APPENDIX E: WETLAND DELINEATION

Wetland Delineation Report

Runway 11-29 Safety Improvements, Off Airport Tree Removal and Airfield Pavement Rehabilitation Projects

Igor I. Sikorsky Memorial Airport

Stratford, Connecticut

November 2021

Contents

Appendices

INTRODUCTION

Igor I. Sikorsky Memorial Airport (the Airport) is a public airport in the Town of Stratford owned and operated by the City of Bridgeport (see **Figure 1, Project Overview Map** and **Figure 2, USGS Map** in **Appendix A**). The City of Bridgeport is proposing safety improvements to the existing crosswinds runway known as Runway 11-29.

The Airport has two asphalt runways, Runway 11-29 which is 4,761 feet long by 150 feet wide and Runway 6-24 which is 4,677 feet long by 100 feet wide. Taxiways, aprons, parking lots and access driveways comprise the other paved areas on the airport property. Buildings include a terminal and hangars housing planes and offices for private air carriers and other airport related businesses along with airport maintenance and operations structures including a fire and rescue building. Areas interior to and surrounding the runways and taxiways are comprised of mowed/maintained grasslands. Along the southern and western perimeter of the airport, and to a much lesser extent on the east of the airport property, are extensive vegetated tidal wetland systems with constructed channels and areas of open water. A small partially undeveloped upland vegetated area is located north of the Runway 11 end and south of Access Road. Residential areas in the Lordship neighborhood are south of the airport property and commercial land uses are to the north.

As neither end of Runway 11-29 currently satisfies Federal Aviation Administration (FAA) standards, several improvement alternatives have been identified to address its non-standard conditions. Specifically, the proposed project would undertake the following:

- At Runway 29, convert approximately 150 feet of the eastern end into a Runway Safety Area (RSA), and install a departure end Engineered Materials Arresting System (EMAS);
- Extend Runway 11 by 150 feet, and install a 260 foot departure end EMAS.

The runway length would remain unchanged, but displaced thresholds would be implemented to provide additional RSA while providing a minimum of 4,550 feet of available landing distance. Other runway improvements include the replacement or addition of the runway turnarounds on both ends of Runway 11-29, grading within the RSA, pavement removal and drainage improvements. The removal of tree obstructions located both on off-Airport property within the runway end approach zones is also included in the proposed project.

METHODOLOGY

Inland and tidal wetlands were delineated by FHI Studio soil scientists and wetland biologists in accordance with State and federal definitions and guidelines.

Tidal wetland limits were delineated in accordance with the State of Connecticut General Statutes (CGS) Section 22a-29 (Tidal Wetlands) and Section 22a-359 (Tidal, Coastal or Navigable Waters). Tidal wetlands are "…those areas which border on or lie beneath tidal waters, such as,

but not limited to banks, bogs, salt marsh, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters, and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing…" tidal vegetation.

In 2012, the Connecticut General Assembly passed Public Act No. 12-101, which included a revision to the State's regulatory jurisdiction under CGS Section 22a-359. This revision changed the regulatory jurisdiction limit from the "high tide line" to the area up to and including the elevation of the "coastal jurisdiction line" (CJL) as determined for the State's major tidal waterbodies. The CJL is not delineated in the field, but is a set elevation for each municipality. It also states under CGS Section 22a-359, "For any tidal, coastal or navigable waters of the state located upstream of a tide gate, weir, or other device that modifies the flow of tidal waters, the coastal jurisdiction line for such tidal, coastal or navigable waters shall be the elevation of mean high water as found at the downstream location of such device".

The identification of Connecticut-regulated inland wetlands is determined by the limit of any of the soil types designated as poorly drained, very poorly drained, alluvial, or floodplain by the National Cooperative Soils Survey, of the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (USDA) (§22a-38-15). NRCS soil surveys were consulted to compare observed soil types to those mapped in the project area. The *Field Indicators for Identifying Hydric Soils in New England Version 4* (2018) and *Field Indicators of Hydric Soils in the United States, Version 8.2* (2018) were used to identify hydric soils, which include both poorly and very poorly drained soils.

Federal wetlands, as defined in the United States Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual* and the USACE 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region – Version 2.0*, were also assessed. Federal wetland boundaries were determined by the presence of dominant hydrophytic vegetation, presence of hydric soils, and evidence of wetland hydrology. In tidally influenced areas, the USACE regulates up to the high tide line (HTL) elevation. USACE Field Documentation Forms were not completed for the delineation, since the wetlands are tidal, and jurisdiction is defined by the HTL elevation.

The limit of the wetland delineation fieldwork differs from the study area. The limit of the wetland delineation fieldwork only includes areas where activities are proposed at, and adjacent to, the Airport, along with the tree obstruction removal areas in the runway end approach zones. The field work was conducted over several site visits between August and October, 2021. The wetland/upland boundary was marked in the field using consecutively numbered flags, and the locations of the flags were recorded by FHI Studio using a GPS unit capable of achieving sub-meter accuracy (note that FHI Studio is not a licensed surveyor). Wetland functions and values were documented in accordance with the USACE *Highway Methodology Supplement* (1999)

guidelines (see **Appendix B**). Photographs were taken at representative locations in the wetlands and adjacent uplands and are included in **Appendix C**.

RESULTS

The delineated wetland systems are numbered 1 to 9 from west to east (see **Figure 3, Wetland Map** in **Appendix A**). All of the wetlands on the site are tidal wetlands, most of which have been disturbed by past and present disturbance. Wetland systems 1, 2 and 3 drain to the west and are within the Southwest Coast major basin, Southwest Eastern regional basin, Lewis Gut subregional basin and Local Basin Number 7102-00 (CT Environmental Conditions Online, Advanced Viewer, 2021). Wetlands 4, 5, 6, 7, 8 and 9 drain to the east and are within the Southwest Coast major basin, Southwest Eastern regional basin, Housatonic River subregional basin and Local Basin Number 6000-90. The CJL elevation for the site is 4.8 feet NAVD88. General descriptions of these nine wetlands are provided below, with additional detailed information for each wetland in **Table 1**.

Wetland 1 and Wetland 2 are extensive tidal marshes in the western portion of the project area where tree obstruction removal is proposed. These wetlands have been altered by past practices of filling and channelization. Typically, these wetlands contain mosquito ditches and upland dikes comprised of side cast dredge spoils adjacent to the excavated tidal creeks. Wetland 1 is located off the Airport property, and although shown as inland wetland by the NWI (see **Figure 4**), it is actually tidally connected via a culvert under Access Road. The tidal creek flows under Access Road from Wetland 1, just east of the intersection with Lordship Boulevard to Wetland 2. The smaller tidal creeks within Wetland 2 all ultimately drain to a larger tidal creek that flows under Lordship Boulevard, draining south to a large tidal marsh adjacent to Lewis Gut. Wetland 2 includes the excavated channel on the north side of the west end of Runway 11-29.

Wetland 3 is adjacent to the mowed areas south of the west end of Runway 11-29. Wetland 3 is part of a larger wetland complex that extends south to Lordship Boulevard. Wetland 3 ultimately drains to the southwest to a tidal creek that flows under Lordship Boulevard ultimately to Lewis Gut. Wetland 3 contains the State-special concern plant species Needlegrass (*Aristida longespica*).

Wetland 4 is a relatively narrow, *Phragmites*-dominated, excavated channel to the north of the intersection of Runway 11-29 and Runway 9-24. The channel was constructed in 2015 to convey drainage from the airport mowed areas off site. Wetland 4 is tidally influenced, and fish were observed during field work. Wetland 5 and Wetland 7 are isolated wetlands entirely within the mowed area south of the east end of Runway 9-24. Wetland 5 contains the State-endangered plant Salt Pond Grass (*Leptochloa fusca*), and Wetland 7 contains the State-special concern plant Needlegrass (*Aristida longespica*). Wetland 6 is a *Phragmites*-dominated wetland located south of the east end of Runway 11-29.

Wetland 8 is located adjacent to the north side of the east end of Runway 11-29. Wetland 8 is an emergent tidal wetland with an excavated creek that flows to the east under Stratford Road (Route 113) to Wetland 9. Portions of Wetland 8 are actively mowed. Wetland 8 contains the State-special concern plant Seaside Orach (*Atriplex glabriuscula*).

Wetland 9 is located on the east side of Stratford Road, off Airport property, where tree obstruction removal is proposed. A tidal creek flows from under Stratford Road to Marine Basin. Tide gates have been installed on the east side of Stratford Road. Wetland 9 includes a narrow strip of tidal vegetation on the south side of a cove along the Housatonic River known on topographic maps as the "Marine Basin" and a tidal channel along the east side of the limit of wetland fieldwork. Marine Basin is connected to the Housatonic River via a tidal creek, with a tide gate on the east side of Route 113.

The wetland ID/flagging sequence, wetland type, soil type and characteristic vegetation of each of the nine wetlands is summarized in **Table 1**. Additionally, the United States Fish and Wildlife Service (USFWS), National Wetland Inventory (NWI) map and Federal Emergency Management Agency (FEMA) floodplain map are included as **Figure 4** and **Figure 5**, respectively, in **Appendix A**. Most of the project area is located within the 100-year floodplain limits.

Table 1: Wetlands Within the Limit of Wetland Delineation Fieldwork

Wetland ID (flagging sequence)	Wetland Type [(a)]	General Description	Soil Type (drainage class)	Characteristic Vegetation (indicator status) [(b)]
Wetland 1 (L1 to L102, M1 to M23, N1 to N51)	E2EM5Pd and E1UBLx	Tidal marsh partially dominated by *Phragmites australis* that has been channelized/diked	Walpole sandy loam (poorly drained), Westbrook mucky peat (very poorly drained) and Aquents (poorly drained)	*Acer rubrum* (FAC) *Phragmites australis* (FACW) *Spartina alterniflora* (OBL) *Spartina patens* (FACW) *Rosa multiflora* (FACU) *Onoclea sensibilis* (FACW) *Toxicodendron radicans* (FAC) *Baccharis halimifolia* (FACW)
Wetland 2 (A1 to A78, AA1 to AA10)	E2EM5Pd and E1UBLx	Tidal marsh partially dominated by *Phragmites australis* that has been channelized/diked	Walpole sandy loam (poorly drained), Westbrook mucky peat (very poorly drained) and Aquents (poorly drained)	*Phragmites australis* (FACW) *Spartina alterniflora* (OBL) *Spartina patens* (FACW) *Rosa multiflora* (FACU) *Baccharis halimifolia* (FACW)
Wetland 3 (D1 to D56, D91 to	E2EM5Pd and E1UBLx	Tidal marsh partially dominated by *Phragmites australis*	Scarborough muck and Aquents	*Phragmites australis* (FACW) *Spartina alterniflora* (OBL) *Spartina patens* (FACW)

Wetland ID (flagging sequence)	Wetland Type [a]	General Description	Soil Type (drainage class)	Characteristic Vegetation (indicator status) [b]
D100, E1 to E19, F1 to F26, J1 to J8)		including excavated channels	(poorly and very poorly drained)	*Solidago sempervirens* (FACW) *Panicum virgatum* (FAC) ***Aristida longespica*** (UPL) *Baccharis halimifolia* (FACW)
Wetland 4 (K1 to K18)	E2EM5x	*Phragmites australis*-dominated recently excavated channel within the mowed areas adjacent to the runway	Aquents (poorly drained)	*Phragmites australis* (FACW) *Typha latifolia* (OBL) *Lythrum salicaria* (OBL) *Juncus effusus* (OBL) *Cyperus strigosus* (FACW) *Rumex crispus* (FAC) *Baccharis halimifolia* (FACW)
Wetland 5 (I1 to I25)	E2EM2	Mowed tidal wetland vegetation adjacent to the south side of the east end of Runway 11-29	Aquents (poorly drained)	*Juncus effusus* (OBL) *Cyperus strigosus* (FACW) ***Leptochloa fusca*** (NI) *Juncus gerardii* (OBL)
Wetland 6 (O1 to O13)	E2EM5Pd	*Phragmites australis*-dominated tidal wetland	Walpole sandy loam (poorly drained) and Aquents (poorly drained)	*Phragmites australis* (FACW) *Impatiens capensis* (FACW) *Euthamia graminifolia* (FAC) *Eutrochium maculatum* (OBL) *Dichanthelium clandestinum* (FACW) *Sambucus nigra* (FACW)
Wetland 7 (H1 to H12)	E2EM2	Mowed tidal wetland vegetation adjacent to the south side of the east end of Runway 11-29	Aquents (poorly drained)	*Cyperus strigosus* (FACW) *Juncus effusus* (OBL) *Juncus gerardii* (OBL) ***Aristida longespica*** (UPL)
Wetland 8 (G1 to G43)	E2EM and E1UBLx	Partially mowed tidal wetland and excavated tidal creek adjacent to the north side of the east end of Runway 11-29	Aquents (poorly drained)	*Spartina alterniflora* (OBL) *Spartina patens* (FACW) *Distichlis spicata* (FACW) *Juncus gerardii* (OBL) *Salicornia sp.* (OBL) ***Atriplex glabriuscula*** (UPL) *Baccharis halimifolia* (FACW) *Iva frutescens* (FACW)

Wetland ID (flagging sequence)	Wetland Type [a]	General Description	Soil Type (drainage class)	Characteristic Vegetation (indicator status) [b]
Wetland 9 (B1 to B49, C1 to C4)	E2EM, E1UBL and E1UBLx	Narrow area of tidal vegetation adjacent to the south side of Marine Basin and a tidal channel	Aquents (poorly drained)	*Spartina alterniflora* (OBL) *Spartina patens* (FACW) *Panicum virgatum* (FAC) *Phragmites australis* (FACW) *Solidago sempervirens* (FACW) *Baccharis halimifolia* (FACW) *Iva frutescens* (FACW) *Acer rubrum* (FAC)

Notes:

(a) Wetland Type (Cowardin, et. al., 1979 and Federal Geographic Data Committee, 2013)
E2EM2 – Estuarine intertidal emergent, non-persistent
E2EMx - Estuarine intertidal emergent, excavated
E2EM5Pd – Estuarine intertidal emergent, *Phragmites australis*, Irregularly flooded, partly drained/ditched
E1UBL – Estuarine subtidal, Unconsolidated bottom, Subtidal
E1UBLx – Estuarine subtidal, Unconsolidated bottom, Subtidal, Excavated

(b) Wetland Indicator Status:
OBL (Obligate): Almost always occur in wetland
FACW (Facultative Wetland): Usually occur in wetland, but may occur in non-wetland
FAC (Facultative): Occur in wetland or non-wetland
FACU (Facultative upland): Usually occur in non-wetland, but may occur in wetland
UPL (Upland): Almost never occur in wetland
NI: no indicator status

Bold text = State listed plant species

NRCS MAPPED AND OBSERVED SOILS

The mapped NRCS soils and observed soils on, and in the vicinity of, the study area are depicted by their soil number on **Figure 6** in **Appendix A**. The mapped NRCS soils and observed soils within the study area are listed in **Table 2** along with their drainage class and NRCS official soil series description.

Table 2: NRCS Mapped Soils in the Vicinity of the Project Area

Soil ID	Soil Name	Drainage Class	Official NRCS Soil Series Description
12	Raypol silt loam	Poorly drained	The Raypol series consists of very deep soils formed in loamy over sandy and gravelly outwash. They are nearly level to gently sloping soils in shallow drainageways and low-lying positions on terraces and plains. Slope ranges from 0 to 5 percent. The soils have a water table at or near the surface much of the year.
13	Walpole sandy loam	Poorly drained	The Walpole Series consists of very deep sandy soils formed in outwash and stratified drift. They are nearly level to gently sloping soils in low-lying positions on terraces and plains. Slope ranges from 0 to 8 percent.
15	Scarboro muck	Very poorly drained	The Scarboro series consists of very deep soils in sandy glaciofluvial deposits on outwash plains, deltas, and terraces. They are nearly level soils in depressions. Slope ranges from 0 through 3 percent.
98	Westbrook mucky peat	Very poorly drained	The Westbrook series consists of very deep soils formed in organic deposits over loamy mineral material. They are in tidal marshes subject to inundation by salt water twice daily.
302	Dumps	None assigned	Either active or inactive landfills are mapped as this soil series. The soil components of dumps are variable depending on the materials in the landfill and the soils used for the landfill cap.
306	Udorthents-Urban Land complex	Well drained	This complex consists of soils that have been disturbed by cutting or filling, and areas that are covered by buildings and pavement.
307	Urban land	None assigned	Urban soil refers to soils in areas of high population density in the largely built environment. These soils can be significantly changed human-transported materials, human-altered materials, or minimally altered or intact “native” soils.

Soil ID	Soil Name	Drainage Class	Official NRCS Soil Series Description
308	Udorthents, smoothed	Moderately well drained	Udorthents, smoothed, consists of areas from which soil material has been excavated, and nearby areas in which this material has been deposited. The original soil material is generally excessively drained to moderately well drained, and ranges from nearly level to very steep.
701a	Ninigret fine sandy loam	Moderately well drained	The Ninigret series consists of very deep soils formed in loamy over sandy and gravelly glacial outwash. They are nearly level to strongly sloping soils on glaciofluvial landforms, typically in slight depressions and broad drainage ways.
	Aquents	Poorly to very poorly drained	Aquents are soils formed in human transported material or on excavated (cut) landscapes.

CONCLUSION

All the wetlands on the site are currently subject to tidal influence and contain one or more species of tidal wetland vegetation. Thus, they are considered tidal wetlands in accordance with the State of Connecticut definition and as such are regulated under CGS Section 22a-29 (Tidal Wetlands). These tidal wetlands are also regulated by the USACE. Wetlands 1, 2 and 3 drain to the southwest to Lewis Gut. Wetlands 1 and 2 are larger tidal wetland complexes that have been disturbed by past filling and draining activities. Wetland 3 is adjacent to the mowed areas around the west end of Runway 11-29 and consists largely of constructed channels and *Phragmites*-dominated tidal marshes. Wetlands 4, 5, 6, 7, 8 and 9 drain to the east to the Housatonic River via the Marine Basin. Wetlands 4, 5, 6, 7 and 8 are within the maintained areas around the east ends of Runway 11-29 and Runway 9-24. Although wetlands 5 and 7 are “isolated” from larger wetlands and have no surface water connection with daily tidal flooding, they are still below the CJL/HTL elevations and presumed to be regulated as tidal wetlands. Wetland 9 is located east of Stratford Road and is comprised of vegetated tidal wetlands associated with the Marine Basin itself.

The larger wetland complexes that are not within the maintained areas around the runways form important habitat systems and wildlife corridors that provide resources for various fish and wildlife species known to occur in tidal marshes and tidal creeks. The tidal wetlands within the maintained areas around the runways provide limited habitat for wildlife. Several plant species listed in the State of Connecticut Endangered Species Act as Special Concern, Threatened, or Endangered, have been documented in portions of some of these tidal wetlands that lie within the project area.

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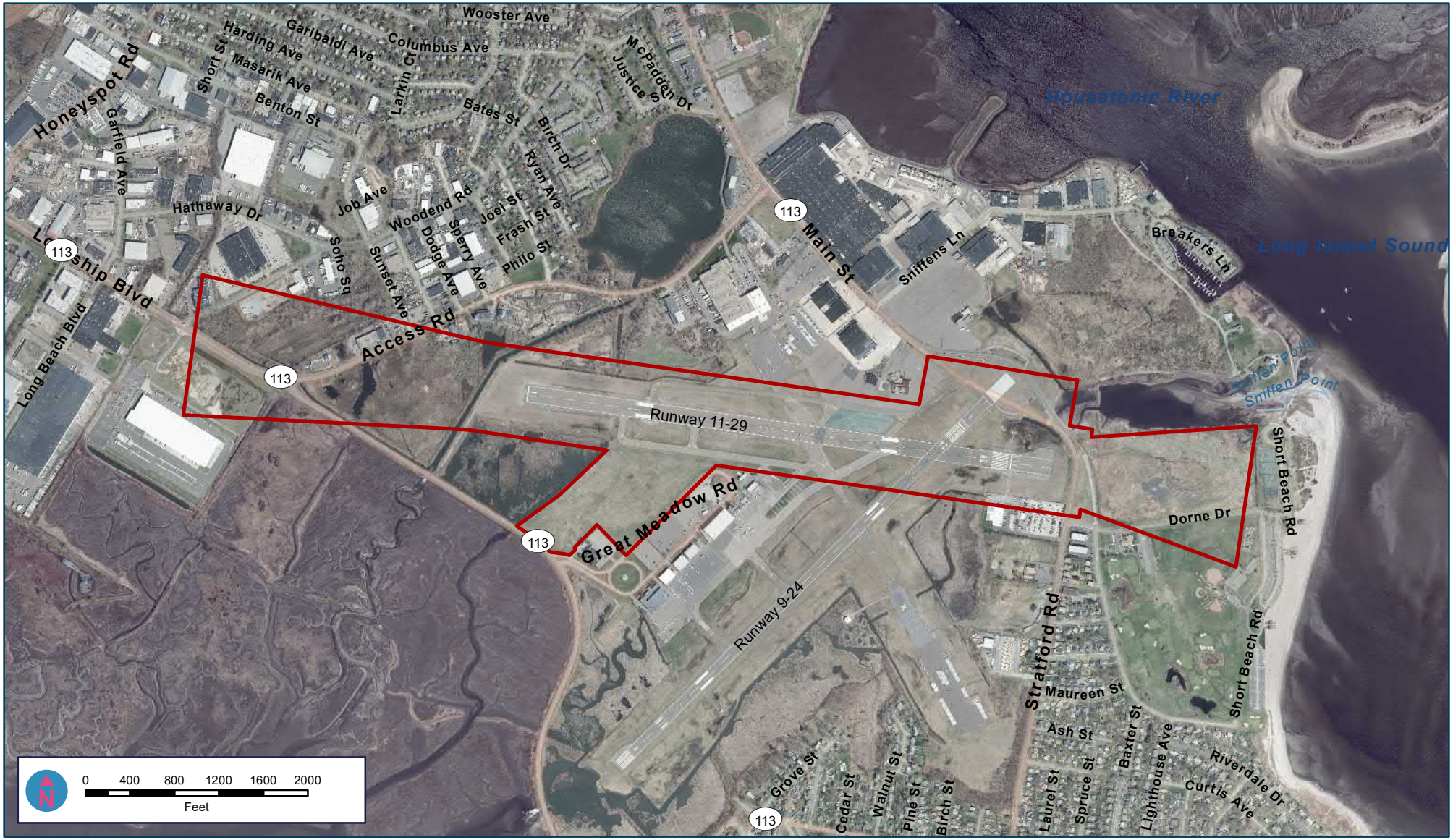
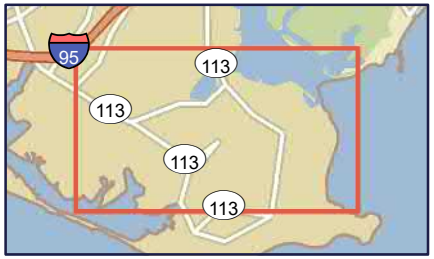
APPENDIX A
FIGURES





Legend

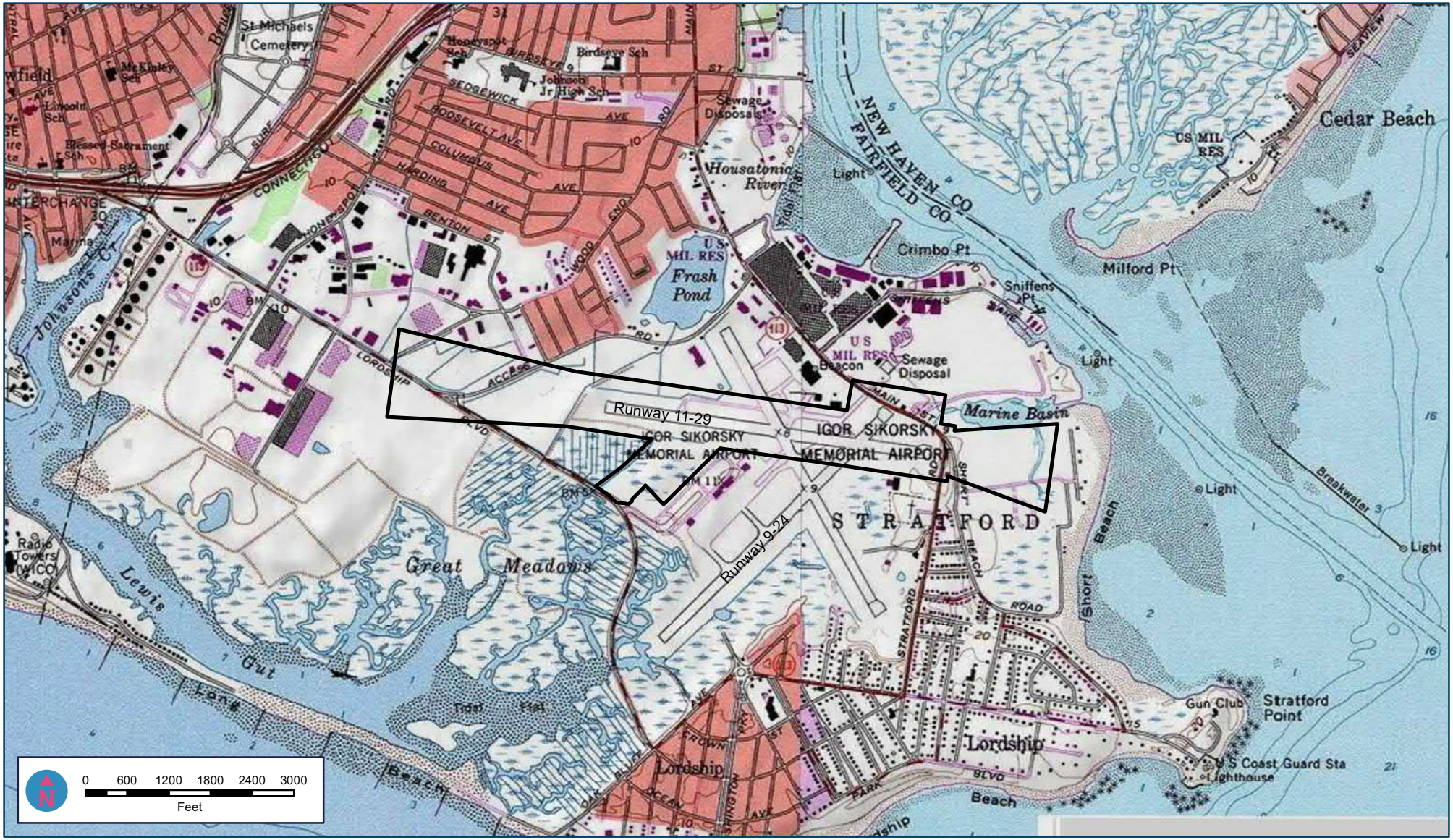
Study Area

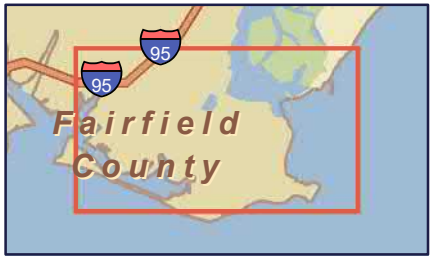
Igor I. Sikorsky Memorial Airport

Environmental Assessment for Short-Term Projects: Runway 11/29 Safety Area Improvements; Off Airport Tree Removal; Airfield Pavement Rehabilitation

Figure 1 - Overview Map

Map Produced 10/25/2021
Data Source: CTECO 2019 Aerial; FHI Studio 2021





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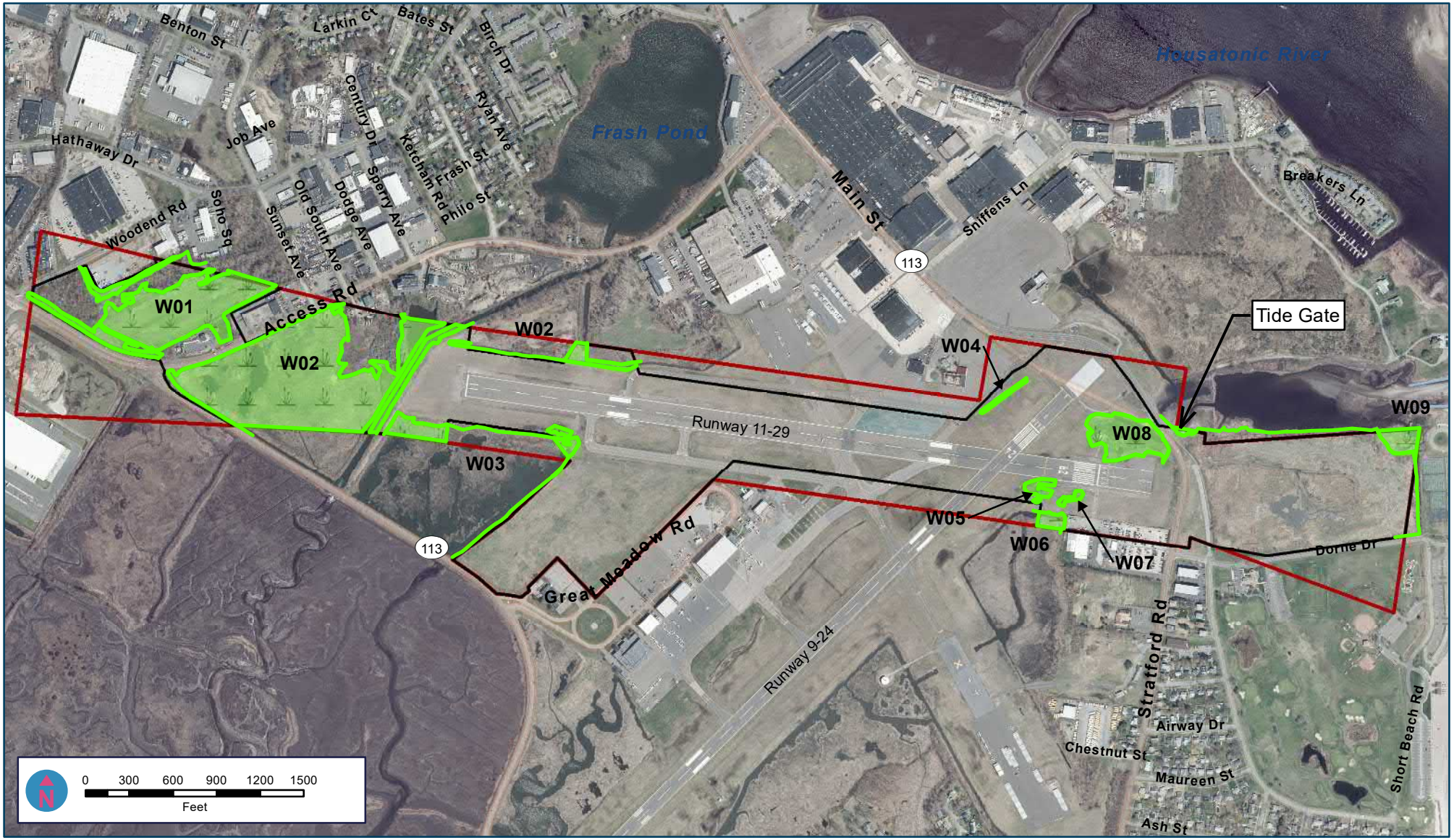
Study Area

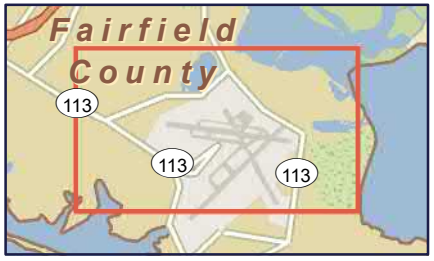
Igor I. Sikorsky Memorial Airport

Environmental Assessment for Short-Term Projects: Runway 11/29 Safety Area Improvements; Off Airport Tree Removal; Airfield Pavement Rehabilitation

Figure 2 - USGS Map

Map Produced 10/26/2021
Data Source: USGS 2021, FHI Studio 2021





Legend

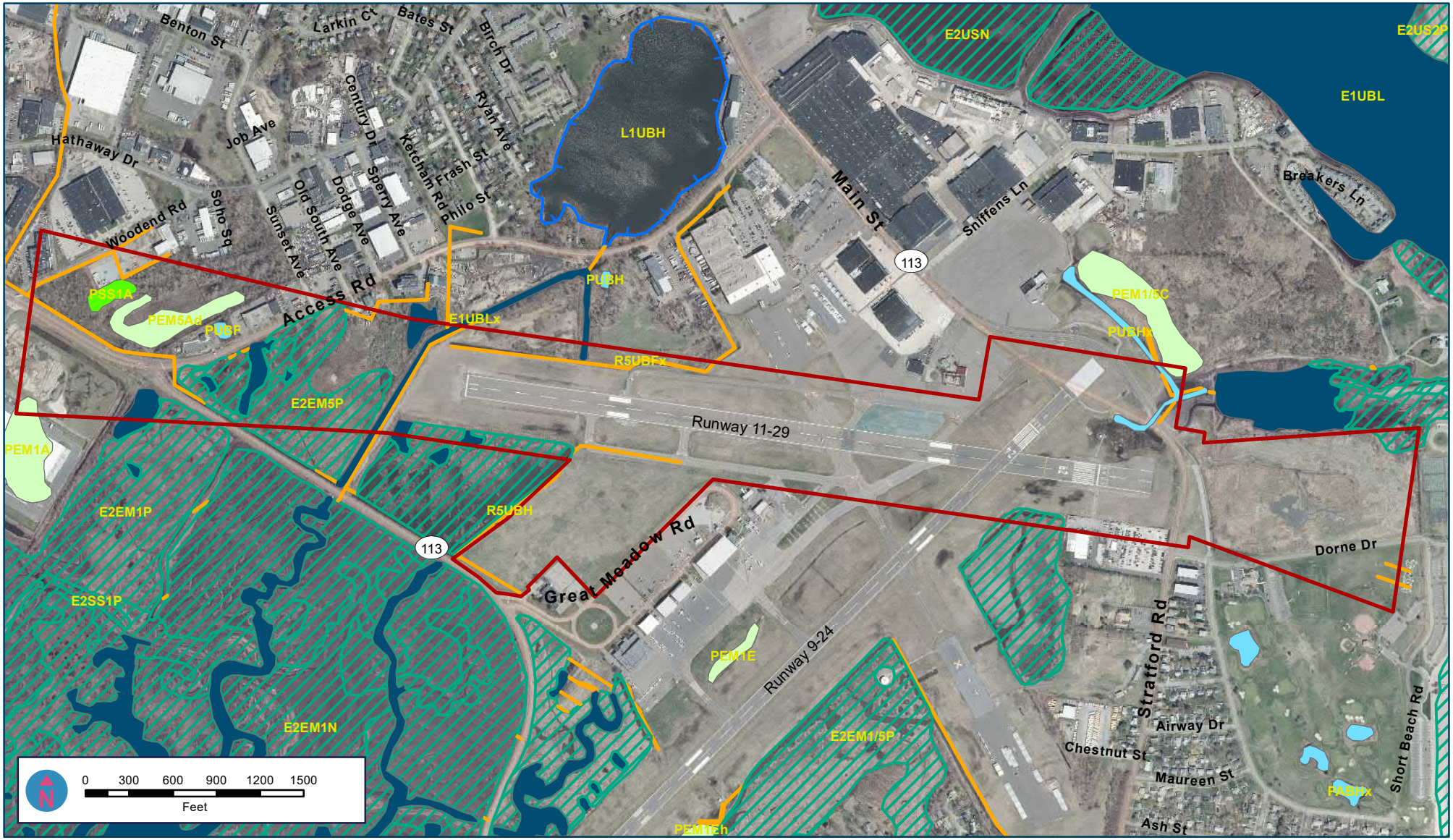
- Study Area
- Limits of Wetland Delineation
- Delineated Tidal Wetland

Igor I. Sikorsky Memorial Airport

Environmental Assessment for Short-Term Projects: Runway 11/29 Safety Area Improvements; Off Airport Tree Removal; Airfield Pavement Rehabilitation

Map Produced 11/5/2021
Data Source: CTECO 2019 Aerial; FHI Studio 2021

Figure 3 - Wetland Resources

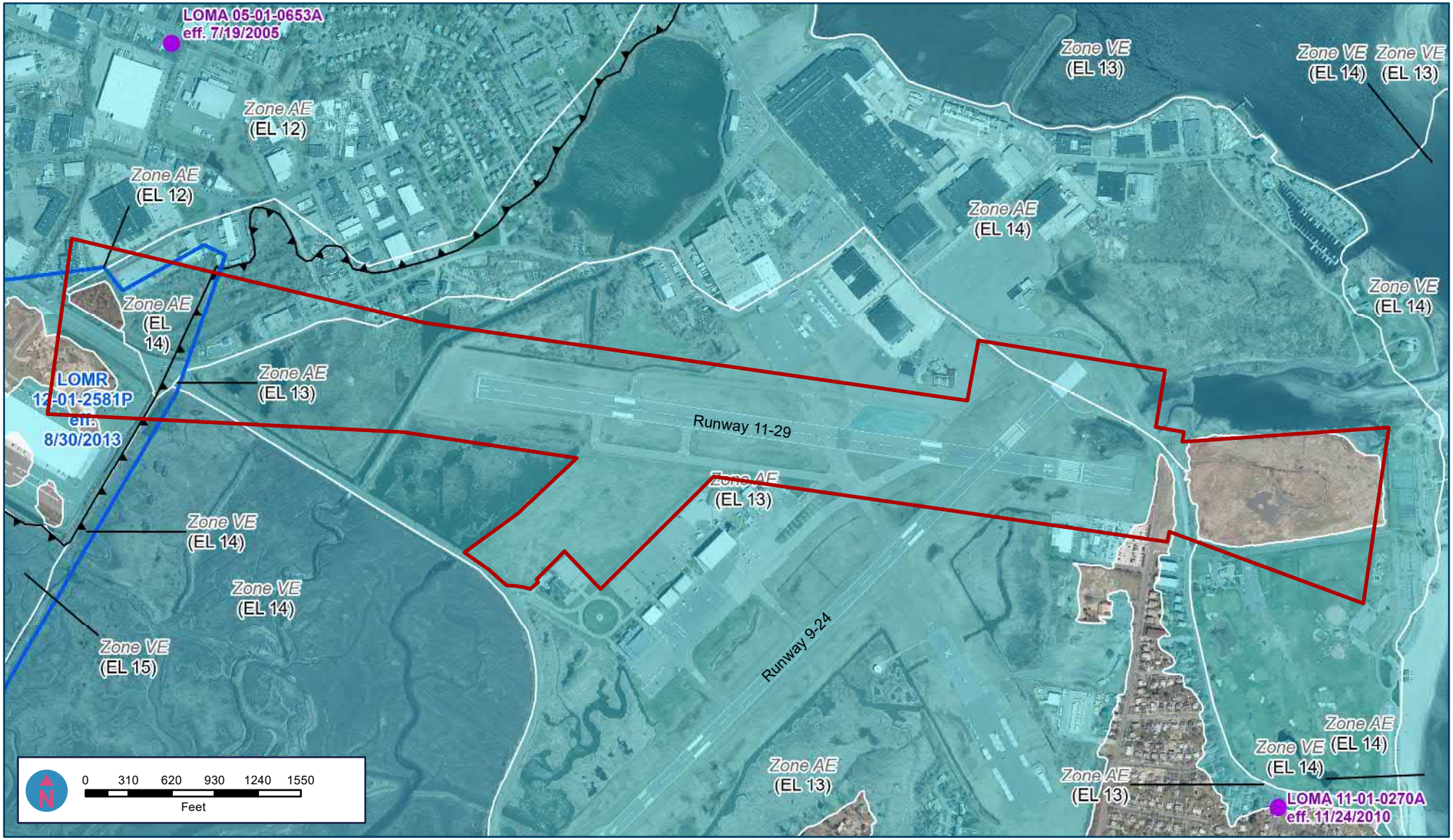


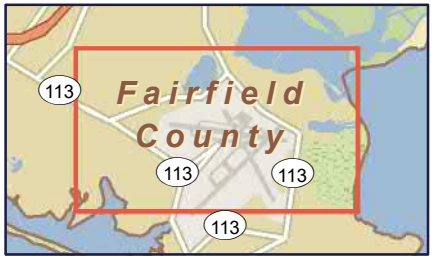
Igor I. Sikorsky Memorial Airport

Environmental Assessment for Short-Term Projects: Runway 11/29 Safety Area Improvements; Off Airport Tree Removal; Airfield Pavement Rehabilitation

Map Produced 10/26/2021
Data Source: USFWS 2021; 2019 Aerial; FHI Studio 2021

Figure 4 - USFWS - NWI Mapping





Legend

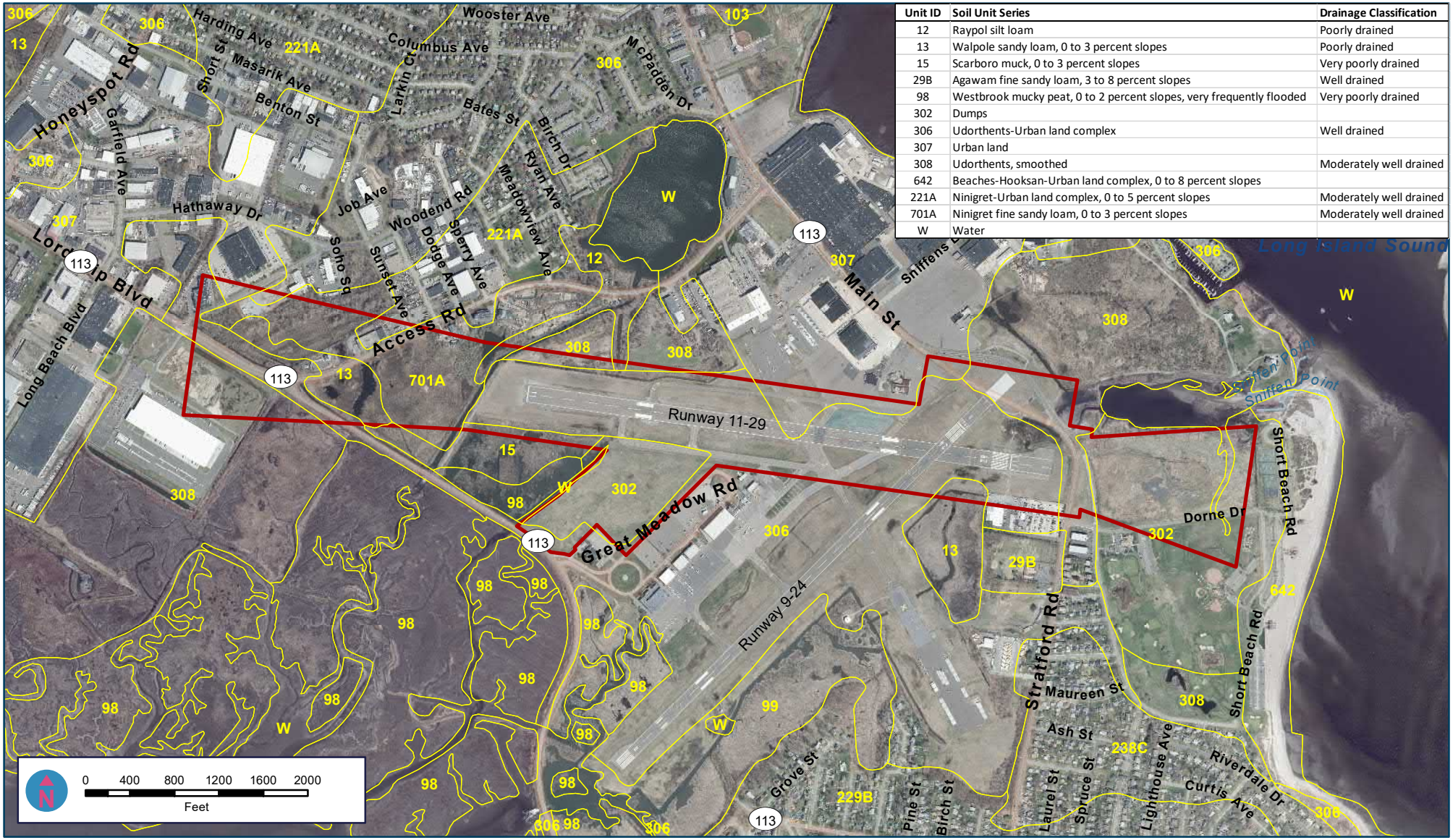
- Study Area
- LOMAs
- Limit of Moderate Wave Action
- Effective LOMRs
- 1% Annual Chance Flood Hazard

Igor I. Sikorsky Memorial Airport

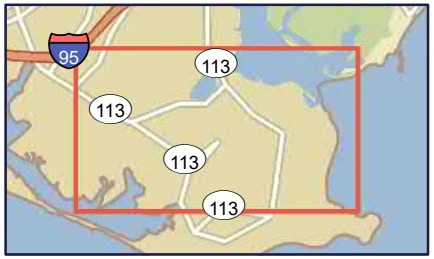
Environmental Assessment for Short-Term Projects: Runway 11/29 Safety Area Improvements; Off Airport Tree Removal; Airfield Pavement Rehabilitation

Figure 5 - FEMA Flood Hazard Areas

Map Produced 10/26/2021
Data Source: CTECO 2019 Aerial; FEMA 2021; FHI Studio 2021



Unit ID	Soil Unit Series	Drainage Classification
12	Raypol silt loam	Poorly drained
13	Walpole sandy loam, 0 to 3 percent slopes	Poorly drained
15	Scarboro muck, 0 to 3 percent slopes	Very poorly drained
29B	Agawam fine sandy loam, 3 to 8 percent slopes	Well drained
98	Westbrook mucky peat, 0 to 2 percent slopes, very frequently flooded	Very poorly drained
302	Dumps	
306	Udorthents-Urban land complex	Well drained
307	Urban land	
308	Udorthents, smoothed	Moderately well drained
642	Beaches-Hooksan-Urban land complex, 0 to 8 percent slopes	
221A	Ninigret-Urban land complex, 0 to 5 percent slopes	Moderately well drained
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	Moderately well drained
W	Water	



Legend

NRCS Mapped Soil Unit

Study Area

Igor I. Sikorsky Memorial Airport

Environmental Assessment for Short-Term Projects: Runway 11/29 Safety Area Improvements; Off Airport Tree Removal; Airfield Pavement Rehabilitation

Map Produced 10/25/2021
Data Source: CTECO 2019 Aerial; USDA NRCS Soils; FHI Studio 2021

Figure 6 - NRCS Soils

APPENDIX B
WETLAND FUNCTION AND VALUE FORMS

Wetland Function-Value Evaluation Form

Total area of wetland N/A Human made? No Is wetland part of a wildlife corridor? yes or a "habitat island"? no

Adjacent land use airport, commercial, roads Distance to nearest roadway or other development adjacent

Dominant wetland systems present E2EM5Pd and E1UBLx Contiguous undeveloped buffer zone present no

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

How many tributaries contribute to the wetland? 3 tidal creeks Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetlands 1, 2 & 3

Latitude 41°10'0.78"N Longitude 73° 8'25.59"W

Prepared by: RG/AZ Date 10/25/21

Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	7		
Floodflow Alteration	◉	○	4,5,6,7,8,9,13,15,18		the tidal creeks & ponds with densely vegetated shorelines provide for floodflow ateration
Fish and Shellfish Habitat	◉	○	1,2,3,4,7	X	7 =the tidal marshes provide habitat for juvenile fish and shellfish
Sediment/Toxicant Retention	◉	○	1,2,3,4,7,8,10,12,13,		14,15,16 the tidal marshes with open water areas have the potential to retain sediments/toxicants
Nutrient Removal	◉	○	2,3,4,5,6,7,8,9,10,11		12,13,14 the densely vegetated tidal wetlands have the capacity to trap nutrients
Production Export	◉	○	1,2,4,5,6,7,10,11,12	X	13; the Spartina alterniflora in the tidal marshes are a source of production export to Long Island Sound via the tidal creeks
Sediment/Shoreline Stabilization	◉	○	3,7,12,13,15		
Wildlife Habitat	◉	○	6,8,11,12,13,17,18,	X	19,21 the tidal marshes, open water & tidal creeks provide habitat for various vertebrate and invertebrate species. They also provide migratory habitat for avian species.
Recreation	○	◉	5,7		the majority of the wetlands are on airport owned property and are not used for public recreation
Educational/Scientific Value	○	◉	1,5,14		the majority of the wetlands are on airport property and are not used for educational/scientific research
Uniqueness/Heritage	◉	○	1,3,4,5,13,14,17,19,22		
Visual Quality/Aesthetics	◉	○	2,6,8,12		the tidal wetlands are visible from the surrounding roads
ES Endangered Species Habitat	◉	○	1		Wetland used by state-listed rare bird species (Great Egret, Snowy Egret). Wetland 3 contains the State listed plant species (Aristida longespicata).
Other	◉	○			wetlands provide for carbon sequestration

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland N/A Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use airport runways, paved surfaces & mowed areas Distance to nearest roadway or other development adjacent

Dominant wetland systems present E2EM5x Contiguous undeveloped buffer zone present no

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

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland 4

Latitude 41° 9'57.76"N Longitude 73° 7'17.73"W

Prepared by: RG/AZ Date 10/25/21

Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	7,15		15 = tidal influence
Floodflow Alteration	○	◉	4,5,7,9,18		7 = ponded water and tidally influenced
Fish and Shellfish Habitat	○	◉	6		6 = food sources available for fish which were observed in the channel
Sediment/Toxicant Retention	◉	○	2,4,10,16	X	
Nutrient Removal	◉	○	3,5,7,8,9,10,11,13,14		
Production Export	◉	○	1,2,6,7,10,12		fish observed in the channel
Sediment/Shoreline Stabilization	◉	○	12,13,15		
Wildlife Habitat	○	◉	8,13,16,19		wildlife is actively discouraged on the airport
Recreation	○	◉			the wetland is on the airport and is not accessible by the public
Educational/Scientific Value	○	◉	14		the wetland is on the airport and is not accessible by the public
Uniqueness/Heritage	○	◉			the wetland is on the airport and is not accessible by the public
Visual Quality/Aesthetics	○	◉			the wetland is on the airport and is not accessible by the public
ES Endangered Species Habitat	◉	○			1 = a state-listed plant species occurs in the wetland
Other	○	◉			

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland N/A Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use airport runways, paved surfaces & mowed areas Distance to nearest roadway or other development adjacent

Dominant wetland systems present E2EM Contiguous undeveloped buffer zone present no

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

How many tributaries contribute to the wetland? none Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland 5 & 7

Latitude 41° 9'51.37"N Longitude 73° 7'12.73"W

Prepared by: RG/AZ Date 10/25/21

Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉			
Floodflow Alteration	○	◉	4,7,9		
Fish and Shellfish Habitat	○	◉			no open water is present in the wetlands
Sediment/Toxicant Retention	◉	○	2,4,16		
Nutrient Removal	◉	○	3,8,9,10,11		
Production Export	○	◉	2,4,12		the wetlands are not associated with a waterbody, but small birds and shorebirds were observed foraging in the wetlands
Sediment/Shoreline Stabilization	○	◉			the wetlands are not associated with a waterbody
Wildlife Habitat	○	◉	7,8,16,18,19		wildlife is actively discouraged on the airport
Recreation	○	◉			the wetland is on the airport and is not accessible by the public
Educational/Scientific Value	○	◉	1,14		the wetland is on the airport and is not accessible by the public; State-listed plant species occur in the wetlands
Uniqueness/Heritage	○	◉	13		the wetland is on the airport and is not accessible by the public
Visual Quality/Aesthetics	○	◉	2,6		the wetland is on the airport and is not accessible by the public
ES Endangered Species Habitat	◉	○	1	X	State-listed plant species occur in the wetlands
Other	○	◉			

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland N/A Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use airport runways, paved surfaces & mowed areas Distance to nearest roadway or other development adjacent

Dominant wetland systems present E2EM5Pd Contiguous undeveloped buffer zone present no

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

How many tributaries contribute to the wetland? one Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland 6

Latitude 41° 9'49.81"N Longitude 73° 7'13.06"W

Prepared by: RG/AZ Date 10/25/21

Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉			
Floodflow Alteration	○	◉	4,5,7,9,13,18		
Fish and Shellfish Habitat	○	◉	4,7		7=Fish occur in the channel
Sediment/Toxicant Retention	◉	○	2,3,4,5,10,16	X	
Nutrient Removal	○	◉	2,3,5,6,7,8,9,10,11,12		
Production Export	◉	○	1,2,4,5,6,7,9,10,12,13	X	
Sediment/Shoreline Stabilization	◉	○	9,12,13,15		
Wildlife Habitat	◉	○	6,7,8,11,13,16,18,19,		21
Recreation	○	◉	5		the wetland is on the airport and is not accessible by the public
Educational/Scientific Value	○	◉	1,5,14		the wetland is on the airport and is not accessible by the public
Uniqueness/Heritage	◉	○	5,7,13,27		the wetland is on the airport and is not accessible by the public; wetland is part of a compensatory mitigation (restoration) site.
Visual Quality/Aesthetics	○	◉	2,6		the wetland is on the airport and is not accessible by the public
ES Endangered Species Habitat	◉	○	1	X	State-listed bird species occur in the wetlands
Other	○	◉			

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland N/A Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use airport runways, paved surfaces & mowed areas Distance to nearest roadway or other development adjacent

Dominant wetland systems present E2EM and E1UBLx Contiguous undeveloped buffer zone present no

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

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland 8

Latitude 41° 9'55.13"N Longitude 73° 7'6.58"W

Prepared by: RG/AZ Date 10/25/21

Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	7		
Floodflow Alteration	○	◉	4,6,7,8,9,13		
Fish and Shellfish Habitat	◉	○	4,7		7=fish were observed in the tidal creek
Sediment/Toxicant Retention	◉	○	2,4,7,10,16		wetland is tidally influenced
Nutrient Removal	◉	○	3,5,7,8,9,10,11,12		The dense tidal vegetation has the potential to remove nutrients
Production Export	◉	○	2,7,10,12	X	the tidal creek has the potential for production export to the Housatonic River
Sediment/Shoreline Stabilization	◉	○	6,7,12,13,15	X	the dense emergent vegetation adjacent to the tidal creek provides for stabilization of the shoreline
Wildlife Habitat	○	◉	1,13,16,17,18,19,21		wildlife is actively discouraged on the airport
Recreation	○	◉			the wetland is on the airport and is not accessible by the public
Educational/Scientific Value	○	◉	1,5,14		the wetland is on the airport and is not accessible by the public
Uniqueness/Heritage	○	◉	1,5,7,13,22,27,28		the wetland is on the airport and is not accessible by the public; wetland is a former compensatory mitigation (restoration) site; rare plants occur in wetland
Visual Quality/Aesthetics	○	◉	2,4,6		the wetland is on the airport and is not accessible by the public
ES Endangered Species Habitat	◉	○	1	X	State-listed plant and avian species have been documented in the wetland
Other	◉	○			carbon sequestration

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland N/A Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? Yes

Adjacent land use paved roadway, closed landfill, & Public Park Distance to nearest roadway or other development adjacent

Dominant wetland systems present E2EM, E1UBL and E1UBLx Contiguous undeveloped buffer zone present no

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

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Wetland 9

Latitude 41° 9'55.27"N Longitude 73° 6'52.14"W

Prepared by: RG/AZ Date 10/25/21

Wetland Impact:
Type N/A Area N/A

Evaluation based on:
Office X Field X

Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	○	◉	7		
Floodflow Alteration	○	◉	4,5,7,9,13		7=tidally influenced
Fish and Shellfish Habitat	◉	○	4,7		fish and shellfish are present in Marine Basin
Sediment/Toxicant Retention	◉	○	1,2,3,4,7,8,10		
Nutrient Removal	○	◉	2,3,4,5,9,11		
Production Export	◉	○	1,2,4,5,6,7,10,11,12	X	the tidal creek has the potential for production export to the Housatonic River
Sediment/Shoreline Stabilization	◉	○	1,2,3,4,6,7,10,12,13	X	15; the emergent vegetation adjacent to the Marine Basin provides for stabilization of the shoreline
Wildlife Habitat	◉	○	6,7,8,12,16,17,18,21	X	22; Marine Basin and the surrounding wetlands provide habitat for variou invertebrate and vertebrate speices.
Recreation	○	◉	5,7,10,11,12		
Educational/Scientific Value	○	◉	1,5,8,9,10		rare plant and animal species occur in the wetland
Uniqueness/Heritage	○	◉	1,17,19,22		
Visual Quality/Aesthetics	○	◉	1,2,4,6,8,12		a walking path is adjacent to the west side of the wetland
ES Endangered Species Habitat	◉	○			state listed plant and animal species occur in the wetland
Other	○	◉			

Notes:

* Refer to backup list of numbered considerations.

Appendix C: Site Photographs

Runway 11-29 Safety Improvements, Off Airport Tree Removal and Airfield Pavement Rehabilitation Projects

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Wetland 1, north central side (October 2021)

Wetland 1, south side (October 2021)

Wetland 2 northeast side (October 2021)

Wetland 3 (October 2021)

Wetland 3, south side (October 2021)

Wetland 4, east end (September 2021)

Wetland 5 (October 2021)

Wetland 6 (October 2021)

Wetland 7 (October 2021)

Wetland 8 (October 2021)

Wetland 9, along south side of the Marine Basin (July 2021)

Wetland 9, along the north side of Dorne Drive (July 2021)