State Project No. 15-336
Runway Safety Area Improvements – Igor I. Sikorsky Memorial Airport

Permit Application for Programs Administered by the CTDEEP Office of Long Island Sound Programs (OLISP)

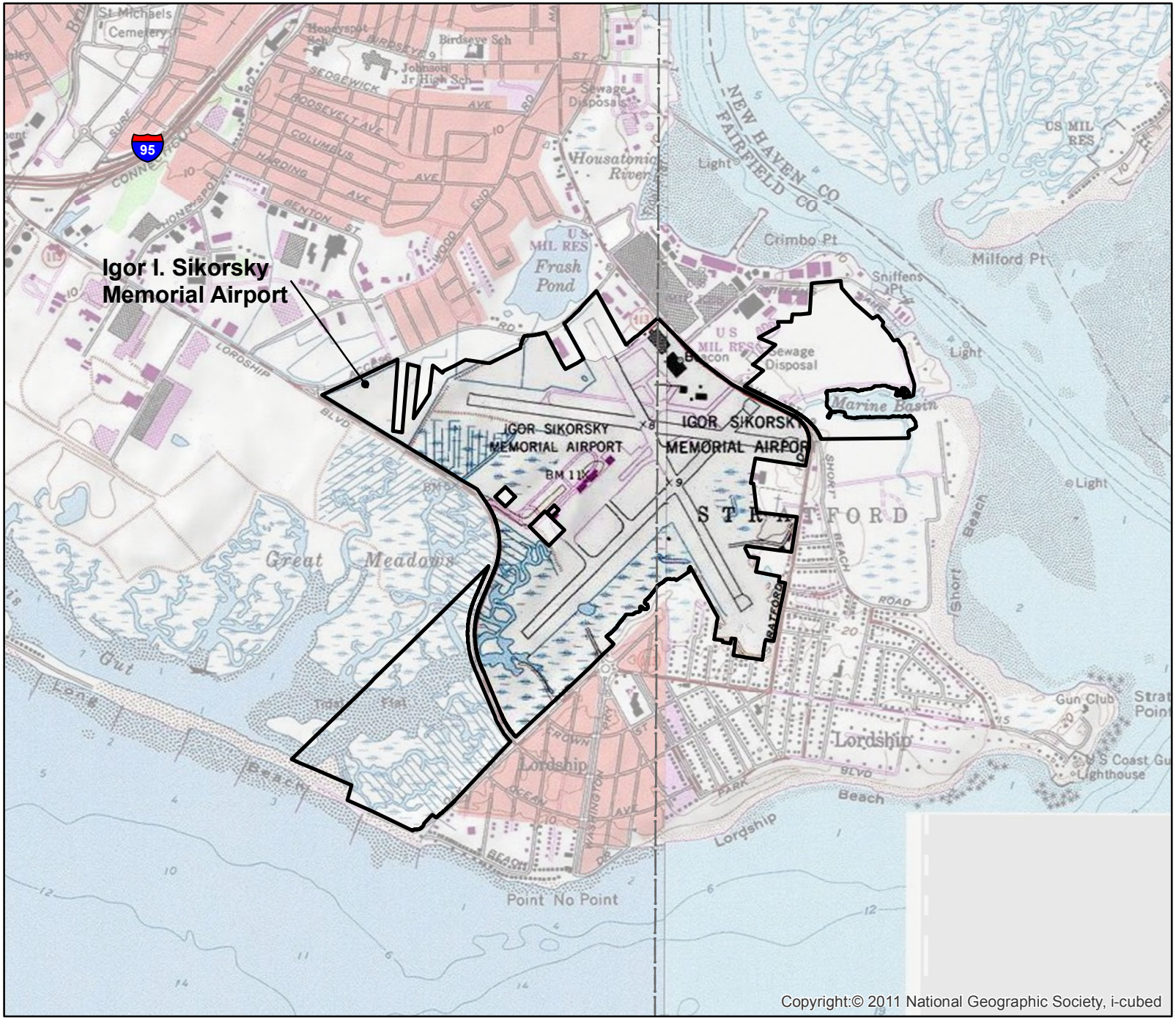
Attachment A: Executive Summary

Proposed Activity Summary

The Connecticut Department of Transportation (CTDOT) and the City of Bridgeport are currently undertaking a runway safety area project at Igor I. Sikorsky Memorial Airport (BDR) in Stratford, Connecticut (State CTDOT Project No. 15-336) (see Figure ES-1). The project involves safety improvements to the runway safety area (RSA) at Runway 6-24 and relocation of State Route 113 to facilitate these safety improvements (see Figure ES-2). These RSA improvements include an engineered material arresting system (EMAS) to provide a proper RSA. A congressional mandate has been issued requiring completion of the airport safety improvements (i.e., EMAS installation) by December 2015. There will also be a reduction in flooding of Route 113, improved stormwater management and treatment, and habitat enhancements as a result of the project.

The proposed project includes the following activities within the airport proper:

- Construction of an RSA that includes installation of an EMAS system;
- Installation of new runway edge lights on Runway 6-24;
- Relocation of Runway End Identifier Lights (REILS);
- Construction of a new connector taxiway from Taxiway A to Runway 24 and demolition of the existing connector Taxiway D at the intersection of Runways 6-24 and 11-29;
- Removal of the existing blast fence located adjacent to Runway 24;
- Installation of new Airport Security Fence;
- Construction of a Turn Around for Runway 6;
- Rehabilitation of pavement on Runway 6-24; and
- Relocation of the Visual Approach Slope Indicator (VASI) and Precision Approach Path Indicator (PAPI) visual landing aids on Runways 6 and 24.



Legend

Igor I. Sikorsky Memorial Airport Property Boundary

USGS Topographic Boundary

1:24,000
USGS Quadrangles
Milford, Bridgeport

Map Title:	Project No.	Project Title:		Town:
Vicinity Map	15-336	Runway Safety Area Project Igor I. Sikorsky Memorial Airport Stratford, Connecticut	N 0 1,000 2,000 Feet	Stratford, CT
	Date: March 2013			Figure ES-1

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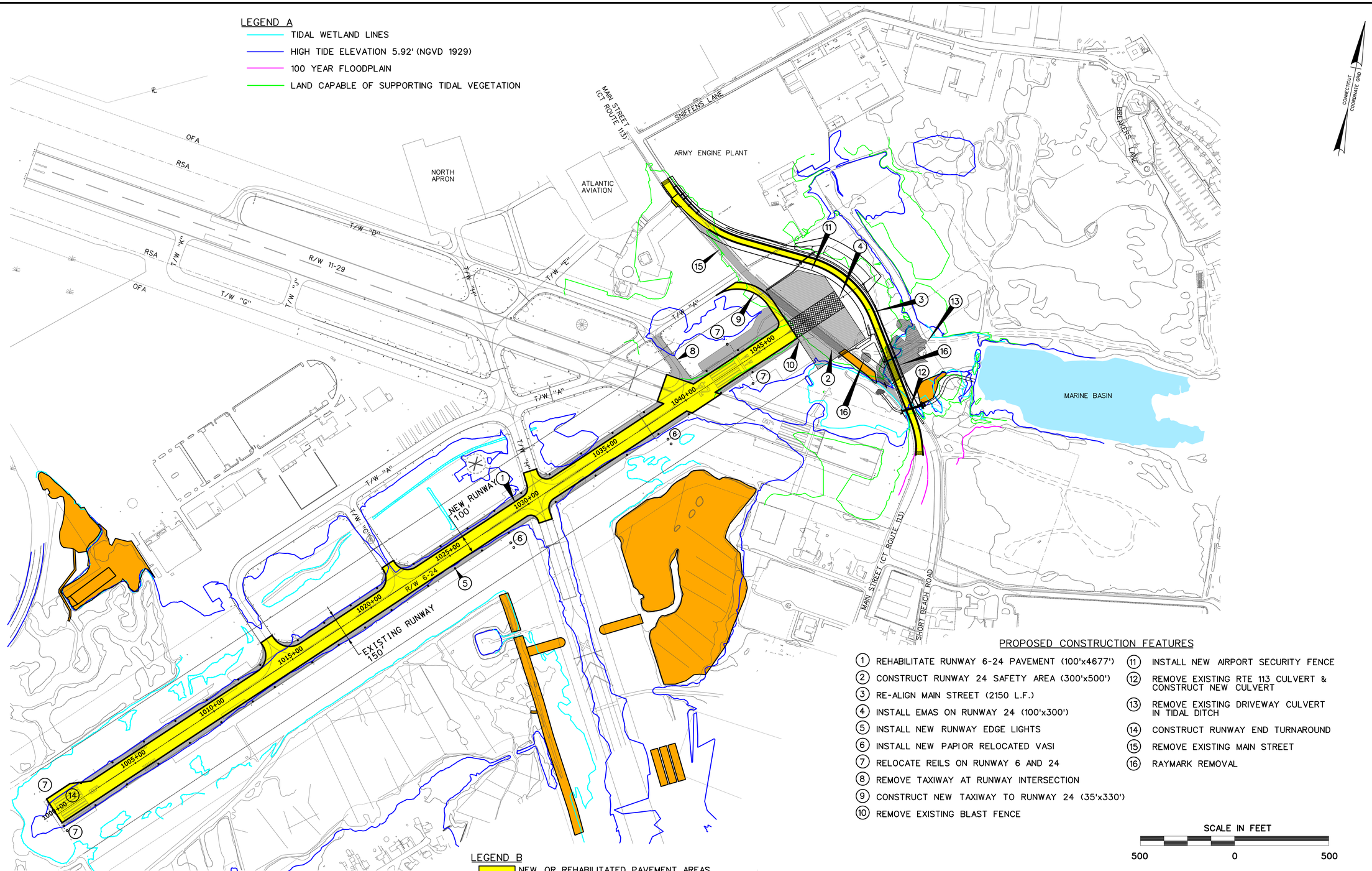

IGOR I. SIKORSKY MEMORIAL AIRPORT
STRATFORD, CONNECTICUT

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RUNWAY SAFETY AREA PROJECT
DOT 15-336
IGOR I. SIKORSKY MEMORIAL AIRPORT
PROPOSED CONSTRUCTION FEATURES

FIGURE
ES-2

The proposed project includes the following activities within the vicinity of Route 113:

- Construction of a realigned segment of Route 113 including a stormwater drainage system and multi-use path (to accommodate the RSA);
- Relocation of all underground utilities from the existing Route 113 right-of-way to the proposed right-of-way;
- Closure and removal of the abandoned segment of Route 113;
- Delineation, removal and disposal of existing Raymark Superfund Site waste materials within the vicinity of the realigned Route 113;
- Construction of a new tidal channel to convey stormwater runoff and tidal flows.

The proposed project includes the following activities within the vicinity of Route 113 and within the airport proper:

- Construction of various wetland mitigation and listed species mitigation areas.

Raymark Superfund waste is located within the proposed project area. Delineation of the Raymark contamination zone was conducted in late 2012, early 2013. The Raymark contamination zone extends into the proposed project area north of Route 113 adjacent to an existing tidal ditch. The 2012-2013 Raymark area is depicted on Plate STG-01 in Attachment I. Raymark waste will be removed and disposed of in an approved manner as part of the project. Coordination is currently ongoing between FAA, CTDOT, US EPA, CTDEEP, the City of Bridgeport, and the Town of Stratford to finalize a plan for removal and disposal.

The RSA safety improvement project can be broken down into six major components. A description of the work involved with each is provided in response to Part III, Questions 2(a), 2(b), 2(c), 3, and 4 of this application form.

***Summary Work Description by Element*:**
Plans and plates are provided in Attachment I3.

1) <u>Route 113 Realignment</u>

The proposed project includes the following activities within the vicinity of Route 113. See PRO Plates in Attachment I.

- Construction of a realigned segment of Route 113 (2,150 feet long) to accommodate the EMAS. The typical minimum cross section consists of the roadway includes 2-12 ft travel lanes, with 4 ft shoulders. A typical cross section can be found on Plate XSC-01 in Attachment 1.
- Construction of a multi-use path on the northern side of the realigned roadway. Typical section includes a 9-ft wide multi-use path with 5-ft roadway separation zone.
- Reconstruction of the stormwater system along the roadway.

- Roadway signing and marking
- Closure and removal of the abandoned segment of Route 113
- Construct Mitigation Site 4 (see Element 6 below)

As part of the project, a tidal channel is proposed to be constructed to maintain the hydraulic connection from the marine basin to the existing tidal ditch located south of Route 113, allowing treated stormwater to flow from the airport and Route 113 to the marine basin. The existing ditches that had previously provided the hydraulic connection are currently not functioning due to an existing tide gate which is broken and not allowing water to pass. Also, the existing culvert under Route 113 is clogged and does not allow any tidal flow to reach the south side of the roadway. Aside from acting as stormwater discharge facilities, these existing ditches were also historically used by the Stratford Army Engine Plant (SAEP) to discharge wastewaters from their former wastewater treatment plant. Sampling and analysis completed in 2012 within the ditches found contamination from the wastewaters discharged from the SAEP.

The CTDEEP has expressed concerns that re-opening these existing channels to regular tidal flows and conveyance of stormwater may cause these contaminants to be transported into the marine basin and ultimately into the Housatonic River. To avoid this, the CT DOT and the City of Bridgeport propose that a new channel constructed in cleaner materials be utilized instead. The existing ditches and tidal gate will be left intact until the contamination in the ditches can be removed as part of the remediation plan to be undertaken by others, and not part of this project.

The proposed channel is designed to include a more natural round stone bottom and side slope up to the Mean High Water (MHW) elevation, as opposed to an angular riprap protection. The bottom of the channel will be 15 feet wide, with sloping banks at a 3:1 grade. Native tidal vegetation will be planted along the banks of the channel above the rounded stone material.

Disturbed areas above the Coastal Jurisdiction Line (CJL) (or High Tide Line – 5.9 feet NGVD29) will be planted with native, non-invasive upland species. A tidal vegetation zone, approximately 2,859 square feet (s.f.) will be established on the northwest side of the channel. A planting shelf for reestablishment of the state endangered salt pond grass (*Leptochloa fusca ssp. Fascicularis*) will also be constructed adjacent to the tidal vegetation zone. The channel will extend from the marine basin to a new culvert that will be placed under Route 113, and will have a maintenance/access road along the top of its southern bank. The existing tidal channel on the south side of Route 113 will be extended to the new culvert location.

2) <u>Airport Runway Work</u>

The proposed project includes the following activities related the airport runway widening. Also see PRO Plates in Attachment I.

- Full-depth reconstruction of Runway 6-24 (total 100 ft width)
- Removal of 25 ft of runway pavement on each side (total 50 ft)
- Removal of approximately 25 ft of shoulder pavement of each side (total 50 ft)
- Installation of new runway edge lights on Runway 6-24
- Relocation of Runway End Identifier Lights (REILS)
- Construction of a new connector taxiway (35 feet in width by 300 feet in length) from Taxiway A to Runway 24
- Demolition of the existing connector Taxiway D at the intersection of Runways 6-24 and 11-29
- Installation of new Airport Security Fence
- Construction of a Turn Around for Runway 6
- Runway marking
- Relocation of the Visual Approach Slope Indicator (VASI) and Precision Approach Path Indicator (PAPI) visual landing aids on Runways 6 and 24

3) <u>RSA/EMAS Installation</u>

The proposed project includes the following activities related to EMAS installation. Also see PRO Plates in Attachment I.

- Construct EMAS support slab and install EMAS
- Removal of the existing blast fence located adjacent to Runway 24
- Construct access road, walkway, and turnaround for EMAS

4) <u>Utilities</u>

The proposed project includes the following activities related to utilities work. Also see Plates in Attachment I.

- Relocation of all underground utilities from the existing Route 113 right-of-way to the proposed right-of-way (a distance of approximately 2,200 ft)
    - AT&T 2'x1' ductbank relocation
    - UI 2'x1' electrical ductbank relocation
    - Cablevision 2-4" conduit relocation
    - Town of Stratford sanitary 14" force main relocation
    - Aquarion Water 8" potable water main relocation
    - Aquarion Water 16" w\potable water main relocation
    - SCG 6" high pressure gas PVC pipe relocation

- Install utility vaults
- Remove utilities from abandoned road alignment

5) Hazardous Materials Remediation – Raymark Waste Removal

The proposed project includes the following activities related to remediation at the Raymark site. The following activities are included as part of Raymark Waste Removal:

- Delineation of existing Raymark Superfund Site hazardous waste materials occurring within the vicinity of the realigned Route 113
- Treatment utilizing chemical solidification/stabilization of polluted soil either in-situ or ex-situ
- Installation of sheet piles in the ditch bank for the entire limits of the area of hazardous waste removal
- Establishment of stabilization pads and flood contingency pad for Raymark waste handling
- Construct Waste Stockpile Areas (WSAs) Nos. 1 and 2 for non-Raymark waste management
- Removal and disposal of Raymark waste materials

The delineated area of Raymark OPERABLE UNIT 6 Superfund Waste, as shown on Plate STG-01 in Attachment I, is partially located within a tidal wetland area. It is anticipated that removal of Raymark waste will cause temporary impact to approximately 0.76 acres of tidal wetland, in addition to the Runway Safety Area improvement and Route 113 realignment work. However, since this is a superfund activity under jurisdiction of the U.S. Environmental Protection Agency, these wetland impacts are not under jurisdiction of the Connecticut Department of Energy and Environment or the U.S. Army Corps of Engineers, and are therefore not discussed further in this application. Of the 0.76 acres, approximately 0.52 acres of temporary impact will occur to tidal wetlands dominated by cool season grasses (i.e., maintained lawn area in fill soils with minimal tidal influence and therefore low value).

6) Compensatory Mitigation [Wetlands, Threatened and Endangered Species]

Due to unavoidable impacts to tidal wetland resources, a compensatory wetland mitigation program has been developed as part of the project. Project impacts are shown in Table 1 below. The mitigation plan will include a total of 16.2 acres of mitigation, comprised of 15.9 acres of wetland enhancement and 0.3 acres of wetland restoration. See plates in Attachment I and Figure 8 - Conceptual mitigation Plan in Attachment M9 – Mitigation Checklist.

The planned mitigation will include improvements of more wetlands and listed species habitat than will be impacted by the project activities. There will be an overall improvement of vegetative communities and enhancement of habitat as part of this project. There are four Mitigation Sites proposed as described in the attached Mitigation Checklist (Attachment M9). The proposed mitigation plan includes the following activities listed below in Table 2 below to compensate for wetland impacts.

Table 1: Sikorsky Runway Safety Area Project Water Resource Impacts

Impact Areas	Temporary Impacts (acres)	Permanent Impacts (acres)	Total Impacts (acres)
Coastal Jurisdiction Line /High Tide Line Areas (TW up to elev. 5.9)			
Pavement	0.56	2.55	3.11
Upland of Tidal Vegetation Line	6.0	8.28	14.29
Subtotal	*6.56*	*10.83*	*17.4*
Tidal Wetland (TW) Areas			
Tidal Vegetated Wetlands	0.25	1.34	1.59
Tidal Open Water	0.03	0.09	0.12
Tidal Riprap Shore	0.0	0.01	0.01
Subtotal	*0.28*	*1.44*	*1.72*
Land Capable of Supporting Tidal Wetland Line Areas (elev. 5.9 to 6.9)			
Upland of CJL/HTL Line	0.05	1.1	1.15
Grand Total	**6.89**	**13.37**	**20.26**

Note: Impacts include runway and roadway work

In support of the permit application, various surveys were undertaken by CTDOT and in 2012, Ornithologists, entomologists and botanists conducted detailed surveys of the project area to determine the presence of known historic and existing listed species and habitats, and those species of high conservation concern. The following surveys were undertaken and completed:

1. Avian Survey Report, Runway Safety Area Project, Igor I. Sikorsky Memorial Airport (2013)
2. Igor I. Sikorsky Memorial Airport Rare Moth Findings Report (2013)
3. Vegetation Report, Runway Safety Area Project, Igor I. Sikorsky Memorial Airport (2013)

Table 2: Sikorsky Runway Safety Area Project Wetland Mitigation

Mitigation Site	Activities	Area of Mitigation (acres)	Type of Mitigation
1	Enhancement of existing tidal marsh near the airport driveway through the construction of a new tidal channel to restore daily tidal flushing and passively remove invasive Phragmites vegetation	2.4	Enhancement
1	Restoration of tidal marsh in a former area of fill material, currently dominated by invasive vegetation species.	0.3	Restoration
2	Enhancement of the existing tidal channel along the west side of Taxiway H by removal of Phragmites.	0.3	Enhancement
2	Enhancement of existing tidal marsh on the east side of Taxiway H	13.2	Enhancement
Total		**16.2**	**Enhancement/Restoration**

A summary of the biological survey findings are described for listed vegetation, avian and invertebrate species below. Specific information on potential impacts to listed species is provided in the survey reports listed above.

- Vegetation: The 2012 survey found present populations of two state-listed endangered species: coast violet (*Viola brittoniana*) and saltpond grass (*Leptochloa fusca* ssp. *fascicularis*). Two state-listed species of special concern: needlegrass (*Aristida longespica)* and orache (*Atriplex glabriuscula*) were also found. Figure 2 in the Vegetation Report (Attachment M5) depicts the locations of these species as documented during the 2012 field survey.

- Avian: During the survey period, CTDEEP approved biologists observed 147 avian species. Of the 147 species observed, 20 are included on the 2010 Connecticut list of endangered, threatened or special concern species. Seven state-listed threatened, three state-listed endangered and five Special Concern species were present on BDR property. One species, Piping Plover is on both the federal and state list of threatened species.

Figure 16 in the Avian Report (Attachment M3) depicts the observed nesting habitat of these species as documented during the 2012 field survey.

- Invertebrates: Two state-listed species - one moth species of special concern [Dune Sympistis (*Sympistis riparia*)] and one tiger beetle species of special concern [Mudflat Tiger Beetle (*Cicindela marginata*)] were recorded during the 2012 survey. Figure 2 in the Invertebrate Report (Attachment M4) depicts the locations of these species as documented during the 2012 field survey.

Impacts to coast violet, a state-endangered plant, are not anticipated as a result of this project. However, in recognition of the importance of conserving this species in Connecticut, maintenance and even expansion (via a proposed seeding bed) of this species at BDR is proposed as part of an overall mitigation package for the project. Sikorsky Airport is one of only two locations in the state where the species is known to exist. See Plates in Attachment M9 – Mitigation Checklist for mitigation design details.

Two sub-populations of the state-endangered salt pond grass, comprising 46 percent of the total population of saltpond grass on BDR property (approximately 0.06 acres), will be directly impacted as a result of the proposed project. These impacts are unavoidable due to the close proximity of these two populations to the existing roadway and the proposed activities. To mitigate for project impacts to saltpond grass, the project proposes a two phased approach involving both translocation of soil materials and seeding of new planting beds. Figure 8 depicts the location of these two areas. The Plates in Attachment M9 – Mitigation Checklist show mitigation design details for this species.

The proposed mitigation plan includes the following activities listed below in Table 3 below to compensate for listed species impacts. Specifically, 1.15 acres of mitigation is proposed for the Salt Pond Grass and Coast violet. Table 3 below shows the proposed areas of mitigation for these species.

Since the proposed project will have direct impacts on the state-endangered salt pond grass, the CTDOT has prepared an Incidental Take Report (see Attachment M6). This report includes a description of the proposed activity, description of baseline conditions for the listed species, impacts to the listed species, and finally, mitigation proposed to off-set any expected impacts. The CTDOT is currently coordinating review and concurrence on the incidental take report from the CTDEEP Wildlife Division.

Route 113 within the project area occurs in an upland area and within the Coastal Management Flood Hazard zone as determined by FEMA. The project will have a positive effect on flooding in the vicinity of the Route 113 realignment. The proposed roadway will also be constructed at a higher elevation than the existing roadway; and is designed to pass runoff from a 25 year rainfall event with no encroachment of the flood waters onto the roadway, even when the

rainfall event occurs coincident with the normal high tide. The project will need a regulatory exemption from the CTDEEP. This regulatory exemption request will be part of the Flood Management Certification application to be prepared and submitted to the CTDEEP for review and approval.

Table 3: Sikorsky Runway Safety Area Project Mitigation for Listed Plant Species

Mitigation Site	Location	Activity	Proposed Timeframe	Area of Mitigation (acres)
Salt Pond Grass Transplant Bed (Area A)	Mitigation Site 4 adjacent to new tidal channel	Relocate soil within impacted sub-population areas to the transplant bed before they are impacted	Fall/winter 2014; outside the growing season, when transplanting will result in the least disruption to plants	0.26
Salt Pond Grass Seeding Bed (Area B)	Mitigation Site 4 in abandoned Route 113 roadway	Plant collected seeds in prepared seed bed	Fall 2015, after new roadway is opened, to allow the seeds to overwinter	0.19
Coast Violet Seeding Bed	Mitigation Site 3	Dethatch and prepare seeding bed rows at existing soils elevations	Fall/winter 2014 to allow seeds to overwinter	0.7
Total				**1.15**

There is a federal mandate in place requiring the runway safety area improvements at Sikorsky Airport to be in place by December 2015. Thus, project construction will occur from the time all permits are secure in fall of 2013 until end of 2015 when the EMAS must be in place. After December 2015, the remaining phases of the project will continue (e.g., runway reconstruction work) until the end of 2016. Roadway construction is slated to be complete by the end of 2015. The Runway rehabilitation project is slated to be complete by the end of 2016.