



**Connecticut Department of
Energy & Environmental Protection**
Bureau of Water Protection & Land Reuse
Office of Long Island Sound Programs

Permit Application for Programs Administered by the Office of Long Island Sound Programs

IMPORTANT - Please refer to the [instructions](#) (DEP-OLISP-INST-100) for completing this application form to ensure that all required information is provided. Print or type all information within the form, providing additional pages as necessary.

CPPU USE ONLY	
App #:	_____
Doc #:	_____
Check #:	_____

Part I: Permit Type and Fee Information

Check only one of the boxes below identifying the applicable state permit program(s). You must submit the initial fee indicated below with this application.

Type of Permit	Initial Fee
<input type="checkbox"/> Structures, Dredging & Fill <i>CGS sec. 22a-361</i> [#1085]	\$660.00
<input type="checkbox"/> Structures, Dredging & Fill and 401 Water Quality Certificate [#1632]	\$660.00
<input type="checkbox"/> Structures, Dredging & Fill, and Tidal Wetlands <i>CGS sec. 22a-361 & sec. 22a-32</i> [#438]	\$660.00
<input checked="" type="checkbox"/> Structures, Dredging & Fill, and Tidal Wetlands and 401 Water Quality Certificate [#417]	\$660.00
<input type="checkbox"/> 401 Water Quality Certificate <i>33 U.S.C. 1341 (For Federal Use Only)</i> [#1195]	None
Note: The fee for municipalities is 50% of the above listed rates. Additional fees based on the water area occupied by the project will be invoiced. The application will not be processed without the initial fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection.	
Town where site is located: <u>Stratford, CT</u>	
Brief Description of Project: State Project #15-336 involves construction of improvements to the Runway Safety Area (RSA) of Runway 24 at the Igor I. Sikorsky Memorial Airport, relocation of a section of Main Street (State Route 113) to accommodate the RSA improvements, construction of an Engineered Materials Arresting System (EMAS) to replace the existing blast fence at the end of Runway 24, and rehabilitation of existing Runway 6-24.	

Check here, in addition to one of the boxes above, if your application is being submitted pursuant to CGS sec. 22a-361(a)(2)(d) to address a violation.

If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the [Request to Change Company/Individual Information](#) to the address indicated on the form. If there is a change in name of the entity holding a DEEP license or a change in ownership, contact the Office of Planning and Program Development (OPPD) at 860-424-3003. For any other changes you must contact the specific program from which you hold a current DEEP license.

Part II: Applicant Information

- If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, registrant's name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of State's database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)
- If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

1. Applicant Name: State of Connecticut Department of Transportation

Mailing Address: **2800 Berlin Turnpike, PO Box 317546**

City/Town: **Newington**

State: **CT**

Zip Code: **06131-7546**

Business Phone: **860-594-2931**

ext.

Contact Person: **Mark Alexander**

Title: **Trans. Assistant Planning Director**

*E-mail: **Mark.W.Alexander@ct.gov**

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

a) Applicant Type (check one):

individual federal agency state agency municipality tribal

*business entity (*If a business entity complete i through iii):

i) check type: corporation limited liability company limited partnership

limited liability partnership statutory trust Other: _____

ii) provide Secretary of the State business ID #: _____ This information can be accessed at database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)

iii) Check here if your business is **NOT** registered with the Secretary of State's office.

b) Applicant's interest in property at which the proposed activity is to be located:

site owner option holder lessee

easement holder operator other (specify): Owner of SR 113 and responsible

party for securing permits for the safety improvement project at Igor I. Sikosky Memorial Airport on behalf of the Federal Aviation Administration (FAA) / City of Bridgeport as owner/operator

Check if any co-applicants. If so, attach additional sheet(s) with the required information as requested above.

Note: If the applicant is not the owner, submit written permission from the owner as Attachment B.

2. List billing contact, if different than the applicant.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

E-mail:

3. List primary contact for departmental correspondence and inquiries if different than applicant.

Name:

Mailing Address:

City/Town:

State:

Zip Code:

Business Phone:

ext.

Contact Person:

Title:

*E-mail:

Part II: Applicant Information (continued)

4. List Site Owner, if different than applicant:

Name: **City of Bridgeport**
Mailing Address: **999 Broad Street, 2nd Floor**
City/Town: **Bridgeport** State: **CT** Zip Code: **06604**
Business Phone: **203-576-7647** ext.
Contact Person: **Lisa Trachtenburg, Esq.** Title: **City Attorney**
E-mail: **lisa.trachtenburg@bridgeportct.gov**

5. List Facility Owner, if different than applicant:

Name: **City of Bridgeport**
Mailing Address: **999 Broad Street, 2nd Floor**
City/Town: **Bridgeport** State: **CT** Zip Code: **06604**
Business Phone: **203-576-7647** ext.
Contact Person: **Lisa Trachtenburg, Esq.** Title: **City Attorney**
E-mail: **lisa.trachtenburg@bridgeportct.gov**

6. List attorney or other representative, if applicable.

Firm Name: **City of Bridgeport**
Mailing Address: **999 Broad Street**
City/Town: **Bridgeport** State: **CT** Zip Code: **06604**
Business Phone: **203-576-7647** ext.
Attorney: **Lisa Trachtenburg, Esq.** Title: **City Attorney**
E-mail: **lisa.trachtenburg@bridgeportct.gov**

7. List all engineer(s), surveyor(s) and/or other consultant(s) employed or retained to assist in preparing the application and designing or constructing the activity.

Name: **URS Corporation**
Mailing Address: **500 Enterprise Drive, Suite 3B**
City/Town: **Rocky Hill** State: **CT** Zip Code: **06067**
Business Phone: **860-529-8882** ext.
Contact Person: **Fraser Walsh** Title: **Project Manager**
E-mail: **Fraser.walsh@urs.corp**
Service Provided: **Engineering/Design Consultation**

Check if additional Applicant Information sheets are included, and label and attach them to this sheet.

8. A pre-application meeting with Office of Long Island Sound Program (OLISP) staff is strongly recommended prior to application submission. Please note the meeting date and OLISP staff person's name:

Staff Name: **Micheal Grzywinski** Meeting Date: **Numerous meetings from 2010-2013 and bi-weekly attendance at meetings by OLISP since April 2012**

Part II (continued)

6. List all engineers(s), surveyor(s) and/or other consultants(s) employed or retained to assist in preparing the application or in designing or constructing the activity.

Name: **URS Corporation**

Mailing Address: **500 Enterprise Drive, Suite 3B**

City/Town: **Rocky Hill** State: **CT** Zip Code: **06067**

Business Phone: **860-529-8882** ext.: **N/A**

Contact Person: **Fraser Walsh, PE** Title: **Project Manager**

Service Provided: **Project Management, Runway Design, Mitigation Design**

Name: **URS Corporation**

Mailing Address: **500 Enterprise Drive, Suite 3B**

City/Town: **Rocky Hill** State: **CT** Zip Code: **06067**

Business Phone: **860-529-8882** ext.: **N/A**

Contact Person: **Roger Krahn, PE** Title: **Transportation Project Manager**

Service Provided: **Roadway Design and Utilities design**

Name: **URS Corporation**

Mailing Address: **500 Enterprise Drive, Suite 3B**

City/Town: **Rocky Hill** State: **CT** Zip Code: **06067**

Business Phone: **860-529-8882** ext.: **N/A**

Contact Person: **Sydney Neer, PE** Title: **Environmental Group Manager**

Service Provided: **Raymark Waste and Environmental Engineering**

Name: **URS Corporation**

Mailing Address: **500 Enterprise Drive, Suite 3B**

City/Town: **Rocky Hill**

State: **CT**

Zip Code: **06067**

Business Phone: **860-529-8882**

ext.: **N/A**

Contact Person: **Gary Nash, PE** Title: **Senior Civil Engineer**

Service Provided: **Hydraulic engineering**

Name: **Zodiac Aerospace**

Mailing Address: **2239 High Hill Road**

City/Town: **Logan Township**

State: **NJ**

Zip Code: **08085**

Business Phone: **856-241-8620**

ext.: **459**

Contact Person: **Trip Thomas** Title: **Regional Director**

Service Provided: **EMAS design**

Name: **Cardino/ATC**

Mailing Address: **40 Stafello Drive, Suite G**

City/Town: **Avon**

State: **MA**

Zip Code: **02322**

Business Phone: **508-588-0886**

ext.: **N/A**

Contact Person: **Tom Bowker** Title: **Regional Division Manager**

Service Provided: **Geotechnical Evaluation**

Name: **Fitzgerald & Halliday, Inc.**

Mailing Address: **72 Cedar Street**

City/Town: **Hartford**

State: **CT**

Zip Code: **06106**

Business Phone: **860-247-7200**

ext.: **N/A**

Fax: **860-247-7206**

Contact Person: **Daniel Hageman, PSS**

Title: **Project Manager**

Service Provided: **Permit Application Preparation, Listed Species Surveys,
Wetland delineation and documentation**

Part III: Project Information

1. Describe the proposed regulated work and activities in a detailed narrative, including the number and dimensions of structures. Refer to both the instructions and Appendix A of the instructions (Activity Specific Instructions).

Please refer to attached sheets

2.
 - a. Describe the construction activities involved for the project in detail, including methods, sequencing, equipment, and any alternative construction methods that might be employed.

Please refer to attached sheets

2.
 - b. Describe any erosion and sedimentation or turbidity control installation and maintenance schedule and plans in detail.

Please refer to attached sheets

2.
 - c. Indicate the length of time needed to complete the project and identify any anticipated time period restrictions.

There is a federal mandate in place requiring the runway safety area improvements at Sikorsky Airport to be in place by 2015. Thus, project construction will occur from the time all permits are secure in fall of 2013 until end of 2015. (Please refer to attached sheets)

State Project #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)

Part III:

1. Describe the proposed regulated work and activities in a detailed narrative, including the number and dimensions of structures.

Impact Summary

All project activities will be conducted on airport and CTDOT properties. Total temporary and permanent impacts to water resources are estimated to be approximately 1.72 acres of tidal wetlands, 1.15 acres of land capable of supporting tidal vegetation, and approximately 17.4 acres of disturbance below the Coastal Jurisdiction Line (CJL) or High Tide Line (HTL), (which is 5.9 feet NGVD29 & 4.8 NAVD 88 for the site). The majority of these vegetated tidal wetland areas are of low quality and are currently maintained as mowed lawn areas, or are dominated by invasive common reed (*Phragmites australis*). However, some higher value tidal wetlands will also be impacted. For a summary of anticipated impacts to tidal wetlands and other jurisdictional resources at the site see Table 1 below.

Impact quantities in square feet and acres are listed in Table 2 below and detailed descriptions of impacts to each tidal wetland follow. The total permanent tidal wetland area impacts are 1.44 acres. A total of 0.28 acres of temporary tidal wetland impacts are also anticipated. Approximately 0.48 acres of the 1.44 permanent impact area will be to tidal wetlands dominated by common reed, and thus are of low value. Also, approximately 0.26 acres of the 1.44 acres of permanent 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). In total, 0.74 acres of the 1.44 acres of permanent impact to tidal wetlands are to low value tidal wetlands.

The following text describes in detail each tidal wetland impact area associated with the proposed BDR runway safety area project. The type and purpose of work for each tidal wetland impact area is also included in this section.

There are six tidal wetland areas that will be disturbed by the runway safety improvement activities as described below. Permanent and temporary impacts to tidal wetland resources are anticipated at Wetlands A and D; permanent impacts only are

anticipated at Wetlands B and C; and temporary impacts only are anticipated at Wetland S. See Table 2 for temporary and permanent impact areas for each tidal wetland.

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
<i>Subtotal</i>	<i>6.56</i>	<i>10.83</i>	<i>17.4</i>
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
<i>Subtotal</i>	<i>0.28</i>	<i>1.44</i>	<i>1.72</i>
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

Detailed Wetland Impact Descriptions

The following text describes the type and purpose of work in each tidal wetland impact area. Table 3 provides detailed information on the volume of proposed fill material within each tidal wetland impact area by material type. See Plates TV-1, TV-2, and TV-3 in Attachment I for the locations of all tidal wetland impact areas.

Impact Area A-1

Impact Area A-1 is depicted on Plate TV-1, PRO 42, PRO 43 and PRO 45 in Attachment I and consists of permanent impacts to tidal wetlands. Work within Impact Area A-1 will consist of 0.43 acres of permanent impacts to tidal vegetation due to the excavation necessary to construct the tidal channel, excavation for construction of the maintenance path for the tidal channel, construction of a proposed drainage system stormwater outfall, construction of the proposed cross culvert and headwall under the realigned roadway, construction of the proposed roadway and construction of the proposed shared use bike path. Additional work includes excavation for the placement of all

Table 2: Sikorsky Runway Safety Area Project Tidal Wetland Impacts and Details

Wetland Number	Wetland Classification		Functions & Values of Impacted Wetland*	Proposed Design/Construction Impact	Temporary Impact		Permanent Impact	
	Cowardin	HGM			(ft ²)	(Acre)	(ft ²)	(Acre)
A-1	E2EM	ESTUARINEF	FF, SS, WH, ES	Realignment of Route 113 & Construction of tidal channel See Plates TV 01, PRO 42, PRO 43 and PRO 45	0	0	18,740	0.43
A-2	E2EM	ESTUARINEF	FF, SS, WH, ES	Realignment of Route 113 & Construction of tidal channel See Plates TV 01, PRO 43 and PRO 45	5,729	0.132	0	0
A-3	E2EM	ESTUARINEF	FF, SS, WH, ES	Construction of tidal channel See Plates TV 01 and PRO 45	418	0.01	0	0
A-4	E2EM	ESTUARINEF	FF, SS, WH, ES	Construction of tidal channel See Plates TV 01 and PRO 45	0	0	2,443	0.056
A-5	E2EM	ESTUARINEF	FF, SS, WH, ES	Construction of tidal channel See Plates TV 01 and PRO 45	235	0.005	0	0
A-6	E2EM	ESTUARINEF	FF, SS, WH, ES	Construction of tidal channel See Plates TV 01 and PRO 46	0	0	5,160	0.118
A-7	E2EM	ESTUARINEF	FF, SS, WH, ES	Construction of tidal channel See Plates TV 01 and PRO 46	2,187	0.05	0	0
A-8	E2EM	ESTUARINEF	FF, SS, WH, ES	Hand removal of fill material from tidal wetlands; construction access See Plates TV 01 and PRO 60	3,409	0.079	0	0
B-1	E2EM	ESTUARINEF	FF, ST, WH, ES	Realignment of Route 113 & Construction of tidal channel See Plates TV 01 and PRO 42	0	0	2,154	0.049
B-2	E2EM	ESTUARINEF	FF, ST, WH, ES	New drainage pipe and headwall construction	0	0	13,083	0.301

Wetland Number	Wetland Classification		Functions & Values of Impacted Wetland*	Proposed Design/Construction Impact	Temporary Impact		Permanent Impact	
	Cowardin	HGM			(ft ²)	(Acre)	(ft ²)	(Acre)
				See Plates TV 01, PRO 42 and PRO 44				
C-1	E2EM	ESTUARINEF	GW , WH, ES	Construction of runway See Plates TV 02, PRO 17 and PRO 59	0	0	2,738	0.062
D-1	E2EM	ESTUARINEF	FF , ST, WH , ES	Construction of runway See Plates TV 02, PRO 16 and PRO 58	0	0	18,220	0.418
D-2	E2EM	ESTUARINEF	FF , ST, WH , ES	Construction of runway See Plates TV 02 and PRO 58	98	0.002	0	0
S-1	E2EM	ESTUARINEF	FF , SS, WH, ES	Rehabilitation of taxiway drainage system See Plates TV 03 and PRO 30	153	0.004	0	0
Total					12,229	0.28	62,518	1.44

* Functions & Values in **BOLD** are principal, while those in regular text are secondary

KEY:

GW Groundwater Recharge/Discharge
FF Floodflow Alteration
FS Fish and Shellfish Habitat
ST Sediment/Toxicant Retention
NR Nutrient Removal
PE Production Export
SS Sediment/Shoreline Stabilization

WH Wildlife Habitat
RE Recreation
ED Educational Scientific Value
UH Uniqueness/Heritage
VA Visual Quality/Aesthetics
ES Endangered Species Habitat

Table 3 - Summary of Fill Material within Tidal Wetland Areas

Impact Area	FILL IN TIDAL VEGETATION AREAS BY MATERIAL TYPE						CUT IN TIDAL VEGETATION AREAS	
	Asphalt Pavement Structure (CY)	Drainage Pipes/Structures (CY)	Utility Structures (CY)	Rounded Stone Riprap (CY)	Embankment / Clean Fill (CY)	Total Fill (CY)	Embankment (CY)	Total Cut (CY)
A-1	427	46	96	0	3,017	3,586	367	367
A-2*	0	0	0	0	0	0	0	0
A-3*	0	0	0	0	0	0	0	0
A-4	13	0	0	49	0	62	409	409
A-5*	0	0	0	0	0	0	0	0
A-6	14	0	0	113	0	127	533	533
A-7*	0	0	0	0	0	0	0	0
A-8*	0	0	0	0	0	0	3	3
Subtotal Impact Area A						3,775	Subtotal Impact Area A	1,312
B-1	0	8	0	23	0	31	173	173
B-2	0	6	0	129	0	135	232	232
Subtotal Impact Area B						166	Subtotal Impact Area B	405
C-1	0	0	0	0	50	50	0	0
Subtotal Impact Area C						50	Subtotal Impact Area C	0
D-1	0	0	0	0	575	575	0	0
D-2*	0	0	0	0	0	0	0	0
Subtotal Impact Area D						575	Subtotal Impact Area D	0
S-1*	0	0	0	0	0	0	0	0
Subtotal Impact Area S						0	Subtotal Impact Area S	0
GRAND TOTAL						4,566		1,717

* Temporary Impact areas with no net fill

underground utilities, which will be located within the footprint of the proposed roadway, and excavation for the removal of all existing underground utilities.

The northern end of Impact Area A-1 is maintained by BDR through mowing and is dominated by cool-season grasses such as Kentucky bluegrass (*Poa pratensis*) and tall fescue (*Schedonorus arundinacues*), with scattered clumps of switchgrass (*Panicum virgatum*) and seaside goldenrod (*Solidago sempervirens*). Its lower fringes also have scattered individuals of marsh elder (*Iva frutescens*). The southern portion of Impact Area A-1 is dominated by common reed, with smaller clumps of seaside goldenrod, black grass, and marsh elder. A portion of open water and its banks associated with the existing tidal channel will also be impacted by the proposed activities in Impact Area A-1. As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area A-2

Impact Area A-2 is depicted on Plate TV-1, PRO 43 and PRO 45 in Attachment I and consists of 0.132 acres of temporary impacts to tidal wetlands. Work within Impact Area A-2 will cause temporary impacts to tidal vegetation due to disturbance beyond the cut/fill limits for equipment access for roadway construction, construction of a proposed drainage system stormwater outfall, construction of the proposed shared use bike path, utility installation, new tidal channel construction, soil remediation, and cross-culvert and headwall installation. Vegetation in Impact Area A-2 is dominated by common reed, with smaller clumps of seaside goldenrod, black grass, and marsh elder. This temporary impact area will be re-graded to existing elevations after construction activities have been completed, with a layer of standard topsoil, and seeded with the Shoreline Seed Mixture (see specification in Attachment M9 - Mitigation Checklist). As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area A-3

Impact Area A-3 is depicted on Plate TV-1 and PRO-45 in Attachment I and consists of 0.01 acres of temporary impacts to tidal wetlands. Work within Impact Area A-3 will cause temporary impacts to tidal vegetation due to disturbance beyond the cut/fill limits for equipment access for construction of the new tidal channel. Vegetation in Impact Area A-3 is dominated by common reed. This temporary impact area will be re-graded to existing elevations after construction activities have been completed, with a

layer of standard topsoil, and seeded with the Shoreline Seed Mixture (see specification in Attachment M9 - Mitigation Checklist). As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area A-4

Impact Area A-4 is depicted on Plate TV-1 and PRO-45 in Attachment I and consists of 0.056 acres of permanent impacts to tidal wetlands. Work within Impact Area A-4 will consist of permanent impacts to tidal vegetation due to the excavation necessary to construct the tidal channel, excavation for construction of the maintenance path for the tidal channel, and installation of rounded stone rip rap in the bottom of the channel. Vegetation in Impact Area A-4 is dominated by common reed. As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area A-5

Impact Area A-5 is depicted on Plate TV-1 and PRO-45 in Attachment I and consists of 0.005 acres of temporary impacts to tidal wetlands. Work within Impact Area A-5 will cause temporary impacts to tidal vegetation due to disturbance beyond the cut/fill limits for equipment access for construction of the new tidal channel. Vegetation in Impact Area A-5 is dominated by common reed. This temporary impact area will be re-graded to existing elevations after construction activities have been completed, with a layer of standard topsoil, and seeded with the Shoreline Seed Mixture (see specification in Attachment M9 - Mitigation Checklist). As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area A-6

Impact Area A-6 is depicted on Plate TV-1 and PRO-46 in Attachment I and consists of 0.118 acres of permanent impacts to tidal wetlands. Work within Impact Area A-6 will consist of permanent impacts to tidal vegetation due to the excavation necessary to construct the tidal channel, excavation for construction of the maintenance path for the tidal channel, and installation of rounded stone rip rap in the bottom of the channel.

The eastern portion of this impact area consists of the connection point of the proposed new tidal channel to the Marine Basin. Impact Area A-6 is dominated by cool-season grasses such as Kentucky bluegrass (*Poa pratensis*) and tall fescue (*Schedonorus arundinacues*), with scattered clumps of switchgrass (*Panicum virgatum*), and seaside goldenrod (*Solidago sempervirens*). The eastern portion of Impact Area A-6 is located along the fringe of the Marine Basin, and a small shelf saltmarsh cordgrass (*Spartina alterniflora*) (approximately 129 sf) will be permanently impacted. However, the proposed new tidal channel will provide a greater area for re-colonization by spartina, offsetting this impact.

As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area A-7

Impact Area A-7 is depicted on Plate TV-1 and PRO-46 in Attachment I and consists of 0.05 acres of temporary impacts to tidal wetlands. Work within Impact Area A-7 will cause temporary impacts to tidal vegetation due to disturbance beyond the cut/fill limits for equipment access for construction of the new tidal channel. Work will also include small areas of temporary disturbance within the Marine Basin at the point where the proposed new tidal channel connects to the Marine Basin, for equipment access. The vegetation in Impact Area A-7 is the same as vegetation with Impact Area A-6 above. A small shelf of saltmarsh cordgrass (approximately 180 sf) will also be temporarily impacted in the Marine Basin. This temporary impact area will meet existing grades within the non-open water areas after construction activities have been completed, with a layer of standard topsoil, and seeded with the Shoreline Seed Mixture (see specification in Attachment M9 - Mitigation Checklist) *Spartina* plugs will also be provided in this area between an elevation of 0.0 and the MHW elevation. Within the open water area of temporary impact (below MLW), the Marine Basin bottom will meet existing grades; no topsoil or plantings will be provided, as it is anticipated that this area will re-colonize over time with sub-tidal species. As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area A-8

Impact Area A-8 is depicted on Plate TV-1 and PRO-60 in Attachment I and consists of 0.079 acres of temporary impacts to tidal wetlands. Work within Impact Area A-8 will

cause temporary impacts to tidal vegetation due to disturbance beyond the cut/fill limits for equipment access for removal of the existing driveway culvert, excavation and removal of an existing, non-functioning driveway culvert, and hand removal of a thin layer of fill material from existing tidal wetlands on either side of the existing driveway. The vegetation in Impact Area A-8 along the side of the driveway and on the channel bank is dominated by black grass and common reed. The majority of the wetland impact is within open water and existing non-vegetated driveway area.

As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions. The small vegetated areas to be impacted by the culvert removal and channel bank re-grading will likely re-establish with tidal vegetation in the post-condition due to the low elevations of these areas (see Plate PRO-60). The hand-raking within the existing vegetated tidal wetlands to either side of the driveway will not impact the tidal vegetation – the intent of this work is to rake out driveway material that has “spilled over” into the adjacent wetlands during previous driveway maintenance grading. This raking will not remove or disturb the existing vegetation or soil, just “uncover” it so it will function again.

Impact Area B-1

Impact Area B-1 is depicted on Plate TV-1 and 42 in Attachment I and consists of 0.049 acres of permanent impacts to tidal wetlands. Work within Impact Area B-1 will consist of permanent impacts to tidal vegetation due to construction of the new tidal channel on the south side of the proposed realignment of Route 113, construction of the proposed roadway, installation of three new 22"x36" RCP Arch stormwater pipes and an endwall (see Plate PRO-42 in Attachment I), removal of the existing roadway embankment, and excavation for the removal of existing underground utilities. The vegetation within Impact Area B-1 is dominated by common reed and sparse areas of black grass. A small area of open water will also be impacted by the proposed activities in Impact Area B-1.

Wetland B supports sub-populations of the state-endangered salt pond grass (*Leptochloa fusca* spp. *Fascicularis*) and the state species of special concern orache (*Atriplex glabriuscula*), however these sub-populations are not located within Impact Area B-1, and will not be impacted. As shown in Table 2, the following principal functions will be impacted: floodflow alteration and wildlife habitat. Secondary functions of sediment/toxicant retention and endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area B-2

Impact Area B-2 is depicted on Plate TV-1, PRO-42 and PRO-44 in Attachment I and consists of 0.301 acres of permanent impacts to tidal wetlands. Work within Impact Area B-2 will consist of permanent impacts to tidal vegetation due to construction of the new tidal channel on the south side of the proposed realignment of Route 113, construction of the proposed cross culvert under the roadway, construction of the proposed roadway, removal of the existing roadway embankment, installation of a new security fence, and excavation for the removal of existing underground utilities. The vegetation within Impact Area B-2 is dominated by common reed, with smaller remnant areas of smooth cordgrass close to the ditch and saltmeadow cordgrass (*Spartina patens*) further from the ditch. As shown in Table 2, the following principal functions will be impacted: floodflow alteration and wildlife habitat. Secondary functions of sediment/toxicant retention and endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Wetland B supports sub-populations of the state-endangered salt pond grass (*Leptochloa fusca* spp. *Fascicularis*) and the state species of special concern orache (*Atriplex glabriuscula*). One of these sub-populations is located within Impact Area B-2, along the edge of existing Route 113, and will not be impacted by the project.

Impact Area C-1

Impact Area C-1 is depicted on Plate TV-2, PRO-17 and PRO-59 in Attachment I and consists of 0.062 acres of permanent impacts to tidal wetlands. Work within Impact Area C-1 will consist of permanent impacts to tidal vegetation due to grading and filling to eliminate open water ponding in the RSA, and to provide a base material sufficient to support an aircraft within the RSA. Vegetation in Impact Area C-1 is dominated by chairmaker's rush (*Scirpus americana*) [also *Schoenoplectus pungens*]. It is the single most dominant species in this wetland, occupying as a near monotypic dominant. As shown in Table 2, the following principal function will be impacted: groundwater recharge. Secondary functions of wildlife habitat and endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area D-1

Impact Area D-1 is depicted on Plate TV-2, PRO-16 and PRO-58 in Attachment I and consists of 0.418 acres of permanent impacts to tidal wetlands. Work within Impact Area D-1 will consist of permanent impacts to tidal vegetation due to the excavation necessary to remove existing bituminous pavement from Runway 6-24, and grading and

filling to eliminate open water ponding in the RSA, and to provide a base material sufficient to support an aircraft within the RSA. Vegetation within Impact Area D-1 is dominated by chairmaker's rush (*Scirpus americana*) [also *Schoenoplectus pungens*]. It is the single most dominant species in this portion of the wetland, occupying as a near monotypic dominant. Other species within Impact Area D-1, or along its periphery, include: bent grass (*Agrostis palustris*) [also *Agrostis stolonifera*]; cypress panicgrass (*Dichanthelium dichotomum*); path rush (*Juncus tenuis*); tapertip rush (*Juncus acuminatus*); lance-leaved violet (*Viola lanceolata*); marsh seedbox (*Ludwigia palustris*); umbrella sedge (*Cyperus* sp.). As shown in Table 2, the following principal functions will be impacted: floodflow alteration and wildlife habitat. Secondary functions of sediment toxicant retention and endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area D-2

Impact Area D-2 is depicted on Plate TV-2 and PRO-58 in Attachment I and consists of 0.002 acres of temporary impacts to tidal wetlands. Work within Impact Area D-2 will cause temporary impacts to tidal vegetation due to disturbance beyond the cut/fill limits for equipment access for re-grading of the RSA. Vegetation within Impact Area D-2 is the same as vegetation within Impact Area D-1 above. This temporary impact area will be re-graded to existing elevations after construction activities have been completed, with a layer of standard topsoil, and seeded with the Shoreline Seed Mixture (see specification in Attachment M9 - Mitigation Checklist). As shown in Table 2, the following principal functions will be impacted: floodflow alteration and wildlife habitat. Secondary functions of sediment toxicant retention and endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Impact Area S-1

Impact Area S-1 is depicted on Plate TV-3 and PRO-30 in Attachment I and consists of 0.004 acres of temporary impacts to tidal wetlands. Work within Impact Area S-1 will cause temporary impacts to tidal vegetation due to disturbance beyond the cut/fill limits for equipment access for removal of existing bituminous pavement from Taxiway H. Vegetation within Impact Area S-1 is dominated by yellow nutsedge, green bulrush, and mowed goldenrod. Other species include black willow, and redosier dogwood. This temporary impact area will be re-graded to existing elevations after construction activities have been completed, with a layer of standard topsoil, and seeded with the Shoreline Seed Mixture (see specification in Attachment M9 - Mitigation Checklist). As shown in Table 2, the following principal functions will be impacted: floodflow alteration, sediment shoreline stabilization, and wildlife habitat. A secondary function of

endangered species will also be impacted. More detail in wetland functions and values impacts is provided following the detailed wetland impact descriptions.

Summary of Wetland Type and Functions and Values Impacted

Wetland classifications for each wetland impact area are listed in Table 2. The dominant wetland type is estuarine intertidal emergent (E2EM) for all wetland impact areas. Therefore, all wetland impacts, temporary and permanent (1.72 acres), will occur to E2EM class wetland resources.

Of the 13 functions and values in the U.S. Army Corps of Engineers (Corps) Highway Methodology Supplement (1999), six (6) functions will be impacted within the project wetlands: groundwater recharge/discharge, floodflow alteration, sediment/toxicant retention, sediment/shoreline stabilization and wildlife habitat. One (1) of the wetland values was observed within the project wetlands: threatened or endangered species habitat. The principal (in bold) and secondary functions and values for each wetland impact area are listed in Table 2.

The principal functions and values of the wetland impact areas were tabulated and the total permanent impact areas of each function were determined for the project. Of the four principal functions, permanent impacts to the wildlife habitat and floodflow alteration functions were the greatest, with 1.37 ac distributed. Impacts to sediment/shoreline stabilization functions were the second highest with 0.6 acres disturbed. The groundwater recharge/discharge function had lowest impact of 0.06 ac of impact.

The combined project impacts to wetlands will be mitigated through restoration and enhancement of two wetland mitigation areas, where a greater range of wetland functions-values can be sustained in perpetuity. This mitigation plan has been developed to address the impacts to tidal wetlands and their corresponding functions and values. The Mitigation Checklist in Attachment M9 provides greater detail on the proposed mitigation for this project.

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Runway Safety Area Improvements – Igor I. Sikorsky Memorial Airport
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Sound Programs (OLISP)

Part III:

2a. Describe the construction activities involved for the project in detail, including methods, sequencing, equipment, and any alternative construction methods that might be employed.

The construction activities, methods, and sequencing of those activities are described below for the various components of both the Roadside and Airside construction contracts.

ROADSIDE CONSTRUCTION

The Roadside Construction includes all construction activities associated with Raymark Waste removal, treatment and disposal; spraying and removal of invasive common reed (*Phragmites australis*) and the development of project mitigation areas including a new tidal channel connection to Marine Basin among others; the relocation of Route 113 and associated utilities work; the abandonment and removal of the existing alignment of Route 113; removal of abandoned utilities within the existing alignment of Route 113; grading of the Runway Safety Area (RSA) in preparation for the eventual placement of Engineered Materials Arresting System (EMAS) concrete blocks; and establishment of waste stockpile areas to facilitate construction. All of the above mentioned project work will take place during four stages of construction: Stage 1, Stage 2a and 2b, Stage 3 and Stage 4.

Equipment needs are anticipated to include: excavators, graders, dump trucks, milling and paving machines, and bulldozers, as well as hand tools incidental to earth work.

Construction Staging/Sequencing

Pre-Construction CTDEEP WHAMM Activities

During fall 2013 a program to spray and cut-back invasive *Phragmites australis* located on proposed project mitigation sites will be undertaken using the services of CTDEEP's

Wetland Habitat and Mosquito Management (WHAMM) Program via a contract with the City of Bridgeport. This *Phragmites* control program will be initiated before the actual physical construction of project elements, which is slated to commence in spring 2014. The WHAMM treatment includes the following elements, some of which will be repeated a second time during the summer of 2014 as added insurance against the possible re-colonization of project mitigation sites by invasive *Phragmites*.

- Mitigation Site 1 WHAMM Treatment: Using a low ground pressure vehicle, CTDEEP WHAMM will spray and cut-back approximately 3.2 acres of *Phragmites* (see MIT Plates in Attachment M9 – Mitigation Checklist) during the late summer/fall 2013. The CTDEEP WHAMM treatment of *Phragmites* will be re-applied in summer 2014. At that second treatment, CTEEP WHAMM personnel will also excavate a 600-foot long tidal ditch to the north into an area bounded by Lordship Boulevard to the west, the Airport Driveway to the north, and an abandoned foundation to the east. The tidal ditch will promote the influx of normal tidal flows into the area, thereby introducing higher levels of salinity which will promote healthy tidal wetland redevelopment and will suppress the potential for re-colonization of the area by *Phragmites*. Authorization for the restoration work will be sought via a separate Certificate of Permission (COP), so that the work can be accomplished in 2014. (Removal of other invasive vegetation located within the foundation and fill area will also occur during summer/fall 2014 and will be the responsibility of the Roadside Contractor and their removal protocol will involve cutting down and removing the brush and then spraying the stumps to eliminate the possibility of grow back.)
- Mitigation Site 2 WHAMM Treatment: Again, using a low ground pressure vehicle, CTDEEP WHAMM personnel will access Mitigation Site #2 from Taxiway H near the VOR Station in summer 2013 and spray and cut-back approximately 1.15 acres of *Phragmites* located along the North/South trending tidal channel and around the VOR Station (see MIT Plates in Attachment M9 – Mitigation Checklist). Excavation work within existing tidal channels should take place during the time period of June through August, so that the larval stage of the listed tiger beetle is avoided in habitat areas. This does not apply to common reed mowing/spraying or excavation work outside the existing tidal channels. On the east side of Taxiway H, the low ground pressure CTDEEP vehicle will be used to access, spray, and cut-back a large 13.2 acre wetland area. Immediately after cutting and spraying, several spot elevations will be taken by land surveyors in order to identify the need for minor grading, and/or new ditch excavations in this area in 2014 that will improve the success of the mitigation site in accommodating a healthy tidal wetland system with low risk of *Phragmites* re-colonization. If it is determined that minor grading, excavation, or ditching is required to improve the overall success of tidal wetland restoration at this mitigation site, a Certificate of Permission (COP) will be sought from the CTDEEP OLISP prior to the work in summer 2014. This COP would also cover the excavation activities that would occur at Mitigation Site 1 described above. If this

type of work is determined to be necessary based on the surveyed elevations, it would be done by CTDEEP WHAMM. (Also at Mitigation Site 2, the ditch that runs north/south along the west side of Taxiway H will be excavated to an elevation 0-feet above mean sea level and will be extended further to the south by the selected Roadside Contractor during summer 2014. Planting of tidal wetland shrubs will occur at 10-foot intervals along the banks of the tidal channel to stabilize the channel upon completion of excavation.)

- Mitigation Site 4 WHAMM Treatment: This mitigation site is associated with the new east-west oriented tidal ditch that will be constructed from Route 113 to connect to Marine Basin. In summer 2013, CTDEEP WHAMM personnel will spray and cut back approximately 1.04 acres of *Phragmites* at the proposed site of the ditch. The CTDEEP WHAMM will not return to this site for a second spray treatment in summer 2014 due to anticipated start of Raymark removal. This treatment is expected to minimize *Phragmites* growth in the proposed tidal ditch.

Roadside Contract Stage 1 – General Construction Sequence

The main element of Roadside Contract Construction Stage 1 is the excavation, removal, stabilization, transport, and ultimate disposal of hazardous Raymark Waste (RMW) OPERABLE UNIT 6 Superfund Site that has been identified and delineated on the project site. This hazardous area of RMW is located east of Route 113 and northwest of Marine Basin, where a driveway leads further east to residences along the shore of the Housatonic River. The removal of Raymark waste will occur during the 2014 construction season.

Roadside Contract Stage 2A – Construction Sequencing

Stage 2A of the roadside construction contract can commence during Stage 1 for those project areas that are located outside of any exclusion zone that is established for the removal of RMW. Primary components of Stage 2A include the construction of the new east-west oriented tidal channel that will ultimately connect to the Marine Basin; construction of the salt pond grass (*Leptochloa spp.*) transplant area on the north side of the new tidal channel (this is also referred to as Mitigation Site #4); and installation of special wing-type endwall and twin 36-inch corrugated aluminum pipe culverts and utilities as shown on Plate STG-05 in the vicinity of the new tidal channel at Station 27+65 LT. The PRO Plates in Attachment I show the proposed roadway work. The construction sequence for Stage 2A is as follows:

- Implement Stage 2 erosion and sedimentation controls as shown on the PRO Plates in Attachment I (and as described in more detail under Part III Questions 2(b) of this permit application).
- Construct special wing-type endwall at Station 27+65 LT and twin 36-inch culverts from the headwall to the existing roadway embankment.
- Install turbidity curtain in Marine Basin at the location of the new channel connection before February 1st, or after May 31st. Once the erosion and sedimentation controls are in place, work could be conducted behind them at any time.
- Construct underground utility conduits crossing the twin 36-inch corrugated aluminum pipe culverts for cablevision, AT&T, United Illuminating, sanitary force main, and water. Coordinate with Southern Connecticut Gas. See PRO Plates in Attachment I. More specifically -
 - Construct 14-inch sanitary force main in the area of the twin 36-inch corrugated aluminum pipe culverts.
 - Place temporary earth retaining system and construct 54-feet of the twin 36-inch corrugated aluminum pipes. Place bedding material and cover the top of the pipes with flowable fill as needed to construct the utility conduits.
 - Construct the special wing-type endwall and temporarily grade around the endwall to tie into existing ground.
 - Construct the cablevision duct bank to tie into the proposed cablevision vault.
 - Coordinate with Southern Connecticut Gas on the construction of the 6-inch and 8-inch gas lines and tie into the proposed gas vault.
 - Construct the AT&T duct bank and tie into the existing AT&T vault.
 - Construct the United Illuminating (UI) duct bank and tie into the UI vault. Utilize one lane alternating traffic when constructing within the existing roadway.
 - Construct 8-inch and 16-inch water lines and tie into the existing lines.
- Construct 9-foot wide shared-use path segment at the culvert at Station 27+65 LT. Protect the path as necessary with barrier or pedestrian fence. Place temporary sheeting and shoring. Construct the ends of the temporary shareduse path to tie into the existing sidewalk. Maintain traffic on existing Route 113 (once Route 113 is re-opened after its closure during Stage 1).
- Construct proposed tidal channel from the special wing-type endwall (Station 27+65 LT) to the Marine Basin berm along with mitigation area and planting area as indicated on the wetland mitigation plans for Mitigation Site 4. Note that construction of the mitigation area will continue throughout the Roadside Construction Contract, as construction allows (Refer to Mitigation Construction Sequencing for more details). Transplant the endangered salt pond grass topsoil from their present location along the western and eastern sides of existing Route 113 to the north side upper bank shelf of the new tidal channel as detailed in the

mitigation plans and specifications. This transplant must occur during the period when the plant is dormant. Once the tidal channel is stabilized and the wing-type endwall and the partial segment of the twin 36-inch corrugated aluminum pipe culverts are in place; breach the Marine Basin berm once the channel is stabilized to allow tidal exchange within the new channel. Turbidity and erosion controls should be removed outside of the time of year restriction for winter flounder, February 1st to May 31st. The resultant landward tidal flow will be blocked from passing through to the western side of Route 113 by the temporary sheeting and plugged pipe ends. The tidal flows will introduce higher salinity levels into the channel that will serve to inhibit colonization of the new channel by *Phragmites* and support vegetation in the channel, including the listed species area.

Roadside Contract Stage 2B – Construction Sequencing

Stage 2B primarily involves earthwork needed to construct the 2,000 foot relocated section of Route 113, including temporary drainage features and sedimentation basins as shown on PRO Plates and STG Plates in Attachment I. Construction sequencing is as follows:

- Place fill for relocated Route 113 to allow for the relocation of utility facilities and structures from approximately Station 12+50 to approximately Station 27+50. Construct sedimentation basin nos. 1 and 2.
- Temporary drainage to be installed at Station 26+00 and directed to basin nos. 1 and 2, once stable
- Drainage outfalls will be constructed from the outfall back, to ensure all areas are stable before receiving flows
- Construct new utility facilities and structures on the proposed alignment of Route 113. Construct the underground utilities to tie-in points on existing Route 113 using lane closures, alternating one-way traffic, and flaggers. Direct any dewatering wastewater to the Stratford WWTP, as needed.
- Coordinate with the utility companies during their work related to pulling and splicing cables through their conduit facilities. Coordinate with utility companies during activation of all proposed utilities.
- Complete the construction of the relocated Route 113 roadway, shoulders, shared-use path, grading and drainage between approximate stations 13+00 and 25+50 except for the roadway surface course. Extend shared-use path to the tie-ins in both directions. Maintain traffic on the existing Route 113 alignment and shift shared-use path traffic to the new alignment when it is available.

Roadside Contract Stage 3 – Construction Sequencing

Stage 3 primarily involves the final steps leading up to the opening of relocated Route 113 to traffic as depicted on the STG Plates in Attachment I. The sequencing is as follows:

- Implement Stage 3 erosion and sedimentation controls as shown on the PROP Plates and that are described in the detailed response to Part III Question 2(b) of this permit application.
- Implement the roadway detour as depicted.
- Using the existing Route 113 roadway closure and detour, install the remainder (western sections) of the twin 36-inch corrugated aluminum pipe culverts and a special type “L” headwall at Station 27+45 RT. Grade the area to final conditions. Water handling shall be performed as shown on the STG and PRO Plates.
- Construct the remaining tidal channel west of Route 113 and re-grade the existing tidal channel. Remove temporary earth retaining system (temporary sheeting) that was installed earlier during Stage 2A as well as the chain link fence that once protected the shared-use path in the area of the partial culvert construction. Water handling shall be performed as shown on the PRO plates.
- Construct relocated Route 113 tie-ins, including milling, from beginning of the project to approximately Station 13+00 and from approximately Station 25+50 to the end of the project.
- Construct the roadway embankment, and roadway pavement up to the top course and guiderail.
- Place roadway pavement top course throughout the length of the project.
- Open relocated Route 113 to traffic.

Roadside Contract Stage 4 – Construction Sequencing

Stage 4 of the Roadside Construction Contract essentially involves the removal of existing Route 113 roadway pavement and utilities once relocated Route 113 is open to traffic. The following is the proposed construction sequence:

- Implement Stage 4 erosion and sedimentation controls as described in the detailed response to Part III Question 2(b) of this permit application.
- Remove abandoned roadway pavement and remove all abandoned utilities. Construct three 22-inch by 34-inch concrete arch pipes that will convey tidal flows and drainage north to south under the end of Runway 24 and the RSA. Construct the associated special manholes as part of this culvert piping system, and the special wing-type endwalls. Water handling shall be performed as shown on the STG and PRO Plates.
- Temporarily close Runway 6-24 to facilitate construction activities

- Grade Runway 6-24 safety area as depicted on PRO Plates for construction of the Engineered Materials Arresting System.
- Removal all accumulated sediment from the basins and excavate to final grade. Convert sedimentation basins #1 and #2 into permanent infiltration basins #1 and #2.
- Construct new airport security fence and then remove the existing airport security fence
- Complete all environmental mitigation work, including seedbeds, grading, plantings as seasonally appropriate in accordance with specifications. This includes creation of the salt pond grass seedbed within the former alignment of Route 113.

AIRSIDE CONSTRUCTION

The Airside Construction includes all construction activities associated with installation of EMAS, installation of new taxiway edge lights, rehabilitation of Runway 6-24 pavement, construction of the new RSA, installation of new runway edge lights, installation of new precision approach path indicator (PAPI) or relocated visual approach slope indicator (VASI), relocation of runway end identifier lights (REILS) on Runways 6 and 24, removal of the taxiway at the runway intersection, construction of a new taxiway to Runway 24, and the construction of a runway end turnaround. Equipment needs are anticipated to include: excavators, graders, dump trucks, milling and paving machines, bulldozers, and cranes, as well as hand tools incidental to earth work. Runway and RSA improvements include:

- 1) Installation of EMAS
- 2) Full depth reconstruction of Runway 6-24 – this involved reducing the runway width by 50-feet on each side. There will be a need to place a small amount of fill (parallel to the runway in a linear fashion). The fill will be seeded with the Conservation Seed Mixture (See Specifications in Attachment M9 – Mitigation Checklist)
- 3) In areas where Needlegrass populations will be impacted, the soil will be scrapped, saved, and replaced as topsoil material along the edge of the runway.
- 4) Installation of PAPI lights

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Part III:

2b. Describe any erosion and sedimentation or turbidity control installation and maintenance schedule and plans in detail.

The proposed project erosion and sedimentation (E&S) controls have been designed and will be in accordance with the *2002 Connecticut Guidelines for Soil Erosion and Sediment Control* and Best Management Practices (BMPs) as outlined in Section 1.10 of CTDOT's Form 816. Staging and stockpile areas will be sited within an upland area where practicable, however, some may be located within floodplains or below the CJL elevation due to site constraints. There will be no storage of machinery or materials within wetland areas. Routine inspection and maintenance of BMP's will take place on a regular basis, particularly after rain events in accordance with CTDOT policy.

The following information is subdivided into two major subheadings:

- **Roadside Work Erosion and Sedimentation Controls;** which includes all construction activities associated with the development of mitigation areas, the relocation of Route 113 and associated utilities, the removal of the abandoned alignment of existing Route 113, removal of abandoned utilities, grading of the Runway Safety Area in preparation for the eventual placement of Engineered Materials Arresting System (EMAS) concrete blocks; and establishment of waste stockpile areas.
- **Airside Work Erosion and Sedimentation Controls;** which includes installation of EMAS, installation of new taxiway edge lights, rehabilitation of Runway 6-24 pavement, construction of the new RSA, installation of new runway edge lights, installation of new PAPI or relocated VASI, relocation of REILS on Runways 6 and 24, removal of the taxiway at the runway intersection, construction of a new taxiway to Runway 24, and the construction of a runway end turnaround.

1) ROADSIDE WORK EROSION AND SEDIMENTATION CONTROLS

Erosion and Sedimentation Control Plans are depicted on PRO Plates and DET Plates in Attachment I, and involve the following specific elements:

- Temporary construction entrances from existing Route 113 to the new alignment/construction site of relocated Route 113 will be installed/constructed at approximately Station 12+00 on the north and Station 27+00 on the south. They will be constructed as a bed of crushed stone placed on top of either a sub-base of free draining backfill or road stabilization geotextile (as necessary on unstable soils)
- A sedimentation control system (either a silt/geotextile fencing system or a staked haybale system) will be installed per the sedimentation and erosion control details and plates in Attachment I. This sedimentation control system will be installed prior to the start of any earthwork/ground disturbance and will be regularly inspected and maintained as per the specifications and especially during and after storm events over the duration of construction activities until the area of disturbance has become stabilized as determined by the environmental construction inspector.
- Temporary stormwater runoff during construction will be directed to two temporary sedimentation basins on the site, located in the footprint of the proposed final water quality basin nos. 1 and 2.
- A turbidity curtain will be installed in the Marine Basin at the location of the new channel connection before February 1st, or after May 31st as directed by NMFS requirements (Coordination with NMFS is on-going relative to time-of-year restrictions). Once the erosion and sedimentation controls are in place, work can be conducted behind them at any time. The turbidity curtain will be inspected on a regular schedule and during and immediately after storm events and will be maintained as necessary by the contractor to ensure optimal functionality over the duration of project construction activities. Turbidity and in-water erosion controls should be removed outside of the time of year restriction for winter flounder, February 1st to May 31st, once the new channel and connection with the Marine Basin are stabilized.
- A grass-line swale with Type E erosion control matting will be constructed along the northeastern edge of relocated Route 113 from approximately Station 13+00 to 17+50 where it broadens out into Sedimentation Basin #2 (described below). A typical sedimentation check dam will be constructed just prior to where drainage carried by this swale enters into the sedimentation basin.

- Two temporary sedimentation basins will be constructed during Stage 2.
 - Sedimentation Basin #1 will be constructed from approximately Station 23+00 to Station 25+00 and will be of a triangular configuration on land located between existing Route 113 and relocated Route 113. A portion of the land area housing this basin will be subject to the Raymark Waste removal activities that will occur during Stage 1 of overall project construction. The swales and forebay draining into this basin from the north and west will be constructed at the end of Stage 4 when this temporary sedimentation basin will be converted into a permanent water quality basin for the project. A stone filter berm will be constructed at the southeastern corner of this temporary sedimentation basin to protect the outlet of the basin. Basin outflow will be conveyed through a 36" CMP perforated riser pipe that will bring drainage to the east of the relocated Route 113 alignment to a pipe that will drain south towards the new tidal channel leading to Marine Basin. A preformed scour hole will be constructed within the new tidal channel at the location where this drainage flows into the channel. The bottom elevation of Sedimentation Basin #1 is set at 4.24 NGVD29.
 - Temporary Sedimentation Basin #2 is a much larger basin compared to Basin#1 (See Plates STG-02, STG-03 and STG-04). It is of rectangular configuration and will be constructed east of relocated Route 113 on fill from approximately Station 17+50 to Station 20+50. Like Basin #1, this basin will be converted to a permanent water quality basin for the project at the end of Stage 4 when a forebay will be constructed along with other drainage details. A stone filter berm will be constructed at the southwestern corner of the basin around the location of the 36" CMP perforated riser outlet pipe, keeping sediments from exiting the basin. The 36" pipe will parallel the east side of relocated Route 113 and carry flows to the south to the new tidal channel leading to Marine Basin. The pipe will pick up flows from Basin #1 in the vicinity of Station 24+60 and as described above will discharge into the new tidal channel at a pre-formed scour hole. Like Basin #1, bottom elevation of Sedimentation Basin #2 is set at 4.24 NGVD29. A duck bill backflow preventer will be installed to prevent tidal flushing into the proposed drainage system.

STAGE 3 – Roadside Work

Stage 3 Erosion and Sedimentation Control Plans are depicted on the PRO permit plates and involve the following specific elements:

- Haybales or geotextile inlet protection will be placed around catch basins located in the vicinity of Station 9+00 through Station 11+00. In this same area, the sedimentation control system installed during Stage 2 on the eastern edge of the existing Route 113 alignment will be extended further to the north along the western edge of the newly relocated Route 113 alignment to approximately Station 8+50.
- A temporary construction access from the contractor staging area to the relocated Route 113 alignment will be constructed in the vicinity of Station 20+50 per design specifications.
- A sedimentation control system (either a silt/geotextile fencing system or a staked haybale system) will be installed along the east and west sides of the tidal channel located west of Route 113 from tidal channel Station 0+00 to approximately Station 1+50. The sedimentation control system located on the east side of the tidal channel and west of existing Route 113 will terminate at the new culvert headwall. The sedimentation control system along the west side of the tidal channel and west of existing Route 113 will continue along the western edge of existing Route 113 at the base of a fill slope that extends from approximately Station 27+70 to Station 30+00.

STAGE 4 – Roadside Work

Stage 4 Erosion and Sedimentation Control Plans involve the following specific elements which are in addition to the erosion and sedimentation controls implemented in the previous construction stages:

- Move erosion and sedimentation control system (either haybales or silt fencing) to the western edge of existing Route 113 from its Stage 3 location along the eastern edge of Route 113. The erosion and sedimentation control system will be placed around the western side of the new triple pipe culvert that will be constructed under the Runway 6-24 Safety Area (RSA) to provide a drainage connection from the area north of the RSA to the tidal channel that ultimately drains under Route 113 and into Marine Basin. This erosion and sedimentation control system will extend all the way to where the tidal channel passes under relocated Route 113 via a new culvert. The system will protect the surrounding environment during removal of existing Route 113 and regrading of the area for the RSA.
- Construct a grass lined swale with Type E Erosion Control Matting along the north side of the future RSA. The swale will carry runoff to the east and into

a culvert under the new alignment of Route 113 at approximately Station 17+30 and ultimately into the sediment forebay Water Quality Basin #2. A permanent check dam will be added to this grass lined swale.

- Sedimentation Basin #2 located east of the relocated alignment of Route 113 will be converted into a permanent Water Quality Basin at the end of Stage 4.
- Construct a grass lined swale with Type E Erosion Control Matting along the south side of the future RSA that will carry runoff to the east and into a new sediment forebay to be constructed as part of Sedimentation Basin #1. A check dam will be installed prior to flows entering the sediment forebay. A smaller grass lined drainage swale will also be constructed along the western edge of relocated Route 113 at approximately Station 22+50 and will carry runoff a short distance to the south and into the sediment forebay constructed as part of Sedimentation Basin #1.
- Sedimentation Basin #1 located west of the relocated alignment of Route 113 in the vicinity of Stations 23+00 to Station 25+00 will be converted into a permanent Water Quality Basin at the end of Stage 4.

Waste Stockpile Areas Erosion and Sedimentation Controls

There is one Waste Stockpile Area (WSA) identified for this project, located at the intersection of CT Route 8 and Island Brook Extension in Bridgeport, CT. This site is currently used as a WSA, with 10 bins which will be lined with an HDPE liner. Erosion and sedimentation controls associated with the stockpile areas are to be maintained on this existing site per CTDOT's Form 816 requirements. There are other waste stockpile and processing areas associated with the Raymark Waste removal work to be performed under this project. However, all Raymark Waste removal activities are under the jurisdiction of the U.S. Environmental Protection Agency and are not further discussed in this application.

Mitigation Sites Erosion and Sedimentation Controls

Four mitigation sites will be constructed as part of this project under the Roadside Construction Contract. Erosion and sedimentation control measures to be installed and maintained during the construction and establishment of these mitigation sites are described below. Details of erosion and sedimentation controls are found on the MIT Plates in Attachment M9 - Mitigation Checklist.

Mitigation Site 1

- All erosion and sedimentation control measures will be installed prior to any mitigation site construction in the upland fill areas in the vicinity of the old foundation (see MIT Plates in Attachment M9 – Mitigation Checklist).
- Where the outlet of the newly constructed tidal channel meets the existing tidal creek to the southeast of the existing abandoned foundation, work will be conducted at low tide to minimize potential sedimentation. The new tidal channel work will be conducted under a separate COP approval from the CTDEEP OLISP, and detailed construction methodologies and E&S controls will be determined through that separate process and approval.
- Before work commences at the tidal wetland restoration area, filter fabric will be installed waterward of the grading limits for this area.

Mitigation Site 2

- All erosion and sedimentation control measures will be installed (see MIT Plates in Attachment M9 – Mitigation Checklist).
- An erosion and sediment control system (either staked haybales or silt fencing) will be installed on the west side of Taxiway H and east of the north/south flowing tidal channel from the southerly bend in the channel to just north of the existing access to the VOR station. A second erosion and sedimentation control system will be installed west of Taxiway H and east of the north/south flowing tidal channel at a location south of the new piped hydraulic connection across Taxiway H. That erosion and sediment control system will extend along the north/south oriented tidal channel until approximately the location where an existing sub-population of coastal violets [*Viola brittoniana*] was identified. A third erosion and sediment control system will be installed east of Taxiway H on both the north and south of the piped hydraulic connection to be constructed across Taxiway H.
- Install orange construction fence to exclude construction vehicles from invertebrate habitat and listed plant areas.

Mitigation Site 3

- Install orange construction fence to exclude construction vehicles from listed plant, coastal violet (*Viola brittoniana*), areas (see MIT Plates in Attachment M9 – Mitigation Checklist).

Mitigation Site 4

- An erosion and sedimentation control system (either staked haybales or silt fencing) will surround the proposed location of the salt pond grass (*Leptochloa*) seeding bed area. Since the seeding bed, known as Area B, is to be located within the footprint of the existing Route 113 alignment (to be removed), the sedimentation and erosion control system for the roadway work (described previously) will remain in place until the seeding bed is fully constructed and established. (see MIT Plates in Attachment M9 – Mitigation Checklist)
- Install orange construction fence to exclude construction vehicles from listed plant, salt pond grass (*Leptochloa*), areas.
- See additional discussion under *Phase 2 – Roadside Construction* section above.

2) AIRSIDE WORK EROSION AND SEDIMENTATION CONTROLS

The airside work includes installation of the Engineered Materials Arresting System in Phase IB, and runway and taxiway rehabilitation and electrical work (Phase IIA and IIB). General notes and construction sequencing for the installation and maintenance of erosion and sedimentation controls for the airside construction work is provided below followed by specific erosion and sedimentation control details for each airside work phase. Since much of this work will be conducted within the RSA, erosion and sedimentation logs will be used, rather than filter fabric fence, to ensure airport safety (see PRO Plates in Attachment I).

Soil and Erosion Control General Notes:

- 1) The PRO plates identify the locations of sediment device installation.
- 2) Implementation of all sediment and erosion control measures shall conform to the contract drawings and specifications or to the CTDEEP “Connecticut Guidelines for Soil Erosion and Sedimentation Control” revised 2002, whichever is more stringent.
- 3) Construction entrances, perimeter sedimentation barriers and protection at existing inlets shall be installed prior to any excavation/fill.
- 4) The contractor shall be responsible for providing additional control measures as required or direction by the engineer.
- 5) Areas disturbed by construction, which will not ultimately be covered by pavement, shall be provided with a permanent or temporary vegetative cover or mulched. The vegetative cover shall be provided as dictated by CTDOT’s Form 816.

- 6) Sediment and debris trapped by sediment barriers shall be removed and disposed of as directed by the engineer when it reaches one half the height of the erosion and sedimentation control system barrier or as directed by the Engineer.
- 7) Provisions shall be made to safely convey surface runoff to existing and protected storm drains or protected outlets to ensure that surface runoff will not damage slopes or other graded areas.
- 8) Sedimentation barriers shall be installed as construction proceeds as shown on the erosion and sediment control plan, all as necessary to contain sediment transport.
- 9) Side slopes of stockpiled materials shall not exceed two horizontal to one vertical.
- 10) All erosion controls must remain in place until removal is authorized by the engineer.

Soil Erosion and Sedimentation Control Construction Sequence

- 1) Hold preconstruction meeting
- 2) Install temporary exclusion fencing to protect listed species habitat in accordance with the plans
- 3) Install construction entrance
- 4) Install erosion and sedimentation controls as directed by the engineer in accordance with the Erosion and Sedimentation Control Plan.
- 5) Proceed with the demolition of the existing runway and initial paving operations in accordance with the Phasing Plans
- 6) Proceed with final paving operations in accordance with the Phasing Plans
- 7) Place additional topsoil to final grade, seed and mulch at disturbed and regraded areas along the runway and taxiways, as final paving proceeds.
- 8) After the site has been stabilized, remove erosion and sedimentation control measures as directed by the engineer.

Specifics of the Erosion and Sedimentation Control Plan for Airside work are based on plates provided in Attachment I. As mentioned above, Erosion and Sedimentation Controls for Airside project work during Phase IIA and IIB (Runway 6-24 Rehabilitation) are depicted on the PRO plates in Attachment I. Erosion and sedimentation controls for the Engineered Materials Arresting System (EMAS) installation to be conducted during Phase 1B are also depicted on the PRO plates.

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Part III:

Question 2c. Indicate the length of time needed to complete the project and identify any anticipated time period restrictions.

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.

Construction sequencing and timing are critical aspects of the project and are influenced by many factors. The following outlines important timing and time restrictions for specific aspects of work associated with the project.

New Tidal Channel

The new tidal channel will be constructed early in the project so that the salt pond grass mitigation transplant area is established before any road work which may impact the salt pond grass subpopulations begins. To ensure success of the proposed salt pond grass mitigation, all salt pond grass within the footprint of the roadway (subpopulations 1 and 2) must be removed and transplanted in the proposed transplant bed adjacent to the new tidal channel. To ensure that the salt pond grass will not be disturbed once the transplant is complete, the work to construct the channel will be complete before the transplant can occur in the dormant period of 2014.

In addition, the entire channel will be constructed and stabilized first, with the exception of the connection to the Marine Basin. The last section, consisting of the punch-through connection to the marine basin, will take place after the channel is stabilized. Based on early coordination with the National Marine Fisheries Service (NMFS), a silt curtain will be installed in the marine basin at the punch-through area prior to the connection taking place, and in accordance with winter flounder time-of-year restrictions. The silt curtain will remain in place until the connection to the Marine

Basin is stabilized, at a minimum. Turbidity and erosion controls should be installed or removed outside of the time of year restriction for winter flounder, February 1st to May 31st. However, once the erosion and sedimentation controls are in place, work could be conducted behind them at any time. It should be noted that coordination with the NMFS will be on-going to ensure that project impacts to these species are minimized.

Early Mitigation Work

- Compensatory mitigation will be initiated in the Fall of 2013.
- The CTDEEP WHAMM Unit will conduct mowing and spraying of existing common reed areas within Mitigation Sites 1, 2, and 4. This work will be conducted before Phase 1 Construction (removal of Raymark waste) is scheduled to begin in Spring of 2014.
- In the Fall of 2014, the CTDEEP WHAMM Unit will again mow and spray common reed within Mitigation Sites 1 and 2. No mowing or spraying will take place in Mitigation Site 4 in the Fall of 2014.
- No mowing or spraying will take place in Mitigation Site 3 since no common reed exists in this area.
- In the Fall of 2014, the CTDEEP WHAMM Unit will excavate a new tidal channel in Site 1 to restore regular tidal flooding within the wetland area.

Avian Species Time Restrictions

- To avoid potential construction impacts to Savannah Sparrows, construction along the runway will begin before April 15th or wait to begin until after August 15th of any given year.

Invertebrate Species Time Restrictions

Habitat for the mudflat tiger beetle is located near the approach of Runway 6 in wet areas and mudflat areas (please refer to Figure 2 in Attachment M4). During construction, orange construction fence will be placed in the field to exclude construction vehicles from habitat areas. Work will be conducted from the pavement in the vicinity of these habitat areas. Work taking place off the pavement in the vicinity of these habitat areas will be limited to the flight time of the beetle, June through August, so that impact to the larval stage of this species is avoided in these habitat areas.

Listed Species Mitigation Timing

During the construction period, direct, indirect, and cumulative impacts to listed plant species will be avoided and minimized to the extent practicable during the construction period. Construction sequencing and timing are important factors in avoiding and

minimizing potential impacts to these listed species. Avoidance and minimization measures during the construction period will include the following:

- Prior to any construction activity, a qualified botanist will identify and mark boundary of listed plant species in areas where project activity is about to take place. Orange protective fencing will be placed around the subpopulations.
- The salt pond grass transplant bed will be constructed before the construction of the Route 113 roadway work occurs within sub-populations 1 and 2 (also see “New Tidal Channel” section above).
- Salt pond grass will be relocated during the dormant season to minimize any impact to the plants.
- Construction sequencing will be carried out in a such as way that once listed vegetation species have been transplanted or seeded, no other disturbance will occur in these areas.
- In order to minimize impact to the existing plants, orange construction fencing will be placed around listed plants or sub-populations that are in close proximity to the proposed work prior to commencement of work. Construction plans will show the proposed locations of fencing and non-access areas. A survey sweep by a qualified botanist will be done again just prior to construction to confirm the proper placement of protective fencing and locations of access/haul routes.
- Listed species seeding beds for the salt pond grass and coast violet will be seeded in the fall to allow for overwintering.
- Wetland mitigation construction and planting will be conducted according to CTDOT specifications to ensure success. See specifications in Attachment M9 – Mitigation Checklist.

The CTDOT Office of Environmental Planning (OEP) will provide oversight for specifications which have been developed to cover all work during construction. The CTDOT will comply with any other time-of-year restrictions imposed by the regulatory agencies.

Part III: Project Information (continued)

3. Describe the purpose of, the need for, and intended use of the proposed activities. (For example, private recreational boating, marina, erosion protection, public infrastructure, etc.)

Please refer to attached sheets

4. Identify and describe all coastal or aquatic resources on the site by checking the appropriate box and describe the expected impact on these resources. You may add addenda as necessary as Attachment M.

Coastal/Aquatic Resources	On-site	Adjacent	Describe Expected Impact
Coastal bluffs and escarpments	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Rocky Shorefront	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Beaches and Dunes	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Intertidal Flats	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Not on site; adjacent; no impacts
Tidal Wetlands	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	On-site and adjacent; impacts discussed in attached text
Fresh Water Wetlands and Watercourses	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Estuarine Embayments	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; Housatonic River; therefore no impacts
Coastal Hazard Areas	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Work proposed within coastal hazard area
Developed Shorefront	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Islands	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Near shore Waters	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Marine basin and various tidal channels; see attached text
Offshore Waters	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Shorelands	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Work proposed within Shorelands
Shellfish Concentration Areas	<input type="checkbox"/>	<input type="checkbox"/>	In Housatonic River; no impacts
Wildlife Resources and Habitat	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Potential impacts; mitigation provided. See attached text
Benthic (bottom) Habitat	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts
Indigenous aquatic life, including shellfish and finfish	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Potential impacts; mitigation provided. See attached text
Submerged Aquatic Vegetation	<input type="checkbox"/>	<input type="checkbox"/>	Not on site or adjacent; therefore no impacts

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Part III:

Question 3. Describe the Purpose and Need for the proposed activities.

The purposes of the proposed actions are to allow the Igor. I Sikorsky Memorial Airport to continue to operate in a safe and efficient manner, to meet FAA design criteria, and to achieve its airside goals. The project is needed due to the deficient runway conditions that exist at the airport today. More specifically, the purpose and need of the proposed project is the following:

- To provide, to the extent practical, runway safety areas (RSAs) on Runway 6-24 which meet current FAA minimum safety standards: FAA Order 5200.8 states that the RSAs at Federally obligated airports and all RSAs at airports certificated under 14 CFR Part 139 shall conform to the standards contained in FAA Advisory Circular 150/5300-13 to the maximum extent practicable. These safety improvements allow for the installation of an Engineered Material Arresting System (EMAS) in those situations where available land area is not enough to meet FAA designated RSA dimensions.
- To improve the runway pavement structure on Runway 6-24 in order to restore a 20-year pavement design life to accommodate aircraft types and levels of operations:. The Airport does participate in a regular crack seal maintenance program and in 2007, the runway received a thermoplastic seal coat; however, no reconstruction or rehabilitation of the pavement of Runway 6-24 has taken place since the runway overlay project in 1981. Thus, the pavement is continuing to deteriorate as identified in engineering investigations that were conducted in 1996. This pavement must be rehabilitated to ensure safety and to extend the life of the airport.

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Sound Programs (OLISP)

PART III:

Question 4. Identify all coastal and aquatic resources on the site and describe expected impact on these resources.

1.0 Existing Coastal and Aquatic Resources

1.1 BDR Property

The entire project site falls within the boundaries of Connecticut's established coastal zone. According to recent GIS mapping from the CT DEEP (dated May 2009), the entire BDR property contains multiple coastal resources including the following:

- Rocky shorefront (various human altered rip rap areas on Long Beach)
- Beaches and dunes at Long Island Sound (Long Beach only)
- Intertidal flats: expansive tidal flats are located off Long Beach, and smaller areas exist north of the Marine Basin channel in the Housatonic River; small areas associated with tidal creeks and channels in larger tidal wetlands on BDR
- Tidal wetlands: throughout airport property
- Freshwater wetlands: none delineated in project area or adjacent to project area.
- Estuarine embayment : at the mouth of the Housatonic River
- Coastal hazard areas (100 year floodplains): most of airport property
- Shellfish concentration areas: the Housatonic River is a designated shellfish area; the Housatonic River also contains oyster beds, hard clam beds; smaller areas of soft clam beds in the vicinity of Short Beach. Hard shell clam beds and oyster beds are located in the vicinity of Long Beach.
- Wildlife resources and habitat
- Benthic (bottom) habitat: in Housatonic River
- Indigenous aquatic life including finfish and shellfish

1.2 Proposed Project Area

The proposed project area contains, or is adjacent to, the following resources. The following resources are located either within the project area or immediately adjacent to it. These coastal resources are shown on Figure 1, with the exception of specific listed species resources and habitat which are depicted on figures corresponding to various listed species surveys found in Attachment M3, M4 and M5.

1. Intertidal flats
2. Tidal wetlands
3. Coastal hazard areas
4. Near shore waters
5. Shorelands
6. Wildlife resources and habitat
7. Indigenous aquatic life including finfish and shellfish

1.2.1 Intertidal Flats

There are small areas of intertidal flats associated with the northern end of the Marine Basin. Large areas of intertidal flats are located within the Housatonic River. The intertidal flats within the Marine basin are primarily confined to the northern end of the basin where sediments have built up over time since the Marine Basin was created.

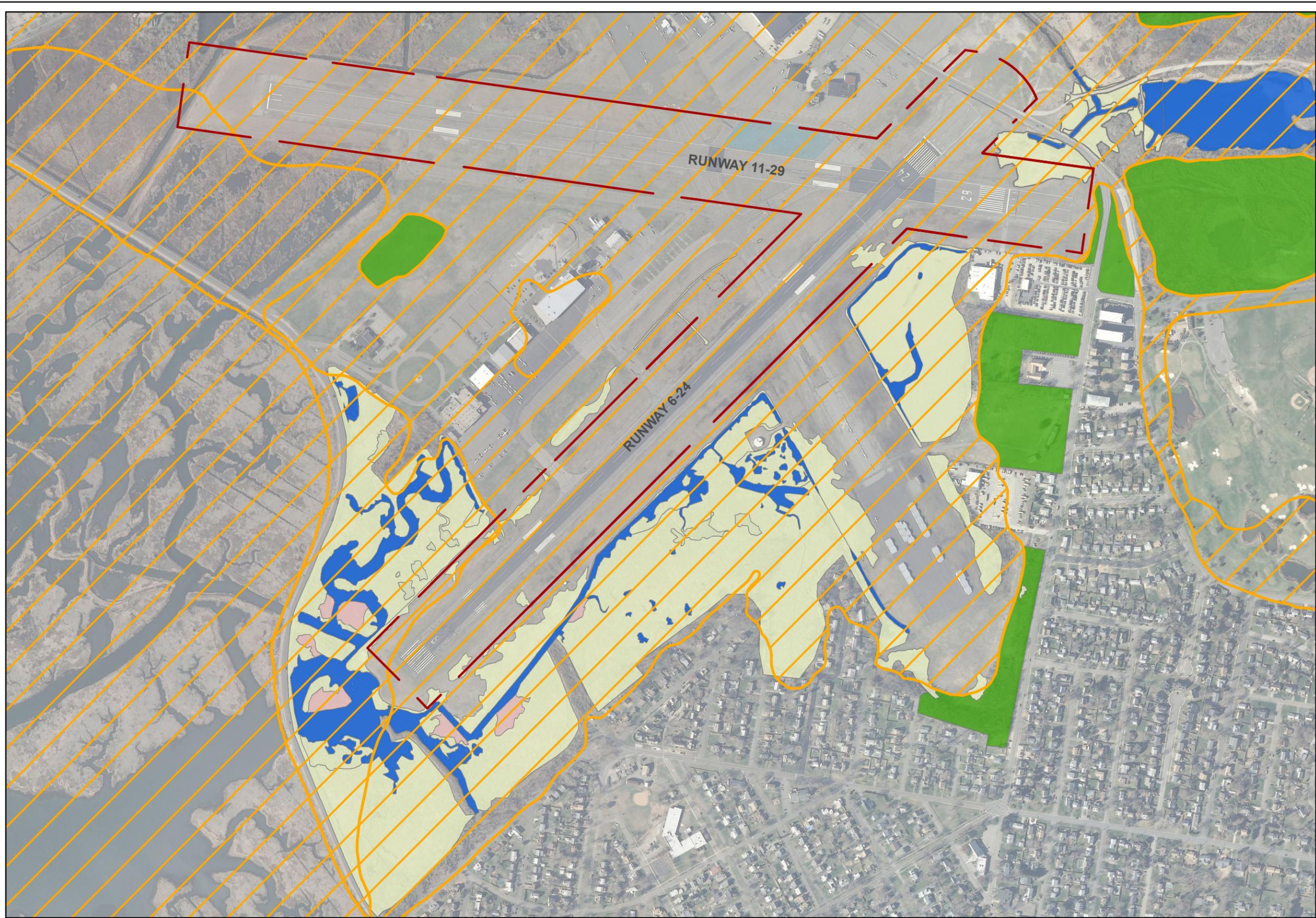
Impacts:

The project will not impact intertidal flats. Intertidal flats are not located within the project area, and indirect impacts will be avoided through implementation of best management practices and erosion and sedimentation controls. Specifically, the minor work within the Marine Basin to connect the new tidal channel will be conducted behind a turbidity curtain.

1.2.2 Tidal Wetlands

Wetland delineation efforts occurred from the fall of 2009 to the fall of 2012. FHI soil scientists field-delineated the boundaries of the wetlands proximate to the proposed areas of construction/earthwork within the project limits. The wetland delineations were conducted according to both the federal and State of Connecticut definitions.

Other jurisdictional wetland resources include those areas below the Coastal Jurisdiction Line (CJL) for the Town of Stratford, as well as "Land Capable of Supporting tidal vegetation", which is 1 foot above the CJL. The CJL is the former high tide line. The

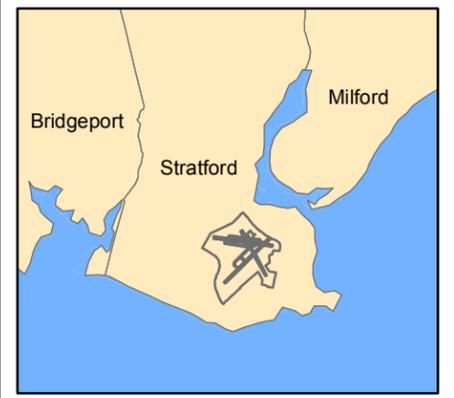


Legend

- Runway Safety Area
- Tidal Wetlands
- Intertidal Flats
- Nearshore Water
- Shoreland Area
- 100 Year Coastal Flood Hazard Area

General Notes:

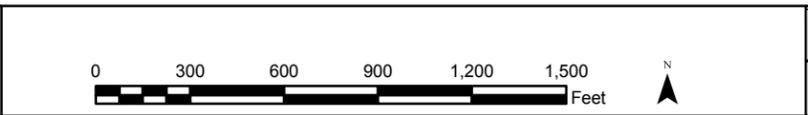
- Wildlife habitat resources are found through out but are not depicted.
- Aquatic wildlife are present in all nearshore waters and potentially in total wetlands.



Map Title:
Coastal Resources

Project No.
15-336
Date:
May 2013

Project Title:
Runway Safety Area Project
Igor I. Sikorsky Memorial Airport
Stratford, Connecticut



Town:
Stratford, CT
Figure 1



following jurisdictional and tidal elevations apply to the project (all elevations in NGVD29 datum):

- Mean Low Water (MLW): -2.5 ft (-3.6 NAVD88)
- Mean High Water (MHW): 4.24 ft (3.14 NAVD88)
- Coastal Jurisdiction Line (CJL): 5.9 ft (4.8 NAVD88)
- Land capable of supporting vegetation: 6.9 ft (5.8 NAVD88)

Large areas of high and low marsh tidal wetlands occur within and adjacent to the proposed activities. Tidal wetlands were delineated within and adjacent to the areas of proposed activity on BDR. Detailed information and documentation of tidal wetlands is contained in the Wetland Delineation Report, in Attachment M-2.

The following text describes in detail the existing conditions of each wetland impact area associated with the proposed BDR runway safety area project. Wetlands are numbered beginning north of Route 113 and regulated activities are presented generally from north (north of Route 113) to south (on the airport proper). The type and purpose of work for each wetland impact area is also included in this section.

There are six wetland areas that will be disturbed by the runway safety improvement activities as described below. Permanent and temporary impacts to wetland resources are anticipated at Wetlands A and D; permanent impacts only are anticipated at Wetlands B and C; and temporary impacts only are anticipated at Wetland S. See Figure 3 in Attachment M2 for a map of all delineated wetlands at the site.

Impacts:

All project activities will be conducted on airport and CTDOT properties. Total temporary and permanent impacts to water resources are estimated to be approximately 1.72 acres of tidal wetlands, 1.15 acres of land capable of supporting tidal vegetation, and approximately 17.4 acres of disturbance below the Coastal Jurisdiction Line (CJL) or High Tide Line (HTL), (which is 5.9 feet NGVD29 & 4.8 NAVD 88 for the site). The majority of these tidal wetland areas are of low quality and are currently maintained as mowed lawn areas, or are dominated by invasive common reed (*Phragmites australis*). However, some higher value tidal wetlands will also be impacted.

1.2.3 Coastal Hazard Areas

Route 113 within the project area occurs in an upland area and within the Coastal Management Flood Hazard (CMFH) zone as determined by FEMA. The majority of the airport also occurs in the CMFH, as depicted on Figure 1.

Impacts:

The proposed project will not have a negative impact on the CMFH zone. The proposed work will not cause additional flooding, will not cause any additional erosion or sedimentation, nor will it cause a threat to public safety resulting from flooding. The project will have a positive effect on flooding in the vicinity of the Route 113 realignment. The proposed condition will result in a net loss of fill in the CMFH.

1.2.4 Nearshore Waters

Nearshore waters are those waters and their substrates lying between mean high water and a depth approximated by the ten meter contour. Nearshore waters are located throughout BDR and the project area. The existing tidal channels in the vicinity of the Roadway realignment classify as nearshore water, as do the tidal channels associated with the larger wetland systems at Mitigation Sites 1 and 2. Nearshore waters include small, narrow areas of sediment exposed along channel edges during periods of low tide that do not otherwise qualify as intertidal flats due to their steeper slopes. Figure 1 – Coastal Resources depicts the nearshore waters within and adjacent to the project area.

Impacts:

The project will permanently impact nearshore waters in the vicinity of the Route 113 roadway realignment and in small areas associated with the mitigation sites. The roadway will be constructed over the existing tidal channel which connects the marine basin to the airport property, since this channel will not be utilized to convey stormwater flows from the airport (a new channel will be constructed for this purpose as shown on Plates PRO-45 and PRO-46 in Attachment I). A small area of nearshore water will be temporarily impacted in Mitigation Site 1, where the proposed new tidal channel connects to the existing tidal channel (see MIT Plates in Attachment M9 – Mitigation Checklist). Nearshore waters will be impacted in Mitigation Site 2, where the proposed new tidal channel connects to the existing tidal channels on either side of Taxiway H, and where the existing tidal channel is excavated to restore normal tidal flushing (see MIT Plates in Attachment M9 – Mitigation Checklist).

1.2.5 Shorelands

Shorelands, those lands adjacent to the shore upland of tidal wetlands and coastal flood hazard areas, are located within and adjacent to the project area. These vacant spaces are dominated by opportunistic vegetation, many of which are considered invasive

species. Due to historic land uses and development, many of the shoreland areas within the project area are composed of fill materials and Udorthent soils.

Impacts:

The project will conduct minor work within shorelands along the southern end of the roadway realignment project. Since the majority of the project is located within a coastal hazard area, shoreline resources are very limited within and adjacent to the project area.

1.2.6 Wildlife Resources and Habitat

Wildlife and Habitat for Non-listed Species

BDR lies within the Western Coastal Ecoregion of the Coastal Hardwoods Zone (Dowhan and Craig, 1976). Much of the native vegetation composition has been disturbed on BDR and a number of invasive herbs, shrubs, and trees have significant coverage on the property including common reed (*Phragmites australis*), and common mugwort (*Artemisia vulgaris*) in the herbaceous layer; autumn olive (*Elaeagnus umbellata*) and multiflora rose (*Rosa multiflora*) in the shrub layer; tree of heaven (*Ailanthus altissima*) and princess tree (*Pawlonia tomentosa*) in the tree layer; and oriental bittersweet (*Celastrus orbiculatus*) in the liana layer. Native species include ash (*Fraxinus* sp.), gray birch (*Betula populifolia*), black cherry (*Prunus serotina*), poison ivy (*Toxicodendron radicans*), and grape (*Vitis* sp).

Based upon the most current ecoregion classification system for Connecticut, developed by Metzler and Barret (2006), BDR lies within the Southern New England Coastal Lowland Subsection of the larger Eastern Broadleaf Forest Province. BDR consists of the following major vegetative communities using the Metzler and Barrett (2006) classification:

- Tidally flooded tall temperate grasslands (e.g., Smooth Cordgrass [*Spartina alterniflora*] tidally flooded grasslands)
- Tidally flooded short temperate grasslands (e.g., Saltmeadow cordgrass [*Spartina patens*] tidally flooded grasslands)
- Medium-tall temperate grasslands (e.g., American Beachgrass [*Ammophila breviligulata*] medium-tall grasslands, as well as managed lawns)
- Tidally flooded cold-deciduous shrublands (e.g., Northern Marshelder [*Iva frutescens*] tidally flooded shrublands)

Other smaller associations or communities occur on BDR as well, notably

- Cattail stands along landward borders of the tidal marshes (especially at upstream reaches where salinity decreases),
- Common reed (*Phragmites australis*) temporarily flooded grasslands which also occur along the landward edge of the salt marsh in areas where nutrient rich stormwater or groundwater discharges
- Remnant Northern Bayberry (*Morella pensylvanica*) – Beach Plum (*Prunus maritima*) shrublands

The habitats and sub-habitats/vegetative communities of conservation priority identified in Connecticut’s Comprehensive Wildlife Conservation Strategy (CCWCS) Plan (CTDEP 2005) that can be found at BDR are provided in Table 1.

Table 1. The Habitats and Subhabitats/vegetative communities of Conservation priority* that can be found on the Site	
Habitat	Subhabitat
Upland Herbaceous	Coastal Dunes
	Sandplain and other Warm Season Grasslands
Tidal Wetland	Tidal Wetland
Freshwater Aquatic	Coastal Plain Ponds
Estuarine Aquatic	Coastal Embayment
	Sedimentary Bottoms
	Shellfish Reefs/Beds
	Open Water
Intensively Managed Habitats	Early Successional Shrublands and Forests

* Identified in Connecticut’s Comprehensive Wildlife Conservation Strategy (CCWCS) Plan (CTDEP 2005)

Portions of the salt marsh wetland system have to some extent, been impaired by past filling and development within the system. Invasive vegetation such as common reed has colonized and proliferated around these fill areas, likely reducing the species diversity and structural diversity of the emergent community. Common reed (and other invasive species) removal/control offers opportunity for habitat restoration.

Wildlife observed on the site included a large number of avian species, and several mammals. During avian surveys in 2012 a total of 147 species were observed on BDR property, 20 of which are state-listed including one federal/state listed species (see following section). Mammal species observed on BDR include red fox, woodchuck, raccoon, and cottontail.

Impacts to non-listed species of wildlife:

The proposed project will have an overall positive effect on wildlife and habitat for non-listed species. The majority of the project will impact upland and wetland habitats which have developed in historic fill and grading areas. Many of these areas are currently maintained to facilitate RSA vegetation management requirements, and are of relatively low value to most wildlife species. Vegetation diversity is relatively low in these areas. The higher value wetland areas impacted by the project are found in portions of Wetlands A, B and D. Most upland areas impacted by the project are mowed lawns, with the exception of the upland area in the footprint of the proposed new tidal channel. The upland area, like most uplands on BDR, is composed of historic fill materials and dominated by invasive vegetation.

The project includes several components which will enhance wildlife habitat on BDR, as summarized below:

1. Removal of approximately 16.7 acres of existing runway and taxiway pavement and replacement with grass lawn. This will promote stormwater infiltration and provide feeding habitat for some wildlife species.
2. Mitigation Site 1 – consists of enhancement of 2.4 acres of tidal marsh from low-value common reed-dominated marsh to high value spartina-dominated marsh and restoration of 0.3 acres of historic fill material to high-value tidal marsh. This will benefit many avian species, many of which are listed species (e.g., Seaside Sparrow and Saltmarsh Sparrow). An existing upland area at this site will also be revegetated with native tree and shrub species after invasive species are removed. An abandoned foundation in this upland area will be filled with gravel and planted with native species to create a sand barren community. Finally, a Barn Owl box will be installed at this site.
3. Mitigation Site 2 – consists of a total of 13.5 acres of enhancement of tidal marsh from low-value common reed-dominated marsh to high value spartina-dominated marsh. This will greatly enhance wildlife habitat for many bird species and promote higher ecological diversity. Another benefit will be a shift from flocking bird species, to non-flocking bird species, which will reduce BASH issues adjacent to the RSA.
4. Mitigation Site 3 – consists of preparation of a seed bed for the state-endangered coast violet. This seed bed will be located within the existing maintained lawn area, and will have limited

value to wildlife, other than increasing the population of this listed plant species and providing additional scientific knowledge for its future management.

5. Mitigation Site 4 – consists of the construction of a new tidal channel and associated wetland “shelf” area for a transplant bed of salt pond grass (see discussion below). Although no mitigation credit is sought, there will be additional benefits associated with this new channel, including: increased open water and intertidal vegetation zones, a tidal vegetation shelf, removal of common reed, improvement of wildlife habitat, and re-establishment of tidal flushing to Wetland B which will promote die-back of common reed and re-establishment of native tidal marsh.
6. Raymark Waste removal – the project will remove Raymark Waste within the project area, providing a cleaner environment for wildlife and vegetation species.

Listed Species Resources

In a letter dated February 19, 2010, the CTDEEP identified potential listed species which were known to occur on or in the vicinity of BDR property (see Attachment C). In a letter dated February 16, 2010, the USFWS identified potential federal listed species known to occur on BDR or in the vicinity of the property (see Attachment M10). The information in these letters, in addition to coordination with CTDEEP staff, was used to create target lists of species for field surveys conducted during the 2012 season on BDR. Additional letters have been sent to both agencies to obtain updated information.

In 2012, CTDEEP-approved ornithologists, entomologists, and botanists conducted detailed surveys of the project area to determine the presence of known historic and existing endangered species and habitats, or those of high conservation concern. These reports are provided in Attachment M3, M4, and M5, and include:

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)

The following provides a summary of the findings of these reports relative to existing conditions on BDR property:

Vegetation: In coordination with CTDEEP, an approved, qualified biologist investigated the project area in 2012 and found present populations of two

state-listed endangered species: Coast Violet (*Viola brittoniana*) and Saltpond Grass (*Leptochloa fusca* ssp. *fascicularis*). The biologist also found present populations of two state-listed species of special concern: Needlegrass (*Aristida longespica*) and Orache (*Atriplex glabriuscula*).

Avian: During the survey period, CTDEEP approved biologists observed 147 avian species. Of the total 147 species observed, 20 are included on the Connecticut list of endangered, threatened or special concern species (CTDEEP, 2010). Although many species utilize BDR property for feeding, only a handful are nesters on the property, including: Saltmarsh Sharp-tail Sparrow (*Ammodramus caudacutus*), Savannah Sparrow (*Passerculus sandwichensis*), and Seaside Sparrow (*Ammodramus maritimus*).

Invertebrates: During the survey period, CTDEEP approved biologists conclusively identified a total of 103 invertebrate species over the six two-night samples of blacklight trapping surveys in 2012. Of these only 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 from the traps. The Dune Sympistis was only observed on sand dunes in the vicinity of Short Beach, far from any proposed project activities. The mudflat tiger beetle was observed in the southern vicinity of Runway 6-24.

On May 17, 2013, a letter NDDDB Request Form was sent to the CTDEEP Wildlife Division to ensure that recent coordination is conducted as part of this application review process. In addition, on May 16, 2013, a letter was sent to the U.S. Fish and Wildlife Service to ensure that recent coordination is included with this application. Responses have not yet been received for either of these letters.

Impacts to Listed Species:

The following provides a summary of potential impacts to listed species resulting from the project. Detailed impact assessments can be found in the survey reports and Incidental Take Report, in Attachments M3, M4, M5 and M6.

Vegetation

Saltpond Grass (State Endangered)

The re-alignment of Route 113 will result in direct impacts to two of the five subpopulations of State listed Endangered Saltpond Grass (*Leptochloa fusca* ssp. *fascicularis*) found on the airport. Impacts total approximately 46% (888 plants)

of all the *L. fusca* ssp. *fascicularis* found in the project area, approximately 0.06 acres. Indirect impacts are also anticipated to plants found in the wetland south of Route 113 which are not directly impacted by the project. *Leptochloa fusca* ssp. *fascicularis* prefers brackish waters; therefore, indirect impacts may occur when regular tidal flushing is introduced by the installation of a new culvert with a connection to Marine Basin. However, it is anticipated that this species, being an annual, will migrate to the upper limits of the wetland where salinity is less and fresh water influence is greater. Proposed mitigation for this species includes a 0.26 acres transplant bed and 0.19 acre seeding bed. Both mitigation sites will be subject to monitoring after construction to ensure success.

Needlegrass (State Species of Special Concern)

It is estimated 12,987 of the 156,585 Needlegrass (*Aristida longespica*) plants on BDR property will be impacted by the project. This is equivalent to approximately eight (8) percent of the total population of *Aristida longespica* on BDR property. However, most of the impacts to the *Aristida longespica* subpopulations are expected to be temporary, as once construction has been completed, the stockpiled soil will be replaced, stabilized, and protected by temporary fencing until it becomes re-established. Permanent impacts to approximately 3,288 plants are anticipated, approximately 2% of the *Aristida longespica* population on airport property.

Coast Violet (State Endangered)

There will be no direct impacts to subpopulations of the Coast Violet (*Viola brittoniana*). Indirect impacts to *Viola brittoniana* (subpopulations #4 and #10) are possible due to the removal of existing pavement by machinery along Runway 6-24 to narrow the runway. Pavement removal activities will take place in close proximity to existing plants. Indirect impacts could occur to these plants due to alterations in adjacent soil conditions and replanting of a ground cover. Also, slight alterations in hydrology could occur, such once pavement is removed and replaced with natural soil materials and vegetation, less water could potential reach the plants from runway runoff. Mitigation will be provided consisting of a 0.7 acre seeding bed for this species. The mitigation site will be subject to monitoring after construction to ensure success and provide scientific data on the species.

Orache (State Species of Special Concern)

No direct impacts are anticipated to Orache (*Atriplex glabriuscula*), located in the existing wetland area south of Route 113. Indirect impacts are possible, as post

construction the *Atriplex glabriuscula* plants may migrate to higher elevations along the periphery of the wetland area where salinities will be lower and fresh water influence greater. Greater tidal flushing, which could indirectly impact *Atriplex glabriuscula* plants, is anticipated after the installation of a new culvert reconnecting the wetland area to Marine Basin.

Avian Species

There will be no direct permanent adverse impacts to any listed avian species as a result of the proposed project activities. Since the majority of listed avian species are wetland-dependent, and were documented nesting and feeding where no activity is proposed, no impacts to these species are anticipated. Potential indirect impacts, although temporary, could occur to grassland avian species as a result of construction activities. These impacts are considered minimal for the following reasons:

- The proposed construction activity is planned for existing developed portions of the airport (e.g., existing runway footprints) or intensely managed or ruderal habitats (e.g., lawns and artificial fill areas) in both upland and wetland settings that are sparsely vegetated or vegetated with non-native and invasive plant species. These areas of the site were found to have little habitat value to avian species of conservation concern, compared to other areas of the airport property.
- The rehabilitation of Runway 6-24 would result in a net reduction of approximately 16.7 acres of paved surface area on the airport, thereby creating a net increase of open, vegetated land cover and reduce impervious surface and improve the overall quality of stormwater runoff.
- The proposed project would include 16.2 acres of wetland mitigation to compensate for approximately 1.72 acres of tidal wetland impact, a ratio of approximately **9.4:1**. The anticipated impacts to wetlands, however, will be addressed via on-site mitigation/ enhancement efforts which will serve to generate substantially higher habitat value wetlands than those impacted by project activities.
- The majority of breeding avifaunal species of conservation concern were found to occur inside existing, high-value tidally influenced salt marsh habitats dominated by native flora. These areas lie outside of proposed impact zones.

- Potential temporary impacts to avian species of conservation concern found nesting near work areas (e.g., Savanna Sparrow) can and will be avoided by construction sequencing / phasing. Construction along the runway will end by April 15th or wait to begin until after August 15th. Savannah Sparrows establish territories and begin nesting in mid-April and fledge by mid-August. In this way, the sparrows will avoid setting territories and nesting in active work areas, and utilize another portion of the airport, or an off-site location.

As outlined in the previous sections, various mitigation elements, both during and post-construction, will compensate for any temporary impacts to avian species. In fact, the project will have a positive impact to both grassland and wetland-dependent listed and non-listed avian species.

Through construction sequencing and scheduling, construction related temporary impacts will be avoided and/or minimized. Long-term mitigation will provide 16.2 acres of additional high-value wetland habitat for wetland-dependent species and an increase of approximately 16.7 acres of grassland habitat for grassland species. Improved maintenance procedures, through a modified mowing regime, will provide for potential increased success rate for nesting grassland species outside the RSA on the property.

Invertebrates

Dune Sympistis

There will be no impact to this species, either direct or indirect, as a result of project activities. This species and its habitat were documented on the dunes of Long Beach, which is not near the project activities.

Mudflat Tiger Beetle

To avoid impacts to the Mudflat Tiger Beetle, wetland mitigation work affecting tidal marsh or channels should be conducted during the flight time of the beetle (June-August), when larval burrows do not exist (see Figure 2 in Attachment M4 – Invertebrate Report). This timing restriction would allow the adult beetles to move to other unaffected habitat and would avoid impacts to the larval stage, which rarely leave their burrows and therefore could not avoid impacts if the sediments are affected. Ultimately, the wetland mitigation will greatly increase the potential habitat for this species on the airport.

1.2.7 Indigenous Aquatic Life Including Finfish and Shellfish

In February 2010, NMFS provided the City of Bridgeport with information regarding fisheries resources for the Reevaluation of the Environmental Impact Statement for BDR. That letter identified and addressed potential adverse impacts to essential fish habitat (EFH) for public trust resources (see Attachment M1). According to the letter, EFH has been designated for 17 federally managed species within and adjacent to the project area. The winter flounder (*Pseudopleuronectes americanus*) was identified as a species to focus on because they utilize shallow areas near the shore (such as in the marine basin – See Figure 4 and Photographs in Attachment M1) for spawning and feeding as adults. Larvae, eggs and juveniles also use such areas for development in their early stages of life. Tidal wetlands were also identified as an important habitat for foraging species, such as the winter flounder. NMFS Protected Resources Division also reviewed the project and determined that no listed species were likely to be present.

The marine basin may also be utilized by the catadromous American eel (*Anguilla rostrata*) and anadromous species such as shad (*Alosa*) and herring (*Celhua*). Juveniles of several non-EFH species could likely use the marine basin as a refuge.

Impacts:

The project will involve minor activity along the edge of the Marine Basin, where finfish and shellfish are known to exist. Through the use of best management practices, the aquatic resources within the Marine Basin will not be adversely impacted by the project. Turbidity and erosion controls will be installed before the start of construction, and before the new tidal channel is connected to the Marine Basin. Turbidity and erosion controls will be installed and/or removed outside of the time of year restriction for winter flounder, February 1st to May 31st, according to coordination with the National Marine Fisheries Service. However, once the erosion and sedimentation controls are in place, work can be conducted behind them at any time.

Part III: Project Information (continued)

5. Identify whether the proposed activities will impact the following categories. If so, describe the expected impact, adding addenda as necessary as Attachment M.

Categories	Yes	No	Describe Expected Impact
Prevention or alleviation of shoreline erosion and coastal flooding	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The project will improve localized flooding problems experienced along Route 113 by improving drainage and tidal flows through the replacement of non-functioning culverts.
Use and development of adjoining uplands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Use and development of adjacent lands and properties	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Improvement of coastal and inland navigation for all vessels, including small craft for recreational purposes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Pollution control	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The project will include the removal of existing Raymark Waste OPERABLE UNIT 6 Superfund Site materials. The project will also include removal of approximately 16.7 acres of existing runway pavement, promoting infiltration and natural treatment of runoff.
Water quality	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The project will improve tidal flows, drainage on runway and Route 113 and will involve the removal of buried Raymark waste within the path of the Route 113 relocation which will thereby eliminate the potential for this waste to leach into groundwater or migrate towards LIS or the Housatonic River. In addition, two stormwater basins are proposed adjacent to the realigned Route 113, which will provide additional treatment of stormwater.
Water circulation and drainage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Improve existing condition via restoration of tidal flows at/under Route 113 and in Mitigation Areas 1, 2 and 4
Recreational use of public water	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Management of coastal resources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Public health and welfare	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The project will include the removal of existing Raymark Waste OPERABLE UNIT 6 Superfund Site materials. In addition, the project will also provide elements to improve long-term water quality through stormwater treatment and reduced impervious surface. The project also includes the construction of safety improvements to the RSA at Runway 6-24 including new runway lighting, runway markings, security fencing, and an engineered material arresting system (EMAS).
The protection of life and property from flood, hurricane and other natural disasters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	The project will include flooding improvements as a result of the Route 113 roadway realignment. The elevation of the roadway will be increased, which will reduce the frequency of flooding at the crossing. Existing non-functional culverts will be replaced to allow free flow of tidal cycles as well as drainage of stormwater flows.

6. Identify and evaluate any potential beneficial and adverse impacts to:

a. navigation: (include federal and local navigation channels and distance to nearby docks)

The project involves improvements to airport safety which will involve the relocation of a section of Route 113 away from the end of Runway 24 in order to accommodate a federally mandated runway safety area which will include an Engineered Materials Arresting System (EMAS). The project will not have any adverse and/or beneficial impacts to navigation as there are no federal or local navigation channels or boat docks within the project study area.

b. public access to, and public use of, public trust lands and waters waterward of mean high water:

Public access to most of these coastal resources is restricted due to their location on airport property and associated security concerns. However, public access to and use of coastal resources not located on airport property will continue to be maintained during the course of the project, with the exception of during the Raymark Waste removal operations. During the Raymark Waste removal operations, an exclusion zone will be set up around the removal activities to limit exposure; requiring the closure of Route 113 and the sidewalk/bike path. This exclusion zone will be established at the start of Raymark waste removal, and will be continuously evaluated during removal operations through air quality monitoring. Depending on the results of the air quality monitoring, the exclusion zone may be moved or reduced, allowing public access along Route 113. Road closures are anticipated to last for 6-8 weeks during Raymark waste removal.

The project will incorporate reconstruction of the existing sidewalk/bikeway to modern standards. This bikeway will be located landward of the MHW line, on the northern side of Route 113 and will be accessible by the public.

Part III: Project Information (continued)

7. Describe how the proposed work will be a water-dependent use(s) of the property or will physically support water-dependent use(s) of the property, such as marinas, recreational and commercial fishing, boating facilities, shipyards and boat building facilities. Please do not include private recreation docks in this category. Include how upland facilities, such as sanitary facilities, designated parking, boat repair and sales, winter storage, etc., will support water-dependent uses on-site.

Not applicable. The project is not a water dependent use. The project involves FAA mandated safety improvements to an existing airport facility that is located within the coastal zone. The safety improvements require the relocation of a segment of existing Route 113 - which provides access to the residents of Lordship and which is also not a water dependent use.

8. Identify and evaluate the potential adverse impacts of the proposed work upon future water-dependent development opportunities and activities.

The project will not have an adverse impact on future water dependent development opportunities or activities. The project will improve the safety of users of the airport and as an offshoot will also improve and existing coastal flooding problem along Route 113 that occurs due to blocked non-functional culverts. The project will also eliminate a known area of Raymark contamination located within the alignment of relocated Route 113.

9. Discuss the alternatives to the proposed project which were considered and indicate why they were rejected.

See attached text

**State Project #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)**

Part III:

9. Discuss the alternatives to the proposed project which were considered and indicate why they were rejected.

Background

On April 27, 1994, a twin-engine charter aircraft overshot Runway 6-24 and struck the blast fence at the northeast end. Eight passengers were killed. The National Transportation Safety Board (NTSB) investigated and issued NTSB Report AAR-94/08 in 1995. The agency recommended to the Federal Aviation Administration (FAA), CTDOT, the City of Bridgeport, and the Town of Stratford that the non-frangible blast fence be removed and safety improvements be constructed assuring an adequate runway safety area at the end of Runway 6-24. Relevant excerpts (paraphrased) of these recommendations are as follows:

The FAA should require that substandard runway safety areas be upgraded to Advisory Circular 150/5300-13 minimum standards wherever it is feasible.

Implement a plan to resolve environmental considerations, and proceed with the installation of an approach light system on Runway 6 as soon as possible.

The CTDOT should relocate Route 113 away from the Runway 24 threshold to provide adequate distance between airplanes and Route 113 to protect vehicles and persons from jet blast.

Following the relocation of Route 113, Sikorsky Memorial Airport should immediately establish an RSA at the approach end of Runway 24 in accordance with FAA Advisory Circular 150/5300-13 and remove the non-frangible blast fence.

Alternatives Considered

During the environmental impact statement (EIS) process, 21 preliminary alternatives were considered, and were screened according to two primary assessment criteria: aviation operations and wetland impact. As a result of the initial screening, the following

alternatives were retained for further study in the EIS: Alternatives 1, 1G, 2B, 2D, 3E, 3G, as well as the No Action Alternative. Following further analysis, it was determined that alternatives with additional runway length (3E and 3G) were inconsistent with the Connecticut Coastal Management Act, and were dropped from further study. Alternatives 1, 1G, 2B, 2D and No Action were retained for further study. Alternative 2D was selected as the FAA's Preferred Alternative in the Draft EIS; however, due to comments received during the Draft EIS Public Review Process, this alternative was modified to combine various elements of Alternative 2B [Medium Intensity Approach Light System with Sequenced Flashing Lights (MALSF) and 600-foot RSA at the Runway 6 end] and Alternative 2D (MALSF, 1,000-foot RSA at the Runway 24 end, and the relocation of Main Street onto Sniffens Lane). This combination was referred to as Alternative 2D-Modified and then became the FAA's Preferred Alternative. Alternative 2D would have significant impacts to tidal wetlands on wetlands at each approach. The wetlands in the vicinity of the Runway 6 approach are of particularly high value.

A revised RSA Determination was then issued on February 5, 2009 by the FAA in accordance with FAA Order 5200.8. The FAA recognized that given the advancement in Engineered Materials Arresting Systems (EMAS) technology, such a system would now be warranted for study at BDR as it would enhance the safety for aircraft on approach to the runways. The revised RSA Determination recommended the construction of a 300-foot safety area with EMAS on the end of Runway 24 and the removal of the blast fence. The airport layout plan (ALP) was updated to reflect these changes; the ALP was conditionally approved on March 20, 2009.

On September 28, 2011, the FAA issued the *Record of Decision for the Written Re-evaluation Environmental Impact Statement for the Runway Safety Area Project at Igor I. Sikorsky Memorial Airport, Stratford, Connecticut*. The ROD approved the following actions:

- Implementation of the revised ALP under 49 USC Section 47107(a) (16) and determinations under 49 USC Section 47106 and 47107 pertaining to FAA funding of airport development;
- Approval for relocation, installation, and/or upgrade of various navigational aids.

The current proposed action, installation of EMAS at the approach of Runway 24, meets the purpose and need of the project, while avoiding and minimizing potential impacts to wetlands and other coastal resources on and adjacent to BDR. Specifically, the proposed project avoids the high value wetlands at the approach of Runway 6 and proposes RSA safety improvements at the approach of Runway 24, where wetlands are of lower quality. Unavoidable tidal wetland impacts associated with the proposed project are fully compensated for through the proposed mitigation plan.

Part III: Project Information (continued)

10. After all measures to eliminate or minimize adverse impacts have been incorporated in the proposed project, describe why any adverse impacts that remain should be deemed acceptable by OLISP.

Impacts to environmental resources will occur with this project, however a comprehensive compensatory mitigation program has been developed. The planned mitigation will include creation of more listed species habitat and wetlands than what will be impacted by the project activities; therefore there will be no remaining adverse coastal impacts once the project is complete. Additionally, there will be an overall improvement of tidal flushing/circulation in the project area, improvements to existing vegetative communities, and an overall enhancement of plant and wildlife habitat as part of this project. The proposed mitigation plans include the following activities and are described in more detail elsewhere in this application:

Enhancement of existing wetlands near the airport driveway/entrance to restore daily tidal flushing and passively remove invasive Phragmites vegetation; also restoration of former tidal wetlands in this area.

Rehabilitation of the tidal channel along the west side of Taxiway H

Relocation and expansion of habitat for the state-endangered coast violet along the east side of Taxiway H

Relocation and expansion of habitat for the state-endangered saltpond grass along the proposed drainage ditch and existing road bed

Enhancement of tidal marsh on the east side of Taxiway H

Positive flooding improvements at Main Street, and improved stormwater management and treatment as a result of the project.

The project will also involve the removal of a known area of Raymark waste which will eliminate any future concerns of contaminant spread related to this site.

The project will include removal of approximately 16.7 acres of existing pavement on the airport, which will reduce impervious surface and promote infiltration.

11. a. Is any portion of the work for which authorization is being sought now complete or under construction?
 Yes No *If No, skip to question #12.*

- b. Specify what parts of the proposed work have been completed or are under construction.

No project-related work is currently complete or under construction. However, to ensure a successful mitigation program, invasive species removal work is currently planned to occur during Fall 2013. This work will be conducted by the CTDEEP WHAMM Unit and will consist of mowing and spraying of common reed within Mitigation Sites 1, 2, and 4. This is part of a two year program to eradicate common reed in this locations before tidal flushing is restored and other mitigation work is initiated.

c. Indicate when such work was undertaken or completed. Identify completed portions on the plans submitted.

d. When did you acquire interest in this property?

e. Were you responsible for the unauthorized activity as a result of actions taken before the acquisition of the property? Yes No If Yes, explain.

Part III: Project Information (continued)

f. Did you know or have reason to know of the unauthorized activity? Yes No If Yes, explain.

g. Is this application associated with an enforcement action pending with DEEP? Yes No
If Yes, explain: **The proposed activity is not a result of an enforcement action with the CTDEEP. However, prior to submittal of this application, two Notice of Violations (NOVs) were issued by the CTDEEP to the City of Bridgeport relating to a failed culvert and tidal gate in the vicinity of the project. Since NOV#LIS-2009-041-V involves work to the existing driveway culvert north of Route 113, which will be disturbed as part of the Raymark removal work for this project, the requirements of this NOV have been integrated into this project. Since NOV-LIS-2008-159-V deals with the existing tide gate within the Marine Basin berm, the requirements of this NOV have not been integrated into this project. All requirements of NOV-LIS-2008-159-V will be part of a future project, dependent on remediation of the existing contaminated tidal channels by others.**

12. Is there or will there be any federal and/or state funding of this project? Yes No If Yes, explain.
The project will be funded primarily through an FAA Grant. The distributions are: FAA 90%; City of Bridgeport 5%; CTDOT 5%.

Check here if additional Project Information sheets are necessary, and label and attach them to this sheet.

Part IV: Site and Resource Information

1. SITE NAME AND LOCATION

Name of Site : **Igor I. Sikorsky Memorial Airport**

Street Address or Location Description: **1000 Great Meadow Drive**

City/Town: **Stratford** State: **CT** Zip Code: **06615**

Tax Assessor's Reference: Map **50.04** Block **3** Lot **1**

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds or in decimal degrees: Latitude: **41 degrees, 9 minutes, 48 seconds north** Longitude: **73 degrees, 7 minutes, 34 seconds west**

Method of determination (check one):

GPS USGS Map Other (please specify):

If a USGS Map was used, provide the quadrangle name: **Milford, Bridgeport**

2. INDIAN LANDS: Is or will the facility be located on federally recognized Indian lands? Yes No

3. COASTAL AREA: Is the project site located in a municipality within the coastal area? (check town list in

the instructions) Yes No

4. **ENDANGERED OR THREATENED SPECIES:** According to the most current "State and Federal Listed Species and Natural Communities Map", is the project site located within an area identified as a habitat for endangered, threatened or special concern species? Yes No Date of Map: **2012**

Part IV: Site Information (continued)

If yes, complete and submit a *Request for NDDDB State Listed Species Review Form* (DEP-APP-007) to the address specified on the form. **Please note NDDDB review generally takes 4 to 6 weeks and may require additional documentation from the applicant.**

A **copy** of the completed *Request for NDDDB State Listed Species Review Form* and the CT NDDDB response **must** be submitted with this completed application as Attachment C.

For more information visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDDB at 860-424-3011.

- 5. AQUIFER PROTECTION AREAS:** Is the site located within a town required to establish Aquifer Protection Areas, as defined in section 22a-354a through 354bb of the General Statutes (CGS)?

Yes No To view the applicable list of towns and maps visit the DEEP website at www.ct.gov/deep/aquiferprotection

If yes, is the site within an area identified on a Level A map? Yes No

If yes, is the site within an area identified on a Level B map? Yes No

If your site is on a Level A map, check the DEEP website, [Business and Industry Information \(www.ct.gov/deep/aquiferprotection\)](http://www.ct.gov/deep/aquiferprotection) to determine if your activity is required to be registered under the Aquifer Protection Area Program.

If your site is on a Level B map, no action is required at this time, however you may be required to register under the Aquifer Protection Area Program in the future when the area is delineated as Level A.

- 6. SHELLFISH COMMISSION:** Does your town have a shellfish commission? Yes No

If yes, you must submit a completed *Shellfish Commission Consultation Form* (DEP-OLISP-APP-101D) with this application as Attachment D.

- 7. HARBOR MANAGEMENT COMMISSION:** Does your town have a Harbor Management Commission?

Yes No

If yes, you must submit a completed *Harbor Management Commission Consultation Form* (DEP-OLISP-APP-101E) with this application as Attachment E.

- 8. DEPARTMENT OF AGRICULTURE/BUREAU OF AQUACULTURE:** If the subject site is located in a specific area as explained in Part IV, item 8 of the application instructions (DEP-OLISP-INST-100), you must submit a completed *Department of Agriculture/Bureau of Aquaculture Consultation Form* (DEP-OLISP-APP-101F) as Attachment F.

- 9. CONSERVATION OR PRESERVATION RESTRICTION:** Is the property subject to a conservation or preservation restriction? Yes No

If yes, proof of written notice of this application to the holder of such restriction or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction, must be submitted as Attachment G.

- 10.** Indicate the number and date of issuance of any previous state coastal permits or certificates issued by DEEP authorizing work at the site and the names to whom they were issued.

<i>Permit/COP Number</i>	<i>Date Issued</i>	<i>Name of Permittee/Certificate Holder</i>
COP# 201201271-KZ	6-7-12	City of Bridgeport
COP# 201100309-KB	4-21-11	City of Bridgeport

Part IV: Site Information (continued)

11. Identify any changes in conditions of the site (including ownership, development, use, or natural resources) since the issuance of the most recent state permit or certificate authorizing work at the site.

No changes to conditions have occurred, with the exception of work to the existng residential driveway north of Route 113 beyond the site limits. Currently, a new driveway is under construction to provide an alternate means of access to residential house currently served by the existing driveway to the north of Route 113 in the project area. The new driveway is being constructed to the west of the existing residences, connecting to Sniffen's Lane. The existing driveway will be abandoned in place. This activity is occurring under permit by the City of Stratford inland wetlands commission. The completion of this driveway will allow for the restoration of the tidal ditch and Raymark Waste removal.

12. a. Identify and describe the existing municipal zoning classification of the site.

The Town of Stratford designates two zoning classifications for the airport: Runway Zone – which includes the airfield; and Airport Development District – which includes all other land areas on the airport. Zoning surrounding the airport is comprised of a Light Industrial District and a Coastal Industrial District to the north, a Resource Conservation District to the west and south, and Residential to the south and east.

b. Identify and describe the existing land use(s) on and adjacent to the site.

Existing land use patterns for the area surrounding the airport have remained essentially unchanged for the past decade with the exception of a land transfer of 1.075 acres from the Stratford Army Engine Plant (SAEP) to the Federal Aviation Administration (FAA). Existing land uses in the vicinity of the airport are varied and include open space, residential, industrial, and commercial. Within the project study area, land uses include aviation and undeveloped land on airport owned property. SAEP owned property is comprised of industrial and undeveloped land. To the south of the airport, land use is predominantly residential. The Great Meadows Marsh occupies much of the land area to the west of the airport and is open space. Industrial uses are located predominantly in an area to the north of the airport. immediately east of the airport is a commercial area along with open space and a limited number of residential dwellings located along the Housatonic River.

13. Provide the name of the waterbody at the site of proposed work: Marine Basin and tidal channels to the Housatonic River and LIS

14. Provide the elevation of the applicable regulatory limit for your project referenced to NAVD88. Refer to the [instructions](#) for more information.

Tidal Wetlands Limit = 4.8 feet Coastal Jurisdiction Limit = _____

15. How was the regulatory limit identified above determined? Please check one of the following:

[DEEP-calculated elevation](#)

Self-calculated elevation (If a self-calculated elevation is used, please provide the additional information and calculations per the instructions.)

Mean High Water elevation (use only if project is upstream of a tide gate, dam or weir)
(If a MHW elevation is used, provide a discussion of the location of the tide gate, dam or weir.)

If other than a DEEP calculated elevation was used to calculate the CJL, please provide the additional information and calculations per the instructions and label and attach them as Attachment M.

16. Provide the elevations of the mean high water and mean low water at the site and the reference datum used. Refer to the instructions regarding elevation datum.

MHW = 3.14 MLW = -3.6 Datum = NAVD88

Check here If NAVD88 is not referenced, and provide an orthometric conversion table in Attachment M.

Part V: Supporting Documents

The supporting documents listed below must be submitted with the application and labeled as indicated. The specific information required in each attachment is described in the *Instructions for Completing a Permit Application for Programs Administered by the Office of Long Island Sound Programs* (DEP-OLIS-INST-100). Check the box by the attachments listed to indicate that they have been submitted.

- Attachment A: Executive Summary; summarize the information contained in the complete application which must include a description of the proposed regulated activities and a synopsis of the environmental and engineering analyses of the impact of such activities. Include a list of the titles of all plans, drawings, reports, studies, appendices, or other documentation which are attached as part of the application.
- Attachment B: If the applicant is not the owner, submit written permission from the owner as Attachment B.
- Attachment C: **Copy** of the completed *Request for NDDB State Listed Species Review Form* (DEP-APP-007) **and** the NDDB response, if applicable.
- Attachment D: [Shellfish Commission Consultation Form](#) (DEP-OLIS-APP-101D), if applicable.
- Attachment E: [Harbor Management Commission Consultation Form](#) (DEP-OLIS-APP-101E), if applicable.
- Attachment F: [Department of Agriculture/Bureau of Aquaculture Consultation Form](#) (DEP-OLIS-APP-101F), if applicable.
- Attachment G: Conservation or Preservation Restriction Information, if applicable.
- Attachment H: [Applicant Compliance Information Form](#) (DEP-APP-002).
- Attachment I: Provide plans of the project as Attachment I. They must be 8 1/2" x 11" scaled plans of the site and proposed work, with the datum of the measurements noted, including:
 - a. A Vicinity Map;
 - b. A Tax Assessor's Map showing the Map, Block and Lot #, subject property and immediately adjacent properties;
 - c. Plan Views showing existing and proposed conditions, including vessel berthing arrangement, based on a site survey prepared by a licensed surveyor; and
 - d. An Elevation or Cross-Section View showing existing and proposed conditions, including vessel berthing arrangement, based on a site survey prepared by a licensed surveyor.**Please refer to Attachment I of the instructions for identification and discussion of required plan components.**
- Attachment J: Photographs showing existing conditions of the site.
- Attachment K: Abutting or adjacent property owner information; including names and mailing addresses and names and addresses of shellfish bed owners or lessees.
- Attachment L: [Applicant Background Information Form](#) (DEP-APP-008) (if applicable).
- Attachment M: Other Information: Any other information the applicant deems relevant or is required by DEEP.
- Attachment N: [US Army Corps of Engineers Consultation Form](#) (DEP-OLISP-APP-101N)

Part VI: Applicant Certification

The applicant(s) and the individual(s) responsible for actually preparing the application must sign this part. An application will be considered insufficient unless all required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that I will comply with all notice requirements as listed in section 22a-6g of the General Statutes."

<i>Thomas J Maziarz</i>	<i>5-20-2013</i>
Signature of Applicant	Date
Thomas Maziarz	Bureau Chief of Policy & Planning
Name of Applicant (print or type)	Title (if applicable)
<i>D. Hageman</i>	<i>5/20/13</i>
Signature of Preparer (if different than above)	Date
Daniel A. Hageman	Project Manager
Name of Preparer (print or type)	Title (if applicable)

Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)

Note: Please submit the completed Application Form, Fee, and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
 DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
 79 ELM STREET
 HARTFORD, CT 06106-5127

Please remember to publish notice of the permit application immediately after submitting your completed application to DEEP. Send a copy of the notice to the chief elected official of the municipality in which the regulated activity is proposed, and provide DEEP with a copy of the notice, as described in the instructions, attached to a completed "Certification of Notice Form" (DEP-APP-005A)".

Submit one complete application copy to the U.S. Army Corps of Engineers, Regulatory Division, 696 Virginia Road, Concord, MA, 01742.

If you are submitting a tidal wetlands application, mail complete application copies to the municipal CEO, Shellfish Commission and Conservation Commission.