</b> ) 5000 (SQ) (		DA 1400	Coast Prairie Redox (A16) (LRR K, L, R)	<b>5</b> \
Hydroge	en Sulfide (A4)		Loamy Mucky	Mineral (F	1) ( <b>LRR K</b>	, L)	Dark Surface (S7) (LRR K, L, M)	•)
Stratified	d Layers (A5)	<i></i>	Loamy Gleyed	Matrix (F	2)		Polyvalue Below Surface (S8) (LRR K, L)	
Depleted	d Below Dark Surfac ark Surface (A12)	ce (A11)	Depleted Matri Redox Dark Si	IX (F3) urface (F6	)		Thin Dark Surface (S9) (LRR K, L) Iron-Mangapese Masses (E12) (LRR K, L)	R)
Sandy M	Aucky Mineral (S1)		Depleted Dark	Surface (	, F7)		Piedmont Floodplain Soils (F19) (MLRA 14	<b>9B</b> )
Sandy G	Gleyed Matrix (S4)		Redox Depres	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149	<b>)B</b> )
Sandy F	Redox (S5)						<u>x</u> Red Parent Material (F21)	
Dark Su	Inface (S7) (LRR R,	MLRA 149	<b>9</b> B)				Other (Explain in Remarks)	
31	f huden de die verste		, 			all a familia a s	, , , , , , , , , , , , , , , , ,	
Restrictive	t nydropnytic vegeta Layer (if observed)	ation and v	vetiand hydrology mu	ist be pres	ent, uniess	aisturbed	d or problematic.	
Type:	<b>,</b> , ,	, 	_					
Depth (in	ches):		_				Hydric Soil Present? Yes <u>x</u> No	
Remarks:								

Project/Site: Charleston Mixed Use Development	City/County:	Richmond	Sampling	July 2012 Date:
Applicant/Owner: NYCEDC		S	tate: Sampli	ng Point: C upland
Investigator(s): Rollino J	Section, Tow	nship, Range:		
Landform (hillslope, terrace, etc.):	Local relief (cond	ave, convex, none):	Flat Land	Slope (%):
Subregion (LRR or MLRA): MLRA 149B Lat:		Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex			NWI classification: n	/a
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes <u>x</u>	No (If n	o, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significant	ntly disturbed?	Are "Normal Cir	cumstances" present?	res x No
Are Vegetation, Soilx, or Hydrology naturally	problematic?	(If needed, expla	ain any answers in Rema	arks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes Yes Yes	No x No x No x	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	res here or in a s	separate rep	port.)

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	g Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled S	Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
X	
Water Table Present? Yes No Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Yes No Depth (inches):	Wetland Hydrology Present? Yes No <sup>X</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Bemerke:       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No <sup>X</sup>
Water Table Present?       Yes       No       Depth (inches):         Saturation Present?       Yes       No       X       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No <sup>×</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup> ections), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X

Trop Stratum (Plot size: 30 ft radius	Absolute	Dominant In	dicator	Dominance Test worksheet:
Acer rubra	70	D	FAC	Number of Dominant Species 2
Sassafras	40		FACU	That Are OBL, FACW, or FAC: (A)
2 Prunus serotina	25	N	FAC	Total Number of Dominant 4 Species Across All Strata: (B)
о				
T				That Are OBL, FACW, or FAC: (A/B)
o				( )
6				Prevalence Index worksheet:
7	400.			Total % Cover of: Multiply by:
	100+	= Total Cover		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 100 sq ft)				FACW species x 2 =
no trees				FAC species x 3 =
2				FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				Devision of the law D/A
5	. <u> </u>			Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
		- Total Covor		<u>x</u> 2 - Dominance Test is >50%
1 m				3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size:) 1 Glechoma hedercea	2	D	FACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
A				be present, unless disturbed or problematic.
	·			Definitions of Vegetation Strata:
5	<u> </u>			
6	·			<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7				at bleast height (DDH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9				and greater than of equal to 5.25 ft (1 m) tail.
10.				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of
11				size, and woody plants less than 3.28 ft tall.
10				Woody vines – All woody vines greater than 3.28 ft in
12	2			height.
		= Total Cover		
<u>Woody Vine Stratum</u> (Plot size: <u>10 sq ft</u> )				
1. Smilax rotundifolia	10	D	FAC	
2.				Hydrophytic
3				Present? Yes <sup>X</sup> No
· ·	·			
4	10			
		= Total Cover		
Remarks: (Include photo numbers here or on a separate	sheet.)			

SOIL	SOIL
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Profile Desc	ription: (Describe te	o the dep	th needed to document the	indicator or confirm	n the absence of indicators.)	
Depth	Matrix		Redox Feature	<u>s</u>		
(inches)	Color (moist)	%	Color (moist) %	Type <sup>1</sup> Loc <sup>2</sup>	Texture Remarks	
0-3	7.5YR 3/2				silt loam w/ organic material	
3-12	7.5YR 3/3				sandy silt	
Depth of r	efusal					
				<u> </u>		
·				<u> </u>		
			······	·		
					· ·	
1 <b>T</b>					<sup>2</sup> l acation: DI - Dana Lining, M-Matrix	
Type: C=Co	ncentration, D=Deple	etion, Rivi=	Reduced Matrix, MS=Masked	a Sand Grains.	Location: PL=Pore Lining, M=Matrix.	
History	(A1)		Dolwaluo Polow Surface		2 om Muck (A10) (I DD K I MI DA 140	
Histoson Histic Er	(AT) hinedon (Δ2)		MIRA 149R)	(30) ( <b>LKK K</b> ,	Coast Prairie Redoy (A16) (IRR K I R	
Black Hi	stic (A3)		Thin Dark Surface (S9) (I	RR R. MI RA 149B	5 cm Mucky Peat or Peat (S3) (I BR K	I.R)
Hydroge	n Sulfide (A4)		Loamy Mucky Mineral (F	1) ( <b>LRR K, L</b> )	Dark Surface (S7) (LRR K, L, M)	_,,
Stratified	Layers (A5)		Loamy Gleyed Matrix (F2	?)	Polyvalue Below Surface (S8) (LRR K,	L)
Depleted	Below Dark Surface	(A11)	Depleted Matrix (F3)		Thin Dark Surface (S9) (LRR K, L)	
Thick Da	rk Surface (A12)		Redox Dark Surface (F6)	1	Iron-Manganese Masses (F12) (LRR K,	L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark Surface (F	7)	Piedmont Floodplain Soils (F19) (MLRA	149B)
Sandy G	leyed Matrix (S4)		Redox Depressions (F8)		Mesic Spodic (TA6) (MLRA 144A, 145,	1 <b>49B</b> )
Sandy R	edox (S5)				X Red Parent Material (F21)	
Stripped	Matrix (S6)				Very Shallow Dark Surface (TF12)	
Dark Su	face (S7) (LRR R, M	LRA 149E	3)		Other (Explain in Remarks)	
<sup>3</sup> Indiantora at	budrophutia vogatati		tland hydrology must be pres	ant unloca disturbas	d er problemetie	
Restrictive I	nyorophytic vegetati	on and we	eliand hydrology must be pres	ent, unless disturbed		
Tures	ayer (il observeu).					
Type:						v
Depth (ind	cnes):				Hydric Soil Present? Yes No	<u>x</u>
Remarks:						

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/10/12
Applicant/Owner:	State: NY	Sampling Point: D
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: Charleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):Flat lanc	l Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NWI class	ification: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No (If no, explain i	n Remarks.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal Circumstances	" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil , or Hydrology naturally	y problematic? (If needed, explain any and	swers in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes X No Yes X No	Is the Sampled Area within a Wetland? Yes <u>X</u> No					
Wetland Hydrology Present?	Yes <u>X</u> No	If yes, optional Wetland Site ID:					
Remarks: (Explain alternative procedures here or in a separate report.)							
Wetland D is a Palustrine Emergent a	nd Scrub-Shrub complex wetlar	d. Hydric soil indicators problematic/red parent material.					

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) X Oxidized Rhizospheres on Living F	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	<u>x</u> Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Ves No X Depth (inches):	
$\frac{1}{1}$ $\frac{1}$	
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No
Saturation Present?       Yes NoX_ Depth (inclus).         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX_ Depth (inclus).         Saturation Present?       Yes NoX_ Depth (inclus).         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective.	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inclues):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inclues):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inclues).         Saturation Present?       Yes NoX Depth (inclues).         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inclues).         Saturation Present?       Yes NoX Depth (inclues).         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective.         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No _X Depth (inclues):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No _X Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No _X Depth (inclues):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Valer rabe resent:       res ros bepth (incles):         Saturation Present?       Yes No Depth (incles):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:

Trac Stratum (Distaire) 30 feet	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>concert</u> )	% Cover	<u>Species</u> ?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata. (B)
4				Percent of Dominant Species 100 (A/B)
5				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Co	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 feet )				FACW species x 2 =
1			<u> </u>	FAC species x 3 =
2				FACU species x 4 =
3.				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
		= Total Co		X 2 - Dominance Test is >50%
Hark Stratum (Plataina) 5 feet		- 101ai CO	VEI	3 - Prevalence Index is ≤3.0 <sup>1</sup>
1. Juncus effusus	72	D	OBL	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2 Phragmites australis	5	N	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2 Carex scoparia	5	N	FACW	<sup>1</sup> Indicators of hydric coil and watland hydrology must
Eleocharis obtusa	15	N	OBL	be present, unless disturbed or problematic.
- Juncus tenis	3	N	FAC	Definitions of Veretation Strata
5				Definitions of Vegetation official.
6				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast neight (DDF), regardless of neight.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
	100	= Total Co	ver	
Woody Vine Stratum (Plot size: 15 feet )				
1				
·				Hydrophytic
2				Vegetation Present? Ves X No
3				
4				
		= Total Co	ver	
Remarks: (Include photo numbers here or on a separate	sneet.)			

JUIL	S	Ο		
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Profile Desc	ription: (Describe	to the de	oth needed to docur	nent the i	indicator	or confirm	the absence of in	dicators.)
Depth	Matrix		Redo	x Feature	<u>s</u>			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-2	10YR4/1	100					silty clay loam	with Oxidized root channels
	7.5YR5/6	70	7.5185/2	30	D	<u>M</u>	silty clay loam	1
	7.5YR4/4	70	7.5YR4/2	30	D	M	silty clay loam	1
					. <u></u>			
					<u> </u>	·		
						<u> </u>		
					<u> </u>			
		<u> </u>						
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM	I=Reduced Matrix, M	S=Masked	d Sand Gra	ains.	<sup>2</sup> Location: PL=	=Pore Lining, M=Matrix.
Hydric Soil	ndicators:						Indicators for P	roblematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Below	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm Muck (	(A10) ( <b>LRR K, L, MLRA 149B</b> )
Histic Ep Black Hi	olpedon (A2) stic (A3)		MLRA 149B) Thin Dark Surfa	) ace (S9) ( <b>I</b>	RR R MI	RA 149B)	5 cm Mucky	Peat or Peat (S3) ( <b>LRR K, L, R</b> )
Hydroge	n Sulfide (A4)		Loamy Mucky N	Mineral (F	1) ( <b>LRR K</b>	, L)	Dark Surfac	e (S7) ( <b>LRR K, L, M</b> )
Stratified	Layers (A5)		Loamy Gleyed	Matrix (F2	2)		Polyvalue B	elow Surface (S8) (LRR K, L)
Depleted Thick Da	l Below Dark Surfac ark Surface (A12)	e (A11)	Depleted Matrix Redox Dark Su	((F3) rface (F6)			I hin Dark S	urface (S9) (LRR K, L) nese Masses (E12) (LRR K L R)
Sandy M	lucky Mineral (S1)		Depleted Dark \$	Surface (F	7)		Piedmont FI	loodplain Soils (F19) (MLRA 149B)
Sandy G	leyed Matrix (S4)		Redox Depress	ions (F8)			Mesic Spodi	ic (TA6) ( <b>MLRA 144A, 145, 149B</b> )
Sandy R	edox (S5) Matrix (S6)						X Red Parent	Material (F21)
Dark Su	face (S7) ( <b>LRR R, I</b>	MLRA 149	<b>B</b> )				Other (Expla	ain in Remarks)
3								
Restrictive I	aver (if observed)	tion and w	etiand hydrology mus	st be prese	ent, uniess	s disturbed (	or problematic.	
Type:			_					
Depth (ind	ches):		- -				Hydric Soil Pres	ent? Yes X No
Remarks:							I	

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richr</u>	mond Sampling	g Date: 7/9/12
Applicant/Owner: NYCEDC	{	State: <u>NY</u> Sampli	ng Point: <u>D (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: Charl	eston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none)	: Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	n/a
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> (If	no, explain in Remarks.)	)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal Ci	rcumstances" present?	Yes <u>x</u> No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, exp	lain any answers in Rem	arks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No x Yes No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes No x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ires here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary frince)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Ves       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No x         ctions), if available:
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Image: Comparison of the state of the stat	Wetland Hydrology Present? Yes No x No x
Water Table Present?       Yes No x       Depth (inches):         Saturation Present?       Yes No x       Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x

Tree Stratum (Plot size: 30')	Absolute	Dominant	Indicator Status	Dominance Test worksheet:
<u>1 (Fiol Size. 30</u> )		<u>Species</u> :	Status	Number of Dominant Species
1	·			That Are OBL, FACW, or FAC: <u>2</u> (A)
2	·		- <u></u>	Total Number of Dominant
3	·			Species Across All Strata. $4$ (B)
4				Percent of Dominant Species
5	·			(A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Co	/er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species <u>30</u> x 2 <u>= 60</u>
1				FAC species x 3 <u>= 75</u>
2				FACU species $45$ x 4 = 180
3.				UPL species x 5 =
4				Column Totals: <u>100</u> (A) <u>315</u> (B)
5.	<u> </u>			Prevalence Index = $B/A = 3.15$
6.		_		Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		= Total Co		2 - Dominance Test is >50%
Horb Stratum (Diataiza: 5')				$\_$ 3 - Prevalence Index is $\leq 3.0^1$
<u>riero Stratuini</u> (riot size. <u>5</u> )	00	P	540	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1. Juncus tenuis			FAC	data in Remarks or on a separate sheet)
2. <u>Agrostis gigantea</u>	25	D	FACW	
3. Solidago canadensis	25	D	FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Euthamia gramnifolia	5	<u>N</u>	FAC	
5. Carex scoparia	5	N	FACW	Definitions of Vegetation Strata:
6. Angropogon virginicus	20	D	FACU	<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7	·			a breast height (DBH), regardless of height.
8	·			<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
9				
10	. <u> </u>			<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				<b>Woody vines</b> $-$ All woody vines greater than 3.28 ft in
12			- <u> </u>	height.
	100	= Total	Cover	
Woody Vine Stratum (Plot size: 15' )				
1				
2				Hydrophytic Vegetation
3				Present? Yes No x
4				
		= Total Co	/er	
Remarks: (Include photo numbers here or on a separate	sheet.)		-	<u> </u>

SOIL	
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Profile Desc	cription: (Describ	e to the de	pth needed to docu	ment the i	ndicator	or confirm	n the absence of indicators.)	
Depth (inches)	Matrix Color (moist)	%	Red Color (moist)	ox Feature %	<u>s</u> Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks	
0-2	10YR5/2	100					Silty clay loam	_
2-4	10YR5/3	95	10YR4/6	5	С	М	Silty clay loam	
1_8	7.5VP4/4	45	7 5785/8	40	<u> </u>	M	Silty clay loam with red parent material increasing w	
	1.511(4/4			<u> </u>				<u>-u</u>
			<u>2.5YR4/6</u>	15	<u> </u>	M		-
8-13	2.5YR4/6	60	2.5YR5/2	40	<u>D</u>	M	<u>Silty clay loam</u>	_
13+							auger refusal	_
				<u> </u>				_
								-
				·			·	-
				·			· · · · · · · · · _ · _ · _ · · _ · · _ ·	-
								_
<sup>1</sup> Type: C=Ce	oncentration, D=De	epletion, RM	/I=Reduced Matrix, N	IS=Masked	Sand Gr	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators:						Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol	(A1) Dipedon (A2)		Polyvalue Belo	w Surface	(S8) ( <b>LR</b>	RR,	2 cm Muck (A10) (LRR K, L, MLRA 149B)	
Black Hi	istic (A3)		Thin Dark Surf	7) ace (S9) ( <b>I</b>	RR R. M	LRA 149B)	) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
Hydroge	en Sulfide (A4)		Loamy Mucky	Mineral (F	1) ( <b>LRR K</b>	, L)	Dark Surface (S7) (LRR K, L, M)	
Stratified	d Layers (A5)		Loamy Gleyed	Matrix (F2	2)		Polyvalue Below Surface (S8) (LRR K, L)	
Depleted	d Below Dark Surfa	ace (A11)	Depleted Matri	ix (F3)			Thin Dark Surface (S9) (LRR K, L)	
I NICK Da	ark Sufface (A12) Aucky Mineral (S1)		Redox Dark Si	Surface (F6)	7)		Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MI RA 149B	\$
Sandy G	Bleyed Matrix (S4)		Redox Depres	sions (F8)	,,		Mesic Spodic (TA6) (MLRA 144A, 145, 149B)	'
Sandy R	Redox (S5)			· · ·			x Red Parent Material (F21)	
Stripped	Matrix (S6)						Very Shallow Dark Surface (TF12)	
Dark Su	rface (S7) (LRR R,	MLRA 14	<b>9B</b> )				Other (Explain in Remarks)	
<sup>3</sup> Indicators o	f hvdrophytic veget	tation and v	vetland hvdrologv mu	ist be prese	ent. unless	s disturbed	or problematic.	
Restrictive I	Layer (if observed	I):	, , , , , , , , , , , , , , , , , , , ,					
Туре:			_					
Depth (in	ches):		_				Hydric Soil Present? Yes No _x	
Remarks:								

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richr</u>	mond Sampli	ing Date: <u>7/11/12</u>
Applicant/Owner: <u>NYCEDC</u>	:	State: <u>NY</u> Sam	pling Point: <u>E</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charl</u>	eston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none)	Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes <u>x</u> No <u>(</u> (If	no, explain in Remark	s.)
Are Vegetation, Soil, or Hydrology significar	ntly disturbed? Are "Normal Ci	rcumstances" present?	Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, exp	lain any answers in Re	marks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes L No If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separate report.)	

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)		<u>x</u> Surface Soil Cracks (B6)	
Surface Water (A1)X Water-Stained Le	eaves (B9)	<u>x</u> Drainage Patterns (B10)	
High Water Table (A2)Aquatic Fauna (B1	3)	Moss Trim Lines (B16)	
Saturation (A3) Marl Deposits (B1	5)	Dry-Season Water Table (C2)	
Water Marks (B1) Hydrogen Sulfide	Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2) X_ Oxidized Rhizospl	heres on Living Roots (C3)	Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3) Presence of Redu	uced Iron (C4)	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4) Recent Iron Redu	ction in Tilled Soils (C6)	Geomorphic Position (D2)	
Iron Deposits (B5) Thin Muck Surface	e (C7)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7) Other (Explain in I	Remarks)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)		FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes <u>No X</u> Depth (inches):	Not at plot		
Water Table Present? Yes No X Depth (inches)	Not at plot		
Saturation Present? Yes No X Depth (inches): (includes capillary fringe)	Not at plot Wetland H	ydrology Present? Yes <u>I</u> No	
Saturation Present?       Yes No _X Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,	Not at plot Wetland H	ydrology Present? Yes I No	
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos,	Previous inspections), if ava	ydrology Present? Yes <u>I</u> No	
Saturation Present?       Yes No _X Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,         Remarks:	Not at plot <b>Wetland H</b> previous inspections), if ava	ydrology Present? Yes <u>I</u> No	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, Remarks:	Not at plot <b>Wetland H</b> previous inspections), if ava	lydrology Present? Yes <u>I</u> No	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No	
Saturation Present?       Yes No _X Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,         Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,         Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No ilable:	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,         Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No ilable:	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,         Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No ilable:	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No ilable:	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,         Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No ilable:	
Saturation Present?       Yes No _X Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos,         Remarks:	Not at plot Wetland H	lydrology Present? Yes <u>I</u> No ilable:	

Sampling Point: E

	Absolute	Dominant In	dicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30 feet</u> )	<u>% Cover</u>	Species? S	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: 1 (B)
4.				Percent of Dominant Species
5.				That Are OBL, FACW, or FAC:(A/B)
6				
				Prevalence Index worksheet:
1				Total % Cover of:Multiply by:
		= Total Cover		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 feet )				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3.				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
				Hydrophytic Vogotation Indicators:
0				1 - Ranid Test for Hydronhytic Vegetation
7				$X_2$ - Dominance Test is >50%
		= Total Cover		$3 - \text{Prevalence Index is } < 3.0^{1}$
Herb Stratum (Plot size: 5 feet )				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1. Juncus effusus	81	D	OBL	data in Remarks or on a separate sheet)
2Juncus tenuis	2	N	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. Solidado rudosa	5	Ν	FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Euthania gramnifolia	2	N	FAC	be present, unless disturbed or problematic.
	2		OBL	Definitions of Vegetation Strata:
		<u>N</u>	FACW	
6. Phragmites australis				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast beight (DBH), regardless of beight
7. Persicaria pennsylcanica		<u> </u>		
8Altisma subcordatum	1	<u>     N                               </u>	OBL	<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall
9. Lidwigia palustris	5	<u>N</u>	OBL	
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size and woody plants less than 3.28 ft tall
11.				size, and woody plants less than 5.28 it tail.
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height
	100	- Total Covar		neight.
Woody Vine Stratum (Plot size: 15 feet )				
1				Hydrophytic
2				Vegetation
3				Present? Yes <u>L</u> No
4				
		= Total Cover		
Remarks: (Include photo numbers here or on a separate	sheet.)			
SOIL				
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Profile Des	cription: (Describe	to the de	nth needed to docu	ment the	indicator	or confirm	the absence	of indicators )
Depth	Matrix		Redc	x Feature	s			
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-2	7.5YR3/2	100					organic	ox. root channels present
2-6	7.5YR5/1	80	7.5YR3/3	20	С	М	silty clay	loam
6-10	7.5YR4/1	90	7.5YR3/3	10	С	М	silty clay	loam
10-14	7.5YR5/1	50	7.5YR5/6	50	С	М	silty clay	loam
					<u> </u>			
					·			
			·					
. <u> </u>	<u></u>							
·					·			
<sup>1</sup> Type: C=C	Concentration, D=Dep	oletion, RM	/I=Reduced Matrix, M	S=Maske	d Sand Gra	ains.	<sup>2</sup> Locatior	: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils <sup>3</sup> :
Histoso	l (A1)		Polyvalue Belo	w Surface	e (S8) ( <b>LRF</b>	RR,	2 cm M	Muck (A10) ( <b>LRR K, L, MLRA 149B</b> )
Histic E	ipipedon (A2)		MLRA 149B	) )		DA 440D)	Coast	Prairie Redox (A16) (LRR K, L, R)
Black H	nstic (A3) en Sulfide (A4)		Loamy Mucky I	Thin Dark Surface (S9) (LRR R, MLRA 149B)			Dark S	Surface (S7) (LRR K, L, M)
Stratifie	ed Layers (A5)		Loamy Gleyed	Matrix (F2	2)	, _/	Polyva	alue Below Surface (S8) (LRR K, L)
Deplete	ed Below Dark Surfac	ce (A11)	X Depleted Matrix	x (F3)			Thin D	Dark Surface (S9) (LRR K, L)
Thick D	ark Surface (A12)		Redox Dark Su	rface (F6	)		Iron-M	langanese Masses (F12) (LRR K, L, R)
Sandy I	Mucky Mineral (S1)		Depleted Dark	Surface (I	=7)		Piedm	Cont Floodplain Soils (F19) (MLRA 149B)
Sandy Sandy I	Gleyed Matrix (54) Redox (S5)		Redox Depress	sions (F8)			Wesic Red P	Spodic (TA6) (MLRA 144A, 145, 149B) arent Material (E21)
Strippe	d Matrix (S6)						Very S	Shallow Dark Surface (TF12)
Dark Su	urface (S7) (LRR R,	MLRA 149	<b>9B</b> )				Other	(Explain in Remarks)
<sup>3</sup> Indicators o	of hydrophytic vegeta	ation and v	vetland hydrology mus	st he nres	ent unless	disturbed	or problemati	<u>^</u>
Restrictive	Layer (if observed)					alotarbea		5.
Type:			_					
Depth (ir	nches):						Hydric Soil	Present? Yes X No
Remarks:								

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Ricl	nmond Sam	pling Date: 7/11/12
Applicant/Owner: NYCEDC		State: <u>NY</u> Sa	mpling Point: <u>E (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Cha</u>	rleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none	e): Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	n/a
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u>	If no, explain in Rema	rks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal (	Circumstances" preser	nt? Yes N <u>o <sup>X</sup></u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, ex	plain any answers in F	Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No x Yes No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes <u>No</u> x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ires here or in a separate repor	t.)
Soils around wetland have been mod	ified historically.	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)			
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)			
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)			
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)			
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)			
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)			
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)			
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)			
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)			
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)			
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)			
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)			
Field Observations:				
Surface Water Present? Yes <u>No x</u> Depth (inches):				
Water Table Present? Yes No x Depth (inches):				
······································				
Saturation Present? Yes <u>No x</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No x			
Saturation Present? Yes No Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present? Yes <u>No x</u> Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes No _x _ Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes No _x _ Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes No _x _ Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes No _x _ Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes No _x Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes Nox Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present? Yes <u>No x</u> Depth (inches): (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			
Saturation Present?       Yes No _x _ Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:			

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30°</u> )	% Cover	Species?	Status	Number of Dominant Species
1			·	That Are OBL, FACW, or FAC: (A)
2			·	Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5.				That Are OBL, FACW, or FAC: <u>33</u> (A/B)
6				
-				Prevalence Index worksheet:
/			·	Total % Cover of: Multiply by:
		= Total Cov	/er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species <u>37</u> x 2 = <u>74</u>
1				FAC species x 3 =
2			·	FACU species <u>53</u> x 4 = <u>212</u>
3.				UPL species x 5 =
4			·	Column Totals: <u>90</u> (A) <u>286</u> (B)
			·	Prevalence Index = $B/A = 3.17$
5	·		·	
6			·	Hydrophytic Vegetation Indicators:
7			·	1 - Rapid Test for Hydrophytic Vegetation
		= Total Cov	/er	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5' )				3 - Prevalence Index is ≤3.0'
1. Plantago lanceolata	25	D	FACU	<ul> <li>4 - Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
2. Agrostis gigantea	35	D	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. Trifolium repens	25	D	FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Juncus tenuis	2	Ν	FAC	be present, unless disturbed or problematic.
5 Lotus corniculatis	2	N	FACU	Definitions of Vegetation Strata:
			FACU	at breast height (DBH), regardless of height.
7	·		·	
8	<u> </u>		·	and greater than or equal to 3.28 ft (1 m) tall.
9			·	
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
11			·	
12.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height
	90	= Total C	over	norgin.
Weedy Vine Stretum (Diet size: 15)		rotar of	0101	
1	<u> </u>		·	Hydrophytic
2	<u> </u>		·	Vegetation
3			·	Present? Yes <u>No</u> x
4				
		= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate	e sheet.)			

#### SOIL

Profile Desc	cription: (Describe t	o the dept	h needed to docu	ment the i	ndicator	or confirm	the absence	of indicat	ors.)		
Depth	Matrix		Redo	x Features	<u> </u>	2					
(inches)	Color (moist)		Color (moist)	%	Type'	Loc	Texture		Rema	ırks	
0+	Auger refusal, grave	e <u>l substra</u> te	, highly compact								
							<u> </u>				
							<u> </u>				
		<u> </u>			·						
					·						
	ncentration D=Deplet	ion PM=P	educed Matrix MS	-Masked S	and Grain	10	<sup>2</sup> Location:	DI =Doro I	ining M=	Matrix	
Hydric Soil In	dicators:					13.	Indicators fo	r Probler	natic Hvd	ric Soils	3.
	A1)	-		Surface (S		-		ok (A10) (		MI DA 4	40B)
	AI) nodon (A2)			Surface (S	00) ( <b>LKK I</b>	κ,		CK (ATU) (	LKK N, L, $(A 16) (I)$		149D) D\
	tic (A3)	-	Thin Dark Surfac	(SQ) (I P		A 140B)	5 cm Mu	cky Post	n Peat (S?	.KK K, L 3) /I DD (	, K) K I P)
	Sulfide (A4)	-		ineral (E1)		\ \	Dark Sur	face (S7)			<b>м, ц, м</b> )
Stratified		-		1  latrix  (F2)		-)	Dark Surface (S7) (LRR K, L, M)				<b>(</b> 1)
Depleted	Below Dark Surface (	Δ11)	Depleted Matrix	(E3)			Thin Dar	k Surface	(\$9) (I RR		ν, μ)
Thick Dar	k Surface (Δ12)	<u>, , , , , , , , , , , , , , , , , , , </u>	Bedox Dark Surf	(10) Face (E6)			Iron-Mar	nanese M	(00) ( <b>ERR</b> 196666 (F1	2) (I RR	
Sandy Mi	r Sullace (A12)	-	Depleted Dark Sun	urface (E7)			Piedmon	iyanese iv it Eloodola	in Soile (F	2) ( <b>LRR</b> (10) ( <b>MI</b> [	R, L, R)
Sandy Mu	ovod Matrix (S4)	-	Bodox Doprossi	$(F_{2})$			Mosic Sr			144A 14	5 149D)
Sandy Bo	dox (S5)		Redux Depressio				Bod Bar	ouic (TAC		1444, 14	5, 1450)
	Matrix (S6)							elli Materi	al (FZI) Surfaco (*	TE12)	
Dark Surf		RA 149R)					Other (F	volain in F	Sunace (1 Semarks)	11 12)	
₂Indicators of	bydronbytic vegetatic	n and wet	and hydrology mus	t ha nrasar	t unless i	disturbed (	or problematic		(emarks)		
Bostrictivo I	aver (if observed):		and hydrology mus	t be preser	it, unicos (						
Turner	-ayer (il observeu).										
Type: grave	ei							_			
Depth (inch	es): 0						Hydric Soil P	resent?	Yes	No	о <u>х</u>
Remarks:											

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmor	d Sampli	ng Date: 7/11/12
Applicant/Owner: NYCEDC	Stat	e: <u>NY</u> Samp	oling Point: <u>F</u>
Investigator(s): <u>J. Rollino/R. Wang</u>	Section, Township, Range: Charlesto	on	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): _F	lat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	N	WI classification:	vetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes <u>x</u> No <u>(</u> (If no.	explain in Remark	s.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circui	mstances" present?	Yes <u>x</u> No
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If needed, explain	any answers in Re	marks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> No Yes <u>X</u> No Yes <u>X</u> No	Is the Sampled Area within a Wetland? Yes X No If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
	Crayfish Burrows (C8)     Suntace Soli Clacks (B0)     Drainage Patterns (B10)     Moss Trim Lines (B16)     Dry-Season Water Table (C2)     Crayfish Burrows (C8)     Saturation Visible on Aerial Imagery (C9)     Stunted or Stressed Plants (D1)     Geomorphic Position (D2)
Iron Denosits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)	<ul> <li>Microtopographic Relief (D4)</li> </ul>
Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Ves No x Dopth (inspes):	
Water Table Present? $\operatorname{res}_{}$ No <u>x</u> Depth (inclus).	
Saturation Present? Yes <u>No x</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Fresent?       Fes No Depth (incles).         Saturation Present?       Yes No Depth (incles):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No
Water Fable Present?       Yes No Depth (inclus).         Saturation Present?       Yes No Depth (inclus).         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ctions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ctions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ctions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ctions), if available:

Sampling Point: F

Ture Obstations (Distations 30 feet	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Iree Stratum</u> (Plot size: <u> </u>	<u>% Cover</u>	Species?	Status	Number of Dominant Species
	20	<u>D</u>	FAC	That Are OBL, FACW, or FAC: (A)
2. Quercus paiusins	20	D	FACW	Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5		. <u></u>		That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6				Brouglance Index workshapt:
7.				Total % Cover of Multiply by
	40	= Total Cov		OBI species x1 =
Sanling/Shruh Stratum (Plot size: 15 feet )		10101 2 2	21	FACW species x 2 =
Vaccinium corvmbosvm	5	<b>D</b>		FAC species x 3 =
1		<u> </u>	FACIN	FACU species x 4 =
2		. <u></u>		UPL species x 5 =
3		. <u></u>		Column Totals: (A) (B)
4		. <u></u>		
5		. <u></u>		Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
	5	= Total Co		<u>x</u> 2 - Dominance Test is >50%
Lash Stratum (Diataiza:		- 10101 00		3 - Prevalence Index is $≤3.0^1$
<u>Herb Stratum</u> (Fibt Size)				<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
2				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
а				be present, unless disturbed or problematic.
				Definitions of Vegetation Strata:
5				
6				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
7				
8		. <u></u>		<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
9		. <u> </u>		
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
11				
12.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
		= Total Cov	er	
Woody Vine Stratum (Plot size: 15 feet				
Smilax rotundifolia	95	D	EAC	
l			FAC	Hydrophytic
2		·		Vegetation
3		·		Present? Yes <u>x</u> No
4		. <u> </u>		
	95	= Total Cove	ər	
Remarks: (Include photo numbers here or on a separate s	sheet.)			·

SOIL	SOIL
------	------

Profile Des	cription: (Describe	to the dep	th needed to docur	ment the i	ndicator	or confirm	the absence of i	indicators.)	
Depth	Matrix	0/	Redo	x Features	5 <b>T</b>	1 2	Tautum	Demoder	
(inches)	Color (moist)	%	Color (moist)	%	lype	Loc	lexture	Remarks	
0-1	10YR2/1	100			. <u> </u>		oganic material		
1-12	10YR4/1	80	10YR4/6	20	С	Μ	silt loam		
12-16	7.5YR5/1	65	7.5YR4/4	35	С	М	silty clay loam		
					·				
		<u> </u>							
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM	=Reduced Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: Pl	L=Pore Lining, M=Matrix.	
Hydric Soll			Polyacius Role	w Surfaco		р	2 cm Much		
Histoso Histic E	pipedon (A2)		MLRA 149B	)	(30) ( <b>LK</b> r	К,	Coast Prai	irie Redox (A16) ( <b>LRR K. L. R</b> )	
Black H	istic (A3)		Thin Dark Surfa	, ace (S9) (L	RR R, ML	<b>.RA 149B</b> )	5 cm Mucł	ky Peat or Peat (S3) ( <b>LRR K, L, R</b> )	
Hydroge	en Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR K, L)				Dark Surface (S7) (LRR K, L, M)		
Stratifie	d Layers (A5)	- ( ) ( )	Loamy Gleyed	Matrix (F2)	)		Polyvalue	Below Surface (S8) (LRR K, L)	
Deplete Thick D	d Below Dark Surfac ark Surface (A12)	e (A11)	<u>x</u> Depleted Matrix (F3) Redox Dark Surface (F6)				Inin Dark	Sufface (S9) (LRK N, L)	
Sandy M	Mucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmont	Floodplain Soils (F19) ( <b>MLRA 149B</b> )	
Sandy (	Gleyed Matrix (S4)		Redox Depress	sions (F8)	,		Mesic Spo	odic (TA6) ( <b>MLRA 144A, 145, 149B</b> )	
Sandy F	Redox (S5)						Red Parer	nt Material (F21)	
Stripped	d Matrix (S6)		B)				Very Shall	low Dark Surface (TF12)	
Dark St	inace (57) ( <b>LRR R, I</b>	VILRA 149	3)				Other (Exp	Diain in Remarks)	
<sup>3</sup> Indicators of	of hydrophytic vegeta	tion and w	etland hydrology mus	st be prese	nt, unless	disturbed	or problematic.		
Restrictive	Layer (if observed):								
Туре:									
Depth (in	ches):						Hydric Soil Pre	esent? Yes <u>x</u> No	
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richr</u>	nond Sampling	Sampling Date: 7/11/12	
Applicant/Owner: NYCEDC		State: <u>NY</u> Sampli	ng Point: <u>F (upland)</u>	
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: Charle	eston		
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat land	Slope (%):	
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:	
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	n/a	
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> (If	no, explain in Remarks.)	1	
Are Vegetation, Soil, or Hydrologysignificar	ntly disturbed? Are "Normal Ci	rcumstances" present?	Yes <u>x</u> N <u>o</u>	
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, expl	lain any answers in Rem	arks.)	

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes No x	Is the Sampled Area within a Wetland? Yes No x
Remarks: (Explain alternative proce	dures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)				
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)				
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2) Oxidized Rhizospheres on Living	ts (C3) Saturation Visible on Aerial Imagery (C9)				
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	s (C6) Geomorphic Position (D2)				
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)				
Field Observations:					
Surface Water Present? Yes <u>No x</u> Depth (inches):					
Water Table Present? Yes <u>No x</u> Depth (inches):					
Water Table Present?     Yes     No     x     Depth (inches):       Saturation Present?     Yes     No     x     Depth (inches):       (includes capillary fringe)     Yes     No     x     Depth (inches):	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No x         ctions), if available:       Image: Comparison of the second seco				
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No x Ctions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x Ctions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x ctions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x				

Sampling Point: F (upland)

	Absolute	Dominant I	ndicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u> )	<u>% Cover</u>	<u>Species</u>	Status	Number of Dominant Species
1. Quercus palustris	20	<u> </u>	FACW	That Are OBL, FACW, or FAC:3 (A)
2. Betula populifolia	10	<u> </u>	FAC	Total Number of Dominant
3	<u> </u>	·		Species Across All Strata:3 (B)
4		·		Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6	<u> </u>			Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	30	= Total Co	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1				FAC species x 3 =
·			<u> </u>	FACU species x 4 =
2		<u> </u>		UPL species x 5 =
3	<u> </u>	<u> </u>	<u> </u>	Column Totals: (A) (B)
4		·		Provolonce Index - P/A -
5		·		Prevalence index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		= Total Cove	r	<u>x</u> 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5' )				3 - Prevalence Index is ≤3.0'
1 ,				<ul> <li>4 - Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
2				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4.				be present, unless disturbed or problematic.
5	. <u> </u>			Definitions of Vegetation Strata:
6	<u> </u>		<u> </u>	<b>Tree</b> Woody plants 2 in (7.6 cm) or more in diameter
7		· ·		at breast height (DBH), regardless of height.
7		·	<u> </u>	Sanling/shrub Woody plants loss than 3 in DPH
8		·		and greater than or equal to 3.28 ft (1 m) tall.
9		·	<u> </u>	Herb - All herbaceous (non-woody) plants regardless of
10			<u> </u>	size, and woody plants less than 3.28 ft tall.
11		·		<b>Woody vines</b> $-$ All woody vines greater than 3.28 ft in
12				height.
	:	= Total Cover		
Woody Vine Stratum (Plot size: 15' )				
1. Smilax rotundifolia	80	D	FAC	
2				Hydrophytic
3			<u> </u>	Vegetation Present? Yes x No
0				
4				
Pomarka: (Include photo numbers here or on a separate	<u>80</u>	= Total Co	ver	
Remarks. (include photo numbers here of on a separate	511661.)			

Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the	indicator o	or confirm	n the absence of ind	icators.)	
Depth	Matrix		Rede	ox Feature	<u>es</u> 1	. 2	<b>-</b> .	_	
(inches)	Color (moist)		Color (moist)	%	Type	Loc	l exture	Remar	rks
0-16	7.5YR5/3	100			·		silt loam		
16-18	7.5YR5/1	80	7.5YR5/6	20	<u> </u>	М	silt clay loam		
							· ·		
		·			·		· ·		
		·			·		· ·		
		·							
							· ·		
					·				
		·			·			-	
		·			·		· ·		
					·				
1									
Type: C=Cor Hydric Soil Ir	ncentration, D=Deple	tion, RM=	Reduced Matrix, MS	=Masked	Sand Grair	IS.	Location: PL=Po	ore Lining, M=N blematic Hydu	Matrix. ric Soils <sup>3</sup> :
Histosol (	Δ1)		 Polyvalue Below	Surface (	S8) (I RR I	2	2 cm Muck (A1		MI RA 149B)
Histic Epi	pedon (A2)		MLRA 149B)	Currace (		x,	Coast Prairie F	edox (A16) (L	.RR K, L, R)
Black His	tic (A3)		Thin Dark Surfac	ce (S9) ( <b>L</b> l	RR R, MLF	RA 149B)	5 cm Mucky Pe	at or Peat (S3	B) (LRR K, L, R)
Hydrogen	Sulfide (A4)		Loamy Mucky M	ineral (F1)	) ( <b>LRR K, I</b>	_)	Dark Surface (	87) ( <b>LRR K, L</b>	, M)
Depleted	Layers (A5) Below Dark Surface	(Δ11)	Loamy Gleyed N	/latrix (F2) (F3)			Polyvalue Belo	w Surface (S8	) (LRR K, L) . K I )
Thick Dar	k Surface (A12)	(711)	Redox Dark Surface (F6)				Iron-Manganes	e Masses (F1	2) (LRR K, L, R)
Sandy Mu	ucky Mineral (S1)		Depleted Dark Surface (F7)				Piedmont Floo	dplain Soils (F	19) ( <b>MLRA 149B</b> )
Sandy Gl	eyed Matrix (S4)		Redox Depressi	ons (F8)			Mesic Spodic (	TA6) ( <b>MLRA 1</b>	144A, 145, 149B)
Sandy Re	edox (S5) Motrix (S6)						Red Parent Ma	iterial (F21)	TE12)
Dark Surf	ace (S7) ( <b>LRR R. M</b> L	RA 149B	)				Other (Explain	in Remarks)	11 12)
3Indicators of	hydrophytic vegetati	on and we	, tland hydrology mus	t be prese	nt, unless	disturbed	or problematic.	,	
Restrictive I	Layer (if observed):								
Туре:									
Depth (inch	es):						Hydric Soil Presen	t? Yes	<u>No x</u>
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/11/12		
Applicant/Owner: NYCEDC	State: NY	Sampling Point: <u>G</u>		
Investigator(s): <u>J. Rollino/R.Wang</u>	Section, Township, Range: Charleston			
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Flat land	Slope (%):		
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:		
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex	NWI clas	sification: wetland not mapped		
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes <u>x</u> No <u>(</u> (If no, explain	n in Remarks.)		
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Are "Normal Circumstance	es" present? Yes <u>x</u> N <u>o</u>		
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If needed, explain any an	swers in Remarks.)		

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>x</u> No If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	dures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
<u>x</u> Surface Water (A1 <u>x</u> Water-Stained Leaves (B	<u>x</u> Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living Ro	oots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils	Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes x No Depth (inches): 1-2"	
Water Table Present?         Yes x         No         Depth (inches):         Surface	
Saturation Present? Yes <u>x</u> No Depth (inches): Surface	Netland Hydrology Present? Yes <u>X</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspectio	ns), if available:
Remarks:	

Sampling Point: <u>G</u>

Trae Stratum (Diataira) 20 faat	Absolute	Dominant Indicator	Dominance Test worksheet:
<u>Tree stratum</u> (Plot size. <u>30 leet</u> )	<u>% Cover</u>		Number of Dominant Species
	40	<u> </u>	That Are OBL, FACW, or FAC: <u>5</u> (A)
2. Betula populifolia	30	D FAC	Total Number of Dominant
3			Species Across All Strata:5 (B)
4			Percent of Dominant Species
5			That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6			Prevalence Index worksheet:
7			Total % Cover of:Multiply by:
	70	= Total Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 Feet )			FACW species x 2 =
1. Vaccinium corymbosum	20	D FACW	FAC species x 3 =
2.			FACU species x 4 =
3			UPL species x 5 =
۵ ۸			Column Totals: (A) (B)
			Prevalence Index = B/A =
5			I halven hatis Venetation Indicatores
6			An Antice the Hydrophytic Vegetation
7			1 - Rapid Test for Hydrophytic Vegetation
	20	= Total Cover	3 - Prevalence Index is < 3.01
Herb Stratum (Plot size: <u>5 feet</u> )			4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1. <u>Scirpus atrovierens</u>	5	D OBL	data in Remarks or on a separate sheet)
2. Euthamia gramnifolia	5	D FAC	Problematic Hydrophytic Vegetation (Explain)
3			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4			be present, unless disturbed or problematic.
5			Definitions of Vegetation Strata:
6			Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7.			at breast height (DBH), regardless of height.
8.			Sapling/shrub – Woody plants less than 3 in. DBH
9			and greater than or equal to 3.28 ft (1 m) tall.
10			Herb - All herbaceous (non-woody) plants, regardless of
11			size, and woody plants less than 3.28 ft tall.
12			Woody vines – All woody vines greater than 3.28 ft in
12			height.
	10	= Total Cover	
Woody Vine Stratum (Plot size:)			
1			Hudrophytic
2			Vegetation
3			Present? Yes <u>x</u> No
4			
		= Total Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)		

OOL
-----

Profile Des	cription: (Describe	to the dep	oth needed to docu	ment the i	indicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redo	x Feature	<u>s</u>	2			
(inches)	Color (moist)	%	Color (moist)	%	Type'		<u>Texture</u>	Remarks	
0-3	7.5YR4/3	40	7.5YR4/1	30	D	M	silt loam		
			7.5YR4/6	20	С	М			
			2.5YR4/6	10	C	М		red parent material	
3-7	7.5YR4/4	70	7.5YR5/3	30	D	М	silt loam		
7-17	7.5YR5/3	60	7.5YR4/6	40	C	М	silt loam	Increasing amounts of r	ed parent
								material (2.5YR4/6) pre	sent
								throughout the profile.	
<sup>1</sup> Type: C=C	Concentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Masker	d Sand Gra	ains.	<sup>2</sup> Location	: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators:		,				Indicators	for Problematic Hydric Soi	ils³:
Histoso	l (A1)		Polyvalue Belo	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm N	Nuck (A10) (LRR K, L, MLRA	149B)
Black H	pipedon (A2)		MLRA 149B Thin Dark Surf:	) ace (S9) (I		RA 1498	Coast Prairie Redox (A16) (LRR K, L, R) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)		
Hydrog	en Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR K, MLRA 149B)				Dark Surface (S7) (LRR K, L, M)		
Stratifie	ed Layers (A5)		Loamy Gleyed	Matrix (F2	2)	, ,	Polyva	lue Below Surface (S8) (LRF	₹K, L)
Deplete	ed Below Dark Surfac	e (A11);	Depleted Matrix	x (F3)			Thin D	ark Surface (S9) (LRR K, L)	
Thick D	Park Surface (A12)		Redox Dark Surface (F6)				Iron-Manganese Masses (F12) (LRR K, L, R)		
Sandy i	Mucky Mineral (S1)		Depleted Dark	Surface (F	-7)		Pleam	ont Floodplain Solis (F19) (M Spodic (TA6) ( <b>MI RA 144A</b>	LRA 149B) 145 149B)
Sandy I	Redox (S5)						X Red Pa	arent Material (F21)	140, 1400/
Strippe	d Matrix (S6)						Very S	hallow Dark Surface (TF12)	
Dark Su	urface (S7) (LRR R, I	MLRA 1491	<b>B</b> )				Other (	(Explain in Remarks)	
<sup>3</sup> Indicators of	of hydrophytic vegeta	tion and w	etland hydrology mu	st be pres	ent, unless	disturbed	or problematio	<b>.</b>	
Restrictive	Layer (if observed)	:							
Type:									
Depth (in	iches):						Hydric Soil	Present? Yes X	10
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richm</u>	nond Sam	pling Date: 7/16/12
Applicant/Owner: <u>NYCEDC</u>	S	state: <u>NY</u> Sar	mpling Point: <u>G (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charle</u>	eston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	n/a
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> (If r	no, explain in Rema	rks.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal Cire	cumstances" presen	t? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, expla	ain any answers in F	Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No x Yes No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes No x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separate report.)	·

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?     Yes     No     x     Depth (inches):       Saturation Present?     Yes     No     x     Depth (inches):       (includes capillary fringe)     Yes     No     x     Depth (inches):	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?         Yes         No x           ctions), if available:
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Image: Comparison of the previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, photos, photos, photos, photos, photos, photos,	Wetland Hydrology Present?       Yes       No x         ctions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x ptions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x ptions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x

Sampling Point: <u>G (upland)</u>

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant	Indicator	Dominance Test worksheet:
1 Populus grandidentata	<u></u>	<u>- Species :</u> D	FACU	Number of Dominant Species
2 Betula populifolia	20	<u>D</u>	FAC	$\begin{bmatrix} \text{Inal Are OBL, FACW, OF FAC.} & \\ & \end{bmatrix} \begin{bmatrix} 0 \\ - \end{bmatrix} \begin{bmatrix} 0$
3			1710	Total Number of Dominant Species Across All Strata: 3 (B)
4				Demonst of Dominant Species
5.				That Are OBL, FACW, or FAC: (A/B)
6				
7				Prevalence Index worksheet:
	30	= Total C	Cover	OBL species x1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1. Vaccinium angustifolium	20	D	FACU	FAC species <u>50</u> x 3 = <u>150</u>
2.				FACU species <u>50</u> x 4 = <u>200</u>
3				UPL species x 5 =
4				Column Totals: <u>100</u> (A) <u>350</u> (B)
5.	·			Prevalence Index = B/A =
6.				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
	20	= Total (	Cover	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5' )		i otai e		3 - Prevalence Index is ≤3.0 <sup>1</sup>
1 Juncus tenuis	10	D	FAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2 Schizachvrium scoparium	20	 D	FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4.				be present, unless disturbed or problematic.
5.				Definitions of Vegetation Strata:
6.				<b>Tree</b> – Woody plants 3 in (7.6 cm) or more in diameter
7.				at breast height (DBH), regardless of height.
8.				Sapling/shrub – Woody plants less than 3 in. DBH
9.				and greater than or equal to 3.28 ft (1 m) tall.
10.				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of
11.				size, and woody plants less than 3.28 ft tall.
12.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height
	10	= Total C	over	
Woody Vine Stratum (Plot size: 15')				
1. Smilax rotundifolia	20	D	FAC	
2.				Hydrophytic
3.				Present? Yes <u>No</u> x
4.				
	20	= Total C	Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Profile Des	cription: (Describe	to the dep	oth needed to docur	nent the i	ndicator	or confirm	the absence of indi	cators.)	
Depth	Matrix		Redo	x Feature	<u>s</u> .				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remar	ks
0-5	7.5YR5/4	100					silt loam		
5-16	7.5YR5/6	95	7.5YR6/3	5	D	М	silty clay		
							<u></u>		
					<u> </u>				
		·							
	·	. <u> </u>							
1							2		
Type: C=Co	ncentration, D=Deple	tion, RM=	Reduced Matrix, MS=	=Masked \$	Sand Grain	ns.	Location: PL=Pc	re Lining, M=N	latrix. ic Soils <sup>3</sup> :
Histosol (	(Δ1)		Polyvalue Below	Surface (	S8) (I RR	R	2 cm Muck (A1		MI RA 149B)
Histic Ep	ipedon (A2)		MLRA 149B)	ounace (		ι,	Coast Prairie R	edox (A16) (LI	RR K. L. R)
Black His	stic (A3)		Thin Dark Surfac	e (S9) ( <b>LF</b>	RR R, MLF	RA 149B)	5 cm Mucky Pe	at or Peat (S3)	) (LRR K, L, R)
Hydroger	n Sulfide (A4)		Loamy Mucky Mi	neral (F1)	(LRR K, I	_)	Dark Surface (	37) ( <b>LRR K, L,</b>	<b>M</b> )
Stratified	Layers (A5)		Loamy Gleyed M	atrix (F2)			Polyvalue Belo	w Surface (S8)	(LRR K, L)
Depleted	Below Dark Surface	(A11)	Depleted Matrix (	(F3)			Thin Dark Surfa	ace (S9) (LRR	
Sandy M	rk Sufface (A12)		Depleted Dark Suna	ace (F6) urfaco (E7	')		Piodmont Floor	e Masses (F12 dolaio Soile (F1	(LRR R, L, R)
Sandy G	leved Matrix (S4)		Redox Depressio	unace (F7)	)		Mesic Spodic (	TA6) ( <b>MI RA 1</b>	444 145 149B)
Sandy Re	edox (S5)		Redux Depressio	///3 (I O)			Red Parent Ma	terial (F21)	++ <b>/</b> , 1+0, 1+0D)
Stripped	Matrix (S6)						Very Shallow D	ark Surface (T	F12)
Dark Sur	face (S7) (LRR R, ML	RA 149B	)				Other (Explain	in Remarks)	
3Indicators of	f hydrophytic vegetation	on and we	tland hydrology must	be prese	nt, unless	disturbed of	or problematic.		
Restrictive	Layer (if observed):								
Туре:									
Depth (inch	nes):						Hydric Soil Presen	t? Yes	No x
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Ri</u>	chmond S	ampling Date: 7/22/12
Applicant/Owner: <u>NYCEDC</u>		State: NY	Sampling Point: <u>H</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Ch</u>	arleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, nor	e): <u>concave</u> (draina	age easement) bpe (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex		NWI classificat	ion:wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u></u>	(If no, explain in Re	marks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal	Circumstances" pre	sent? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil , or Hydrology natural	ly problematic? (If needed,	explain any answers	s in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes X No Yes X No	Is the Sampled Area within a Wetland? Yes <u>X</u> No
wetland Hydrology Present?	Yes X NO	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separate report.) H	ydric soil indicators problematic/red parent material.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9) High Water Table (A2) Aquatic Fauna (B13)	<u>x</u> Drainage Patterns (B10) Moss Trim Lines (B16)
<ul> <li>Ingit Water Table (R2)</li> <li>Saturation (A3)</li> <li>Marl Deposits (B15)</li> <li>Water Marks (B1)</li> <li>Sediment Deposits (B2)</li> <li>Drift Deposits (B3)</li> <li>Algal Mat or Crust (B4)</li> <li>Iron Deposits (B5)</li> <li>Thin Muck Surface (C7)</li> </ul>	moss frinc Lines (D10)     Dry-Season Water Table (C2)     Crayfish Burrows (C8)     Saturation Visible on Aerial Imagery (C9)     Stunted or Stressed Plants (D1)     Geomorphic Position (D2)     Shallow Aquitard (D3)
Sparsely Vegetated Concave Surface (B8)	EAC-Neutral Test (D5)
Field Observations:	
Surface Water Present?       Yes No _x _ Depth (inches):         Water Table Present?       Yes No _x _ Depth (inches):         Saturation Present?       Yes No _x _ Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:

Tree Stratum (Plot size: )	Absolute % Cover	Dominant In Species?	ndicator Status	Dominance Test worksheet:
1,				Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2				Total Number of Dominant
3	,			Species Across All Strata:3 (B)
4			<u> </u>	Percent of Dominant Species
5				That Are OBL, FACW, or FAC:0 (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cove	r	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 feet )				FACW species x 2 =
1. <u>Salix sp.</u>	10	D	FACW	FAC species x 3 =
2				FACU species         X 4 =           LIPL species         X 5 =
3				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
	10	= Total Cove	r	<u>X</u> 2 - Dominance Test is $>50\%$
Herb Stratum (Plot size: <u>5 feet</u> )				$3 - \text{Prevalence index is } \le 3.0$
1. <u>Phragmites australis</u>	30	D	FACW	data in Remarks or on a separate sheet)
2. Juncus effusus	40	D	OBL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. Juncus tenuis	10	ND	FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Scirpus cyperinus	10	ND	OBL	be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				Weady vince All weady vince creater than 2.28 ft in
12				height.
	90	= Total Co	ver	
Woody Vine Stratum (Plot size:)				
1				
2				Hydrophytic Vegetation
3				Present? Yes <u>X</u> No
4				
		= Total Cove	r	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Profile Des	cription: (Describe	to the dep	th needed to docur	ment the i	ndicator	or confirm	the absence	of indicators.)	
Depth	Matrix		Redo	x Features	<u>s</u> Turu 1	12	Tautom	Demedia	
(inches)		%	Color (moist)	%	Type		<u>l exture</u>	Remarks	
0-6	<u>101R3/2</u>			45			silty loam	red parent material, trace gravel	
<u> </u>	5YR3/2 7 5VP2/6	<u>85</u>	5YR3/4	15	<u> </u>		cilty loom w	/ith trace cand	
	7.5183/0		7.5YR4/6			<u>M</u>	Silly IOam w		
			7.5YR6/4			IVI			
					. <u> </u>				
					<u> </u>				
<sup>1</sup> Type: C=C	oncentration, D=Dep	pletion, RM	=Reduced Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location:	: PL=Pore Lining, M=Matrix.	
Histosol			Polyvalue Belo <sup>,</sup>	w Surface	(S8) (I RE	R	2 cm M	luck (A10) (IRR K I MIRA 149B)	
Histic E	pipedon (A2)		MLRA 149B	)		ι i,	Coast I	Prairie Redox (A16) ( <b>LRR K, L, R</b> )	
Black H	istic (A3)		Thin Dark Surfa	ace (S9) ( <b>L</b>	.RR R, ML	RA 149B)	5 cm M	lucky Peat or Peat (S3) (LRR K, L, R)	
Hydroge Stratifio	en Sulfide (A4)		Loamy Mucky N	Mineral (F1	1) ( <b>LRR K</b>	, L)	Dark S	urface (S7) (LRR K, L, M)	
Deplete	d Below Dark Surfac	ce (A11)	X Depleted Matrix	x (F3)	.)		Thin Da	ark Surface (S9) (LRR K, L)	
Thick D	ark Surface (A12)	. ,	Redox Dark Su	rface (F6)			Iron-Ma	anganese Masses (F12) (LRR K, L, R)	
Sandy M	Mucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmo	ont Floodplain Soils (F19) ( <b>MLRA 149B</b> )	
Sandy C	Bedox (S5)		Redox Depress	sions (F8)			X Red Pa	Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> ) arent Material (E21)	
Stripped	d Matrix (S6)						Very Shallow Dark Surface (TF12)		
Dark Su	urface (S7) (LRR R, I	MLRA 149I	B)				Other (	Explain in Remarks)	
<sup>3</sup> Indicators o	of hydrophytic vegeta	ation and w	etland hydrology mus	st he prese	ent unless	disturbed	or problematic		
Restrictive	Layer (if observed)	:	stand Hydrology mac	<u>,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, </u>		alotarbea		·	
Type:									
Depth (in	ches):						Hydric Soil	Present? Yes X No	
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, F</u>	Richmond San	npling Date: 7/22/12
Applicant/Owner: NYCEDC		State: <u>NY</u> Sa	ampling Point: <u>H (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>C</u>	harleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, n	one):	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex		NWI classification	n: n/a
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u></u>	(If no, explain in Rema	arks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Norm	al Circumstances" prese	ent? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If needed,	explain any answers in	Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No x Yes No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes No x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	res here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Yes       No       x       Depth (inches):	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No x         ctions), if available:
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Demarker       Demarker	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x ctions), if available:
Water Table Present?       Yes No X Depth (inches):         Saturation Present?       Yes No X Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:         Remarks:	Wetland Hydrology Present? Yes No x

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Iree Stratum</u> (Plot size: <u>30</u> )	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2			·	Total Number of Dominant
3			·	Species Across All Strata: <u>2</u> (B)
4			·	Percent of Dominant Species
5			·	That Are OBL, FACW, or FAC: <u>50</u> (A/B)
6			·	Prevalence Index worksheet:
7			·	Total % Cover of: Multiply by:
		= Total Cov	rer	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1				FAC species $20$ x 3 = $60$
2				FACU species x 4 =
3.				UPL species x 5 = (D)
4.				Column Lotals: <u>60</u> (A) <u>220</u> (B)
5				Prevalence Index = $B/A = 3.67$
6.				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
		= Total Cov	er.	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5' )			01	$\_$ 3 - Prevalence Index is $\leq 3.0^1$
1 Artemisia vulgaris	10	П	NI	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2 Populus deltoides	20	<u> </u>	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Panicum sn	20	<u> </u>		<sup>1</sup> Indiastors of hydric coil and watland hydrology must
4 Andronogon virginicus	40		EACU	be present, unless disturbed or problematic.
	40		TACO	Definitions of Vegetation Strata:
5				
0 7			·	at breast height (DBH), regardless of height.
8.			·	Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
11				
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
	90	= Total C	over	
Woody Vine Stratum (Plot size: 15' )				
1				
2				Hydrophytic Vegetation
3				Present? Yes No x
4.				
		= Total Cov	rer	
Remarks: (Include photo numbers here or on a separate	sheet.)		-	<u> </u>

Profile Desc	cription: (Describe	to the dep	oth needed to docu	ment the i	ndicator	or confirm	n the absence of indic	ators.)	
Depth	Matrix		Redo	x Features	<u>s</u>	2			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
	5YR4/3	100					Loam w/ trace gravel		
4-9	5YR3/4	100					Loam w/ trace gravel		
9+	auger refusal - ri	prap		. <u> </u>					
					<u> </u>				
·					·				
				<u> </u>					
				·	·				
				. <u> </u>	<u> </u>				
'Type: C=Cor Hydric Soil In	ncentration, D=Depl	etion, RM=I	Reduced Matrix, MS	=Masked S	Sand Grain	าร.	Location: PL=Por	e Lining, M=Mat	rix. Soils <sup>3</sup> :
Histosol (/	A1)		Polyvalue Below	Surface (	S8) ( <b>LRR</b>	R,	2 cm Muck (A10	) (LRR K, L, ML	.RA 149B)
Histic Epi	pedon (A2)		MLRA 149B)				Coast Prairie Re	dox (A16) ( <b>LRR</b>	<b>K, L, R</b> )
Black Hist	tic (A3)		Thin Dark Surfac	ce (S9) ( <b>LF</b>		<b>RA 149B</b> )	5 cm Mucky Pea	t or Peat (S3) ( <b>I</b>	_RR K, L, R)
Hydrogen Stratified	Suffice (A4)		Loamy Mucky M	Ineral (F1) Iatrix (F2)	(LKK K, I	_)	Dark Surface (S Polyvalue Below	() (LRR R, L, W Surface (S8) (I	) RRKI)
Depleted	Below Dark Surface	e (A11)	Depleted Matrix	(F3)			Thin Dark Surfac	ce (S9) (LRR K,	L)
Thick Dar	k Surface (A12)	· · ·	 Redox Dark Surf	face (F6)			Iron-Manganese	Masses (F12) (	LRR K, L, R)
Sandy Mu	ucky Mineral (S1)		Depleted Dark S	urface (F7	)		Piedmont Flood	olain Soils (F19)	(MLRA 149B)
Sandy Gle	eyed Matrix (S4)		Redox Depression	ons (F8)			Mesic Spodic (T	A6) ( <b>MLRA 144</b>	A, 145, 149B)
Sandy Re	00X (S5) Matrix (S6)						Very Shallow Da	eriai (F21) rk Surface (TF1	2)
Dark Surfa	ace (S7) ( <b>LRR R, M</b>	ILRA 149B)	)				Other (Explain in	Remarks)	_)
<sup>3</sup> Indiantors of I	hydrophytic yccototi	ion and wat	land hydrology must	ho procor	t unlogo c	liaturbad	or problematic		
Restrictive La	ayer (if observed):		and flydrology must	be preser	it, uniess t	istuibeu			
Type: Ripra	ар								
Depth (inch	nes): 9 <u>+</u>						Hydric Soil Present?	Yes	No <u>x</u>
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richn</u>	nond Sampling	Date: 7/22/12
Applicant/Owner: NYCEDC		State: <u>NY</u> Samplin	ng Point: <u>HA</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: Charle	eston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	concave (drainage ease	ementiope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	_	NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes No (If n	o, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Cir	cumstances" present?	Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil _ x, or Hydrology natural	y problematic? (If needed, exp	blain any answers in Ren	narks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes x No If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separate report.)	Wetland consists of hydric soils in a drainage easement

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	x Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?     Yes     No     x     Depth (inches):       Saturation Present?     Yes     No     x     Depth (inches):       (includes capillary fringe)     Yes     No     x     Depth (inches):	Wetland Hydrology Present? Yes <u>x</u> No
Water Table Present?       Yes No _x       Depth (inches):         Saturation Present?       Yes No _x       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Ves       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4.				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6				
0				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 =
1				FAC species x 3 =
2.				FACU species x 4 =
3				UPL species x 5 =
<u>.</u>				Column Totals: (A) (B)
4	·			Drovelence Index - D/A -
5				Prevalence muex = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		= Total Cov	er	<u>X</u> 2 - Dominance Test is >50%
Horb Stratum (Distaize: E fact )			01	$\_$ 3 - Prevalence Index is $\leq 3.0^1$
<u>Herb Stratum</u> (Piot Size. <u>5 leet</u> )	60	D	OBI	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2 Phragmites australis	20		FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Frithansis menusifalia		<u> </u>	<u> 174000</u>	
3. Eutnamia gramnifolia		N	FAC	Indicators of hydric soil and wetland hydrology must
4. <u>Scirpus cyperinus</u>	5	<u>     N</u>	OBL	
5. Juncus tenuis	10	<u>N</u>	FAC	Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7.				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
0				and greater than or equal to 3.28 ft (1 m) tall.
5	·			<b>Herb</b> – All herbaceous (non-woody) plants, regardless of
10				size, and woody plants less than 3.28 ft tall.
11	·			<b>Woody vines</b> – All woody vines greater than 3.28 ft in
12				height.
	100	= Total	Cover	
Woody Vine Stratum (Plot size:				
1				
	·			Hvdrophytic
2	·			Vegetation
3				Present? Yes X No
4	<u> </u>			
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			

SO	L
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Profile Desc	ription: (Describe to	the dep	th needed to docur	nent the i	ndicator	or confirm	the absence of indic	cators.)	
Depth	Matrix		Redo	x Feature	<u>s</u> 1	. 2			
(inches)	Color (moist)	%	Color (moist)	%	Type'		Texture	Remarks	
0-6	5YR3/2	100			<u> </u>		Silt loam w/ gravel a	nd red parent material	
6-14	7.5YR3/2	80	2.5YR2.5/4	20	С	М	Silt loam w/ 10% incr	reasing trace sand	
14+	auger refusal/grave	ı							
		·					·		
						·			
							·		
		<u> </u>			<u> </u>	·	·		
						·			
		<u> </u>							
17							21		
Hvdric Soil	Indicators:	tion, Rivi	-Reduced Matrix, Ma	S=Masked	a Sand Gra	ains.	Indicators for Pro	blematic Hvdric Soils <sup>3</sup> :	
Histosol	(A1)		Polvvalue Belov	w Surface	(S8) ( <b>LRF</b>	R.	2 cm Muck (A	10) ( <b>LRR K. L. MLRA 149B</b> )	
Histic Ep	pipedon (A2)		MLRA 149B	)	()(	,	Coast Prairie F	Redox (A16) ( <b>LRR K, L, R</b> )	
Black Hi	stic (A3)		Thin Dark Surfa	ace (S9) ( <b>I</b>	_RR R, ML	RA 149B)	5 cm Mucky P	eat or Peat (S3) (LRR K, L, R)	
Hydroge	n Sulfide (A4)		Loamy Mucky N	Mineral (F	1) ( <b>LRR K</b>	, L)	Dark Surface (	(S7) ( <b>LRR K, L, M</b> )	
Stratified	1 Layers (A5) 1 Below Dark Surface	(Δ11)	Loamy Gleyed	Matrix (F2	2)		Polyvalue Belo	bw Sufface (S8) (LRR K, L)	
Thick Da	ark Surface (A12)	(,,,,)	Redox Dark Su	rface (F6)			Iron-Manganes	se Masses (F12) (LRR K, L, R)	
Sandy M	lucky Mineral (S1)		Depleted Dark	, Surface (F	7)		Piedmont Floo	odplain Soils (F19) (MLRA 149B)	
Sandy G	Bleyed Matrix (S4)		Redox Depress	ions (F8)			Mesic Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )		
Sandy R	ledox (S5)						<u>x</u> Red Parent Material (F21) Very Shallow Dark Surface (TE12)		
Dark Su	rface (S7) (LRR R. MI	RA 149	3)				Other (Explain	in Remarks)	
			- )				<u> </u>		
<sup>3</sup> Indicators of	f hydrophytic vegetatio	on and we	etland hydrology mus	st be prese	ent, unless	disturbed	or problematic.		
Restrictive I	_ayer (if observed):								
Туре:									
Depth (ind	ches):						Hydric Soil Presen	t? Yes <u>x</u> No	
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Ric</u>	hmond Samp	oling Date: 7/22/12
Applicant/Owner: <u>NYCEDC</u>		State: <u>NY</u> San	npling Point: <u>HA (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Cha</u>	arleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, non	e):	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	n/a
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes <u>x</u> No <u></u>	(If no, explain in Remar	ks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal	Circumstances" presen	t? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, et	xplain any answers in R	emarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No x Yes No x Yes No x	Is the Sampled Area within a Wetland? Yes No x
Remarks: (Explain alternative proced	lures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Yes       No       x       Depth (inches):	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No x         ctions), if available:
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x ctions), if available:
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x

Trop Stratum (Blot size: 20)	Absolute	Dominant	Indicator	Dominance Test worksheet:
	% Cover	<u>Species</u> ?		Number of Dominant Species
1	. <u> </u>			That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3	<u> </u>			Species Across All Strata: <u>4</u> (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>25</u> (A/B)
6.				
7				Tetal % Cover of:
		- Total Co	vor	
Conting (Chryle Charters / Distaines 45)		- 10181 00	VCI	EACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15				EAC species $25$ $x_3 = 75$
1				EACLI species $40$ $x 4 = 160$
2				$\frac{112}{12} = \frac{112}{12} = 1$
3				Column Totals: 65 (A) 235 (B)
4				
5.				Prevalence Index = $B/A = 3.62$
6.				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
/:		Tatal Oa		2 - Dominance Test is >50%
			ver	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: 5' )	20	П	NI	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
2 Euthamia grampifolia	20		FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	<u> </u>	<u> </u>		be present, unless disturbed or problematic.
4. Andropogon virginicus	20	D	FACU	Definitions of Manatation Strates
5. Phleum pratense	20	D	FACU	Definitions of vegetation Strata:
6. Lespedeza sp.	15	N	NI	<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9				
10.				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of
11				size, and woody plants less than 3.28 ft tall.
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in
12			0	neight.
	100	= Iotal	Cover	
Woody Vine Stratum (Plot size: 15' )				
1	<u> </u>			Heater a beat a
2				Vegetation
3				Present? Yes No x
4		_		
		= Total Co	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			1

Depth	Matrix		Redo	ox Feature	<u>s</u> .	-				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Ren	narks	
0-7	5YR3/3	60	2.5YR3/4	40	С	М	Sandy loam	Red parent materi	al present throughou	
7-11	2.5YR4/4	<u>100</u>					Sandy loam w	// gravel		
11-18	5YR4/4	80	5YR4/6	20	С	М	Sandy loam w	/ gravel		
								-		
			<u> </u>							
Type: C=Co	ncentration D=Depl	etion RM	= Reduced Matrix MS	=Masked	Sand Grai	ns	<sup>2</sup> Location:	PI =Pore Lining M	=Matrix	
Hydric Soil I	ndicators:			Mached			Indicators f	or Problematic Hy	dric Soils <sup>3</sup> :	
Histosol	(A1)		Polyvalue Below	Surface (	S8) ( <b>LRR</b>	R,	2 cm Mi	uck (A10) ( <b>LRR K, I</b>	L, MLRA 149B)	
Histic Ep	ipedon (A2)		MLRA 149B)			DA 4400)	Coast P	Prairie Redox (A16)		
Hvdroger	n Sulfide (A4)		Loamy Mucky M	ineral (F1)		τΑ 149D) L)	Dark Su	ucky Pear of Pear (3 urface (S7) (LRR K.	53) ( <b>LKK K, L, K</b> ) L. <b>M</b> )	
Stratified	Layers (A5)		Loamy Gleyed N	/atrix (F2)	(,	_,	Polyvalu	ue Below Surface (S	58) ( <b>LRR K, L</b> )	
Depleted	Below Dark Surface	e (A11)	Depleted Matrix	(F3)			Thin Dark Surface (S9) (LRR K, L)			
Thick Da	rk Surface (A12)		Redox Dark Sur	face (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)			
Sandy M	ucky Mineral (S1)		Depleted Dark S	Surface (F7	")		Piedmont Floodplain Soils (F19) (MLRA 149B)			
Sandy G	edox (S5)		Redox Depressi	ons (F8)			Mesic Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> ) Red Parent Material (F21)			
Stripped	Matrix (S6)						Very Shallow Dark Surface (TF12)			
Dark Sur	face (S7) (LRR R, N	ILRA 1491	<b>B</b> )				Other (Explain in Remarks)			
Indiantara of	hydrophytic ycactot	ion and w	atland bydralagy must	ha propor		diaturhad	or problematic			
Restrictive L	aver (if observed):	ion and we	eliand hydrology musi	be preser	it, unless (	uistuibed	or problematic.			
Туре:			_							
Depth (inc	:hes):		_				Hydric Soil F	Present? Yes	<u>No x</u>	
Remarks:										

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Rie</u>	chmond Samplin	ng Date: <u>7/10/12</u>
Applicant/Owner:		State: <u>NY</u> Samp	ling Point: <u>NA</u>
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: <u>Ch</u>	arleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, nor	e):Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u> </u>	(If no, explain in Remarks	.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal	Circumstances" present?	Yes <u>x</u> No
Are Vegetation, Soil , or Hydrology naturall	y problematic? (If needed,	explain any answers in Re	marks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>I</u> No
Wetland Hydrology Present?	Yes <u>x</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proce	dures here or in a separate report.)	Soil contains red parent material/problematic.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled S	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	x Microtopographic Relief (D4)
x Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes No <u>x</u> Depth (inches):	
Water I able Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes I No
Water Table Present?       Yes No X Depth (inches):         Saturation Present?       Yes No X Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes I No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No ctions), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No ctions), if available:

Tree Stratum (Plot size:)	Absolute Dominant Indicator % Cover Species? Status	Dominance Test worksheet:
1		Number of Dominant Species           That Are OBL, FACW, or FAC:
2		Total Number of Dominant
3		Species Across All Strata: (B)
4		Percent of Dominant Species
5		That Are OBL, FACW, or FAC: (A/B)
6		Prevalence Index worksheet:
7		Total % Cover of: Multiply by:
	= Total Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)		FACW species x 2 =
1		FAC species x 3 =
2		FACU species x 4 =
3		$\begin{array}{c} \text{OPL species} \\ \text{Column Totals} \\ \end{array} \qquad \qquad$
4		
5		Prevalence Index = B/A =
6		Hydrophytic Vegetation Indicators:
7		1 - Rapid Test for Hydrophytic Vegetation
	= Total Cover	2 - Dominance Test is >50%
Herb Stratum (Plot size:)		3 - Prevalence Index is ≤3.0°
1		data in Remarks or on a separate sheet)
2		X Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3		<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4		be present, unless disturbed or problematic.
5		Definitions of Vegetation Strata:
6		Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7		at breast height (DBH), regardless of height.
8		<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
9		Harb - All herbaceous (non-woody) plants regardless of
10		size, and woody plants less than 3.28 ft tall.
11		Woody vines – All woody vines greater than 3.28 ft in
12		height.
	= Total Cover	
<u>woody vine Stratum</u> (Plot size:)		
1		Hydrophytic
2		Vegetation
3		Present? Tes No
4		See below
	= Total Cover	
Non-vegetated vernal pool, dry at the time of survey	v.	

#### SOIL

Profile Desc	cription: (Describe	to the dep	th needed to docu	ment the in	ndicator	or confirn	n the absence of	indicators.)	
Depth	Matrix		Redo	x Features					
(inches)	Color (moist)	%	Color (moist)	<u>%</u>		Loc <sup>2</sup>	Texture	Remarks	
0-4	7.5YR 4/2						silt		
4-6	2.5YR4/3	66	2.5YR4/4	33	С	М	loam		
6-12	2.5YR4/2&2.5YR	4/4					loamy sand	double matrix	
12+	Auger refusal	·					·		
		·					·		
							·		
		·					·		
		·					· ·		
		·							
		·					·		
		·							
		·					·		
		·					·	<u>.</u>	
<sup>1</sup> Type: C=C	oncentration, D=Dep	letion, RM:	Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: I	PL=Pore Lining, M=Matrix.	
			Debuselus Dela						
HISTOSO	(A1) ninedon (A2)		Polyvalue Belo	w Surface	(58) ( <b>LKF</b>	КК,	2 cm Mud Coast Pr	airie Redox (A16) ( <b>I RR K I R</b> )	
Black H	istic (A3)		Thin Dark Surfa	, ace (S9) ( <b>L</b>	RR R. ML	_RA 149B	) 5 cm Mu	ckv Peat or Peat (S3) (LRR K. L. R)	
Hydroge	en Sulfide (A4)		Loamy Mucky	Mineral (F1	) (LRR K	, L)	Dark Sur	face (S7) ( <b>LRR K, L, M</b> )	
Stratifie	d Layers (A5)		Loamy Gleyed	Matrix (F2)	)	. ,	Polyvalue	e Below Surface (S8) (LRR K, L)	
Deplete	d Below Dark Surface	e (A11)	Depleted Matrix	k (F3)			Thin Darl	k Surface (S9) (LRR K, L)	
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)		
Sandy N	/lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmont Floodplain Soils (F19) (MLRA 149B)		
Sandy C	Gleyed Matrix (S4)		Redox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)		
Sandy F	Redox (S5)						<u>x</u> Red Par	rent Material (F21)	
Stripped	l Matrix (S6)						Very Shallow Dark Surface (TF12)		
Dark Su	rface (S7) (LRR R, N	ILRA 1498	3)				Other (Ex	xplain in Remarks)	
<sup>3</sup> Indicators o	f hydrophytic vegetat	tion and we	etland hydrology mus	st be prese	nt, unless	disturbed	l or problematic.		
Restrictive	Layer (if observed):								
Туре:								(F21) x	
Depth (in	ches):						Hydric Soil Pr	resent? YesX <u>(FZT</u> ) No	
Remarks:									

Project/Site:	City/County: Richmond	Sampling	g Date: July 2012
Applicant/Owner:			ling Point: NA Upland
Investigator(s):Rollino, J.	Section, Township, Range:	Charleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, no	ne): Flat land	Slope (%):
Subregion (LRR or MLRA): Lat:	Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Com	nplex	NWI classification:	n/a
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes No	(If no, explain in Remarks.)	
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Are "Norma	I Circumstances" present?	Yes <u>x</u> No
Are Vegetation, Soil, or Hydrology naturall	y problematic? (If needed,	explain any answers in Rem	arks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No Yes No Yes No	x x x	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separa	ate report.)	
Plot adjacent to former access road	l, historic disturbance like	ely.	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	g Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled S	Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Ves No X Danth (inches);	
Water Table Present? res No Depth (inches).	
Saturation Present? Yes <u>No X</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No X
Saturation Present?       Yes NoX       Depth (inches).         (includes capillary fringe)       NoX       Depth (inches).         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No X
Saturation Present?       Yes NoX       Depth (inches).         Saturation Present?       Yes NoX       Depth (inches):         (includes capillary fringe)        Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No X
Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No X
Valer Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Valer Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:	Wetland Hydrology Present? Yes No X
Water Fable Present?       Fes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:	Wetland Hydrology Present? Yes No X
Water Fable Present?       Fes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:	Wetland Hydrology Present? Yes No X
Water Fable Present?       Fes NoX       Depth (inches):         Saturation Present?       Yes NoX       Depth (inches):         (includes capillary fringe)       Depth (inches):       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe       Remarks:	Wetland Hydrology Present? Yes No X
Water Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:	Wetland Hydrology Present? Yes No X
Water Fable Present?       Yes NoX Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Tes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe         Remarks:	Wetland Hydrology Present? Yes No X

Trop Stratum (Blat size: 30 ft radius	Absolute	Dominant In	dicator	Dominance Test worksheet:
Populous deltoides	<u>% Cover</u> 75	D	FAC	Number of Dominant Species 2
Quercus rubra	25	N	FAC	That Are OBL, FACW, or FAC: (A)
2Ulmus sp.	25		NI	Total Number of Dominant 3
3				Species Across All Strata: (B)
4				Percent of Dominant Species 66
5	. <u></u>	· _		That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	100	= Total Cover		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 10 sq ft )				FACW species x 2 =
<u></u>				FAC species x 3 =
				FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4			<u> </u>	
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
	0	= Total Cover		X 2 - Dominance Test is >50%
Hark Stratum (Plat size) 1 meter				3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size:)	3	П	EACU	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
			TACO	data in Remarks or on a separate sheet)
2				Problematic Hydrophytic Vegetation' (Explain)
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5.				Definitions of Vegetation Strata:
6				<b>Tree</b> – Woody plants 3 in (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
1		· _	<u> </u>	Sanling/shrub Woody plants loss than 3 in DPH
8				and greater than or equal to 3.28 ft (1 m) tall.
9	. <u></u>	· _		Harb All hashaacous (non woody) plants secondlass of
10				size, and woody plants less than 3.28 ft tall.
11				
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
	3	= Total Cover		
10 sq ft Woody Vine Stratum (Plot size: )				
Smilax rotundifolia	70	D	FAC	
Lonicera sp	10		NI	Hydrophytic
2				Vegetation
3			<u> </u>	Present? Yes <u>^</u> No
4				
	80	= Total Cover		
Remarks: (Include photo numbers here or on a separate	sheet.)			
Hydric species are FAC, limited understory and herbs a	re upland sp	ecles.		

Color (moist)         %         Color (moist)         %         Color (moist)         %         Loar         Remarks           0-1         7.5 YR 3/2         100
0-1         7.5 YR 3/2         100         Loam           1-3         7.5 YR 4/3         100         Sandy leam           5-9         5YR 5/6         85         Silty Sand         15% Charcoal           9-14         5YR 5/6         100         Silty Sand         15% Charcoal           9-14         5% 5/6         Silty Sand         Silty Sand         15% Charcoal           9-14         5% 5/6         Silty Sand         Silty Sand         15% Charcoal           9-14         5% 5/6         Silty Sand         Silty Sand         15% Charcoal           9-14         5% 5/6         Silty Sand         Silty Sand         15% Charcoal           9-14         5% 5/6         Silty Sand         Silty Sand         15% Charcoal           9-14         5% 5/
1-3       7.5 YR 4/3       100       Sandy loam         5-9       5YR 5/6       85       Silty Sand       15% Charcoal         9-14       5YR 5/6       100       Silty Sand       15% Charcoal         9-14       5       Silty Sand       Silty Sand       Silty Sand         9-14       5       Silty Sand       Sandy Roek (A10) (LRR K, L, MR, LA149B)       Coast Prairie Redox (A16) (LRR K, L, N)         9-14       Sandy Roek (S5)       Sandy Roek (S5)       Sandy Roek (S5)       Polyalue Below Surface (F7)       Polyalue Below Surface (S3) (LRR K, L, N)         9-1
5-9         5YR 5/6         86         Silty Sand         15% Charcoal           9:14         5YR 5/6         100         Silty Sand
9:14       5YR 5/6       100       Sity Sand         100       100       100       100         11       100       100       100         11       100       100       100         11       100       100       100         11       100       100       100         11       100       100       100         12       100       100       100         13       100       100       100         14       100       100       100       100         14       100       100       100       100       100         14       100       100       100       100       100       100         15       100       100       100       100       100       100       100         14       14980       100       10
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains, Indicators for Problematic Hydric Soils? <sup>2</sup> Location: PL=Pore Lining, M=Matrix, Indicators for Problematic Hydric Soils?             Histosol (A1)           Polyvalue Below Surface (S8) (LRR R, Indicators for Problematic Hydric Soils?             Histosol (A1)           Polyvalue Below Surface (S8) (LRR R, Indicators for Problematic Hydric Soils?             Histosol (A1)           Polyvalue Below Surface (S9) (LRR R, I, RLRA 149B)             Black Histo (A3)           Thin Dark Surface (S9) (LRR K, L, R)             Hydrige Suffice (A4)           Loamy Gleyed Matrix (F2)             Depleted Below Dark Surface (A11)           Depleted Matrix (F3)             Thin Dark Surface (F6)           Loamy Gleyed Matrix (F3)             Sandy Mucky Mineral (S1)           Depleted Depleted Deplete Deplete Deplete Dark Surface (F7)             Sthipped Matrix (S6)           Redox Depressions (F6)           Lore Manganese Masses (F12) (LRR K, L, R)             Sandy Mucky Mineral (S1)           Depleted Dark Surface (F12)           Material (F21)             Sthipped Matrix (S6)           Redox Depressions (F6)           Lorem-Manganese Masses (F12)
Image: String of the string
'Type:       C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *location: PL=Pore Lining, M=Matrix.         'Indicators i:       Indicators:       Indicators for Problematic Hydric Soils*:         Histic Soil Indicators:
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>1</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Gleyed Matrix (F2)         Bake Histic (A4)       Loamy Gleyed Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F2)         Thick Dark Surface (A12)       Redox Dark Surface (F6)         Stratified Layers (A5)       Depleted Matrix (F2)         Sandy Mucky Mineral (S1)       Depleted Matrix (S4)         Sandy Gleyed Matrix (S4)       Redox Depressions (F6)         Sandy Redox (S5)       Redox Depressions (F6)         Stratified Layers (G1 (LRR R, MLRA 149B))       Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>1</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, L, R)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Loamy Gleyed Matrix (F2)         Below Surface (A12)       Depleted Matrix (F2)         Depleted Below Dark Surface (A11)       Depleted Matrix (F2)         Sandy Mucky Mineral (F1)       Depleted Matrix (S4)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S6)       Redox Depressions (F8)         Sandy Gleyed Matrix (S6)       Very Shallow Dark Surface (T12)         Stripped Matrix (S6)       Very Shallow Dark Surface (T12)         Stripped (S1)       URR R 149B) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Depleted Informatic       Yes       No         Type:       Depleted Informatic Soil Present? Yes       No         Remarks:       Mydric Soil Present? Yes       No       X
'Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils*:         Histos (A1)       Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR K, L)       Dark Surface (S8) (LRR K, L, M)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Polyvalue Below Surface (S8) (LRR K, L)         Thick Dark Surface (A11)       Depleted Matrix (F3)       Thin Dark Surface (S8) (LRR K, L)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Qetry Shallow Dark Surface (TF12)       Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         Sandy Redox (S5)       Wesic Spodic (TA6) (MLRA 144A, 145, 149B)         Stripped Matrix (S6)       Other (Explain in Remarks)         Other (Explain in Remarks)       Prometio
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.          Hydric Soil Indicators:           Indicators for Problematic Hydric Soils <sup>3</sup> :          Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,           2 cm Muck (A10) (LRR K, L, MLRA 149B)          Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)          Coast Prairie Redox (A16) (LRR K, L, R)          Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR K, L)           Dark Surface (S9) (LRR K, L, R)          Stratified Layers (A5)       Loamy Gleyed Matrix (F2)          Polyvalue Below Surface (S8) (LRR K, L, R)          Thin Dark Surface (A11)       Depleted Matrix (F2)          Polyvalue Below Surface (S9) (LRR K, L, R)          Stratified Layers (A5)          Loamy Gleyed Matrix (F2)          Polyvalue Below Surface (S9) (LRR K, L, R)          Stratified Below Dark Surface (A11)          Depleted Dark Surface (F7)           Piedmont Floodplain Soils (F19) (MLRA 149B)          Sandy Redox (S5)          Sandy Redox (S5)           Mesic Spocic (TA6) (MLRA 144A, 145, 149B)          Sandy Redox (S5)          Dark Surface (S7) (LR R, MLRA 149B)           Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be p
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Histosol (A2)       MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Suffade (A4)       Loamy Mucky Mineral (F1) (LRR K, L)       Dark Surface (S7) (LRR K, L, M)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Polyvalue Below Surface (S9) (LRR K, L)         Thick Dark Surface (A11)       Depleted Matrix (F3)       Thin Dark Surface (S9) (LRR K, L, R)         Sandy Gleyed Matrix (S4)       Redox Dark Surface (F7)       Piedmont Floodplain Soils (F19) (MLRA 1449B)         Sandy Gleyed Matrix (S6)       Red Parent Material (F21)       Wesix Spodic (TA6) (MLRA 1444, 145, 149B)         Sinpiped Matrix (S6)       Generative S0 (LRR K, L, R)       Peleted Matrix (S6)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)       Shipped Matrix (S6)         Bardy Redox (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)       Shipped Matrix (S6)       Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation an
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R,       2 cm Muck (A10) (LRR K, L, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR K, L)       Dark Surface (S7) (LRR K, L, M)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Polyvalue Below Surface (S9) (LRR K, L)         Thick Dark Surface (A11)       Depleted Matrix (F3)       Thin Dark Surface (S9) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Gleyed Matrix (S4)       Redox Dark Surface (F7)       Piedmont Floodplain Soils (F19) (MLRA 149B)         Sandy Redox (S5)       Red Parent Material (F21)       Very Shallow Dark Surface (TF12)         Sandy Redox (S5)       Redox Depressions (F8)       Mesic Spoint (TA6) (MLRA 1448)         Sitipped Matrix (S6)       Very Shallow Dark Surface (TF12)       Dark Surface (S7) (LRR R, MLRA 149B)         Sitipped Matrix (S6)       Very Shallow Dark Surface (TF12)       Dark Surface (S7) (LRR R, MLRA 149B)         Sindicators of hydrophytic vegetation and wetland hydrol
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histos (A1)       Polyvalue Below Surface (S8) (LRR R,         Histic Epipedon (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR K, L, M)         Hydrogen Suffde (A4)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A11)       Depleted Matrix (F2)         Polyvalue Below Surface (F6)       Thin Dark Surface (S9) (LRR K, L, R)         Dark Surface (A12)       Redox Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)         Sandy Redox (S5)       Red Parent Material (F21)         Striftee Layer (if observed):       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:       Deplete for Served):       Yes       No         Thick Dark Surface (S7) (LRR R, MLRA 149B)       Mexic Soil Present? Yes       No <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be pre
Implementation       Imple
Histic Epipedon (A2)       MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       5 cm Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Mucky Mineral (F1) (LRR K, L)       Dark Surface (S7) (LRR K, L, M)         Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Polyvalue Below Surface (S9) (LRR K, L)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Thin Dark Surface (S9) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Gleyed Matrix (S4)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Redox (S5)       Redox Depressions (F8)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)       3 <sup>1</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Remarks:
Black Histic (A3)
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thin Dark Surface (S9) (LRR K, L)     Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) (LRR K, L, R)     Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Soils (F19) (MLRA 149B)     Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)     Sandy Redox (S5) Red Parent Material (F21) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.     Restrictive Layer (if observed):     Type:Depth (inches): NoX_     Remarks:
Sandy Mukey Mineral (S1) Depleted Dark Surface (F7) Pledmont Prodeptain Soils (F19) (MLRA 144B)     Sandy Gleyed Matrix (S4) Redox Depressions (F8) Mesic Spodic (TA6) (MLRA 144A, 145, 149B)     Sandy Redox (S5) Red Parent Material (F21)     Very Shallow Dark Surface (TF12)     Dark Surface (S7) (LRR R, MLRA 149B)     Other (Explain in Remarks)       Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.     Restrictive Layer (if observed):       Depth (inches): Remarks:
Sandy Redox (S5) Red Parent Material (F21) Red Parent Material (F21) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Depth (inches): Hydric Soil Present? Yes No Remarks:
Stripped Matrix (S6)Very Shallow Dark Surface (TF12)Other (Explain in Remarks)
Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Restrictive Layer (if observed): Type: Depth (inches): NoX Remarks:
<sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.          Restrictive Layer (if observed):       Hydric Soil Present? Yes No X         Depth (inches):       No X         Remarks:       No X
Restrictive Layer (if observed):     Type:
Type:     Hydric Soil Present? Yes NoX       Depth (inches):     Remarks:
Remarks:

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richm</u>	ond Samp	ling Date: 7/10/12
Applicant/Owner:	Si	ate: <u>NY</u> San	npling Point: <u>NB</u>
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: <u>Charles</u>	ston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	fyear? Yes <u>x</u> No <u>(</u> (If r	io, explain in Remar	ks.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal Circ	umstances" present	? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil , or Hydrology naturall	y problematic? (If needed, expl	ain any answers in I	Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>x</u> No
Wetland Hydrology Present?	Yes <u>x</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ures here or in a separate report.) Pro	oblematic hydric soil indicators/red parent material.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled So	pils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	x Microtopographic Relief (D4)
x Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No x Depth (inches):	
Water Table Present? Ves No x Dopth (inches):	
$Mater Table Fresent? \qquad Tes \_ Mo \_ x \_ Deptit (fincties).$	
Saturation Present? Yes <u>No x</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No
Saturation Present?       Yes No _x Depth (incres).         Saturation Present?       Yes No _x Depth (incres).         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No _x Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No _x Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No _x Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No _x Depth (incres):         (includes capillary fringe)       No _x Depth (incres):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Fresent?       Fes No Depth (incres).         Saturation Present?       Yes No Depth (incres).         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Present?       Yes No _x Depth (incres).         Saturation Present?       Yes No _x Depth (incres).         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Present?       Yes No _x Depth (incres):         Saturation Present?       Yes No _x Depth (incres):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Fresent?       Fes No Depth (incres):         Saturation Present?       Yes No Depth (incres):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:

Sampling Point: NB

	Absolute	Dominant	Indicator							
Tree Stratum (Plot size: <u>30 feet</u> )	<u>% Cover</u>	Species?	Status	Dominance Test worksheet:						
1. Quercus palustris	20	D	FACW	That Are OBL, FACW, or FAC: 7 (A)						
2. Populus deltoides	5	D	FAC	Total Number of Deminent						
3.				Species Across All Strata: 7 (B)						
A										
				That Are OBL, FACW, or FAC: 100 (A/B)						
5				······································						
6				Prevalence Index worksheet:						
7				Total % Cover of:Multiply by:						
		= Total Co	ver	OBL species x 1 =						
Sapling/Shrub Stratum (Plot size: 15 feet )				FACW species x 2 =						
1. Viburnum dentatum	5	D	FAC	FAC species x 3 =						
2. Salix sp.	5	D	FACW	FACU species x 4 =						
3				UPL species x 5 =						
0				Column Totals: (A) (B)						
4				Prevalence Index = B/A =						
5										
6				Hydrophytic vegetation indicators:						
7				1 - Rapid Test for Hydrophytic Vegetation						
	10	= Total C	Cover	$\frac{1}{2}$ - Dominance rest is >50%						
Herb Stratum (Plot size:)				<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting</li> </ul>						
1. Juncus effusus	5	D	OBL	data in Remarks or on a separate sheet)						
2. Carex scoparia	5	D	OBL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)						
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must						
4				be present, unless disturbed or problematic.						
5.				Definitions of Vegetation Strata:						
6.				<b>Tree</b> – Woody plants 3 in (7.6 cm) or more in diameter						
7				at breast height (DBH), regardless of height.						
o				Sapling/shrub – Woody plants less than 3 in DBH						
o				and greater than or equal to 3.28 ft (1 m) tall.						
9				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of						
10				size, and woody plants less than 3.28 ft tall.						
11				<b>Woody vines</b> $-$ All woody vines greater than 3.28 ft in						
12				height.						
	10	= Total (	Cover							
Woody Vine Stratum (Plot size: <u>15 feet</u> )										
1. Smilax rotundifoia	50	D	FAC							
2				Hydrophytic						
2				Vegetation Present? Yes X No						
3										
4										
	50	= Total (	Cover							
Remarks: (Include photo numbers here or on a separate	sheet.)									
Profile Des	cription: (Describe	to the de	pth needed to docu	nent the i	ndicator	or confirm	m the absence	of indicato	ors.)	
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Depth	Matrix	0/	Redo	x Feature	<u>S</u> Tura a <sup>1</sup>	L = = 2	Tautura		Demente	
(incnes)		<u>%</u>		%	<u> </u>	LOC			Remarks	
	5YR3/2	100					Root mass			
	7.5YR4/2	90	7 <u>.5YR4/4</u>	10	<u>C</u>	<u>PL </u>	<u>Sandy loam w/</u>	fibrous root	material through	nout
6-9	7.5YR5/2	50	7.5YR5/6	50			Silt loam	Double mat	trix	
9+	Auger refusal/rip-r	a <u>p</u>						<u></u>		
<sup>1</sup> Type: C=C	oncentration D=Dep	letion RI	 M=Reduced Matrix_M	S=Masker	Sand Gr	ains	<sup>2</sup> Locatio	n: PI =Pore	Lining M=Matri	x
Hydric Soil	Indicators:						Indicators	for Proble	matic Hydric S	oils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belo	w Surface	(S8) ( <b>LRI</b>	RR,	2 cm	Muck (A10) (		RA 149B)
Black H	pipedon (A2) istic (A3)		Thin Dark Surfa	) ace (S9) ( <b>I</b>	.RR R, M	LRA 149E	Coast 3) 5 cm	Mucky Peat	ox (A16) (LRR I or Peat (S3) (LF	κ, L, κ) RR K, L, R)
Hydroge	en Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR K, L)			Dark	Dark Surface (S7) (LRR K, L, M)			
Stratifie	d Layers (A5) d Below Dark Surface	ο (Δ11)	Loamy Gleyed Matrix (F2)			Polyvalue Below Surface (S8) (LRR K, L)				
Thick D	ark Surface (A12)	c (/ (11)	Redox Dark Su	Redox Dark Surface (F6)			Iron-N	Iron-Manganese Masses (F12) (LRR K, L, R)		
Sandy M	Mucky Mineral (S1)		Depleted Dark Surface (F7)			Piedmont Floodplain Soils (F19) (MLRA 149B)				
Sandy C	Redox (S5)		Redox Depress	SIONS (FO)			<u>x</u> Red	Parent Mate	rial (F21)	, 145, 149D)
Stripped	d Matrix (S6)						Very S	Shallow Dark	Surface (TF12	)
Dark Su	irface (S7) (LRR R, N	ALRA 14	9B)				Other	(Explain in F	Remarks)	
<sup>3</sup> Indicators o	f hydrophytic vegetat	tion and v	vetland hydrology mus	st be prese	ent, unles	s disturbed	d or problemati	с.		
Restrictive	Layer (if observed):									
Type:	choc):		-				Hydric Soi	Procont?	Voc x	No
Remarks:	ciles)						Hyunc Sol	I Flesent?		N <u>0</u>

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/9/12
Applicant/Owner: NYCEDC	State:	NY Sampling Point: <u>NB (upland)</u>
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Fla	t land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NWI	n/a classification:
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> (If no, ex	plain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circumst	ances" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain an	y answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes No x Yes No x	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes No x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ires here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)		
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)		
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)		
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)		
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)		
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)		
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	pils (C6) Geomorphic Position (D2)		
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)		
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)		
Field Observations:			
Surface Water Present? Yes <u>No x</u> Depth (inches):			
Water Table Present? Yes No x Depth (inches):			
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x		
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Includes capillary fringe       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Includes capillary fringe       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Includes capillary fringe       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No X Depth (inches):         Saturation Present?       Yes No X Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x		
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x		
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:		
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>No x</u> tions), if available:		

	Absolute	Dominant	Indicator	Dominance Test worksheet:			
Tree Stratum (Plot size: <u>30'</u> )	<u>% Cover</u>	<u>Species?</u>	<u>Status</u>	Number of Dominant Species			
1			·	That Are OBL, FACW, or FAC: (A)			
2			·	Total Number of Dominant			
3			·	Species Across All Strata: <u>2</u> (B)			
4	<u> </u>			Percent of Dominant Species			
5				That Are OBL, FACW, or FAC: <u>50</u> (A/B)			
6				Provalence Index worksheet:			
7.				Total % Cover of Multiply by			
		= Total Cov	er	$\frac{1}{OBL \text{ species}} = \frac{1}{x + 1}$			
Sapling/Shrub Stratum (Plot size: 15'				FACW species $5 \times 2 = 10$			
1 Baccharis halmnifolia	5	D	FACW	FAC species x 3 =			
	<u> </u>	<u> </u>		FACU species <u>14</u> x 4 <u>= 56</u>			
	<u> </u>			UPL species x 5 =			
3. Elaeagnus angustifolia	8	D	FACU	Column Totals: <u>19</u> (A) <u>66</u> (B)			
4			·	Provolonce Index = P/A = -2.47			
5	<u> </u>		·	Prevalence index = B/A = 3.47			
6			·	Hydrophytic Vegetation Indicators:			
7				1 - Rapid Test for Hydrophytic Vegetation			
	18	= Total C	over	2 - Dominance Test is >50%			
Herb Stratum (Plot size: 5' )				$3$ - Prevalence Index is $\leq 3.0^{\circ}$			
1. Fescue sp.	70	D	NI	4 - Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)			
2 Phleum pratense	1	N	FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
2. Latus corrigulatus		N	<u> </u>				
		N	<u>FACU</u>	be present, unless disturbed or problematic.			
4. Solidago sp.	10	<u>         N</u>		Definitions of Vagatation Strata:			
5	·		·	Definitions of Vegetation Strata.			
6	<u> </u>		·	<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter			
7	·		·	at breast height (bbh), regardless of height.			
8	<u> </u>		·	<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3 28 ft (1 m) tall			
9			·				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall			
11	<u> </u>						
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.			
	86	= Total C	over				
Woody Vine Stratum (Plot size: 15')							
1							
·				Hydrophytic			
2	·		·	Vegetation Present? Yes No X			
3	<u> </u>						
4							
		= Total Co	ver				
Remarks: (Include photo numbers here or on a separate	e sheet.)						

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix		Redo	x Features	<u>s</u>					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-9	7.5YR4/4	100					Loam	Friable;	anthropogenic	debris
9+							Loam	Auger re	efusal	
		·								
·		·								
		·								
		·								
·										
		·								
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM	=Reduced Matrix, M	S=Masked	I Sand Gra	ains.	<sup>2</sup> Location:	PL=Pore	Lining, M=Matr	ix.
Hydric Soil I	ndicators:	,	,				Indicators	for Probler	matic Hydric S	oils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belov	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm M	uck (A10) (	(LRR K, L, MLF	RA 149B)
Histic Ep	pipedon (A2)		MLRA 149B	)	. , .		Coast F	Prairie Redo	ox (A16) ( <b>LRR</b>	K, L, R)
Black Hi	stic (A3)		Thin Dark Surfa	ace (S9) ( <b>L</b>	.RR R, MI	LRA 149B)	5 cm M	ucky Peat	or Peat (S3) (L	RR K, L, R)
Hydroge	n Sulfide (A4)		Loamy Mucky N	Mineral (F1	1) ( <b>LRR K</b>	, L)	Dark Si	urface (S7)	$(LRR\;K,L,M)$	
Stratified	l Layers (A5)		Loamy Gleyed	Matrix (F2	)		Polyval	ue Below S	Surface (S8) (LI	<b>R K, L</b> )
Depleted	Below Dark Surfac	e (A11)	Depleted Matrix	(F3)			Thin Da	ark Surface	(S9) ( <b>LRR K, I</b>	_)
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6)			Iron-Ma	anganese M	/lasses (F12) (L	.RR K, L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmo	ont Floodpla	ain Soils (F19) (	MLRA 149B)
Sandy G	leyed Matrix (S4)		Redox Depress	sions (F8)				Spodic (TAt	o) ( <b>MLKA 144</b> A ial (521)	., 145, 149B)
Sandy R	edox (55) Matrix (S6)						Red Pa	irent Materi	Iai (FZI) ( Surfood (TE1)	2)
Suipped	face (SZ) (I PP P N		2)				Very Si	Tallow Dark Evolain in E	Comarke)	.)
	$(\mathbf{C}(\mathbf{C})) (\mathbf{L}\mathbf{K}\mathbf{K},\mathbf{K})$	1LKA 1451	<b>)</b>					схріант ін г	(emarks)	
<sup>3</sup> Indicators of	hvdrophytic vegetat	tion and we	etland hydrology mus	st be prese	ent. unless	s disturbed	or problematic.			
Restrictive L	_aver (if observed):		stand nyarology mad							
Type:	<b>,</b> (,-									
Depth (inc	chec).						Hydric Soil	Procont?	Vos	No x
							Tryune Son	riesent:		
Remarks:										

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richmo</u>	nd Sampling Date: 7/10/12
Applicant/Owner: <u>NYCEDC</u>	Sta	ite: <u>NY</u> Sampling Point: <u>NC</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charlest</u>	on
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	!	NWI classification: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> If no	, explain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circu	imstances" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If needed, explai	n any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>x</u> No
Wetland Hydrology Present?	Yes <u>x</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	res here or in a separate report.) S	oil contains red parent material.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Livin	g Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled	Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	<u>x</u> Microtopographic Relief (D4)
<u>x</u> Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):	Wetland Hydrology Present? Yes <u>x</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes x No ections), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes x No ections), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ections), if available:

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Thee Stratum</u> (Plot size. <u>30</u> )	<u>% COV</u> E	<u>specie</u> s	<u>? 5ta</u> tus	Number of Dominant Species
1				That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5				$\begin{array}{c} \text{Inal Ale OBL, FACW, of FAC.} \\                   $
6	·			Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	:	= Total Cove	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )				FACW species x 2 =
1.				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
3				Column Totals: (A) (B)
4 5.				Prevalence Index = B/A =
6				Hvdrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
1		Tatal Oa		x 2 - Dominance Test is >50%
		= Total Cove	er	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: <u>5</u> )				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1. Persicaria pennsylvanica		<u>    N                                </u>	FACW	data in Remarks or on a separate sheet)
2	·			Problematic Hydrophytic Vegetation (Explain)
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8		<u> </u>		<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				
12				woody vines – All woody vines greater than 3.28 ft in height.
	1	= Total Co	/er	
Woody Vine Stratum (Plot size: 15')				
1. Wisteria frutescens	8	D	FACW	
2 Toxicodendron radicans	3	N	FAC	Hydrophytic
3 Smilay rotundifolia	2	N	FAC	Vegetation Present? Yes x No
4.				
	13	= Total Co	over	
Remarks: (Include photo numbers here or on a separate	sheet.) Lir	nited vegeta	ition in wet	and at time of delineation.

Profile Desc	cription: (Describe	to the de	pth needed to docun	nent the	indicator	or confirm	m the absence of indicators.)		
Depth (inchos)	Matrix	0/_	Redo:	x Feature		$1 \text{ oc}^2$	Toyturo Domarka		
<u>(incries)</u> 0-2	10YR2/1	100		70	<u> </u>				
2-5	7 5YR5/3	50	7 5YR4/4	50	C	м	Loam		
5-8	7.5YR5/3	50	7.5YR5/6	50	C	M	Loam		
8-15	7.5YR5/2	30	7.5YR5/4	30	С	М	Loam		
			7.5YR5/6	4 0	С	М			
					<u> </u>				
					<u> </u>				
					<u> </u>				
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM	1=Reduced Matrix, MS	S=Maske	d Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.		
Histosol	(A1)		Polyvalue Belov	v Surface	e (S8) ( <b>LRF</b>	R,	2 cm Muck (A10) (LRR K, L, MLRA 149B	5)	
Histic Ep	pipedon (A2)		MLRA 149B)				Coast Prairie Redox (A16) (LRR K, L, R)		
Black Hi Hydroge	stic (A3) n Sulfide (A4)		I hin Dark Surfa	ce (S9) ( /ineral (F	LRR R, ML 1) (LRR K	_RA 149B . L)	5 cm Mucky Peat or Peat (S3) (LRR K, L, R) Dark Surface (S7) (LRR K, L, M)		
Stratified	d Layers (A5)		Loamy Gleyed I	Matrix (F	2)	, _/	Polyvalue Below Surface (S8) (LRR K, L)	I	
Depleted	d Below Dark Surfac	e (A11)	Depleted Matrix	(F3)			Thin Dark Surface (S9) (LRR K, L)		
Thick Da	ark Surface (A12)		Redox Dark Su	face (F6	)		Iron-Manganese Masses (F12) (LRR K, L Biodmont Electrolatin Soils (E10) (MI BA 1	., R)	
Sandy N Sandy G	Gleved Matrix (S4)		Redox Depress	ions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 14	49B)	
Sandy R	Redox (S5)		<u> </u>				<u>x</u> Red Parent Material (F21)	,	
Stripped	Matrix (S6)						Very Shallow Dark Surface (TF12)		
Dark Su	rface (S7) ( <b>LRR R, N</b>	ILRA 149	B)				Other (Explain in Remarks)		
<sup>3</sup> Indicators of	f hydrophytic vegeta	tion and w	etland hydrology mus	t be pres	ent, unless	disturbed	d or problematic.		
Restrictive I	Layer (if observed):								
Depth (inc	ches):		-				Hydric Soil Present? Yes <u>x</u> No		
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/9/12
Applicant/Owner:NYCEDC	State:	NY Sampling Point: NC (upland)
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: Charleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NWI	classification:n/a
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes No (If no, exp	lain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circumst	ances" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If needed, explain an	y answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>No</u> X	Is the Sampled Area within a Wetland? Yes No x
Wetland Hydrology Present?	Yes No x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	res here or in a separate report.)	

Primary Indicators (minimum of one is required; check all that apply)	becondary indicators (minimum or two required)
Finaly indicators (minimum of one is required, check an that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?     Yes No Depth (inches):	
Saturation Present? Yes No y Denth (inches):	Wetland Hydrology Present? Yes No x
(includes capillary fringe)	· · · · ·
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	ctions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	ctions), if available:
(includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	ctions), if available:
(includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	tions), if available:
(includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	tions), if available:
Cincludes capillary fringe)       Tess No Depth (includes).         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	tions), if available:
Cincludes capillary fringe)	ctions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:

Trans Obertainer (Distriction 2001	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Iree Stratum</u> (Plot size: <u>30'</u> )	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2	·			Total Number of Dominant
3				Species Across All Strata: <u>1</u> (B)
4				Percent of Dominant Species
5				(A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3.				UPL species x 5 =
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6.				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		- Total Cov		X 2 - Dominance Test is >50%
Hack Otecture (Distained Flue			ei	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: 5')				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1				data in Remarks or on a separate sheet)
2				Problematic Hydrophytic Vegetation (Explain)
3				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4	. <u> </u>			be present, unless disturbed of problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3 28 ft (1 m) tall
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				
12				woody vines – All woody vines greater than 3.28 it in height.
		= Total Cov	er	
Woody Vine Stratum (Plot size: 15')				
1. Wisteria frutensens	50	D	FACW	
2. Smilax rotundifolia	10	Ν	FAC	Hydrophytic Vegetation
3. Parthenocissis quinquefolia	2	N	FACU	Present? Yes X No
4				
	62	= Total C	over	
Remarks: (Include photo numbers here or on a separate	sheet.)			·

Profile Desc	ription: (Describe t	o the dep	oth needed to docur	nent the i	ndicator	or confirm	the absence of indicators.)
Depth	Matrix		Redo	x Features	<u>s</u> .		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks
0-2	7.5YR3/2	100					Fiberous root mass
2-9	7.5YR4/4	100					Loam
9-14	5YR4/4	100					Loam
14-16	7.5YR4/4	95	7.5YR4/6	5	С	M	Loam
<sup>1</sup> Type: C=Co	oncentration, D=Depl	etion, RM	=Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:	,	, , ,				Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belov	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm Muck (A10) (LRR K, L, MLRA 149B)
Histic Ep	bipedon (A2)		MLRA 149B	) ) ) (50) (1		DA 1400)	Coast Prairie Redox (A16) (LRR K, L, R)
Hvdroge	n Sulfide (A4)		Loamy Mucky M	/lineral (F1	1) (LRR K	-RA 1430) . L)	Dark Surface (S7) (LRR K, L, M)
Stratified	Lavers (A5)		Loamy Gleved	Matrix (F2	)	, _/	Polyvalue Below Surface (S8) (LRR K. L)
Depleted	Below Dark Surface	(A11)	Depleted Matrix	(F3)	,		Thin Dark Surface (S9) (LRR K, L)
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy G	leyed Matrix (S4)		Redox Depress	ions (F8)			Mesic Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )
Sandy R	edox (S5)						Red Parent Material (F21)
Stripped	Matrix (S6)		_`				Very Shallow Dark Surface (TF12)
Dark Sui	fface (S7) (LRR R, M	LRA 149	B)				Other (Explain in Remarks)
<sup>3</sup> Indicators of	f hydrophytic vegetati	on and w	etland hydrology mus	t be prese	ent, unless	disturbed	or problematic.
Restrictive L	_ayer (if observed):						
Depth (inc	ches):						Hydric Soil Present? Yes No x
Remarks:							

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/10/12
Applicant/Owner: <u>NYCEDC</u>	State: NY	Sampling Point: <u>ND</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex	NWI classific	ation: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time c	of year? Yes No (If no, explain in R	emarks.)
Are Vegetation, Soil, or Hydrology significa	Intly disturbed? Are "Normal Circumstances" p	oresent? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If needed, explain any answe	rs in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>X</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>L</u> No
Wetland Hydrology Present?	Yes <u>X</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
<u>x</u> Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
x Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No</u> Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Yes No Depth (inches):	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes I No tions), if available:
Water Table Present?       Yes       No       Depth (inches):         Saturation Present?       Yes       No       Depth (inches):         (includes capillary fringe)       Ves       No       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection)	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:

Tree Stratum (Plot size: 30 foot )	Absolute % Cover	Dominant Indicator	Dominance Test worksheet:
1	<u></u>		Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2			Total Number of Deminant
3			Species Across All Strata: <u>2</u> (B)
4			Percent of Dominant Species
5			That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6			Provolance Index worksheet:
7			Total % Cover of Multiply by
		= Total Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15 foot )			FACW species x 2 =
1			FAC species x 3 =
2			FACU species x 4 =
2			UPL species x 5 =
3			Column Totals: (A) (B)
4			Prevalence Index = B/A =
5			Hydrophytic Vogetation Indicators:
0			1 - Rapid Test for Hydrophytic Vegetation
7			X 2 - Dominance Test is >50%
		= Total Cover	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: <u>5 foot</u> )	30		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
2 Phragmites australis	20		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	20		
3			be present, unless disturbed or problematic.
4			Definitions of Vagetation Strata:
5			Deminions of Vegetation Strata.
6			<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH) regardless of height
7			
8			and greater than or equal to 3.28 ft (1 m) tall.
9			Harb All herbassous (non woody) plants recordless of
10			size, and woody plants less than 3.28 ft tall.
11			<b>Woody vines</b> $-$ All woody vines greater than 3.28 ft in
12			height.
	50	= Total Cover	
Woody Vine Stratum (Plot size: 15 foot )			
1			
2			Hydrophytic Vegetation
3			Present? Yes <u>x</u> No
4.			
		= Total Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)		

Profile Desc	cription: (Describe	to the de	oth needed to docu	ment the i	indicator	or confirn	m the absence of indicators.)	
Depth	Matrix		Redo	ox Feature	s			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks	
0-5	5 YR 3/2	90	5 YR 3/4	10			Sandy loam	
5-9	7.5 YR 3/2	85	7.5 YR 3/3	15			Sandy loam	
9-14	7.5 YR 3/2	85	7.5 YR 3/3	15			Loam with gravel	
							<u> </u>	
								—
·								
	-							_
<sup>1</sup> Type: C=Co	oncentration, D=Dep	oletion, RM	Reduced Matrix, M	S=Masked	d Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
Hydric Soil	Indicators:						Indicators for Problematic Hydric Soils":	
Histosol	(A1)		Polyvalue Belo	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm Muck (A10) ( <b>LRR K, L, MLRA 149B</b> )	
Histic Ep	pipedon (A2)		MLRA 149B	5) (00) (1		DA 440D	Coast Prairie Redox (A16) (LRR K, L, R)	
Black Hi	ISTIC (A3)			ace (59) (I Minoral (E		-RA 149B	3) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)	
Hydroge Stratified	d Lavers (A5)			Matrix (F2	1) ( <b>LKK K</b> 2)	, L)	Dark Surface (S7) (LRR K, L, M)	
Stratified	d Below Dark Surfac	ο (Δ11)	Depleted Matri	wautx (1 2 x (E3)	-)		Thin Dark Surface (S9) (LRR K I)	
Depicted	ark Surface (A12)		Redox Dark Si	rface (F6)			Iron-Manganese Masses (E12) (LRR K. L. R)	)
Sandy M	/uckv Mineral (S1)		x Depleted Darl	k Surface (	(F7)		Piedmont Floodplain Soils (F19) (MLRA 149	<b>B</b> )
Sandy G	Bleyed Matrix (S4)		Redox Depress	sions (F8)	<b>、</b>		Mesic Spodic (TA6) (MLRA 144A, 145, 149B	a) ĺ
Sandy R	Redox (S5)			· · ·			Red Parent Material (F21)	,
Stripped	I Matrix (S6)						Very Shallow Dark Surface (TF12)	
Dark Su	rface (S7) (LRR R, I	MLRA 149	<b>B</b> )				Other (Explain in Remarks)	
°Indicators o	f hydrophytic vegeta	tion and w	etland hydrology mu	st be prese	ent, unless	s disturbed	d or problematic.	
Restrictive I	Layer (if observed)							
Туре:								
Depth (in	ches):		-				Hydric Soil Present? Yes <u>x</u> No	
Remarks:								

Charleston Mixed Use Development Project/Site:	City/County: Richm	ond	Sampling Date: July 2012
Applicant/Owner: NYCEDC		State: NY	_ Sampling Point: ND Upland
Investigator(s):Rollino, J.	Section, Township, R	ange: Charleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, co	nvex, none): Flat land	Slope (%):
Subregion (LRR or MLRA): Lat:	Lo	ong:	Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Com	plex	NWI classifica	ation: <sup>n/a</sup>
Are climatic / hydrologic conditions on the site typical for this time c	of year? Yes No	(If no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Are	"Normal Circumstances" p	resent? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If r	needed, explain any answer	s in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No <sup>X</sup> Yes <u>x</u> No Yes No <sup>X</sup>	Is the Sampled Area within a Wetland? Yes No x If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	res here or in a separate report.)	

wetland Hydrology Indicato	ors:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum	of one is required; ch	eck all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	_	Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2)		Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3)	-	Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1)		Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2)	-	Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3)		Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4)	_	Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5)		Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aer	ial Imagery (B7)	Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Cond	cave Surface (B8)		FAC-Neutral Test (D5)
Field Observations:			
Surface Water Present?	Yes No	Depth (inches):	
Water Table Present?	Yes No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present?         Yes         No         x           ctions), if available:
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present?       Yes       No x         ctions), if available:
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes <u>No x</u> ctions), if available:
Saturation Present? (includes capillary fringe) Describe Recorded Data (stre Remarks:	Yes No	Depth (inches): g well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x

Ture Obstation (Distained 30)	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Iree Stratum</u> (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1	·			That Are OBL, FACW, or FAC: 0 (A)
2				Total Number of Dominant
3				Species Across All Strata:1 (B)
4				Demonst of Deminent Creation
	·		·	That Are OBL, FACW, or FAC: 0 (A/B)
o	·			
6	·			Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cov	/er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 10')				FACW species x 2 =
				FAC species x 3 =
1	·			FACU species 5 $x = 20$
2	·			$\frac{1}{1} = \frac{1}{2} = \frac{1}{2}$
3				$\begin{array}{c} \text{Column Totals:} & 5 & (\text{A}) & 20 & (\text{B}) \end{array}$
4.				
5				Prevalence Index = $B/A = 4$
6				Hydrophytic Vegetation Indicators:
7	·			1 - Rapid Test for Hydrophytic Vegetation
/	·			2 - Dominance Test is >50%
1 sg m		= Total Cov	/er	$3$ - Prevalence Index is $\leq 3.0^{1}$
Herb Stratum (Plot size:)				Morphological Adaptations <sup>1</sup> (Provide supporting
1. Gramineae	90	Yes	NI	data in Remarks or on a separate sheet)
2. Andropogon virginicus	5	No	FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. Daucus carota	5	No	NI	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4.				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
	·			
6	·			<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7	·			at breast neight (BBH), regulatess of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9				
10				Herb - All herbaceous (non-woody) plants, regardless of
	·		·	size, and woody plants less than 3.28 ft tall.
· · · · · · · · · · · · · · · · · · ·	·			Woody vines – All woody vines greater than 3.28 ft in
12				height.
	100	= Total Cov	/er	
Woody Vine Stratum (Plot size: 10 sq ft )				
1.				
2	·			Hydrophytic
2	·		·	Vegetation
3	·			Fresent? TesNo x
4	·			
		= Total Cov	/er	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inchos)	Matrix	0/	Redo	x Features	Tuno <sup>1</sup>	$1 \cos^2$	Taxtura Domarka	
	7.5 VR 3/3	100		70	туре			
<u> </u>	7.5 YR 3/2	100					Sandy loam	
0.15	5 VP 3/2	100					Sandy loam	
	5 11( 5/5	100						—
<sup>1</sup> Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.	
Hydric Soll Histosol	Indicators:		Polyvalue Beloy	v Surface (	(1 PE	<b>D</b>	a cm Muck (A10) (I PP K I MI PA 1498)	
Histosof	oipedon (A2)		MLRA 149B)	V Ourrace (	(00) (EN	х IX,	Coast Prairie Redox (A16) (LRR K, L, R)	
Black Hi	stic (A3)		Thin Dark Surfa	ce (S9) (L	RR R, ML	RA 149B	B) 5 cm Mucky Peat or Peat (S3) (LRR K, L, R	ł)
Hydroge Stratified	en Sulfide (A4) d Lavers (A5)		Loamy Mucky N	lineral (F1) Matrix (F2)	) (LRR K	, L)	Dark Surface (S7) (LRR K, L, M) Polyvalue Below Surface (S8) (LRR K, L)	
Depleted	d Below Dark Surface	e (A11)	x Depleted Matri	x (F3)			Thin Dark Surface (S9) (LRR K, L)	
Thick Da	ark Surface (A12)		Redox Dark Su	face (F6)			Iron-Manganese Masses (F12) (LRR K, L, I	R)
Sandy M	lucky Mineral (S1) Sleved Matrix (S4)		Depleted Dark S	Surface (F7	()		Piedmont Floodplain Soils (F19) (MLRA 149 Mesic Spodic (TA6) (MI RA 144A 145 149)	ĴΒ) iΒ)
Sandy R	Redox (S5)						Red Parent Material (F21)	_,
Stripped	Matrix (S6)						Very Shallow Dark Surface (TF12)	
Dark Su	rface (S7) (LRR R, N	ILRA 149E	3)				Other (Explain in Remarks)	
<sup>3</sup> Indicators of	f hydrophytic vegetat	ion and we	tland hydrology mus	t be prese	nt, unless	disturbed	d or problematic.	
Restrictive I	Layer (if observed):							
Type:								
Depth (ind	ches):						Hydric Soil Present? Yes <u>x</u> No	
Remarks:								

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/10/12
Applicant/Owner: NYCEDC	State:	NY Sampling Point: NE
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NW	I classification: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes <u>x</u> No <u>(</u> (If no, ex	xplain in Remarks.)
Are Vegetation, Soil, or Hydrology significan	tly disturbed? Are "Normal Circums	tances" present? Yes <u>x</u> No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain ar	וץ answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes I No If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
<u>x</u> Sediment Deposits (B2) Oxidized Rhizospheres on Living	g Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	x Microtopographic Relief (D4)
x Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Non No y Donth (inches);	
water rable Present? $\text{res}_{}$ No $\underline{x}_{}$ Depth (incres).	
Saturation Present? Yes <u>No x</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No
Water Fable Present?       Yes NoX Depth (incres).         Saturation Present?       Yes NoX Depth (incres).	Wetland Hydrology Present? Yes I No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes I No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes I No tions), if available:
Water Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:
Water Fable Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No tions), if available:

Sampling Point: <u>NE</u>

	Absolute	Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30</u> )	% Cover	<u>Species?</u> Status	Number of Dominant Species
1		·	- That Are OBL, FACW, or FAC: <u>2</u> (A)
2			Total Number of Dominant
3		·	_ Species Across All Strata: (B)
4		·	- Percent of Dominant Species
5	. <u></u>	·	(AM
6	. <u></u>	<u> </u>	- Prevalence Index worksheet:
7		<u> </u>	Total % Cover of: Multiply by:
		= Total Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )			FACW species x 2 =
1			FAC species x 3 =
2.			FACU species x 4 =
3			UPL species x 5 =
4			Column Totals: (A) (B)
+ 5			Prevalence Index = B/A =
6.			- Hydrophytic Vegetation Indicators:
7			1 - Rapid Test for Hydrophytic Vegetation
1-			<u>x</u> 2 - Dominance Test is >50%
Harb Otrature (Distaire) 51			3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: <u>5'</u> ) 1. Rumex crispus	8	D FAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2. Carex scoparia	2	N FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3 Juncus effusus	5	D OBI	<sup>-</sup> <sup>1</sup> Indicators of hydric soil and wetland hydrology must
4			be present, unless disturbed or problematic.
T		·	Definitions of Vegetation Strata:
5	·		
6		<u> </u>	at breast height (DBH), regardless of height.
<i>I</i>		<u> </u>	- Continentations there 2 in DDU
8		·	and greater than or equal to 3.28 ft (1 m) tall.
9	. <u></u>	·	Harb All berbassous (non woody) plants regardless of
10	. <u></u>	<u> </u>	- size, and woody plants less than 3.28 ft tall.
11			Woody rings All woody vince greater than 2.28 ft in
12			height.
	15	= Total Cover	
Woody Vine Stratum (Plot size: 15')			
1.			
2			Hydrophytic
2			- Vegetation Present? Yes x No
3. <u></u>			-
4			-
		= Total Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redo	x Features	5				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-2	7.5 YR 3/3	100					Sandy loam		
2-7	7.5 YR 3/2	85	7.5 YR 4/6	15			Loam		
7-12	5 YR 4/1	85	5 YR 4/4	15			Loam		
			·						
			·	·					
			·						
<sup>1</sup> Type: C=Ce	oncentration, D=Dep	letion, RN	I=Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Li	ning, M=Matrix.	
Hydric Soil	Indicators:						Indicators for Problem	atic Hydric Soils <sup>3</sup> :	
Histosol	(A1)		Polyvalue Belo	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm Muck (A10) (L	RR K, L, MLRA 149B)	
Histic Ep	pipedon (A2)		MLRA 149B	)			Coast Prairie Redox	(A16) ( <b>LRR K, L, R</b> )	
Black Hi	stic (A3)		Thin Dark Surfa	ace (S9) ( <b>L</b>	.RR R, MI	_RA 149B	) 5 cm Mucky Peat or	<sup>-</sup> Peat (S3) ( <b>LRR K, L, R</b> )	
Hydroge	en Sulfide (A4)		Loamy Mucky I	Mineral (F1	) ( <b>LRR K</b>	, L)	Dark Surface (S7) (I	LRR K, L, M)	
Stratified	d Layers (A5)		Loamy Gleyed	Matrix (F2	)		Polyvalue Below Su	rface (S8) (LRR K, L)	
Depleted	d Below Dark Surfac	æ (A11)	x Depleted Matr	ix (F3)			Thin Dark Surface	(S9) ( <b>LRR K, L</b> )	
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6)			Iron-Manganese Ma	asses (F12) ( <b>LRR K, L, R</b> )	
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmont Floodplair	n Soils (F19) ( <b>MLRA 149B</b> )	
Sandy G	Bleyed Matrix (S4)		Redox Depress	sions (F8)			Mesic Spodic (TA6)	(MLRA 144A, 145, 149B)	
Sandy R	Redox (S5)						Red Parent Material (F21)		
Stripped	Matrix (S6)						Very Shallow Dark Surface (TF12)		
Dark Su	rface (S7) (LRR R, I	MLRA 149	B)				Other (Explain in Re	emarks)	
<sup>3</sup> Indicators o	f hydrophytic vegeta	tion and w	vetland hydrology mus	st be prese	ent, unless	s disturbed	or problematic.		
Restrictive I	Layer (if observed)	:							
Type:			-						
Depth (in	ches):		_				Hydric Soil Present?	Yes <u>x</u> No	
Remarks:									

Project/Site:	City/County: Richmond	Sa	mpling Date: July 2012
Applicant/Owner: NYCEDC		State: <u>NY</u>	Sampling Point: NE Upland
Investigator(s):Rollino, J.	Section, Township, Range:	Charleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex,	none): Flat land	Slope (%):
Subregion (LRR or MLRA): Lat:	Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Com	plex	NWI classificatio	none n:
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes No	_ (If no, explain in Rema	arks.) <sub>x</sub>
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Nor	mal Circumstances" prese	ent? Yes No
Are Vegetation, Soil, or Hydrology naturally	problematic? (If neede	d, explain any answers in	n Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes No	X	Is the Sampled Area	
Hydric Soil Present?	Yes No	X	within a Wetland? Yes No <sup>x</sup>	
Wetland Hydrology Present?	Yes No	X	If yes, optional Wetland Site ID:	
Remarks: (Explain alternative procedu	res here or in a separ	ate report.)		

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Yes No^ Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No $\ { m X}$
Water Table Present?       Yes No^ Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No       X         tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No       X         :tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present?       Yes       No       X         ctions), if available:
Water Table Present?       Yes No^ Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No^ Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No^ Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X

Tree Stratum (Plot size:	Absolute % Cover	Dominant	Indicator	Dominance Test worksheet:
1	<u>/// Cover</u>	<u>Species</u>	Status	Number of Dominant Species
·				That Are OBL, FACW, of FAC: (A)
2				Total Number of Dominant 1 Species Across All Strate: (P)
S				
4	·			Percent of Dominant Species 100
5				
6	<u> </u>		<u> </u>	Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3.				UPL species x 5 =
4.				Column Totals: (A) (B)
5				Prevalence Index = B/A =
G				Hydronhytic Vegetation Indicators:
0				1 - Rapid Test for Hydrophytic Vegetation
/				2 - Dominance Test is >50%
5 feet	·	= Total Cov	er	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size:)	00	V	EAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1. Andropogon virginicus	90	I	FAC	data in Remarks or on a separate sheet)
2	5		FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3			FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6.				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
o				and greater than or equal to 3.28 ft (1 m) tall.
3	. <u></u> .			Herb – All herbaceous (non-woody) plants, regardless of
				size, and woody plants less than 3.28 ft tall.
11	·			Woody vines – All woody vines greater than 3.28 ft in
12	100			height.
	100	= Total Cov	er	
Woody Vine Stratum (Plot size:)				
1				Hadavala da
2				Vegetation
3				Present? Yes No
4				
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			1
Subdominant species are non hydric				
Subdommant opcoleo are non nyano.				

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redo	x Features	<u>-</u> 1	. 2		
(inches)	Color (moist)		Color (moist)	%	Type'	Loc	Texture Remarks	
4.0	7.5 TR 3/3	100						
4-9	7.5 YR 3/2	100						
9-15	5 YR 3/3	100					Sandy loam	
<sup>1</sup> Type: C=C Hydric Soil	oncentration, D=Depl Indicators:	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils <sup>3</sup> :	
Histosol Histic Ej Histic Ej Hydroge Stratified Depletee Grhick Da Sandy N Sandy C Sandy F CStrippec Dark Su	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Redox (S5) I Matrix (S6) rface (S7) (LRR R, M	- 	<ul> <li>Polyvalue Belov</li> <li>MLRA 149B)</li> <li>Thin Dark Surfa</li> <li>Loamy Mucky M</li> <li>Loamy Gleyed I</li> <li>Depleted Matrix</li> <li>Redox Dark Su</li> <li>Depleted Dark S</li> <li>Redox Depress</li> </ul>	v Surface ce (S9) ( <b>L</b> /lineral (F1 Matrix (F2 : (F3) fface (F6) Surface (F6) Surface (F8)	(S8) (LRR RR R, ML ) (LRR K; ) 7)	r, <b>Γ</b> , <b>Γ</b>	<ul> <li>2 cm Muck (A10) (LRR K, L, MLRA 149B)</li> <li>Coast Prairie Redox (A16) (LRR K, L, R)</li> <li>5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</li> <li>Dark Surface (S7) (LRR K, L, M)</li> <li>Polyvalue Below Surface (S8) (LRR K, L)</li> <li>Thin Dark Surface (S9) (LRR K, L)</li> <li>Iron-Manganese Masses (F12) (LRR K, L, R)</li> <li>Piedmont Floodplain Soils (F19) (MLRA 149E</li> <li>Mesic Spodic (TA6) (MLRA 144A, 145, 149B</li> <li>Red Parent Material (F21)</li> <li>Very Shallow Dark Surface (TF12)</li> <li>Other (Explain in Remarks)</li> </ul>	
<sup>3</sup> Indicators o	f hydrophytic vegetati	on and wet	land hydrology mus	t be prese	nt, unless	disturbed	d or problematic.	
Restrictive	Layer (if observed):							
Depth (in	ches):						Hydric Soil Present? Yes No	
Remarks:								

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/10/12
Applicant/Owner: <u>NYCEDC</u>	State:	NY Sampling Point: NF
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):FI	at land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NW	I classification: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes <u>x</u> No <u></u> (If no, e)	xplain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circums	tances" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If needed, explain ar	ny answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>I</u> No
Wetland Hydrology Present?	Yes <u>x</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedur Red parent material. Wetland is a depre	res here or in a separate report.) ssion in former site access road.	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) <u>x</u> Oxidized Rhizospheres on Living	g Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled S	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	x Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes No x Depth (inches):	
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       No _x Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?         YesI         No           ctions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes I No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes <u>I</u> No ctions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes I No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes I No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No ctions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No ctions), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>I</u> No ctions), if available:

·				
Trop Stratum (Plot size:	Absolute % Covor	Dominant	Indicator	Dominance Test worksheet:
		<u>Species</u>	Status	Number of Dominant Species
1			<u> </u>	That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3.				Species Across All Strata: 1 (B)
				、
4			<u> </u>	Percent of Dominant Species
5				That Ale OBL, FACW, OF FAC. 100 (A/D)
6				Prevalence Index worksheet:
7				
··		<b>T</b> 1 1 0		
		= Total Cov	er	
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
Z				UPL species x 5 =
3				Column Totals: (A) (B)
4				
5.				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
0			<u> </u>	1. Danid Toot for Lludranbutin Vegetation
7				
		= Total Cov	er	$\underline{x}$ 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5' )				3 - Prevalence Index is ≤3.0'
<u></u> (100020.		-		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1. Juncus effusus	75	D	OBL	data in Remarks or on a separate sheet)
2. Phragmites australis	5	<u>        N</u>	FACW	Problematic Hydrophytic Vegetation' (Explain)
3. Eleocharis obtusa	5	N	OBL	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
				Definitions of Vegetation Strata:
o			<u> </u>	
6				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
				and greater than or equal to 3.28 ft (1 m) tall.
9				Horb All herbaceous (non woody) plants, regardless of
10				size, and woody plants less than 3.28 ft tall.
11				
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in
·		Tatalo		neight.
	85	= Total C	over	
Woody Vine Stratum (Plot size:)				
1				
2				Hydrophytic
2			·	Vegetation
3			<u> </u>	Fresent? Tes <u>x</u> No
4				
		= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			
	,			

SOIL	
------	--

Profile Desc	ription: (Describe to	o the dept	h needed to docu	ment the i	ndicator o	or confirm	the absence	of indicator	rs.)		
Depth	Matrix	<u> </u>	Redo	x Features	<u>s</u>						
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks		
0-1	5YR 3/2	100					Organic ma	aterial w/ san	Id		
3-8	7.5YR 4/3	85	7.5YR 4/6	15		sar	nd clay loam	small pie	ces of red par	ent material	
8-14	7.5YR 5/4	80	7.5 YR 4/6	20			clay loam	gritty			
<sup>1</sup> Type: C=Co	oncentration, D=Deple	etion, RM=	Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location	n: PL=Pore L	ining, M=Mat	rix.	
Hydric Soil I	Indicators:						Indicators	s for Problen	natic Hydric S	Soils <sup>3</sup> :	
Histosol	(A1)	-	Polyvalue Belo	w Surface	(S8) ( <b>LRF</b>	R R,	2 cm M	Muck (A10) (I	LRR K, L, ML	<b>RA 149B</b> )	
Histic Ep	oipedon (A2)		MLRA 149B	)			Coast	Prairie Redo	x (A16) ( <b>LRR</b>	K, L, R)	
Black Hi	stic (A3)	-	Thin Dark Surfa	ace (S9) ( <b>L</b>	.RR R, ML	<b>.RA 149B</b> )	5 cm N	Mucky Peat o	or Peat (S3) (L	.RR K, L, R)	
Hydroge	n Sulfide (A4)	-	Loamy Mucky I	Mineral (F	1) ( <b>LRR K</b> ,	, <b>L</b> )	Dark S	Surface (S7)	$(LRR\;K,L,M)$	)	
Stratified	Layers (A5)	-	Loamy Gleyed	Matrix (F2	)		Polyva	alue Below S	urface (S8) (L	RR K, L)	
Depleted	d Below Dark Surface	(A11) _	Depleted Matrix	x (F3)			Thin Dark Surface (S9) (LRR K, L)				
Thick Da	ark Surface (A12)	-	Redox Dark Su	Irface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)				
Sandy M	lucky Mineral (S1)	-	Depleted Dark	Surface (F	7)		Piedm	nont Floodpla	in Soils (F19)	(MLRA 149B)	
Sandy G	Bleyed Matrix (S4)	-	Redox Depress	sions (F8)			Mesic Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )				
Sandy R	ledox (S5)						X Red Parent Material (F21)				
Stripped	Matrix (S6)					Very Shallow Dark Surface (TF12)					
Dark Su	rface (S7) ( <b>LRR R, M</b>	LRA 149B	)				Other	(Explain in R	emarks)		
<sup>3</sup> Indicators of	f hydrophytic vegetatio	on and wet	land hydrology mu	st be prese	ent, unless	disturbed of	or problemation	С.			
Restrictive I	_ayer (if observed):										
Туре:											
Depth (ind	ches):						Hydric Soil	I Present?	Yes X	No	
Remarks:											
Soil in form	er access road. Wetla	and is a sm	nall, confined depre	ssion.							

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/10/12
Applicant/Owner: <u>NYCEDC</u>	State:	NY Sampling Point: NG
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: Charleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):Fla	it land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	NWI	classification: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> (If no, ex	plain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circumsta	ances" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology natural	ly problematic? (If needed, explain a	iy answers in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> Yes <u>x</u> Yes <u>x</u>	No No (see below) No	Is the Sampled Area within a Wetland? Yes <u>x</u> No If yes, optional Wetland Site ID: vdric soil indicators are problematic due to presence of red parent material
			yund son indicators are problematic due to presence of red parent material.
HYDROLOGY			
Wetland Hydrology Indicators:			Secondary Indicators (minimum of two required)

Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	<u>x</u> Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
x Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	x Microtopographic Relief (D4)
x Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes No x Depth (inches):	
Saturation Present? Yes No x Depth (inches):	Wetland Hydrology Present? Yes x No
	weddiar rydrology riesent: res <u>x</u> no
(includes capillary fringe)	
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:
(includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec Remarks:	tions), if available:

Sampling Point: NG

	Absolute	Dominant Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>30'</u> )	<u>% Cover</u>	<u>Species?</u> Status	Number of Dominant Species
1. Quercus palustris	45	D FACW	That Are OBL, FACW, or FAC: (A)
2			Total Number of Dominant
3	·		Species Across All Strata: (B)
4			Percent of Dominant Species
5			That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6			Provalence Index worksheet:
7			Total % Cover of Multiply by
	45	= Total Cover	$\frac{1}{OBL} \text{ species} \qquad x 1 =$
Sapling/Shrub Stratum (Plot size:			FACW species x 2 =
			FAC species x 3 =
			FACU species x 4 =
2			UPL species x 5 =
3			Column Totals: (A) (B)
4			
5			Prevalence Index = B/A =
6			Hydrophytic Vegetation Indicators:
7			1 - Rapid Test for Hydrophytic Vegetation
		= Total Cover	X 2 - Dominance Test is >50%
Herb Stratum (Plot size: 5')			3 - Prevalence Index is ≤3.0 <sup>1</sup>
1. Scirpus atrovierens	10	D OBL	<ul> <li>4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
2 Juncus effusus	9	D OBI	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3 Agrestis gigantea	30		Indiastara of hydria apil and watland hydrology must
			be present, unless disturbed or problematic.
4			Definitions of Vagatation Strata:
5			Demittons of Vegetation offata.
6			<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7			at breast height (bbir), regardless of height.
8			<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9			
10			<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
11			size, and woody plants less than 5.20 ft tan.
12.			<b>Woody vines</b> – All woody vines greater than 3.28 ft in height
	49	= Total Cover	norgin.
Woody Vine Stratum (Plot size:			
l			Hydrophytic
2			Vegetation
3			Present? Yes X No
4			
		= Total Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)		

Profile Desc	ription: (Describe	to the de	oth needed to docu	ment the in	dicator o	or confirm	n the absence	of indicators.)	
Depth (inches)	Matrix Color (moist)	0/2	Redo	x Features	Type <sup>1</sup>	$1 \text{ oc}^2$	Toxturo	Pemarks	
0-3	10 YR 3/2	85	5 YR 3/4	15	Туре		Silty sand		
3-10	5 YR 4/6	85	2.5 YR 3/4	15			Silty sand	Depth to refusal - 10"	
0.10	5 11( 4/0		2.5 11( 5/4	10					
				<u> </u>					
							·		
					<u> </u>				
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM	Reduced Matrix, M	S=Masked \$	Sand Gra	ains.	<sup>2</sup> Location	: PL=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators:						Indicators	for Problematic Hydric Soils <sup>3</sup> :	
Histosol	(A1)		Polyvalue Belo	w Surface (	S8) ( <b>LRR</b>	ł R,	2 cm N	Auck (A10) (LRR K, L, MLRA 149B)	
Black Hi	stic (A3)		Thin Dark Surfa	) ace (S9) (L <b>F</b>	R R. ML	RA 149B	) 5 cm M	Aucky Peat or Peat (S3) (LRR K, L, R)	
Hydroge	n Sulfide (A4)		Loamy Mucky I	Mineral (F1)	(LRR K,	L)	Dark S	Surface (S7) ( <b>LRR K, L, M</b> )	
Stratified	l Layers (A5)		Loamy Gleyed	Matrix (F2)			Polyva	alue Below Surface (S8) (LRR K, L)	
Depleted	Below Dark Surfac	e (A11)	Depleted Matri	x (F3)			Thin D	Park Surface (S9) (LRR K, L)	
Thick Da Sandy M	ark Sufface (A12) lucky Mineral (S1)		Redox Dark Su	Ifface (F6) Surface (F7	)		Iron-M Piedm	anganese Masses (F12) (LRR K, L, R) ont Floodolain Soils (F19) (MI RA 149B)	
Sandy G	leved Matrix (S4)		Redox Depress	sions (F8)	)		Mesic	Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )	
Sandy R	edox (S5)						X Red P	arent Material (F21)	
Stripped	Matrix (S6)						Very Shallow Dark Surface (TF12)		
Dark Sui	face (S7) ( <b>LRR R, N</b>	/LRA 149	<b>B</b> )				Other	(Explain in Remarks)	
<sup>3</sup> Indicators of	hydrophytic vegeta	tion and w	etland hydrology mu	st be preser	nt, unless	disturbed	or problemation	2.	
Restrictive L	_ayer (if observed):		, , ,						
Туре:									
Depth (inc	ches):		<u>.</u>				Hydric Soil	Present? Yes <u>x</u> No <u></u>	
Remarks:									

Charleston Mixed Use Development Project/Site:	City/County:	Richmond	Sam	pling Date:	July 2012
Applicant/Owner:			_ State: <u>NY</u> Sa	mpling Poin	t: NG Upland
Investigator(s):Rollino, J.	Section, Tow	nship, Range:	Charleston		
Landform (hillslope, terrace, etc.):	Local relief (cond	cave, convex, nor	ne): Flat land	Slop	e (%):
Subregion (LRR or MLRA): Lat:		Long:		Datum	n:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Com	ıplex		NWI classification:	none	
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes	No	(If no, explain in Remark	(S.)	
Are Vegetation, Soil, or Hydrology significa	antly disturbed?	Are "Normal	Circumstances" presen	t? Yes	No
Are Vegetation, Soil, or Hydrology naturally	y problematic?	(If needed, e	explain any answers in F	Remarks.)	
Are Vegetation, Soil, or Hydrology naturally	y problematic?	(If needed, e	explain any answers in F	Remarks.)	

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes No X	Is the Sampled Area
Hydric Soil Present?	Yes No X	within a Wetland? Yes No X
Wetland Hydrology Present?	Yes No X	If yes, optional Wetland Site ID:
Wetland Hydrology Present?	Yes <u>No X</u>	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proc	edures here or in a separate report.)	Used road as comparitive upland habitat.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Livin	ng Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled	Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
X	
Water Table Present? Yes <u>No</u> Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Yes No Depth (inches):	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes       No       Depth (inches):         Saturation Present?       Yes       No       X       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No ×
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No × No ×
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No X nections), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No × No ×
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insponse)         Remarks:	Wetland Hydrology Present? Yes No × No × No ×
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No ×
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insponse)         Remarks:	Wetland Hydrology Present? Yes No X nections), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insponse)         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insponse)         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:         Remarks:	Wetland Hydrology Present? Yes No X pections), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X nections), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X nections), if available:

Tree Stratum (Plot size:	Absolute % Cover	Dominant	Indicator	Dominance Test worksheet:
1	<u>/// Cover</u>	<u>Species</u> :	Status	Number of Dominant Species
·				That are OBL, FACW, of FAC: (A)
2				Total Number of Dominant
3				
4				Percent of Dominant Species
5				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 =
1				FAC species x 3 =
2.				FACU species x 4 =
3				UPL species x 5 =
۰				Column Totals: (A) (B)
*·			·	Prevalence Index = B/A =
5				
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		= Total Cov	er	2 - Dominance Test is >50%
Herb Stratum (Plot size: 5 feet )	50	Y	FAC-	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2				
3 4				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall
11				
12.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height
		= Total Cov	er	
Woody Vine Stratum (Plot size:				
1				
Smilax rotundifolia	50	Y	FAC	Hydrophytic
2				Vegetation Xee No X
3			·	
4	100		·	
	100	= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			

I

Profile Desc	ription: (Describe	to the de	pth needed to docu	ment the i	ndicator	or confirm	n the absence	of indicator	rs.)	
Depth	Matrix		Redo	x Features	<u>s</u>	2				
(inches)	Color (moist)	%	Color (moist)	%	Type'	Loc <sup>2</sup>	Texture		Remark	(S
0-2	5 YR 2.5/2	100					Friable	O Horizon		
2-5	5 YR 4/4	90	5 YR 3/4	10			Sandy loam			
5-9	5 YR 3/4	100					Sandy loam			
9-12	2.5 YR 4/4	100					Sandy loam			
			·			·				
<sup>1</sup> Turney 0-0							21		ining M-I	Matrix
Hydric Soil	Indicators:	Dietion, Riv	A=Reduced Mathx, M	S=Masked	Sand Gra	ains.	Indicators	for Problen	natic Hydi	ric Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belo	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm N	Muck (A10) (I	LRR K, L,	MLRA 149B)
Histic Ep	pipedon (A2)		MLRA 149B	)			Coast	Prairie Redo	x (A16) (L	.RR K, L, R)
Black Hi	stic (A3)		Thin Dark Surfa	ace (S9) ( <b>L</b>	RR R, ML	_RA 149B	) 5 cm M	Mucky Peat o	or Peat (S3	3) (LRR K, L, R)
Hydroge	en Sulfide (A4)		Loamy Mucky I	Mineral (F1	) (LRR K	, L)	Dark S	Surface (S7)	(LRR K, L	., M)
Stratified	d Layers (A5) d Bolow Dark Surfa	00 (111)	Loamy Gleyed	Matrix (F2)	)		Polyva	alue Below Si	urface (S8	5) (LRR K, L)
Depleted	ark Surface (A12)	e (ATT)	Depleted Math	x (F3) Irface (F6)			Iron-M	langanese M	(39) ( <b>LKK</b> Jasses (F1	$(\mathbf{R}, \mathbf{L})$
Sandy M	Aucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedm	ont Floodpla	in Soils (F	19) ( <b>MLRA 149B</b> )
Sandy G	Bleyed Matrix (S4)		Redox Depress	sions (F8)	,		Mesic	Spodic (TA6	) ( <b>MLRA</b> 1	144A, 145, 149B)
Sandy R	Redox (S5)						X Red P	arent Materia	al (F21)	
Stripped	l Matrix (S6)						Very S	Shallow Dark	Surface (	TF12)
Dark Su	rface (S7) (LRR R,	MLRA 149	<b>9B</b> )				Other	(Explain in R	temarks)	
<sup>3</sup> Indicators o	f hydrophytic vegeta	ation and v	vetland hydrology mus	st be prese	nt, unless	disturbed	or problemation	С.		
Restrictive I	Layer (if observed)	:								
Туре:			-					<b>D</b> (0)		X
Depth (in	ches):		-				Hydric Soil	Present?	Yes	NO
Remarks.										

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richmo</u>	ond Samplin	ng Date: <u>7/10/12</u>
Applicant/Owner:	St	ate: <u>NY</u> Samp	ling Point: <u>NH</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charles</u>	ston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): _	Flat land	Slope (%):
Subregion (LRR or MLRA): MLRA 149B Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> (If n	o, explain in Remarks	S.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal Circ	umstances" present?	Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil _x, or Hydrology naturally	problematic? (If needed, explai	in any answers in Rei	marks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>x</u> No
Wetland Hydrology Present?	Yes <u>x</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	dures here or in a separate report.) R	ed parent material in soil. Wetland is depression in former site access road.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Sparsely Vegetated Concave Surface (B8)	
Surface Water Present?       Yes Nox Depth (inches):         Water Table Present?       Yes Nox Depth (inches):	
Saturation Present?       Yes x       No       Depth (inches): 10"         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No
Saturation Present?       Yes x       No       Depth (inches): 10"         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:

Sampling Point: NH

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species
1				That Are OBL, FACW, or FAC:3 (A)
2				Total Number of Dominant Species Across All Strata: 3 (B)
3				
4				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
5				
7				Prevalence Index worksheet:
/·		- Total Cav		Total % Cover of:Multiply by:
Capling/Shruh Stratum (Diat aiza: 15')		- 10(a) COV	ei	FACW species x 2 =
1 Potulo populifolio	Б	D	EAC	FAC species x 3 =
1. <u>Betula populitolia</u>	<u> </u>	<u> </u>		FACU species x 4 =
	<u> </u>	<u> </u>	FAC	UPL species x 5 =
3				Column Totals: (A) (B)
4				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
/		- Total Ca		<u>X</u> 2 - Dominance Test is >50%
Lieth Christian (Distring)	/		ver	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: <u>5</u> )	25	П	EAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
Solidago rugosa     Solidago rugosa	25			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	20	<u> </u>		
Scipus cyperinus		<u> </u>		be present, unless disturbed or problematic.
Cyperus esculentus     Eleceborio eciculorue	2	<u> </u>		Definitions of Vegetation Strata:
5. Electriaris acicularus	2	<u> </u>		
0. Agrosus gigantea	2	N		at breast height (DBH), regardless of height.
Similax fotundiolia		<u> </u>		Sanling/shrub – Woody plants less than 3 in DBH
		<u> </u>		and greater than or equal to 3.28 ft (1 m) tall.
9. Carex sp.	<u> </u>	<u> </u>		Herb – All herbaceous (non-woody) plants, regardless of
10				size, and woody plants less than 3.28 ft tall.
11				Woody vines – All woody vines greater than 3.28 ft in
12				height.
March Mine Otroburg (Distriction 45)		= Total C	over	
Woody Vine Stratum (Plot size: <u>15</u> )				
1				Hydrophytic
2				Vegetation Precent? Yes Y No
3				
4				
Pemarke: (Include photo numbers here or on a senarate	sheet )	= Total Cov	er	
	Sheet.)			

SOIL	
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Profile Desc	cription: (Describe	to the de	pth needed to docu	ment the	indicator	or confirm	n the absence of ind	icators.)		
Depth	Matrix		Redo	ox Feature	<u>es</u> 1	. 2	_	_		
(inches)	Color (moist)		Color (moist)	%	Type'	Loc <sup>2</sup>	Texture	Rei	narks	
0-1	7.5YR3/2	100					<u>Organic w/ trace silt</u>			
<u> </u>	7.5YR4/2		<u>5YR3/4</u>	20	<u> </u>	<u> </u>	Silty clay loam			
	7.5YR4/3	85	<u>7.5YR3/4</u>		<u> </u>	<u> </u>	<u>Silty clay loam</u>			
8-16	7.5YR4/2	50	<u>7.5YR5/6</u>	35	<u> </u>	<u> </u>	<u>Silty clay loam</u>			
			<u>7.5YR5/1</u>	15		M				
							<u> </u>			
·										
					<u> </u>					
1					. <u> </u>					
Type: C=C Hydric Soil	oncentration, D=Depl Indicators:	etion, RN	I=Reduced Matrix, M	S=Maske	d Sand Gra	ains.	Location: PL= Indicators for Pi	Pore Lining, oblematic I	M=Matrix Hydric So	<. oils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belo	w Surface	e (S8) ( <b>LRF</b>	RR,	2 cm Muck (/	410) ( <b>LRR K</b>	, L, MLR	A 149B)
Histic Ep Black Hi	pipedon (A2) istic (A3)		MLRA 149B Thin Dark Surfa	) ace (S9) (	LRR R. MI	RA 149E	Coast Prairie 5 cm Mucky	Redox (A16 Peat or Peat	6) ( <b>LRR M</b> t (S3) (L <b>R</b>	(, L, R) R K, L, R)
Hydroge	en Sulfide (A4)		Loamy Mucky I	Mineral (F	1) ( <b>LRR K</b>	, L)	Dark Surface	e (S7) ( <b>LRR</b>	K, L, M)	, _,,
Stratified	d Layers (A5) d Below Dark Surface	Δ11) م	Loamy Gleyed	Matrix (F2	2)		Polyvalue Be	low Surface	(S8) (LR	(R K, L)
Thick Da	ark Surface (A12)	. (/ (11)	Redox Dark Su	Inface (F6)	)		Iron-Manganese Masses (F12) (LRR K, L, R)			
Sandy M	Aucky Mineral (S1)		Depleted Dark	Surface (I	F7)		Piedmont Floodplain Soils (F19) (MLRA 149B)			
Sandy G	Redox (S5)						Red Parent N	Aterial (F21	\A 144A, )	, 143, 1430)
Stripped	Matrix (S6)		D)				Very Shallow	Dark Surfa	ce (TF12)	)
Dark Su	пасе (S7) (LKK K, N	ILRA 149	в)				Other (Expla	in in Remark	(S)	
<sup>3</sup> Indicators o	f hydrophytic vegetat	ion and w	etland hydrology mu	st be pres	ent, unless	disturbe	d or problematic.			
Type:	Layer (if observed):									
Depth (in	ches):		-				Hydric Soil Prese	nt? Yes	х	N <u>o</u>
Remarks:										

City/County: Staten Island, Richmond	Sampling Date: 7/9/12
State:N	Sampling Point: <u>NH (upland)</u>
Section, Township, Range: <u>Charleston</u>	
Local relief (concave, convex, none): Flat land	Slope (%):
Long:	Datum:
NWI clas	ssification:
f year? Yes <u>x</u> No (If no, explai	n in Remarks.)
ntly disturbed? Are "Normal Circumstanc	es" present? Yes <u>x</u> N <u>o</u>
v problematic? (If needed, explain any ar	swers in Remarks.)
	City/County: <u>Staten Island, Richmond</u> State: <u>NM</u> State: <u>NM</u> Section, Township, Range: <u>Charleston</u> Local relief (concave, convex, none): <u>Flat land</u> Long: NWI class f year? Yes <u>x</u> No (If no, explain ntly disturbed? Are "Normal Circumstanc problematic? (If needed, explain any ar

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No	Is the Sampled Area
Hydric Soil Present?	Yes <u>No</u> x	within a Wetland? Yes No x
Wetland Hydrology Present?	Yes <u>No</u> x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separate report.)	Red parent material.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)	
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)	
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)	
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)	
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2) Oxidized Rhizospheres on Living	oots (C3) Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)	
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)	
Field Observations:		
Surface Water Present? Yes <u>No x</u> Depth (inches):		
Water Table Dresent? Vac Na Vac Danth (inches):		
water Table Present? Yes No $\underline{x}$ Depth (incres):		
Saturation Present?     Yes NoX     Depth (inches):       (includes capillary fringe)     Yes NoX     Depth (inches):	Wetland Hydrology Present? Yes No x	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:	

	Absolute	Dominant	Indicator	Dominance Test worksheet					
Tree Stratum (Plot size: <u>30'</u> )	% Cover	Species?	<u>Status</u>	Number of Dominant Species					
1			·	That Are OBL, FACW, or FAC: (A)					
2			·	Total Number of Dominant					
3				Species Across All Strata:4 (B)					
4.				Percent of Dominant Species					
5				That Are OBL, FACW, or FAC: <u>75</u> (A/B)					
6									
-			·	Prevalence Index worksheet:					
/			·	Total % Cover of: Multiply by:					
		= Total Cov	rer	OBL species x 1 =					
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =					
1. Betula populifolia	25	D	FAC	FAC species x 3 =					
2				FACU species x 4 =					
3.				UPL species x 5 =					
Δ				Column Totals: (A) (B)					
5.				Prevalence Index = B/A =					
6				Hydrophytic Vegetation Indicators:					
7.				1 - Rapid Test for Hydrophytic Vegetation					
		- Total Cov		X 2 - Dominance Test is >50%					
List Obstance (Distained Figure )		- 10(a) COV		3 - Prevalence Index is ≤3.0 <sup>1</sup>					
Herb Stratum (Plot size: 5 )	2	N	NII	4 - Morphological Adaptations <sup>1</sup> (Provide supporting					
1. Symphphyotrichum sp.	<u></u>			data in Remarks or on a separate sheet)					
2. Juncus tenuis	5	<u> </u>		Problematic Hydrophytic Vegetation' (Explain)					
3. Agrostis gigantea	10	D	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must					
4. Euthamia gramnifolia	5	N	FAC	be present, unless disturbed or problematic.					
5. Andropogon virginicus	10	D	FACU	Definitions of Vegetation Strata:					
6. Potentilla sp.	10	D	NI	<b>Tree</b> – Woody plants 3 in (7.6 cm) or more in diameter					
7 Pinus thunbergii	2	N	NI	at breast height (DBH), regardless of height.					
o				Sapling/shrub – Woody plants less than 3 in DBH					
o				and greater than or equal to 3.28 ft (1 m) tall.					
9			·	<b>Herb</b> – All herbaceous (non-woody) plants regardless of					
10			·	size, and woody plants less than 3.28 ft tall.					
11				Woody vines All woody vines greater than 3.28 ft in					
12			·	height.					
	44	= Total Cove	er						
Woody Vine Stratum (Plot size: 15' )									
1. Smilax rotundifolia	10	D	FAC						
2				Hydrophytic					
2				Vegetation Present? Yes X No					
			·						
4	10		·						
		= Total Cov	rer						
Remarks: (Include photo numbers here or on a separate	sheet.)								
Profile Des	cription: (Describe	to the de	pth needed to docu	ment the i	ndicator	or confirm	n the absence of indic	ators.)	
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Depth	Matrix		Redo	x Feature	<u>s</u> 1	. 2		_	
(inches)	Color (moist)	<u>%</u> 100	<u>Color (moist)</u>	%	Type'	Loc		Rema	arks
0.40	7.511(5/0								
8-12	7.5YR5/6	80	<u>5YR4/6</u>	20			Clay loam		
12-16	5YR4/6	60	5YR5/4	40			Clay loam		
							,		
			<u> </u>				· · ·		
			<u> </u>	. <u> </u>	. <u> </u>		· ·		
							· ·		
		<u> </u>							
<sup>1</sup> Type: C=Co	ncentration, D=Deple	etion, RM:	Reduced Matrix, MS	=Masked \$	Sand Grai	ns.	<sup>2</sup> Location: PL=Por	e Lining, M=	Matrix.
Hydric Soil Ir	ndicators:	,					Indicators for Prob	ematic Hyd	ric Soils <sup>3</sup> :
Histosol (	(A1)		Polyvalue Below	Surface (	S8) ( <b>LRR</b>	R,	2 cm Muck (A10	) (LRR K, L,	MLRA 149B)
Histic Epi Black His	ipedon (A2) tic (A3)		MLRA 149B) Thin Dark Surfac	e (S9) ( <b>I F</b>		A 149B)	Coast Prairie Re	dox (A16) (L at or Peat (Sí	
Hydroger	n Sulfide (A4)		Loamy Mucky M	ineral (F1)	(LRR K, 1	L)	Dark Surface (S	7) ( <b>LRR K, L</b>	., <b>M</b> )
Stratified	Layers (A5)		Loamy Gleyed M	Loamy Gleyed Matrix (F2)			Polyvalue Below	Surface (S8	B) (LRR K, L)
Depleted	Below Dark Surface	(A11)	Depleted Matrix (F3)			Thin Dark Surfa	ce (S9) (LRR	8 K, L)	
Sandy Mi	uckv Mineral (S1)		Redox Dark Surface (F6) Depleted Dark Surface (F7)			Iron-Manganese Masses (F12) (LRR K, L, R) Piedmont Floodplain Soils (F19) (MI RA 149B)			
Sandy GI	eyed Matrix (S4)		Redox Depression	ons (F8)	,		Mesic Spodic (T	A6) ( <b>MLRA</b> <sup>•</sup>	144A, 145, 149B)
Sandy Re	edox (S5)						Red Parent Mat	erial (F21)	
Stripped	Matrix (S6) face (S7) (IRR R M		3)				Very Shallow Da	rk Surface (	TF12)
			_)					ritemarks)	
<sup>3</sup> Indicators of	hydrophytic vegetati	on and we	etland hydrology must	be presen	it, unless o	disturbed of	or problematic.		
Restrictive L	ayer (if observed):								
Type:	hoo):		_				Hydria Sail Brasant	Vaa	Nov
Deptil (Inci Pomarka:	nes).		_				nyunc son Fresent	Tes	<u> </u>
Remarks.									

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/11/12
Applicant/Owner:	State:N	NYSampling Point: NI
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Flat la	nd Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex	NWI cl	assification: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes <u>x</u> No <u>(</u> (If no, expla	ain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Are "Normal Circumstar	ices" present? Yes <u>x</u> No
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If needed, explain any a	answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>Ý</u> No Yes <u>X</u> No Yes <u>X</u> No	Is the Sampled Area within a Wetland? Yes x No If yes, optional Wetland Site ID:
Remarks: (Explain alternative proced	lures here or in a separate report.)	Wetland was mostly devoid of vegetation except at the perimeter of the wetlar
boundary.		

Wettand Hydrology indicators.	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living F	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled So	ils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
x Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No x Depth (inches):	
Water Table Present?     Yes No _x Depth (inches):	
Saturation Present? Yes <u>x</u> No Depth (inches): Surface (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No
Saturation Present?     Yes x     No     Depth (inches):     Surface       (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x       No       Depth (inches):       Surface (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present? Yes <u>x</u> No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x       No       Depth (inches):       Surface         (includes capillary fringe)       0       0       0       0       0         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect       0       0       0       0         Remarks:       0	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x       No       Depth (inches):       Surface (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x       No       Depth (inches):       Surface         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x       No       Depth (inches):       Surface         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x       No       Depth (inches):       Surface         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x       No       Depth (inches):       Surface (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes _ x _ No Depth (inches):       Surface (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes _ x _ No Depth (inches):       Surface (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x No Depth (inches): Surface (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present?       Yes x No Depth (inches): Surface (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:
Saturation Present? Yes <u>x</u> No Depth (inches): Surface (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect Remarks:	Wetland Hydrology Present? Yes <u>x</u> No ions), if available:

Sampling Point: <u>NI</u>

Tree Stratum (Plot size:	Absolute % Cover	Dominant II Species?	ndicator Status	Dominance Test worksheet:
1 Quercus palustris	2	<u>N I</u>	FACW	Number of Dominant Species
2 Populous tremuloides	2	<u>.</u>	FACU	That Ale OBL, FACW, OF FAC (A)
3			17.00	Total Number of Dominant Species Across All Strata: 0 (B)
۵ ۸				
ч Е				Percent of Dominant Species That Are OBL, FACW, or FAC: - (A/B)
5				
6				Prevalence Index worksheet:
7				Total % Cover of:Multiply by:
	4	= Total Cov	er	OBL species         2         x 1 = 2
Sapling/Shrub Stratum (Plot size: 15' )				FACW species $4$ $x^2 = 8$
1. Viburnum dentatum	2	<u>N</u>	FAC	FAC species $4$ $x_3 = 12$
2. Vaccinium corymbosum	2	<u> </u>	FACW	$\frac{1}{100 \text{ species}} = \frac{2}{2} \times 5 = \frac{1}{2}$
3. <u>Salix sp.</u>	2	<u>N</u>	NI	Column Totals: 12 (A) 30 (B)
4. Cephalanthus occidentalis	2	Ν	OBL	
5				Prevalence Index = $B/A = 2.5$
6.				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
	8	= Total Cov	er	2 - Dominance Test is >50%
Horb Stratum (Diot aizo:		- 100010000	CI	<u>x</u> 3 - Prevalence Index is ≤3.0
				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1		<u> </u>		data in Remarks or on a separate sneet)
2				
34.				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5.				Definitions of Vegetation Strata:
6				<b>Tree</b> – Woody plants 3 in (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
9				Herb – All herbaceous (non-woody) plants, regardless of
11				size, and woody plants less than 3.28 ft tall.
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
		= Total Cove	r	-
Woody Vine Stratum (Plot size: 15'				
1. Smilax rotundifolia	2	N	FAC	
				Hydrophytic
2				Vegetation Procent? Yes y No
3			<u> </u>	Fresent? Tes X NO
4				
	2	= Total Cove	er	

Profile Des	cription: (Describe	to the de	pth needed to docu	ment the	indicator of	or confirm	n the absence of in	idicators.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	<u>x Feature</u> %	<u>s</u> Tvpe <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-1	7.5YR3/1	100					organic		
1-6	7.5YR3/2	50	7.5YR4/4	50	С	М	Silty clay loam with	h trace sand	
6-16	7.5YR4/2	55	7.5YR3/4	40	С	М	Silty clay loam with	trace sand; hydroge	n sulfide odor
			<u>7.5YR4/6</u>	5	С	М	·		
							- <u> </u>		
							·		
<sup>1</sup> Type: C=C Hydric Soil	oncentration, D=Dep	letion, RN	I=Reduced Matrix, M	S=Maske	d Sand Gra	ains.	<sup>2</sup> Location: PL	=Pore Lining, M=Mat	trix. Soils <sup>3.</sup>
Histosol	(A1)		Polyvalue Belo	w Surface	e (S8) ( <b>LRF</b>	8 R,	2 cm Muck	(A10) ( <b>LRR K, L, ML</b>	<b>.RA 149B</b> )
Histic E	pipedon (A2)		MLRA 149B	) ace (SQ) (		DA 1498	Coast Prair	ie Redox (A16) ( <b>LRR</b> v Peat or Peat (S3) ( <b>I</b>	RK, L, R)
<u>x</u> Hydrog	gen Sulfide (A4)		Loamy Mucky	Mineral (	F1) ( <b>LRR</b>	(, L)	Dark Surfa	ace (S7) ( <b>LRR K, L, I</b>	M)
Stratifie	d Layers (A5) d Rolow Dark Surfac	0 (11)	Loamy Gleyed	Matrix (F2	2)		Polyvalue E	Below Surface (S8) (L	LRR K, L)
Thick D	ark Surface (A12)	e (ATT)	Redox Dark Su	Irface (F6)	)		Iron-Manga	inese Masses (F12) (	(LRR K, L, R)
Sandy M	Mucky Mineral (S1)		Depleted Dark	Surface (I	=7)		Piedmont F	loodplain Soils (F19)	(MLRA 149B)
Sandy C	Redox (S5)		Redox Depress	sions (F8)			Red Parent	: Material (F21)	A, 145, 149B)
Stripped	d Matrix (S6)						Very Shallo	w Dark Surface (TF1	2)
Dark Su	Irface (S7) (LRR R, N	/ILRA 149	<b>B</b> )				Other (Expl	ain in Remarks)	
<sup>3</sup> Indicators o	f hydrophytic vegeta	tion and w	etland hydrology mu	st be pres	ent, unless	disturbed	d or problematic.		
Restrictive	Layer (if observed):								
Depth (in	ches):		-				Hydric Soil Pres	sent? Yes <u>x</u>	No
Remarks:									
l									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richmond</u>	Sampling Date: 7/9/12
Applicant/Owner: NYCEDC	State:	NY Sampling Point: <u>NI (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Flat lar	nd Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex	NWI	classification:
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes <u>x</u> No <u>(</u> (If no, exp	lain in Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circumsta	nces" present? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain any	answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>No</u> x
Wetland Hydrology Present?	Yes No x	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	pils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?     Yes No Depth (inches):	
Water Table Present?     Yes     No     x     Depth (inches):       Saturation Present?     Yes     No     x     Depth (inches):       (includes capillary fringe)     Yes     No     x     Depth (inches):	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Ves       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Ves       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x

<u>Tree Stratum</u> (Plot size: <u>30'</u> )	Absolute <u>% Cover</u>	Dominant Species?	Indicator <u>Status</u>	Dominance Test worksheet: Number of Dominant Species
2			·	Total Number of Dominant
3			<u> </u>	Species Across All Strata: <u>2</u> (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:(A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Co	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3.				UPL species x 5 =
4			- <u> </u>	Column Totals: (A) (B)
5.				Prevalence Index = B/A =
6.				Hydrophytic Vegetation Indicators:
7			- <u> </u>	1 - Rapid Test for Hydrophytic Vegetation
/		- Total Car	- <u></u>	<u>x</u> 2 - Dominance Test is >50%
			/er	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: <u>5'</u> ) 1. Juncus tenuis	50	D	FAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2. Solidago rugosa	5	Ν	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. Juncus canadensis	1	N	OBL	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				Weady vines All woody vines greater than 2.28 ft in
12				height.
		= Total Cov	/er	
Woody Vine Stratum (Plot size: 15' )				
1. Smilax rotundifolia	50	D	FAC	
2				Hydrophytic
2			- <u> </u>	Vegetation Present? Yes x No
3			- <u> </u>	
4				
		= Total C	Cover	
Remarks: (Include photo numbers here or on a separate	sneet.)			

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix Color (moist)	%	Redox Color (moist)	x Feature %	<u>s</u> Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks		
	7.5YR3/2	100	,				Organic		
1-6	7.5YR4/2	85	7.5YR4/4	15	С	М	Silt loam with trace sand		
6-12	7.5YR4/3	90	7.5YR3/4	10	<u> </u>	М	Silt loam with trace sand		
	refusal								
							· _ · · · _ · ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ _ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ ~ _ ~ ~ ~ _ ~ ~ _ ~		
							· _ · · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · _ · · _ · ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ _ ~ _ ~ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ _ ~ ~ ~ _ ~ ~ ~ _ ~ ~ _ ~ ~ ~ ~ _ ~		
						. <u></u>			
<sup>1</sup> Turney 0=0									
Hydric Soil	Indicators:	Dietion, Riv	Reduced Matrix, Ma	S=IVIASKed	a Sana Gra	ains.	Indicators for Problematic Hydric Soils <sup>3</sup> :		
Hydric Soil Indicators: Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6) Dark Surface (S7) (LRR R, MLRA 149 <sup>3</sup> Indicators of hydrophytic vegetation and w			<ul> <li>Polyvalue Below Surface (S8) (LRR R, MLRA 149B)</li> <li>Thin Dark Surface (S9) (LRR R, MLRA 149B)</li> <li>Loamy Mucky Mineral (F1) (LRR K, L)</li> <li>Loamy Gleyed Matrix (F2)</li> <li>Depleted Matrix (F3)</li> <li>Redox Dark Surface (F6)</li> <li>Depleted Dark Surface (F7)</li> <li>Redox Depressions (F8)</li> </ul>			R R, _RA 149B) , L)	2 cm Muck (A10) (LRR K, L, MLRA 149B)     Coast Prairie Redox (A16) (LRR K, L, R)     5 cm Mucky Peat or Peat (S3) (LRR K, L, R)     Dark Surface (S7) (LRR K, L, M)     Polyvalue Below Surface (S8) (LRR K, L)     Thin Dark Surface (S9) (LRR K, L)     Iron-Manganese Masses (F12) (LRR K, L, R)     Piedmont Floodplain Soils (F19) (MLRA 149B)     Mesic Spodic (TA6) (MLRA 144A, 145, 149B)     Red Parent Material (F21)     Very Shallow Dark Surface (TF12)     Other (Explain in Remarks)		
Type: Depth (in	ches):						Hydric Soil Present? Yes <u>x</u> No		
Remarks:							1		

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Ric</u>	hmond Samp	ling Date: 7/12/12
Applicant/Owner:		State: <u>NY</u> San	npling Point: <u>NJ</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Cha</u>	arleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none	e): Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes <u>x</u> No <u></u>	(If no, explain in Remar	ks.)
Are Vegetation, Soil, or Hydrology significant	ntly disturbed? Are "Normal	Circumstances" present	? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil , or Hydrology naturall	y problematic? (If needed, e	explain any answers in I	Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>X</u> No Yes <u>X</u> No Yes <u>X</u> No	Is the Sampled Area within a Wetland? Yes x No If yes, optional Wetland Site ID:			
Remarks: (Explain alternative procedures here or in a separate report.)					
Problematic hydric soils; red parent	material.				

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	<u>x</u> Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
<u>x</u> Saturation (A3) <u>Marl Deposits (B15)</u>	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?     Yes No _x     Depth (inches):	
Saturation Present? Yes <u>x</u> No Depth (inches): >12" (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
Remarks: Depression; man-made pond approximately / meters in diameter.	

Tree Stratum (Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1,				Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)
2				Total Number of Deminant
3				Species Across All Strata: <u>1</u> (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6				Provalance Index worksheet:
7			_	Total % Cover of Multiply by
		= Total Co	ver	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: )				FACW species x 2 =
1. ····································				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
3				Column Totals: (A) (B)
4 5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
·		- Total Co	vor	x 2 - Dominance Test is >50%
Horb Stratum (Distaire)		- 10(a) C0	VEI	3 - Prevalence Index is ≤3.0 <sup>1</sup>
1 Cyperus esculentus	40	D	FACW	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
2. Phragmites australis	10	N	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3. Juncus effusus	2	N	OBL	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Eleocharis obtusa	<1	N	OBL	be present, unless disturbed or problematic.
5.				Definitions of Vegetation Strata:
6.				<b>Tree</b> – Woody plants 3 in (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9				and greater than or equal to 3.28 ft (1 m) tall.
10				Herb - All herbaceous (non-woody) plants, regardless of
11				size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in
12		- Total (		height.
		= 10181	Jover	
<u>woody vine Stratum</u> (Plot size:)				
1				Hydrophytic
2				Vegetation
3				Present? Yes <u>x</u> No
4				
		= Total Co	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			

(in all a - )	Matrix		Redo	x Features	<u>s</u>	. 0	_		_	
(incnes)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-9	5YR 2/1	100					Silty sand with	organic ma	aterial	
9-16	5YR 4/4	100					Sand loam wit	th gravel		
							· ·			
		·								
					<u> </u>		<u> </u>			
							·			
						·	· ·			
							. <u> </u>			
<sup>1</sup> Type: C=Cc	oncentration, D=Dep	letion, RM=	Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location:	PL=Pore L	ining, M=Mat	ix.
Hydric Soil I	ndicators:	,	,				Indicators f	or Problen	natic Hydric S	Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belo	w Surface	(S8) ( <b>LRF</b>	R,	2 cm Mi	uck (A10) (I	LRR K, L, ML	RA 149B)
Histic Ep	vipedon (A2)		MLRA 149B	) 			Coast P	rairie Redo	x (A16) (LRR	K, L, R)
Black His Hydroge	stic (A3) n Sulfide (A4)		I nin Dark Suna	ace (59) (L Mineral (F1	. K K K , MIL	_RA 149B) . I.)	) 5 cm Mi Dark Su	ucky Peat c Irface (S7)	(I RR K. I. M)	.KK K, L, K)
Stratified	Layers (A5)		Loamy Gleyed	Matrix (F2)	)	, _/	Polyvalı	Le Below S	urface (S8) (L	RR K, L)
Depleted	Below Dark Surface	e (A11)	Depleted Matrix	x (F3)			Thin Da	rk Surface	(S9) (LRR K,	L)
Thick Da	rk Surface (A12)		Redox Dark Su	Irface (F6)	_\		Iron-Ma	nganese M	asses (F12) (I	LRR K, L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmo Mosio S	nt Floodpla	in Soils (F19)	(MLRA 149B)
Sandy G	edox (S5)						x Red Pa	rent Materia	al (F21)	<b>1, 143, 1430</b> )
Stripped	Matrix (S6)						Very Sh	allow Dark	Surface (TF1)	2)
x Dark Su	urface (S7) (LRR R,	MLRA 149	B)				Other (	(Explain in I	Remarks)	
3 and a stars of						ما مد سام م	an nuch lanatia			
Restrictive I	aver (if observed):	ion and we	etiand hydrology mus	st be prese	ent, uniess	aisturbea	or problematic.			
Type <sup>.</sup>							Hydric Soil F	Present?	Yes X	No
Type: Depth (inc	ches):									
Type: Depth (inc	ches):									
Type: Depth (inc Remarks:	shes):	<u></u>								
Type: Depth (inc Remarks:	:hes):									
Type: Depth (inc Remarks:	:hes):									
Type: Depth (inc Remarks:	: <u></u>									
Type: Depth (inc Remarks:	ches):									
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Type: Depth (inc Remarks:	ches):									
Type: Depth (inc Remarks:	ches):									
Type: Depth (inc Remarks:	ches):									

Project/Site: Charleston Mixed Use Development	City/County: Staten Island, Richmond	Sampling Date: 7/12/12
Applicant/Owner:	State: <u>NY</u>	Sampling Point: <u>NJ (upland)</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charleston</u>	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none): Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex	NWI classif	ication:
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> If no, explain ir	Remarks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circumstances"	present? Yes <u>x</u> No
Are Vegetation, Soil, or Hydrology naturally	v problematic? (If needed, explain any answ	ers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes <u>N</u> No x Yes No x	Is the Sampled Area within a Wetland? Yes <u>No</u> x
Remarks: (Explain alternative proc	edures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary frince)       Yes No Depth (inches):	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       No       x       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?         Yes         No         x           ctions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No x         ctions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes       No       x       Depth (inches):         Saturation Present?       Yes       No       x       Depth (inches):         (includes capillary fringe)       Image: Comparison of the second depth of the second d	Wetland Hydrology Present? Yes No x ctions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X       Depth (inches):         Saturation Present?       Yes No X       Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X Depth (inches):         Saturation Present?       Yes No X Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No X Depth (inches):         Saturation Present?       Yes No X Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x

Sampling Point: NJ (upland)

	Absolute	Dominant	Indicator	Dominanco Tost workshoot:
Tree Stratum (Plot size: <u>30'</u> )	% Cover	Species?	Status	Number of Dominant Species
1. Fraxinus pennsylcanica	10	D	FACW	That Are OBL, FACW, or FAC: (A)
2. Polonia tomentosa	5	D	<u>NI</u>	Total Number of Dominant
3				Species Across All Strata: <u>2</u> (B)
4	<u> </u>		<u> </u>	Percent of Dominant Species
5.				That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6.				
7				Prevalence Index worksheet:
· ·	15	- Total	Cover	
		- Total	Cover	
Sapling/Shrub Stratum (Plot size: 15				FAC species x 2 =
1	·			FACU species    x 4 =
2				$\frac{1100 \text{ species}}{100 \text{ species}} = \frac{1100 \text{ species}}{100 \text{ species}}$
3	·			Column Totals: (A) (B)
4	<u> </u>			
5				Prevalence Index = B/A =
6				Hvdrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
/	·	Total Ca		x 2 - Dominance Test is >50%
		= Total Cov	ver	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: 5' )				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1				data in Remarks or on a separate sheet)
2				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3	<u> </u>			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
6.	·		• —	Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
0				Sanling/shrub – Woody plants less than 3 in. DBH
0				and greater than or equal to 3.28 ft (1 m) tall.
9				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of
10	<u> </u>			size, and woody plants less than 3.28 ft tall.
11				<b>Woody vines</b> – All woody vines greater than 3.28 ft in
12				height.
		= Total Cov	ver	
Woody Vine Stratum (Plot size: 15' )				
1. Smila <u>x rotundifolia</u>	8	N	FAC	
2. Wisteria frutescens	75	D	FACW	Hydrophytic
3 Vitis labrusca	2	N	FACU	Vegetation Present? Yes <u>x</u> No
A. VIII3 IUDI UDI UDI UDI UDI UDI UDI UDI UDI UD			1//00	
4				
Demorto: (Include photo numbero horo er en e concreto	<u>85</u>		Jover	
Remarks: (Include photo numbers here or on a separate	sneet.)			

Profile Desc	ription: (Describe	e to the de	oth needed to docum	nent the in	dicator or confirm	n the absence o	f indicato	rs.)	
Depth	Matrix		Redox	Features					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup> Loc <sup>2</sup>	Texture		Remarks	
0-4	10YR3/3	100				Loose, Friable			
4-10	5YR4/4	100				<u>Silt loam with t</u>	race coars	e sand	
10+	Rocky refusal								
·			·			·			
·									
						·			
		nlotion DM	-Reduced Matrix MS	-Maakad	Sond Craina	<sup>2</sup> Logation:	DI - Doro I	ining M-Mat	trix
Hydric Soil	Indicators:			-waskeu	Sanu Grains.	Indicators for	or Problen	natic Hvdric	Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Below	/ Surface (	S8) ( <b>I RR R</b>	2 cm Mi	ick (A10) (	IRRKI MI	RA 149B)
Histic Ep	pipedon (A2)		MLRA 149B)		00) ( <b>_</b> ,	Coast P	rairie Redo	x (A16) ( <b>LRR</b>	<b>ξ K, L, R</b> )
Black Hi	stic (A3)		Thin Dark Surfa	ce (S9) ( <b>L</b> l	RR R, MLRA 149B	) 5 cm Mu	ucky Peat o	or Peat (S3) (I	LRR K, L, R)
Hydroge	en Sulfide (A4)		Loamy Mucky N	lineral (F1)	) (LRR K, L)	Dark Su	rface (S7)	(LRR K, L, M	)
Stratified	d Layers (A5)		Loamy Gleyed M	/latrix (F2)		Polyvalu	le Below S	urface (S8) ( <b>I</b>	<b>_RR K, L</b> )
Depleted	d Below Dark Surfa	ce (A11)	Depleted Matrix	(F3)		Thin Da	rk Surface	(S9) ( <b>LRR K</b> ,	L)
I NICK Da	Ark Surface (A12)		Redox Dark Sur	Tace (F6) Surface (E7	7)	Iron-Mai Piedmor	nganese IV at Eloodola	lasses (F12) ( in Soile (F19)	$(\mathbf{L}\mathbf{R}\mathbf{R}\mathbf{K},\mathbf{L},\mathbf{R})$
Sandy G	leved Matrix (S4)		Depieted Dark 3	ons (F8)	)	Mesic S	nodic (TA6	S) (MI RA 144	A 145 149B)
Sandy R	Redox (S5)			0110 (1 0)		Red Par	ent Materia	al (F21)	, , , , , , , , , , , , , , , , , , , ,
Stripped	Matrix (S6)					Very Sh	allow Dark	Surface (TF1	2)
Dark Su	rface (S7) (LRR R,	MLRA 149	<b>B</b> )			Other (E	xplain in F	Remarks)	
<sup>3</sup> Indicators of	f hydrophytic vegeta	ation and w	etland hydrology mus	t be preser	nt, unless disturbed	or problematic.			
Restrictive I	Layer (if observed)	):							
Type:									
Depth (ind	ches):		-			Hydric Soil P	resent?	Yes	<u>No x</u>
Remarks:									

Project/Site:	City/County: Richmond	Sa	mpling Date: July 2012
Applicant/Owner: NYCEDC		State: <u>NY</u> S	Sampling Point: NK Wetland
Investigator(s): Rollino, J.	Section, Township, Range:	Charleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none	e): Flat land	Slope (%):
Subregion (LRR or MLRA): MLRB 149B Lat:	Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Com	plex	NWI classification	n: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes <u>x</u> No (I	f no, explain in Rema	arks.)
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Are "Normal (	Circumstances" prese	ent? Yes No
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If needed, ex	plain any answers in	Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland? Yes X No If yes, optional Wetland Site ID: NK				
Remarks: (Explain alternative procedures here or in a separate report.)						
Wetland is 0.005 acres in size						
Wetland is in a field that has beed a	Itered by previous filling and excavati	on. Natural clay deposits occur in the field. Also, site used as a hore pasture.				

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	X Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) X Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	X FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes <u>No X</u> Depth (inches):	
Saturation Present? Yes <u>No</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	tions), if available:
Demortion	
Remarks.	
Wetland is compressed depression in a field with natural clay deposits. Hydrology enoug	gh to promote hydrophytic vetation.

Tree Stratum (Plot size:	Absolute % Cover	Dominant Indica Species? State	ator Dominance Test worksheet:
1	<u>/// 00/01</u>		Number of Dominant Species
2			
3		·	Total Number of Dominant Species Across All Strata: (B)
3			
4:		·	Percent of Dominant Species     That Are OBL_EACW_or EAC <sup>2</sup> (A/B)
5			
6		·	Prevalence Index worksheet:
7			Total % Cover of: Multiply by:
	. <u> </u>	= Total Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)			FACW species x 2 =
1			FAC species x 3 =
2			FACU species x 4 =
3.			UPL species x 5 = (D)
4			Column Totals: (A) (B)
5			Prevalence Index = B/A =
		·	Hydrophytic Vegetation Indicators:
-		·	1 - Rapid Test for Hydrophytic Vegetation
7		·	2 - Dominance Test is >50%
		= Total Cover	$3 - Prevalence Index is \leq 3.0^{1}$
Herb Stratum (Plot size: _ 5 IEET )	90	OB	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
2			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2		·	
3		·	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4		·	Definitions of Venetation Strate:
5			Demittions of Vegetation Strata:
6			<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7			
8		·	Sapling/shrub – Woody plants less than 3 in. DBH
9			
10			Herb – All herbaceous (non-woody) plants, regardless of
11			size, and woody plants less than 5.20 it tail.
12.			Woody vines – All woody vines greater than 3.28 ft in height.
	90	= Total Cover	
Woody Vine Stratum (Plot size:			
1			
·		·	Hydrophytic
2		·	
3		·	
4		·	[
		= Total Cover	
Remarks: (Include photo numbers here or on a separate	sheet.)		

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redo	x Features	<u>i</u>				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-4	7.5 YR 3/2	100					Sandy silt		
4-8	5 YR 4/4	100					Sandy loam	8"=Depth to refusal	
			·						
			·						
				·					
· · · · · · · · · · · · · · · · · · ·									
			·	. <u> </u>					
<sup>1</sup> Type: C=Co	oncentration, D=De	pletion, RM	I=Reduced Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location	n: PL=Pore Lining, M=Matrix.	
Hydric Soil I	ndicators:						Indicators	for Problematic Hydric Soils":	
Histosol	(A1)		Polyvalue Belov	w Surface	(S8) ( <b>LRF</b>	RR,	2 cm I	Muck (A10) ( <b>LRR K, L, MLRA 149B</b> )	
Histic Ep	oipedon (A2)		MLRA 149B	)			Coast	Prairie Redox (A16) ( <b>LRR K, L, R</b> )	
Black His	stic (A3)			ice (S9) (L		-RA 149B	) 5 cm ľ	Mucky Peat or Peat (S3) (LRR K, L, R)	
Hydroge				/Ineral (F1 Motrix (E2)		, L)	Dark :	Surface (S7) (LRR K, L, M)	
Stratilied	I Layers (A5)	00 (111)	Loany Gleyed	いるUTX (FZ)	)		POlyva Thip C	and Below Surface (So) (LRR R, L)	
Depleted	rk Surface (A12)	Le (ATT)	Depieted Math	rfaco (E6)				Janganoso Massos (E12) (LPP K   P)	
Sandy M	lucky Mineral (S1)		Depleted Dark 3	Surface (F	7)		Nion-N	ingaliese Masses (F12) (ERR R, E, R)	
Sandy M	leved Matrix (S4)		Depleted Dark	ions (F8)	, )		Nesic	Spodic (TA6) (MI RA 144A 145 149B)	
Sandy R	edox (S5)						X Red P	arent Material (E21)	
Stripped	Matrix (S6)						Verv S	Shallow Dark Surface (TE12)	
Dark Sur	face (S7) (LRR R.	MLRA 149	<b>B</b> )				Other	(Explain in Remarks)	
			,					( F	
<sup>3</sup> Indicators of	hydrophytic vegeta	ation and w	etland hydrology mus	t be prese	nt, unless	disturbed	l or problemati	С.	
Restrictive L	ayer (if observed)	):							
Type:	clay, hard packed	material	_						
Depth (inc	ches): 8						Hvdric Soil	Present? Yes X No	
Remarks:			-				.,		
Remarks.									

Project/Site:	City/County:	Richmond	\$	Sampling Date:	July 2012
Applicant/Owner:			State: <u>NY</u>	_ Sampling Poi	nt: NL Wetland
Investigator(s):Rollino, J.	Section, Tow	nship, Range:	Charleston		
Landform (hillslope, terrace, etc.):	Local relief (cond	ave, convex, no	ne): Flat lan	d Slo	pe (%):
Subregion (LRR or MLRA): Lat:		Long:		Datu	n:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Comp	olex		NWI classificat	tion: wetland	l not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u>	No	(If no, explain in Re	marks.)	
Are Vegetation <u>x</u> , Soil <u>x</u> , or Hydrology significar	ntly disturbed?	Are "Normal	Circumstances" pre	esent? Yes	No
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, e	explain any answers	s in Remarks.)	

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland? Yes X No If yes, optional Wetland Site ID: NL
Remarks: (Explain alternative proce	dures here or in a separate report.)	
Wetland is in a field that has beed al	tered by previous filling and excavation	n. Natural clay deposits occur in the field. Also, site used as a hore pasture.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	X Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	X Microtopographic Relief (D4)
x Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Water Table Present?     Yes No Depth (inches):       Saturation Present?     Yes No Depth (inches):       (includes capillary fringe)     Yes No Depth (inches):	Wetland Hydrology Present? Yes No
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No tions), if available:

Trop Stratum (Plat size:	Absolute	Dominant	Indicator	Dominance Test worksheet:
	% Cover	<u>Species</u> ?	Status	Number of Dominant Species
				That Are OBL, FACW, or FAC: (A)
2	·			Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6.				Drevelence Index werkeheet
7				Total % Cover of: Multiply by:
		- Total Cov		
		- 10(a) CO		$FACW$ species $x^2 =$
Sapling/Shrub Stratum (Plot size:)				FAC species $x^2 =$
1			. <u></u>	FACIl species $x 4 =$
2	<u> </u>			$1 \text{ Pl species} \qquad \qquad x = -$
3				Column Totals: $(A)$ (B)
4				
5.				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
	·			1 - Rapid Test for Hydrophytic Vegetation
/				2 - Dominance Test is >50%
		= Total Cov	ver	$3 - Prevalence Index is \leq 3.0^{1}$
Herb Stratum (Plot size: 5 IEEL)				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
<sub>1.</sub> Juncus effusus	20	D	FACW+	data in Remarks or on a separate sheet)
<sub>2.</sub> Eleocharis obtusa	15	D	OBL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<sub>3.</sub> Juncus tenuis	5	n	FAC-	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4 Cyperus sp.	2	n	NL	be present, unless disturbed or problematic.
5				Definitions of Vegetation Strata:
<u>.</u>				
o				at breast height (DBH) regardless of height
7	·			
8				Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size and woody plants less than 3.28 ft tall
11				size, and woody plants less than 5.20 it and
12.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height
	47	= Total Cov	/er	
Weedy Vine Stratum (Plat size)				
1	<u> </u>			Hydrophytic
2			. <u></u>	Vegetation
3				Present? Yes <u>A</u> No
4				
		= Total Cov	/er	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Profile Desc	ription: (Describe	to the de	oth needed to docu	ment the ir	dicator	or confirn	n the absence of in	dicators.)	
Depth	Matrix		Redo	ox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-3	5 YR 5/1	90	5 YR 4/6	10			Clay		
3-12	10 YR 6/1	60	10 YR 6/2	30			Clay		
continued			- 5 YR 4/6	10			Clay		
							·		
·					<u> </u>				
							· ·		<u> </u>
							· ·		
							· ·		<u> </u>
							· ·		
<sup>1</sup> Type: C=Co	oncentration, D=Dep	oletion, RN	=Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: PL	=Pore Lining, M=Ma	atrix.
Hydric Soil I	Indicators:						Indicators for F	Problematic Hydric	Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belo	w Surface (	S8) ( <b>LRF</b>	RR,	2 cm Muck	(A10) (LRR K, L, M	LRA 149B)
Histic Ep	pipedon (A2)		MLRA 149B	5)			Coast Prair	ie Redox (A16) (LR	R K, L, R)
Black Hi	stic (A3)		Thin Dark Surfa	ace (S9) ( <b>L</b>	RR R, MI	_RA 149B	) 5 cm Mucky	y Peat or Peat (S3)	(LRR K, L, R)
Hydroge	n Sulfide (A4)		Loamy Mucky	Mineral (F1	) (LRR K	, L)	Dark Surfac	ce (S7) (LRR K, L, N	M)
Stratified	Layers (A5)	(	Loamy Gleyed	Matrix (F2)			Polyvalue E	Below Surface (S8) (	(LRR K, L)
Depleted	Below Dark Surface	ce (A11)	<u>     Depleted Matri</u>	х (F3) unface (ГС)				Surface (S9) (LRR K	(, L)
Thick Da	Ark Surface (ATZ) Aucky Mineral (S1)		Redux Dark St	Surface (F0)	7)		IION-Manga Piedmont E	lloodolain Soils (F12)	(LKK K, L, K)
Sandy R	Sleved Matrix (S4)		Depleted Dark	sions (F8)	)		Mesic Spod	lic (TA6) ( <b>MI RA 14</b>	44 145 149B)
Sandy B	edox (S5)						Red Parent	Material (F21)	in, 140, 140D)
Stripped	Matrix (S6)						Verv Shallo	w Dark Surface (TF	12)
Dark Su	rface (S7) (LRR R,	MLRA 149	B)				Other (Expl	ain in Remarks)	,
<sup>3</sup> Indicators of	f hydrophytic vegeta	ation and w	etland hydrology mu	st be prese	nt, unless	disturbed	l or problematic.		
Restrictive I	_ayer (if observed)	:							
Type:	Clay								
Depth (ind	ches): at surface.		<u>.</u>				Hydric Soil Pres	sent? Yes <u>×</u>	No
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richm</u>	nond Sampling Date: 7/11/12
Applicant/Owner:	s	tate: <u>NY</u> Sampling Point: <u>NM</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Charle</u>	ston
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat land Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:	Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex	_	NWI classification: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes <u>x</u> No <u>(</u> (If )	no, explain in Remarks.)
Are Vegetation <u>x</u> , Soil <u>x</u> , or Hydrology significa	antly disturbed? Are "Normal Cir	cumstances" present? Yes N <u>o</u>
Are Vegetation, Soilx , or Hydrology naturall	y problematic? (If needed, expl	ain any answers in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> Yes <u>x</u>	No No (see below)	Is the Sampled Area within a Wetland?	Yes <u>x</u>	No
Wetland Hydrology Present?	Yes <u>x</u>	No	If yes, optional Wetland Site	e ID:	
Remarks: (Explain alternative proced Wetland is in a field that has beed alt	lures here or in a s tered by previous	separate report.) H	ydric soil indicators problema n. Natural clay deposits occu	tic/red parent mate ir in the field. Also	erial. , site used as a hore pasture.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	<u>x</u> Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
x Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	<u>x</u> Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	x FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Brasent? Veg Na y Donth (inches):	
Water Table Present? $\operatorname{Fes}_{}$ No <u>x</u> Depth (inches).	
Saturation Present? Yes <u>x</u> No <u>Depth</u> (inches): 9 (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes _x _ No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):       9         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):       9 <ul> <li>(includes capillary fringe)</li> <li>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:</li> </ul> Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes _x No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):       9         (includes capillary fringe)        Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):       9         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:

Tree Stratum (Plot size:) 1	Absolute % Cover	Dominant Species?	Indicator <u>Status</u>	Dominance Test worksheet:           Number of Dominant Species           That Are OBL, FACW, or FAC:         2         (A)		
2 3				Total Number of Dominant         Species Across All Strata:       2       (B)		
4 5			·	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)		
6 7				Prevalence Index worksheet: Total % Cover of:Multiply by:		
Sapling/Shrub Stratum (Plot size:) 1		= Total Cov	/er	OBL species       x 1 =         FACW species       x 2 =         FAC species       x 3 =         FACU species       x 4 =		
3			·	UPL species x 5 = Column Totals: (A) (B)		
4 5.			·	Prevalence Index = B/A =		
6 7				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation		
		= Total Cov	ver	x 2 - Dominance Test is >50% 3 - Prevalence Index is $\leq 3.0^1$		
Herb Stratum (Plot size: <u>5'</u> )	30	П	OBI	4 - Morphological Adaptations <sup>1</sup> (Provide supporting		
2 Eleocharis obtusa	<u> </u>	 D		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
3 Juncus sp	10	<u> </u>		<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
4. Euthamia gramnifolia	5	N	FAC	be present, unless disturbed or problematic.		
5. Juncus tenuis	5	N	FAC	Definitions of Vegetation Strata:		
6			·	<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
8			·	<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.		
9 10			·	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
11 12.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height		
	100	= Total	Cover			
Woody Vine Stratum (Plot size:)						
1			·	Hydrophytic		
2			·	Vegetation Present? Yes x No		
3			·			
4		- Total Ca				
Remarks: (Include photo numbers here or on a separate	sheet.)					
	- /					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redo	x Features	6				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remark	(S	
0-2	7.5 YR 3/2	100					Silty sand		
2-8	7.5 YR 4/4	100					Silty sand 15% material		
8-14	5 YR 4/4	90	5 YR 3/4	10			Sandy loam		
		otion PM	-Doducod Matrix M	S=Maakad	Sand Cr	ino	<sup>2</sup> Location: DL=Doro Lining M=N	Actrix	
Hvdric Soil I	ndicators:			S-IVIASKEU	Saliu Gia	1115.	Indicators for Problematic Hydr	ric Soils <sup>3</sup> :	
Histosol	(A1)		Polyvalue Belo	w Surface	(S8) ( <b>I RE</b>	R	2 cm Muck (A10) ( <b>I RR K I</b>	MI RA 149B)	
Histic Ep	vipedon (A2)		MLRA 149B	)	(00) (211)	,	Coast Prairie Redox (A16) (L	.RR K, L, R)	
Black His	stic (A3)		Thin Dark Surfa	, ace (S9) ( <b>L</b>	RR R, ML	RA 149B)	) 5 cm Mucky Peat or Peat (S3	5) (LRR K, L, R)	
Hydroge	n Sulfide (A4)		Loamy Mucky I	Mineral (F1	) (LRR K	, L)	Dark Surface (S7) (LRR K, L	, <b>M</b> )	
Stratified	Layers (A5)		Loamy Gleyed	Matrix (F2)	)		Polyvalue Below Surface (S8	) (LRR K, L)	
Depleted	Below Dark Surface	e (A11)	Depleted Matrix	x (F3)			Thin Dark Surface (S9) (LRR	<b>K, L</b> )	
Thick Da	rk Surface (A12)		Redox Dark Su	Irface (F6)			Iron-Manganese Masses (F12	2) (LRR K, L, R)	
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmont Floodplain Soils (F	19) ( <b>MLRA 149B</b> )	
Sandy G	leyed Matrix (S4)		Redox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 1	44A, 145, 149B)	
Sandy R	edox (SS)						<u>X</u> Red Parent Material (F21)		
Suippeu	face (S7) (I PP P M		3)				Other (Explain in Remarks)	. Г 12)	
			<b>_</b> )						
<sup>3</sup> Indicators of	hydrophytic vegetati	ion and w	etland hydrology mus	st be prese	nt, unless	disturbed	or problematic.		
Restrictive L	ayer (if observed):								
Type:									
Depth (inc	ches):						Hydric Soil Present? Yes <u>x</u>	No	
Remarks:									

Project/Site:	City/County:	Richmond	Sa	ampling Date:	July 2012
Applicant/Owner:NYCEDC			State: <u>NY</u>	Sampling Point	NM Upland
Investigator(s): Rollino, J.	Section, Town	ship, Range:	Charleston		
Landform (hillslope, terrace, etc.):	Local relief (conc	ave, convex, nor	ne):Flat lar	nd Slope	e (%):
Subregion (LRR or MLRA): Lat:		Long:		Datum	
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Com	ıplex		NWI classificatio	on:	
Are climatic / hydrologic conditions on the site typical for this time o	of year? Yes	No (	(If no, explain in Rema	arks.)	
Are Vegetation <u>x</u> , Soil <u>x</u> , or Hydrology significa	antly disturbed?	Are "Normal	Circumstances" pres	ent? Yes	No
Are Vegetation, Soil, or Hydrology naturally	y problematic?	(If needed, e	explain any answers ir	n Remarks.)	

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes No X Yes No X Yes No X	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID:
Remarks: (Explain alternative proce	dures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Second	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Yes <u>No X</u> Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes       No       X       Depth (inches):         Saturation Present?       Yes       No       X       Depth (inches):         (includes capillary fringe)       No       X       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present?       Yes       No       ×         ctions), if available:
Water Table Present?       Yes       No       X       Depth (inches):         Saturation Present?       Yes       No       X       Depth (inches):         (includes capillary fringe)       No       X       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No _X Depth (inches):         Saturation Present?       Yes No _X Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes NoX Depth (inches):         Saturation Present?       Yes NoX Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No X ctions), if available:

Troo Stratum (Plot size:	Absolute	Dominant In	dicator Status	Dominance Test worksheet:
	70 COVEL	<u>opecies</u>	<u>status</u>	Number of Dominant Species
I				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4				Percent of Dominant Species
5	. <u> </u>			That Are OBL, FACW, or FAC: (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
		= Total Cover		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: )				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				Provalence Index - P/A -
5				
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		= Total Cover		2 - Dominance Test is >50%
Herb Stratum (Plot size: )				3 - Prevalence Index is ≤3.0'
1 Gramineae	85		NI	<ul> <li>4 - Morphological Adaptations' (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
2 Plantago sp.	15		NI	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2				
3				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4	<u> </u>			Definitions of Venetation Starter
5				Definitions of vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9				and greater than of equal to 5.26 it (1 m) tail.
10.				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of
11.				size, and woody plants less than 5.28 it tall.
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in
12		- Total Covar		neight.
	·			
Woody Vine Stratum (Plot size:)				
1				Hydrophytic
2				Vegetation
3				Present? Yes No X
4				
		= Total Cover		
Remarks: (Include photo numbers here or on a separate s	sheet.)			
Hore				

Profile Desc	ription: (Describe	e to the dep	th needed to docun	nent the i	ndicator	or confirn	n the absence of indica	ators.)	
Depth	Matrix		Redo	x Features	6				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remark	6
0-3	7.5 YR 3/2	100					Silty sand		
3-8	7.5 YR 5/4	100					Silty sand		
8-14	7.5 YR 4/4	100							
		nlation DM	-Doduced Metrix M				<sup>2</sup> l costion: DI -Do	a Lining M-N	lotrix
Hydric Soil I	Indicators:	pletion, RM	Reduced Matrix, Ma	s=iviasked	Sand Gra	ains.	Location: PL=P0	e Lining, M=N	atrix.
Histosol Histic Ep Histic Ep Histic Ep Hydroge Stratified Depleted Thick Da Sandy M Sandy G Sandy R Stripped Dark Sun	(A1) bipedon (A2) stic (A3) In Sulfide (A4) Layers (A5) Below Dark Surfa ark Surface (A12) Mucky Mineral (S1) Beyed Matrix (S4) Redox (S5) Matrix (S6) rface (S7) (LRR R, f hydrophytic veget	ce (A11) <b>MLRA 149E</b> ation and we	Polyvalue Belov     MLRA 149B)     Thin Dark Surfa     Loamy Mucky M     Loamy Gleyed I     Depleted Matrix     Redox Dark Sur     Depleted Dark S     Redox Depress 3) etland hydrology mus	v Surface Ince (S9) ( <b>L</b> Mineral (F1) Matrix (F2) (F3) Inface (F6) Surface (F6) Surface (F8)	(S8) ( <b>LRF</b> . <b>RR R, MI</b> ) ( <b>LRR K</b> ) 7) 7)	R R, -RA 149B , L)	<ul> <li>2 cm Muck (A10</li> <li>Coast Prairie Re</li> <li>5 cm Mucky Pe</li> <li>Dark Surface (S</li> <li>Polyvalue Below</li> <li>Thin Dark Surfa</li> <li>Iron-Manganese</li> <li>Piedmont Flood</li> <li>Mesic Spodic (1</li> <li>X Red Parent Mal</li> <li>Very Shallow D</li> <li>Other (Explain i</li> </ul>	b) (LRR K, L, I edox (A16) (Li at or Peat (S3) 77) (LRR K, L, v Surface (S8) ce (S9) (LRR e Masses (F12 plain Soils (F1 A6) (MLRA 1 erial (F21) ark Surface (T n Remarks)	MLRA 149B) RR K, L, R) (LRR K, L, R) M) (LRR K, L) K, L) 2) (LRR K, L, R) 9) (MLRA 149B) 44A, 145, 149B) F12)
Restrictive L	ayer (if observed	):							
Туре:									X
Depth (inc	ches):						Hydric Soil Present	? Yes	No
Remarks:									
Active horse	e pasture. Herbace	ous materia	l is grazed.						

Charleston Mixed Use Development Project/Site:	_ City/County: _ Richmond	Samplin	g Date: July 2012
Applicant/Owner: NYCEDC	5	State: <u>NY</u> Samp	ling Point: NN Wetland
Investigator(s): Rollino, J.	_ Section, Township, Range: C	harleston	
Landform (hillslope, terrace, etc.): L	ocal relief (concave, convex, none)	Flat land	Slope (%):
Subregion (LRR or MLRA): Lat:	Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Comp	lex	NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	year? Yes <u>x</u> No (If r	no, explain in Remarks.)	×
Are Vegetation, Soil, or Hydrology significant	tly disturbed? Are "Normal Ci	rcumstances" present?	Yes No
Are Vegetation, Soil, or Hydrology naturally p	problematic? (If needed, exp	ain any answers in Rem	narks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes X No Yes X No	Is the Sampled Area within a Wetland? Yes X No If yes, optional Wetland Site ID: NN
Remarks: (Explain alternative proced	lures here or in a separate report.	) Natural clay deposists in the soil.
Wetland is in a field that has beed alt	ered by previous filling and excav	ation. Natural clay deposits occur in the field. Also, site used as a hore pasture.

Secondary Indicators (minimum of two required)
Surface Soil Cracks (B6)
Drainage Patterns (B10)
Moss Trim Lines (B16)
Dry-Season Water Table (C2)
Crayfish Burrows (C8)
Roots (C3) Saturation Visible on Aerial Imagery (C9)
Stunted or Stressed Plants (D1)
oils (C6) Geomorphic Position (D2)
Shallow Aquitard (D3)
X Microtopographic Relief (D4)
X FAC-Neutral Test (D5)
Wetland Hydrology Present? Yes X No
L ctions), if available:

	Absolute	Dominant I	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species 2
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3.				Species Across All Strata: (B)
4				Demonst of Deminent Creation
				That Are OBL, FACW, or FAC: 100 (A/B)
o	·		·	
6				Prevalence Index worksheet:
7	. <u> </u>			Total % Cover of:Multiply by:
		= Total Cove	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:				FACW species x 2 =
1				FAC species x 3 =
				FACU species x 4 =
2	·		·	UPL species x 5 =
3				Column Totals: (A) (B)
4				
5.				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
				1 - Ranid Test for Hydrophytic Vegetation
7	·		·	$\overline{x}$
		= Total Cove	er	$\frac{1}{2} = \frac{1}{2} = \frac{1}$
Herb Stratum (Plot size: 1 sq m )				5 - Frevalence index is \$5.0
<sub>1.</sub> Eleocharis obtusa	25	D	OBL	data in Remarks or on a separate sheet)
, Juncus effusus	15	D	FACW	+ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2	·			
3				Indicators of hydric soil and wetland hydrology must
4	·			
5				Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
0	·			Sanling/shrub – Woody plants less than 3 in DBH
o				and greater than or equal to 3.28 ft (1 m) tall.
9	. <u> </u>			Harb All hasheseens (non woods) plants recordings of
10				size, and woody plants less than 3.28 ft tall.
11				
12.				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height
	40	= Total Cove		
			,	
<u>Woody Vine Stratum</u> (Plot size:)				
1				Under stratig
2				Vegetation
3				Present? Yes X No
4.				
		- Total Cove		
Remarks: (Include photo numbers here or on a separate	sheet )		51	
Remarks. (include photo numbers here of on a separate	sheet.)			

S	Ο	I	L
•	•		_

Profile Desc	ription: (Describe	to the de	pth needed to docu	ment the i	ndicator	or confirn	n the absence of indicators.)
Depth	Matrix		Redo	x Feature	<u>s</u>		
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Remarks
0-4	5 YR 3/2	100		. <u></u>			Clay
4-14	10 YR 6/2	70	10 YR 6/1	20			Clay
continued			5 YR 4/6	10			Clay
continued	Dincentration, D=Dep		5 YR 4/6	10 		ains.	Clay Clay Clay Clay Clay Clay Clay Clay
HISTOSOI	(A1) Dipedon (A2)		Polyvalue Belo	w Sunace	(58) ( <b>LR</b>	КΚ,	2 CM MUCK (A10) (LRR K, L, MLRA 149B) Coast Prairie Redox (A16) (LRP K L P)
Histic Ep	stic (A3)		Thin Dark Surf	) 200 (SQ) (I		PA 1/08	Coast Prairie Redox (A16) (LRR K, L, R)
Hvdroge	en Sulfide (A4)		Loamy Mucky I	Mineral (F	1) (I RR K	LKA 149D	Dark Surface (S7) (I RR K. I. M)
Stratified	d Lavers (A5)		Loamy Gleved	Matrix (F2	)	, <b>L</b> /	Polyvalue Below Surface (S8) (LRR K. L)
Depleted	d Below Dark Surfac	ce (A11)	Depleted Matri	x (F3)	,		Thin Dark Surface (S9) (LRR K, L)
Thick Da	ark Surface (A12)		Redox Dark Su	rface (F6)			Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedmont Floodplain Soils (F19) (MLRA 149B)
Sandy G	Bleyed Matrix (S4)		Redox Depress	sions (F8)			Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy R	Redox (S5)						Red Parent Material (F21)
Stripped	Matrix (S6)		-				Very Shallow Dark Surface (TF12)
Dark Su	nace (S7) ( <b>LRR R</b> ,	MLRA 149	в)				Other (Explain in Remarks)
<sup>3</sup> Indicators of	f hydrophytic vegeta	ation and w	etland hydrology mu	st be prese	ent, unless	s disturbed	d or problematic.
Restrictive I	Layer (if observed)	):					
Type:	ches):		-				Hydric Soil Present? Ves No
Deptil (illi			-				

Project/Site: Charleston Mixed Use Development	City/County: _	Richmond		Sampling Date:	July 2012
Applicant/Owner: NYCEDC			State: NY	Sampling Poir	t: NO Wetland
Investigator(s): Rollino J	Section, Town	nship, Range:			
Landform (hillslope, terrace, etc.):	Local relief (conc	ave, convex, non	e): Flat land	Slop	be (%):
Subregion (LRR or MLRA): MLRA 149B Lat:		Long:		Datur	n:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex			NWI classifica	ation: <u>wetland</u>	not mapped
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes <u>x</u>	No (	If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrology significa	ntly disturbed?	Are "Normal	Circumstances" p	resent? Yes X	<sup>.</sup> No
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, e	xplain any answer	rs in Remarks.)	

#### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes X No
Wetland Hydrology Present?	Yes <u> </u>	If yes, optional Wetland Site ID:
Remarks: (Explain alternative proce	dures here or in a separate report.)	
HYDROLOGY		

#### Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (B6) \_\_\_\_ Surface Water (A1) X Drainage Patterns (B10) <u>X</u> Water-Stained Leaves (B9) \_\_\_\_ Moss Trim Lines (B16) \_\_\_\_ High Water Table (A2) \_\_\_\_ Aquatic Fauna (B13) \_\_\_\_ Dry-Season Water Table (C2) \_\_\_\_ Saturation (A3) Marl Deposits (B15) \_\_\_\_ Hydrogen Sulfide Odor (C1) Water Marks (B1) Crayfish Burrows (C8) \_\_\_\_ Sediment Deposits (B2) \_\_\_\_ Oxidized Rhizospheres on Living Roots (C3) \_\_\_\_ Saturation Visible on Aerial Imagery (C9) \_\_\_\_ Drift Deposits (B3) Presence of Reduced Iron (C4) \_\_\_\_ Stunted or Stressed Plants (D1) \_\_\_\_ Algal Mat or Crust (B4) \_\_\_\_ Recent Iron Reduction in Tilled Soils (C6) \_\_\_\_ Geomorphic Position (D2) \_\_\_\_ Iron Deposits (B5) \_\_\_\_ Thin Muck Surface (C7) Shallow Aquitard (D3) X Microtopographic Relief (D4) \_\_\_\_ Inundation Visible on Aerial Imagery (B7) \_\_\_\_ Other (Explain in Remarks) Sparsely Vegetated Concave Surface (B8) FAC-Neutral Test (D5) **Field Observations:** Yes No X Depth (inches): Yes No X Depth (inches): Yes No X Depth (inches): Surface Water Present? Water Table Present? \_ No <sup>×</sup> Saturation Present? Wetland Hydrology Present? Yes \_\_\_\_\_ (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				
Z				Total Number of Dominant
3				Species Across All Strata: (B)
4.				Percent of Dominant Species 400
-				That Are OBL_EACW or EAC: (A/B)
5	. <u> </u>			
6				Prevalence Index worksheet:
7				
	<u> </u>	= Total Cove	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 100 sq ft)				FACW species x 2 =
no trees				FAC species x 3 =
I				FACU species x 4 =
2	. <u> </u>			
3				UPL species x 5 =
				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
0				A Deniel Test for Undersky tic Manufacture
7	. <u> </u>			1 - Rapid Test for Hydrophytic Vegetation
		= Total Cove	er	<u>×</u> 2 - Dominance Test is >50%
1 m				3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size:)				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
1	70	D	OBL	data in Remarks or on a separate sheet)
2 Solidago rugosa	12	n	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	9		OBL	
3. Eleocharis obtusa	<u> </u>			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4.				be present, unless disturbed or problematic.
				Definitions of Vegetation Strata
D				Dominiono en regolarion original
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
				<b>Continue (chruch</b> Woody plants loss than 2 in DDU
8				and greater than or equal to 3 28 ft (1 m) tall
9				
10				Herb - All herbaceous (non-woody) plants, regardless of
10				size, and woody plants less than 3.28 ft tall.
11				
12.				woody vines – All woody vines greater than 3.28 ft in beight
	91			norgin.
		= Total Cove	er	
Woody Vine Stratum (Plot size:)				
1 none				
··	······			Hydrophytic
2	·			Vegetation
3.				Present? Yes X No
4				
		= Total Cove	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Profile Desc	ription: (Describe t	o the depth	needed to docu	ment the in	dicator	or confirm	the absence	ot indicators.)	
(inches)	Color (moist)	%	Color (moist)	<u>x reatures</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-5	7.5 YR 3/2	100					sand loam	organic material with gravel	
5-12	10YR 5/6	80	10 YR 4/6	20			Clay Loam		
<u>J-12</u>	1011( 3/0								
				·		·			
						. <u> </u>			
<sup>1</sup> Type: C=C(	oncentration D=Denk	etion RM=R	educed Matrix M	S=Masked	Sand Gra	ains	<sup>2</sup> Location	PI =Pore Lining M=Matrix	
Hydric Soil	Indicators:						Indicators	for Problematic Hydric Soils	3
Histosol	(A1)		Polyvalue Belo	w Surface (	S8) ( <b>LR</b> F	R.	2 cm M	luck (A10) ( <b>LRR K, L, MLRA 1</b>	<b>49B</b> )
Histic Ep	pipedon (A2)		MLRA 149B	)	, (		Coast F	Prairie Redox (A16) (LRR K, L	, R)
Black Hi	stic (A3)	_	_ Thin Dark Surfa	ace (S9) ( <b>LI</b>	RR R, ML	RA 149B)	) 5 cm M	lucky Peat or Peat (S3) (LRR I	K, L, R)
Hydroge	en Sulfide (A4)	_	Loamy Mucky I	Mineral (F1)	) (LRR K	, L)	Dark S	urface (S7) ( <b>LRR K, L, M</b> )	
Stratified	d Layers (A5)	<u> </u>	_ Loamy Gleyed	Matrix (F2)			Polyval	lue Below Surface (S8) (LRR K	<b>(</b> , L)
Depleted	d Below Dark Surface	(A11)	_ Depleted Matri	х (F3) urface (Г6)			Thin Da	ark Surface (S9) (LRR K, L)	
Thick Da	Ark Sunace (A12) Aucky Mineral (S1)	_	_ Redux Dark St Depleted Dark	Surface (F0)	7)		ITON-IVIA	anganese masses (F12) (LRR ont Floodolain Soils (F19) (MI F	<b>κ</b> , <b>μ</b> , <b>κ</b> ) <b>RΔ 149R</b> )
Sandy G	Gleved Matrix (S4)		Redox Depress	sions (F8)	)		Mesic S	Spodic (TA6) ( <b>MLRA 144A, 14</b>	5. 149B)
Sandy R	Redox (S5)	_					X Red Pa	arent Material (F21)	-, ,
Stripped	Matrix (S6)						Very SI	hallow Dark Surface (TF12)	
Dark Su	rface (S7) (LRR R, M	LRA 149B)					Other (	Explain in Remarks)	
2									
°Indicators of	f hydrophytic vegetati	on and wetla	and hydrology mu	st be preser	nt, unless	disturbed	or problematic		
Restrictive I	Layer (if observed):								
Type:								х	
Depth (ind	ches):						Hydric Soil	Present? Yes <u>No</u>	
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County: _	Richmond		Sampling Date:	July 2012
Applicant/Owner: NYCEDC			State:NY	Sampling Poi	nt: NR Wetland
Investigator(s): Rollino J	Section, Tow	nship, Range:			
Landform (hillslope, terrace, etc.):	Local relief (cond	ave, convex, no	ne): Flat land	Slo	pe (%):
Subregion (LRR or MLRA): MLRA 149B Lat:		Long:		Datu	m:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex			NWI classific	ation: <u>wet</u> lar	nd not mapped
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes <u>x</u>	No	(If no, explain in Re	emarks.)	
Are Vegetation, Soil, or Hydrology significa	ntly disturbed?	Are "Norma	I Circumstances" p	resent? Yes	<sup>x</sup> No
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed,	explain any answei	rs in Remarks.)	

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes X No Yes No Yes No	Is the Sampled Area within a Wetland? Yes X No
Remarks: (Explain alternative proce	dures here or in a separate report	.)
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1) Water-Stained Leaves (B9)	<u> </u>				
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)				
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2) Oxidized Rhizospheres on Living	(C3) Saturation Visible on Aerial Imagery (C9)				
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)				
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)				
Field Observations:					
Surface Water Present? Yes No Depth (inches):					
Water Table Present? Yes No. Donth (inches):					
water rable Present? res No Depth (inches).					
Saturation Present? Yes <u>No</u> Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes <u>×</u> No				
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes X No				
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes X No tions), if available:				
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>X</u> No tions), if available:				
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Saturation Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				
Water Fable Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:				

# Sampling Point: \_\_\_\_\_NR Wetland

	Absolute	Dominant	Indicator	Dominance Test worksheet:		
<u>Iree Stratum</u> (Plot size:)	% Cover	Species?	Status	Number of Dominant Species	1	
1				That Are OBL, FACW, or FAC:		(A)
2.						
2				Lotal Number of Dominant	1	(P)
<u> </u>				opecies Across Air Otrata.		(6)
4				Percent of Dominant Species	100	
5				That Are OBL, FACW, or FAC:		(A/B)
6.						
7				Prevalence Index worksheet:		
1				Total % Cover of:	Multiply by:	
100 1		= Total Cove	er	OBL species x 1	=	
Sapling/Shrub Stratum (Plot size: 100 sq ft )				FACW species x 2	=	
no trees				FAC species x 3	. =	_
				FACU species x 4	. =	
Z				UPL species x 5	;	
3				Column Totals: (A)		(B)
4						_ (=)
5				Prevalence Index = B/A =		
<u>.</u>			·	Hydrophytic Vegetation Indiant		
б			·	nydropnytic vegetation indicate	DIS:	
7				1 - Rapid Test for Hydrophytic	c vegetation	
		= Total Cove	er	<u>x</u> 2 - Dominance Test is >50%		
Horb Stratum (Plot size: 1 m )				$3$ - Prevalence Index is $\leq 3.0^1$		
Juncus effusus	50	D	OBI	4 - Morphological Adaptations	s <sup>1</sup> (Provide supp	orting
1. Cyperus sp. (Umbrella Sedge)	- 25			data in Remarks or on a se	eparate sheet)	
2	25			Problematic Hydrophytic Vege	etation <sup>1</sup> (Explain	ר)
3. Eleocharis obtusa	15	n	OBL	<sup>1</sup> Indicators of hydric soil and wetla	and hydrology m	ust
Carex sp.	10	n	NI	be present, unless disturbed or pr	oblematic.	
4				Definitions of Venetotion State		
5				Definitions of vegetation Strata		
6				Tree – Woody plants 3 in. (7.6 cm	ı) or more in dia	meter
7.				at breast height (DBH), regardless	s of height.	
2				Sapling/shrub – Woody plants le	ss than 3 in DR	вн
<u> </u>				and greater than or equal to 3.28	ft (1 m) tall.	
9						¢
10				size, and woody plants less than 3.28	ft tall	5 01
11.						
12				<b>Woody vines</b> – All woody vines great	ater than 3.28 ft in	1
16	90			neight.		
		= Total Cove	er			
Woody Vine Stratum (Plot size:)						
1none						
2				Hydrophytic		
				Vegetation Present? Ves X	No	
3					NO	
4						
		= Total Cove	er			
Remarks: (Include photo numbers here or on a separate	sheet.)					
	,					

SOIL
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Profile Desc	ription: (Describe t	the dep	th needed to docu	ment the i	ndicator o	or confirm	n the absence	of indicato	rs.)	
Depth	Matrix		Redo	x Features	5					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-2	7.5 YR 3/2	100					sand loam	organic ma	aterial	
3-8	7 5YR 4/3	85	75 VP ///	45			clay loam			
			7.5 11(4)4	15						
8-14	7.5YR 5/4	80	7.5YR 4/6	20			Clay loam			
				·						
<sup>1</sup> Type: C=Co	oncentration, D=Depl	etion, RM	=Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Locatior	: PL=Pore L	_ining, M=Mat	trix.
Hydric Soil I	ndicators:	,					Indicators	for Problem	natic Hydric	Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belo	w Surface	(S8) ( <b>LRR</b>	R.	2 cm 1	Muck (A10) (	LRR K. L. ML	<b>RA 149B</b> )
Histic Fr	pipedon (A2)		MLRA 149B	)	(00) (	,	Coast	Prairie Redo	DX (A16) (LRR	K.L.R)
Black Hi	stic (A3)		Thin Dark Surfa	, ace (S9) (L	RR R. ML	RA 149B	) 5 cm M	Aucky Peat of	or Peat (S3) (I	LRR K. L. R)
Hvdroge	n Sulfide (A4)		Loamv Muckv I	Mineral (F1	) (LRR K.	L)	, <u> </u>	Surface (S7)	(LRR K. L. M	, <u>-,</u> ,
Stratified	Lavers (A5)		Loamy Gleved	Matrix (F2)	)	, ,	Polvva	alue Below S	urface (S8) ( <b>I</b>	, LRR K. L)
Depleted	Below Dark Surface	e (A11)	Depleted Matrix	x (F3)			Thin D	ark Surface	(S9) (LRR K,	, L)
Thick Da	ark Surface (A12)	· · /	Redox Dark Su	Inface (F6)			Iron-M	langanese M	lasses (F12) (	(LRR K, L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedm	ont Floodpla	in Soils (F19)	(MLRA 149B)
Sandy G	leved Matrix (S4)		Redox Depress	sions (F8)	,		Mesic	Spodic (TA6	6) (MLRA 144	A, 145, 149B)
Sandy R	edox (S5)			( )			X Red P	arent Materia	al (F21)	, , ,
Stripped	Matrix (S6)						Very S	Shallow Dark	Surface (TF1	12)
Dark Su	rface (S7) (LRR R, M	ILRA 1498	3)				Other	(Explain in R	Remarks)	,
			,					<b>、</b> 1	,	
<sup>3</sup> Indicators of	hydrophytic vegetati	ion and we	tland hydrology mus	st be prese	nt, unless	disturbed	or problemation	C.		
Restrictive L	_aver (if observed):		, ,	•						
Type	,									
Dopth (inc	aboa):						Hudria Sail	Brocont?	Xaa X	No
							Hydric Soli	Fresent	ies	
Remarks:										

Project/Site: Charleston Mixed Use Development	City/County:	Richmond		Sampling Date: July 2012
Applicant/Owner: NYCEDC		8	State: NY	_ Sampling Point: NR Upland
Investigator(s): Rollino J	Section, Town	ship, Range:		
Landform (hillslope, terrace, etc.):	Local relief (conca	ave, convex, none)	Flat Land	<pre>&lt;2 Slope (%):</pre>
Subregion (LRR or MLRA): MLRA 149B Lat:		Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex			_ NWI classifica	ation:
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u>	No (If r	no, explain in Re	emarks.)
Are Vegetation, Soil, or Hydrology significar	ntly disturbed?	Are "Normal Ci	rcumstances" p	resent? Yes <u>×</u> No
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, exp	lain any answer	s in Remarks.)

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>No x</u> Yes <u>No x</u>	Is the Sampled Area within a Wetland? Yes No <sup>X</sup>
Wetland Hydrology Present?	Yes No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	res here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)	
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)	
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)	
x Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)	
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)	
Sediment Deposits (B2) Oxidized Rhizospheres on Livi	Roots (C3) Saturation Visible on Aerial Imagery (C9)	
Drift Deposits (B3) Presence of Reduced Iron (C4	) Stunted or Stressed Plants (D1)	
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled	oils (C6) Geomorphic Position (D2)	
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)	
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)	
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)	
Field Observations:		
Surface Water Present? Yes No Depth (inches):		
Water Table Present? Yes No Depth (inches)		
Saturation Present? Yes No Z Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes NoX       Depth (inches): (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes NoX       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup>	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup>	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X pections), if available:	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X	
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X	

	Absolute	Dominant	Indicator	Dominance Test worksheet:					
Iree Stratum (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species 1					
1				That Are OBL, FACW, or FAC: (A)					
2				Total Number of Dominant 2					
3				Species Across All Strata: (B)					
4				Percent of Dominant Species 50					
5				That Are OBL, FACW, or FAC: (A/B)					
6				Provolonco Indox workshoot:					
7.				Total % Cover of: Multiply by:					
		= Total Cov	er	OBL species x1 =					
Sapling (Shruh Stratum (Distaire), 100 sq ft			CI	FACW species $x^2 =$					
no trees				FAC species $x_3 =$					
1	·			FACIL species $x 4 =$					
2									
3				Column Tatalar (A)					
4.				Column Totals: (A) (B)					
5.			·	Prevalence Index = B/A =					
6.				Hydrophytic Vegetation Indicators:					
7				1 - Rapid Test for Hydrophytic Vegetation					
1				× 2 - Dominance Test is >50%					
		= Total Cov	er	$3 - Prevalence Index is \leq 30^{1}$					
Herb Stratum (Plot size: <u>1 m</u> )				4 - Morphological Adaptations <sup>1</sup> (Provide supporting					
Gramineae 1	60	D	NI	data in Remarks or on a separate sheet)					
2Andropogon virginicus	20	n	FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)					
3. Agrostis Sp.	10	n	NL	<sup>1</sup> Indicators of hydric soil and wetland hydrology must					
4. Daucus carota	5	n	FACU	be present, unless disturbed or problematic.					
5				Definitions of Vegetation Strata:					
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter					
7				at breast height (DBH), regardless of height.					
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH					
9				and greater than or equal to 3.28 ft (1 m) tall.					
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.					
11	. <u> </u>			Woody vines All woody vines greater than 2.29 ft in					
12				height.					
	90 = Total Cover								
Woody Vine Stratum (Plot size:									
Smilax rotundifolia	20	D	FAC						
I				Hydrophytic					
2				Vegetation					
3				Present? Yes No X					
4									
	20	= Total Cov	er						
Remarks: (Include photo numbers here or on a separate sheet.)									
	-								
Only dominat hydrophytic vegetation is Smilax, which is a	in oppurtuni	stic sepecie	s. Identified	d grass species are upland species.					
Profile Desc	ription: (Describe t	o the depth	n needed to docun	nent the ir	ndicator	or confirm	the absence of i	indicators.)	
---------------------------	------------------------	-------------	--------------------	--------------	-------------------	------------------	--------------------------	------------------------------	--
Depth	Matrix		Redo	x Features					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	6
0-4	7.5YR 4/4	100					Clay Loam		
	7 5YR 4/3	85		<u> </u>			sandy clay loam		
4-11									
Depth of r	efusal								
							<u> </u>		
·	·								
<sup>1</sup> Type: C=Ce	oncentration. D=Deple	etion. RM=F	Reduced Matrix. MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location: P	L=Pore Linina. M=N	latrix.
Hydric Soil	Indicators:						Indicators for	Problematic Hydri	c Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Belov	v Surface i	(S8) (I RE	R	2 cm Muc	k (A10) (I RR K I I	
Histic Er	(-1)	_		Vounace		<b>х тх</b> ,	Coast Pra	irie Redox (A16) ( <b>I</b>	DKID)
	$A^{2}$		Thin Dork Surfa	00 (80) (		DA 1400	E om Muol	ky Doot or Doot (S2)	
	SILC (AS)	_		liboral (E1		-NA 1490)	Dork Surf	ky Feat OFFeat (33)	$(\mathbf{L}\mathbf{n}\mathbf{n},\mathbf{L},\mathbf{n})$
		_				, L)	Dark Suria	Deleve Curface (CO)	
Stratified	Layers (A5)		_ Loamy Gleyed I	viatrix (F2)				Below Surface (S8)	
Depleted	Below Dark Surface	(A11) _	_ Depleted Matrix	(F3)			Thin Dark	Surface (S9) (LRR	K, L)
Thick Da	ark Surface (A12)	-	Redox Dark Sur	face (F6)			Iron-Mang	anese Masses (F12	2) (LRR K, L, R)
Sandy M	lucky Mineral (S1)	_	_ Depleted Dark S	Surface (F	7)		Piedmont	Floodplain Soils (F1	9) ( <b>MLRA 149B</b> )
Sandy G	Gleyed Matrix (S4)	_	Redox Depress	ions (F8)			Mesic Spo	odic (TA6) ( <b>MLRA 1</b> 4	44A, 145, 149B)
Sandy R	Redox (S5)						X Red Parer	nt Material (F21)	
Stripped	Matrix (S6)						Very Shall	ow Dark Surface (T	F12)
Dark Su	rface (S7) (LRR R, M	LRA 149B)					Other (Exp	olain in Remarks)	
<sup>3</sup> Indicators o	f hydrophytic vegetati	on and wet	and hydrology mus	t be prese	nt, unless	disturbed	or problematic.		
Restrictive I	Layer (if observed):								
Туре:									
Depth (in	ches):						Hydric Soil Pre	esent? Yes	No ×
Remarks:									
r ternarito.									

Project/Site: Charleston Mixed Use Development	City/County: Richmond	Samplin	July 2012 Ig Date:	
Applicant/Owner: <u>NYCEDC</u>	\$ \$	NY tate: Samp	ling Point: NS Wetland	
Investigator(s): Rollino J	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat Land	Slope (%):	
Subregion (LRR or MLRA): MLRA 149B Lat:	Long:		Datum:	
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex		NWI classification:	wetland not mapped	
Are climatic / hydrologic conditions on the site typical for this time of	of year? Yes <u>x</u> No (If n	o, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology significa	antly disturbed? Are "Normal Cir	cumstances" present?	Yes No	
Are Vegetation, Soil, or Hydrology naturally	y problematic? (If needed, expl	ain any answers in Ren	narks.)	

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes X No Yes X No	Is the Sampled Area within a Wetland? Yes <u>×</u> No							
Wetland Hydrology Present?	Yes <u>No</u>	If yes, optional Wetland Site ID:							
Remarks: (Explain alternative procedures here or in a separate report.)									
Wetland is confined trench behind the shallow rise of an embankment, portion of wetland is in an active recreational trail.									

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	X Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
<u>x</u> Sediment Deposits (B2) Oxidized Rhizospheres on Living R	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	pils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	X Microtopographic Relief (D4)
X Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>x</u> No <u>Depth</u> (inches): <sup>2</sup>	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes X No
Saturation Present?       Yes No Depth (inches).         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect)	Wetland Hydrology Present? Yes X No
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection)	Wetland Hydrology Present? Yes X No
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection)	Wetland Hydrology Present? Yes X No
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes X No
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>X</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes X No
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Valer rable resent:       res No Depth (inclues).         Saturation Present?       Yes No Depth (inclues).         (includes capillary fringe)       Depth (inclues).         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Valer rable resent:       res No Depth (inclues).         Saturation Present?       Yes No Depth (inclues).         (includes capillary fringe)       Depth (inclues).         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:

Tree Stratum (Plot size:	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1.	<u>/// 00/01</u>		010103	Number of Dominant Species 1 That Are OBL_EACW_or EAC: (A)
2				
3.				Total Number of Dominant 1 Species Across All Strata: (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: (A/B)
6				
7				Prevalence Index worksheet:
/		- Tatal Cau		I otal % Cover of: Multiply by:
			er	
Sapling/Shrub Stratum (Plot size:)				FAC species x3 =
1				FACIL species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
	0	= Total Cove		2 - Dominance Test is >50%
Horb Stratum (Plot aize: 1 M )		- 10101 0000	-1	$\_$ 3 - Prevalence Index is $\leq 3.0^{1}$
Juncus effusus	15	D	OBL	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
2 Cyperus sp. (Umbrella Sedge)	2	n	NL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2				
3				be present, unless disturbed or problematic.
4				Definitions of Vegetation Strata:
5				Demitions of Vegetation of ata.
6				<b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (BBH), regulatess of height.
8	. <u> </u>			<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall
9				
10				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
11				
12				<b>Woody vines</b> – All woody vines greater than 3.28 ft in height.
	17	= Total Cove	er	
Woody Vine Stratum (Plot size: <sup>10</sup> sq ft )				
1				
2				Hydrophytic
2	·			Vegetation X Present? Yes No
3				
4	0			
Demontos (la cludo aboto asumboro boro er en e concreto	choot )	= Total Cove	er	
Remarks: (include photo numbers here or on a separate	sneet.)			
Hydric vegetation are all FAC				

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the in	dicator o	or confirm	the absence	of indicators.)	
Depth	Matrix		Redo	x Features	_ 1	. ?			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Туре'	Loc	Texture sandy clay	Remarks	
0-4	7.5YR 3/4	90	7.5 YR 4/6				Sandy clay		
5-12	5YR 4/6	100					sandy clay		
·							·		
·							·		<u> </u>
·							·		
. <u> </u>							·		
				·					
·				·	<u> </u>		·		
				·					
·				·	<u> </u>		·		
	ncentration D=Den	etion RM=	Reduced Matrix M	S=Masked 9	Sand Gra	ins		PI =Pore Lining M=Matrix	
Hydric Soil I	ndicators:						Indicators	for Problematic Hydric Soils <sup>3</sup> :	
Histosol	(A1)		Polyvalue Belov	N Surface (	S8) (I PP	D	2 cm M		B)
Histic En	$(\Delta I)$	-				. IX,	Coast I	Prairie Redox (A16) (IRR K I R	)
Black His	stic (A3)		Thin Dark Surfa	/ ace (S9) ( <b>I E</b>		RA 1498	- 5  cm M	lucky Peat or Peat (S3) (I RR K I	, R)
Hydroge	n Sulfide (A4)	-	Loamy Mucky M	Mineral (F1)		1)	, <u> </u>	urface (S7) (IRR K. I. M)	-,)
Stratified	Lavers (A5)	-	Loamy Gleved	Matrix (F2)	(ERRER,	-)	Polyva	lue Below Surface (S8) (I RR K. I	)
Depleted	Below Dark Surface	- (A11)	Depleted Matrix	(F3)			Thin Da	ark Surface (S9) (LRR K. L)	-)
Thick Da	ark Surface (A12)	- (/ (/ (/ ) ) ) <u>-</u>	Redox Dark Su	rface (F6)			Iron-Ma	anganese Masses (F12) (LRR K.	L. R)
Sandy M	luckv Mineral (S1)	-	Depleted Dark	Surface (F7	.)		Piedmo	ont Floodplain Soils (F19) (MLRA	149B)
Sandy G	leved Matrix (S4)	-	Redox Depress	ions (F8)	/		Mesic	Spodic (TA6) (MLRA 144A, 145,	149B)
Sandy R	edox (S5)	-	-	( )			X Red Pa	arent Material (F21)	,
Stripped	Matrix (S6)						Very S	hallow Dark Surface (TF12)	
Dark Sur	rface (S7) (LRR R, N	LRA 149B	)				Other (	Explain in Remarks)	
								· ·	
<sup>3</sup> Indicators of	f hydrophytic vegetat	ion and wet	land hydrology mus	st be preser	nt, unless	disturbed	or problematic		
Restrictive L	ayer (if observed):								
Type:									
Denth (inc	rhes).						Hydric Soil	X Present? Yes No	
Demerke:							ingune con		
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County:	Richmond	Sampling	g Date:	uly 2012
Applicant/Owner: NYCEDC		:	State: <u>NY</u> Samp	ling Point:	NS Upland
Investigator(s): Rollino J	Section, Towr	nship, Range:			
Landform (hillslope, terrace, etc.):	Local relief (conc	ave, convex, none)	Flat Land	Slope	<2 (%): <u></u>
Subregion (LRR or MLRA): MLRA 149B Lat:		Long:		Datum:	
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex			NWI classification:	not mappe	d
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u>	No (If	no, explain in Remarks.)		
Are Vegetation, Soil, or Hydrology significar	ntly disturbed?	Are "Normal C	ircumstances" present?	Yes	No
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, exp	olain any answers in Rem	arks.)	

## SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>×</u> No Yes <u>No</u> Yes <u>No</u>	) , X , X	Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID:
Remarks: (Explain alternative proceed	dures here or in a sepa	arate report.)	·
HYDROLOGY			

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)				
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)				
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)				
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)				
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)				
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)				
Sediment Deposits (B2) Oxidized Rhizospheres on Living I	Roots (C3) Saturation Visible on Aerial Imagery (C9)				
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)				
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)				
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)				
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)				
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)				
Field Observations:					
Surface Water Present? Yes <u>No X</u> Depth (inches):					
X					
Water Table Present? Yes <u>No</u> Depth (inches):					
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Yes No Depth (inches):	Wetland Hydrology Present? Yes No <sup>X</sup>				
Water Table Present?       Yes       No       Depth (inches):         Saturation Present?       Yes       No       Depth (inches):         (includes capillary fringe)        Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection)	Wetland Hydrology Present? Yes No <sup>X</sup>				
Water Table Present?       Yes       No       Depth (inches):         Saturation Present?       Yes       No       X       Depth (inches):         (includes capillary fringe)       No       X       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection)	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection)	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No <sup>X</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No <sup>×</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No <sup>×</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect         Remarks:	Wetland Hydrology Present? Yes No <sup>×</sup> tions), if available:				
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No <sup>×</sup> tions), if available:				

# **VEGETATION** – Use scientific names of plants.

NS upland Sampling Point:

Trop Stratum (Plot size: 30 ft )	Absolute	Dominant	Indicator	Dominance Test worksheet:
Populus grandidentata	<u>% Cover</u>	<u> </u>	FACU-	Number of Dominant Species 2
Quercus alba	20	N	FACU	That Are OBL, FACW, or FAC: (A)
2 Quercus rubra	10	N	FACU	Total Number of Dominant
3				Species Across Air Strata. (D)
4				Percent of Dominant Species 40
5				
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
	90	= Total Cov	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 100 sq ft)				FACW species x 2 =
1. Betula populifolia	30	D	FAC	FAC species x 3 =
2.				FACU species x 4 =
3				UPL species x 5 =
3				Column Totals: (A) (B)
4				Prevalence Index = B/A =
5	·			
6		<u> </u>		Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
		= Total Cov	er	2 - Dominance Test is >50%
Herb Stratum (Plot size: <u>1 m</u> )				$3$ - Prevalence index is $\leq 3.0^{\circ}$
1 Glechoma hedercea	2	D	FACU	<ul> <li>4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)</li> </ul>
2 Eupatorium serotinum	2	D	FAC-	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Rubus sp.	1		NI	
JLonicera sp	1		NI	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4				Definitions of Venetation Starter
5				Definitions of vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
8				<b>Sapling/shrub</b> – Woody plants less than 3 in. DBH
9				and greater than of equal to 5.26 it (1 m) tail.
10.				<b>Herb</b> – All herbaceous (non-woody) plants, regardless of
11				size, and woody plants less than 3.28 ft tall.
12				Woody vines – All woody vines greater than 3.28 ft in
12	6			height.
10 ca ft		= Total Cov	er	
<u>Woody Vine Stratum</u> (Plot size: 10 sq n )	70	_	FAC	
1	70	D	FAC	Deduced at the
2				Vegetation
3				Present? Yes <u>No X</u>
4.				
	70	= Total Cov	er	
Remarks: (Include photo numbers here or on a separate	sheet.)			
Hydric vegetation are all FAC	,			

I

SOIL
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Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth	Matrix		Redo	x Features	_ 1	. 2			
(inches)	Color (moist)		Color (moist)		Type'	Loc	Texture loam w/ grit a	Remarks	
0-2	10YR 3/2								
2-7	10YR 3/2	90	10YR 3/4	10			clay loam		
7-14	7.5 YR 4/4	100					clay loam		
							·		
<u> </u>									
<sup>1</sup> Type: C=Co	oncentration, D=Depl	letion, RM	Reduced Matrix, MS	S=Masked S	Sand Gr	ains.	<sup>2</sup> Location:	PL=Pore Lining, M=Matrix.	
Histosol	(A1)		Polyvalue Beloy	v Surface (	S8) (I P	D D	2 cm M	luck (A10) (I PP K I MI PA 140B)	
Histic Er	bipedon (A2)		MLRA 149B		50) ( <b>L</b> K	к к,	Coast F	Prairie Redox (A16) (LRR K. L. R)	
Black Hi	stic (A3)		Thin Dark Surfa	ce (S9) ( <b>LF</b>	RR R, M	LRA 149B	) 5 cm M	lucky Peat or Peat (S3) (LRR K, L, R)	
Hydroge	n Sulfide (A4)		Loamy Mucky N	lineral (F1)	(LRR K	K, L)	Dark Si	urface (S7) (LRR K, L, M)	
<u>    Stratified</u>	l Layers (A5)		Loamy Gleyed I	Matrix (F2)			Polyval	ue Below Surface (S8) (LRR K, L)	
Depleted	Below Dark Surface	e (A11)	Depleted Matrix	(F3)			Thin Da	ark Surface (S9) (LRR K, L)	
Thick Da	ark Surface (A12)		Redox Dark Su	face (F6)			Iron-Ma	anganese Masses (F12) (LRR K, L, R)	
Sandy M	lucky Mineral (S1)		Depleted Dark S	Surface (F7	)		Piedmo	ont Floodplain Soils (F19) (MLRA 149B)	
Sandy G	edox (S5)		Redox Depress	ions (F8)			Mesic Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )		
Stripped	Matrix (S6)						Verv St	hallow Dark Surface (TE12)	
Dark Su	rface (S7) (LRR R, N	ILRA 1491	3)				Other (	Explain in Remarks)	
<sup>3</sup> Indicators of	f hydrophytic vegetat	ion and we	etland hydrology mus	t be preser	nt, unles	s disturbed	l or problematic		
Restrictive I	_ayer (if observed):								
Type:									
Depth (inc	ches):						Hydric Soil	Present? Yes No	
Remarks:									

Project/Site: Charleston Mixed Use Development	City/County:	Richmond	Sa	July 2012 ampling Date:
Applicant/Owner: <u>NYCEDC</u>		St	ate: NU	NU Wetland Sampling Point:
Investigator(s): Rollino J	Section, Towr	nship, Range:		
Landform (hillslope, terrace, etc.):	Local relief (conc	ave, convex, none): _	Flat Land	Slope (%):
Subregion (LRR or MLRA): MLRA 149B Lat:		Long:		Datum:
Soil Map Unit Name: Whethersfield-Ludlow-Wilbraham Complex			NWI classification	on: wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time o	f year? Yes <u>x</u>	No (If no	, explain in Rem	arks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed?	Are "Normal Circ	umstances" pres	sent? Yes <u>×</u> No
Are Vegetation, Soil, or Hydrology naturally	problematic?	(If needed, expla	in any answers i	n Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes X No
Wetland Hydrology Present?	Yes <u> </u>	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu Wetland is a depression in a drainage	ures here or in a separate report.) ditch. The wetland is only 0.004 ac	in size

## HYDROLOGY

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Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	X Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Sc	bils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	X Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
X	
Water Table Present? Yes No Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Yes No Depth (inches):	Wetland Hydrology Present? Yes <u>×</u> No
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes X No
Water Table Present?       Yes       No       A       Depth (inches):         Saturation Present?       Yes       No       X       Depth (inches):         (includes capillary fringe)       Mo       X       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes X No
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>X</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspec         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective)         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes <u>×</u> No tions), if available:

# **VEGETATION** – Use scientific names of plants.

Trac Stratum (Dist size)	Absolute	Dominant I	Indicator	Dominance Test worksheet:		
no trees	% Cover	<u>Species ?</u>	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	2	(A)
2				Total Number of Dominant	3	
3				Species Across All Strata:		(B)
4				Percent of Dominant Species	66	(A/R)
5						(100)
6				Prevalence Index worksheet:		
7				Total % Cover of:	Multiply by:	
		= Total Cove	er	OBL species x	1 =	
Sapling/Shrub Stratum (Plot size: 100 sq ft )				FACW species x	2 =	
no trees				FAC species x	3 =	
l				FACU species x	4 =	
2				UPL species x	5 =	
3				Column Totals: (A	4)	(B)
4				(	.,	_ (- /
5.				Prevalence Index = B/A =		
6				Hydrophytic Vegetation Indica	ators:	
-		·		1 - Rapid Test for Hydrophy	tic Vegetation	
1				$X_2$ - Dominance Test is >50%	%	
		= Total Cove	er	3 - Prevalence Index is <3 (	ง า <sup>1</sup>	
Herb Stratum (Plot size: 1 m )					, ne <sup>1</sup> (Provido sun	norting
1. Juncus effusus	25	D	OBL	data in Remarks or on a	separate sheet)	porting
Cyperus sp. (Umbrella Sedge) 2	20	D	NL	Problematic Hydrophytic Ve	getation <sup>1</sup> (Explai	in)
3. Eleocharis obtusa	20	D	OBL	<sup>1</sup> Indicators of hydric soil and we	tland hydrology r	nust
4. Carex sp.	2	n	NI	be present, unless disturbed or	problematic.	indot
5.				Definitions of Vegetation Strat	ta:	
6.				Tree – Woody plants 3 in (7.6 c	m) or more in di	ameter
7				at breast height (DBH), regardle	ess of height.	
8.				Sapling/shrub – Woody plants	less than 3 in. D	BH
9.				and greater than or equal to 3.2	:8 ft (1 m) tall.	
10.				Herb – All herbaceous (non-woody	y) plants, regardles	s of
11.				size, and woody plants less than 3.2	28 It tall.	
12.				Woody vines – All woody vines gr	reater than 3.28 ft i	n
	59	= Total Cove		incigitt.		
			~1			
Woody Vine Stratum (Plot size:)						
1						
2				Hydrophytic		
3.				Present? Yes X	No	
4						
·		= Total Cove				
Remarks: (Include photo numbers here or on a separate	sheet )	10101 0010	,			
	Sheet.)					

Depth (index)       Matrix       Redox Features       Loc'       Texture       Remarks         0-7       10YR 4/1       100       Color (most)       %       The'       Loc'       all learn       organic material         7-11       7.5YR 4/2       100       day learn       day learn       day learn       day learn	Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)							
(inches)       Color (moist)       %.       Type       Loc <sup>2</sup> Texture       Remarks         0-7       10YR 41       100       all tam       grantc material         7-11       7.5YR 4/2       100       all tam       grantc material         7-11       7.5YR 4/2       100       all tam       grantc material         7-11       7.5YR 4/2       100       all tam       grantc material         2       all tam       all tam       all tam       grantc material         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam       all tam         all tam       all tam       all tam       all tam	Depth Matrix		Redo	x Features	<u>s</u>			
0-7       10YR 4/1       100       sill cam       organic material         7-11       7.5YR 4/2       100       clay loam	(inches) Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
7.11       7.3YR 4/2       100	0-7 10YR 4/1	100					silt loam	organic material
Image: Solution of the solution	7-11 7.5YR 4/2	100					clay loam	
Image: Interpretation in DeDepletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location: PL=Pore Lining, M=Matrix, Image:								
Image: Space (S4)       Image: Space (S4)         Image: Space (S4)       Image: Space (S5)         Image: Space (S4)       Image: Space (S4)								
Image: Solid Control (Control (Contro) (Control (Control (Control (Control (Cont								
Image: Solution of the solution								
Image:								
Image: Soli Indicators:       Indicators for Problematic Hydric Solis!         Isoch Hydric Soli Indicators:       Indicators for Problematic Hydric Solis!         Isoch Hydric Solis:       Indicators for Problematic Hydric Solis!         Black Histo (A3)       Thin Dark Surface (S9) (LRR R, IL RR L, IA)         Black Hydrogen Sulfide (A4)       Learny Mucky Mineral (F1) (LRR K, IL M)         Depleted Below Dark Surface (A1)       Depleted Matrix (F3)         Thick Dark Surface (S1)       Redox Depressions (F3)         Sandy Medox (S5)       Kedox Depressions (F3)         Sandy Redox (S1)       Redox Depressions (F3)         Type:       Dark Surface (S7) (LRR R, MLRA 149B)         Thick Dark Surface (S7) (LRR R, MLRA 149B)       Other (Explain in Remarks)         "Indicators of hydrophydic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):       Type:         Depth (inche								
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soli Indicators:	<u> </u>							
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         "Hydric Soil Indicators:       Indicators for Problematic Hydric Soils".         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, Black Histo (A3)       Thin Dark Surface (S9) (LRR K, L, MLRA 149B)         Hydric Soil Adjace (A2)       MLRA 1499       Coast Prairie Redox (A10) (LRR K, L, R)         Stratified Layers (A5)       Loamy Gleyed Matrix (F3)       Dark Surface (S7) (LRR K, L, M)         Stratified Layers (A5)       Loamy Gleyed Matrix (F3)       Drive Marganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Matrix (F3)       Thin Dark Surface (S7) (LRR K, L, R)         Sandy Kedx (S5)       Xerdox Dark Surface (F7)       Perferont Floodplain Soils (F19) (LRR A1448, 145, 149B)         Sandy Kedx (S5)       Xerdox Dark Surface (T7)       Very Shallow Dark Surface (T12)         Dark Surface (S7) (LRR R, MLRA 149B)       Xerdox CF7)       Perferont Floodplain Soils (F19) (MLRA 1494, 145, 149B)         Stripped Matrix (S4)       Redox Depressions (F8)       Xerd Parent Matria (F21)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (T12)       Dark Surface (S7) (LRR R, MLRA 149B)         "Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Ne         Restrictive Layer (if observed):								
**Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location: PL=Pore Lining, M=Matrix.         Hydric Soil indicators:       Indicators:       Indicators for Problematic Hydric Soils':         Histos (A1)       Polyvalue Below Surface (S8) (LRR R, L RR)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histis (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histis (A3)       Loamy Mucky Mineral (F1) (LRR K, L)       Dark Surface (S7) (LRR K, L, M)         Depleted Below Dark Surface (A11)       Depleted Matrix (F2)       Polyvalue Below Surface (S3) (LRR K, L, L)         Thick Dark Surface (A12)       Redox Dark Surface (F7)       Piedmont Floodplain Soili (F19) (MLRA 1448, 145, 149B)         Sandy Mucky Mineral (F31)       Depleted Dark Surface (F7)       Piedmont Floodplain Soili (F19) (MLRA 144A, 145, 149B)         Sandy Mucky Mineral (F31)       Depleted Matrix (S3)       KR K, L)         Sandy Mucky Mineral (F21)       Redox Depressions (F8)       Mesic Spodic (TA6) (MLRA 144A, 145, 149B)         Sandy Mucky Mineral (F21)       Dark Surface (S7) (LRR R, MLRA 149B)       Very Shalibo Dark Surface (T12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shalibo Dark Surface (T12)       Very Shalibo Dark Surface (T12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shalibo Dark Surface (T12)       Very Shalibo Dark Surface (T12) <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>1</sup> Location: PL=Pore Lining, M=Matrix.          Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>1</sup> :          Histic Epidedin (A2)       MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S8) (LRR R, MLRA 149B)         Coast Prairie Redox (A16) (LRR K, L, R)         Hydrogen Suffae (A4)       Loamy Mucky Mineral (F1) (LRR K, L)         Depleted Below Dark Surface (A1)       Depleted Matrix (F2)         Polyvalue Below Surface (S9) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Redox (S5)       X Red Parent Material (F12) (LRR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LRR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LRR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LRR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LRR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LR K, L, R)         Sandy Redox (S5)       X Red Parent Material (F12) (LR K, L, R)         Bardy Redox (S5)       X Red Parent Material (F12) (LR K, L, R)			<u> </u>					
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.       *Location: PL=Pore Lining, M=Matrix         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils':         Histosol (A1)       Polyvalue Below Surface (S8) (LRR R, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)         Black Histic (A3)       Thin Dark Surface (S9) (LRR K, L, R)         Depleted Below Dark Surface (A11)       Depleted Matrix (F2)         Depleted Below Dark Surface (A12)       Redox Dark Surface (F6)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)         Sandy Redox (S5)       KR Rdox Depressions (F8)         Sandy Redox (S5)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Sandy Redox (S5)       Hydric Soil Present? Yes X         No       Pereim Matrix (P3)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)         Sandy Redox (S5)       Hydric Soil Present? Yes X         No       Pereim Matrix (P3)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R,								
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>3</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>3</sup> :         Histosoi (A1)       Polyvalue Below Surface (S8) (LRR R, ILR A 149B)       Coast Prairie Redox (A16) (LRR K, L, R)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 149B)       Som Mucky Peat or Peat (S3) (LRR K, L, R)         Hydrogen Sulfide (A4)       Loamy Worky Mineral (F1) (LRR K, L)       Dark Surface (S7) (LRR K, L, M)         Depleted Below Dark Surface (A11)       Depleted Matrix (F2)       Polyvalue Below Surface (S9) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F6)       Iton-Hanganese Masses (F12) (LRR K, L, R)         Sandy Redox (S5)       Xerdav Depressions (F8)       Mesic Spodic (TA6) (MLRA 1448B)         Sandy Redox (S6)       Xerdav C(S7)       Piedmont Floodplain Solis (F19) (MLRA 1449B)         Sandy Redox (S6)       Xerdav C(S7)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Other (Sandav C(S7)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)       Uter Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (TF12)       Very Shallow Dark Surface (TF12)         Dark Surface (S7) (LRR R, MLRA								
<sup>1</sup> Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup> Location: PL=Pore Lining, M=Matrix.         Hydric Soil Indicators:       Indicators for Problematic Hydric Soils <sup>1</sup> :         Histic Epipedon (A2)       Polyvalue Below Surface (S8) (LRR R, MLRA 1498)         Black Histic (A3)       Thin Dark Surface (S9) (LRR R, MLRA 1498)         Straffied Layers (A5)       Loamy Mucky Mineral (F1) (LRR K, L, R)         Straffied Layers (A5)       Loamy Mucky Mineral (F2)         Think Dark Surface (A11)       Depleted Matrix (F3)         Think Mark Surface (A12)       Redox Dark Surface (F7)         Sandy Mucky Mineral (S1)       Depleted Depressions (F8)         Sandy Mucky Mineral (S1)       Depleted Depressions (F8)         Sandy Mucky Mineral (S6)       Wesic Spodic (TA6) (MLRA 1449B)         Sandy Redox (S5)       Xer Red Parent Material (F21)         Straffied CS7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (T12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (T12)         Straffied Matrix (S6)       Ket Parent Material (F21)         Wesic Sordic (TA6) (MLRA 1444, 145, 149B)       Very Shallow Dark Surface (T12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (T12)         Dark Surface (S7) (LRR R, MLRA 149B)       Very Shallow Dark Surface (T12)         Depleted Dis								
Type:         Cacation: PL-Pore Lining, M-Matrix.           Hydric Soil Indicators:         —           Histosol (A1)         —           Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)         MLRA 149B)           Black Histic (A3)         —           Joard Matrix (MS*Masked Sand Grains.         —           Yuge:        2 cm Muck (A10) (LRR K, L, MLRA 149B)           Black Histic (A3)	<u> </u>						2	
Hydro Son Indicators:       — Polyvalue Below Surface (S8) (LRR R, Histic Epipedon (A2)	'Type: C=Concentration, D=Deplet	ion, RM=F	Reduced Matrix, MS	S=Masked	Sand Gra	lins.		: PL=Pore Lining, M=Matrix.
Histicsol (A1)	Hydric Soll Indicators:					_	Indicators	for Problematic Hydric Solls :
Inside Epipedon (A2)       Intribut Surface (S9) (LRR R, MLRA 149B)       Coast Priarie Redox (A16) (LRR K, L, R)         Black Histis (A3)	Histosol (A1)	_		w Surface	(S8) (LRR	к,	2 cm N	Auck (A10) (LRR K, L, MLRA 149B)
Biddx Insta (x0)	Black Histic (A3)		Thin Dark Surfa	) 200 (SQ) (I		PA 1/08	$\sim - \frac{1}{5}$ coasi	Aucky Peat or Peat (S3) (IPP K I P)
Stratified Layers (A5)       Loamy Gleyed Matrix (F2)       Polyadue Below Surface (S8) (LRR K, L)         Depleted Below Dark Surface (A11)       Depleted Matrix (F3)       Thin Dark Surface (S8) (LRR K, L)         Thick Dark Surface (A12)       Redox Dark Surface (F6)       Iron-Manganese Masses (F12) (LRR K, L, R)         Sandy Mucky Mineral (S1)       Depleted Dark Surface (F7)       Piedmont Floodplini Solis (F19) (MLRA 149B)         Sandy Redox (S6)       X Red Parent Material (F21)       X Red Parent Material (F21)         Stripped Matrix (S6)       Very Shallow Dark Surface (TF12)       Depleted Dark Surface (S7) (LRR R, MLRA 149B) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.       Restrictive Layer (if observed):         Type:	Hydrogen Sulfide (A4)		Loamy Mucky M	Aineral (F1		L)	, <u> </u>	Surface (S7) (LRR K, L, M)
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thin Dark Surface (S9) (LRR K, L, R)     Thick Dark Surface (A12) Redox Dark Surface (F6) Iron-Manganese Masses (F12) (LRR K, L, R)     Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Piedmont Floodplain Solis (F19) (MLRA 1449B)     Sandy Redox (S5) X Red Parent Material (F21) X Red Parent Material (F21) Very Shallow Dark Surface (TF12) Other (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.     Restrictive Layer (if observed):     Type: Depth (inches): Hydric Soil Present? Yes X No No Remarks:	Stratified Layers (A5)	_	Loamy Gleved	Matrix (F2	)	_/	Polyva	lue Below Surface (S8) (LRR K, L)
Thick Dark Surface (A12)     Redox Dark Surface (F6)     Iron-Manganese Masses (F12) (LRR K, L, R)     Sandy Mucky Mineral (S1)     Depleted Dark Surface (F7)     Piedmont Floodplain Solis (F19) (MLRA 149B)     Sandy Redox (S5)     X Red Parent Material (F21)     Very Shallow Dark Surface (TF12)     Dark Surface (S7) (LRR R, MLRA 149B)     Other (Explain in Remarks)     and the start of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed):     Type: Depth (inches): Remarks:     No Remarks:	Depleted Below Dark Surface (	A11)	Depleted Matrix	(F3)	,		Thin D	ark Surface (S9) (LRR K, L)
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Piedmont Floodplain Solis (F19) (MLRA 149B) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) Mesic Spodic (TA6) (MLRA 144B)	Thick Dark Surface (A12)		Redox Dark Su	rface (F6)			Iron-M	anganese Masses (F12) (LRR K, L, R)
	Sandy Mucky Mineral (S1)		Depleted Dark	Surface (F	7)		Piedm	ont Floodplain Soils (F19) (MLRA 149B)
Sandy Redox (S5)X Red Parent Material (F21)V Very Shallow Dark Surface (TF12)O ther (Explain in Remarks)O ther (Explain in Remarks) <sup>3</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No Remarks:	Sandy Gleyed Matrix (S4)		_ Redox Depress	ions (F8)			Mesic	Spodic (TA6) ( <b>MLRA 144A, 145, 149B</b> )
Stripped Matrix (S6) Very Shallow Dark Surface (1F12) Dark Surface (S7) (LRR R, MLRA 149B) Other (Explain in Remarks)	Sandy Redox (S5)						X Red Pa	arent Material (F21)
	Stripped Matrix (S6)						Very S	Shallow Dark Surface (TF12)
<sup>a</sup> Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.         Restrictive Layer (if observed):         Type:         Depth (inches):         Remarks:		RA 149B)					Other	(Explain in Remarks)
Restrictive Layer (if observed):	<sup>3</sup> Indicators of hydrophytic vegetation	n and wetl	and hydrology mus	t be prese	ent unless	disturbed	or problematio	
Type:	Restrictive Laver (if observed):					4.014.004		
Depth (inches):	Type:							
Remarks:	Depth (inches):						Hydric Soil	X Present? Yes No
	Pomorko:						ilyano con	
	Remarks.							

City/County:	Richmond	July 2012 Sampling Date:		
	St	ate: Sampli	ng Point	NU Upland
Section, Town	ship, Range:			
Local relief (conc	ave, convex, none):	Flat Land	Slop	e (%):
	Long:		Datum	:
		NWI classification:	ot mappe	ed
of year? Yes <u>x</u>	No (If no	o, explain in Remarks.)		
intly disturbed?	Are "Normal Circ	cumstances" present?	Yes <u>x</u>	No
y problematic?	(If needed, expla	ain any answers in Rema	arks.)	
	City/County: Section, Towr Local relief (conc f year? Yes X ntly disturbed?	City/County: Richmond St Section, Township, Range: Local relief (concave, convex, none): Long: f year? Yes No (If no ntly disturbed? Are "Normal Circo problematic? (If needed, explain	City/County:RichmondSampling State:Sampling Section, Township, Range:Sampling Local relief (concave, convex, none):Flat Land Long:NWI classification: NWI classification: f year? YesX No (If no, explain in Remarks.) ntly disturbed? Are "Normal Circumstances" present? ` problematic? (If needed, explain any answers in Remarks)	City/County:Richmond Sampling Date: State: Sampling Point Section, Township, Range: Local relief (concave, convex, none):Flat LandSlop Long: Datum NWI classification: Datum NWI classification: not mappe f year? YesX No (If no, explain in Remarks.) ntly disturbed? Are "Normal Circumstances" present? YesX problematic? (If needed, explain any answers in Remarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> Yes Yes	No No No	x x	Is the Sampled Area within a Wetland? Yes No × If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ires here or in a	separa	ate report.)	·

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Livi	ng Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4	) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled	Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No X</u> Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Water I able Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       No Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp	Wetland Hydrology Present?         Yes         No         X           Decitions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp	Wetland Hydrology Present? Yes No X Dections), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:       Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:       Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:       Remarks:	Wetland Hydrology Present? Yes No X
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup>
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous insp         Remarks:       Remarks:	Wetland Hydrology Present? Yes No <sup>x</sup>

	Absolute	Dominant	Indicator	Deminence Test worksheet		
Tree Stratum (Plot size:)	% Cover	Species?	Status	Number of Dominant Species		
1				That Are OBL, FACW, or FAC:	1	(A)
2.						<b>、</b> ,
3				Lotal Number of Dominant	1	(B)
3	·			opecies Across Air otrata.		(D)
4				Percent of Dominant Species	100	
5	·			That Are OBL, FACW, or FAC:		(A/B)
6				Prevalence Index worksheet:		
7.				Total % Cover of:	Multiply by:	
		= Total Cove			1 =	
o i contra contra 100 sq ft			51		2 –	_
no trees					2 =	—
1	·			FAC species X	3 =	—
2				FACU species X	4 =	—
3.				UPL species x	5 =	_
Λ				Column Totals: (A	v)	_ (B)
				Prevalence Index = B/A =		
6.				Hydrophytic Vegetation Indica	ators:	
7				1 - Rapid Test for Hydrophyt	tic Vegetation	
1				× 2 - Dominance Test is >50%	6	
		= Total Cove	er	3 - Prevalence Index is <3.0	) <sup>1</sup>	
Herb Stratum (Plot size: 1 m )					ns <sup>1</sup> (Provide sup	norting
1. Panicum virgatum	60	D	FAC	data in Remarks or on a	separate sheet)	porting
2. Andropogon virginicus	20	n	FACU	Problematic Hydrophytic Ve	getation <sup>1</sup> (Explai	in)
3.				<sup>1</sup> Indicators of hydric soil and wet	land hydrology r	nust
/				be present, unless disturbed or p	problematic.	
5				Definitions of Vegetation Strat	ta:	
6				Tree Woody plants 3 in (7.6 c)	m) or moro in di	amotor
7				at breast height (DBH), regardles	ss of height.	ametei
8				Sapling/shrub – Woody plants I	less than 3 in. DI	вн
o				and greater than or equal to 3.28	8 ft (1 m) tall.	
3 10				Herb – All herbaceous (non-woody	) plants, regardles	s of
11				size, and woody plants less than 3.2	.8 ft tall.	
12				<b>Woody vines</b> – All woody vines green	eater than 3.28 ft i	n
	90	- Total Cove				
			;1			
Woody Vine Stratum (Plot size:)						
1						
2				Hydrophytic Vegetation		
3.				Present? Yes	No X	
+	·					
		= Total Cove	er			
Remarks: (Include photo numbers here or on a separate s	sneet.)					
Only dominat hydrophytic vegetation is Panicum which is	an oppurti	unistic sepeci	es. Other	identified grass species are upland	d species.	
	opporte					

Depth (inches)	Matrix Color (moist)	0/2	$\frac{\text{Redox Features}}{\text{Color (moist)}} \qquad \frac{94}{2} \qquad \text{Type}^{1} \qquad 4 \text{ co}^{2}$	Texture Domarka
	7 5VR 4/2	100		Clay Loam
0-4	7.511( 4/2	100		
4-11	7.5 YR 5/4	100		sandy clay loam
Depth of r	efusal			
				·
		otion PM-	Poducod Matrix, MS-Maskad Sand Grains	<sup>2</sup> Location: PL-Poro Lining M-Matrix
Hydric Soil I	ndicators:			Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(Δ1)		Polyvalue Below Surface (S8) (I RR R	2 cm Muck (A10) (I RR K I MI RA 149B)
Histic En	(A) bipedon (A2)		MI RA 149B)	Coast Prairie Redox (A16) (I RR K, I, R)
Black His	stic (A3)		Thin Dark Surface (S9) (LRR R. MLRA 149B)	5 cm Mucky Peat or Peat (S3) (LRR K. L. R)
Hydroge	n Sulfide (A4)		Loamy Mucky Mineral (F1) (LRR K, L)	Dark Surface (S7) (LRR K, L, M)
Stratified	Layers (A5)		Loamy Gleyed Matrix (F2)	Polyvalue Below Surface (S8) (LRR K, L)
Depleted	Below Dark Surface	e (A11)	Depleted Matrix (F3)	Thin Dark Surface (S9) (LRR K, L)
Thick Da	ark Surface (A12)		Redox Dark Surface (F6)	Iron-Manganese Masses (F12) (LRR K, L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark Surface (F7)	Piedmont Floodplain Soils (F19) (MLRA 149B
Sandy G	leyed Matrix (S4)		Redox Depressions (F8)	Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
Sandy R	edox (S5)			X Red Parent Material (F21)
Stripped	Matrix (S6)			Very Shallow Dark Surface (TF12)
Dark Sur	fface (S7) (LRR R, M	LRA 149E	3)	Other (Explain in Remarks)
<sup>3</sup> Indicators of	bydrophytic vogotati	on and wa	tland hydrology must be present upless disturbed	or problematic
Postrictivo I	aver (if observed):		tiand hydrology must be present, unless disturbed t	
Tunoi	Layer (il observeu).			
Type				
Depth (Inc	cnes):			Hydric Soll Present? Yes No
Remarks:				
Wetland is	marked depression in	n site acce	ess way. Hydrology collects to promote hydrophytic	vegetation in the depression only.

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Ricl</u>	<u>nmond</u> Sampli	ng Date: <u>7/22/12</u>
Applicant/Owner: <u>NYCEDC</u>		State: <u>NY</u> Sam	oling Point: <u>NW</u>
Investigator(s): <u>J. Rollino/M. Smith</u>	Section, Township, Range: <u>Cha</u>	rleston	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none	e): Flat land	Slope (%):
Subregion (LRR or MLRA): <u>MLRA 149B</u> Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>		NWI classification:	wetland not mapped
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u></u> (	If no, explain in Remark	s.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal C	Circumstances" present?	Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil _ x, or Hydrology natural	ly problematic? (If needed, e	xplain any answers in R	emarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present?	Yes <u>x</u> No Yes <u>x</u> No	Is the Sampled Area within a Wetland? Yes <u>x</u> No
Wetland Hydrology Present?	Yes <u>x</u> No	If yes, optional Wetland Site ID:
Remarks: (Explain alternative procedu	ires here or in a separate report.) F	roblematic soil/red parent material.

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	x Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Livi	ng Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4	) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled	d Soils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	x Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes No _x       Depth (inches):         Saturation Present?       Yes No _x       Depth (inches):         (includes capillary fringe)       Yes No _x       Depth (inches):	Wetland Hydrology Present? Yes <u>x</u> No
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       No _x Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous instance)	Wetland Hydrology Present?         Yes         No           pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous instance)	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes       No x       Depth (inches):         Saturation Present?       Yes       No x       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes       No x       Depth (inches):         Saturation Present?       Yes       No x       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes       No x       Depth (inches):         Saturation Present?       Yes       No x       Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins         Remarks:       Remarks:	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous ins         Remarks:	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:
Water Table Present?       Yes No _x Depth (inches):         Saturation Present?       Yes No _x Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes <u>x</u> No pections), if available:

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Iree Stratum (Plot size:)	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1		·		That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4.				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>100</u> (A/B)
6				
6				Prevalence Index worksheet:
/				Total % Cover of:Multiply by:
		= Total Cove	er	OBL species x 1 =
Sapling/Shrub Stratum (Plot size:)				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				Descriptions la desc. D/A
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7.				1 - Rapid Test for Hydrophytic Vegetation
		- Total Cov		x 2 - Dominance Test is >50%
			51	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: 5' )	30	П	OBI	4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
	<u> </u>			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	25		FAC	
3. Phalaris arundinacea		<u>     N                               </u>	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Phragmites australis	15	<u>N</u>	FACW	be present, unless disturbed of problematic.
5. Graminaea	5	Ν	NI	Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7				at breast height (DBH), regardless of height.
··				Sanling/shrub – Woody plants less than 3 in DBH
ő				and greater than or equal to 3.28 ft (1 m) tall.
9				Harb All barbassous (non woody) plants, recordless of
10				size, and woody plants less than 3.28 ft tall.
11				
12.				Woody vines – All woody vines greater than 3.28 ft in height
	90	= Total Co	over	
March Mine Obstance (Distriction		rotar ot	5761	
<u>woody vine Stratum</u> (Plot size:)				
1				Underschutie
2				Vegetation
3				Present? Yes x No
4.				
		- Total Cov		
Remarks: (Include photo numbers here or on a separate	sheet )		51	
Remarks. (include photo numbers here of on a separate	sneet.)			

nches)	Matrix		Redo	ox Feature	<u>es</u> 1	. 2		_	
	Color (moist)	%	Color (moist)	%	Туре	Loc	Texture	Rem	arks
-4	7.5YR3/3	90	5YR3/4	10	<u> </u>	M	silt loam		
-10	7.5YR3/3	100					silt loam w/ trace	e sand. Anthro. c	<u>lebris, lg pieces red p</u> a
10+	auger refusal								
		_							
					. <u> </u>				
					. <u> </u>		·		
						·			
						. <u> </u>			
						. <u> </u>			
					<u> </u>				
vpe: C=Cc	oncentration, D=Dep	pletion, RN	/I=Reduced Matrix, M	S=Masked	d Sand Gr	ains.	<sup>2</sup> Location: P	L=Pore Lining, N	/I=Matrix.
nKf]WGc]`⁼	bX]WUhcfg.	,	·				<del>⊫bX</del> ]WUhcfgʻZcf	∵DfcV`YaUhjWi≺ı	mXf]WGc]`g
Histosol	(A1)		Polyvalue Belo	w Surface	e (S8) (@FI	FFŽ	2 cm Muc	k (A10) (@FF?ž	@ZA@F5*%(-6)
Black Hi	stic (A3)		A @ -5 % -6 — Thin Dark Surf:	) ace (S9) ()	@FF <sup>·</sup> FžA	@F5 <sup>*</sup> %-6	5 cm Muc	kv Peat or Peat (	(@FF?Z@ZF) (S3)(@FF??ž@2F)
Hydroge	n Sulfide (A4)		- Loamy Mucky I	Mineral (F	1) (@FF?	ž@,	— Dark Surfa	ace (S7) (@FF?	ž@žA)
Stratified	Layers (A5)	- ( 1 1 1 )	Loamy Gleyed	Matrix (F2	2)		Polyvalue	Below Surface (	S8) (@FF`?ž@)
Thick Da	rk Surface (A12)	æ (A11)		x (F3) Irface (F6)	)		Inin Dark	anese Masses (	FF ?Z@) F12)(@FF'?Z©27F)
- Sandy M	lucky Mineral (S1)		— Depleted Dark	Surface (F	, F7)		- Piedmont	Floodplain Soils	(F19) ( <b>A @F5 '%(-6</b> )
- Sandy G	eleyed Matrix (S4)		Redox Depress	sions (F8)			Mesic Spo	odic (TA6) ( <b>A @F</b> ant Material (E21	5 <b>`%((5ž%()</b> ž%(-6)` `
- Stripped	Matrix (S6)						Very Shal	low Dark Surface	) e (TF12)
Dark Sur	face (S7) ( <b>@FF`Fž/</b>	A@F5 <sup>°</sup> %(-	6)				Other (Ex	plain in Remarks	)
dicators of	bydronbytic vegeta	tion and w	wetland bydrology mu	et ha nrae	ont unlos	e disturbed	or problematic <b>E</b>	Valdi Wili V. @ Invf	
Type:			<ul> <li>Depth (inches):</li> </ul>	st be pres	ent, unies	s disturbed	<mxf1wgc1`df< td=""><td>YaYbl8 MYa</td><td>'iBc</td></mxf1wgc1`df<>	YaYbl8 MYa	'iBc
emarks:			-						

Project/Site: Charleston Mixed Use Development	City/County: <u>Staten Island, Richmor</u>	<u>nd</u> Samp	oling Date: 7/22/12
Applicant/Owner:	Sta	te: <u>NY</u> San	npling Point: <u>NW (upland)</u>
Investigator(s): J. Rollino/M. Smith	Section, Township, Range: <u>Charlest</u>	on	
Landform (hillslope, terrace, etc.):	Local relief (concave, convex, none):	Flat land	Slope (%):
Subregion (LRR or MLRA): MLRA 149B Lat:	Long:		Datum:
Soil Map Unit Name: <u>Whethersfield-Ludlow-Wilbraham Complex</u>	N	WI classification:	n/a
Are climatic / hydrologic conditions on the site typical for this time of	f year? Yes <u>x</u> No <u>(</u> (If no	, explain in Remar	ks.)
Are Vegetation, Soil, or Hydrology significa	ntly disturbed? Are "Normal Circu	mstances" present	t? Yes <u>x</u> N <u>o</u>
Are Vegetation, Soil, or Hydrology naturally	problematic? (If needed, explain	any answers in R	emarks.)

# SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present?	Yes <u>x</u> No Yes No x	Is the Sampled Area within a Wetland? Yes No x
Remarks: (Explain alternative proced	ures here or in a separate report.)	

Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Water-Stained Leaves (B9)	Drainage Patterns (B10)
High Water Table (A2) Aquatic Fauna (B13)	Moss Trim Lines (B16)
Saturation (A3) Marl Deposits (B15)	Dry-Season Water Table (C2)
Water Marks (B1) Hydrogen Sulfide Odor (C1)	Crayfish Burrows (C8)
Sediment Deposits (B2) Oxidized Rhizospheres on Living	Roots (C3) Saturation Visible on Aerial Imagery (C9)
Drift Deposits (B3) Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled So	oils (C6) Geomorphic Position (D2)
Iron Deposits (B5) Thin Muck Surface (C7)	Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7) Other (Explain in Remarks)	Microtopographic Relief (D4)
Sparsely Vegetated Concave Surface (B8)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes <u>No x</u> Depth (inches):	
Water Table Present? Yes <u>No x</u> Depth (inches):	
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present?       Yes       No x         tions), if available:       Itions       Itions
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective	Wetland Hydrology Present? Yes No x
Water Table Present?       Yes No X Depth (inches):         Saturation Present?       Yes No X Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)       Depth (inches):         Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes Nox Depth (inches):         Saturation Present?       Yes Nox Depth (inches):         (includes capillary fringe)          Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)	Wetland Hydrology Present? Yes No x tions), if available:
Water Table Present?       Yes No Depth (inches):         Saturation Present?       Yes No Depth (inches):         (includes capillary fringe)       Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspective         Remarks:       Remarks:	Wetland Hydrology Present? Yes No x tions), if available:

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: <u>30'</u> )	<u>% Cover</u>	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC: (A)
2				Total Number of Dominant
3				Species Across All Strata: (B)
4			<u> </u>	Percent of Dominant Species
5				That Are OBL, FACW, or FAC: <u>67</u> (A/B)
6.				
7				Prevalence Index worksheet:
· ·		- Total Ca		
			ver	
Sapling/Shrub Stratum (Plot size: 15				FAC species x3 =
1				FACIL species X 4 =
2				I Acto species         x 4           I IPI species         x 5 =
3				Column Totals: (A) (B)
4			<u> </u>	
5				Prevalence Index = B/A =
6.				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
·		_ Tatal Ca		X 2 - Dominance Test is >50%
			ver	3 - Prevalence Index is ≤3.0 <sup>1</sup>
Herb Stratum (Plot size: 5' )	20	П	EAC	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
Suncus tenuis		<u>D</u>		Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Eutnamia gramnifolia	20	<u>D</u>	FAC	
3. Solidago spp.	5	<u>N</u>	<u>NI</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Andropogon virginicus	20	D	FACU	
5. Phleum pratense	5	N	FACU	Definitions of Vegetation Strata:
6				Tree – Woody plants 3 in. (7.6 cm) or more in diameter
7			<u> </u>	at breast height (DBH), regardless of height.
8				Sapling/shrub – Woody plants less than 3 in. DBH
9.				and greater than or equal to 3.28 ft (1 m) tall.
10				Herb - All herbaceous (non-woody) plants, regardless of
11		-		size, and woody plants less than 3.28 ft tall.
11				Woody vines – All woody vines greater than 3.28 ft in
12				height.
	70	= Total C	Cover	
Woody Vine Stratum (Plot size: 15' )				
1				
2				Hydrophytic Vegetation
3				Present? Yes X No
4				
		= Total Cov	ver	
Remarks: (Include photo numbers here or on a separate	sheet.)			

Profile Des	cription: (Describe	to the dep	th needed to docu	ment the i	ndicator	or confirm	n the absence of indica	tors.)	
Depth	Matrix		Redo	ox Features	<u>s</u>				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remar	<u>rks</u>
0-6	7.5YR3/4	100					Sandy loam w/ trace gr	avel	
6 10	7 5/02/2	100					Sandy loom w/ groyeld	<b>a</b> u	
0-10	1.31K3/3	100					<u>Sanuy Ioann w/ graver i</u>	111	
	<u></u>								
<sup>1</sup> Type: C=Cc	oncentration, D=Deple	etion, RM=I	Reduced Matrix, MS	=Masked S	Sand Graii	าร.	<sup>2</sup> Location: PL=Pore	Lining, M=N	/latrix.
Hydric Soil I	ndicators:						Indicators for Proble	matic Hydr	ic Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Below	Surface (	S8) ( <b>LRR</b>	R,	2 cm Muck (A10)	(LRR K, L, I	MLRA 149B)
Histic Ep	vipedon (A2)		MLRA 149B)				<u>Coast Prairie Rec</u>	ox (A16) (LI	
	SIIC (A3) n Sulfide (A1)		Inin Dark Sunac	:e (59) ( <b>LF</b> ineral (E1)	(IPPKI	(A 149B)	5 cm Mucky Peat Dark Surface (S7	or Peat (53)	(LRR R, L, R)
Stratified	Lavers (A5)		Loamy Gleved M	latrix (F2)		-)	Polyvalue Below	Surface (S8)	(LRR K. L)
Depleted	Below Dark Surface	(A11)	Depleted Matrix	(F3)			Thin Dark Surface	e (S9) (LRR	K, L)
Thick Da	irk Surface (A12)		Redox Dark Sur	face (F6)			Iron-Manganese	Masses (F12	2) (LRR K, L, R)
Sandy M	lucky Mineral (S1)		Depleted Dark S	urface (F7	)		Piedmont Floodp	ain Soils (F1	19) ( <b>MLRA 149B</b> )
<u>Sandy</u> G	leyed Matrix (S4)		Redox Depressi	ons (F8)			Mesic Spodic (TA	.6) ( <b>MLRA 1</b>	<b>44A, 145, 149B</b> )
Sandy R	edox (S5)						Red Parent Mate	rial (F21)	
Stripped	Matrix (S6)						Very Shallow Dar	K Surface (1	F12)
		LKA 149D)	)				Other (Explain in	Remarks)	
<sup>3</sup> Indicators of	hvdrophytic vegetati	on and wet	land hvdrologv must	be presen	t. unless d	listurbed	or problematic.		
Restrictive L	ayer (if observed):				-,				
Type:									
Depth (inc	ches):						Hydric Soil Present?	Yes	No x
Remarks <sup>.</sup>	,								
i tomanto.									

# ATTACHMENT C

# VERNAL POOL SURVEY

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During the wetland delineation surveys conducted in 2012, natural resource scientists identified areas that had the potential to function as vernal habitat. These areas were subsequently evaluated in the Spring of 2013 using techniques adapted from the New Jersey Department of Environmental Protection's (NJDEP) Land Use Regulation Program (LURP) Freshwater Wetlands Vernal Habitat Protocol (see attachment). Potential vernal pool habitat was evaluated to determine whether or not they meet the following four determining criteria:

- 1. Occurs in a confined basin depression without a permanent flowing outlet: The scientists walked the circumference of the potential vernal habitat area to confirm the absence of an inlet or outlet.
- 2. Features evidence of breeding by one or more species of fauna adapted to reproduce in ephemeral aquatic conditions: Visual and ocular observations were made to identify presence of obligate or facultative species individuals, larvae, egg masses, or breeding chorus'.
- 3. Maintains ponded water for at least two continuous months between March and September of a normal rainfall year:
- 4. Is free of fish throughout the year, or dries up at some time during the year: the area will be visually scanned for the presence of any fish species; for potential vernal pool areas contiguous with deep water habitats will require additional survey of the deep water habitats to determine the potential presence of fish species.

All delineated wetlands within the entire project area were reviewed for the presence of vernal habitat. Also, several low depressions that were not wetlands were also evaluated, including two within the Englewood Avenue Corridor south of the existing dirt path. These depressions were located approximately 425 ft and 925 ft east of Wetland C, respectively.

Natural resource scientists conducted the vernal habitat investigation on April 16<sup>th</sup> and April 17<sup>th</sup>, 2013. The surveys were conducted during the optimum time to identify areas that function as vernal pools and/or amphibian breeding habitat (in the spring, when evening low temperatures remain in the 40s Fahrenheit). The scientists targeted their search to start before sunrise to identify vocalizations of amphibians and during mid-day to identify potential basking herptofauna. Both days were warm and sunny.

During the 2012 Wetland Delineation, certain wetland parcels were identified as potentially serving as vernal pool habitat. Photographs of those wetlands are provided in the following pages.

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Photo No. 4 Descrip Wetland Identifie providir pool ha	Date: April 16, 2013 tion: d B – ed as ig vernal bitat.	

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# ATTACHMENT

# NJ VERNAL POOLS PROTOCOLS

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#### Land Use Regulation Program Freshwater Wetlands Vernal Habitat Protocol (updated: 05/17/02)

#### Purpose: 54

Item 1: "Occurs in a confined basin depression without a permanent flowing outlet" Item 2: "Features evidence of breeding by one or more species of fauna adapted to reproduce in ephemeral aquatic conditions"

Item 3: "Maintains ponded water for at least two continuous months between March and September of a normal rainfall year"

Item 4: "Is free of fish throughout the year, or dries up at some time during the year" Required Field Observations for Certifying a Vernal Habitat

Documenting The Location Of A Vernal Habitat

Use Of This Protocol In The Freshwater Wetlands Permit Program

## 1 Purpose:

This protocol will be used by the Land Use Regulation Program to determine whether an area meets the definition of a "vernal habitat" in N.J.A.C. 7:7A-1.4. If the application of this protocol results in a Department determination that an area meets the definition of a vernal habitat, the area will be placed on the list of certified vernal habitats, maintained by the Department. The Department will also develop digital mapping to show the locations of certified vernal habitats.

The definition of a vernal habitat includes four criteria that must be satisfied. Item 1 requires that the area occur in a confined basin depression without a permanently flowing outlet. Item 2 requires the documentation of obligate or facultative vernal habitat species (these species are identified in N.J.A.C. 7:7A, Appendix 1). Item 3 requires that the area maintain ponded water for at least two continuous months between March and September of a normal rainfall year. Item 4 requires that the area is free of fish populations throughout the year, or dries up at some time during a normal rainfall year. The elements required to satisfy each item are discussed below.

#### 1.1.1 Item 1: "Occurs in a confined basin depression without a permanent flowing outlet"

The area must be a depression in the surrounding ground, confined by areas of higher upland or wetland ground. It must not have a permanently flowing outlet but may have a periodic outlet through which water flows during periods of heavy rain events, flooding or seasonally high water tables.

# **1.1.2** Item 2: "Features evidence of breeding by one or more species of fauna adapted to reproduce in ephemeral aquatic conditions"

The area must feature evidence of breeding by vernal habitat species. These species are listed in N.J.A.C. 7:7A, Appendix 1, and are divided into obligate and facultative species. An obligate vernal habitat species is one for which vernal habitats are the only type of habitat used for breeding. A facultative species will use vernal habitat for various activities, for example breeding or foraging, but can also use other types of habitats.

<u>Obligate species:</u> For the purposes of item 2 of the definition of vernal habitat, the following will constitute evidence of breeding by a species listed as an obligate species at N.J.A.C. 7:7A, Appendix 1:

- a. The following types of evidence of breeding adults:
- i. Frog breeding chorus;
- ii. Mated pairs of frogs;
- iii. Salamander courting individuals; and/or
- iv. Salamander spermatophores;
- b. Two or more egg masses of any obligate species;
- c. Frog tadpoles;
- d. Mole salamander larvae; and/or
- e. The following types of evidence of transforming juveniles:
- i. Wood frogs with tail stubs evident; and/or
- ii. Salamanders with gill remnants evident.

<u>Facultative species</u>: For the purposes of item 2 of the definition of vernal habitat, evidence of the presence of one or more members of the species within the area of the habitat listed as facultative species at N.J.A.C. 7:7A, Appendix 1 shall constitute evidence of breeding or foraging by that species.

# **1.1.3** Item 3: "Maintains ponded water for at least two continuous months between March and September of a normal rainfall year"

If an area satisfies item 2 by showing evidence of breeding by obligate species, the criteria in items 3 and 4 are presumed to be satisfied. (See flow chart below for an illustration of this.) This presumption does not apply if an area satisfies item 2 solely by showing evidence of breeding by facultative species. This application of the presumption reflects the fact that the species listed as obligate depend almost exclusively on vernal habitat for breeding, and cannot breed in other types of habitat. They must breed in an area that maintains water for certain time periods, and in which there are no fish to eat their eggs. Obligate species also tend to be site tenacious, meaning that succeeding generations of the species frequently return to their natal pond for breeding purposes. Therefore, if an area shows evidence of breeding by an obligate species, the area must meet the criteria in items 3 and 4.

However, the species listed as facultative do not depend exclusively on vernal habitat, although they do regularly use vernal habitats. These species also use other similar types of habitat that would not meet the definition of a vernal habitat. Therefore, the presumption that an area is ponded for at least two months and is free of fish populations (i.e., that the criteria in items 3 and 4 are met) does not apply where only facultative species have been found. In those cases, the ponding of water (Item 3) and the drying up or lack of fish populations (Item 4) must be independently demonstrated in accordance with this protocol.

To satisfy Item 3, an area that is not subject to the presumption discussed above (i.e., an area with evidence of facultative species only) must maintain ponded water continuously for at least two contiguous months (60 days) between March  $1^{st}$  and September  $30^{th}$  of a normal rainfall year.

#### 1.1.4 Item 4: "Is free of fish throughout the year, or dries up at some time during the year"

As discussed above under Item 3, if an area satisfies item 2 by showing evidence of breeding by obligate species, the criteria in items 3 and 4 are presumed to be satisfied. (See flow chart below for an illustration of this.)

To satisfy Item 4, an area that is not subject to the presumption discussed above (i.e., an area with evidence of facultative species only) must be free of fish populations throughout the year, or dry up at some time during the year. Meeting either one of these criteria is sufficient to satisfy Item 4.
#### **Required Field Observations for Certifying a Vernal Habitat**

A. Item 1: Clear photographs are required to document that an area is a confined basin depression without a permanent flowing outlet. The photographs must be taken from several angles, and must be sufficient to clearly display the area's complete or intermittent hydric isolation.

B. Item 2: At least one of the following types of evidence is required to document each observation of a vernal habitat species:

1. Photograph(s). <u>This is the preferred method</u>. Prints, slides, or digital photographs are acceptable. The location, date of observation, and observer's name must be provided;

2. Videotape recording. The location, date, and recorder's name must be provided;

3. Taped audio recording of a frog breeding chorus. The location, date, and recorder's name must be provided; and/or

4. Detailed written description(s) of species observed, including a discussion of the criteria that were used to identify the species involved. Field notes, and/or a drawing of the animal, may be submitted as part of the description. It is preferred that the description and field notes be prepared by a biologist competent in animal identification.

C. Item 3: The following evidence is required to support observations that an area maintains ponded water for at least two contiguous months between March and September:

1. A logbook containing a record of observations, made approximately weekly, of the presence or absence of standing water in the area. For each observation date, the logbook shall state the approximate depth and dimensions of the area covered by standing water; and/or

2. A list of one or more amphibian and reptile species that were observed using the area for breeding purposes (including dates).

D. Item 4: At least one of the following types of evidence is required to demonstrate that an area is free of fish populations throughout the year, or dries up at some time during the year:

1. Clear photograph(s) and/or statement of direct observation, including date of observation, showing the area to be dried up; or

2. Scientific evidence sufficient to conclude that the area is free of fish populations.

#### **Documenting The Location Of A Vernal Habitat**

The following documentation is required to identify the location of a vernal habitat:

1. One or more of the items at i through iii below:

i. Metes and bounds description. Compass bearings and measured distances (the distances should be 1000 feet or less) of the habitat from at least two permanent landmarks, and the locations of landmarks. The compass bearings must account for the appropriate declination. The locations of the landmarks and the vernal habitat must be shown on the municipal tax map required in 2 below;

ii. Aerial photographs. The vernal habitat must be clearly visible on the aerial photograph; or

iii. Professional survey or GPS coordinates; and

2. A photocopy of an 8.5" by 11" section of the appropriate United States Geological Survey quadrangle map with the approximate site of the vernal habitat clearly marked should also be included (USGS quad maps are available from the Department's Office of Maps and Publications at (609) 777-1038); and

3. It is recommended that a sketch map and/or detailed description of features in the immediate vicinity (within 1000 feet) of the vernal habitat also be provided.

#### Use Of This Protocol In The Freshwater Wetlands Permit Program:

1. The Department will develop a list of certified vernal habitats. After the list is developed, the Department will develop digital GIS maps showing the locations of certified vernal habitats.

2. When an application for a freshwater wetlands permit is submitted, the Department will review the list of certified vernal habitats to determine if the site may contain a vernal habitat.

3. If the site contains a certified vernal habitat, the Department will inform the applicant of this fact.

4. For each permit application, LUR accepts public comment during the period of application review, in accordance with N.J.A.C. 7:7A-12.3. If the Department receives information indicating that an area may be a vernal habitat during the public comment period (whether the information is submitted by the public, discovered by staff during a site investigation, or obtained in some other way), the Department will evaluate this information. If the information is sufficient to certify the area as a vernal habitat in accordance with this protocol, the Department will do so. Alternatively, the Department may delay a final decision on the application in order to obtain further information. The Department's action in these cases will vary on a case by case basis depending upon the quality of information available to the Department and/or the credentials of the person providing the information.

5. If the Department does not receive or discover any information indicating that an area is a vernal habitat prior to the Department's final decision on the application, the area shall not be considered a vernal habitat for purposes of the final decision on that application.

6. An applicant may contest the certification of an area as a vernal habitat. In order to contest a certification, an applicant must demonstrate that the area no longer meets the criteria in items 1, 2, 3, or 4 of the definition of vernal habitat. If such a demonstration includes a survey for vernal habitat species, the survey must be conducted over a minimum of two normal rainfall years, and must show no evidence of the presence of any vernal habitat species during the survey period.

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ATTACHMENT D

AGENCY CORRESPONDENCE

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#### New York State Department of Environmental Conservation Division of Fish, Wildlife & Marine Resources Bureau of Wildlife 47-40 21st Street Long Island City, New York 11101-4502





December 5, 2012

Matt Mason Vice President New York City Economic Development Corporation 110 William Street New York, New York 10038

Re: Freshwater Wetland AR - 11

Dear Sir;

Staff examined the parcels proposed for the Charleston Mixed-Use Development and provided information concerning the location of the mapped NYS Freshwater Wetland.

A survey prepared by J.S. Schmidt, Project N0559.002.00 Sheet 1, dated October 16, 2012rev. was submitted to this office for verification. This survey depicts the wetland boundary, flags B1-18, C1-19, CA1-9, approved by the Department

Please contact me if I can be of any further assistance.

Yours truly;

Joseph J. Pane Principal Fish & Wildlife Biologist

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION Division of Fish, Wildlife & Marine Resources New York Natural Heritage Program 625 Broadway, 5<sup>th</sup> Floor, Albany, New York 12233-4757 Phone: (518) 402-8935 • Fax: (518) 402-8925 Website: www.dec.ny.gov



Joe Martens Commissioner

February 13, 2013

John Rollino AECOM 20 Exchange Place New York, NY 10005

Dear Mr. Rollino:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to an Environmental Assessment for the Proposed Development, site as indicated on the map you enclosed, located in Richmond, New York City.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities, which our database indicates occur, or may occur, on your site or in the immediate vicinity of your site. For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our databases. We cannot provide a definitive statement as to the presence or absence of all rare or state-listed species or significant natural communities. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

The enclosed report may be included in documents that will be available to the public. However, any enclosed maps displaying locations of rare species are considered sensitive information, and are intended only for the internal use of the recipient; they should not be included in any document that will be made available to the public, without permission from the New York Natural Heritage Program.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the appropriate NYS DEC Regional Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

Our databases are continually growing as records are added and updated. If this proposed project is still under development one year from now, we recommend that you contact us again so that we may update this response with the most current information.

Sincerely,

ean Pietrusiak, Information Services NYS Department Environmental Conservation #148

Enc. cc: Reg. 2, Wildlife Mgr. New York Natural Heritage Program



Report on Rare Animals, Rare Plants, and Significant Natural Communities

# The following rare plants, rare animals, and significant natural communities have been documented at your project site, or in its vicinity.

We recommend that potential onsite and offsite impacts of the proposed project on these species or communities be addressed as part of any environmental assessment or review conducted as part of the planning, permitting and approval process, such as reviews conducted under SEQR. Field surveys of the project site may be necessary to determine the status of a species at the site, particularly for sites that are currently undeveloped and may still contain suitable habitat. Final requirements of the project to avoid, minimize, or mitigate potential impacts are determined by the lead permitting agency or the government body approving the project.

## The following animals, while not listed by New York State as Endangered or Threatened, are of conservation concern to the state, and are considered rare by the New York Natural Heritage Program.

COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATU	JS
Dragonflies and Damselflies				
Comet Darner	Anax longipes	Unlisted	Imperiled in NYS	
Comet Pond: The od	onates were observed in the fields, m	arshs, and trails near a pond.		13441
The following plants are li New York Natural Heritage	sted as Endangered or Threaten Program, and so are a vulnerat	ed by New York State, and/ le natural resource of cons	or are considered rare by the ervation concern.	•
COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	HERITAGE CONSERVATION STATU	US
Vascular Plants				
Fringed Boneset	Eupatorium torreyanum	Threatened	Imperiled in NYS	
Clay Pit Ponds Bloon are human-made. Th with a high percentag vegetated corridor be there are good exam	ningdale Road: Groups 1-3: Sandy dr le trails in the southern part of the site ge of open, unvegetated sand. Group stween two roads. Eupatorium hyssop ples of both varieties, but also some i	y and sandy wet openings in the seem to be more wet. Groups 7: The plants are growing on the ifolium var. hyssopifolium is als ntermediate forms present.	e dense shrubland. The openings 4-8: An open, dry oak woods e edge of a wooded area in a o present at Groups 5, 6, and 7;	10719
			Critically Imperiled in NVS	
Torrey's Mountain-mi	int Pycnanthemum torrei	Endangered	and Globally Ra	are
Clay Pit Ponds Bloor to be seldom mowed	ningdale Road: A vegetated roadside . Part of the roadside is dominated by	about 4-6 feet wide. The plants Artemisia. The roadside is bac	are mostly native and it appears ked by a berm with trees.	10717

2/12/2013

Virginia Pine	Pinus virginiana	Endangered	Critically Imperiled in NYS
Clay Pit Ponds Bloor dense vegetation.	ningdale Road: Group 1: An upland fo	prest in a clearing along the hor	se trail. Group 2: This tree is in
19 14			
Willow Oak	Quercus phellos	Endangered	Critically Imperiled in NYS
Clay Pit Ponds Bloor	ningdale Road: The trees are growing	in a wooded corridor along a n	najor roadway. The corridor is 13247

This report only includes records from the NY Natural Heritage databases. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the rare animals and plants in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, from NatureServe Explorer at http://www.natureserve.org/explorer, and from USDA's Plants Database at http://plants.usda.gov/index.html (for plants).

Information about many of the natural community types in New York, including identification, dominant and characteristic vegetation, distribution, conservation, and management, is available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org. For descriptions of all community types, go to http://www.dec.ny.gov/animals/29384.html and click on Draft Ecological Communities of New York State.

2/12/2013

New York Natural Heritage Program



Report on Historical Records of Rare Animals, Rare Plants, and Natural Communities

#### The following rare plants and rare animals have historical records at your project site, or in its vicinity.

The following rare plants and animals were documented in the vicinity of the project site at one time, but have not been documented there since 1979 or earlier, and/or there is uncertainty regarding their continued presence. There is no recent information on these plants and animals in the vicinity of the project site and their current status there is unknown. In most cases the precise location of the plant or animal in this vicinity at the time it was last documented is also unknown.

If suitable habitat for these plants or animals is present in the vicinity of the project site, it is possible that they may still occur there. We recommend that any field surveys to the site should include a search for these species, particularly for sites that are currently undeveloped and may still contain suitable habitat.

COMMON NAME -	SCIENTIFIC NAME	NYS LISTING	HERITAGE CONSERVATION STATUS	ŝ
Vascular Plants				
American Ipecac	Èuphorbia ipecacuanhae	Endangered	Critically Imperiled in NYS	
1882-06: Kreischerville.				4506
American Strawberry-bush	Euonymus americanus	Endangered	Critically Imperiled in NYS	
1901-09-19: Kreischerville. Woo	ods.			800
Bead Pinweed	Lechea pulchella var. moniliformis	Endangered	Critically Imperiled in NYS	
1901-09-19: Kreischerville. Pine	e barrens.			2590
Dwarf Hawthorn	Crataegus uniflora	Endangered	Critically Imperiled in NYS	
1907-06-05: Kreischerville. Clos	se to shore line.			7112
Primrose-leaf Violet	Viola primulifolia	Threatened	Imperiled in NYS	
1902-05-29: Kreischerville. Clay	y pits.			4265
Soapwort Gentian	Gentiana saponaria	Endangered	Critically Imperiled in NYS	
1889-09-22: Pleasant Plains.				8849
Whorled Mountain-mint	Pycnanthemum verticillatum var. verticillatum	Endangered	Critically Imperiled in NYS	
1869-07-22: Richmond Valley.			2	5662

Page 1 of 2

New York Natural Heritage Program



Report on State-Listed Animals

# The following state-listed animals have been documented at your project site, or in its vicinity.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed or are candidates for federal listing. The list may also include significant natural communities that can serve as habitat for Endangered or Threatened animals, and/or other rare animals and rare plants found at these habitats.

For information about potential impacts of your project on these populations, how to avoid, minimize, or mitigate any impacts, and any permit considerations, contact the Wildlife Manager or the Fisheries Manager at the NYSDEC Regional Office for the region where the project is located. A listing of Regional Offices is at http://www.dec.ny.gov/about/558.html.

The following species and habitats have been documented at or near the project site, generally within 0.5 mile. Potential onsite and offsite impacts from the project may need to be addressed.

Eastern Mud Turtle	Kinosternon subrubrum	Endangered		2855
Reptiles				0000
COMMON NAME	SCIENTIFIC NAME	NY STATE LISTING	FEDERAL LISTING	

This report only includes records from the NY Natural Heritage databases. For most sites, comprehensive field surveys have not been conducted, and we cannot provide a definitive statement as to the presence or absence of all rare or state-listed species. This information should not be substituted for on-site surveys that may be required for environmental impact assessment.

If any rare plants or animals are documented during site visits, we request that information on the observations be provided to the New York Natural Heritage Program so that we may update our database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NYSDEC at http://www.dec.ny.gov/animals/7494.

Information about many of the rare plants and animals, and natural community types, in New York are available online in Natural Heritage's Conservation Guides at www.guides.nynhp.org, and from NatureServe Explorer at http://www.natureserve.org/explorer.

FINAL REPORT: NATURAL RESOURCES ASSESSMENT AT CHARLESTON, STATEN ISLAND (OCTOBER 2007-DECEMBER 2008)

Prepared for:



New York City Economic Development Corp 110 William Street New York, NY 10038

Prepared by:

# ZAKRF

#### **Environmental and Planning Consultants**

440 Park Avenue South 7th Floor New York, NY 10016 tel: 212 696-0670 fax: 212 213-3191 www.akrf.com

## **DRAFT 29 JUNE 2009**

## **Table of Contents**

Α.	EXECUTIVE SUMMARY
в.	INTRODUCTION
C.	PROJECT SITE
	Project site
	Site history4
	Study area5
D.	METHODS
Ε.	EXISTING CONDITIONS
	Floodplains9
	Wetlands9
	Tidal wetlands9
	Freshwater wetlands9
	Freshwater wetlands delineation10
	Flora
	Habitats
	Vegetation
	Rare, special concern, threatened and endangered species
	Fauna
	Reptiles and amphibians
	Birds19
	Mammals
	Insects
	Rare, special concern, threatened and endangered species20
F.	CONCLUSIONS AND RECOMMENDATIONS
	Discussion of sensitive areas (flora and fauna)21
	Additional action items23
Ì	Changes to the project site and study area, October 2007 to the present
G.	LITERATURE CITED
	1 DRAFT CHARLESTON NATURAL RESOURCES SURVEY REPORT

#### A. EXECUTIVE SUMMARY

A Natural Resources Assessment was conducted by AKRF at a City-owned project site (approximately 88 arces) in Charleston, Staten Island between October 2007 and December 2008. The primary purposes of this field investigation were to: (1) describe existing natural resources within the boundaries of the project site; (2) identify and document any sensitive species that may be present within the project site; and (3) describe the extent of connectivity between the project site and adjacent natural areas.

Findings include the following:

- FEMA data indicates that most of the project site is outside the 100-year and 500-year floodplain.
- No tidal wetlands were noted within the project site. Freshwater wetlands along, and continuous with, the Englewood Avenue corridor were delineated, including three isolated and three continuous wetland areas. Several potential freshwater wetland areas occurring outside of the Englewood Avenue corridor were noted.
- Upland forest and meadow communities were dominant within the project site. No
  habitat communities listed as rare, special concern, threatened or endangered in New York
  State were observed within the project site. One S1-ranked habitat community, a variant of
  Red Maple-Sweetgum Swamp Forest, occurred within the project site.
- Of approximately 239 plant species observed on the project site, AKRF confirmed eleven S1, S2 and S3 ranked species within the project site.
- The New York State special concern Eastern Box Turtle was observed within the project site. No other state or federally-listed reptiles or amphibians were observed within the project site, although potential habitat may exist for nesting or overwintering Eastern Mud Turtles.
- Of approximately 174 bird species observed at the project site, 10 New York State-listed species were observed. Two of these species, Cooper's Hawk (special concern), Northern Harrier (threatened) and Peregrine Falcon (endangered) were observed during periodic foraging activities within the project site, though no breeding for these three species occured. The remaining species were observed either while in-transit over the site (Common Tern, Osprey) or during brief periods of migratory or wintering seasons (Common Nighthawk, Horned Lark).
- No state or federally-listed mammals were observed on the project site. Reproduction and foraging by White-tailed Deer and Woodchuck was observed on the project site.
- One New York State-listed dragonfly, Comet Darner (S2), was observed on the project site, although habitats that may support populations state-listed species, including the Yellowsided and Bar-winged Skimmer, are present within the project site.

Sensitive areas within the project site, and recommendations on potential future effort required to assess impacts to natural resources as a result of a proposed project, are discussed below.

#### **B. INTRODUCTION**

This report summarizes a natural resources field investigation of several City-owned parcels ("project site") within the Charleston section of Staten Island, New York (Richmond County). On behalf of the NYC Economic Development Corporation (EDC), AKRF, Inc. conducted a five-season natural resources survey of the project site between October 2007 and December 2008. The project site has been proposed as a mixed residential, commercial and recreational development, although no site plan has been advanced for review as of the date of this document. The parameters of this survey were initially described in the Charleston Natural Resources Scope of Work (AKRF 2007) and the Charleston Natural Resources Survey Methodology (AKRF 2008).

The project site is located in proximity to biologically diverse habitat communities, and the presence of several state-listed plant species (including Torrey's Mountain Mint) have been previously documented within the vicinity of the project site. An in-depth examination of natural resources was required to document any sensitive flora, fauna and habitat communities existing within the project site boundary, in conjunction with future efforts to assess potential impacts to natural resources that would occur as a result of proposed site plans.

The primary purposes of this field investigation were to: (1) describe existing natural resources within the boundaries of the project site; (2) identify and document any sensitive species that may be present within the project site; and (3) describe the extent of connectivity between the project site and adjacent natural areas. This final report details the existing conditions of the project site and offers recommendations on sensitive areas present within the project site.

#### C. PROJECT SITE

#### PROJECT SITE

3

The approximately 88 acre project site (Figures 1 and 2) is bounded to the north by Englewood Avenue, to the east and south by Veterans Road West, and to the west by Arthur Kill Road. The project site includes approximately 43.9 acres of NYC Department of Parks and Recreation property (defined by a conservation area and the proposed Fairview Park), in addition to approximately 41 acres of other City-owned property. Site photographs are located in Appendix A.

For the purposes of this study, the project site included several City-owned parcels, including areas slated for conservation under any future plan. The acreages and uses presented below were proposed in a previous site plan (EDC 2007) and were used as an initial template to determine the boundaries of the project site; these uses and dimensions are subject to change pending approval of a proposed site plan design:

- NYC Department of Parks and Recreation property (i.e., the proposed 23 acre Fairview Park and a 20.9 acre conservation area);
- a 10.9 acre site, previously proposed for an NYC Department of Education school site;
- a 12.3 acre site, previously proposed for the construction of affordable senior housing by the NYC Department of Housing;
- 9.7 acres, previously proposed for the construction of a commercial garden center;

DRAFT CHARLESTON NATURAL RESOURCES SURVEY REPORT

- the proposed extension of Englewood Avenue, representing the northern boundary of the project (currently represented by a paved road and an unpaved path); and
- additional road developments to extend south from Englewood Avenue and connect with the existing Bricktown Way.

The project site includes lower elevations to the west and south and is highest at the former Balthazar Kreischer estate (see below). Site topography varies from approximately 50 to 130 feet above sea level (Figure 3).

Several previous examinations of natural resources have occurred within and adjacent to the project site, including the Bricktown Centre at Charleston Final Environmental Impact Statement (Office of the Deputy Mayor for Economic Development and Rebuilding [ODMEDR] 2002), the Bricktown Centre at Charleston Environmental Assessment (ODMEDR 2004) the Charleston Site Vegetation Sampling Report (AKRF 2003), and the Fairview Park Modified EAS (NYCDPR 2005).

#### SITE HISTORY

The project site is located within the Charleston (formerly Kreischerville) section of Staten Island. In terms of the prehistoric period, there is evidence of a Native American presence within the vicinity of the project site prior to European settlement of the project area in the 1600's. Important Paleo-Indian sites have been documented at the Port Mobil site to the north, and archaeological findings on the project site also give credence to this suggestion (ODMEDR 2002). By the 1800's, the project site was divided among several large (<50 acre) lots, and the western portion of the project site was the location of the Balthazar Kreischer estate ("Fairview", Figures 4 and 5), which was constructed in the mid-1800s and destroyed by fire in 1931. Historic aerials and maps indicate the presence of paved and unpaved roads and informal paths and some residential and agricultural structures (e.g., barns) within the project site over the past 150 years.

Between 1854 and 1927, the Kreischer Brick Works was active along the Arthur Kill shoreline to the west. Clay extraction to provide brick-making material for the Kreischer Brick Works was prevalent throughout this portion of Staten Island; it is likely that related land disturbing activities occurred within the project site, including the creation of temporary roads and paths, embankments and excavated areas (Schneider 1977, Trust For Public Land 1986, Rossi et al. undated). Additional land uses of the presently undeveloped habitats within the project site also likely included agriculture, pasture land for livestock and other subsistence-level uses.

Over the past 50 years, residential and commercial structures have been constructed along the paved, western end of Englewood Avenue in the vicinity of Arthur Kill Road, including single family dwellings, a horse stable, parking areas for construction and other vehicle staging, warehouses, commercial buildings, a firing range and other types (AKRF 2000).

Presently, much of the project site is used informally for recreation, including hiking and horseback riding associated with trails from Clay Pit Ponds Park Preserve that enter the project site from the north, and as informal sports fields. An extensive, informally maintained trail system is present throughout the project site; these areas are used primarily for horseback riding, hiking, mountain biking and perhaps infrequently by all-terrain vehicles.

Fire has, and continues, to shape the habitat communities that are present within the project site. A large fire that burned a substantial portion of the project site was documented in the mid 1960's, and evidence of occasional, smaller fires (including one in the southwestern portion of the project site in spring 2009) is also present.

In addition to informal trail clearing that has occurred within the project site, other land clearing activities have occurred within the project site within the past five years. A central, cleared area is present within the north-central portion of the project site, relating to initial site-clearing for the proposed Fairview Park in 2004 [VERIFY DATE]. Due to the discovery of sensitive flora within the project site area (including Torrey's Mountain Mint) and other factors, a Comprehensive Environmental Assessment Statement was required. A subsequent Modified EAS was prepared by NYCDPR for the Fairview Park project in February 2005, although no further development has occurred within the project site since this time [VERIFY STATEMENT].

#### **STUDY AREA**

Areas beyond the approximately 88-acre project site that were examined during the course of this study are referred to as the "study area." This included developed sites, sites under construction and natural areas.

In termed of developed or under-construction sites, the project site is located immediately north of the Bricktown Centre at Charleston commercial development (ODMEDR 2002 and 2004), which was completed in 2006 [VERIFY DATE], and east of the Tides at Charleston residential development (Rampulla Associates Architects 2005). Presently, an approximately 10 acre parcel along the western boundary of the project site is currently being development as the New York City Transit's Charleston Bus Annex (New York City Transit 2007).

Several distinctive natural areas are present in the vicinity of the project site, some of which form a vegetated corridor linking to the project site (Figure 6). The study area included the following locations, which were visited at least once over the course of the survey period:

- a section of Clay Pit Ponds State Park Preserve and privately owned wooded parcels south of Sharrotts Road and along the northern boundary of the project site;
- residential areas to the west and northwest of the project site along the existing paved portion of Englewood Avenue and Arthur Kill Road;
- a preservation area for Torrey's Mountain Mint (*Pycnanthemum torrei*) south of Bricktown Centre at Charleston;
- a wooded parcel southeast of Bricktown Centre owned by NYCDPR and private entities;
- a NYC Transit parcel west of the project site for the Charleston Bus Annex; and
- the Arthur Kill shoreline west of the project site.

The above areas were not part of the repeated sampling effort used within the project site, though observations were made to generally describe existing conditions at the sites above where access was permitted.

#### D. METHODS

Repeated sampling for flora and fauna was conducted within thirty 1000-square-foot plots (Figure 7) chosen at random within the project site boundary. Time-restricted searches for

flora and fauna were conducted throughout the remainder of the project site. Incidental observations occurring while in transit through the project site were also recorded.

In order to select sampling plots, a grid system (NAD 1983 State Plane Coordinate System, New York Long Island FIPS 3104 Feet) was applied to the entire project site, dividing it into 1000 square-foot plots. Thirty (30) plots were chosen at random in ArcMap using Hawth's Analysis Tools (http://www.spatialecology.com/htools/overview.php). A stratified-random sampling method (ASTM 2008) was used to select plots with a minimum distance between plots of 100 feet. In February/March 2008, the thirty plot centerpoints were located in the field using a Trimble GeoXT unit and marked at the center and north, south, east and west corners with orange flag stakes clearly marked with each plot's alphanumeric code. A handheld GPS unit (Garmin GPSmap 60CSx) was used to relocate plots on subsequent surveys, and to mark the locations of flora, fauna and depressional wetlands within the project site. The thirty sampling plots were used for all primary vegetation sampling and wildlife surveys. Sampling efforts were focused within the randomly selected plots, and time-restricted searches and incidental observations were also conducted within the entire project site.

Data was recorded on standard data sheets and field notebooks for vegetation surveys, wetlands delineation, bird point counts, wildlife cover and track boards, time-restricted searches and incidental observations. Site conditions (including temperature, precipitation, cloud cover, and wind speed and direction) were recorded at the beginning and end of each survey date. Photographic records of all sensitive species encountered, when photographs were possible, were maintained.

AKRF's survey team consisted of natural resources staff experienced in the identification of flora and fauna expected to occur within the study area, and in wetlands delineation following the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (USACE 1987). Two person teams conducted the majority of the field observations (with the exception of bird surveys, which were generally conducted by one experienced observer). Seasonal habitat surveys required two teams to cover all sampling plots. NYCDPR's Natural Resources Group (NRG) staff participated in wetlands delineation activity, insect surveys and timerestricted searches.

Preliminary site visits were conducted by a two-person team on 17, 18 and 25 October 2007. These site visits were used to inform the sampling protocol for the full survey, which was conducted on a total of 27 days between February and December 2008, as follows.

#### 1. Habitat surveys

Habitat surveys included vegetation surveys at 30 sampling plots, wetlands verification and delineation, and an exhaustive search for rare, special concern, threatened and endangered flora and habitat communities. Four AKRF natural resources staff, working in teams of two, conducted these three to four day surveys in early spring (3-4 March 2008), early summer (18 June – 2 July 2008) and early fall (17 -24 September 2008) to detect seasonal changes in vegetation.

a. Vegetation/habitat community sampling

Within the 30 sampling plots, vegetation was sampled following methods similar to those described in the Charleston Site Vegetation Sampling report (AKRF 2003). Within

each plot, species from each of four vegetative strata were recorded: canopy (>20 feet), subcanopy (8-20 feet), shrub/vine (woody species from 2-8 feet), and herbaceous/ground cover (all non-woody vegetation). Subsampling within the larger plots allowed for a reasonable description of forest and herbaceous cover (Peet et al. 1998). Three randomly selected 100 square-foot plots within each of the 30 sampling plots were sampled for canopy, subcanopy, and shrub/vine species. An additional six randomly selected 9 square-foot (~1 meter) subplots were sampled for herbaceous species; plots were selected by casting out plot markers on each visit if the site is sufficiently open, or randomly selecting plot locations when ground cover encountered (i.e., greenbrier) was prohibitively dense. From these efforts, habitat community structure could be derived; habitats present on the site follow nomenclature from Edinger et al. (2002 Draft).

b. Rare, Special Concern, Threatened and Endangered Flora

Numerous sensitive plant species (including *Pycnanthemum torrei, Eleocharis obtusa* var. *ovata, Eupatorium hyssopifolium* var. *laciniatum*, and several others) were known to occur at or near the project site from previous efforts. During plot sampling work, during time-restricted searches outside of plots, and during transit between plots along transects, a concerted effort was be made to identify all state and federally listed species. Prior to field efforts, survey teams examined diagnostic features of sensitive plant species noted by the NY Natural Heritage Program as potentially existing on either the project site or Clay Pit Ponds State Park Preserve.

#### 2. Wetlands delineation

AKRF natural resources staff members experienced in wetlands ecology identified the location, type, and approximate dimensions of wetlands previously mapped by the National Wetlands Inventory (NWI) and NYSDEC, and noted within Bricktown Centre at Charleston FEIS (2002). In addition, the wetlands along Englewood Avenue were delineated (18 August to 2 October 2008) and clearly flagged in accordance with the US Army Corps of Engineers (USACE) 1987 Delineation Manual. NYCDPR-NRG staff accompanied AKRF field survey teams during two of these surveys in August and October 2008. A licensed surveyor (Control Point Associates, Inc.) was retained by the EDC for surveying and final mapping of the flagged wetland delineations along the proposed Englewood Avenue (Control Point Associates, Inc. 2008).

#### 3. Reptile and Amphibian Surveys

In order to describe the diversity of reptile and amphibian activity that may occur on the site, several methods were employed.

#### a. Visual Encounter Survey

Time-constrained searches were conducted within 15 of 30 sampling plots to identify the presence of reptile and amphibian species. We conducted time-constrained searching within each of the selected plots on two non-consecutive spring (22 April and 20 May 2008) and two non-consecutive summer (11 and 23 June 2008) days occurring within 1-3 days of significant rain event (> 0.1 inch). These surveys involved turning cover objects (i.e., rocks, logs, debris) and visually searching for animals. Any animals revealed by these methods were identified to species and photographed when possible. Turtle nest sites were also documented. Details of the above methods are discussed in 'Multiple Species Inventory and Monitoring Protocol Technical Guide' (Manley et al. 2005).

#### b. Nocturnal Auditory Amphibian Counts

Following the evening visual encounter surveys, nocturnal surveys for vocalizing amphibians (see North American Amphibian Monitoring Program protocols for details) were conducted on two non-consecutive spring and summer nights (22 April, 20 May, 10 June, 23 June and 2 July 2008) within 1-3 days of significant rain event (> 0.1 inch).

#### c. Aquatic turtle sampling

As described in the EEA, Inc. report 'Bricktown Retail Centre Herpetological Survey for Eastern Mud Turtle (*Kinosternon subrubum*) And Other Incidental Species' (2001), two wetlands within the project site were suggested to support eastern mud turtles or other aquatic turtle species (a small freshwater pond in the southwest portion of the project site and a palustrine forested wetland along the proposed Englewood Avenue). Initial site surveys conducted in October and November 2007 suggested the presence of suitable hydrology in support of these species. However, standing water was not present at suitable levels within these wetland areas after early March, and thus no aquatic turtle traps were used.

#### d. Cover boards

In ten randomly selected plots (see Figure 7 for plots), three cover boards were randomly placed within each 1000 square foot plot boundary and examined each time the plot was visited for the presence of reptiles and amphibians.

#### 4. Bird surveys

Point counts are a standardized method used to sample bird populations in order to estimate densities and trends in local areas (Ralph et al. 1995). Point counts on the project site were conducted from the center point of each of the 30 randomly selected sampling plots. These points were monitored over 12 sessions (4 and 18 March, 22 April, 20 May, 10 and 23 June, 2, 16 and 31 July, 21 and 28 August, 18 September, 22 October, 10 November and 29 December 2008). One experienced observer conducted all point counts.

Surveys started 30 minutes before local sunrise and were completed within 4-5 hours; all thirty plots could be sampled during this time. At each point, the observers waited for five minutes, and recorded species, distance from the observer, behavior, and any breeding evidence for all birds seen or heard within a 100 foot radius. Counts were conducted on clear, calm days with little to no precipitation.

#### 5. Mammal Surveys

Mammal surveys were conducted concurrently with habitat surveys and wetlands delineation activity (12 total days from March to October 2008). The primary method for mammal detection was visual observation of individuals, tracks, or scat. During habitat surveys, AKRF field teams conducted visual searches of mammals at each sampling plot.

In ten randomly selected plots (see Figure 7), three cover boards and one baited track board (see Carey and Witt (1991) and Raphael et al. (1986) for design) were randomly placed within the 1000-square-foot plot boundary and examined each time the plot is visited.

During night auditory surveys for amphibians (described above), any nocturnal mammal observations were noted, and any incidental mammal observations while in transit within the project site were noted.

#### 6. Insect Surveys

Insect surveys were conducted concurrently with habitat surveys (12 total days from March to October 2008). These surveys focused primarily on visual observation of rare, special concern, threatened and endangered species, particularly those taxa noted by the NYNHP (i.e., odonates, lepidopterans, etc.). During habitat surveys, AKRF field teams conducted visual searches of each sampling plot and noted the occurrence of insect species when encountered. Additionally, all insect taxa noted within sampling plots or along transects were identified to the lowest possible taxonomic level.

7. Rare, Special Concern, Threatened and Endangered Fauna

Numerous sensitive wildlife species (Eastern Mud Turtle, Eastern Box Turtle, Yellow-sided Skimmer, Northern Harrier) were known to occur at or near the project site from previous efforts. During plot sampling work, during time-restricted searches outside of plots, and during transit between plots along transects, a concerted effort was be made to identify all state and federally listed species.

#### E. EXISTING CONDITIONS

#### **FLOODPLAINS**

Figure 8 denotes the 100-year and 500-year floodplains in the vicinity of the project site. FEMA data indicates that most of the project site is outside the 100-year and 500-year floodplain. On the southeastern portion of the project site, the 100-year floodplain appears to reach a substantial portion of the Mill Creek watershed as had formerly occurred within the project site. The construction of Bricktown Centre at Charleston has substantially re-engineered this watershed within the project site boundary, and a system of culverts and retaining walls would likely prevent any 100-year or 500-year storm from flooding any built portion of the project site.

#### WETLANDS

9

#### TIDAL WETLANDS

Figures 9 and 10 indicate tidal wetlands mapped by the US Fish and Wildlife Services National Wetlands Inventory (NWI) and the NYSDEC, respectively. As indicated, there are no tidal wetlands on the project site. Tidal waters of the Arthur Kill are located to the west of the project site.

#### FRESHWATER WETLANDS

Two NWI-mapped freshwater wetlands are indicated within the project site in Figure 9; a saturated, palustrine forested wetland with broad-leaved deciduous vegetation (PFO1B) in the

western portion of the project site, and a permanently flooded palustrine wetland with and unconsolidated bottom (PUBH). Wetlands mapped by the NYSDEC on-site indicate the presence of two wetland systems (AR-11 and AR-27) as existing within the eastern portion of the project site (see Appendix B, Figure B-2). While gaps are shown to exist between these two systems, and recent development has further altered hydrologic flow between wetlands in the Clay Pit Ponds State Park Preserve and the Mill Creek watershed, there appears to be a remnant hydrologic connection within the project site that periodically links wetlands to the north (Clay Pits) and to the south (Mill Creek). This is elaborated upon in the following section, and in the wetlands delineation report provided in Appendix B.

#### FRESHWATER WETLANDS DELINEATION

AKRF's wetland inspection targeted the Englewood Avenue corridor, located along the northern boundary of the project site. The wetland inspection extended along Englewood Avenue southwards into the project site a distance of 80 feet. Wetland areas identified within this zone (Wetlands A-D, F and G; Figure 11) were identified and flagged in accordance with the US Army Corps of Engineers' (USACE) Wetland Delineation Methodology (1987). The flagging of the identified wetlands was extended southwards into the project site until positive wetland indicators were no longer present. This resulted in the flagging of several wetland areas beyond the footprint of Englewood Avenue - most notably, the wetland system comprised of Wetlands "C", "D", and "F". This wetland system extends southwards well into the subject parcel following the path of surface drainage tributary to Mill Creek. The other three wetland areas, Wetlands "A", "B", and "G", are located in closer proximity to the mapped portion of Englewood Avenue. The full wetlands report is located in Appendix B.

The wetland delineation effort performed by AKRF flagged only those wetlands contiguous with Englewood Avenue. As part of AKRF's ongoing ecological work onsite, numerous additional wetland areas and potential wetland areas were identified outside of the Englewood Avenue investigation area. These additional wetland areas were not flagged, but are documented in Figure 12. These include one wetland under federal jurisdiction (the permanently flooded, palustrine wetland located on the southwestern portion of the site) and several wet depressions that had suitable hydrology, vegetation (woolgrass, soft rush, etc.) and/or wildlife activity (amphibian breeding activity) during the course of this study.

#### **FLORA**

#### HABITATS

Figure 13 indicates habitat communities identified within the project site, following terminology found in Edinger et al. (2002 Draft) and relating to a previous habitat community survey conducted for the Fairview Park Modified Environmental Assessment Statement (February 2005). They are as follows:

#### Native Uplands:

10

#### Coastal Oak-Hickory Variant I

This habitat community was prevalent on the eastern edge of the project site within the NYCDPR conservation area. It consists primarily of various oak species (White, Pin, Black, Red and Scarlet) and Mockernut and Pignut hickories from 5-25 inches in diameter at breast height (dbh). Subcanopy trees include Sassafrass, Gray Birch, Black Gum and some sparse Black-jack Oak saplings. Understory species include Highbush Blueberry and Canada Mayflower. The easternmost edge has a strong American Beech component, with Hay-scented Fern and Round-leaved Pyrola common in the understory. Common Greenbrier has sparsely colonized this habitat community, far less than was apparent in the Fragmented Coastal Oak Variants discussed below. White-tailed Deer activity was prevalent in this area, as was the presence of some forest-breeding birds (Eastern Wood Pewee, Wood Thrush). Cooper's and Red-tailed Hawks were noted foraging within this area on several occasions.

#### Coastal Oak-Hickory Variant II

This habitat was similar in most respects to Variant I, although is now separated from the above habitat area by the eastern entrance to Bricktown Centre at Charleston. As a result, several invasive species (including Japanese Honeysuckle and Asiatic Bittersweet) have colonized the eastern and northern edges of this parcel.

#### Fragmented Coastal Oak Variant (>20 years)

This coastal oak forest variant appears to have a more mature component of oaks (White, Pin, Red, Black) in comparison to the other coastal oak communities within the project site. It appears to be a somewhat diverse secondary growth community that may have developed following a 1963 wildfire that removed vegetation from most of the area. Canopy species include mature oaks (White, Pin, Red, Black) and aspens (Big-toothed, Quaking), with Sassafrass, Black Cherry, Black Locust, Eastern Cottonwood and Mulberry in the subcanopy. The entire area is substantially colonized by Common Greenbrier in the understory, from 20-80% through most of the community. Wildlife observed within this community included edge (Eastern Towhee, Northern Cardinal, common Yellowthroat, Indigo Bunting) and forestbreeding bird species (Black-capped Chickadee, Tufted Titmouse, Northern Flicker), Whitetailed Deer, Woodchuck, Eastern Gray Squirrel, and numerous other species.

Subsets of this habitat type were also observed within the project site – these included:

#### Fragmented Coastal Oak Variant I (<20 years)

This habitat community was most prevalent within the project site, and was similar in most respects to the primary coastal oak variant community, though with an overall younger composition of oak species. Common Greenbrier was a dominant component of the understory within much of this community type, though only occasionally as dense as observed within Variant II. Several "clay barren" areas with a sparse mature oak overstory were observed within this habitat type, and were dominated by ericaceous species, forbs grasses in the understory (various blueberry and goldenrod species, Broom Sedge), a substantial coverage of mosses (including Reindeer Moss) and aspen saplings and young trees. These may represent areas that have been substantially burned during fires in previous years. This habitat was traversed by a system of periodically maintained, informal trails between five and ten feet wide; there appears to be substantial traffic along these paths, mostly as a result of their use as informal horse trails.

#### Fragmented Coastal Oak Variant II (<20 years)

11

This habitat was similar in description to the primary coastal oak variant, but possessed an overall younger composition of oaks, and had 60-100% coverage with Common Greenbrier within the herbaceous to subcanopy layers. Minimal growth of other herbaceous species was found within this habitat type. The site was fragmented by a Successional Old Field drainage swale/slope formerly used as a golf driving range. Additionally development of the NYCT Charleston Bus Annex had occurred along the northern border of this community.

#### Fragmented Coastal Oak Variant III (<10 years)

This habitat was markedly similar to Variant II in terms of species composition and size, although with substantially more Gray Birch (1-5 inches dbh) in the canopy and subcanopy and Common Greenbrier dominant in the understory. This habitat type was located adjacent to Successional Old Field IV, suggesting that previous construction activity may have terminated here. Wildlife observed included principally edge species (Eastern Towhee, Gray Catbird, Northern Cardinal); one Red-eyed Vireo nest was located within this habitat type. Spring Peepers were actively calling both within and north of this habitat type, suggesting that some seasonal wet depressions may be located within the area.

#### Red Maple Sweetgum Swamp Forest Variant

A drainage swale (Wetland C) with mature Red Maples and Sweetgum (7-20 inches dbh) was observed within the western portion of the NYCDPR conservation area, leading southward from freshwater wetlands (including Sharrott's Pond) to a large culvert and retaining wall of the Bricktown Centre at Charleston development. American Holly, Sassafrass, Black Gum and Pin Oak were also present in the understory, and Arrow-wood, Common Elderberry and numerous herbaceous species were also present. Common Greenbrier coverage within this swale was relatively sparse, although the eastern, western and southern edges were thickly colonized by this species. The northern edge of this swale is marked by the unpaved Englewood Avenue Path; a similar swamp forest and seasonally flooded freshwater wetland was found within NYSDEC property on the northern side of the path. Wildlife species included forest-breeding birds (Downy Woodpecker, Great-crested Flycatcher, American Crow, Blue-Gray Gnatcatcher, Tufted Titmouse), White-tailed Deer, Woodchuck, Spring Peeper and other species.

#### Successional Old Field I

This is the first of several old field areas located in the central part of the project site. While this field has been kept clear for decades for informal recreation (a baseball field, horse riding), similar herbaceous, shrub and young tree species are presently located in all of the central old fields. These sites were cleared in 2005 for the early stages of the Fairview Park development. The majority of plants in this area are grasses and herbaceous species; this part of the central field appears to be maintained informally for horse riding (with various jumps present), and horse grazing activity is also substantial. Characteristic species include common herbaceous and grass species, including Chicory, Pilewort, Broomsedge, Crabgrass spp., Queen Anne's Lace, with pioneering Gray Birch and Black Cherry saplings. A substantial amount of Late-flowering Boneset and small aggregations of Orangegrass was present. This was a common location for wildlife to forage, including Red and Big Brown Bats; Barn, Tree and Northern Rough-winged Swallows; and a substantial number of sparrows during the fall and winter months were present feeding in the field (American Tree Sparrow, Savannah Sparrow, White-throated and White-crowned Sparrows and one Lincoln's Sparrow). Indigo Buntings and Field Sparrows

nested within this portion of the site (~2-3 pairs each). Wetlands A and B were noted in this area within 80 feet south of Englewood Avenue.

#### Successional Old Field II

This comprises the majority of the successional old field habitat within the central clearing area. A substantial population of Late-flowering Boneset exists in the southern portion of this clearing, along with numerous specimens of Hyssop-leaved Boneset, Fringed Boneset, Rough Boneset and Round-leaf Boneset. Broom Sedge, Switchgrass spp. and numerous Solidago species were present in the herb layer, with pioneering shrub and tree species such as Bigtoothed Aspen, Gray Birch, Groundsel Bush and blackberry species. This was also one of the few locations where Tall Reed was observed, growing out of mounds of decayed brush and woody material that appear to be remnants from the clearing of Fairview Park. Indigo Bunting, American Woodcock, Killdeer and other species found in open habitats bred in this area. Wild Turkey may have attempted to nest, as a female flushed from the southeastern corner several times in late April and early May. During migration, numerous areas of standing water were present throughout this site (suggesting that wetlands delineation activity should occur here); shorebirds such as Wilson's Snipe, Least Sandpiper and Solitary Sandpiper were observed along the edges of standing water areas. Under coverboards, White-footed Mouse and Short-tailed Shrew were present, with the former establishing nests under two separate coverboards in mid to late spring 2008. DeKay's Snake and several Spring Peepers were observed in this area, and an Eastern Box Turtle (only one of two individuals observed during this study) was observed dispersing north along the path that formed the eastern edge of the clearing in early July 2008.

#### Successional Old Field III

This site was also heavily manipulated during construction of Bricktown Centre – a 2005 aerial image shows exposed sand covering the majority of this former golf driving range. Several groundhog burrows observed in the slope confirmed that fine, white sands of unknown origin underlie this old field. The site is similar in plant community to Old Field I; with a mix of common herbaceous and grass species and some listed species (including Late-Flowering Boneset and at least one specimen of Torrey's Mountain-mint). White-tailed Deer frequently used the area in fall and winter 2007/2008; up two 18 deer were observed foraging and bedding on a single occasion, including yearlings and adult males and females. In June 2008, two young fawns (1-2 weeks old) were observed bedded down along the top of the berm, suggesting that local reproduction by deer populations is occurring. In October 2007, a Northern Harrier (adult female) was observed foraging over this large open area, into the adjacent Charleston Bus Annex site and eastward into the central clearing within the project site. The woodland edge of the old field berm was also heavily used by migrating warblers in the spring (including Kentucky, Mourning and Hooded Warblers and Yellow-breasted Chat) and fall (including Tennessee, Nashville and Blackburnian Warblers).

#### Successional Old Field IV

This area was cleared of all vegetation during the construction of Bricktown Center, and is defined on its southern and eastern borders by a chain-link fence, with Fragmented Coastal Oak Variant III to the north. While it is likely that many of the grasses present were planted for erosion control (principally Fescue spp.), there is a surprising diversity of sensitive herbaceous species present, including Hyssop-leaved Boneset, Fringed Boneset, Late-flowering Boneset

and one specimen of Serrate Round-leaf Boneset. This was also one of only two sites where Torrey's Mountain-mint was located during the course of this study – approximately 22 stems, many of them flowering, were observed along the berm in spring and summer 2008.

#### Non-native Uplands:

#### Exotic Forested Upland I

These two parcels represent the former grounds of the Balthazar Kreischer Estate, and likely represent naturalized ornamental planting from the estate. The sites are composed of mature Tree-of-Heaven, Royal Paulownia, American Basswood and other species with Chinese Wisteria threaded through the canopy and sub-canopy, some ornamental shrubs (Eastern Sweetshrub, Mock Orange, Deutzia) and an understory of Japanese Knotweed, Common Greenbrier, Japanese Honeysuckle and some native vines and herbaceous species. The two sites are separated by a wide, well maintained path with a horse jump. The ruins of the former estate and various outbuildings, which were razed by fire in 1931, are present throughout these areas. The bricks in these sites were some of the few locations on the project site occupied by Redbacked Salamanders.

#### Exotic Forested Upland II

Described as "brushy cleared land" in NYCDPR (2005), this area has been colonized by numerous exotic or invasive species (Multiflora Rose, Callery Pear, Chinese Wisteria, Japanese Knotweed) in the intervening years, as well as native sub-canopy, herbaceous and early successional species (Gray Birch, Black Cherry, various Solidago species). It appears that certain invasives, particularly Japanese Knotweed and Multiflora Rose, are beginning to colonize the adjacent Coastal Oak-Hickory Variant woodlands to the south and west; interestingly, there was a substantial amount of browsing activity on young Japanese Knotweed shoots in early summer by White-tailed Deer.

#### **Terrestrial Cultural:**

#### Paved Road

This represents the paved portion of Englewood Avenue extending eastward from Arthur Kill Road, terminating in a substantial barrier gate. Single family homes, a horse stable and several automobile and construction-related businesses, some with mowed lawns and ornamental vegetation, is present along the northern edge of Englewood Avenue. Along the south side, a mature hardwood forest (see Fragmented Coastal Oak Variant above) dominated by Red and Black Oak, Sweetgum and other species. Common Greenbrier forms a thick mat in the understory, with 100% coverage in the understory in some areas. Several businesses and a south-directed paved road are located along the south side of Englewood near Arthur Kill Road, with little ornamental vegetation present.

#### **Unpaved Path I**

This small area is a gravel pad that was likely placed as a staging area for vehicles working on the Fairview Park project. It is a small (200 square foot) unvegetated area immediately north and west of Wetland A.

#### Unpaved Path II

This represents the unbuilt portion of Englewood Avenue, and varies between sandy and loamy soil substrates as it extends eastward from the paved portion of Englewood. As it is fairly narrow along most of its course, and passes along old successional field and hardwood forests, and terminates at a road barrier at Veterans Road West and the parking lot for the West Shore Motel. Several state-listed species (Tall Lespedeza (*L. stuevei*), River Birch) were observed along the edges of the path, as well as numerous native and invasive herbaceous species. Reptiles and amphibians, including painted turtle and red-eared slider, were observed laying eggs within the roadway in early July 2008; several of these nests were preyed upon by raccoons and possibly feral cats within days of egg-laying. This site was also used by reptiles and amphibians in transit heading both north (Eastern Box Turtle) and south (Painted Turtle, Spring Peeper), suggesting that the unbuilt roadway functions as a corridor between Clay Pit Ponds State Park Preserve and the NYCDPR conservation area. This is discussed further in Section E.

#### Roadcut Slope

East of the Home Depot within Bricktown Centre, which was constructed on a large berm, a steep sloping area descends eastward towards a remnant Coastal Oak-Hickory Variant and the area delineated as Wetland F. It consists of a steep slope, along a paved parking lot and access road, which was created by digging during road construction.

#### Terrestrial Cultural/Stormwater Retention Pond

This stormwater retention pond was constructed to accept stormwater from the Bricktown Centre parking lots and streets. The pond itself is lined with riprap along the shore. It is present within the NYCDPR conservation area, and has been planted and/or colonized around the edges with mainly native species (Pasture Rose, Red Maple, Sweetgum, Canadian Goldenrod, Virginia Creeper) and is being used by a variety of wildlife (e.g., Green Heron and Mallard nested off of the northern shore.

#### <u>Urban Vacant Lot</u>

This site, on the southwestern corner of the study area, is predominantly used as a staging area for construction vehicles for development projects occurring in the vicinity of the project site. It has been colonized by invasive herbaceous species (Mugwort, Japanese Knotweed) and other species. The site appears to be heavily impacted by human use, and few woody species are present.

#### VEGETATION

As noted in Table 1, approximately 239 plant species were observed both within plots during detailed vegetation surveys (188 species, 78% of the total observed) and outside of plots during time-restricted searches and incidental observations (51 species, 22% of the total observed). These included 5 fern species, 44 graminoids, 97 herb/forb species, 2 saprophytes, 29 shrub, 51 tree and 10 vine species.

In the canopy, tree species in mature forested uplands varied from principally oak species (White, Red, Black; 10-29 inches in diameter at breast height[dbh]) in the southern and western portion of the Fragmented Coastal Oak Variant habitats, where the most common understory species was Common Greenbrier (14 of 18 plots had 60-100% greenbrier in the herb, shrub and subcanopy layers). Various species of blueberries were also found within these

habitats; in the south central portion of this habitat, several unique "clay barren" habitats were found, with substantial coverage of mosses and lichens (including Reindeer Moss), blueberries and other ericaceous species.

Hickory (Mockernut, Pignut; 3-24 inches dbh) and American Beech (1-29 inches dbh) were largely restricted to the eastern, Coastal Oak-Hickory Variant habitats, where a vastly more open understory community was present, comprised of shrubs (Arrow-wood), ferns (Hay-scented), and other shade-tolerant herbaceous and ground cover (Round-leaf Pyrola) species. In both habitats, small numbers of American Chestnut, American Elm and hybrid oaks (Rudkin's Oak) were observed; hybrid oaks are highly likely to occur throughout the forested uplands of the project site (Mike Feller, NYCDPR-NRG, pers. comm.). After a thorough search, however, no habitats meeting the post oak-blackjack oak sand barren criteria were located; only a few Black-jack Oak adults were located, as discussed below.

On the northwestern portion of the site, a remnant population of naturalized ornamental trees (American Basswood, Royal Paulownia), old vines (Chinese Wisteria) with little native understory was present.

As discussed above, the old successional field areas were principally colonized by grasses (*Agrostis* spp., *Panicum* spp.), herbs such as *Solidago* and *Eupatorium* spp., and areas of early successional (mostly native) shrubs and trees (Gray Birch, Sweetgum, Black Cherry, Big-toothed and Quaking Aspen).

Human and domesticated animal-dominated habitats varied in their species composition; in general, however, there were relatively few invasive exotic species colonizing these habitats. In some areas of New York City, cleared fields might be colonized with mainly invasive herbs (Mugwort), vines (Asiatic Bittersweet) and trees (Callery Pear). Site history, soil type and the existing seed bank all have major roles in site colonization following disturbances (either by fire or short-term human activities such as clearing, as exhibited within the central successional old field).

#### RARE, SPECIAL CONCERN, THREATENED AND ENDANGERED SPECIES

No federally listed flora was observed during this study.

For state or federally listed flora, approximately 52 species have been previously identified in the vicinity of the project site, including Clay Pit Ponds State Park Preserve (Table 6). AKRF confirmed eleven S1, S2 and S3 ranked species within the project site, including the Englewood Avenue corridor. Species of primary concern that were noted during the proposed Fairview Park project (e.g., Torrey's Mountain-mint, Fringed Boneset, etc.) were observed within the project site.

In terms of NY state-listed significant plant communities, both the S1-ranked Post Oak-Blackjack Oak Barrens and the S1-ranked Red Maple-Sweetgum Swamp are known from the adjacent Clay Pit Ponds State Park Preserve area. As noted earlier, no Post Oak-Blackjack Oak Barrens were observed within the project site, although individual Blackjack Oaks were observed in several areas of the project site, and a small stand of these oaks were found in the southern-central portion of the project site. A Red Maple-Sweetgum Swamp Forest variant habitat was present in a narrow corridor within the central portion of the project site. The following flora listed as rare, special concern, threatened or endangered in New York State was observed on the project site:

American Strawberry-bush *Euonymys americana*. Specimens were located within the Coastal Oak-Hickory Variant habitat only, within two sampling plots.

Torrey's Mountain-mint *Pycnanthemum torrei*. Approximately 23 stems were found in old successional field habitats, including one sampling plot, along the southern and western border of the project site; these areas are closest to the existing Torrey's Mountain-mint conservation area (on Veterans Road at Tyrellan Avenue).

Fringed Boneset *Eupatorium hyssopifolium var. laciniatum*. Roughly 20 specimens were identified within three plots in the southern and central portion of the project site. Another 20-30 specimens were observed in the central successional old field.

Serrate Round-leaf Boneset *Eupatorium rotundifolium var. ovatum.* One specimen was located along the south-central portion of the project site adjacent to Bricktown Centre at Charleston. Other individuals may exist in open areas within the project site.

Round-leaf Boneset *Eupatorium rotundifolium var. rotundifolium*. Three examples were observed outside of plots within the western and central portion of the project site.

Late-flowering Boneset *Eupatorium serotinum*. This species was common in every part of the site not marked by human activity or

Tall Lespedeza *Lespedeza stuevei*. One plant was observed along the eastern end of the unbuilt portion of Englewood Avenue.

The following species were noted in NYNHP agency contact letters for previous examinations within the project area. These include:

Black-jack Oak *Quercus marilandica*. Mature specimens occurred in two plots, and saplings in three additional plots, all within the Fragmented Coastal Oak Variant habitats. No sign of pine barren communities populated by Black-jack and Post oaks were present within the project site.

Rudkin's Oak *Quercus rudkinii* (*phellos x marilandica*). Noted at two plots within the southeastern portion of the site, within the Coastal Oak-Hickory Variant habitat. Special attention should be paid to the study of potentially rare or unusual hybrid oaks within this project site, both within the conservation area and less accessible (i.e., greenbrier-dominated) coastal oak habitats.

American Chestnut *Castanea dentata*. While several specimens were located on three southeastern plots, *no* flowering specimens were present within the project site, as had been previously observed at the Bricktown Centre at Charleston site (Harrington and Schwanof 2004). The observed new growth southeast of plot K-36 appears to be in the same location as a young flowering individual present on the site in 2004. This individual was removed during construction of the roadway entering Bricktown Centre from the east. This new chestnut growth and other individuals observed (in plots D-35 and O-36) are located within the City's designated conservation area, which is not slated for future development.

Shortleaf Pine *Pinus echinata*. One individual was located near the eastern entrance to Bricktown Centre at Charleston. This specimen appears to have been planted. NYCDPR-NRG noted that this individual was moved prior to construction of Bricktown Centre into the City's designated conservation area, which is not slated for further development.

Virginia Pine *Pinus virginiana*. One mature specimen was located east of the Red Maple-Sweetgum Swamp Variant forest. It was substantially covered with Common Greenbrier, and will likely be permanently damaged if intervening measures are not taken.

Hyssop-leaved Boneset *Eupatorium hyssopifolium var. hyssopifolium*. This species was located within four sampling plots, and in both forested upland and successional old field areas throughout the project site.

American Elm *Ulmus americana*. One specimen showing signs of disease was located on the western portion of the project site near Arthur Kill Road.

Orangegrass *Hypericum gentianoides*. Several populations were observed along paths within the central old field and in the "clay barren" areas within the southern portion of the project site.

Two native fern species present on the site, Cinnamon Fern *Osmunda cinnamomea* and New York Fern *Thelypteris noveboracensis*, are also listed as protected by NYS. They were present within two plots, but were otherwise rarely observed within the project site.

Regarding the above species, further discussed is provided below in Section E "Conclusions and Recommendations." As the precise location of listed species is sensitive information, a map of generally sensitive areas within the project site is presented in this report, focusing on areas where AKRF observed sensitive flora and fauna.

#### FAUNA

18

#### **REPTILES AND AMPHIBIANS**

Figure 14 denotes the date and location of all reptile and amphibian sightings on the project site. Fifteen (15) species of reptiles and amphibians were observed within the project site from Mar-Dec 2008 (Table 2). All individuals were observed during time-restricted searches and incidental observations in upland and wetland habitats; no individuals were located under cover boards. Aquatic trapping effort was proposed as a sampling method for turtles in the Methodology (15 Feb 2008), although this method was not used during this study. The only open water area suitable for such traps (i.e., the pond on the southwestern portion of the site adjacent to plot K-12) was too shallow by early spring for this method to be effective.

Two salamander species (Red-backed Salamander and Northern Two-lined Salamander) were observed within the project site. Red-backed Salamanders were principally observed from May-Oct 2008 under bricks in surrounding ruins of the Balthazar Kreischer's 'Fairview' estate (located on the western edge of the project site). One Northern Two-lined Salamander was observed under wood debris along the shoreline of a pond in the south-western portion of the site.

Of the five frog species observed on the site, Spring Peeper was the most commonly encountered. It was present in wet areas throughout the entire site during spring, and was most often detected by vocalization. Other species included American and Fowler's toads, American Bullfrog and Northern Green Frog.

Four turtle species were observed on the project site, including Snapping Turtle, Eastern Box Turtle, Red-eared Slider and Painted Turtle. Individuals were observed during movement and egg laying. Nesting activity was confirmed for each of the above species; egg laying was most commonly observed along exposed soil trails that are located throughout the site, although one painted turtle was observed constructing a nest within the open area proposed as Fairview Park.

Of the four species of snakes observed on the site, Eastern Gartersnake was the most commonly encountered. DeKay's Brownsnake, Eastern Racer and Milksnake were encountered on one occasion each. No hibernacula or breeding activities were observed within the project site.

Several NY state special concern, threatened and endangered reptiles and amphibian species are known from the vicinity of the project site, including Eastern Mud Turtle (endangered) and Fence Lizard (threatened), Spotted Turtle and Wood Turtle. Eastern Box Turtle (special concern) was observed within the project site (2 occasions) – one moving south from Clay Pit Ponds State Park Preserve into the Fairview Park clearing, the other moving north toward Clay Pits from the central old field area, suggesting some movement to and from the project site. Although no Eastern Mud Turtles were observed within the project site, areas within the conservation area and successional old fields appear to offer suitable foraging and hibernation habitat for this species.

#### BIRDS

Over the study period, 174 bird species were noted within the project site during point counts and through incidental observations. Of these, 53 species were probable or confirmed breeders, and an additional 12 species were observed infrequently during the breeding season only (Table 3).

In general, the majority of breeding birds observed on the project site were consistent with those inhabiting forested, edge and open habitats in the NYC area. Notable exceptions included Indigo Bunting (a minimum of four nests within the Fairview Park clearing area), Redeyed Vireo (two confirmed nests in woodland areas) and Field Sparrow (three nests within the Fairview Park clearing area).

No federally listed threatened or endangered species or candidate species were noted within the site. Several NYS listed species were observed within the project site, although no breeding activity was noted. For the following species, AKRF observed foraging activity within and/or flights over the project site during breeding, migratory or winter periods: Peregrine Falcon (endangered), Northern Harrier (threatened), Common Tern (threatened), Sharp-shinned Hawk (special concern), Cooper's Hawk (special concern), Black Skimmer (special concern), Common Nighthawk (special concern), Horned Lark (special concern), and Yellow-breasted Chat (special concern).

Ospreys (special concern) were observed in transit over the site on numerous occasions in early and mid summer; a nest was confirmed in May 2008 on a scuttled barge in the Arthur Kill in the Port Mobil vicinity, suggesting that foraging flights may have been occurring to the Raritan during a portion of the breeding season (Bernick and Craig 2008).

#### MAMMALS

Twenty (20) mammal species were observed within the project site from October 2007 to December 2008 (Table 4). These included common species for natural areas in NYC (Eastern Gray Squirrel, Eastern Chipmunk, Eastern Cottontail), feral dogs and cats, and uncommon species for the City (White-tailed Deer) and Staten Island (Striped Skunk, two observations).

Two bat species were observed during evening hours in the spring and summer, Little and Big Brown Bats. Red Bats were identified by observation through binoculars on two occasions in fall 2007/2008. Exposed foundations of the 'Fairview' estate may function as subsurface 'cave' habitat used for shelter by bats, although none were observed entering or exiting them during the survey period.

Breeding activity for White-footed Mouse was noted under cover boards placed in woodland and edge habitats, and Short-tailed Shrew and Eastern Mole were noted on one occasion each under cover boards. Track boards confirmed the presence of common species only, and were most frequently visited by Raccoon and feral cats.

The project site was frequently used by White-tailed Deer, for reproduction (two newborn fawn was observed in June 2008), foraging and shelter. High counts for this species included 18 individuals (7 male, 11 female) on a single date in fall 2008; deer were observed during the majority of site visited throughout the entire study period. Additionally, Woodchuck burrows were observed within 22 of 30 sampling plots, and activity for this species is prevalent throughout the project site.

No federal or state-listed mammals were observed within the project site during the natural resources surveys, although available habitat may exist within the project site to support migrating Indiana Bat.

#### INSECTS

Approximately 71 species of insects, primarily lepidopterans (butterflies, moths), odonates (dragonflies, damselflies) and dipterans (flies), were observed within the project site from March-November 2008 (Table 5). Insects were predominantly observed during time-restricted searches or during the course of other surveys, although odonate species were also observed during site visits with Ellen Pehek and Susan Stanley of NYCDPR-NRG in July 2008, including the S2 ranked Comet Darner (*Anax longipes*).

None of the state-listed insect species previously noted at or near the project site were observed during AKRF's survey, including the Bar-winged and Yellow-sided Skimmers and the Tawny Emperor Butterfly. Several wetland and old field locations, however, were observed to support odonates during the summer months after periods of sustained rainfall, and meet the habitat requirements of these listed species.

#### RARE, SPECIAL CONCERN, THREATENED AND ENDANGERED SPECIES

No federally listed fauna was observed during this study.

DRAFT CHARLESTON NATURAL RESOURCES SURVEY REPORT

The following fauna listed as rare, special concern, threatened or endangered in New York State was observed on the project site, as discussed above.

Reptiles: Eastern Box Turtle (special concern)

Birds: Peregrine Falcon (endangered), Northern Harrier (threatened), Common Tern (threatened), Sharp-shinned Hawk (special concern), Cooper's Hawk (special concern), Black Skimmer (special concern), Common Nighthawk (special concern), Horned Lark (special concern), Osprey (special concern) and Yellow-breasted Chat (special concern).

Comet Darner *Anax longipes*. Although presently unlisted in New York State, one individual of this S2-ranked dragonfly species was observed in early July 2008 in the "permanently flooded" palustrine wetland on the southwestern portion of the project site.

#### F. CONCLUSIONS AND RECOMMENDATIONS

In summary, this study revealed the presence of rare, special concern, threatened and endangered flora and fauna species: 11 plant species (including Torrey's Mountain-mint) and 12 wildlife species (including Eastern Box Turtle).

#### DISCUSSION OF SENSITIVE AREAS (FLORA AND FAUNA)

Areas of sensitivity for flora and fauna, as illustrated in Figure 15, are as follows:

1. Sensitive flora and wildlife corridor, Englewood Avenue Unpaved Path:

The connectivity between the project site, particularly the segment of ecological communities, flora and fauna observed within the section of Clay Pit Ponds State Park Preserve to the north of the project site were closely aligned with those within the NYCDPR conservation land within the eastern end of the project site. Reptile and amphibian breeding activity was noted within a seasonally flooded red maple swamp adjacent Englewood Avenue; AKRF observed both northward and southward movement of amphibians between the Clay Pit Ponds State Park Preserve property and the project site in June and July 2008. It is likely that reptiles. amphibians, birds and other wildlife species inhabiting the project site travel through the larger forested and wetland corridor connection to the 260 acre Clay Pit Ponds State Park Preserve. A build-out of Englewood Avenue would likely curtail wildlife movement (and reduce the habitat value of the NYCDPR conservation area for ground-dwelling species. In the worst case, significant mortality due to road crossing may occur; wildlife corridors under roadways are one method to avoid such mortality. Further study of reptile and amphibian populations, using a more rigorous field protocol targeted at NY State listed species, is discussed below. Development plans that preserve the relatively unfragmented corridor between Clay Pits and the NYCDPR conservation area, have benefits for wildlife populations, and for preserving the ecosystem services and biodiversity provided by larger contiguous areas of forested cover.

In addition, several state-listed species (Tall Lespedeza, River Birch) are present within the current unbuilt portion of Englewood Avenue.

2. Sensitive plant species, Successional Old Field II:

As noted about, several state-listed *Eupatorium* species are present within this parcel. Any future project should consider the impacts to the conditions of this unusual meadow habitat; areas that are colonized by largely native species are relatively unique for the New York City.

At the very least, the abiotic and biotic conditions that allow this process to occur should be examined. If development is unavoidable in this area, and segments of the existing landscape cannot be retained in-situ, then efforts to retain plant material and seed stock should be implemented. Additionally, it would be useful to retain any topsoil from this site for use in local restoration projects – as past human use of this site has been relatively light (no known industrial uses of the site that would raise concerns over contamination), this would represent an effective and relatively inexpensive source of soil stock.

3. Sensitive plant species, Red Maple-Sweet Gum Swamp Variant

American Strawberry-bush and Virginia Pine are located in these areas; as this is within the conservation area, no development is planned.

4. Sensitive Plant Species, Coastal Oak-Hickory Variant

American Chestnut and Shortleaf Pine area are located in these areas; as this is within the conservation area, no development is planned.

5. Sensitive plant species, Successional Old Field IV:

Hyssop-leaved Boneset, Fringed Boneset, Late-flowering Boneset, one specimen of Serrate Round-leaf Boneset, and Torrey's Mountain-mint (22 stems, many fruiting) were all located during the course of this study. Consideration should be given to future development plans that avoid construction on this berm; discussion with NYCDPR and NYSDEC should be a precursor to any development plans. If avoidance is untenable, it would be worthwhile to consider these sensitive plant populations into the current Torrey's Mountain Mint conservation plan.

6. Sensitive odonate (dragonfly & damselfly) species, possible USACE jurisdictional wetland:

One S2 ranked dragonfly, the Comet Darner, was observed at this site on a single survey date. Two state listed species, Bar-winged Skimmer and Yellow-sided skimmer, are known from either the project site or the study area – this pond exhibits suitable habitat for these species, and further investigation should be conducted. Odonates and other organisms are sensitive to degradation of water quality and associated vegetative cover. Consideration should be given to provide an adequate buffer in accordance with recent discussions in the PlaNYC report 'New York City's Wetlands: Regulatory Gaps and Other Threats (January 2009)' and the 2007 Wetland Transfer Task Force report.

7. Sensitive Plant Species, Successional Old Field III:

22

Torrey's Mountain-mint (at least 1 fruiting stem) was located within this area. Consideration should be given to future development plans that avoid construction within this area; discussion with NYCDPR and NYSDEC should be a precursor to any development plans. If avoidance is untenable, it would be worthwhile to consider these sensitive plant populations into the current Torrey's Mountain Mint conservation plan.

A detailed discussion of wetlands on the project site is provided in Appendix B "Charleston Wetlands Report." Additional areas for investigation are noted in Figure 12, and discussed above.
## ADDITIONAL ACTION ITEMS

The following action items should be considered for investigation as part of the natural resources impacts assessment of any proposed site plan for the project site.

1. Coordination with USACE on wetland delineations performed within the Englewood Avenue corridor. NYCEDC should request a Jurisdictional Determination (JD) Site Inspection from the USACE to confirm the boundaries of those freshwater wetlands delineated and described in this report. Although a wetlands delineation was conducted within the project site during a previous investigation (Bricktown Centre at Charleston) and field determinations were carried out by the USACE and NYSDEC to clarify the regulatory status of some wetlands within the project site, over nine years have passed since some of these delineations were conducted (EEA 2003), and five years since the most recent correspondence with regulatory agencies (Vollmuth and Brush 2004). Additionally, based on the present effort, wetland boundaries for several depressional wetlands within the Englewood Avenue corridor appear to have changed since they were delineated in 2000, possibly due to the land-clearing activities that occurred within the north-central portion of the project site in previous years. It is also possible that the clearing revealed additional wetlands that were not previously visible within the extremely dense understory vegetation that was present at the time of the prior delineation efforts.

In addition to potential structural changes, recent reports on City wetlands (PlaNYC 2009, Wetlands Transfer Task Force 2007) have focused on maintaining the critical ecological functions of freshwater wetlands within the City, and stressed the importance of detailed, lot-level mapping of the City's wetlands and a review of upland buffer setbacks surrounding the City's freshwater wetlands. A U.S. Supreme Court ruling on wetlands regulations (RAPANOS et ux., et al. v. UNITED STATES, 2006) and subsequent agency guidance in interpreting the ruling has further altered the regulatory definition of "isolated" wetlands that appear to predominate within the project site.

As a result of potential physical changes to wetlands within the Englewood Avenue corridor and a changing regulatory context on City, state and federal levels, coordination with the USACE is recommended. This may also require coordination with NYSDEC, if more precise mapping leads to the state taking jurisdiction over freshwater wetlands parcels beyond those appearing on current wetland maps. NYCDPR-NRG has requested involvement in any wetlands issues involved within the project site, and should be included in any wetlands-related activities. As red-parent material soils are prevalent throughout the project site, additional coordination with the NYC Soil and Water Conservation District's NYC Soil Survey would also be advisable. The NYCSWCD's Staten Island office is currently updating the initial soils map of Staten Island, although the project site had not been examined by the end of this field study (December 2008).

2. Coordination with USACE on wetlands delineation within the remainder of the project site. Only wetlands within the Englewood Avenue Corridor were delineated. Additional wetland areas are present throughout the project site; some occur in isolated depressions or qualify as wetlands based solely on soil parameters specific to red parent material. As such, the USACE may not take jurisdiction of these potential wetland areas. Before proceeding on a lengthy delineation of the entire property, complicated by highly variable

site conditions, we recommend getting primary input from USACE, and additional input from NYSDEC regarding freshwater wetlands within New York City.

- 3. Contact with NYSDEC-NYNHP and other agencies on sensitive species populations within the project site. Previously published species lists and reports on rare, special concern, threatened and endangered species were used as the basis for known or potential species occurrences at or near the project site during this field effory. Once a proposed site plan has been presented and an impacts assessment is being conducted, it is recommended that: 1) NYSDEC be contacted for up-to-date information on listed species occurrences at or in the vicinity of the project site; 2) official sighting forms for sensitive species documented on the project site are submitted to NYNHP; and 3) the proposed construction of Englewood Avenue, which is situated along the southeastern boundary of Clay Pit Ponds State Park Preserve, is discussed with NYSDEC.
- 4. The preservation area for Torrey's Mountain-mint (Pycnanthemum torrei) south of Bricktown Centre at Charleston. Between June and Novermber 2008, the Torrey's Mountain-mint preservation area at Veterans Road West and Tyrellan Avenue was visited on several occasions. From beyond the protective fence, AKRF observed numerous (50+) stems of Torrey's Mountain Mint within this site. A substantial amount of invasive species growth (e.g., Japanese honeysuckle) was observed within the fenced area, partially covering some of the Torrey's Mountain-mint stems. While this did not appear to be greatly inhibiting growth, maintenance of the preservation area may be appropriate during subsequent growing seasons.
- 5. Additional reptile and amphibian surveys. In the present study, reptile and amphibian use of the project site was determined through visual observation during time-restricted searches, incidental observations, and cover board observation. These methods had two major advantages (simplicity and cost-effective effort), and 15 reptile and amphibian species were observed within the project site. While no New York State-endangered Eastern Mud Turtles were observed during these efforts, both foraging and hibernating habitat appeared to be present within the project site. If more in-depth sampling is required to determine the potential use of the project site by Eastern Mud Turtles, trapping during seasonal dispersal events may be an effective method to sample for this species and other reptiles and amphibians. AKRF (2008) described two additional methods to sample reptiles and amphibians, including the use of (1) drift fences to direct organisms into modified funnel traps and (2) pitfall traps to temporarily capture organisms. Efforts to determine the presence of snake hibernacula may also be worthwhile, as several black racer hibernacula have been uncovered during land clearing activities at adjacent sites. It is important to note that such efforts would require additional funding for trap materials and staff to install and operate traps, and licenses for scientific research involving trapping of state-endangered species would be required.
- 6. Preserving native genotypes of relatively "old-growth" oak forests, including hybrid oaks. If a development plan moves forward for this site, it would be of great value to establish a plan involving seed collection and rescue of small to moderately sized specimen trees of single or hybrid ancestry (1-10 inches dbh). Since the Charleston are represents one of the last historic, native coastal oak forests on Staten Island, it would be worthwhile to preserve local genotypic diversity through such a plan.

## CHANGES TO THE PROJECT SITE AND STUDY AREA, OCTOBER 2007 TO THE PRESENT

Several events occurred within the project site and study area that occurred between October 2007 and the present, including the following:

- A parcel on the western boundary of the property was being developed as the NYCT Charleston Bus Annex during the course of the survey period; this site was gated and locked, and surveys within this site were not possible. The site was cleared to bare soil by Mar 2008 and the frames of future structures and perimeter sheet piling was installed as of Dec 2008.
- On the southwestern edge of the site, earth moving activities occurred on adjacent private property formerly used as a driving range at some point between 15 November and 29 December 2008; this earth moving activity covered over a small wet depression with some wetland indicator plants (Juncus effusus, Echinochloa muricata) noted during field surveys on 16 Sep 2008.
- The Arthur Kill shoreline in the vicinity of the project site includes pilings, debris and historic remnants of the former Kreischer Brick Works, areas of *Spartina alterniflora*, and transitional mud and sand banks extending to mudflats along the Arthur Kill. A permit for a stormwater outfall discharging at Allentown Lane for the NYCT Charleston Bus Annex has been recently submitted to NYSDEC.
- At the northern edge of the project site, AKRF field staff noted in late summer 2008 that trees along the southern edge of the paved portion of Englewood Avenue were marked with orange spray paint, and survey flagging and orange spray paint were noted within the Englewood Avenue corridor at the southwest boundary of the adjacent Clay Pits Pond State Park Preserve. AKRF did not learn the purpose of these survey markings, although no tree clearing or construction occurred in these areas as of the final survey date of 29 Dec 2008.
- Between January and May 2009, a fire burned several acres of Fragmented Coastal Oak Variant Forest the southwestern portion of the project site, east of the NYCT Charleston Bus Annex site.

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Figure 1: Project site boundary for Charleston Natural Resources Survey and surrounding area, Charleston, Staten Island, NY (Richmond County.) Source: NYC Economic Development Corporation.



Figure 2: Project site boundary for Charleston Natural Resources Survey, Charleston, Staten Island, NY (Richmond County.)



Figure 3: Project site topography.



Figure 4: Beers Atlas of Staten Island, Richmond County, New York (1887); detail featuring the Charleston (Kreischerville) area of Staten Island.



Figure 5: Robinson's Atlas of the City of New York (1898); detail featuring the Charleston (Kreischerville) area of Staten Island. Note the location of the "Fairview" Estate, the foundation of which is still visible within the western portion of the project site.

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Figure 6: Study area.



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Figure 7: Project site sampling plots (N=30). Circled plots denote those in which cover boards and track boards were placed for fauna surveys.



Figure 8: 100 and 500 year floodplains in the vicinity of the project site.



Figure 9: National Wetland Inventory mapped tidal and freshwater wetlands in the vicinity of the project site.



Figure 10: New York State Department of Environmental Conservation mapped tidal wetlands in the vicinity of the project site.



Figure 11: Surveyed wetlands within the Englewood Avenue corridor of the project site. Based on AKRF wetlands delineation survey data and Control Point Associates, Inc. mapping data (10/29/2008).



Figure 12: Additional wetlands within the project site. This includes one previously identified jurisdictional wetland and several other locations where evidence of wetland hydrology, vegetation and wildlife activity were present during this study.



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Figure 13: Habitat communities within the project site.



Figure 14: Reptile and amphibian observations located during time-restricted searches and incidental observations at the project site, October 2007 to December 2008.



Figure 15: Sensitive areas within the project site. See Section 5 "Conclusions and Recommendations" for further discussion.

TABLES



		nde het welde stiert versten dat het er die geheren.	ola, kalenda esta esta oraz	Plants of	oserved w	vithin the p	Table 1 roiect site
Form	Scientific Name	Common Name	Rank	Outside Plots Only	Early Spring Only	Early Summer Only	Early Fall Only
Fern	Dennstaedtia punctilobula	Hay-scented Fern	-			-	
Fern	Onoclea sensibilis	Sensitive Fern		x			
Fern	Osmunda cinnamomea****	Cinnamon Fern	Protected				
Fern	Pteridium aquilinum	Bracken Fern					
Fern	Thelypteris noveboracensis****	New York Fern	Protected				
Graminoid	Agrostis capillaris	Colonial Bentgrass		×			
Graminoid	Agrostis gigantea	Redtop					
Graminoid	Agrostis perennans	Upland Bentgrass		×			
Graminoid	Agrostis stolonifera	Creeping Bentgrass					
Graminoid	Aristida oligantha	Prairie Threeawn		×			
Graminoid	Aristida purpurea	Purple Three-awn		×			
Graminoid	Carex annectens	Yellowfruit Sedge		x			
Graminoid	Carex scoparia	Broom Sedge					
Graminoid	Carex stricta	Tussock Sedge					
Graminoid	Carex vulpinoidea	Fox Sedge				x	
Graminoid	Cynodon dactylon	Bermuda Grass					x
Graminoid	Cyperus esculentus	Nut Sedge		x			
Graminoid	Cyperus iria	Ricefield Flatsedge		×			
Graminoid	Cyprus strigosis	Umbrella Sedge					
Graminoid	Dactylis glomerata	Orchardgrass					
Graminoid	Dichanthelium acuminatum	Tapered Rosette Grass					
Graminoid	Dichanthelium clandestinum	Deertongue		×			
Graminoid	Digitaria sanguinalis	Hairy Crabgrass					×
Graminoid	Echinochloa crus-galli	Barnyard Grass		×			
Graminoid	Echinochloa walteri	Coast Cockspur Grass		x			
Graminoid	Eleocharis acicularis	Needle Spike-rush					
Graminoid	Eleocharis obtusa	Blunt Spike-rush		x			
Graminoid	Eleocharis spp.	Spike-rush spp.			menter service science e da		
Graminoid	Festuca rubra	Red Fescue			R		
Graminoid	Festuca spp.	Fescue spp.					
Graminoid	Juncus bufonius	Toad Rush					
Graminoid	Juncus canadensis	Canadian Rush					
Graminoid	Juncus effusus	Soft Rush					
Graminoid	Juncus tenuis	Path rush					
Graminoid	Leersia virginica	White Grass		×			
Graminoid	Microstegium vimineum	Japanese Stiltgrass		×			
Graminoid	Panicum clandestinum	Deer Tongue Grass					
Graminoid	Panicum spp.	Switchgrass					พระก และเหลือ เรื่อง
Graminoid	Panicum virgatum	Switchgrass					
Graminoid	Phalaris arundinacea	Reed Canarygrass		x			
Graminoid	Phleum pratense	Timothy					
Graminoid	Phragmites australis	Tall Reed		×			
Graminoid	Poa pratensis	Kentucky Bluegrass					×
Graminoid	Schizachyrium scoparium	Little Bluestem					x
Graminoid	Scirpus atrovirens	Green Bulrush					
Graminoid	Scirpus cyperinus	Wool Grass					
Graminoid	Scirpus microcarpus	Panicled Bulrush		x			
Graminoid	Setaria viridis	Green Foxtail				×	
Graminoid	Typha latifolia	Broadleaf Cattail		x			

Herb/Forb	Agerating altissima	White Snakeroot					
Herb/Forb	Aginglis purpureg	Purple False Foxglove					x
Herb/Forb	Alliaria petiolata	Garlic Mustard					
Herb/Forb	Allium ascalonicum	Wild Onion			×		
Herb/Forb	Allium vineale	Wild Garlic					
Herb/Forb	Ambrosia artemisifolia	Bagweed					
Herb/Forb	Anaphalis margaritacea	Pearly Everlasting					
Herb/Forb	Apocynum cannabinum	Indian Hemp					
Herb/Forb	Aralia hispida	Bristly Sarsaparilla				x	
Herb/Forb	Aralia racemosa	American Spikenard					x
Herb/Forb	Artemisia absinthium	Wormwood					
Herb/Forb	Artemisia vulgaris	Mugwort					
Herb/Forb	Asclepias svriaca	Common Milkweed					
Herb/Forb	Bidens frondosa	Beggars Ticks					
Herb/Forb	Chamaecrista fasciculata	Partridge Pea					
Herb/Forb	Chenopodium album	Lamb's Quarters					
Herb/Forb	Chimaphila maculata	Striped Wintergreen					
Herb/Forb	Cichorium intybus	Chicory					
Herb/Forb	Claytonia virginica	Spring Beauty		×	×		
Herb/Forb	Daucus carota	Oueen Anne Lace					
Herb/Forb	Desmodium paniculatum	Panicle-leaved Tick-Trefoil					x
Herb/Forb	Dianthus armeria	Deptford Pink					
Herb/Forb	Erechtites hieracifolia	Pilewort					x
Herb/Forb	Erigeron annuus	Daisy Eleabane					
Herb/Forb	Erythronium americanum	Trout Lily		×			
Herb/Forb	Eupatoriadelphus maculatus	Joe Pye Weed		×			
Herb/Forb	Eupatorium album	White Boneset					
11010/1010	Eupatorium hyssopifolium						
Herb/Forb	var. hvssopifolium	Hyssop-leaved Boneset				essenti kanalorea	
	Eupatorium hyssopifolium						
Herb/Forb	var. laciniatum**	Fringed Boneset	G5T4T5/S2				
Herb/Forb	Eupatorium perfoliatum	Common Boneset		×			
Herb/Forb	Eupatorium pilosum	Rough Boneset					
	Eupatorium rotundifolium	Serrate Round-leaf					
Herb/Forb	var. ovatum*	Boneset	G5T5/S1	×			
	Eupatorium rotundifolium						
Herb/Forb	var. rotundifolium*	Round-leaf Boneset	G5T5/SH	×			
Herb/Forb	Eupatorium serotinum*	Late-flowering Boneset	G5/S2S3				
Herb/Forb	Eupatorium sessifolium	Upland Boneset				11-11-11-11-1-1-1-1-1-1-1-1-1-1-1-1-1-	
Herb/Forb	Euthamia caroliniana	Slenderleaved Goldenrod					
Herb/Forb	Euthamia galetorum	Slender Goldentop		x			
Herb/Forb	Euthamia graminifolia	Lance-leaved Goldenrod					
Herb/Forb	Fragaria vesca	Woodland Strawberry				х	
Herb/Forb	Fragaria virginiana	Virginia Strawberry					
Herb/Forb	Gnaphalium obtusifolium	Sweet Everlasting					
Herb/Forb	Hieracium aurantiacum	Orange Hawkweed		×			
Herb/Forb	Hypericum gentianoides	Orangegrass					
Herb/Forb	Lespedeza capitata	Round-headed Bush Clover					
Herb/Forb	Lespedeza stuevei**	Tall Lespedeza	G4?/S2	×			x
Herb/Forb	Linaria canadensis	Blue Toadflax					
Herb/Forb	Lotus corniculatus	Bird's-foot Trefoil					
Herb/Forb	Lysimachia quadrifolia	Whorled Loosestrife					
Herb/Forb	Maianthemum canadense	Canada Mayflower		×			
Herb/Forb	Maianthemum racemosum	False Solomon's Seal					
Herb/Forb	Medicago lupulina	Black Medic					

Herb/Forb	Oenothera biennis	Common Evening Primrose	Contraction of the	×		T	
Herb/Forb	Phytolacca americana	American Pokeweed	10.00	1000	MD-VOP	1	
Herb/Forb	Pilea pumila	Clearweed	1911	1			
Herb/Forb	Plantago aristata	Large-bracted Plantain					
Herb/Forb	Plantago lanceolata	English Plantain					
Herb/Forb	Polygonum cespitosum	Oriental Lady's Thumb	1.1				×
Herb/Forb	Polygonum cuspidatum	Japanese Knotweed					^
Herb/Forb	Polygonum pennsylvanicum	Pink Knotweed		1000			
Herb/Forb	Polygonum perisicaria	Lady's Thumb					
Herb/Forb	Potentilla canadensis	Dwarf Cinquefoil		×			
Herb/Forb	Potentilla intermedia	Downy Cinquefoil	te l'en e	^			
Herb/Forb	Potentilla recta	Sulphur Cinquefoil					
Herb/Forb	Potentilla simplex	Common Cinquefoil					
Herb/Forb	Pycnanthemum torrei*	Torrey's Mountain-mint	62/51				
Herb/Forb	Pyrola rotundifolia	Roundleaf Pyrola	02/31				
Herb/Forb	Bhevia virginica	Handsome Harry		~			
Herb/Forb	Rumey crisnus	Curled Dock		^	×		
Herb/Forb	Rumey obtusifolius	Ritter Dock					
Herb/Forb	Setaria verticillata	Brittly Foxtail					
Herb/Forb	Setund Venticinata	Charlock Mustard					×
Herb/Forb	Sindpis divensis	Eastern Blue aved Grees					
Herb/Forb	Sisymenum dularmana	Eastern Blue-eyed Grass				×	
Herb/Forb	Solanum duicamara	Bitter Nightshade					
Herb/Forb	Solidago canadensis	Canada Goldenrod					×
Herb/Forb	Solidago erecta	Showy Goldenrod					×
Herb/Forb	Solidago hispida	Hairy Goldenrod					×
Herb/Forb	Solidago juncea	Early Goldenrod		×			
Herb/Forb	Solidago nemoralis	Gray Goldenrod					X
Herb/Forb	Solidago odora	Anise-scented Goldenrod					×
Herb/Forb	Solidago puberula	Downy Goldenrod					×
Herb/Forb	Solidago rugosa	Wrinkleleaf Goldenrod					×
Herb/Forb	Solidago spp.	Goldenrod spp.					
Herb/Forb	Sonchus oleraceus	Common Sow Thistle					
Herb/Forb	Symphyotrichum laeve	Smooth Aster					
Lingh /Fauls	Symphyotrichum novae-			10			
Herb/Forb	angliae	New England Aster		×			
Herb/Forb	Symphyotrichum pilosum	White Heath Aster					×
Havb /Farb	Symphyotrichum	Constant to the Autom					
Herb/Forb	prenantnoiaes	Crookedstem Aster		×			
Harb/Forb	Sumphystrichum recomesum	Smooth white oldfield				1.	
Herb/Forb	Tarayasum officinale	Common Dandelion	-	x			
Herb/Forb	Trifolium anionso	Dahbit feet Clever					
Herb/Forb	Trifolium compostro	Field Clever					
Herb/Forb	Trifolium hubridum	Alsike Clover		X			
Herb/Forb	Trifolium protonon	Alsike Clover					
Herb/Forb	Trifolium pratense	Ked Clover	and the second				
Herb/Forb	Trifolium repens	White Clover					
Herb/Forb	Uvularia perfoliata	Perfoliate Bellwort				×	
Herb/Forb	Veronica peregrina	Hairy Purslane Speedwell				×	
Herb/Forb	Vicia cracca	Cow Vetch					
Saprophyte	Epijagus virginiana	Beechdrops		x			
Saprophyte	Monotropa uniflora	Indian Pipes					
Shrub	Aralia spinosa	Devil's Walkingstick					
Shrub	Baccharis halimifolia	Groundsel Bush					
Shrub	Berberis thunbergii	Japanese Barberry					
Shrub	Calycanthus floridus	Eastern Sweetshrub		x			

			and the second		1	
Shrub	Cephalanthus occidentalis	Common Buttonbush		x	 	
Shrub	Deutzia scabra	Fuzzy Pride-of-Rochester			 	
Shrub	Elaeagnus umbellata	Autumn Olive			 	
Shrub	Euonymus americana*	American Strawberry-bush	G5/S1		 	
Shrub	Fagus grandifolia	American Beech			 	
Shrub	Forsythia spp.	Forsythia			 	
Shrub	llex verticillata	Common Winterberry			 	
Shrub	Lonicera tatarica	Tartarian Honeysuckle		×	 	
Shrub	Philadephus spp.	Mock Orange		x	 	
Shrub	Rhus glabra	Smooth Sumac			 	
Shrub	Rosa multiflora	Multiflora Rose				
Shrub	Rosa palustris	Pasture Rose				
Shrub	Rubus allegheniensis	Blackberry				
Shrub	Rubus flagellaris	Northern Dewberry		x		
Shrub	Rubus hispidus	Bristly Dewberry				
Shrub	Rubus occidentalis	Black Raspberry				
Shrub	Rubus pensilvanicus	Pennsylvania Blackberry		×		
Shrub	Sambucus nigra	Elderberry		x		
Shrub	Vaccinium angustifolium	Late Low Blueberry		en and a second		
		Common Highbush				
Shrub	Vaccinium corymbosum	Blueberry				
Shrub	Vaccinium fuscatum	Black Highbush Blueberry				
Shrub	Vaccinium pallidum	Early Lowbush Blueberry				
Shrub	Viburnum acerifolium	Maple-leaved Viburnum				
Shrub	Viburnum alnifolium	Hobble Bush				
Shrub	Viburnum dentatum	Southern Arrowwood				
Tree	Acer rubrum	Red Maple				
Tree	Acer saccharinum	Silver maple				x
Tree	Ailanthus altissima	Tree-of-Heaven				
Tree	Albizia julibrissin	Silktree				
Tree	Amelanchier arborea	Downy Juneberry				
Tree	Amelanchier laevis	Smooth Juneberry				
Tree	Amelanchier spp.	Juneberry spp.				
Tree	Betula niara	River Birch	G5/S3	x	 	
Tree	Betula populifolia	Grav Birch	and the second se		 	
Tree	Carva cordiformis	Bitternut Hickory			 	x
Tree	Carva spp.	Hickory spp.				
Tree	Carva tomentosa	Mockernut Hickory				
Tree	Castanea dentata	American Chestnut				
Tree	Celtis occidentalis	Common Hackberry				
Tree	llex opaca***	American Holly				
Tree	Juniperus virainiana	Eastern Red Cedar				
Tree	Liquidambar styraciflua	Sweetgum				
Tree	Morus son	Mulberry spp				×
Tree	Nyssa sylvatica	Black Gum			 	~
Tree	Paulownia tomentosa	Boyal Paulownia			 	
Tree	Photinia pyrifolia	Royal Padiownia			 	
Tree	Picea alauca	Norway Spruce		v	 	
Troo	Piceu gluucu Dinus echinete	Shortlesf Bing	G5/C1	X	 	
Tree	Pinus echinata	Ditch Dino	05/31	X	 	
Tree	Pinus rigida	Multa Dica			 	
Tree	Pinus strobus	Seets Pine			 	
Tree	Pinus sylvestris	Scots Pine			 	
Tree	Pinus thunbergii	Japanese Black Pine			 	
Tree	Pinus virginiana	Virginia Pine		×	 	
Tree	Platanus occidentalis	American Sycamore		X		

Tree	Populus deltoides	Eastern Cottonwood		1		
Tree	Populus grandidentata	Big-toothed Aspen				
Tree	Populus tremuloides	Quaking Aspen	200 00000000000000000000000000000000000			
Tree	Prunus serotina	Black Cherry				
Tree	Pyrus calleryana	Callery Pear				
Tree	Quercus alba	White Oak				
Tree	Quercus bicolor	Swamp White Oak				
Tree	Quercus coccinea	Scarlet Oak	x			
Tree	Quercus imbricaria	Shingle Oak			<u></u>	
Tree	Quercus marilandica	Black-jack Oak				
Tree	Quercus nigra	Black Oak				
Tree	Quercus palustris	Pin Oak				
Tree	Quercus phellos x marilandica (rudkinii)	Rudkin's Oak				x
Tree	Quercus prinus	Chestnut oak		1. 1991	1.1197	1
Tree	Quercus rubra	Red Oak	1.1.1	1.		
Tree	Quercus velutina	Black Oak		1	1 Contraction	
Tree	Rhus copallina	Winged Sumac				
Tree	Robinia psuedo-acacia	Black Locust				
Tree	Salix bebbiana	Bebb Willow	×			
Tree	Sassafras albidum	Sassafras				
Tree	Tilia americana	American Basswood		1		
Tree	Ulmus americana	American Elm				
Vine	Campsis radicans	Trumpet Creeper				
Vine	Celastrus orbiculatus	Asiatic Bittersweet				
Vine	Lonicera japonica	Japanese Honeysuckle				
Vine	Parthenocissus quinquefolia	Virginia Creeper	 			
Vine	Rhus radicans	Poison Ivy				
Vine	Rubus flagellaris	Prickly Dewberry				
Vine	Smilax glauca	Catbrier				
Vine	Smilax rotundifolia	Common Greebrier				
Vine	Vitis labrusca	Fox Grape				
Vine	Wisteria sinensis	Chinese Wisteria				

**Notes:** Native plants are protected under Section 9-1503 of the Environmental Conservation Law, which states that it is a violation for any person, anywhere in the state, to pick, pluck, sever, remove, damage by the application of herbicides or defoliants, or carry away, without the consent of the owner, any protected plant. Each protected plant so picked, plucked, severed, removed, damaged or carried away shall constitute a separate violation (Young 2008).

Protected status in NYS: \* = Endangered; \*\*=Threatened; \*\*\*= Exploitably Vulnerable; \*\*\*\*=Native Ferns.

For ranks, see S. Young's New York Rare Plant Status Lists (June 2008).

Sources: Young (2008)

10 1070 D		Table 2
Reptiles and am	phibians observed within th	e project site
	Breeding confirmed	Adults only
Salamanders		
Eastern Red-backed Salamander Plethodon cinereus	×	
Northern Two-lined Salamander Eurycea bislineata		×
Toads and Frogs		
Eastern American Toad Bufo americanus	. X	
Fowler's Toad Bufo woodhousii	×	
Spring Peeper Pseudacris crucifer	x	
American Bullfrog Rana catesbeiana	x	to provide and the event of a subscriber
Northern Green Frog Rana clamitans	x	
Turtles		
Snapping Turtle Chelydra serpentina	x	
Eastern Box Turtle Terrapene carolina		×
Red-eared Slider Trachemys scripta	x	
Painted Turtle Chrysemys picta	x	
Snakes	Standard and a second sec	
DeKay's Brownsnake Storeria dekayi		×
Eastern Gartersnake Thamnophis sirtalis	x	
Eastern Racer Coluber constrictor		×
Milksnake Lampropeltis triangulum		×
Notes: Sources: AKRF Time-restricted searches and Incidental Observations, N	Aarch to December 2008.	

				Table 3
and a state of the	Birds o	bserved	within the	project site
	Breeding	Flyover	Migratory	Wintering
Order ANSERIFORMES	12.1			
Family Anatidae — Swans, Geese	e, and Ducks	1		1
Snow Goose Chen caerulescens		X	X	x
Atlantic Brant Branta bernicia		X	×	×
Canada Goose B. canadensis *	x		×	×
Tundra Swan Cygnus olor (I)		×		
Wood Duck Aix spansa		x	×	
Gadwall Angs strengra				×
American Black Duck A subrines		X		
Mallard A. ploturburghos *		x		
Green winged Teal A greese	x			
Headed Marganser Laphadutes sugulatus			×	×
Hooded Merganser Lophoaytes cuculatus		1	X	L
Eamily Phasianidas - Parteidasa Gra	use and Turks			
Ping-pecked Phoacant Physionus colobicus (I) *	use, and Turke	iys		1
Wild Turkey Malagaris collegave (12)*	<u>x</u>			
Wild Turkey Weledgris gallopavo (IP)	X			
Family Cavildea Lea				
Pad throated Loop Gruig stellate	115	1		1
	c	x	X	
Eamily Phalacroscorasidae — C	5 rmorante			
Double-crosted Cormorant Bhalagracearay quritur	ormorants	1 1		1
Great Cormonant Phalacrocords damas		<u> </u>	^	
		<u>^</u>		×
Family Ardeidae — Bitterns Hero	ns and Allies			
Great Blue Heron Ardea berodias	ns, and Ames	1		v
Great Egret A alba		-		^
Snowy Egret Faretta thula				
Green Heron Butorides virescens *	×			
Black-crowned Night-Heron Nycticorax pycticorax	^			
Family Threskiornithidae — Ibises	and Spoonbills			
Glossy Ibis Pleaadis falcinellus	ind opportunity	1	l	1
Order FALCONIFORME	5			
Family Cathartidae — America	o Vultures			
Black Vulture Corgayos atratus	· · · uitui co	L x	1	1
Turkey Vulture Cathartes aura		x		
Family Accipitridae — Eagles, Haw	ks and Allies	<u> </u>		
Osprey Pandion haliaetus	no una rinco	×		
Northern Harrier Circus cvaneus				×
Sharp-shinned Hawk Accipiter strigtus			x	×
Cooper's Hawk A. cooperii				
Broad-winged Hawk Buteo platypterus		×	×	
Red-tailed Hawk B. jamaicensis				
Family Falconidae — Caracaras	nd Falcons		•	
American Kestrel Falco sparverius			x	
Merlin F. columbarius			x	
Peregrine Falcon F. peregrinus		x		×
Order GRUIFORMES			•	
Family Rallidae — Rails, Gallinule	s, and Coots			
Virginia Rail Rallus limicola			x	
	Contraction of the local division of the loc	the second s	And and an owner of the second s	And the second se

•

American Coot Fulica americana	F.C.			x
Order CHARADRIIFORM	ES			
Family Charadriidae — Pl	overs			
Killdeer Charadrius vociferus *	×			
Family Scolopacidae — Sandpipe	ers and Allies			
Spotted Sandpiper Actitis macularius				
Solitary Sandpiper Tringa solitaria			×	
Greater Yellowlegs T. melanoleuca			x	
Semipalmated Sandpiper Calidris pusilla			x	
Least Sandpiper C. minutilla	Merce production		×	
Wilson's Snipe Gallinago delicata			x	
American Woodcock Scolopax minor *	×			
Family Laridae — Gulls, Terns, a	nd Skimmers			
Laughing Gull Leucophaeus atricilla		x		
Ring-billed Gull Larus delawarensis		x		
Herring Gull L. argentatus		x		
Lesser Black-backed Gull L. fuscus				x
Great Black-backed Gull L. marinus				
Common Tern S. hirundo		x		
Forster's Tern <i>S. forsteri</i>		x		
Royal Tern Thalasseus maximus		x	×	
Black Skimmer Rynchops niger		x		
Order COLUMBIFORMI	S			
Family Columbidae — Pigeons	and Doves			
Rock Pigeon Columba livia (I) *	×			
Mourning Dove Z. macroura *	×			
Order CUCULIFORME				
Eamily Cuculidae — Cuc	005			
Vellow-billed Cuckoo Coccuzus americanus *	v v			
Black-billed Cuckoo C erythronthalmus	^		×	
Order STRIGIEORMES			^	
Eamily Tytonidao — Barn	Owle			
Barn Owl Tyte alba	OWIS			
Eamily Strigidae - Tunica	Owle			
Fairing Strigidae — Typica	OWIS			
Creat Harrad Oud Ruba virginigraus				
Great Horned Owl Bubb Virginianus				
Northern Saw-whet Owi A. acadicus	455		x	
Order CAPRIMOLGIFORM	/IES			
Family Caprimuigidae — Goa	tsuckers			
Common Nighthawk Chordelles minor			X	
Chuck-will's-widow Caprimulgus carolinensis				
Order APODIFORMES				
Family Apodidae — Sw	ifts			
Chimney Swift Chaetura pelagica		x		
Family Trochilidae — Humm	ingbirds			
Ruby-throated Hummingbird Archilochus colubris			x	
Order CORACIIFORME	S			
Family Alcedinidae — King	fishers			
Belted Kingfisher Megaceryle alcyon				
Order PICIFORMES				
Family Picidae — Woodpe	eckers			
Red-bellied Woodpecker M. carolinus *	×		×	×
Yellow-bellied Sapsucker S. varius			x	
Downy Woodpecker Picoides pubescens *	×		×	x
Hairy Woodpecker P. villosus *	x		x	x



Northern Flicker Colaptes auratus *	x			
Order PASSERIFORM	S	-		
Family Tyrannidae — Tyrant I	lycatchers			
Eastern Wood-Pewee C. virens *	x			
Yellow-bellied Flycatcher Empidonax flaviventris			×	
Acadian Flycatcher E. virescens			×	
Willow Flycatcher E. traillii *	x			
Least Flycatcher E. minimus			×	
Eastern Phoebe Sayornis phoebe			×	
Great Crested Flycatcher M. crinitus *	×			
Eastern Kingbird <i>T. tyrannus</i> *	×			
Family Vireonidae — Vi	reos			
White-eyed Vireo Vireo griseus *	x			
Blue-headed Vireo V. solitarius			×	
Warbling Vireo V. gilvus *	×	1.5		
Red-eyed Vireo V. olivaceus *	×		x	
Family Corvidae — Jays an	d Crows			
Blue Jay Cyanocitta cristata *	×		×	×
American Crow Corvus brachyrhynchos *	×	11		
Fish Crow C. ossifragus			x	x
Family Alaudidae — La	irks		-	
Horned Lark Eremophila alpestris			x	
Family Hirundinidae — Sw	allows			
Purple Martin Progne subis		x	×	
Tree Swallow Tachycineta bicolor	100	х		x
Northern Rough-winged Swallow Stelgidopteryx serripennis		х		
Bank Swallow Riparia riparia		x	×	
Barn Swallow Hirundo rustica *	×			
Family Paridae — Chickadees	and Titmice			
Black-capped Chickadee Poecile atricapillus *	×			×
Tufted Titmouse Baeolophus bicolor *	×			x
Family Sittidae — Nutha	tches			
Red-breasted Nuthatch Sitta canadensis			×	×
White-breasted Nuthatch S. carolinensis *	×			x
Family Certhiidae — Cre	epers	and a second		
Brown Creeper Certhia americana			×	
Family Troglodytidae — V	Nrens	1		
Carolina Wren Thryothorus Iudovicianus *	×			
House Wren Troglodytes aedon *	×			
Winter Wren T. troglodytes			×	
Family Regulidae — Kin	glets	1	1	
Bubu growned Kinglet Regulus satrapa			×	×
Ruby-crowned Kinglet R. calendula	t als ava	L	x	x
Plue gray Gratesteher Policetile egerules *	itchers	T		<b></b>
Early Ghatcatcher Polioptila caeruea	x x		X	
Eastern Bluebird Siglig siglis	snes	T		
Voorv Catharus fuscescens			~	
Grav-cheeked Thrush C minimus			~	
Swainson's Thrush C ustulatus			~ ~	
Hermit Thrush C. auttatus			Ŷ	v
Wood Thrush Hylocichla musteling *	×		Ŷ	^
American Robin T. miaratorius *	×		×	×
Family Mimidae — Mockinghirds. Th	ashers, and Alli	es		^
Gray Catbird Dumetella carolinensis *	x	I		x
	~			~

Northern Mockingbird Mimus polyglottos *	×			×
Brown Thrasher Toxostoma rufum *	×			
Family Sturnidae — Star	lings			
European Starling Sturnus vulgaris (I) *	×		×	x
Family Motacillidae — P	ipits	1		
American Pipit Anthus rubescens		х	x	
Family Bombycillidae — Wa	axwings			
Cedar Waxwing B. cedrorum *	×		х	x
Family Parulidae — Wood V	Varblers			
Blue-winged Warbler Vermivora pinus *	×		×	
Tennessee Warbler V. peregrind	Contraction of the second		×	
Nashville Warbler V. celata			x	
Nashville Warbier V. ruficapilia			x	
Northern Parula Parula americana			×	
Charteut sided Washlas D. paraulusian	x			
Chestnut-sided Warbler D. pensylvanica			×	
Coro May Warbler D. Magnolia			×	
Cape May Warbler D. tigrind			X	
Black-throated Blue Warbler D. coerulescens			×	
Periow-rumped warbier D. coronata			X	X
Black-throated Green Warbler D. Virens			×	
Biackburnian Warbler D. Jusco			×	
Prile Warbler D. discolor			~ ~	
Plane Warbler D. ascolor			×	
Paim Warbier D. pumurum			×	
Blackpoll Warbler D. ctriata			~	
Black-and-white Warbler Mnietilta varia			×	
American Redstart Setonhaga ruticilla *	×		Ŷ	
Ovenbird Seiurus aurocanilla	^		×	
Northern Waterthrush S. noveborgcensis			×	
Kentucky Warbler Oporornis formosus			×	
Mourning Warbler O. philadelphia			x	
Common Yellowthroat Geothlynis trichas *	×		×	
Hooded Warbler Wilsonia citrina			×	
Wilson's Warbler W. pusilla			×	
Canada Warbler W. canadensis			×	
Yellow-breasted Chat Icteria virens			×	
Family Thraupidae - Tana	agers			
Scarlet Tanager P. olivacea	Ĭ		x	
Family Emberizidae - Spa	rrows			
Eastern Towhee P. erythrophthalmus *	×			
American Tree Sparrow Spizella arborea				x
Chipping Sparrow S. passerina			×	
Field Sparrow S. pusilla *	x			x
Savannah Sparrow Passerculus sandwichensis				х
Fox Sparrow Passerella iliaca			×	×
Song Sparrow Melospiza melodia *	×		×	x
Lincoln's Sparrow M. lincolnii			×	
Swamp Sparrow M. georgiana			×	
White-throated Sparrow Zonotrichia albicollis			×	x
White-crowned Sparrow Z. leucophrys				×
Dark-eyed Junco Junco hyemalis				x
Family Cardinalidae — Grosbeaks	and Buntings			
Northern Cardinal Cardinalis cardinalis *	х			x

	Rose-breasted Grosbeak Pheucticus Iudovicianus			x	
	Indigo Bunting P. cyanea *	x			
	Family Icteridae –	– Blackbirds	nation manage		
	Bobolink Dolichonyx oryzivorus		x	x	
	Red-winged Blackbird Agelaius phoeniceus *	x			
	Eastern Meadowlark Sturnella magna			×	
	Rusty Blackbird Euphagus carolinus			x	
	Common Grackle Quiscalus quiscula *	x		x	
	Brown-headed Cowbird Molothrus ater *	x			
	Orchard Oriole Icterus spurius				
	Baltimore Oriole I. galbula *	x			
	Family Fringillidae — Fringillin	e and Cardueline Finche	s		
	Purple Finch Carpodacus purpureus	A Real Providence of the second	х		x
	House Finch C. mexicanus (I) *	x			x
	Common Redpoll Carduelis flammea	5 P	Section 1.		×
	Pine Siskin <i>C. pinus</i>				x
	American Goldfinch C. tristis *	x			x
	Family Passeridae — Ol	d World Sparrows			
	House Sparrow Passer domesticus (I) *	x		×	x
	Total: 174 species	53 species			
Notes:	* = Possible, probable or confirmed as breeder on the basis state or federally listed species is discussed in the "Rare, Sp AKPE point counts and incidental observations.	of point counts conduct ecial Concern, Threatene	ed from late ed and Enda	e May to mid Ju ngered Species	ly. Status of " section
sources:	AKKE point counts and incluental observations, October 20	007-December 2008.			

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	intaninitais 0		project o
		Breeding confirmed	Adults or
Marsupials			
Virginia Opossum <i>Didelphis virginiana</i>		x	_
Shrews and Moles			
Northern Short-tailed Shrew Blarina brevicauda			X
Eastern Mole Scalopus aquaticus			x
Bats			
Little Brown Bat Myotis lucifugus			X
Big Brown Bat Eptesicus fuscus			x
Red Bat Lasiurus borealis			x
Canids			
Feral Dog Canis lupus familiaris			x
Raccoon			
Raccoon Procyon lotor	lender in bradaers	x	
Mustelids			
Striped Skunk Mephitis mephitis			x
Felids			
Feral Cat Felis catus		x	
Ungulates			
White-tailed Deer Odocoileus virginianus		х	
Rodents			
Eastern Chipmunk Tamias striatus			x
Woodchuck Marmota monax			x
Gray Squirrel Sciurus carolinensis		x	
White-footed Mouse Peromyscus leucopus		х	
Meadow Vole Microtus pennsylvanicus		x	
Muskrat Ondatra zibethicus			x
Norway Rat Rattus norvegicus	n de la company de la compañía de la		x
House Mouse Mus musculus			x
Rabbits and Hares			
Eastern Cottontail Sylvilagus floridanus		×	

Dragonflies and D	Damselflies	NY Stat
Green Darner	Anax iunius	
Comet Darner	Anax lonaipes	NYS-S
Azure Bluet	Enallaama aspersum	
Eastern Pondhawk	Ervthemis simplicicollis	
Fragile Forktail	Ischnura posita	
Common Forktail	Ischnura verticalis	
Blue Dasher	Pachydiplax longipennis	
Wandering Globetrotter	Pantala flavescens	
Common Whitetail	Plathemis (Libellula) lydia	
Autumn Meadowhawk	Sympetrum vicinum	
Carolina Saddlebags	Tramea carolina	
Black Saddlebags	Tramea lacerata	
Red Saddlebags	Tramea onusta	
Butterflies and	d moths	
Viceroy	Limenitis archippus	
Spring Azure	Celastrina neglecta	
Orange Sulphur	Colias eurytheme	
Monarch	Danaus plexippus	
Silver Spotted Skipper	Epargyreus clarus	
Hummingbird Clearwing	Hemaris thysbe	
Grass Skipper (unid)	Hesperiinae	
Gian Leopard Moth	Hypercompe scribonia	
Gypsy Moth	Lymantria dispar	
Eastern Tent Caterpillar Moth	Malacosoma americanum	
Little Wood Satyr	Megisto cymela	
Mourning Cloak	Nymphalis antiopa	
Eastern Tiger Swallowtail	Papilio glaucus	
Black Swallowtail	Papilio polyxenes	
Spicebush Swallowtail	Papilio troilus	
Cloudless Sulphur	Phoebis sennae	
Pearl Crescent	Phyciodes tharos	
Cabbage White	Pieris rapae	
Zabulon Skipper	Poanes zabulon	
Eastern Comma	Polygonia comma	
Question Mark	Polygonia interrogationis	
Wooly Bear	Pyrrharctia isabella	
Large Lace Border	Scopula limboundata	
Painted Lady	Vanessa cardui	
American Lady	Vanessa virginiensis	
Red Admiral	Vanessa atalanta	
Additional s	pecies	
Field Cricket (unid)	Gryllus spp	
Round-headed Katydid (unid)	Amblycorypha spp	
Lone Star Tick	Amblyomma americanum	
Broad Nosed Weevil	Aphrastus taeniata	
Honey Bee	Apis mellifera	
Yellow Garden Spider	Argiope aurantia	
Eastern Boxelder Bug	Boisea trivittata	
Blowfly (unid)	Calliphoridae	
Carpenter Ant	Camponotus chromaiodes	
Black Carpenter Ant	Camponotus pennsylvanicus	

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Lesser Meadow Katydid (unid)	Conocephalus spp
American Dog Tick	Dermacentor variabilis
Carolina Grasshopper	Dissosteira carolina
Crane Fly	Epiphragma solatrix
Leafhopper	Graphocephala versuta
Brown Marmorated Stink Bug	Halyomorpha halys
Ichneumonid Wasp (unid)	Ichneumonidae
Deer Tick	Ixodes scapularis
Leaf-footed Bug (unid)	Leptoglossus spp
Orchard Orbweaver	Leucauge venusta
Red-legged Grasshopper	Melanoplus femurrubrum
Pine Tree Spurthroat Grasshopper	Melanoplus punctulatus
Large Milkweed Bug	Oncopeltus fasciatus
Common Woodlouse	Oniscus asellus
Nursery Web Spider	Pisaurina mira
European Paper Wasp	Polistes dominula
Eastern Cicada Killer	Sphecius speciosus
Chinese Mantid	Tenodera aridifolia sinensis
Orbweaver Spider (unid)	Tetragnatha spp
Pygmy Grasshopper	Tetrix subulata
Swamp Cicada	Tibicen tibicen
Yellowjacket (unid)	Vespula spp
Notes: State Rank: NYS-S2 = imperiled in	New York State
Sources: Time-restricted searches and targ staff, October 2007-October 2008 and Susan Stanley, NYCDPR-NRG	eted wetland surveys conducted by AKRF Natural Resources field Additional field assistance on odonate surveys by Ellen Pehek (8 July 2008)
### Table 6

Rare, specia	al concern,	threatened	and enda	angered s	pecies re	ported to
occu	r in the vic	inity of the	Charlesto	n, Staten	Island p	oject site

	FLORA	STATUS
Bristly Sarsaparilla	Aralia hispida	0
White Milkweed	Asclepias variegata	Р
Saltmarsh Aster	Aster subulatus	Р
River Birch	Betula nigra	С
Terrestrial Starwort	Callitriche terrestris	P
Collins' Sedge	Carex collinsii	Р
Slender Spikegrass	Chasmanthium laxum	Р
Dwarf Hawthorn	Crataegus uniflora	Р
Wild Comfrey	Cynoglossum virginianum	Р
Retrorse Flatsedge	Cyperus retrorsus	Р
Little-leaf Tick-trefoil	Desmodium ciliare	Р
Smooth Tick-clover	Desmodium laevigatum	Р
Nuttall's Tick-clover	Desmodium nuttallii	Р
Slender crabgrass	Digitaria filiformis	Р
Persimmon	Diospyros virginiana	Р
American Strawberry Bush	Euonymus americanus	0
Fringed Boneset	Eupatorium hyssopifolium var. laciniatum	0
	Eupatorium rotundifolium var. rotundifolum	
Round-leaved Boneset	Eupatorium rotundifolium var.ovatum	0
Wild Ipecac	Euphorbia ipecacuahae	Р
Soapwort Gentian	Gentiana saponaria	Р
Carolina Cranesbill	Geranium carolinianum	Р
Swamp Pink	Helonias bullata	Р
Flax-leaved Whitetop	lonactis linariifolius	Р
Wild Potato-vine	Ipomoea pandurata	Р
Scirpus-like Rush	Juncus scirpoides	Р
Bead Pinweed	Lechea pulchella var moniliformis	P
Pale Duckweed	Lemna valdiviana	Р
Velvety Lespedeza	Lespedeza stuevei	0
Wolf's claw	Lycopodium clavatum	P
Ground Pine	Lycopodium obscurum	P
Sweet-bay Magnolia	Magnolia virginiana	Р
Few-flowered Panic Grass	Panicum oligosanthes var oligosanthes	P
Downy Rattlesnake Plantain	Peramium pubescens	Р
Ground-cherry	Physalis pruinosa	Р
Shortleaf pine	Pinus echinata	С
Virginia Pine	Pinus virginiana	С
Torrey's Mountain-mint	Pycnanthemum torrei	0
Whorled Mountain-mint	Pycnanthemum verticillatum	Р
Round-leaved Pyrola	Pyrola americana	С
Blackjack Oak	Quercus marilandica	С
Willow Oak	Quercus phellos	Р
Sand Blackberry	Rubus cuneifolius	Р
Rose Pink	Sabatia angularis	Р
Hyssop-skullcap	Scutellaria integrifolia	Р
Michaux's Blue-eyed Grass	Sisyrinchium mucronatum	Р
Seaside Goldenrod	Soidago sempervirens	Р
Wild Pink Bean	Strophostyles umbellata	Р
Ohio spiderwort	Tradescantia ohiensis	Р
Virginia spiderwort	Tradescantia virginiana	Р
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DRAFT CHARLESTON NATURAL RESOURCES SURVEY REPORT

	Tiny Blue Curls	Trichostema oblongum	Р
	Possum-haw	Viburnum nudum	Р
Primrose Violet		Viola primulifolia var primulifolia	Р
		FAUNA	
Tawr	y Emperor Butterfly	Asterocampa clyton	Р
Whip-poor-will		Caprimulgus vociferus	Р
	Spotted Turtle	Clemmy guttata	Р
	Wood Turtle	Clemmys insculpta	Р
٦	Northern Harrier	Circus cyaneus	C (foraging)
Ea	stern Mud Turtle	Kinosternon subrubrum	Р
Ba	r-winged Skimmer	Libellula acilena	Р
Yell	ow-sided Skimmer	Libellula flavida	Р
	Osprey	Pandion haliaetus	C (flyover)
	Fence Lizard	Sceloporus undulatus	Р
Notes: Stat	tus is as follows: C = Conf	irmed during 2007-2008 study; O = Observed during 20	07-2008
	study, identification pe	ending review by NYNHP; P = Previously observed with	in the study
	area; not observed wit	hin the project site during his study.	5 2010 00 00 00 00 00 00 00 00 00 00 00 00
Sources:	Information requests f	rom NYNHP regarding rare, special concern, threatene	d and
	endangered species in	the vicinity of the project site, from the following docu	iments:
	Bricktown Centre at Cl	harleston FEIS (2002), Fairview Park Modified EAS (200	5), Charleston
	Bus Annex EA (2007).	Additional information from Evans, D., P. Novak and T.	Weldy.
	2002. Rare species and	ecological communities of Clay Pit Ponds State Park.	en de la companya

# APPENDIX A: PROJECT SITE PHOTOGRAPHS

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APPENDIX B: REPORT ON ENGLEWOOD AVENUE CORRIDOR WETLANDS DELINEATION, AUGUST-OCTOBER 2008

### **Appendix B:**

### **Charleston Wetlands Delineation Report**

This report pertains to AKRF's wetlands delineation efforts in the Englewood Avenue Corridor of the project site in Charleston, Staten Island. The delineation was conducted by AKRF, with input from NYCDPR-NRG, between August and October 2008. Control Point Associates, Inc. surveyed the flagged boundaries in mid-October 2008, and produced a wetlands delineation sketch on October 29, 2008 (Control Point Associates, Inc. 2008).

### H. INTRODUCTION:

AKRF's wetland inspection targeted the Englewood Avenue corridor, located along the northern boundary of the Charleston Natural Resources Survey project site. The wetland inspection extended along Englewood Avenue southwards into the project site a distance of 80 feet, as shown in Figure B-1. Wetland areas identified within this zone (Wetlands A-D, F and G) were identified and flagged in accordance with the US Army Corps of Engineers' (USACE) Wetland Delineation Methodology (1987). The flagging of the identified wetlands was extended southwards into the project site until positive wetland indicators were no longer present. This resulted in the flagging of several wetland areas beyond the footprint of Englewood Avenue - most notably, the wetland system comprised of Wetlands "C", "D", and "F". This wetland system extends southwards well into the subject parcel following the path of surface drainage tributary to Mill Creek. The other three wetland areas, Wetlands "A", "B", and "G", are located in closer proximity to the mapped portion of Englewood Avenue. Figures B-2 to B-9 indicate all current National Wetlands Inventory (NWI) and New York State Department of Environmental Conservation (NYSDEC) mapped wetlands at, and in the vicinity of, the project site. USACE Routine Wetland Determination Data Forms for upland and wetland data points are also provided below.

### I. WETLAND AREA DESCRIPTIONS

### WETLAND AREAS A AND B

Wetlands A and B are located within a level portion of the project site that has been maintained in a cleared, open field and successional field condition. Portions of both wetland areas extend into the existing footprint of the dirt path/road within the mapped portion of Englewood Avenue.

### WETLAND A:

Wetland A is an area of low topography, characterized by a wet depressional area. This area is interrupted at points by small upland pockets; this area was subject to recent clearing for the Fairview Park project, and appears to be maintained as open habitat by the informal recreational uses ongoing within the site (e.g., horseback riding). These small upland pockets are vegetated with successional plant species. In general, the vegetation in this area can be described generally as a wet shrubland; trees are limited to saplings or small trees, and

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herbaceous vegetation is prominent. The upland pockets are dominated by gray birch (*Betula populifolia*) (FAC), quaking aspen (*Populus tremuloides*), and pin oak (Quercus palustris). Dominant species in the wet depressional areas include soft rush (*Juncus effusus*), lance-leaved goldenrod (*Euthamia graminifolia*), switch grass (*Panicum virgatum*), and toad rush (*Juncus bufonius*). Associated species include common greenbrier (*Smilax rotundifolia*), late boneset (*Eupatorium serotinum*), hairy boneset (*Eupatorium pilosum*), and tapered rosette grass (*Dichanthelium acuminatum*). Hydric soils are present throughout the area.

#### WETLAND B:

64

Wetland B is located immediately east of Wetland A, and extends from the footprint of Englewood Avenue into an open successional field, portions of which are used currently for horseback riding. It is dominated by herbaceous wetland species (*Scirpus* sp., *Juncus* sp., *Carex* sp.) and shows evidence of surface ponding as observed over several site inspections between May and December 2008. The extent of the cleared area surrounding this wetland was expanded in the recent past (approximately 2002) by the NYC Department of Parks and Recreation for the Fairview Park project.

Wetland B contains vegetated mounds of soil bordering the unbuilt portion of Englewood Avenue. The mounds of soil are remnants of recent earth moving activities that were associated with the preliminary stages of the Fairview Park project, and vegetation is actively grazed by domesticated horses. Currently, this area contains wet depressions dominated by hydrophytic vegetation and hydric soils. Dominant vegetation within the wet depressions are characterized by the obligate species of blunt spike rush (*Eleocharis obtusa*) and FACW/+ species of toad rush (*Juncus bufonius*), coast cockspur grass (*Echinochloa walteri*), and soft rush (*Juncus effusus*). Lance-leaved goldenrod (*Euthamia graminifolia*) and grass that JIM identified (formerly thought to be Poa pratensis) are also present. Although the surface of the soils in these depressions can be characterized as rocky fill, hydric soils are present and display dark manganese concretions at depths below six inches.

Upland areas associated with Wetland B include hyssop-leaved boneset (*Eupatorium hyssopifolium*), lance-leaved goldenrod (*Euthamia graminifolia*), birds-foot trefoil (*Lotus corniculatus*) and English plantain (*Plantago lanceolata*). Soils in the upland area demonstrate a silty loam with some low chroma colors and some mottling, though hydrophytic vegetation and hydrology do not appear to be present.

Hydric soil indicators encompass a larger area than flagged as Wetland B, extending into much of the remaining portions of the cleared area dominated by herbaceous plants. However, evidence of wetland hydrology and vegetation is not uniform throughout the field area. Therefore, the extent of Wetland B was limited by vegetation/hydrology indicators, and flagged in a closed loop (B-1 to B-26). Wetland B was found to be one of a number of discrete wetland areas in the field. Additional wetland areas observed are not contiguous with Wetland B and are located beyond the 80 foot investigation area adjacent to Englewood Avenue. Therefore, the additional wetland areas observed in the field were not included in the delineation of Englewood Avenue wetlands.

#### WETLAND AREAS C, D AND F

Wetland Areas C, D, and F appear to constitute one wetland system which conveys surface water flows across Englewood Avenue southwards, through two large culverts and eventually into the Mill Creek watershed.

Wetlands flagged as "C", "D" and F" are mapped by both the U.S. Fish and Wildlife Service's National Wetlands Inventory (NWI) as shown in Figure B-7, and the New York State Department of Environmental Conservation (NYSDEC) as shown in Figures B-2 and B-4. The NWI classification of this wetland system is "PFO1B – palustrine forested, broad-leaved deciduous, saturated" within its more northerly segment and "R2UBH – riverine, lower perennial, unconsolidated bottom, permanently flooded" within the more linear segments to the south. The New York State wetland identification number for this wetland system is "AR-27".

New York State has also mapped a classified stream within this wetland system. This stream is known as "Mill Creek" and is classified a "Class C" stream (Figure B-6). Mill Creek flows southwards from the project site into Richmond Valley and then westwards eventually tributary to the Arthur Kill tidal river.

Due to the fact that this wetland system is mapped at the Federal and State level, and is a NYSDEC classified stream, AKRF extended the delineation southwards beyond Englewood Avenue. Site inspection confirms that Wetland Areas "C", "D" and "F" form a system of interconnected wetlands that were formerly one uninterrupted stream/wetland complex.

#### DRAINAGE

This wetland system is directly adjacent and appear to be hydrologically connected to the offsite Sharrott's Pond wetland system (NYSDEC Wetland AR-11, Figure B-3) located immediately north of Englewood Avenue within Clay Pit Ponds State Park Preserve. The relationship of the onsite and offsite wetland systems is shown in Figure B-4. Surface flows connecting these wetland systems were evident across the dirt path that now represents Englewood Avenue. As such, the survey drawing prepared for this delineation report indicates that the offsite and onsite wetland systems are contiguous. No wetland flags were placed north of Englewood Avenue within NYSDEC property, as permission was not received for this project.

It appears that surface and subsurface water flows southwards from the offsite Sharrott's Pond wetland, through Wetland Area C, then into a newly-built culvert in the retaining wall of the parking lot serving the Bricktown Centre shopping mall (north of the present Christmas Tree Shops). Formerly, surface drainage proceeded southwards as "Mill Creek" from Wetland Area C through Wetland Area D and Wetland Area F before exiting the project site at Veteran's Parkway. Currently, surface drainage from Wetland C is piped directly to Wetland F; under heavy flow conditions, there is a potential for surface flow to pass along the retaining wall and enter Wetland D. Wetland D also has a large culvert at its southern terminus, which connects southward into Wetland F.

#### WETLAND C:

Wetland Area "C" is a forested wetland dominated by red maple (*Acer rubrum*) and pin oak (*Quercus palustris*) with some occurrence of additional facultative species including sweetgum (*Liquidambar styraciflua*) and elderberry (*Sambucus canadensis*). It was flagged C-1 to C-20.

65 DRAFT CHARLESTON NATURAL RESOURCES SURVEY REPORT

#### WETLAND D:

Wetland "D" is a linear wetland feature formerly connected via surface runoff to Wetland "C". This wetland conveys surface water through young oak, sassafras and black gum forest and is mapped by NYSDEC as the classified stream "Mill Creek". Dominant plants within and adjacent to Wetland D include red maple, black gum, greenbrier and pin oak. Construction of the shopping mall appear to have separated this wetland from historic upstream water sources – examination of the retaining wall built as part of the "Christmas Tree Shops" shows no culvert. As mentioned above, periods of heavy flow may contribute water from the north to Wetland D via the retaining wall; it is apparent that positive wetland indicators persist.

It was flagged as a center-line (linear) wetland feature D-1 to D-7. The area exhibiting positive Federal wetland indicators is limited to the drainage feature and its immediate banks – approximately 8' in width.

#### WETLAND F:

Wetland "F" is also a linear wetland feature conveying the flows of "Mill Creek" through the project site as described above. This segment of was flagged F-1 to F-8.

Wetland F is best described as an ephemeral drainage area, and as noted above, appears to have formerly been connected to a larger wetland complex now occupied by a portion of the Bricktown Centre development. This drainage area can be described as having a number of eroded gullies that connect to a larger arterial drainage corridor. The bed of the drainage area contains medium to large sized cobble, sand, and in some areas, the banks are eroded. Standing water is present in a pool located in an area close to the roadway leading to the Bricktown Centre development that bisects the drainage way.

Vegetation in the vicinity of Wetland F and along the drainage way corridor is largely dominated by red maple (*Acer rubrum*) in the canopy. Black gum (*Nyssa sylvatica*), sweet gum (*Liquidambar styraciflua*), big-tooth aspen (*Populus grandidentata*), and sumac (*Rhus sp.*) species are also present. In the subcanopy, sassafras (*Sassafras albidum*) is present. The shrub layer is largely dominated high bush blueberry (*Vaccinium corymbosum*) and maple-leaf viburnum (*Vibrunum acerifolium*). Species of juneberry (*Amelanchier sp.*) are also present. Species in the herbaceous layer include hayscented fern (*Dennstaedtia punctilobula*), bracken fern (*Pteridium aquilinum*), blackberry (*Rubus allegheniensis*), Canada mayflower (*Maianthemum canadense*), round-leaved pyrola (*Pyrola rotundifolia*), and seedlings of the abovementioned woody species. Early spring vegetation surveys also show that a spring ephemeral, trout lily (*Erythronium americanum*), occurs in this area. Roundleaf greenbrier (*Smilax rotundifolia*) and cat greenbrier (*Smilax glauca*) is present in both the herbaceous and shrub layers.

#### WETLAND AREA G

Wetland G is an isolated depression dominated by pin oak and red maple. It is located in close proximity to Englewood Road, and was flagged G-1 to G-6. It appears to be an ephemeral wet depression that receives surface water seasonally from the surrounding higher ground; there is a substantial amount of debris in the vicinity of this wet depression, suggesting past disturbance and possible excavation.

### J. SOILS:

The Natural Resources Conservation Service (NRCS) has mapped the following two soil mapping units for the project site:

<u>Western portion of Site – Wetlands A and B</u>: Wethersfield-Ludlow-Wilbraham complex, 0 to 8 percent slopes

Nearly level to gently sloping areas of till plains, relatively undisturbed and mostly wooded; a mixture of well drained, moderately well drained, and poorly drained soils developed in red till; located in Staten Island. The Willbraham Series is designated a Hydric Soil per National Technical Committe for Hydric Soil (NTCHS). Its taxonomy is an "Aquic Dystrochrept".

Eastern portion of Site – Wetlands C, D, F and G: Wethersfield-Ludlow complex, 8 to 15 percent slopes

Strongly sloping to moderately steep areas of till plains and hills, relatively undisturbed and mostly wooded; a mixture of well drained and moderately well drained soils developed in red till; located in Staten Island.

Site inspection confirms these soil types on the project site. Due to the prevalence of red parent material in both of these soil mapping units, AKRF used the test indicator for hydric soils "TF2: Red Parent Material" (Field Indicators of Hydric Soil in the United States, 2006) for several areas – most notably Wetland "C". Past communications with Paul Smith of the NRCS, New York City Field Office, have confirmed the presence of soils derived from red sandstone/siltstone in this region of Staten Island and the likelihood of encountering hydric soil without low chroma colors as a result.

#### Wethersfield series

Parent Material: Dense basal till derived mainly from red sedimentary rocks

Landform: Till plains and hills

Depth to Bedrock: Very deep

Drainage Class: Well drained

Permeability: Moderately rapid or moderate in the solum; slow or very slow in the dense

substratum

Soil Texture: Silt loam, loam, or sandy loam throughout

Coarse Fragments: 5 to 25 percent rock fragments in the solum; 5 to 35 percent in the

substratum

Range in Soil pH: Extremely acid to mildly alkaline

Hydrologic Soil Group: C

#### **Typical Soil Profile:**

A 0 to 3 inches - dark brown (7.5YR 3/2) loam; moderate medium granular structure; friable; 10 percent gravel; strongly acid.

*Bw1* 3 to 13 inches - reddish brown (5YR 4/4) loam; weak medium subangular blocky structure; friable; 10 percent gravel; strongly acid.

*Bw2* 13 to 27 inches - dark reddish brown (5YR 3/3) gravelly loam; weak medium subangular blocky structure; friable; 10 percent gravel and 5 percent cobbles; strongly acid.

*Cd* 27 to 65 inches - reddish brown (2.5YR 4/4) gravelly loam; weak thick platy structure; very firm and brittle; few silt films and black coatings on some plates; 15 percent gravel and 5 percent cobbles; strongly acid.

#### Ludlow series

Parent Material: Dense basal till derived mainly from red sedimentary rocks and basalt

Depth to Bedrock: Very deep

Drainage Class: Moderately well drained

Permeability: Moderate in the solum; slow or very slow in the substratum

Soil Texture: Loam or sandy loam in the solum; sandy loam in the substratum where pockets or

thin lenses of loamy sand may be found

Coarse Fragments: 5 to 25 percent in the solum; 5 to 35 percent in the substratum

Range in Soil pH: Very strongly acid to moderately acid

Hydrologic Soil Group: C

#### Typical Soil Profile:

68

Ap 0 to 8 inches; dark brown (7.5YR 3/2) silt loam; weak coarse granular structure; friable; 8 percent gravel; strongly acid.

*Bw1* 8 to 20 inches – reddish brown (5YR 4/4) silt loam; weak coarse subangular blocky structure; friable; 10 percent gravel; strongly acid.

*Bw2* 20 to 26 inches – dark reddish brown (5YR 3/4) silt loam; weak coarse subangular blocky structure; friable; 12 percent gravel; common medium distinct pinkish gray (5YR 6/2) and common medium prominent strong brown (7.5YR 5/8) redoximorphic features; strongly acid.

*Cd* 26 to 65 inches – dark reddish brown (2.5YR 3/4) gravelly loam; weak thick platy structure; very firm and brittle; thin patchy silt films and black (10YR 2/1) manganese coatings on some plates; 15 percent gravel and 5 percent cobbles; few fine distinct reddish gray (5YR 5/2) redoximorphic features; strongly acid.

#### Wilbraham series

Parent Material: Dense basal till derived mainly from red sedimentary rocks

Landform: Till plains and hills

Depth to Bedrock: Very deep

Drainage Class: Poorly drained

Permeability: Moderate in the solum; slow or very slow in the dense substratum

**Soil Texture**: Silt loam or loam in the surface; silt loam, loam, or fine sandy loam in the subsoil and substratum

Coarse Fragments: 5 to 25 percent rock fragments in the solum; 5 to 35 percent in the

substratum

Range in Soil pH: Very strongly acid to moderately acid

Hydrologic Soil Group: D

#### **Typical Soil Profile:**

A 0 to 4 inches - very dark gray (10YR 3/1) silt loam; weak medium granular structure; very friable; 5 percent gravel; strongly acid.

*Bw1* 4 to 8 inches - dark reddish brown (5YR 3/3) silt loam; weak coarse subangular blocky structure; very friable; common medium prominent pinkish gray (7.5YR 6/2) redoximorphic features; 10 percent gravel; strongly acid.

*Bw2* 8 to 20 inches - reddish brown (5YR 4/4) silt loam; weak coarse subangular blocky structure; friable; common medium prominent reddish gray (5YR 5/2) redoximorphic features; 10 percent gravel and 3 percent cobbles; strongly acid.

*Cd* 20 to 65 inches - dark reddish brown (5YR 3/3) gravelly loam; weak thick platy structure; very firm and brittle; silt films and black (10YR 2/1) coatings on some plates; many medium distinct brown (7.5YR 5/2) and dark brown (7.5YR 4/4) redoximorphic features; 20 percent gravel and 5 percent cobbles; strongly acid.

#### K. RECOMMENDATION

It is important to note that the wetland delineation effort performed by AKRF in August to October 2008 flagged only those wetlands contiguous with Englewood Avenue. As part of AKRF's ongoing ecological work onsite, numerous additional wetland areas, and potential wetland areas, have been identified outside of the Englewood Avenue investigation area (See Figure 11 within the final report). These additional wetland areas have not been flagged as part of the 2008 wetlands delineation within the Englewood Avenue Corridor. It is AKRF's recommendation that the NYC Economic Development Corporation (EDC) request a Jurisdictional Determination (JD) Site Inspection from the Army Corps of Engineers (USACE) to confirm the boundaries of those wetlands delineated and described in this report, after which the regulatory status of additional wetlands areas throughout the project can be determined. Many of these additional wetland areas occur in isolated depressions, or qualify as wetlands based on soil parameters specific to red parent material. Although the USACE has previously noted their intention to take jurisdiction over some of these potential wetland areas (see EEA 2004), before proceeding on a lengthy delineation of the entire property, complicated by highly variable site conditions, we recommend receiving input from the USACE – the one regulatory body with authority for freshwater wetlands within New York City.

FIGURES



Figure B-1: Englewood Avenue Corridor – search area for AKRF wetlands delineation

DRAFT CHARLESTON NATURAL RESOURCES SURVEY REPORT



Figure B- 2: NYSDEC wetland areas within the vicinity of the project site.



Figure B- 3: Clay Pit Ponds State Park Preserve wetlands, north of project site



Figure B- 4: NYSDEC wetlands from Environmental Resource Mapper (green area represents the "wetlands check-zone"



Figure B- 5: NYSDEC wetlands over 2002 aerial, prior to construction of Bricktown Centre at Charleston and Tides at Charleston developments



Figure B- 6: NYSDEC wetlands to south of project site, including Mill Creek watershed



Figure B-7: NWI wetlands in the vicinity of the project site



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Figure B- 8: NWI wetlands in the vicinity of the project site



Figure B- 9: Project site topography with NWI wetlands

## USACE ROUTINE WETLAND DETERMINATION DATA FORMS

A-1 to A-3
B-1 to B-4
C-1 and C-2
D-1
F-1
G-1

N

Project/Site: Charleston, Staten Island (Natural Resource:	roject/Site: Charleston, Staten Island (Natural Resources Study Area)						
Applicant/Owner: NYC EDC	County: Richmond						
Investigator: A. Bernick, M. Bright, A. McMahon, J. Nash,	State: NY						

### VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus effusus	herb	FACW+	6.		
2. Scirpus cyperinus	herb	FACW+	7.		
3. Betula populifolia	tree	FAC	8.		
4.		( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	9.	0. Met-19-19-19-19-19-19-19-19-19-19-19-19-19-	
5.			10.		
Percent of Dominant Species	s that are OBL. F	ACW, or FAC (ex	cluding FAC-): 100		
		· · · · · · · · · · · · · · · · · · ·			
Remarks: Eupatorium ser	otinum (FAC-)				

### HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge	Wetland Hydrology Indicators: Primary Indicators:
Aerial Photographs	X Inundated
Other	Saturated in Upper 12 Inches
No Recorded Data Available	X Water Marks
	Drift Lines
Field Observations: NVA	Sediment Deposits
Field Observations: N/A	Drainage Patterns in Wetlands
Depth of Surface Water: (in	Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches X Water-Stained Leaves
Depth to Free Water in Pit: (in	Local Soil Survey Data
Depth to Saturated Soil:(in	FAC-Neutral Test Other (Explain in Remarks)

Remarks: Water ponded near wetland flag A1. Broad-leaved Cattails observed growing in the ponded area. Wood chips and coarse gravel fill observed near Englewood Avenue at northern end of Wetland A.

### SOILS

Map Unit Name (Series and Phase):	Wethersfield-Ludlow-Wilbr complex	raham	Drainage	Drainage Class:		Well drained to poorly drained		
Taxonomy (Subgroup):	Aquic to Oxyaquic subgroup		Field Observations Confirm Mapped Type?		Poorly drained	Yes	No	
Profile Description: Depth (Inches) Horiz	- Matrix Color con (Munsell Moist) A 10 YR 4/2	Mottle C (Munsel	colors I Moist)	Mottle Abund Size/Contras	lance/ t	Texture, Concretions, Structure, etc Clay loa	3	
4-10 E 10-12+ E	3         10 YR 4/1           3         10 YR 6/1	10 Y	YR 5/8 YR 6/8			Loamy cl	ay ay	
lydric Soil Indicators: Histosol Histic Epipedo Sulfuric Odor Aquic Moistur Reducing Cor	on e Regime nditions		Concr High C Organ Listed	etions Drganic Content ic Streaking in S on Local Hydric on National Hyd	in Surface Sandy Soils Soils List Iric Soils L	Layer in Sand	y Soils	
X Gleyed or Lov	v-Chroma Colors	9	Other	(Explain in Rem	arks)			

Remarks: Wethersfield, Ludlow and Wilbraham soils developed in dense basal till derived mainly from red sedimentary rocks. Drainage class for these soil types ranges from well drained to poorly drained, with hydrologic soil group either C or D. Wilbraham and Ludlow are both mesic Aquic Dystrudepts. Wethersfield is a mesic Oxyaquic Dystrudepts. Wilbraham is designated as a hydric soil by the NTCHS. Meets TF2: red parent material test.

#### WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
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Remarks: The course of Wetland A appears to have changed with some human alteration of the landscape (e.g., clearing) occurring in the past five years. More study is needed to determine connectivity between Wetland A and possible wet depressions to the south.

Approved by HQUSACE 3/92

Applicant/Owner: NYC EDC	County: Richmond		
Investigator: A. Bernick, M. Bright, A. McMahon, J. Nash, A.	AKRF, Inc.		State: NY
Do Normal Circumstances exist on the site?	Yes	No	Community ID: Data Point A-2
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	No No	Community ID:Data Point A-2 Transect ID:
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)? Is the area a potential Problem Area?	Yes Yes Yes	No No No	Community ID:Data Point A-2 Transect ID: Plot ID:(flagged Wetland A)

### VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Poa pratensis		FACU	6.		
2. Panicum virgatum		FAC	7.		
3. Daucus carota		NL	8.		W. C
4. Eupatorium serotinum		FAC-	9.	7 K-10	
5.			10.		N
Remarks: Other vegetation: Potentilla canadensis (NL)					
Plantago lanceolata (UPL)					
Carex scoparia (FACW)					

### HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary Indicators:
Aerial Photographs	Inundated
Other	Saturated in Upper 12 Inches
No Recorded Data Available	Water Marks
	Drift Lines
Pield Observations AllA	X Sediment Deposits
Field Observations: N/A	X Drainage Patterns in Wetlands
Depth of Surface Water:	(in.) X Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit:	(in.) Local Soil Survey Data
	FAC-Neutral Test
Depth to Saturated Soil:	(in.) Other (Explain in Remarks)
Demarka Na hudralanu maant	

### SOILS

Map Unit Name (Series and Phase):	Wethersfield-Ludlow-Wilbra complex	aham	Drainage Class	S:	Well dra	ained to poorly di	rained
Taxonomy (Subgroup):	Aquic to Oxyaquic subgroup		Field Observations Confirm Mapped Type?		Poorly drained Yes		No
Profile Description: Depth (Inches) Horizo	Matrix Color n(Munsell Moist) 	Mottle Col (Munsell M	ors N loist) S	Nottle Abund Size/Contrast	ance/	Texture, Concretions, Structure, etc.	
lydric Soil Indicators: Histosol Histic Epipedor Sulfuric Odor	1		Concretion High Orgar Organic St	s nic Content i reaking in Si	n Surface andy Soils	Layer in Sandy	Soils
Aquic Moisture Reducing Conc Gleyed or Low-	Regime litions Chroma Colors	-	Listed on L Listed on N Other (Exp	ocal Hydric Iational Hydr Iain in Rema	Soils List ric Soils L arks)	ist	
Remarks: NO SOILS TA	KEN – GRAVEL FILL TO 4	INCHES					, 1

### WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks: Upland point ta	aken near wetle	and flag A	-3.			

Approved by HQUSACE 3/92

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Project/Site: Charleston, Staten Island (Natural Resources	s Study Area	)	County: Richmond
Investigator: A. Bernick, M. Bright, A. McMahon, J. Nash,	AKRF, Inc.		State: NY
Do Normal Circumstances exist on the site?	Yes	No	Community ID: Data Point A-3
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	No No	Community ID:Data Point A-3 Transect ID:

### VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Juncus effusus	herb	FACW+	6.		
2. Juncus bufonius	herb	FACW	7.		
3. Carex scoparia	herb	FACW	8.		a allow months a
4. Phragmites australis	herb	FACW	9.	×	
5. Panicum virgatum	herb	FAC	10.		
Percent of Dominant Species Remarks: Other vegetation Eupatorium serotinum (FAC-) Carex scoparia (FACW) Scirpus cyperinus (FACW+) Betula populifolia (FAC) Liquidambar styraciflua (FAC)	that are OBL, F : )	ACW, or FAC (ex	cluding FAC-): 100		

### HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge Aerial Photographs Other No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches Water Marks Drift Lines
Field Observations: N/A	X Sediment Deposits X Drainage Patterns in Wetlands
Depth of Surface Water: (in.)	Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches X Water-Stained Leaves
Depth to Free Water in Pit: (in.)	Local Soil Survey Data
Depth to Saturated Soil:(in.)	FAC-Neutral Test Other (Explain in Remarks)
Remarks: Standing water near flag A-5.	

#### SOILS

Map Unit Name (Series and Phase):		Wethersfield-Ludlow-Wilbr complex	aham	Drainage	Class:	Well dra	ained to poorl	y drained
Taxonomy (Subç	group):	Aquic to Oxyaquic subgr	roup	Field Obs	ervations lapped Type?	Poorly drained pe? Yes		No
Profile Descri	iption:							
Depth (Inches) 0-3	Horizor	Matrix Color (Munsell Moist) 10 YR 4/3	Mottle C (Munsel	Colors Il Moist)	Mottle Abund Size/Contras	lance/ It	Texture, Concretion: Structure, e	s, atc
3-10	В	10 YR 6/6	*****				Loamy	clay
10-12+	В	10 YR 6/6	10 YF 10 Y	8 6/8 and YR 6/1			Loamy	clay
Hudrie Coll India							9 9	
Hydric Soli Indic Histoso Histic E Sulfuric Aquic M Reduci X Gleyed	Epipedon Codor Moisture ng Cond or Low-(	Regime itions Chroma Colors		Concr High C Organ Listed Listed Other	etions Drganic Content ic Streaking in S on Local Hydric on National Hyd (Explain in Rem	in Surface Sandy Soils Soils List dric Soils L arks)	Layer in San 3 ist	dy Soils

Remarks: Wethersfield, Ludlow and Wilbraham soils developed in dense basal till derived mainly from red sedimentary rocks. Drainage class for these soil types ranges from well drained to poorly drained, with hydrologic soil group either C or D. Wilbraham and Ludlow are both mesic Aquic Dystrudepts. Wethersfield is a mesic Oxyaquic Dystrudepts. Wilbraham is designated as a hydric soil by the NTCHS. Meets TF2: red parent material test.

### WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks: Wetland point	taken near wel	lland flag /	4-5.			

Approved by HQUSACE 3/92

Project/Site:	Charleston, Staten Island, NY (Natural Resou	irces Study	Area)	Date: 08.18.08		
Applicant/Ow	ner: NYC EDC	County: Richmond				
Investigator:	A. Bernick, M. Bright, A. McMahon, J. Nash, A		State: NY			
	N 40'31'59 W 074'13"54.1					
Do Normal Ci	ircumstances exist on the site?	Yes	No	Community ID: Data point B-1		
Is the site sig	Yes	No	Transect ID:			
Is the area a	potential Problem Area?	Yes	No	Plot ID: (flagged Wetland B area)		
(If needed, ex	(plain on reverse.)			4 Internations of the Annual Control		

### VEGETATION

Dom	inant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.	Eleocharis obtusa	Herb	OBL	6.	-	
2.	Juncus bufonius	Herb	FACW	7.		
3.	Poa pratensis	Herb	FACU	8.		
4.	Echinochloa crus-galli	Herb	FACU	9.	No. New York Company Streement	
5.		•		10.		
Perc	ent of Dominant Species th	hat are OBL, FA	CW, or FAC (ex	cluding FAC-):		
Rem	arks: Associated speci	es (FAC-), Euth	namia graminifolia	a (FAC), E. hyssopifolium (N/L)		

IJ

### HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary indicators:
Aerial Photographs	Saturated in Linner 12 Inches
X No Recorded Data Available	Water Marks
	Drift Lines
E111 OL	X Sediment Deposits
Field Observations: N/A	Drainage Patterns in Wetlands
Depth of Surface Water: (in.)	Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit: (in.)	Local Soil Survey Data
Depth to Saturated Soil: (in.)	FAC-Neutral Test Other (Explain in Remarks)

Remarks: Vegetation represented and the presence of water stained leaves suggests that water ponds in this wet depressional area.

#### SOILS

Map Unit Nam (Series and Ph	e Weth lase): <u>comp</u>	ersfield-Ludlow-Wilbr	aham Drainag	e Class:	Well dra	Well drained to poorly drained			
axonomy (Subgroup): <u>Aquic to Oxyaquic subgroup</u>				Field Observations Confirm Mapped Type? Yes					
Profile Dese Depth (Inches) 0-3 3-8 7-10	<u>Horizon</u>	Matrix Color (Munsell Moist) 7.5 YR 6/1 7.5 YR 6/1-7/1 10 YR 5/1	Mottle Colors (Munsell Moist) 7.5YR 6/8 7.5YR 6/8-7/1 7.5YR 5/8	Mottle Abund Size/Contrast	lance/ t	Texture, Concretions, Structure, etc. Clay/Loam Clay/Loam Clay/Loam			
łydric Soil Ind Histo Histic Sulfu Aquic Redu X Gleye	icators: sol : Epipedon ric Odor : Moisture Regi cing Conditions ed or Low-Chroi	me s ma Colors	Com High Org Liste Liste Oth	ncretions h Organic Content i anic Streaking in S ed on Local Hydric ed on National Hyd er (Explain in Rema	in Surface andy Soils Soils List ric Soils Li arks)	Layer in Sandy s	Soils		
Remarks:									

### WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Solls Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	x	Yes	No
					-		

Remarks: This area has had recent human disturbances (clearing activity within the past 5 years). Although the point exhibited wetland characteristics, further consultation with USACE is required on this site as an atypical situation is present.

Approved by HQUSACE 3/92

Applicant/Owner: NYCEDC	County: Richmond				
Investigator: A. Bernick, M. Bright, A. McMahon, J. Nash,	AKRF, Inc	).	_		State: NY
Do Normal Circumstances exist on the site?	Yes	х	No		Community ID: Data Point B-2
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	x x	No No		Community ID:Data Point B-2 Transect ID:

### VEGETATION

Dom	inant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.	Juncus effusus	Herb	FACW+	6.		
2.	Echinochloa walteri	Herb	FACW+	7.		
3.	Eleocharis obtusa	Herb	OBL	8.		
4.	Juncus bufonius	Herb	FACW	9.		
5.				10.		
1205000				JONYME -		
Dere	ant of Dominant Coopies	that are OBL E		aludina EAC >: 100%		
Perc	ent of Dominant Species	s that are OBL, F	ACVV, of FAC (ex	cluding FAC-): 100%		
Rem	arks:					
12165783.0						

### HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary Indicators:
Aerial Photographs	Inundated
Other	Saturated in Upper 12 Inches
X No Recorded Data Available	Water Marks
	Drift Lines
	X Sediment Deposits
Field Observations: N/A	Drainage Patterns in Wetlands
	Secondary Indicators (2 or more required):
Depth of Surface Water:	(in.) Oxidized Root Channels in Upper 12 Inches
Depth to Free Water in Pit:	(in.) X vvater-Stained Leaves Local Soil Survey Data
	FAC-Neutral Test
Depth to Saturated Soil:	(in.) Other (Explain in Remarks)

Remarks: Vegetation represented and the presence of water stained leaves suggests that water ponds in this wet depressional area.

### SOILS

Map Unit Nam (Series and Ph	e nase):	n Thuế đầu tru	Drainage	Drainage Class: Field Observations Confirm Mapped Type? Yes				
Taxonomy (Su	ibgroup):		Field Ob Confirm					
Profile Des Depth (Inches)	cription: Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc.			
0-3		40 VD 5/2	10 VD 5/0		Rocky fill			
6-8		10 YR 7/3	10 YR 5/8		Dark black Maganese concretions			
8-12		10 YR 7/3	10 YR 5/8		Dark black Maganese concretions			
-lydric Soil Ind 	licators: osol c Epipedon uric Odor c Moisture Regi ucing Conditions ed or Low-Chro	me s ma Colors	X Conc High Orga Liste Liste Othe	cretions Organic Content in Surfa nic Streaking in Sandy So d on Local Hydric Soils Li d on National Hydric Soils r (Explain in Remarks)	ce Layer in Sandy : bils st : List	Solls		
Remarks:								

### WETLAND DETERMINATION

in the

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Solls Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks:						

Approved by HQUSACE 3/92

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Applicant/Owner: NYCEDC	County: Richmond				
Investigator: A. Bernick, M. Bright, A. McMahon, J. Nash, A.	AKRF, Inc	<b>)</b> .			State: NY
Do Normal Circumstances exist on the site?	Yes	х	No	10.24	Community ID: _ Data Point B-3
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	x	No No	x	Community ID:Data Point B-3 Transect ID:

### VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Eupatorium serotinum	Herb	FAC-	6.		
2. Eupatorium hyssopifolium	Herb	N/A	7.		
3. Euthamia graminifolia	Herb	FAC	8.		
4. Lotus corniculatus	Herb	FACU	9.		
5. Plantago lanceolata	Herb	UPL	10.		
Percent of Dominant Species	that are OBL, F	ACW, or FAC (ex	cluding FAC-): 20%		
Remarks:					

### HYDROLOGY

	Wetland Hydrology Indicators:
	Primary Indicators:
	Seturated in Upper 12 Inches
	Saturated in Opper 12 inches
	Water Marks
	Drift Lines
	Sediment Deposits
	Drainage Patterns in Wetlands
(in.)	Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches
(in.)	Local Soil Survey Data
(in.)	Other (Explain in Remarks)
	(in.) (in.) (in.)

SOILS

Series and Pha	ise):		Drainage	Drainage Class: Field Observations Confirm Mapped Type? Yes N				
axonomy (Sub	group):		Field Obs Confirm I					
Profile Desc	ription: TO C	COME			NYE W			
Depth (Inches) 0-5 6-8	Horizon	Matrix Color         Mottle Colors         Mottle Abundance           Horizon         (Munsell Moist)         (Munsell Moist)         Size/Contrast           7.5 YR 5/6         7.5 YR 4/3         7.5 YR 4/6         Image: Color Size / Contrast		Mottle Abundance/ Size/Contrast	Texture, Concretions, Structure, etc. Silty Loam Silty Loam			
0=10		7.5 TK 4/4-5/4	JTK 4/0					
ydric Soil Indic	ators: ol Epipedon c Odor Moisture Regii	me	Conc High Organ Listed	retions Organic Content in Surfa nic Streaking in Sandy So d on Local Hydric Soils Lis d on Notional Hydric Soils Chi	ce Layer in Sandy ills st	Soi		

### WETLAND DETERMINATION

/egetation Present? Netland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks: This area repre	esents the upla	nd bound	ary of wetla	nd B.		

Approved by HQUSACE 3/92

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Applicant/Owner: NYC EDC	County: Richmond		
Investigator: J.Nash			State: NY
Do Normal Circumstances exist on the site?	Yes	No	Community ID: Data Point B-4
Is the site significantly disturbed (Atypical Situation)?	Yes	No	Transect ID:
Is the area a potential Problem Area?	Yes	No	Plot ID: (flagged Wetland B)
(If needed, explain on reverse.)			

#### VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator	
1. Cyperus iria	Herb	FACW	6. Euthamia galetorum	Herb	FAC	
2. Juncus bufonius	Herb	FACW	7.			
3. Panicum virgatum	herb	FAC	8.	8	Manager Street and Street	
4. Carex scoparia	Herb	FACW	9.	8 11 12		
5. Scirpus atrovirens	herb	OBL	10.			

Percent of Dominant Species that are OBL, FACW, or FAC (excluding FAC-): 100%

Remarks: The grasses Aristida oligantha (NL) and Agrostis capillaris (NO) and Eupatorium serotinum (FAC-) are found in open areas on the edge of wetland B, slightly drier than wetter portions. Eleocharis obtusa (OBL), Scirpus cyperinus (FACW+), Juncus effusus (FACW+) and Scirpus cyperinus (FACW+) were seen in earlier visits (summer 2008) within the wettest portions of Wetland B.

Adjacent woods w/ gray birch, highbush blueberry, black gum, slender leaved goldenrod, pin oak, but appear to lack suitable hydrology.

#### HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge	Wetland Hydrology Indicators: Primary Indicators:
Aerial Photographs Other No Recorded Data Available	X Inundated Saturated in Upper 12 Inches Water Marks
Field Observations:	X Sediment Deposits Drainage Patterns in Wetlands
Depth of Surface Water: (in	Secondary Indicators (2 or more required):     X     Oxidized Root Channels in Upper 12 Inches     X     Water-Stained Leaves
Depth to Free Water in Pit: (in	Local Soil Survey Data
Depth to Saturated Soil:(ir	D.) FAC-Neutral Test Other (Explain in Remarks)

Remarks: Portions inundated two days after rain storm. Predominantly saturated at surface in wetter portions (flagged) during other site visits. Sediment deposits and bare soil noted.
Map Unit Name (Series and Pha	w se): _co	ethersfield-Ludlow-Wilbra	aham	Drainage Cla	ass:	Well dra	ined to poorly d	rained
Taxonomy (Sub	group): _	Aquic to Oxyaquic		Field Observ Confirm Map	vations oped Type?	Poorly drained	Yes	No
Profile Descr Depth (Inches) 0-2 2-6 7-12+	Horizon O/A A A2	Matrix Color (Munsell Moist) 7.5YR 4/2 7.5YR 5/1 7.5YR 5/1	Mottle Co (Munsell I none 7.5YR 5/ 7.5YR 5/	lors Moist) 6 6	Mottle Abunda Size/Contrast 20% 30%	ance/	Texture, Concretions, Structure, etc. Clay Ioam clay Ioam Clay Ioam	
Hydric Soil Indic Histose Histic I Sulfuric Aquic I X Reduc X Gleyec	ators; bl Epipedon c Odor Moisture R ng Conditi l or Low-Cl	egime ons nroma Colors		Concretic High Org Organic : Listed or Listed or X Other (E:	ons janic Content ii Streaking in Sa Local Hydric : National Hydr xplain in Rema	n Surface andy Soils Soils List ic Soils L irks)	Layer in Sandy ist	Soils
Remarks: Meets Field Indi NOTE: Soil is ur predominance o clearing for Fain southern end of	cator "F3: I niformly lov f hydrophy view Park p open field	Depleted Matrix". / chroma/high value throu tic vegetation. It is susper project) has exposed a ne meet "TF2: Red Parent M	ighout open cted that reg early gleyed faterial".	field area. Bo rading of the horizon w/ hig	undary therefo field in previou h clay content	re defined s years (~ . Adjacen	l based on 2004/2005, duri t woodlands at	ng

#### WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No (Circle) No No	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks: Wetland flag	ged B1 to B26	in a closed loop. W		er of open fi	eld. in

Remarks: Wetland flagged B1 to B26 in a closed loop. Wetland extends around soil/mulch piles in center of open field, in northwest corner, partially within footprint of mapped Englewood Drive.

NOTE: Additional areas of the open field and adjacent woods to the south may meet USACE wetland definition. However, these additional areas were not contiguous within the Englewood Avenue Corridor. These additional potential wetland areas must be investigated as part of land-use actions on remaining portions of the Charleston Natural Resources Study Area.

Approved by HQUSACE 3/92

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Applicant/Owner: NYC EDC	aroos otaay,	1100)	County: Bichmond
Investigator: J.Nash (Data Point: 40 deg, 31' 57.5"; 74 deg	g, 13' 43.0")		State: NY
Do Normal Circumstances exist on the site?	Yes	No	Community ID: Data Point C-1
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	No No	Community ID:Data Point C-1 Transect ID:

## VEGETATION

Dom	ninant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.	Red Maple (Acer rubrum)	tree	FAC	6,		
2.	Pin oak (Quercus palustris	tree	FACW	7.		
3.	White grass (Leersia virginica)	herb	FACW	8.		
4.	Sweetgum (Liquidambar styraciflua)	tree	FAC	9.		
5.				10.		
Perc	cent of Dominant Species narks: Buttressed roo	s that are OBL, F oting noted.	ACW, or FAC (ex	cluding FAC-): 100%		

## HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge	Wetland Hydrology Indicators: Primary Indicators:
Aerial Photographs	Inundated
Other	Saturated in Upper 12 Inches
No Recorded Data Available	Water Marks
	X Drift Lines
Field Observations:	X Sediment Deposits
Field Observations:	Drainage Patterns in Wetlands
Depth of Surface Water:	(in.) Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches Water-Stained Leaves
Depth to Free Water in Pit:	(in.) Local Soil Survey Data
Depth to Saturated Soil:	(in.) FAC-Neutral Test Other (Explain in Remarks)

Remarks: Little herbaceous vegetation. Sediment deposits and roots exposed attest to frequent surface flow as sheet runoff.

Map Unit Name (Series and Ph	e nase):	Wethersfield-Ludlow-Wilbr complex	aham	_ Drainage	Class:	Well dr	ained to poor	ly drained
Taxonomy (Su	bgroup):	Aquic and Oxyaquic sub	group	Field Obs	servations Mapped Type?	Poorly drained	Yes	No
Profile Dest Depth (Inches) 0-6	cription: Horizo	Matrix Color on (Munsell Moist) 5YR 4/6	Mottle C (Munse	Colors II Moist)	Mottle Abund Size/Contras	lance/	Texture, Concretior Structure,	ns, etc.
6-8 8-10 11-14	B B B2	7.5YR 6/4 5YR 5/3 7YR 3/2	5YR 4/0 4/6	8	 20% 20%		Silty loam Silty loam Silty loam	
Hydric Soil Ind Histo Histo Sulfu Aquic X Redu Gleye	icators: sol : Epipedo ric Odor : Moisture icing Cone ed or Low	n Regime ditions -Chroma Colors		Conc High Orga Listed X Other	retions Organic Content nic Streaking in S d on Local Hydric d on National Hyd r (Explain in Rem	in Surface andy Soil Soils List Iric Soils I arks)	e Layer in Sar Is List	ndy Soils

#### Remarks:

Meets Field Indicators "TF2: Red Parent Material". Wethersfield, Ludlow and Wilbraham soils developed in dense basal till derived mainly from red sedimentary rocks. Drainage class for these soil types ranges from well drained to poorly drained, with hydrologic soil group either C or D. Wilbraham and Ludlow are both Aquic Dystrudepts. Wethersfield is an Oxyaquic Dystrudepts. Wilbraham is designated as a hydric soil by the NTCHS.

#### WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks: Wetland Flagg	ed C1-C20. W	etland ma	pped by NV	VI (PFO1B and R2UBH) and by NYSDEC as	AR-27.	

Project/Site: Charleston, Staten Island, NY (Natural Resource) Applicant/Owner: NYC EDC	urces Study	Area)	Date: 8.13.08 County: Richmond
Investigator: J.Nash (Data Point: 40 deg, 31' 57.5"; 74 deg	g, 13' 43.0")		State: NY
	And and a second		
Do Normal Circumstances exist on the site?	Yes	No	Community ID: Data Point C-2
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	No	Community ID: <u>Data Point C-2</u> Transect ID:

#### VEGETATION

1. Red Maple (Acer     tree     FAC     6.       rubrum)     2. Pin oak (Quercus     tree     FACW     7.       palustris)	
2. Pin oak (Quercus tree FACW 7. palustris) 3. White grass (Leersia berb FACW 8.	
3 White grass (Leersia berb FACW 8	
virginica)	
9.	
5. 10.	S

Remarks: Buttressed rooting noted. As wetland descends southwards, it becomes a linear water feature occupied by Elderberry (Sambucus nigra): FACW-; red maple (Acer rubrum): FAC; and joe pye weed (Eupatoriadelphus fistulosus): FACW. Linear water feature reaches retaining wall of shopping mall - formerly connected to wetland "D", as headwaters of Mill Creek. At southern terminus, a substantial culvert opening is present, which diverts flow underneath the Bricktown Centre shopping area to the area of Wetland F. Overland flow may pass along retaining wall and towards Wetland D.

#### HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary Indicators:
Aerial Photographs	Inundated
Other	Saturated in Upper 12 Inches
No Recorded Data Available	Water Marks
	X Drift Lines
Field Observations	X Sediment Deposits
Field Observations:	Drainage Patterns in Wetlands
Depth of Surface Water:	(in.) Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches X Water-Stained Leaves
Depth to Free Water in Pit:	(in.) Local Soil Survey Data
Depth to Saturated Soil:	(in.) Other (Explain in Remarks)

Remarks:

Oxidized rhizospheres 2-6". Little herbaceous vegetation. Sediment deposits and roots exposed attest to frequent surface flow as sheet runoff.

Map Unit Name (Series and Ph	www. weth weth weth	ersfield-Ludlow-Wilbr	aham Drair	age Class:	Well drained to	poorly drained
Taxonomy (Sul	Aqı ogroup):	uic to Oxyaquic	Field Conf	Observations irm Mapped Type?	Poorly drained Yes	No
Profile Desc Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abund Size/Contras	Textu dance/ Conc st Struc	ire, retions, ture, etc.
0-2	<u>A</u>	5YR 4/3	5YR 5/8	10%	Ciller	0.000
2-0		5YR 4/3	51R 4/6	20%	Silty	loam
10-15	 	7VR 3/2	4/6	20%	Sanc	ly loam loam
Hydric Soil Indi Histos Histic Sulfur Aquic X Reduc Gleye	cators: sol Epipedon ic Odor Moisture Regi cing Conditions d or Low-Chroi	me ma Colors		concretions ligh Organic Content organic Streaking in S isted on Local Hydric isted on National Hyd other (Explain in Rem	in Surface Layer i Sandy Soils Soils List dric Soils List arks)	n Sandy Soils
Remarks:						
Meets Field Inc Wethersfield, L Drainage class Wilbraham and hydric soil by th Upland fringe w Second soil pit	licators "TF2: F udlow and Wilk for these soil t Ludlow are bo ne NTCHS. /here smilax do at data point: 4	Red Parent Material". oraham soils develope ypes ranges from wel th Aquic Dystrudepts. ominant (40deg, 31' 5 10deg, 31' 57.5"; 74de	ed in dense basal ti l drained to poorly . Wethersfield is a 5.5"; 74deg, 13' 44 eg, 13' 43.0".	ll derived mainly fron drained, with hydrolo Oxyaquic Dystrudept .7") exhibits 5YR 4/3	n red sedimentary gic soil group eith s. Wilbraham is d throughout, no mo	rocks. er C or D, esignated as a ottling,

# WETLAND DETERMINATION

Vegetation Present? Wetland Hydrology Present?	Yes Yes	No No	(Circle)	(Circle)		
Hvdric Soils Present?	Yes	No		Is this Sampling Point Within a Wetland?	Yes	No

Approved by HQUSACE 3/92

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Applicant/Owner: NYC EDC	urces Study /	Area)	County: Richmond
Investigator: J.Nash (Data Point: 40 deg, 31' 49.6"; 74 deg	g, 13' 36.6")		State: NY
Do Normal Circumstances exist on the site?	Yes	No	Community ID: Data Point D-1
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	No No	Community ID:Data Point D-1 Transect ID:

#### VEGETATION

Dom	ninant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.	Red maple (Acer rubrum)	tree	FAC	6.		
2.	Pin oak (Quercus palustris)	tree	FACW	7.		
3.	Black gum (Nyssa sylvatica)	tree	FAC	8.		
4.	Greenbriar (Smilax rotundifolia)	vine	FAC	9.		
5.				10		
Perc	ent of Dominant Species	that are OBL, F	ACW, or FAC (ex	cluding FAC-): 100%		
Rem strea	arks: Narrow band of am corridor to the east or	wetland vegetati west.	on - greenbriar, bi	igtooth aspen and white oak more	prevalent as one	ascends away from

## HYDROLOGY

Recorded Data (Describe in Remarks):	Wetland Hydrology Indicators:
Stream, Lake, or Tide Gauge	Primary Indicators:
Aerial Photographs	Inundated
Other	Saturated in Upper 12 Inches
No Recorded Data Available	X Water Marks
	X Drift Lines
Field Observations	X Sediment Deposits
Field Observations:	Drainage Patterns in Wetlands
	Secondary Indicators (2 or more required):
Depth of Surface Water:	(in.) X Oxidized Root Channels in Upper 12 Inches
	X Water-Stained Leaves
Depth to Free Water in Pit:	(in.) Local Soil Survey Data
	FAC-Neutral Test
Depth to Saturated Soil:	(in.) Other (Explain in Remarks)

#### Remarks:

Formerly connected stream channel (gully) - now disconnected from upstream portions by shopping mall retaining wall. (Formerly connected to upstream portions of NYSDEC wetland AR-27). At southern terminus, a substantial culvert opening is present, apparently diverting flow (during storm events) to the northern end of Wetland F. See Data Forms for Points F-1 and C-2 for more discussion.

Aquic to Oxyaquic       Field Observations       Poorly drained         Confirm Mapped Type?       Yes         Profile Description:       Matrix Color       Mottle Colors       Mottle Abundance/       Struture, Concretions, Structure, etc.         0-3       A       5YR 5/6       5YR 4/4       10%       Clay loam         0-3       A       5YR 5/6       5YR 3/4 to 4/6       20%       Clay loam         8-10       B       5YR 4/2       5YR 3/4 to 4/6       20%       Silty loam         10+       B2       7YR 4/3        Sandy loam       Sandy loam         4ydric Soil Indicators:	Aquic to Oxyaquic       Field Observations       Poorly drained         Confirm Mapped Type?       Yes         Profile Description:	ap Unit Name Series and Phase):	Wethersfield-Ludlow-Wilbra complex	aham Drain:	Drainage Class: Field Observations		Well drained to poorly drain Poorly drained	
Profile Description:       Matrix Color (Munsell Moist)       Mottle Colors (Munsell Moist)       Mottle Abundance/ Size/Contrast       Texture, Concretions, Structure, etc.         0-3       A       5YR 5/6       5YR 4/4       10%       Clay loam         4-8       A       5YR 4/2       5YR 3/4 to 4/6       20%       Clay loam         8-10       B       5YR 4/2 to 4/3       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        Sandy loam       Sandy loam         10+       B2       7YR 4/3        Sandy loam       Sandy loam         Histic Epipedon	Profile Description:       Matrix Color       Mottle Colors       Mottle Abundance/       Texture, Concretions, Size/Contrast       Texture, Concretions, Structure, etc.         0-3       A       5YR 5/6       5YR 4/4       10%       Clay loam         4-8       A       5YR 4/2       5YR 3/4 to 4/6       20%       Clay loam         8-10       B       5YR 4/2 to 4/3       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        Sandy loam       Sandy loam         4vdric Soil Indicators:	axonomy (Subgroup):	Aquic to Oxyaquic	Field				
Profile Description:       Matrix Color       Mottle Colors       Mottle Abundance/ Size/Contrast       Texture, Concretions, Structure, etc.         0-3       A       5YR 5/6       5YR 4/4       10%       Clay loam         4-8       A       5YR 4/2       5YR 3/4 to 4/6       20%       Clay loam         8-10       B       5YR 4/2       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        Sandy loam         10+       B2       7YR 4/3        Sandy loam         vydric Soil Indicators:	Profile Description:       Matrix Color (Inches)       Matrix Color (Munsell Moist)       Mottle Colors (Munsell Moist)       Mottle Abundance/ Size/Contrast       Texture, Concretions, Structure, etc.         0-3       A       5YR 5/6       5YR 4/4       10%       Clay loam         4-8       A       5YR 4/2       5YR 3/4 to 4/6       20%       Clay loam         8-10       B       5YR 4/2 to 4/3       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        Sandy loam       Sandy loam         lydric Soil Indicators:			Confir	rm Mapped Type?		Yes	No
Depth (Inches)       Horizon A       Matrix Color (Munsell Moist)       Mottle Colors (Munsell Moist)       Mottle Abundance/ Size/Contrast       Texture, Concretions, Size/Contrast         4-8       A       5YR 5/6       5YR 3/4 to 4/6       20%       Clay loam         8-10       B       5YR 4/2       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        Sandy loam         ydric Soil Indicators:	Depth (Inches)       Horizon       Matrix Color (Munsell Moist)       Mottle Colors (Munsell Moist)       Mottle Abundance/ Size/Contrast       Texture, Concretions, Structure, etc.         0-3       A       5YR 5/6       5YR 4/4       10%       Clay loam         4-8       A       5YR 4/2       5YR 3/4 to 4/6       20%       clay loam         8-10       B       5YR 4/2 to 4/3       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        Sandy loam       Sandy loam         ydric Soil Indicators:	Profile Description:	_					
0-3       A       5YR 5/6       5YR 4/4       10%       Clay loam         4-8       A       5YR 4/2       5YR 3/4 to 4/6       20%       clay loam         8-10       B       5YR 4/2 to 4/3       5YR 5/6       20%       clay loam         10+       B2       7YR 4/3        20%       silty loam         ydric Soil Indicators:	0-3         A         5YR 5/6         5YR 4/4         10%         Clay loam           4-8         A         5YR 4/2         5YR 3/4 to 4/6         20%         clay loam           8-10         B         5YR 4/2 to 4/3         5YR 5/6         20%         Silty loam           10+         B2         7YR 4/3          Sandy loam         Sandy loam           ydric Soil Indicators:	Depth (Inches) Horiz	Matrix Color con (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abun Size/Contra	dance/ st	Texture, Concretions, Structure, etc	4
4-8       A       5YR 4/2       5YR 3/4 to 4/6       20%       clay loam         8-10       B       5YR 4/2 to 4/3       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        20%       Silty loam         ydric Soil Indicators:	4-8         A         5YR 4/2         5YR 3/4 to 4/6         20%         clay loam           8-10         B         5YR 4/2 to 4/3         5YR 5/6         20%         Silty loam           10+         B2         7YR 4/3          20%         Silty loam           ydric Soil Indicators:	0-3 A	5YR 5/6	5YR 4/4	10%		Clay loam	
8-10       B       5YR 4/2 to 4/3       5YR 5/6       20%       Silty loam         10+       B2       7YR 4/3        20%       Silty loam         ydric Soil Indicators:	8-10         B         5YR 4/2 to 4/3         5YR 5/6         20%         Silty loam           10+         B2         7YR 4/3          Sandy loam         Sandy loam           ydric Soil Indicators:	4-8 A	5YR 4/2	5YR 3/4 to 4/6	20%		clay loam	_
10+       B2       7YR 4/3        Sandy loam         ydric Soil Indicators:	10+     B2     7YR 4/3        ydric Soil Indicators:	8-10 B	5YR 4/2 to 4/3	5YR 5/6	20%		Silty loam	
ydric Soil Indicators: Histosol Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy S Sulfuric Odor Organic Streaking in Sandy Soils Aquic Moisture Regime Listed on Local Hydric Soils List X Reducing Conditions List	ydric Soil Indicators: Histosol	10+ B2	7YR 4/3				Sandy loam	
ydric Soil Indicators: Histosol Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy S Sulfuric Odor Organic Streaking in Sandy Soils Aquic Moisture Regime Listed on Local Hydric Soils List X Reducing Conditions List	ydric Soil Indicators: HistosolConcretions							
ydric Soil Indicators: Histosol Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy S Sulfuric Odor Organic Streaking in Sandy Soils Aquic Moisture Regime Listed on Local Hydric Soils List X Reducing Conditions List	ydric Soil Indicators: HistosolConcretions							
lydric Soil Indicators: Histosol Concretions Histic Epipedon High Organic Content in Surface Layer in Sandy S Sulfuric Odor Organic Streaking in Sandy Soils Aquic Moisture Regime Listed on Local Hydric Soils List X Reducing Conditions List	iydric Soil Indicators: Histosol Concretions							
Histosol       Concretions         Histic Epipedon       High Organic Content in Surface Layer in Sandy S         Sulfuric Odor       Organic Streaking in Sandy Soils         Aquic Moisture Regime       Listed on Local Hydric Soils List         X Reducing Conditions       Listed on National Hydric Soils List	Histosol Concretions	vdric Soil Indicators						
Histosol       Concretions         Histic Epipedon       High Organic Content in Surface Layer in Sandy \$         Sulfuric Odor       Organic Streaking in Sandy Soils         Aquic Moisture Regime       Listed on Local Hydric Soils List         X Reducing Conditions       Listed on National Hydric Soils List	Histosol Concretions	yano oon malaatoro.						
Histic Epipedon       High Organic Content in Surface Layer in Sandy S         Sulfuric Odor       Organic Streaking in Sandy Soils         Aquic Moisture Regime       Listed on Local Hydric Soils List         X       Reducing Conditions		- Histosol		Co	oncretions			0-11
Aquic Moisture Regime Listed on Local Hydric Soils List X Reducing Conditions Listed on National Hydric Soils List	High Organic Content in Surface Layer in Sandy S		2n	[]	ign Organic Content	In Surface	Layer in Sandy	y Solis
X         Reducing Conditions         Listed on National Hydric Soils List	Organic Streaking in Sandy Soils	Sulfuric Odor	a Pagima		rganic Streaking in a	Sandy Solls	5	
A Reducing Conditions	X Reducing Conditions	X Reducing Cor	ditions	Li	sted on Local Hydro	dric Soile I	iet	
X Gleved or Low-Chroma Colore X Other (Explain in Remarks)	X Glaved or Low-Chroma Colore	X Reducing Col	-Chroma Colore	X	ther (Evolain in Ren	arke)	.131	
		X Lieved or Low	-onona colora	<u></u> 0	ther (Explain in Ken	iaiko)		

Wethersfield, Ludlow and Wilbraham soils developed in dense basal till derived mainly from red sedimentary rocks. Drainage class for these soil types ranges from well drained to poorly drained, with hydrologic soil group either C or D. Wilbraham and Ludlow are both Aquic Dystrudepts. Wethersfield is a Oxyaquic Dystrudepts. Wilbraham is designated as a hydric soil by the NTCHS.

## WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks: Wetland flag	ged D1 to D7 a	as a linear	wetland fea	ature. Wetland mapped by NWI and by NYSI	DEC as AR-	27.

Applicant/Owner: NYCEDC					County: Richmond
Investigator: A. Bernick, M. Bright, A. McMahon, J. Nash,	AKRF, Inc	) <u>.</u>			State: NY
		-	_	-	
Do Normal Circumstances exist on the site?	Yes	х	No		Community ID: Data Point F-1
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes Yes	х	No No	x	Community ID:Data Point F-1 Transect ID:

#### VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. Acer rubrum	Canopy/ Sub/canop v	FAC	6.		
2. Sassafras albidum	Sub- canopy	FACU-	7.		
3. Vaccinium corymbosum	shrub	FACW-	8.		
4. Viburnum dentatum	Shrub	FAC	9.		
5.			10.	-	
Percent of Dominant Species	s that are OBL, FA	CW, or FAC (ex	cluding FAC-): 100%		
Remarks:					
l					

## HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge Aerial Photographs Other X No Recorded Data Available	Wetland Hydrology Indicators: Primary Indicators: Inundated Saturated in Upper 12 Inches X Water Marks Drift Lines
Field Observations: N/A	X Sediment Deposits X Drainage Patterns in Wetlands
Depth of Surface Water: (in.)	Secondary Indicators (2 or more required): Oxidized Root Channels in Upper 12 Inches X Water-Stained Leaves
Depth to Free Water in Pit: (in.)	Local Soil Survey Data
Depth to Saturated Soil: (in.)	Other (Explain in Remarks)

Remarks: Intermittent stream. A shallow cut-back approximately 20 meters from the northern end of Wetland F holds standing water through the growing season, and supported Green Frogs through the season. A well defined channel is present, with substantial cobble along much of the run. The southern terminus of Wetland F drains into a culvert that passes east underneath Veterans Road and enters the Mill Creek system (see attached figures).

Map Unit Nam Series and Ph	e Weth nase): <u>com</u> p	nersfield-Ludlow-Wilbr plex	aham Drainage	e Class:	Well drained	to poorly drained
Faxonomy (Subgroup): Aquic to Oxyaquic			Field Ob Confirm	Field Observations Confirm Mapped Type?		No
Profile Des	cription:				-	1
Depth (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abund Size/Contras	dance/ Co t St	exture, oncretions, ructure, etc.
0-2	_A	5YR 4/3	5YR 5/8	10%		
2-6	В	5YR 4/3	5YR 4/6		Si	Ity loam
7-10	В	5YR 4/3	5YR 4/6	20%	Si	lty loam
10-15	B2	7YR 3/2	4/6	20%	Sa	andy loam loam
Histo Histo Sulfu Aquic Redu X Gleye	sol Epipedon ric Odor Moisture Regi icing Conditions ed or Low-Chro	ime s ma Colors	Cond High Orga Liste Liste Othe	cretions Organic Content Inic Streaking in S Id on Local Hydric Id on National Hyd Ir (Explain in Rem	in Surface Layo Sandy Soils Soils List Iric Soils List arks)	er in Sandy Soils
Remarks:						

## WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
	MARK.	179			MARK.	6.000

Remarks: Appears to be connected to the areas of Wetlands C and D via culverts – see Data Forms for Data Points C-2 and D-1. At northern terminus of the Wetland F channel, a substantial culvert opening is present, which appears to accept flow underneath the Bricktown Centre shopping area from culverts at the southern end of Wetland C, and potentially Wetland D.

Applicant/Owner: NYC EDC	County: Richmond		
Investigator: J.Nash ( Data Point: 40 deg, 31' 57.7"; 74 de	eg, 13' 38.2")		State: NY
Do Normal Circumstances exist on the site?	Yes	No	Community ID: _ Data Point G-1
Do Normal Circumstances exist on the site? Is the site significantly disturbed (Atypical Situation)?	Yes	No No	Community ID:Data Point G-1 Transect ID:

## VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
<ol> <li>Red Maple (Acer rubrum)</li> </ol>	Tree	FAC	6.		
<ol> <li>Pin oak (Quercus palustris)</li> </ol>	Tree	FACW	7.		
<ol> <li>Hay-scented fern (Dennstaedtia punctilobula)</li> <li>4.</li> <li>5.</li> </ol>	Herb	NL	8. 9. 10.		
Percent of Dominant Species	that are OBL, F	ACW, or FAC (exc	cluding FAC-): 66%		
Remarks: Hay scented f	ern limited to ma	irgins of this small	depressional wetland.		

## HYDROLOGY

Recorded Data (Describe in Remarks): Stream, Lake, or Tide Gauge	Wetland Hydrology Indicators: Primary Indicators:				
Aerial Photographs	Inundated				
Other	X Saturated in Upper 12 Inches				
No Recorded Data Available	Water Marks				
	Drift Lines				
Field Observations	X Sediment Deposits				
Field Observations:	Drainage Patterns in Wetlands				
Depth of Surface Water: (in.)	Secondary Indicators (2 or more required): X Oxidized Root Channels in Upper 12 Inches X Water-Stained Leaves				
Depth to Free Water in Pit: (in.)	Local Soil Survey Data				
	FAC-Neutral Test				
Depth to Saturated Soil: (in.)	Other (Explain in Remarks)				

Remarks: Small, wet depression 3 meters south of unpaved path along the mapped Englewood Avenue corridor, with evidence of past fill/excavation.

Map Unit Name (Series and Phase): (Series and Phase): Taxonomy (Subgroup):		Vethersfield-Ludlow-Wilb omplex	Drainage Class: Field Observations Confirm Mapped Type?		Well drained to poorly drained			
		Aquic to Oxyaquic subg			Poorly drained	Yes	No	
Profile Desc Depth (Inches) 0-3 3-8 7-10	ription: Horizon	Matrix Color (Munsell Moist) 7.5 YR 6/1 7.5 YR 6/1-7/1 10 YR 5/1	Mottle C (Munsel 7.5YR ( 7.5YR ( 7.5YR )	Colors II Moist) 3/8 3/8-7/1 5/8	Mottle Abund Size/Contras	lance/ t	Texture, Concretions, Structure, etc Clay/Loam Clay/Loam	<u>.                                    </u>
Hydric Soil India Histos Histic Sulfuri Aquic Reduc X Gleyed	cators: ol Epipedon ic Odor Moisture F sing Condit d or Low-C	Regime tions Chroma Colors		Concre High C Organi Listed Listed Other	ations Irganic Content c Streaking in S on Local Hydric on National Hyd (Explain in Rem	in Surface andy Soils Soils List tric Soils L arks)	Layer in Sand	y Soils

rocks. Drainage class for these soil types ranges from well drained to poorly drained, with hydrologic soil group either C or D. Wilbraham and Ludlow are both mesic Aquic Dystrudepts. Wethersfield is a mesic Oxyaquic Dystrudepts. Wilbraham is designated as a hydric soil by the NTCHS. Meets TF2: red parent material test.

# WETLAND DETERMINATION

Hydrophytic Vegetation Present? Wetland Hydrology Present? Hydric Soils Present?	Yes Yes Yes	No No No	(Circle)	(Circle) Is this Sampling Point Within a Wetland?	Yes	No
Remarks: Flagged wetlar	nd "G", numbei	red G1 to	G6 in a clos	ed loop.		

