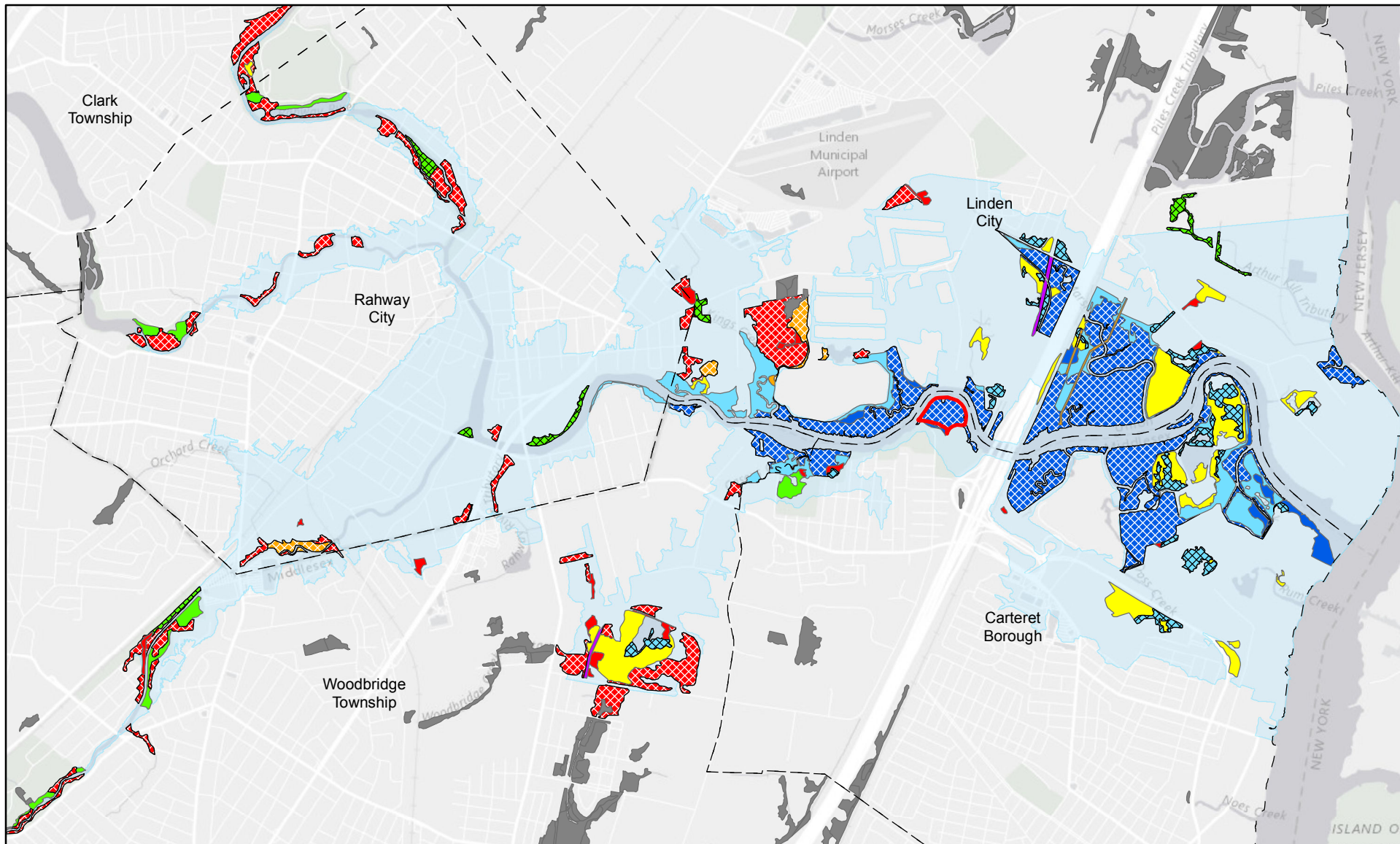


Rahway River Basin, New Jersey  
Coastal Storm Risk Management Feasibility Study

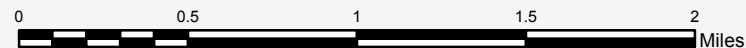
Appendix A.1  
Environmental Documentation

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Figure 1  
Wetland Habitat Types Within Project Area



# Wetlands within Study Area (NJDEP 2012) Rahway River (Tidal) Basin Coastal Storm Risk Management



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## Legend

- Project Study Area
- New Jersey Municipal Boundaries
- USACE Tidal Marsh Mitigation Site
- Various Wetlands outside the Study Area

## Types of Wetlands within the Study Area

- DECIDUOUS SCRUB/SHRUB WETLANDS
- DECIDUOUS WOODED WETLANDS
- DISTURBED TIDAL WETLANDS
- DISTURBED WETLANDS (MODIFIED)

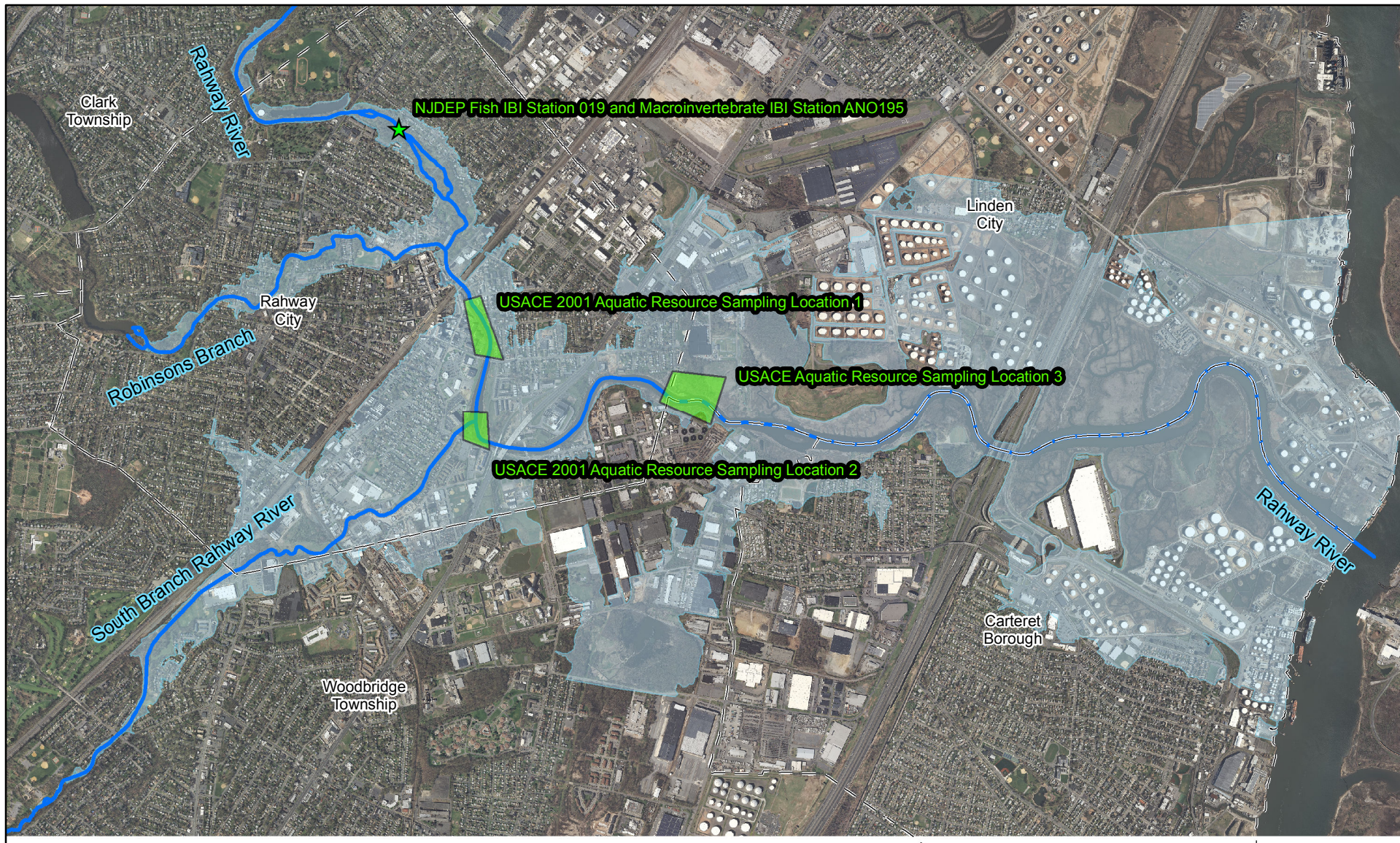
- HERBACEOUS WETLANDS
- MANAGED WETLAND IN BUILT-UP MAINTAINED REC AREA
- MANAGED WETLAND IN MAINTAINED LAWN GREENSPACE
- PHRAGMITES DOMINATE COASTAL WETLANDS

- PHRAGMITES DOMINATE INTERIOR WETLANDS
- SALINE MARSH (HIGH MARSH)
- SALINE MARSH (LOW MARSH)
- WETLAND RIGHTS-OF-WAY

Rahway River Basin, New Jersey  
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Figure 2  
Aquatic Resource Sampling Conducted by Others  
Within the Project Area





## Locations of Aquatic Resource Sampling Conducted by Others Rahway River (Tidal) Basin Coastal Storm Risk Management



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0 0.5 1 1.5 2 Miles



### Legend

- Aquatic Resource Sampling Points
- Aquatic Resource Sampling Areas
- New Jersey Municipal Boundaries
- Significant Rivers within Project Study Area
- Project Study Area



Rahway River Basin, New Jersey  
Coastal Storm Risk Management Feasibility Study

Table 1  
Species Identified During 2001 USACE Bird Survey

**Table 1. Bird Species Observed During the 2001 Summer and Fall Avian Surveys at the Rahway River Project and Reference Areas for USACE Aquatic Ecosystem Restoration Study.**

<b>Common Name</b>	<b>Scientific Name</b>	<b>Habitat Use</b>
<b>Waterfowl</b>		
Common merganser	<i>Mergus merganser</i>	Open water
Canada goose	<i>Branta canadensis</i>	Open water, mudflat, upland grass
Mallard duck	<i>Anas platyrhynchos</i>	Mudflat, open water
Snow goose	<i>Chen caerulescens</i>	Open water
<b>Wading Birds</b>		
Black-crowned night heron*	<i>Nycticorax nycticorax</i>	Emergent marsh, mudflat, open water edge
Cattle egret	<i>Bubulcus ibis</i>	Emergent marsh, mudflat, open water edge
Great blue heron	<i>Ardea herodias</i>	Emergent marsh, mudflat, open water edge
Great egret	<i>Casmerodius albus</i>	Emergent marsh, mudflat, open water
Green heron	<i>Butorides virescens</i>	Mudflat, open water, emergent marsh
Snowy egret	<i>Egretta thula</i>	Emergent marsh, mudflat, open water
<b>Shorebirds</b>		
Double-crested cormorant	<i>Phalacrocorax auritus</i>	Mudflat, open water
Great black backed gull	<i>Larus marinus</i>	Mudflat, open water
Herring gull	<i>Larus argentatus</i>	Mudflat, open water
Killdeer	<i>Charadrius vociferous</i>	Upland grass, open water
Ring billed gull	<i>Larus delawarensis</i>	Mudflat, open water
Spotted sandpiper	<i>Actitis macularia</i>	Emergent marsh, mudflat, open water
<b>Songbirds</b>		
American crow	<i>Corvus brachyrhynchos</i>	Generalist
American goldfinch	<i>Carduelis tristis</i>	Generalist
American robin	<i>Turdus migratorius</i>	Generalist
Bank swallow	<i>Riparia riparia</i>	Bridges/embankments over water
Black-capped chickadee	<i>Parus atricapillus</i>	Forest, forest/scrub-shrub

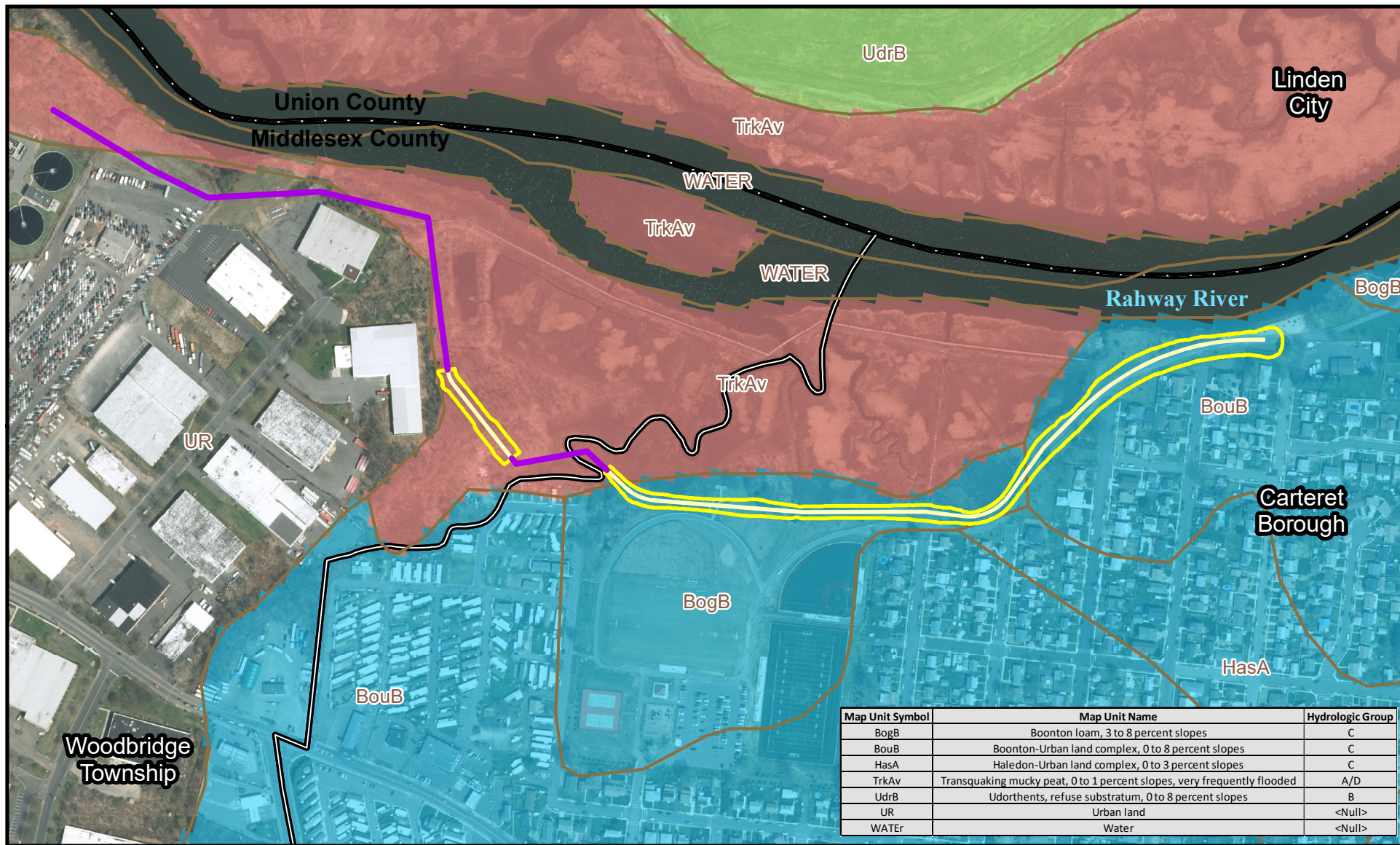
Common Name	Scientific Name	Habitat Use
Belted kingfisher	<i>Megaceryle alcyon</i>	Open water, riparian areas
Blue jay	<i>Cyanocitta cristata</i>	Generalist
Brown headed cowbird	<i>Molothrus ater</i>	Urban edge
Carolina wren	<i>Thryothorus ludovicianus</i>	Forest, forest scrub-shrub, scrub-shrub
Cedar waxwing	<i>Bombycilla cedrorum</i>	Upland forest/scrub-shrub
Clapper rail	<i>Rallus longirostris</i>	Emergent marsh
Common grackle	<i>Quiscalus quiscula</i>	Generalist
Common yellowthroat	<i>Geothlypis trichas</i>	Scrub-shrub
Downy woodpecker	<i>Picoides pubescens</i>	Forest, forest scrub-shrub
Eastern kingbird	<i>Tyrannus tyrannus</i>	Forest, forest scrub-shrub, foraging in open areas, road edges
European starling	<i>Sturnus vulgaris</i>	Generalist, urban areas
Fish crow	<i>Corvus ossifragus</i>	Generalist, esp. found near riparian areas
Gray catbird	<i>Dumetella carolinensis</i>	Scrub-shrub, urban areas
Greater yellowlegs	<i>Tringa melanoleuca</i>	Emergent marsh, mudflat, open water edge
Hairy woodpecker	<i>Picoides villosus</i>	Forest, forest-scrub-shrub
Hermit thrush	<i>Catharus guttatus</i>	Forest, forest scrub-shrub
House finch	<i>Carpodacus mexicanus</i>	Generalist, urban areas
House sparrow	<i>Passer domesticus</i>	Generalist, urban areas
House wren	<i>Troglodytes aedon</i>	Forest, forest-scrub-shrub
Marsh wren	<i>Cistothorus palustris</i>	Emergent marsh, <i>Phragmites</i> , cattails
Mourning dove	<i>Zenaida macroura</i>	Generalist, urban areas
Northern cardinal	<i>Cardinalis cardinalis</i>	Forest, forest scrub-shrub
Northern flicker	<i>Colaptes auratus</i>	Forest, forest scrub-shrub, upland grass
Northern mockingbird	<i>Mimus polyglottos</i>	Urban areas, scrub-shrub
Northern oriole	<i>Icterus galbula</i>	Forest, forest scrub-shrub
Red-bellied woodpecker	<i>Melanerpes carolinus</i>	Forest, forest scrub-shrub
Red-eyed vireo	<i>Vireo olivaceus</i>	Forest, forest scrub-shrub
Red-winged blackbird	<i>Agelaius phoeniceus</i>	Emergent marsh, <i>Phragmites</i> , cattails, marshy
Rock dove	<i>Columbia livia</i>	Generalist, urban areas



Common Name	Scientific Name	Habitat Use
Song sparrow	<i>Melospiza melodia</i>	Scrub-shrub, herbaceous
Swamp sparrow	<i>Melospiza georgiana</i>	Emergent marsh
Tree swallow	<i>Tachycineta bicolor</i>	Scrub-shrub, open areas near water
Tufted titmouse	<i>Parus bicolor</i>	Forest, forest/scrub-shrub
Warbling vireo	<i>Vireo gilvus</i>	Forest, forest scrub-shrub, urban parks
White-throated sparrow	<i>Zonotrichia albicollis</i>	Scrub-shrub
Willow flycatcher	<i>Empidonax traillii</i>	Scrub-shrub
Wood thrush	<i>Hylocichla mustelina</i>	Forest
Yellow warbler	<i>Dendroica petechia</i>	Forest and Scrub-shrub
<b>Others</b>		
Osprey	<i>Pandion haliaetus</i>	Open water, coastal areas
Red-tailed hawk	<i>Buteo jamaicensis</i>	Scrub-shrub, open areas
Sharp-shinned hawk	<i>Accipiter striatus</i>	Forest, forest scrub-shrub
Turkey vulture	<i>Cathartes aura</i>	Generalist, urban areas roadsides

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Figure 3  
Soils within Segment Levee D Project Area



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# Soils Map Units and Hydrologic Soil Groups (NRCS) in Proximity of Recommended Plan Rahway River Basin (Tidal) Coastal Storm Risk Management Study



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0 500 1,000  
Feet

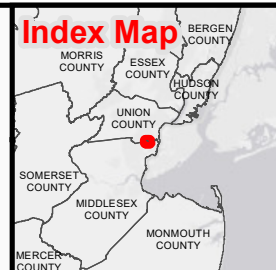


## Legend

- Floodwall
- Levee Toe
- Top of Levee
- New Jersey County Boundaries
- New Jersey Municipal Boundaries
- Soil Map Units (NRCS)

## Hydrologic Soil Groups (NRCS)

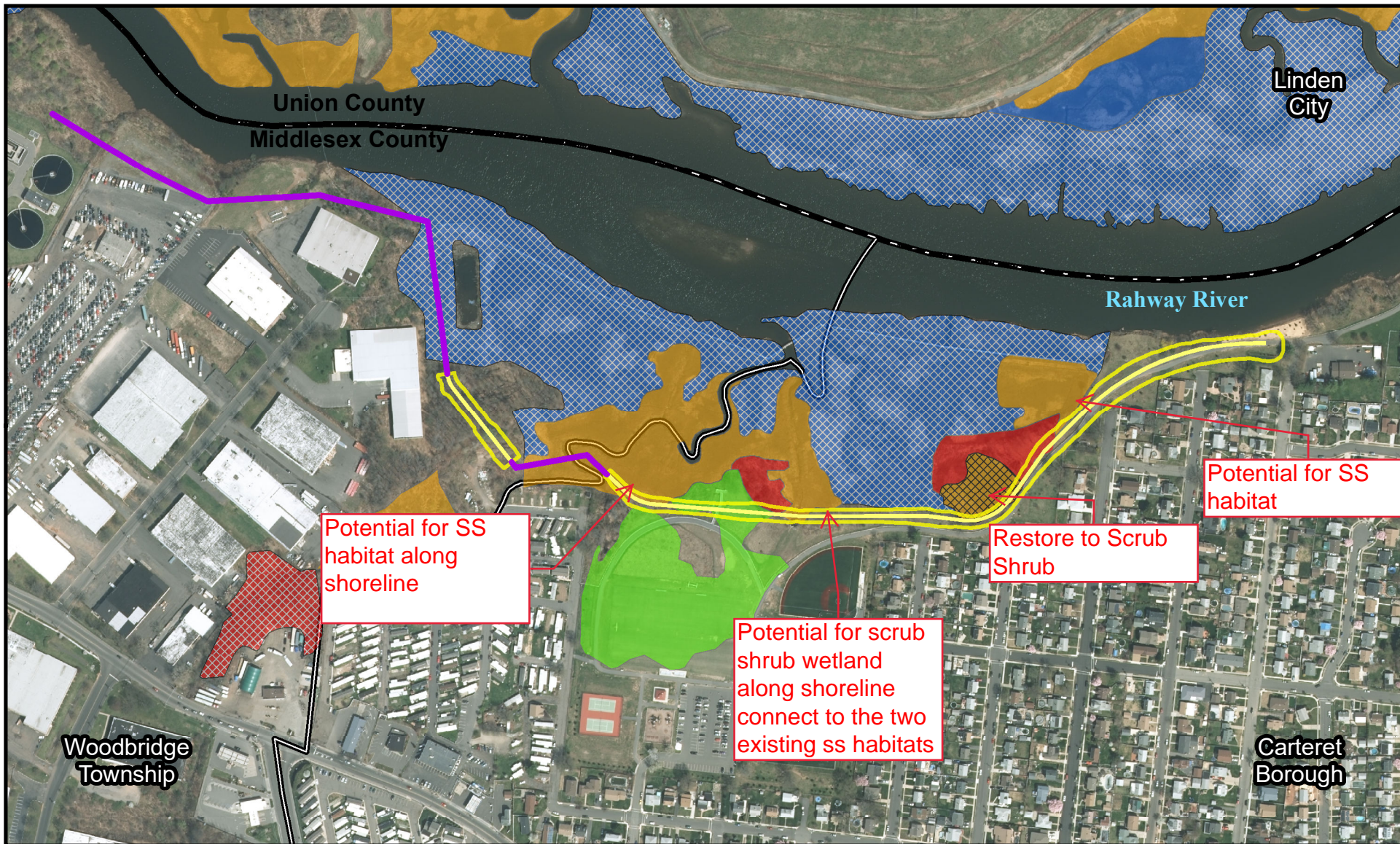
- A/D - High Infiltration Rate (Drained) & Very Slow Infiltration Rate (Undrained)
- B - Moderate Infiltration Rate
- C - Slow Infiltration Rate



Rahway River Basin, New Jersey  
Coastal Storm Risk Management Feasibility Study

Figure 4  
Wetland Types Within Levee Segment D Project  
Area





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# Wetlands (NJDEP 2012) in Proximity of Recommended Plan Rahway River Basin (Tidal) Coastal Storm Risk Management Study



US Army Corps  
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New York District

0 500 1,000  
Feet



- Floodwall
- Levee Toe
- Top of Levee

## Types of Wetlands

- DECIDUOUS SCRUB/SHRUB WETLANDS
- DECIDUOUS WOODED WETLANDS
- MANAGED WETLAND IN BUILT-UP MAINTAINED REC AREA
- PHRAGMITES DOMINATE COASTAL WETLANDS
- PHRAGMITES DOMINATE INTERIOR WETLANDS
- SALINE MARSH (HIGH MARSH)
- SALINE MARSH (LOW MARSH)
- New Jersey County Boundaries
- New Jersey Municipal Boundaries

