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New York District

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**WESTCHESTER COUNTY STREAMS,  
BYRAM RIVER BASIN**

**FLOOD RISK MANAGEMENT FEASIBILITY STUDY**

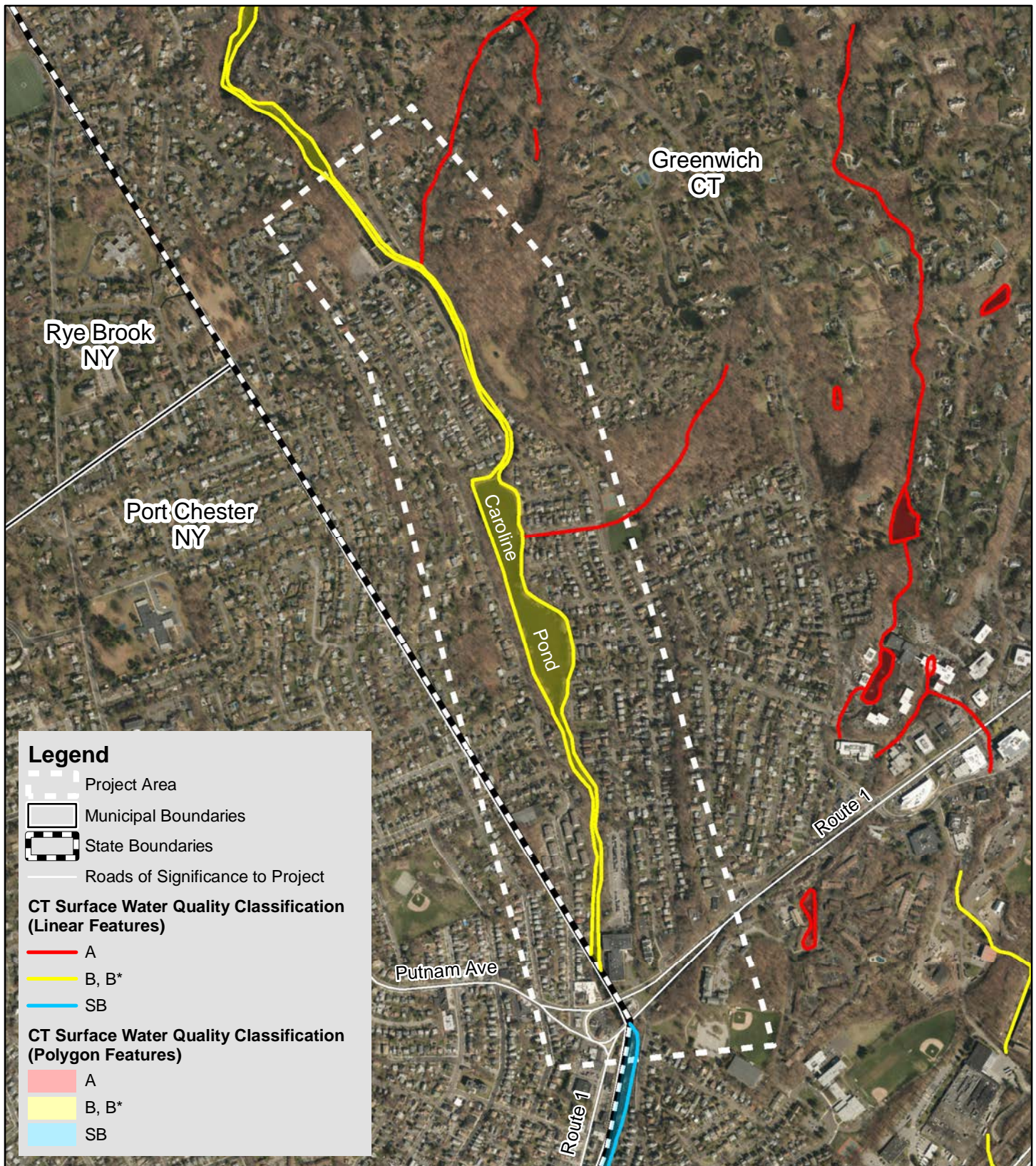
**FAIRFIELD COUNTY, CONNECTICUT AND WESTCHESTER COUNTY, NEW YORK**

**FINAL INTEGRATED FEASIBILITY REPORT &  
ENVIRONMENTAL IMPACT STATEMENT**

**APPENDIX A.1:**

**Environmental Resource Figures**

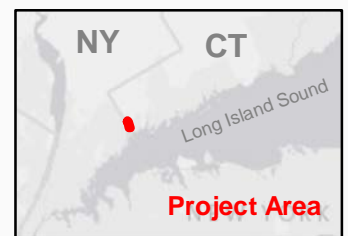
# **1. CONNECTICUT SURFACE WATER CLASSIFICATION**



## Byram River Basin Flood Risk Management Study Connecticut Surface Water Quality Classification Data



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## **2. NEW YORK SURFACE WATER CLASSIFICATION**



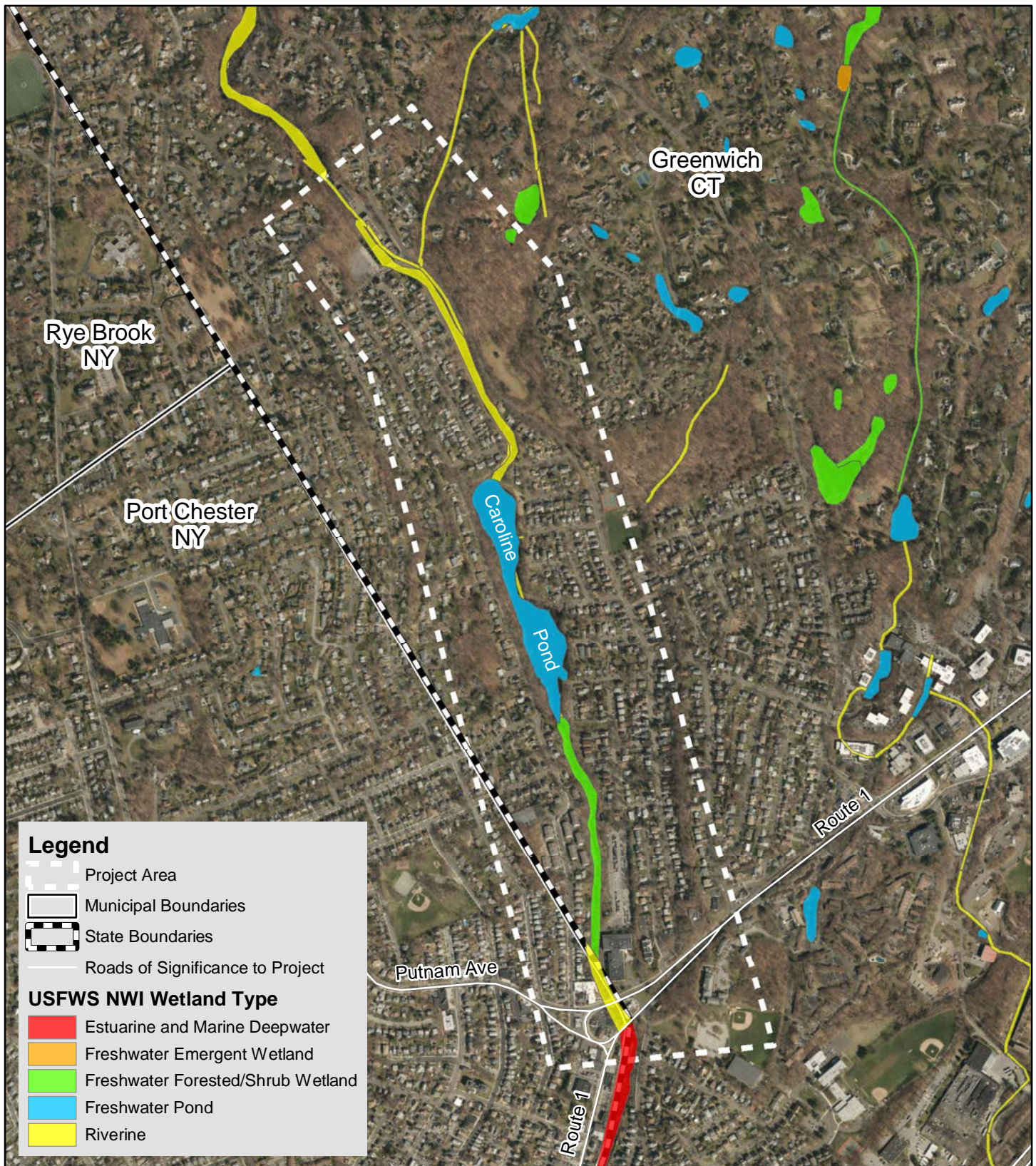
## Byram River Basin Flood Risk Management Study New York Surface Water Quality Classification Data



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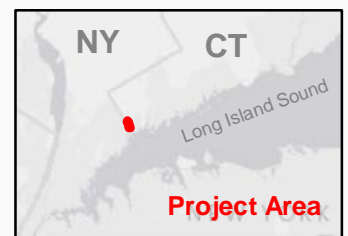
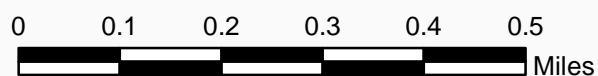
### **3. USFWS NATIONAL WETLAND INVENTORY WETLANDS WITHIN PROJECT AREA**



## Byram River Basin Flood Risk Management Study USFWS National Wetlands Inventory Data



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## **4. CONNECTICUT INLAND WETLANDS WITHIN PROJECT AREA**

### **4.1. Town Identified Wetland Resources**

Town of Greenwich, CT identified wetlands resource areas are shown on Figures 6a through 6e – Town Determined Delineated Wetlands. Those wetlands were delineated by the Town based on soils. Because they were identified predominantly by soils, they may include areas that are not identified as federal jurisdictional wetlands based on the parameters of vegetation, soil and hydrology. Within the project area, 16 state wetlands are identified on the Town of Greenwich wetlands map. The following wetlands were field verified during field reconnaissance.

#### **4.1.1. Wetland 1**

The northernmost wetland is located to the east of and perpendicular to Riversville Road (see Figure 6a – Town Determined Delineated Wetlands). It is depicted as approximately 360 feet long and approximately 45 feet wide.

#### **4.1.2. Wetland 2**

The second Town identified wetland is located directly south of Wetland 1 (see Figure 6a – Town Determined Delineated Wetlands). It is approximately 90 feet long and 90 feet wide.

#### **4.1.3. Wetland 3**

This wetland is located west of Wetland 1 and 2, south of Bailiwick Road and parallel to the Byram River (see Figure 6a – Town Determined Delineated Wetlands). It is depicted as approximately 210 feet long and 10 feet wide.

#### **4.1.4. Wetland 4**

This wetland is located southwest of Wetland 3 (see Figure 6a – Town Determined Delineated Wetlands). This is a smaller resource area, approximately 20 feet long and 20 feet wide.

#### **4.1.5. Wetland 5**

This wetland is located southeast of Wetland 3 and perpendicular to the Byram River (see Figure 6a – Town Determined Delineated Wetlands). This wetland is approximately 480 feet long and 60 feet wide.

#### **4.1.6. Wetland 6**

This wetland is located south of Bailiwick Road, and is parallel to the Byram River. Wetland 5 bisects this wetland at its midpoint (see Figure 6a – Town Determined Delineated Wetlands). This feature is approximately 675 feet long and 45 feet wide.

#### **4.1.7. Wetland 7**

This wetland is located between Glenville Street and Glen Ridge Road, North of Sioux Place (see Figure 6b – Town Determined Delineated Wetlands). This wetland is approximately 195 feet long and 30 feet wide.

#### **4.1.8. Wetland 8**

This wetland is located south of Sioux Place and north of Ettl Lane (see Figure 6b – Town Determined Delineated Wetlands). This is a smaller resource area, approximately 45 feet long

and 30 feet wide.

The areas labeled as Wetlands 1-8 are located within residential lawns and urbanized areas. These resource areas were not confirmed in the field, and it is not anticipated that these are accurate depictions of existing wetland resource areas.

#### **4.1.9. Wetland 9**

This wetland is located south of Riverview Court and north of Muriel Place, adjacent to the Byram River (see Figure 6b – Town Determined Delineated Wetlands). This is a smaller resource area, approximately 75 feet long and 30 feet wide. This resource area was field identified as a forested fringe wetland located along the western bank of the Byram River (see Photograph 5). It is long and narrow and extends approximately 100 feet long and 20-30 feet wide in parallel with the Byram River.

#### **4.1.10. Wetland 10**

This wetland is located adjacent to the Byram River, east of Gard Court (see Figure 6c – Town Determined Delineated Wetlands). This is a smaller resource area, approximately 120 feet long and 5 feet wide.

#### **4.1.11. Wetland 11**

This wetland is located between Pemberwick Road and Concord Street, south of Benders Drive (see Figure 6c – Town Determined Delineated Wetlands). This feature is approximately 90 feet long and 60 feet wide.

#### **4.1.12. Wetland 12**

This wetland is located between Concord Street and Deep Gorge Road (see Figure 6c – Town Determined Delineated Wetlands). It is depicted as approximately 255 feet long and 90 feet wide.

The areas labeled as Wetlands 10-12 are located on the fringe of the study area, and not located adjacent to the Byram River. These areas are directly adjacent to residential homes and predominantly consist of maintained lawn and landscaping. These resource areas were not confirmed

#### **4.1.13. Wetland 13**

This wetland is located at the northern bank of Caroline Pond (see Figure 6d – Town Determined Delineated Wetlands). It is depicted as approximately 100 feet long across the top of the pond, and 10 feet wide. This resource area was field verified as a terrace wetland located along the extent of the northern bank, resembling the wetland depicted on the Town wetland resource area map. It had a rocky substrate and its vegetation community was dominated by various wildflower species (See Photograph 6 in Appendix A).

#### **4.1.14. Wetland 14**

This wetland resource area is located approximately 2,200 feet south of Wetland 13. This is a smaller, 70 feet long, 20 feet wide feature located at the end of Hobart Avenue on the western bank of the Byram River (see Figure 6e – Town Determined Delineated Wetlands). This feature is parallel to the Byram River. While conducting field reconnaissance, it was determined that this feature does not exist. The area is predominantly maintained lawn with a narrow strip of vegetation within the riparian corridor.

#### **4.1.15. Wetland 15**

This wetland is located on the western bank of the Byram River, across from Den Lane (see Figure 6e – Town Determined Delineated Wetlands). This resource is approximately 200 feet long and 30 feet wide, and parallels the Byram River. While completing field reconnaissance, it was determined that there is no wetland in this location. The bank where the feature is shown on the map is a steep sloping bank with a narrow strip of vegetation within the riparian corridor.

#### **4.1.16. Wetland 16**

The southernmost wetland is located adjacent to the corner of Caroline Place and Riverdale Avenue (see Figure 6e – Town Determined Delineated Wetlands). This resource is 50 feet south of Wetland 15 and it is a narrow strip of wetland, approximately 400 feet long and 10 feet wide. Observations during reconnaissance determined that this was not a wetland resource area. This section of the bank is steep, eroded bank with a very thin fragment of vegetation within the riparian corridor. There is no visual evidence of wetland vegetation within this location.

### **4.2. Field Identified Wetland Resources**

During the field reconnaissance, wetland resource areas were identified within the project area based on the parameters of vegetation, soil and hydrology; see Figure 7 – Field Located Wetland Resources. The field findings confirmed two Town identified wetland areas located within the project area (Wetlands 9 and 13, as described above), and identified two additional state and federal jurisdictional wetland resource areas (Wetland B & C below) that are not identified on the Town wetlands map. The Town GIS Wetlands layer indicates that these wetland resource areas were delineated in various years from approximately 1999 through 2003. Due to the changes in the project area as a result of erosion and other natural processes, the location of wetland resource areas within the project area appears to have changed. Observations during field reconnaissance identified four wetlands as described below.

#### **4.2.1. Wetland A**

The first wetland, identified above as Wetland 9 under Town Identified Wetland Resources, is located along Pemberwick Road, on the western bank of the Byram River. It is a forested fringe wetland that parallels the Byram River and is approximately 100 feet long and 20 to 30 feet wide. Vegetation within this wetland consists mostly of large red maples (*Acer rubrum*) and American beech, with skunk cabbage as the dominant ground cover.

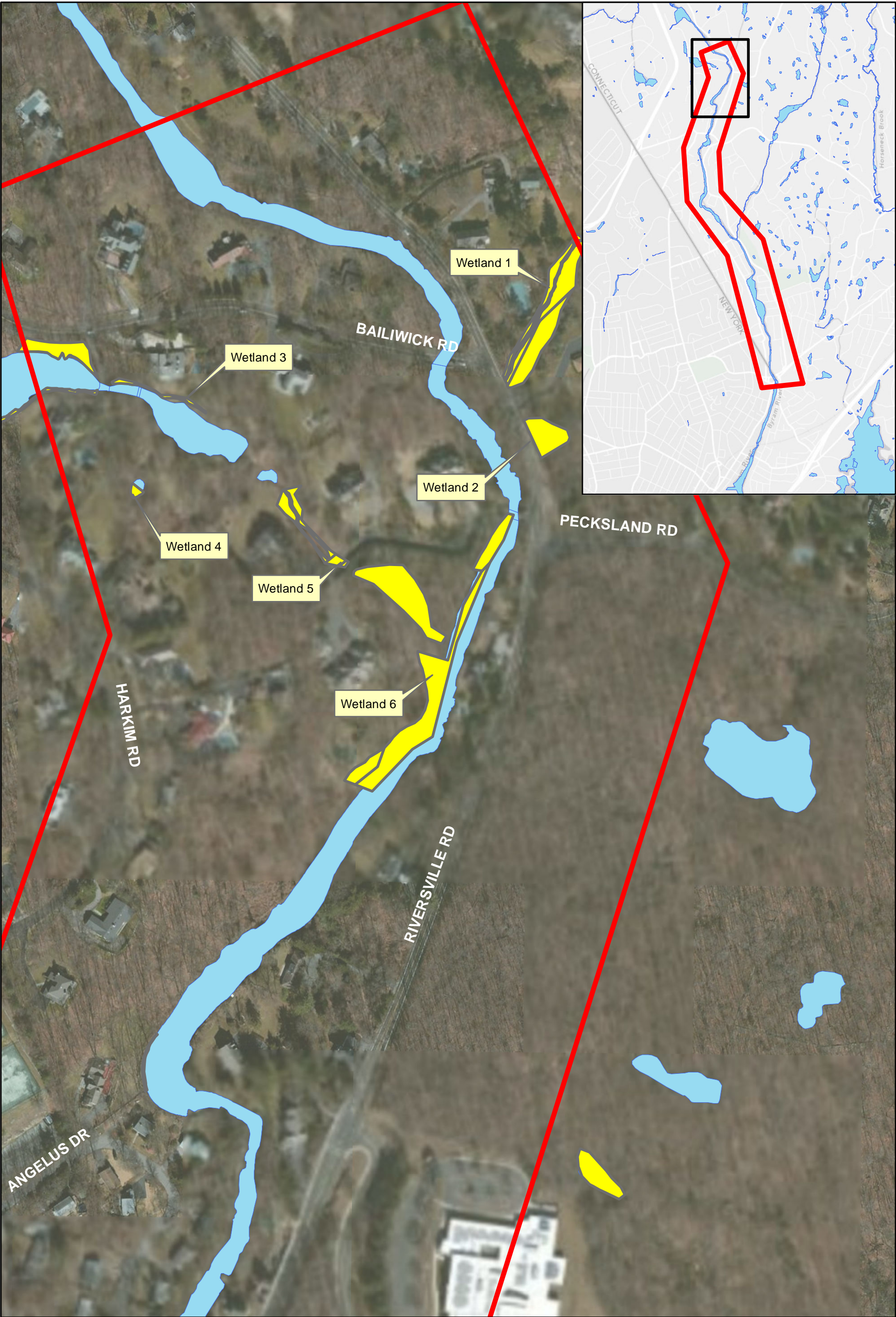
#### **4.2.2. Wetlands B & C:**

Two of the four field identified wetland resources are small wet meadows located upstream and downstream of the Comly Avenue bridge. Wetland B is located upstream of the Comly Avenue bridge, and Wetland C is located downstream of the Comly Avenue bridge, see Photographs 6 & 7 in Appendix



A. Both are located on a stream terrace within the existing channel. These small palustrine emergent wetlands are dominated by: purple loosestrife (*Lythrum salicaria*), Lady's thumb (*Polygonum persicaria*), arrowleaf tearthumb (*Polygonum sagittatum*), bluets (*Houstonia caerulea*), iris (*Iris* sp.), reed canary grass (*Phalaris arundinacea*), soft rush (*Juncus effusus*), umbrella sedge (*Cyperus strigosus*), European beggars-tick (*Bidens frondosa*), and Indian hemp (*Apocynum cannabinum*), and wood nettle (*Laportea canadensis*). Low growing willows (*Salix* sp.) were observed along the water's edge.

**4.2.3. Wetland D:**

The fourth wetland, identified as Wetland 13 above, is located at the north end of Caroline Pond, at the confluence of the Byram River, and continues along the northern section of the pond (see Figure 6d – Town Determined Delineated Wetlands and Photograph 8 in Appendix A). This wetland is dominated by various wildflower species.

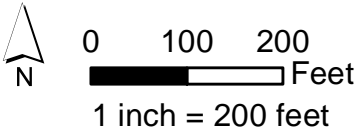


Source: Greenwich GIS Department

-  Byram River Flood Study Project Area
-  Town Delineated Wetlands



**Byram River Basin Feasibility Study**

Greenwich, Connecticut  
May 7, 2014



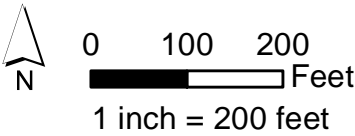


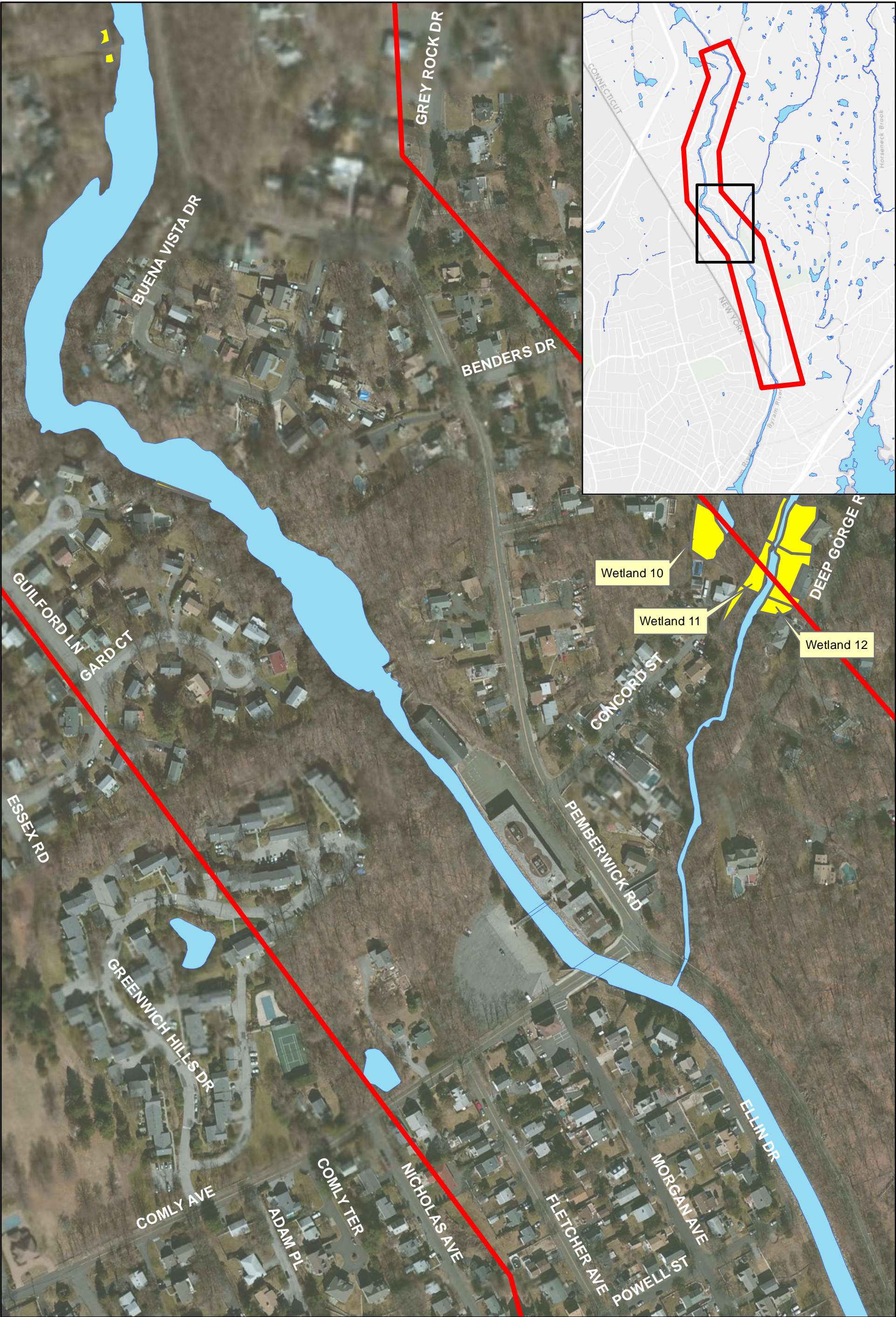
Source: Greenwich GIS Department

-  Byram River Flood Study Project Area
-  Town Delineated Wetlands



**Byram River Basin Feasibility Study**

Greenwich, Connecticut  
May 7, 2014






Source: Greenwich GIS Department

-  Byram River Flood Study Project Area
-  Town Delineated Wetlands

**Byram River Basin Feasibility Study**

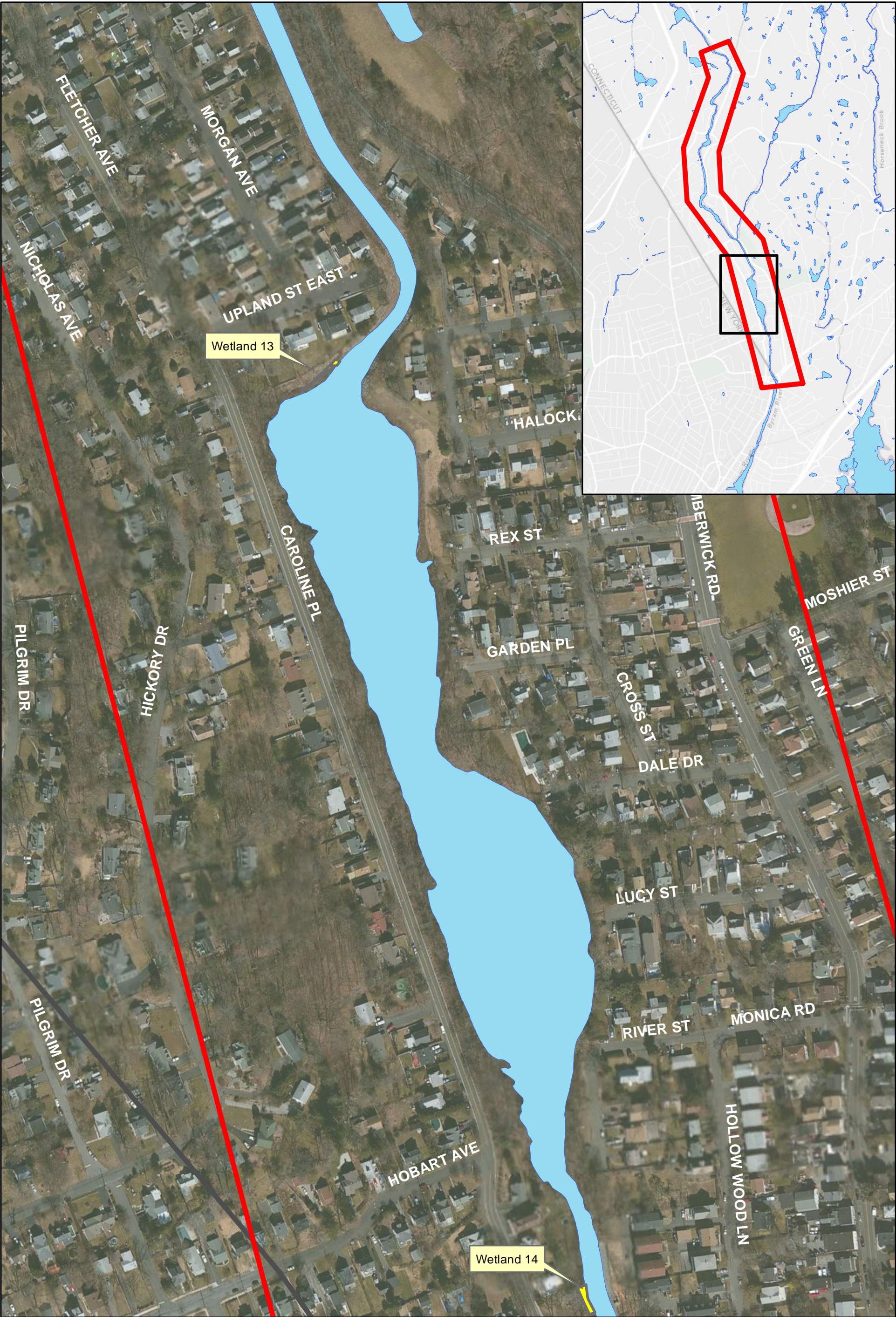
Greenwich, Connecticut  
May 7, 2014

  
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Feet

1 inch = 200 feet

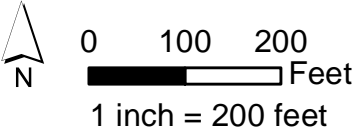


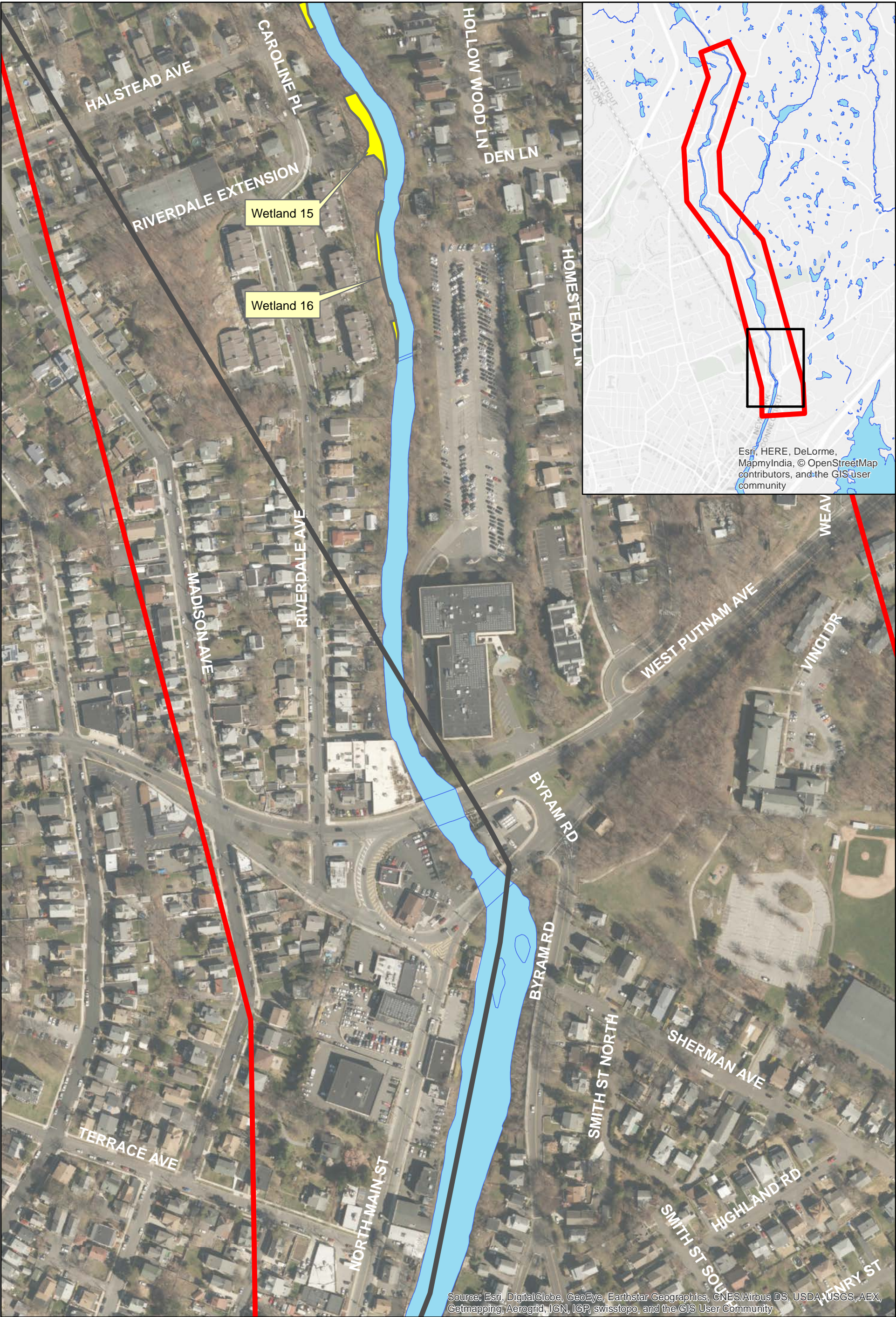
Source: Greenwich GIS Department

-  Byram River Flood Study Project Area
-  Town Delineated Wetlands



**Byram River Basin Feasibility Study**

Greenwich, Connecticut  
May 7, 2014



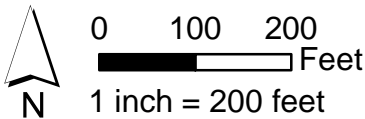


Source: Greenwich GIS Department

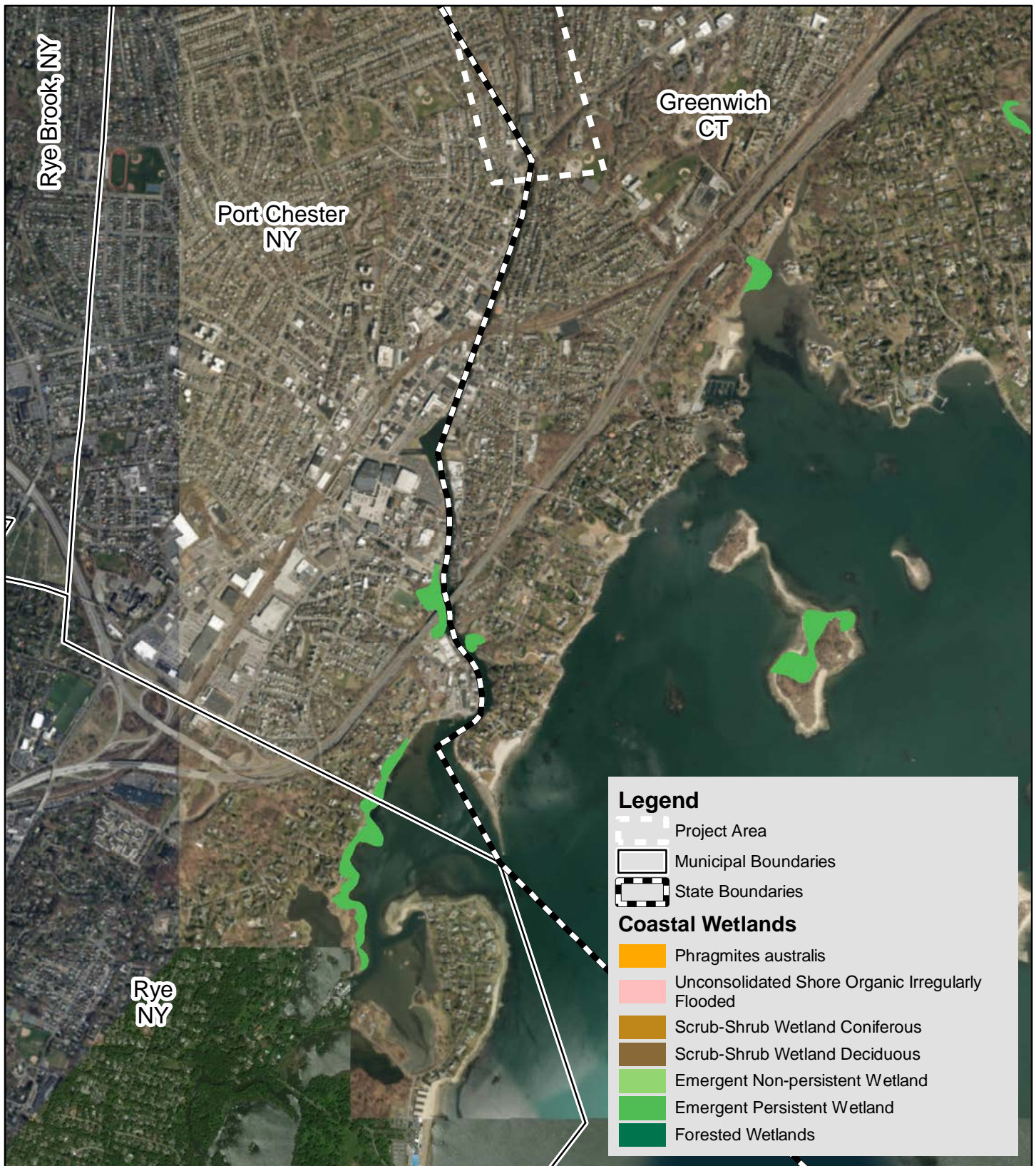
-  Byram River Flood Study Project Area
-  Town Delineated Wetlands

# Byram River Basin Feasibility Study

Greenwich, Connecticut  
January 2018



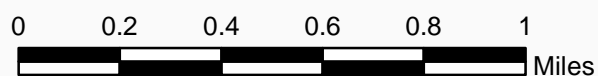
## **5. NEW YORK COASTAL WETLANDS**



## Byram River Basin Flood Risk Management Study New York DOS Coastal Wetlands Data



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## 6. BIRD SPECIES OBSERVED WITHIN PROJECT AREA

### 6.1. Birds

While conducting field reconnaissance within the project area, CDM Smith identified 23 bird species by both visual and audible cues. These are summarized in Table 1 below.

**Table 1. Bird species identified within the project area.**

<u>Common name</u>	<u>Latin Binomial</u>
Killdeer	( <i>Charadrius vociferus</i> )
Red-tailed hawks	( <i>Buteo jamaicensis</i> )
Great Blue Heron	( <i>Ardea herodias</i> )
Mallards	( <i>Anas platyrhynchos</i> )
Canada Geese	( <i>Branta canadensis</i> )
Osprey	( <i>Pandion haliaetus</i> )
House Sparrows	( <i>Passer domesticus</i> )
Gray Catbirds	( <i>Dumetella carolinensis</i> )
Common Grackles	( <i>Quiscalus quiscula</i> )
Rock Doves	( <i>Columba livia</i> )
Belted Kingfisher	( <i>Megaceryle alcyon</i> )
Herring Gulls	( <i>Larus sp.</i> )
Blue Jays	( <i>Cyanocitta cristata</i> )
Mute Swan	( <i>Cygnus olor</i> )
American Robin	( <i>Turdus migratorius</i> )
Double –crested Cormorants	( <i>Phalacrocorax auritus</i> )
Red-winged Blackbirds	( <i>Agelaius phoeniceus</i> )
Downy Woodpecker	( <i>Picoides pubescens</i> )
Red-bellied Woodpeckers	( <i>Melanerpes carolinus</i> )
Northern Cardinals	( <i>Cardinalis cardinalis</i> )
Barn Swallows	( <i>Hirundo rustica</i> )
Mourning Doves	( <i>Zenaidura macroura</i> )
Black Crowned Night Heron	( <i>Nycticorax nycticorax</i> )

\* identified by audible cue, all others were visual observations

The above listed species represents resident species, such as house sparrows, catbirds, grackles, doves, gulls, and blue jays, that are typically found in residential neighborhoods and are adapted to living in close proximity to humans. Additionally, the Byram River provides good riparian habitat for species such as mallards, great blue heron, black crowned night heron, killdeer, and osprey which use the riparian zone for roosting, nesting and feeding during the summer months, before migrating south for the winter months. The river and ponds also provide habitat for migrating water fowl, such as mallards and geese, to feed and rest during their migrations.

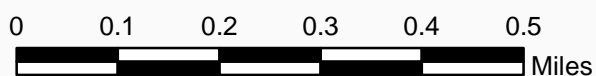
## **7. COASTAL ZONE MANAGEMENT JURISDICTIONAL BOUNDARIES**



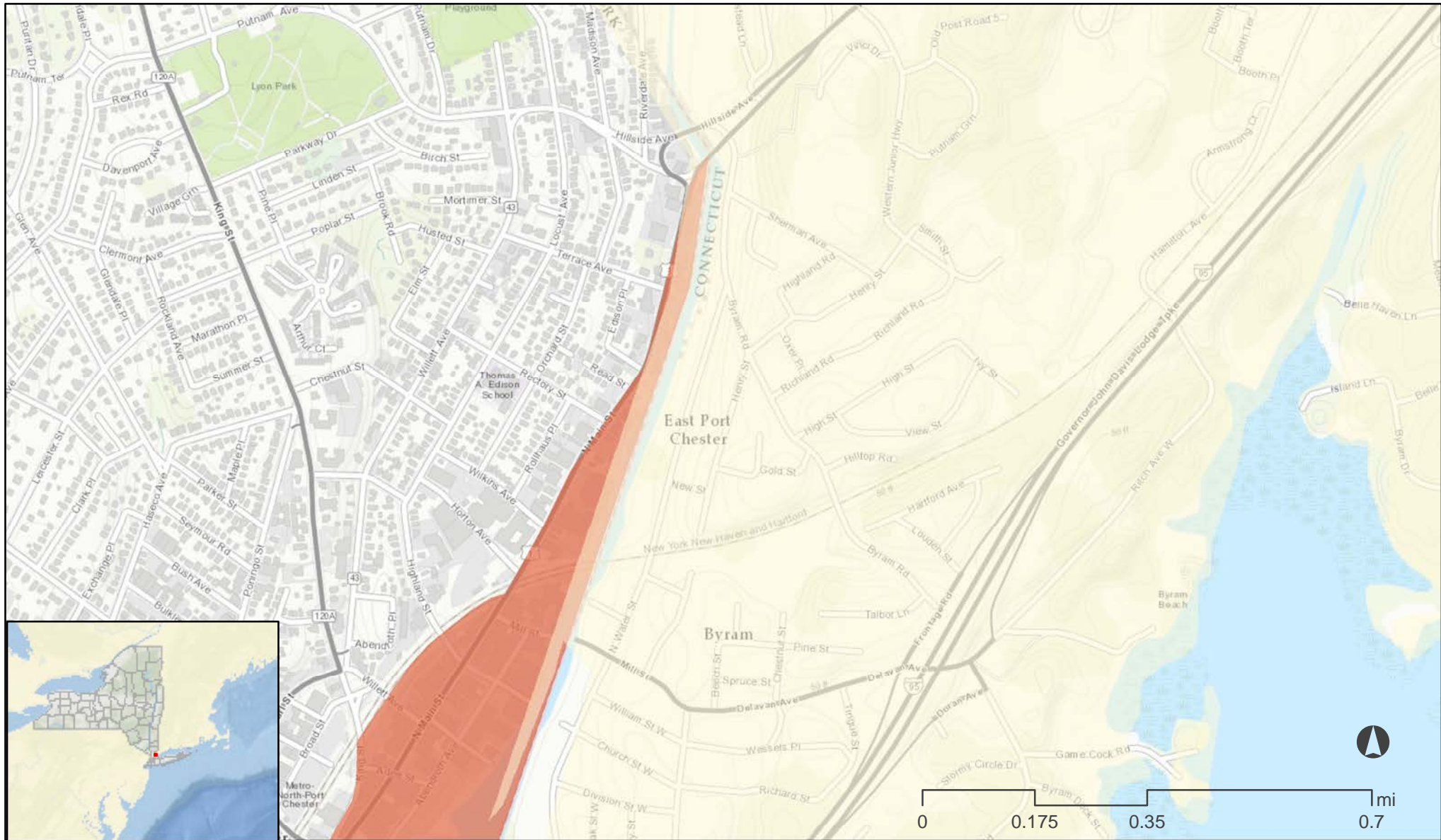
## Byram River Basin Flood Risk Management Study New York Coastal Boundary Data



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# Long Island Sound Coastal Management Program

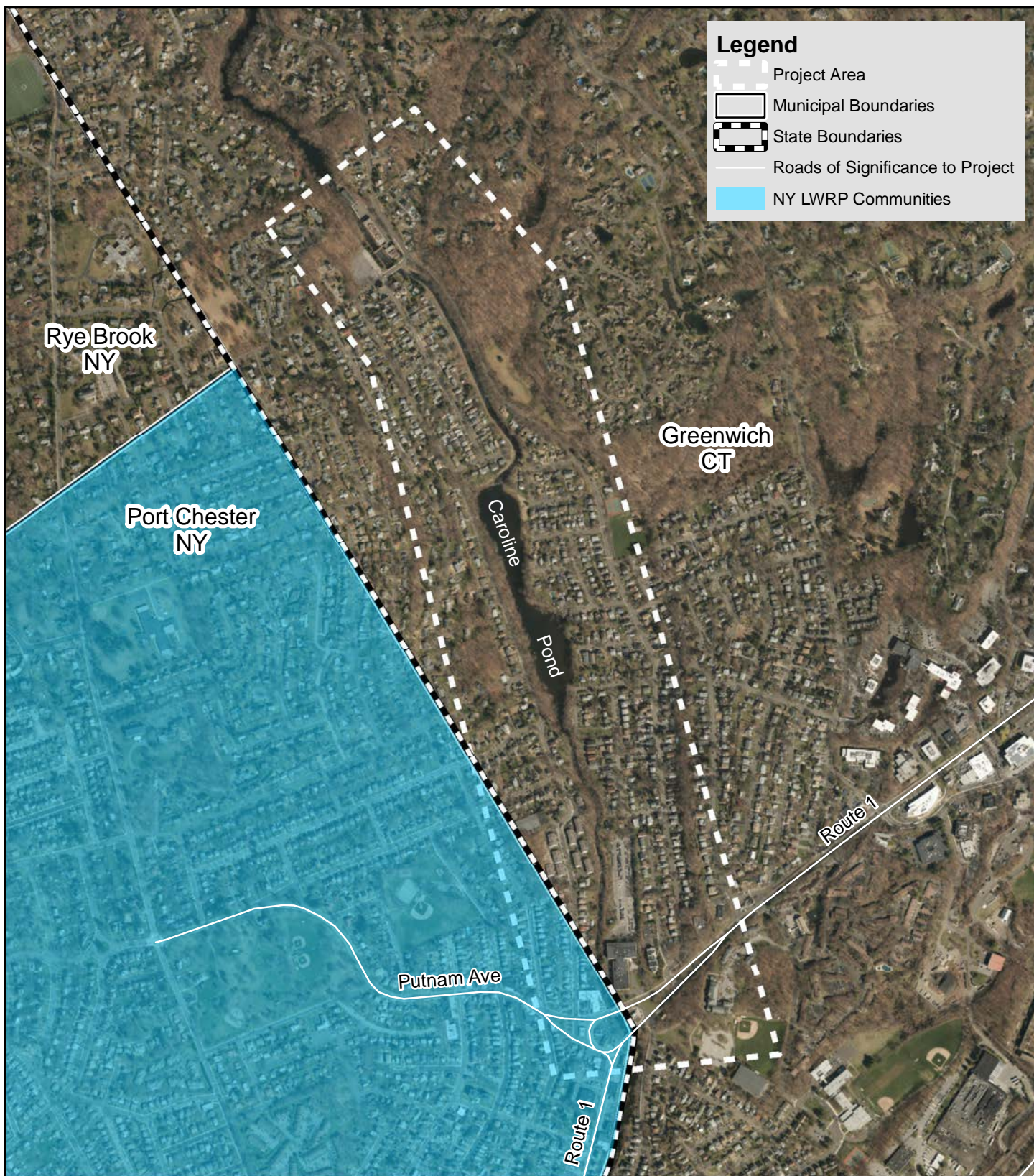


Long\_Island\_Sound\_Program



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## Byram River Basin Flood Risk Management Study New York LWRP Communities Data

Communities with an approved Local Waterfront Revitalization Program (LWRP)

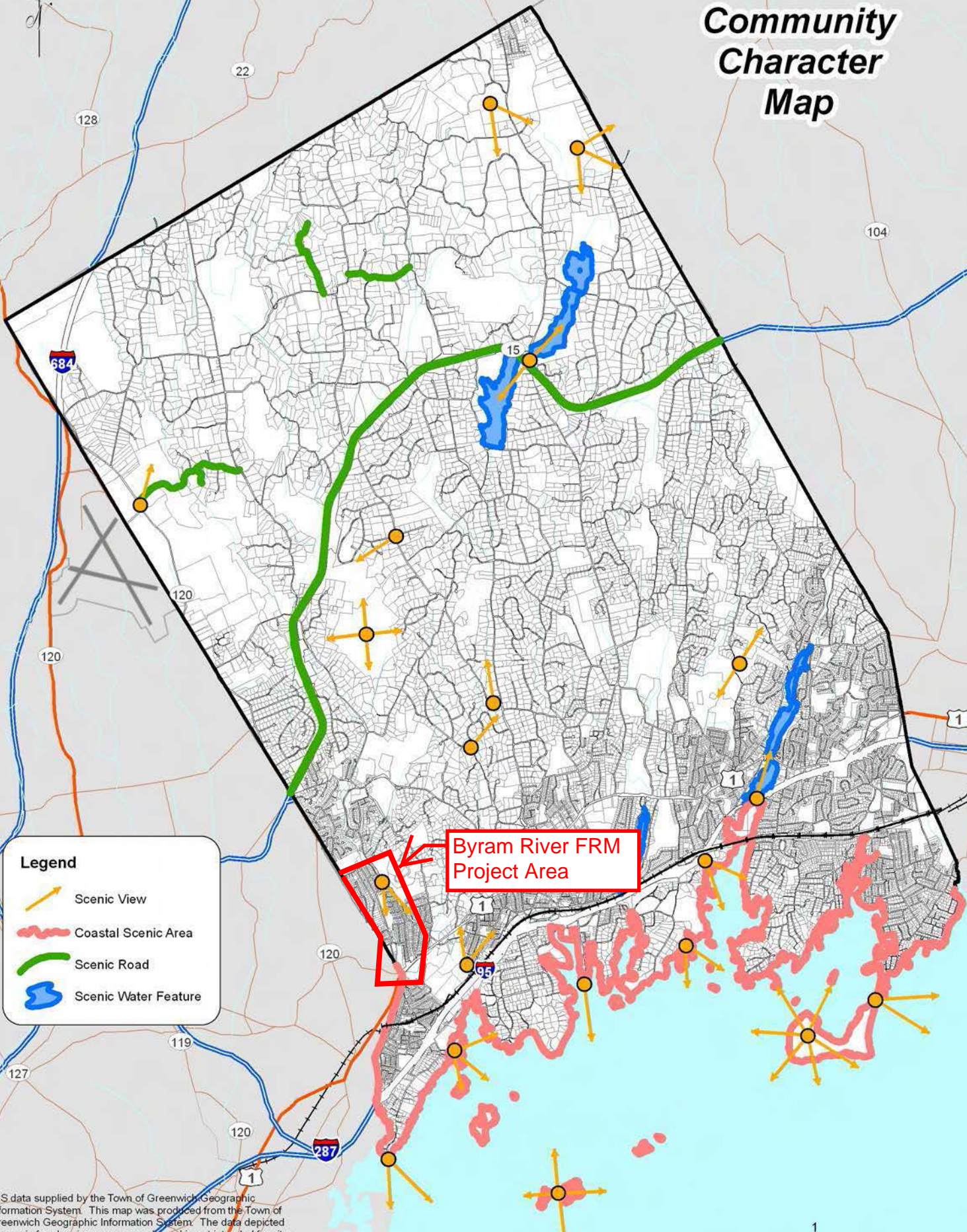


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## **8. TOWN OF GREENWICH IDENTIFIED SCENIC VIEWS**

# Community Character Map



GIS data supplied by the Town of Greenwich Geographic Information System. This map was produced from the Town of Greenwich Geographic Information System. The data depicted hereon is for planning purposes only, and is not intended for site-specific analysis. The Town does not certify this data as survey accurate, and expressly disclaims any liability that may result from the use of this map. Aerial: 4/15/03. Map: 13 April 2009.